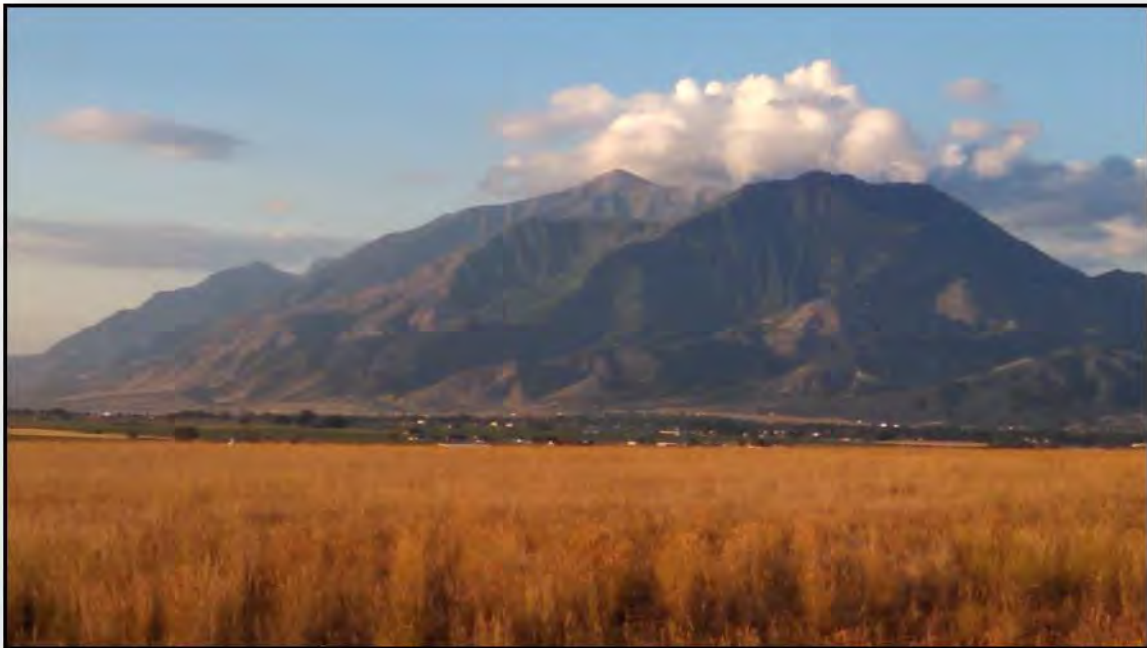




RESOURCE MANAGEMENT PLAN



2017

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CHAPTER 1

INTRODUCTION

1.1 PURPOSE AND NEED

1.1.1 PURPOSE

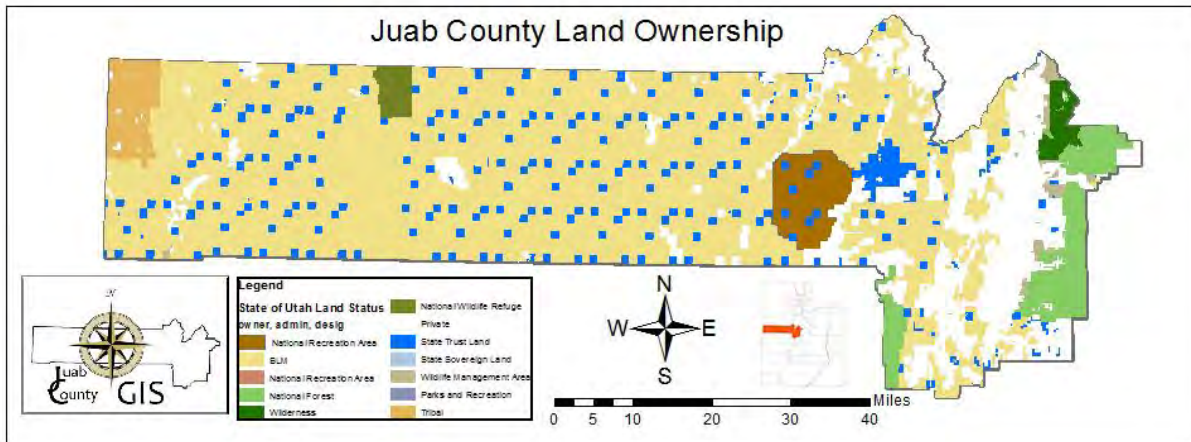
The purpose and scope of this document is to amend the County General Plan by creating a Resource Management Section addressing public land issues. It is intended, to the maximum extent allowed by law, to establish criteria, policies, and requirements to be met in the various federal land planning processes and to provide consistency across agency boundaries while preserving and enhancing the County's custom, culture, resources, and socioeconomic base. This Plan is based on objective science, public input, multiple use/sustained yield principles, a Recreation Opportunity Spectrum (ROS) process consistent with federal guidelines, Visual Resource Management (VRM) analysis, agency directives, procedures and standards applied in a consistent, objective, interdisciplinary manner across agency boundaries.

Juab County (County) bases its land use plan on quantifiable data, scientific information, and known science. Where land management agencies are developing land use plans, and where quantified data is not available, professional judgment must defer to policies and objectives outlined in this Resource Management Plan (RMP). Where in the absence of quantifiable data, scientific facts, and known, proven results, professional judgment is used to establish planning actions that are not in agreement with the County's Plan, they are deemed to be inconsistent to the maximum extent allowed by law and are considered arbitrary and capricious.

1.1.2 NEED

The County (Map 1.1) consists of various units of federal, state, local government and private lands. The federal, state and local government entities have various planning requirements conducted within the laws, regulations and procedures for each agency. No two entities' requirements are exactly identical. However, they all rely, to a greater or lesser extent, on the local government plan as a basis for a) consistency, b) preserving the health, safety, welfare, custom, culture, and heritage of an area, c) meeting the needs of local communities and the public at large, and d) encouraging a productive and enjoyable harmony between man and his environment. Some agencies are required – to the maximum extent allowed by law – to be consistent with local plans, and other agencies are required to give deference to such plans; but all agencies are required to coordinate their plans with local government.

In the past, federal agencies have been reluctant to include the County as a full partner in the public lands planning process. Recently, the County has taken a more active role in establishing baseline policies and communicating County needs in public land planning. That involvement has led the County to conclude that the County General Plan needs to be amended/augmented with a Resource Management Section to provide clear direction, objectives, goals, and criteria that can be applied consistently across agency boundaries and that can protect the custom, culture and welfare of the County's visitors and residents while providing for the conservation, development, use and/or enjoyment of its resources.



Map 1.1

As the only governmental entity with some level of jurisdiction and planning responsibility for all lands within the planning boundaries, the County needs all agencies, to the maximum extent allowed by law, to adopt the direction, objectives, goals, policies, and criteria identified herein. Findings documented in the General Plan and the Resource Management Section are baseline conditions for all analysis. Where existing law is silent on a particular issue or where an agency is given discretion, the County's position must be given deference. If land managers feel alternate management scenarios are justified, detailed documentation needs to be provided and the County's concurrence needs to be sought. Absent such concurrence, and barring established law to the contrary, direction, objectives, goals, policies, and criteria identified in the County plans must be adopted.

1.2 DESCRIPTION OF PLANNING BOUNDARIES

The planning area consists of all lands located within the legally established boundaries of the County. All lands within the County are considered, regardless of ownership. Legally established municipalities consist primarily of private lands and comprise a small percentage of the County's land base. Conditions in and impacts to municipalities are considered in the planning process. However, management direction for lands within municipal boundaries is deferred to the individual town or city.

The Federal Government controls 1,569,966 acres or 72% of the approximately 2.18 million acres of land area in the County. Of the 1,569,966 acres 1,442,917 acres are managed by the Bureau of Land Management's Fillmore Field Office which constitutes 66% of the County. The Forest Service controls 5% or 109,917 acres split among the Uinta-Wasatch-Cache; Fishlake and the Manti-La Sal National Forests; and the U.S. Fish and Wildlife manages the Fish Springs National Wildlife Refuge containing 17,992 acres, less than 1% of the County. Approximately 17.5% or 382,144 acres is held in private ownership, and State of Utah owns 178,526 acres or 8.18% of the total. The remaining 52,617 acres or 2.4% is under management jurisdiction of incorporated cities, the Goshute Reservation, and roads/railroad rights-of-ways.

1.3 PLANNING PROCESS

1.3.1 RELATIONSHIP TO OTHER PLANS

It is recognized that land managers conduct many programs that are beneficial to the County. However, this plan is focused on areas in need of change. No attempt has been made to delineate the resources that are being appropriately managed. The plan is written in a genuine cooperative spirit of partnership that will meet the goals of public land management agencies and the County while a) encouraging productive and enjoyable harmony between man and his environment, b) promoting efforts which will prevent or eliminate damage to the environment and biosphere, and c) stimulating the health and welfare of man.

For analysis purposes, the region of comparison is that combined area comprised by the State of Utah, the Colorado Plateau and Anasazi dwelling units.

1.3.2 MONITORING, MAINTENANCE, AMENDMENT, AND REVISION

Monitoring and Evaluation

The plan shall be monitored and evaluated at regular intervals based on the sensitivity of the resource to the decisions involved and shall consider whether there is a change in conditions or whether there is new data of significance to the plan. The County shall be responsible for monitoring and evaluating the plan at intervals not to exceed 10 years and at other times as appropriate to determine whether there is sufficient cause to warrant amendment or revision of the plan.

Plan Maintenance

This RMP and supporting components shall be maintained as necessary to reflect minor changes in data. Such maintenance is limited to further refining or documenting a previously approved decision incorporated in the plan. Maintenance shall not result in expansion in the scope of resource uses or restrictions, or change the terms, conditions, and decisions of the approved plan. Maintenance is not considered a plan amendment and shall not require formal public involvement and coordination or the preparation of a completely new document. Maintenance shall be recorded in the plan and supporting records.

Amendment

This RMP may be changed through amendment. An amendment may be initiated to consider monitoring and evaluation results, new data, new or revised policy, a change in circumstances, or a proposed action that may result in a change in the scope of resource uses or a change in the terms, conditions and decisions of the approved plan. An amendment shall be made through a public process similar to that required for initial development of the plan. The effect of the amendment on the health and welfare of the County and its resources shall be considered. If the amendment is being considered in response to a specific proposal, the analysis required for the proposal and for the amendment may occur simultaneously. Approved plan amendments shall carry the same validity as if originally included in the plan.

Revision

Revision to this RMP will be conducted as follows:

Proposed Change	Action	Public Commission	
		Comment	Approval
Current Setting	Plan Maintenance	No	Yes
Desired Conditions	Plan Amendment	Yes	Yes
Need for Management Change	Plan Amendment	Yes	Yes
Policies, Goals, Objectives, & Criteria	Plan Amendment	Yes	Yes
Findings	Plan Amendment	Yes	Yes
Land Use	Plan Amendment	Yes	Yes
Data Correction	Plan Maintenance	No	Yes
Appendix Information	Plan Maintenance	No	Yes
Appendix Augmentation	Plan Maintenance	No	Yes
Map Correction	Plan Maintenance	No	Yes
Grammar/Typographic	Plan Maintenance	No	No

Clarification of the intent, position, and/or policies contained herein shall be at the discretion of the County and may be provide upon request.

1.4 AUTHORITIES

In addition to authorities granted by the State of Utah to govern private lands within its boundaries, the County asserts the Constitution of the United States has bestowed considerable power and authority to local governments which direct and influence the federal agency land use planning process for existing and future management of lands within federal agency boundaries. In the Federalist Papers: 45, James Madison discusses “alleged dangers” the federal government poses to state governments. Among other things, the papers assure States of the following:

Within every district to which a federal collector would be allotted, there would not be less than thirty or forty, or even more, officers of different descriptions, and many of them persons of character and weight, whose influence would lie on the side of the State. The powers delegated by the proposed Constitution to the federal government are few and defined. Those which are to remain in the State governments are numerous and indefinite. The former will be exercised principally on external objects, as war, peace, negotiation, and foreign commerce; with which last the power of taxation will, for the most part, be connected.

The powers reserved to the several States will extend to all the objects which, in the ordinary course of affairs, concern the lives, liberties, and properties of the people, and the internal order, improvement, and prosperity of the State. The operations of the federal government will be most

extensive and important in times of war and danger; those of the State governments, in times of peace and security. As the former periods will probably bear a small proportion to the latter, the State governments will here enjoy another advantage over the federal government.

Utah State Statute directs the development of county-level plans. Section 17-27a-401 of the Utah Code provides:

“...each County shall prepare and adopt a comprehensive, long range general plan.”

Specific components which are required to be addressed within these plans include: land use, transportation, environmental issues, public services and facilities, rehabilitation and redevelopment, economic concerns, recommendations for plan implementation, and “any other elements that the county considers appropriate”.

In 2015, the Utah Legislature amended Title 17-27a-401 to also require that County General Plans include a Resource Management Plan to provide a basis for communicating and coordinating with the federal government on land and resource management issues. This RMP is the fulfillment of those requirements.

Major federal laws that influence land planning in the County include but are not limited to:

- The Federal Land Policy and Management Act (FLPMA)
- The National Forest Management Act (NFMA)
- The National Environmental Policy Act (NEPA)
- The Wild and Scenic Rivers Act (WSRA)
- The Endangered Species Act (ESA)
- Archaeological Resources Protection Act (1979)
- The Wilderness Act (1964)
- The National Trails Systems Act (1968)
- The National Historic Preservation Act
- The Data Quality Act
- The Regulatory Flexibility Act
- The Clean Air Act
- The Clean Water Act
- The Resource Conservation and Recovery Act

The federal government also recognizes the role of state, local and tribal governments in planning processes. Under NEPA’s purpose of achieving productive and enjoyable harmony between man and his environment, CEQ Regulations, the U.S. Code, the Code of Federal Regulations and individual agency manuals direct and mandate federal agencies to consult,

coordinate, and cooperate with state, local and tribal governments and to achieve the maximum possible consistency between federal and non-federal plans. Language in the authorizing statutes/documents is often identical for state and local governments and for tribal governments. Agency implementation guidance is also frequently identical for the three levels of non-federal government. However, some agencies provide greater detailed guidance for Native American Tribes, especially in Alaska. Wherever authorizing language is similar/identical, or absent specific federal law to the contrary, the County adopts consistency, consultation, coordination and cooperation requirements as described in Executive Order 12866 and Executive Order 13175 identical for state, local and tribal entities.

1.4.1 NATIONAL PARK SERVICE

As of March 2017 the County does not contain any National Park Service (NPS) units. The National Park Service was created on August 25, 1916 through its Organic Act located at Title 16 of the United States Code. National Park Service units are created for specific purposes as disclosed in their enabling legislation. In determining what is an appropriate use of a National Park Service unit, NPS Planning and decision making procedures are used to engage interested governmental entities and the public. Processes also require the best scientific information must be considered.

The criteria for determining whether a particular use is appropriate in a park are set forth in the Federal Code. In applying the criteria, the responsible NPS Manager must use good judgment to ensure that uses will not create an unacceptable impact, be inconsistent with park purposes or values, unreasonably interfere with park programs or activities, disrupt the operation of park concessions or contractors, create an unsafe or unhealthful environment for visitors or employees, result in significant conflict with other appropriate uses, or diminish opportunities for current or future generations to enjoy park resources or values. In short, Park Service Managers have a great deal of discretion in the planning process, so long as it meets criteria mentioned above. This RMP provides direction and standards for use in applying Park Service discretion.

Under NEPA's implementing regulations (40 CFR 1500 – 1508) and the Code of Federal Regulations (43 CFR Subtitle A Part 46.155), the NPS and other federal agencies are required to consult, coordinate, and cooperate with State and local governments, to the fullest extent possible, concerning environmental effects of any federal action within the jurisdictions or related to the interests of the non-federal entities.

1.4.2 NATIONAL FOREST SERVICE

National Forests operate under the Department of Agriculture and have a similar obligation as Department of Interior agencies to comply with CEQ's implementing regulations for NEPA and other applicable federal law. Consistency, consultation, coordination and cooperation requirements are identified in federal statutes and regulations for states, local governments and recognized Native American tribes.

Furthermore, the National Forest Management Act obligates Forest Service land managers to provide for community stability including: a) establishing coordination procedures with the County prior to selection of a preferred alternative, b) coordinating with County planning efforts, considering alternatives in light of any conflicts with respect to County plans, c) displaying results of County plan reviews in environmental documents, and d) monitoring how the Forest

Service Plan affects nearby communities.

Additionally, 16 U.S.C 1604 requires:

“...the Secretary of Agriculture shall develop, maintain, and, as appropriate, revise land and resource management plans for units of the National Forest System, coordinated with the land and resource management planning processes of State and local governments and other Federal agencies.”

This Land Management Plan is prepared according to the National Forest Management Act (NFMA) and other laws and regulations. Current plans for the Manti-La Sal, and Fishlake National Forest were approved in 1986. The current plan for Uinta-Wasatch-Cache forest within the County was approved in 2003. NFMA regulations require that each plan be revised at least every 15 years (36 CFR 219.7(a) (4)). The current County revision is being prepared to provide direction for future federal planning.

1.4.3 BUREAU OF LAND MANAGEMENT

In addition to CEQ Regulations and the Code of Federal Regulations cited above, the Federal Land Policy and Management Act (FLPMA) also obligates the BLM to coordinate its land use plans with County plans, and take all practical measures to resolve conflicts between them as follows:

Section 202(a) - The Secretary shall, with public involvement and consistent with the terms and conditions of this Act, develop, maintain, and when appropriate, revise land use plans.

Section 202(c) - In the development and revision of land use plans the Secretary shall:

(1) use and observe the principles of multiple use and sustained yield set forth in this and other applicable laws.

(2) use a systematic interdisciplinary approach to achieve integrated consideration of physical, biological, economic, and other sciences.

(9) to the extent consistent with the laws governing the administration of the public lands, coordinate the land use inventory, planning, and management activities of or for such lands with the land use planning and management programs of other Federal departments and agencies and of the States and local governments within which the lands are located ... considering the policies of approved State and tribal land resource management programs.

Subsection (9) goes on to state:

“Land use plans of the Secretary under this section shall be consistent with State and local plans to the maximum extent he finds consistent with Federal law and the purposes of this Act.”

Title VII, Section 701(a) is also important to this County Planning Revision in that it states, *“Nothing in this Act, or in any amendment made by this Act, shall be construed as terminating any valid lease, permit, patent, right-of-way or other land use right or authorization existing on the date of approval of this act.”*

1.4.4 JURISDICTION FOR HEALTH, SAFETY AND WELFARE

The United States Constitution is the most important document in American governance and is the source of all federal law. It is the cornerstone and the foundation upon which is built the relationship between the citizens and their government. The Constitution defines the rights, privileges and responsibilities of the people and limits government authority over the people. It is a contract between the people and the government. The people are bound by the laws of the government, and the government is bound by the provisions and principles of the Constitution.

Our government is one of enumerated powers, and it can only exercise powers granted to it. Article I of Section 8 grants to Congress the authority to make laws regarding specific subjects. The powers not specifically delegated to the United States by the Constitution, nor prohibited by it to the states, are reserved to the states or the people. Other laws may deal with matters not specifically considered in the Constitution, but no law, be it state or federal, can conflict with the Constitution.

The Tenth Amendment reserves the power not expressly given to the federal government in the Constitution to the States or to the people. In section 8 of Article I, *Exclusive* federal jurisdiction is established over forts and several other specifically defined federal facilities. Section 3 of Article IV gives Congress the power to make rules and regulations regarding the territory and other property belonging to the United States. However, the primary source of authority and jurisdiction for federal land management agencies is federal statutes. Some federal statutes (called enabling legislation) provide authority for specific federal agencies to adopt regulations to implement their statutory authority. Enabling legislation authorizes an agency to adopt regulations for those areas specified in the statute. Outside the limits set in its enabling legislation, a federal agency does not have authority to adopt regulations.

Jurisdiction over federal lands consists of a) what authority an agency has over lands under its management and b) the geographical limits of its authority, which are generally set at the agency's boundaries. Along with other considerations, the method and terms of the acquisition of the property determine the type of federal jurisdiction that applies to that particular parcel of land. The basic types of federal jurisdiction are exclusive, concurrent, partial, and proprietary.

In areas of exclusive jurisdiction, only the federal government has law enforcement authority. This occurs when the federal government has received, through state legislative action (called "ceding" or "cession") all of the authority of the state on a certain tract of land contained within the state's borders. With exclusive jurisdiction, no reservations have been made to the state, except that state and local officers have the authority to serve criminal and civil process, such as arrest warrants, resulting from activities that occurred outside the area of exclusive jurisdiction.

Concurrent jurisdiction exists when both the state and federal governments have authority over a particular area. Usually this occurs when a state has ceded land to the United States, but has reserved to itself the right to exercise its state authority. In these jurisdictions, both the state and federal governments may enforce their respective criminal laws and prosecute those who violate their respective laws.

Partial jurisdiction occurs in areas where some of the jurisdiction normally held by the state is ceded to the federal government and some of the state's jurisdiction is retained. Those portions

ceded to the federal government would be similar to exclusive jurisdiction; and those portions retained would be similar to proprietary jurisdiction.

Proprietary jurisdiction is primarily state jurisdiction, with exceptions for federal laws of general application and federal laws and regulations specifically applicable to the particular type of land involved. Proprietary jurisdiction exists when the United States has acquired some right or title to an area within a state's borders, but has not acquired any measure of the state's authority over the area. In essence, the United States has rights generally equivalent to a private landowner. In these situations, state law applies within the proprietary area to the same extent that it does throughout the remainder of the state. However, under the Supremacy and Property Clauses of the United States Constitution, federal statutes or regulations enacted to protect these proprietary areas may also be enforced.

Jurisdictional status for lands managed the various federal agencies are maintained by the General Services Administration (GSA). GSA's formal responses to Freedom of Information Act Requests indicate the following jurisdictional classifications for federal lands in the County:

<u>Entity</u>	<u>Jurisdiction</u>
BLM, Fillmore Field Office	Proprietary
Fishlake National Forest	Proprietary
Manti-La Sal National Forest	Proprietary
Uinta-Wasatch-Cache Natl. Forest	Proprietary
Fish Spring Natl. Wildlife Refuge	Proprietary

There may be other federally owned lands that exist in the County, but they are believed to be of minimal acreage when compared with the properties listed above. Additionally, the Goshute Indian Tribe manages reservation lands in the northwest corner of the County. These lands are managed as an independent tribal nation and are not considered a federal agency.

1.5 COORDINATION, COOPERATION & CONSISTENCY

1.5.1 INTRODUCTION Since the 1970s, Congress has required¹ federal agencies to manage their lands through land use plans. These plans are park-wide, field office wide, district-wide or forest-wide documents that determine how the resources for a given area of Park Service, BLM or Forest Service land will be used and managed over an extended period of time. Typically, land use plans are scheduled for revision every 15 to 20 years, but often are in place for much longer periods of time. Federal land use plans provide the basis for on the ground actions an agency may take. Because of their far-reaching impact on both man and his environment, land use plans must be accompanied by an environmental impact statement (EIS) as required by the National Environmental Policy Act (NEPA).

Local governments also use land use plans to identify acceptable uses of lands within their boundaries. Congress has recognized local entities' health, safety, welfare, custom, culture, heritage and socio-economic wellbeing are intimately tied to the management of the surrounding federal lands and has recognized state's, local governments' and tribal governments' roles in the federal land use planning and management process. Federal agencies may have supremacy where

federal law provides for specific jurisdiction, but many federal statutes recognize state responsibilities for air, water, roads, law enforcement, emergency services, noxious weeds, cultural resources, wildlife, solid & hazardous waste and other issues, in addition to local responsibilities for the health, safety and welfare of the residents. And, where federal law is silent, state, local and tribal laws, plans, policies and programs may take precedence over discretionary federal actions. Federal statutes and regulations also require federal agencies to: a) achieve a productive and enjoyable harmony between man and his environment (often termed consistency with state, local and tribal plans, policies and programs); b) provide meaningful opportunities for cooperation between federal agencies and states, local governments and tribes; and c) coordinate federal actions with the plans, policies and programs of affected states, local and tribal governments. Moreover, counties are required by Utah law to oversee the economic, social, and general wellbeing of the people and resources within their jurisdictions and to provide general and resource management plans to serve as the basis for consistency, cooperation and coordination with federal agencies managing lands within the county's boundaries.

Aside from specific expectations for federal land management, local land use plans may also include information about an area's history, economic base, custom, culture, heritage, and traditional ethnographic uses (both extractive and recreational) on federal lands, as well as the local government's plans, policies and programs. Depending on the plan, a variety of other expectations, requirements and background information may be included. But ultimately, all local land use plans have the same purpose: to serve as an officially adopted baseline document identifying acceptable management approaches on federal and non-federal lands within the local government's boundaries.

1.5.2 COORDINATION

Coordination is a congressionally mandated process that requires federal agencies to work with local governments to seek consistency and cooperation between federal land use planning actions and local land use plans and policies. Coordination requires federal agencies do more than just inform local governments of their future management plans and decisions, and it requires that federal agencies do more than merely solicit comments from local government entities. Coordination calls for negotiation on a government-to government basis that seeks to ensure officially approved local plans and policies are accommodated by planning and management decisions on federal lands. The mandate to coordinate comes from NEPA, CEQ Regulations, FLPMA, NFMA, NPS policy, and other federal guidance regulating planning activities of federal agencies.

Coordination is not limited to the process of bringing federal and local land use plans into harmony with each other. Coordination goes beyond comprehensive land use plans, both on the part of the local government and the federal agencies. Coordination also considers policies, resolutions, ordinances, and programs adopted by local governments which relate to the management of federal lands. Coordination requires an ongoing process in which a local government interacts with a federal agency on a regular basis to discuss anticipated management actions on federal land, and continually balances those actions against the local government's land use plan or policies. BLM statute, regulations, and applicable case law recognize that coordination applies to BLM management activities as well as to land use plans. Forest Service statutes and regulations explicitly recognize that coordination applies to land use plans, resource management plans and planning related to roads, trails and areas. Park Service regulations

require information regarding the process used to coordinate with local governments as part of every environmental impact statement. And implementation of NEPA requires cooperative alignment of federal and non-federal programs.

Coordination is not optional. FLPMA and NFMA require the BLM and the Forest Service to coordinate land use planning actions with local government plans and policies. NEPA regulations adopted by the Department of the Interior have similar coordination requirements for NPS units (see National Park Service NEPA Handbook, 2015). However, the agencies' governing statutes and regulations explain coordination with varying degrees of detail.

FLPMA provides a detailed baseline for the coordination process and identifies at least four specific BLM actions: 1) Remain informed of local land use plans; 2) Guarantee that local land use plans are given proper consideration; 3) Attempt to resolve inconsistencies between local and BLM land use plans; and 4) Provide meaningful involvement for local entities early and throughout the decision making process.

Federal responsibilities regarding the Forest Service's coordination with local governments is less descriptive than explained in FLPMA. However, coordination with the Forest Service is still a substantive process. The Forest Service is explicitly directed in NFMA to coordinate with local governments, and the agency must engage in a process that involves some level of mutual accommodation that is significantly more than a mere perusal of the local plan. NFMA does not specify how the process of coordination is to be accomplished, but the Forest Service is expected to engage in a meaningful process with local governments and to seek to harmonize local and Forest Service plans and decisions. Specifically, Forest Service regulations require:

1. Responsible officials coordinate with local governments.
2. Responsible officials shall review local plans and policies that are relevant to the federal plan. The review will consider the objectives of local plans, the compatibility and interrelated impacts between local and federal plans, opportunities to address impacts and contribute to joint objectives, and opportunities to resolve or reduce conflicts. This review must be included in the accompanying federal environmental document.
3. The responsible official will not direct or control management of lands outside of the planning boundary.

Coordination between local government and the Forest Service must be a substantive process, and the federal agency should seek interaction with on a regular basis, share planning information as early as possible, and engage in a good faith effort to harmonize Forest Service plans with local land use plans and policies.

NPS coordination requirements are outlined in Department of Interior regulations implementing NEPA and in NPS specific guidance. NPS units and programs are expected to consult, cooperate, and coordinate with other federal, state, local, and tribal governments and other bureaus and federal agencies whenever possible (43 CFR 46.155).

Policy: the County demands Coordination to the maximum extent allowed by federal law.

Finding: the County finds Coordination is a basic process necessary for achieving the national policy of encouraging productive and enjoyable harmony between man and his environment.

1.5.3 COOPERATION

Cooperation between federal land managers and local governments is often related to *Cooperating Agency Status* as defined in Council on Environmental Quality Regulations implementing NEPA. These regulations apply to all federal agencies and recognize the special status of states, local governments and tribes. Statutes authorizing Cooperating Agency roles are identical for states, local governments and tribal governments and in some cases federal entities. Additional clarification has been added in the form of desk guides, handbooks, executive orders and court rulings. There is no known law requiring any differentiation between the various levels of eligible entities. Unless prohibited by law, the County demands treatment as a Cooperating Agency equal to other federal entities, states and tribal governments.

In addition to providing meaningful involvement early and often through cooperating agency status, federal agencies are to harmonize their planning process with local plans, policies and programs as indicated by the companion terms of coordination and consistency. Read as a whole, congressional mandates clearly support local government's influence on federal planning processes.

Cooperating agency status only occurs in the context of specific environmental analysis conducted under NEPA and ends when the NEPA process is completed. Cooperating agencies are members of the interdisciplinary NEPA team, can recommend that the lead agency undertake certain scientific studies, and recommend existing research for inclusion in the analysis.

Policy: Unless prohibited by law, the County demands treatment as a Cooperating Agency equal to other federal entities, states and tribal governments.

Policy: the County demands Cooperation and inclusion as a Cooperating Agency to the maximum extent allowed by federal law.

Finding: the County finds Cooperation is a basic process necessary for achieving the national policy of encouraging productive and enjoyable harmony between man and his environment.

Finding: the County finds that cooperating agency status must be offered at the earliest possible date and prior to scoping. Earliest possible date means no later than when a federal agency initially considers an undertaking, when a federal agency identifies a project lead or members of an interdisciplinary team, or when an agency is notified of funding to perform an undertaking, whichever occurs first.

Policy: the County demands meaningful involvement as a Cooperating Agency to the maximum extent allowed by federal law.

1.5.4 CONSISTENCY

Consistency between federal, state, local and tribal plans is the desired outcome for the coordination and cooperation processes required of federal agencies. It is unreasonable and contrary to law that federal agencies would attempt to manage federal lands interspersed with state and private lands without considering the impact federal actions have on other entities and without considering the impacts the non-federal agencies have on them. Two of the purposes of NEPA are: 1) encourage productive and enjoyable harmony between man and his environment; and 2) stimulate the health and welfare of man. In fact, the Merriam-Webster dictionary defines

consistency as a) *agreement or harmony of parts or features to one another or a whole* and b) *harmony of conduct or practice with profession* (emphasis added). Harmony and consistency are synonymous and constitute the ability of an act to be completed without contradiction.

Local officials are charged with the responsibility of promoting and preserving the health, safety and welfare of their residents – the “man” component of NEPA. Federal agencies are charged with the responsibility of managing land and resources – the “environment” component of NEPA. It logically follows, in order to achieve the national policy outlined in NEPA, federal plans must be consistent with non-federal plans unless authorized by laws circumventing NEPA. Congress further emphasized the national policy of consistency/harmony by requiring federal agencies to coordinate under FLPMA and NFMA and to cooperate under CEQ Regulations.

The failure of a federal plan or action to be consistent with a local land use plan can only be justified by reference to a resulting violation of federal law. In other words, where federal land use plans are inconsistent with local land use plans, the burden is on the federal agency to show how adhering to the local plan would result in a violation of federal law. Moreover, NEPA, federal regulations and agency directives clearly indicate consistency (or harmony) is a strong requirement in and of itself.

Finding: the County finds the only/optimal way to comply with national policy of encouraging productive and enjoyable harmony between man and his environment established in NEPA is for federal agencies to be consistent (in harmony) with state, local and tribal plans to the maximum extent allowed by federal law.

Finding: the County finds federal plans that are inconsistent with local plans – unless specifically mandated by federal law – violate national, statutory policy outlined in NEPA.

Policy: the County will coordinate and cooperate with federal agencies to achieve consistency between federal and local plans in order to encourage and obtain the productive and enjoyable harmony between man and his environment outlined in NEPA.

Policy: the County demands federal agencies achieve consistency between federal and local plans in order to encourage and obtain the productive and enjoyable harmony between man and his environment outlined in NEPA.

Policy: the County adopts an “Equal, Not Subordinate” standard for coordination, cooperation and consistency associated with federal, state and local planning.

Finding: the County finds and declares federal agencies that fail to achieve consistency with local plans, unless mandated to the contrary by specific federal statute, are in violation of NEPA and local law.

Policy: Where federal land use plans are inconsistent with local land use plans, the burden is on the federal agency to demonstrate how adhering to the local plan will result in a violation of federal law.

Policy: “Consistent” means federal plans will adhere to the terms, conditions, and decisions of officially approved and adopted local resource management plans, or in their absence, with policies and programs, subject to the provisions of federal law.

1.6 ENVIRONMENTAL CONSEQUENCES

The overriding authority for this planning effort is CEQ's implementation of the National Environmental Policy Act which outlines significant federal requirements for consistency, consultation, coordination, and cooperation. In addition, NEPA requires federal agencies consider and document the cumulative impacts associated with all federal actions (in this case agency planning and implementation efforts by the BLM and the US Forest Service) to include impacts to not only local land bases and environments, but also the economic and social impacts that will result from decisions arising from federal planning efforts.

The National Environmental Policy Act also requires that all major federal actions be subject to environmental analysis before they are undertaken to determine the consequences of the proposed action. The analysis must include direct, indirect and cumulative effects of the proposed actions and must consider a reasonable range of alternatives including a no action alternative. The process must also consider relevant state and local plans and provide meaningful involvement for state, local and tribal governments.

Over the past few decades federal land management practices and their associated environmental documentation have failed to properly incorporate consistency, consultation, coordination and cooperation and have failed to accurately account for negative impacts affecting the custom, culture, and socioeconomic viability of the County. In addition, these documents fail to consider the cumulative effects across agency boundaries and the total aggregate effect on County visitors and residents. This is evidenced by a decline in traditional natural resource based industries in a State that is rapidly growing and expanding business. Failure to accurately depict the socioeconomic impact of prescriptive land management decisions has resulted in the loss of traditional industries and a one-dimensional, recreation oriented economy. Although income derived from tourism has increased, revenues derived from recreation, especially from the lands reserved for primitive recreation, have failed to provide sufficient income to sustain families and local communities.

Federal agencies must accurately depict direct, indirect, and cumulative impacts across the entire County in their environmental analysis. Where the County has established baseline figures, data, impact analysis, revenue rates, or other established positions regarding custom, culture, or socioeconomic information, the data must be used in environmental analysis. Agencies which fail to use the information or which substitute other findings without concurrence of the County are inconsistent with the Juab County General Plan, arbitrary, capricious, and fail to accurately depict environmental consequences of proposed actions.

Environmental analysis of proposed actions that are demonstrated to be inaccurate by more than 10% after three years should be reevaluated, reviewed, and revised in order to meet the intent of plan monitoring and maintenance. Failure to perform such re-evaluation processes constitutes a failure to monitor and maintain existing plans and is considered to be irresponsible agency action.

1.7 SOCIOECONOMIC CONSIDERATIONS

Introduction:

All economic activity in the arid and semiarid western United States depends on adequate dependable water supplies. The County is just as dependent on water availability as the rest of the interior West. The County's water supply is dependent upon the health of the watersheds in the County. The watersheds are almost exclusively on Federal Lands managed by the US Forest Service or Bureau of Land Management. Therefore, how these watersheds are managed determines the long run sustainability of the County and the rest of the arid and semiarid West.

Industries in Juab County:

The industries in the County are dependent upon the natural resources in the County. This dependence may be from the direct use of resources or service of public lands, the indirect use or service by supplying goods and services to those who directly use the resources or services, or from the induced effects of the money generated in the county by direct, indirect and other induced economic activities.

Agricultural and Forestry Industries:

The agricultural sector in 1994 was composed of 16 different industrial classifications producing output valued at \$18.8 million in 2015 dollars. Agricultural operations employed 301 people. By 2015 the agricultural sector was composed of 10 different industrial classifications producing output valued at \$40.4 million and employed 420 people. In the County agriculture is dominated by cattle and hay production with output valued at \$26.9 million and employing 320 people. The social, cultural and character has its foundation in agriculture and natural resources. Agriculture and natural resources has provided for community stability and resilience throughout the history of the County. the County was settled because of its natural resources that could maintain them and their families for generations.

Mining and Petroleum Industries:

The mining and petroleum sectors in 1994 produced output valued at \$5.6 million in 2015 dollars. Mining and petroleum operations employed 20 people. By 2015 the mining and petroleum sectors produced output valued at \$32 million and employed 146 people.

Electric Power Industries:

The electric power sector in 1994 was not monitored. By 2015 the electric power sector produced output valued at \$24.1 million and employed 20 people.

Tourist Industries:

Tourist industries have been a minor part of the County economy. Most of the tourists are passing through the county and need a place to stay for the night or a place to eat. In 1994 tourist industries accounted for about \$15.4 million in 2015 dollars and employed about 384 people. By 2015 tourist industries account for about \$18.2 million and employed about 349 people.

Service Industries:

Since 1994 service industries have grown the most in the County. In 1994 service industries accounted for about \$58.4 million in 2015 dollars and employed about 632 people. By 2015 this had grown to about \$162.5 million and employment grew to about 1,421 people. Included in service industries are Banking, Credit Agencies, Security and Commodity Brokers, Insurance Carriers, Insurance Agents and Brokers, Owner-occupied Dwellings, Real Estate, Laundry, Cleaning, Portrait and Photographic Studios, Beauty and Barber Shops, Funeral Service, Miscellaneous Personal Services, Advertising, Other Business Services, Photo-finishing, Commercial Photography, Services To Buildings, Equipment Rental and Leasing, Personnel Supply Services, Computer and Data Processing Services, Automobile Rental and Leasing, Automobile Parking and Car Wash, Automobile Repair and Services, Electrical Repair Service, Miscellaneous Repair Shops, Motion Pictures, Theatrical Producers, Bands Etc. Commercial Sports Except Racing, Racing and Track Operation, Amusement and Recreation Services, N.E.C., Membership Sports and Recreation Clubs, Doctors and Dentists, Nursing and Protective Care, Hospitals, Other Medical and Health Services, Legal Services, Child Day Care Services, Social Services, N.E.C., Residential Care, Other Nonprofit Organizations, Business Associations, Labor and Civic Organizations, Religious Organizations, Engineering, Architectural Services, Accounting, Auditing and Bookkeeping, Management and Consulting Services, Research, Development & Testing Services, and Domestic Services. Service industries cover many types of businesses many which are not in the County.

Air Quality:

The social economic impacts of air quality are complex because the monetary costs of pollution control are easily calculated the benefit are not easily calculated. The reason is the benefit take place over a much longer time period and over a large diverse population of beneficiaries that are difficult to identify each one and everyone.

As a rural county that has limited development relative to its landmass most of the County is classified as a Type II Air Shed. Type II Shed are designated to limit significant deterioration of air quality within the air shed.

The management of social economic activities of 72% of the landmass is done by federal agencies. Therefore, how these agencies operate is a major determinate of air quality in the county. The other 28% fall under EPA Utah Department of Environmental Quality Division of Air Quality.

Among the County Air Quality desired conditions are:

1. The County's air quality be maintained or improved while allowing development of projects needed for socio-economic stability.
2. Federal agencies quantify and mitigate impacts from drift, fugitive dust and fires prior to restricting projects needed for socio-economic stability.
3. Natural fugitive dust is reduced through improved vegetative cover, vigor and utilization.

4. Federal agencies resolve inconsistencies with biogenic pollutants, natural fugitive dust, wildland fire, and prescribed fire prior to restricting projects needed for socio-economic stability.
5. Air quality should be cooperatively managed and coordinated by local, State and Federal agencies.

Social-economic Benefits:

As these 5 desired conditions are achieved the following social-economic benefits will be realized.

1. Minimal air quality deterioration as development occurs
2. Improved landscape health
3. Less erosion by wind and water
4. Increased vegetative diversity
5. Increased wildlife habitat and species diversity
6. Increased social-economic sustainability.
7. Decreased tension between residents and agency personnel
8. Increased economic benefit from public land through services and goods
9. Fewer wildfires with their associated air quality, biologic, erosion, and other costs
10. View-sheds are maintained and in some cases enhanced
11. Increased water shed health and water yield
12. Increased water quality and reduced sediment in rivers and streams
13. Increased soil health and productivity

Soils:

Soils are said to be living organisms because they have both a mineral component and an organic component. The mineral component provided the underlying structure, inorganic nutrient and in large measure the water holding capacity of the soil. The type of minerals and the amount of organic matter in the soil determines its productive capacity of the soil. The productive capacity determines the potential economic value of the land. The productive capacity determines the amount and kind vegetation that the soil can support under the climate and weather conditions.

Healthy productive soils provide the for wildlife and human needs. To assure healthy soils

Juab County Desires the following future conditions:

1. 80% of the soils in the County are producing at least 60% of their capacity.
2. Encroaching Class I conifers are managed to limit their extent to pre-European settlement conditions.

3. Class II and Class III Pinyon/Juniper woodlands are managed to limit their extent to pre-European settlement conditions.
4. Soils are stabilized through vegetative treatments that utilize an optimum combination of native and non-native species.
5. Surface disturbing activities are managed consistent with the County's Best Management Practices.
6. A reduction of soil loss on watersheds in the County by performing appropriate land treatments and restoration of desirable sagebrush/semi-desert grassland vegetation communities.
7. Surfaces disturbances are reclaimed in a timely manner during or upon completion of authorized activities, as appropriate.
8. Temporary roads be evaluated to determine if continued use provides a benefit to the public without jeopardizing land health.
9. Fragile soils are identified during preparation of project-level plans, and necessary mitigation measures are developed to allow the project to move forward, while minimizing risks and degradation to soil resources

Social-economic Benefits:

As these 9 desired conditions are achieved the following social-economic benefits will be realized.

1. Minimal air quality deterioration as development occurs
2. Improved landscape health
3. Less erosion by wind and water
4. Increased vegetation and vegetative diversity
5. Increased social-economic sustainability.
6. Decreased tension between residents and agency personnel.
7. Increased economic benefit from public land through services and goods.
8. Fewer wildfires with their associated air quality, biologic, erosion, and other costs.
9. View-sheds are maintained and in some cases enhanced.
10. Increased water shed health and water yield
11. Increased water quality and reduced sediment in rivers and streams
12. Increased soil health and productivity
13. Increased wildlife habitat and species diversity

Water Resources:

All economic activity in the arid and semiarid western United States depends on adequate dependable water supplies. The County's water supply is dependent upon the health of the watersheds in County. The County is home to 5 major sub basin watersheds: Utah Lake, Lower Sevier, Southern Great Salt Lake, Tule Valley and Hamlin-Snake Valleys. Three of the watersheds in the western portion of the County develop surface waters which flow north and eventually terminate at the Great Salt Lake. One accepts water from the Sevier River basin from as far away as the Dixie National Forest and transfers it to its terminus at Sevier Lake in Millard County. The Utah Lake watershed collects water from the western side of Mount Nebo and drains into Utah Lake via Current Creek. No attempt is made to put a dollar value on the benefits of healthy water sheds in the County.

The County has identified the following desired future conditions:

1. Scarce water resources are maximized for the beneficial use of man
2. Land managers prepare for changing climatic conditions by optimizing land health by while protecting and enhancing multiple use activities
3. A greater emphasis be placed on water development projects that optimize use and benefit of scarce water resources
4. Land managers eradicate undesirable riparian species and noxious weeds in the County.
5. Land mangers maximize desirable native and non-native vegetative cover to optimize use of water resources.

Social-economic Benefits:

As these 5 desired conditions are achieved the following social-economic benefits will be realized.

1. Increased water shed health and water yield
2. Increased social-economic sustainability.
3. Increased water quality and reduced sediment in rivers and streams
4. Increased soil health and productivity
5. Increased vegetation and vegetative diversity
6. Improved landscape health
7. Increased wildlife habitat and species diversity
8. Increased economic benefit from public land through services and goods.
9. Less erosion by wind and water
10. Decreased tension between residents and agency personnel.

11. Fewer wildfires with their associated air quality, water quality, biologic, erosion, and other costs.
12. View-sheds are maintained and in some cases enhanced.

Hydrology:

Juab County Desires:

1. Land management agencies significantly increase implementation of projects to improve vegetative cover, stream bank stabilization, water detention, and eradication of undesirable invasive species.
2. Land managers increase native and non-native vegetative ground cover percentages to 50% of soil potential by 2025 and 70% by 2050.
3. Land managers prioritize structural and non-structural projects and best management practices that are designed to reduce stormwater volume, peak flows, and/or nonpoint source pollution through evapotranspiration, infiltration, detention, hydrograph extension, and filtration over restricting human development and multiple use/sustained yield activities.
4. Land managers implement structural and non-structural perennial, intermittent and ephemeral stream stabilization projects that reduce stream sedimentation and erosion while enhancing riparian areas, wetlands and vegetation for wildlife and livestock.
5. Undesirable vegetation in and near watercourses is removed and replaced with desirable native and non-native vegetation communities that retain bank stability and provide appropriate channel shade.
6. Acceptable ground cover is recruited, established, re-established, or retained after prescribed and wildland fire prior to the first season prone to erosive storms,
7. Land managers coordinate programmatic agreements, best management practices and prioritization schedules for improving hydrologic functions and conditions with the County.
8. Enhanced programmatic agreements and best management practices associated with prescribed and wildland fire are implemented to protect hydrologic function and condition in the County.

Social-economic Benefits:

As these 8 desired conditions are achieved the following social-economic benefits will be realized.

1. Increased water shed health and water yield. The Natural Resources Conservation Service identified 68,473 acres as forest lands and about 1,494,744 acres as rangelands. If these conditions are met water yield most likely will increase by 0.5 acre feet per acre for forest lands and 0.05 acre feet per acre of rangeland. If the water is valued at \$50.00 per acre foot. Then the economic value of the water yield would increase by approximately \$11

million. This value can be realized in the Great Basin. The value does not include the value for wildlife, fish or recreation on or in the rivers, streams, lakes and reservoirs.

2. Increased social-economic sustainability.
3. Increased water quality and reduced sediment in rivers and streams
4. Increased soil health and productivity
5. Increased vegetation and vegetative diversity
6. Improved landscape health
7. Increased wildlife habitat and species diversity
8. Increased economic benefit from public land through services and goods.
9. Less erosion by wind and water
10. Decreased tension between residents and agency personnel.
11. Fewer wildfires with their associated air quality, water quality, biologic, erosion, and other costs.
12. View-sheds are maintained and in some cases enhanced.

Water Rights & Irrigation:

Juab County Desires:

1. Adequate water is developed to meet the diverse current and future needs of the County.
2. Existing water resources be augmented and historic resources be restored through appropriate timber harvests, restoration of at least 2% annually of Class II and Class III pinyon/juniper woodlands to sagebrush/grassland habitats, and control of invasive weeds.
3. Water related issues are coordinated with the County and managed consistent with this RMP.
4. Federally reserved water rights be limited to the minimum allowed by an entity's enabling legislation.
5. Federal, state and local entities coordinate definitive resolution of federal reserved water rights consistent with the provisions of this RMP.
6. The State of Utah develops definitive resolution regarding ownership of water rights on federal lands for wildlife, livestock and other authorized uses.
7. Irrigation rights be preserved to the maximum extent allowed by law.

Social-economic Benefits:

As these 7 desired conditions are achieved the following social-economic benefits will be realized.

1. All social-economic activities in the County are dependent on adequate, dependable, and secure water. The desired conditions assure that the County's social, cultural and economic condition are secured and can grow at a sustainable rate. The value of water to the County future cannot be overstated.
2. Decreased tension between residents and agency personnel.

Irrigation:

Juab County Desires:

1. Irrigation be preserved, improved and enhanced and federal land managers support preservation, improvement and enhancement of irrigation on private lands through appropriate actions on federal lands.
2. Irrigation be recognized a cultural resource and management actions be taken that will result in preserved, improved and enhanced irrigation.
3. Land managers implement avoidance, minimization and mitigation techniques and best management practices to support irrigation while allowing appropriate multiple use/sustained yield activities to proceed.
4. Unimpeded and efficient flow of current and future irrigation waters across federal lands.
5. Appropriate irrigation related resources be added to the County's list of historic/cultural resources and landmarks.
6. Removal of encroaching pinyon/juniper woodlands, Tamarisk, Russian Olive, and cheatgrass which negatively impact water quality, water quantity and irrigation resources in the County and for downstream users.
7. Lands are managed to increase water development and resources.

Social-economic Benefits:

As these 8 desired conditions are achieved the following social-economic benefits will be realized.

1. Increased social-economic sustainability. From settlement to the mid-twentieth century the County residents depended on what they raised in their local communities and on their ranches. Irrigation was and is required to grow crops in the County. These activities because the foundation of the social, cultural and character fabric of the community and economy. Continued irrigation is essential to the culture of the County.
2. Increased water shed health and water yield.
3. Increased water quality and reduced sediment in rivers and streams
4. Increased soil health and productivity
5. Increased vegetation and vegetative diversity
6. Improved landscape health

7. Increased wildlife habitat and species diversity
8. Increased economic benefit from public land through services and goods.
9. Less erosion by wind and water
10. Decreased tension between residents and agency personnel.
11. Fewer wildfires with their associated air quality, water quality, biologic, erosion, and other costs.
12. View-sheds are maintained and in some cases enhanced.

Surface Waters:

Juab County Desires:

1. Land managers preserve, enhance, improve or optimize surface water resources through active management, especially watershed restoration and improving desirable native and non-native vegetative ground cover.
2. The regulatory control of surface waters under the Clean Water Act needs to be recognized and implemented.
3. Land managers need to cooperate and coordinate in accordance with federal laws, regulations, rules, and manuals regarding state and local direction of water resource management issues.
4. Surface waters be re-evaluated to verify the designated beneficial use is consistent with hydrologic and environmental conditions. Stream reaches identified as not meeting standards for cold water fisheries need to be reconsidered for classification as a warm water fishery.
5. Upland soil loss due to lack of desired vegetative ground cover be recognized as the primary source of nonpoint pollution in the County.
6. The provisions of this RMP be accepted as the controlling maintenance, mitigation, enhancement, and improvement standard for surface water resources in the County, until such time as state and federal agencies coordinate surface water management and implementation plans with the County.
7. Invasion and encroachment of undesirable watercourse vegetation, pinyon/juniper woodlands and other undesirable species is recognized as negatively impacting surface waters to a much greater extent than human development and impacts from man.

Social-economic Benefits:

As these 7 desired conditions are achieved the following social-economic benefits will be realized.

1. Increased social-economic sustainability.
2. Increased water shed health and water yield.

3. Increased water quality and reduced sediment in rivers and streams
4. Increased soil health and productivity
5. Increased vegetation and vegetative diversity
6. Improved landscape health
7. Increased wildlife habitat and species diversity
8. Increased economic benefit from public land through services and goods.
9. Less erosion by wind and water
10. Decreased tension between residents and agency personnel.
11. Fewer wildfires with their associated air quality, water quality, biologic, erosion, and other costs.
12. View-sheds are maintained and in some cases enhanced.

Ditches & Canals the Current Setting:

Juab County Desires:

1. Existing ditches be preserved, enhanced and improved to permit the unimpeded flow of water.
2. Ditches and canals be recognized as important cultural resources and their function be preserved, enhanced and improved.

Social-economic Benefits:

As these 2 desired conditions are achieved the following social-economic benefits will be realized.

1. Increased social-economic sustainability.
2. Increased understanding of the historic value water delivery structures and their social and cultural impacts on the communities.
3. Increased understanding of the importance of secure water rights to the future development of the County
4. Increased soil health and productivity
5. Increased vegetation and vegetative diversity
6. Improved landscape health through improved water distribution
7. Increased wildlife habitat and species diversity in hay fields and irrigated pastures.
8. Less erosion by wind and water through more vegetative cover and root density.
9. Increased security of rights-of-way for water distribution structures

10. View-sheds are maintained and in some cases enhanced.

Rivers & Streams:

Juab County Desires:

1. The beneficial use of the County's rivers and streams be maximized through protection and development of water quantity and quality and through more aggressive vegetative management in watersheds and other areas impacting rivers and streams.
2. Land managers are consistent with the County's plans, programs and policies for resources impacting rivers and streams, including but not limited to actions for vegetation, water quality, pinyon/juniper reduction, fish & wildlife, livestock grazing, special status species, and soil resources to the maximum extent allowed by law.
3. Wild, scenic and recreational river evaluations and designations are consistent with the County's criteria, plans, programs and policies.
4. Increased access for law enforcement and emergency medical services, solid waste collection services, human waste collection services, recreation, and the general public is provided to the County's rivers and streams, especially on public lands.
5. Impaired waters in the Sevier River watershed are reclassified to include only those tributaries with native targeted fish populations and conditions suitable current designations.
6. Class II and Class III pinyon/juniper woodlands are reduced by 25% on a rolling 10 year average and replaced with desirable vegetative communities in the County and in the upstream watersheds to reduce erosion and impacts to the County's rivers and streams.
7. Additional structural (dams, reservoirs, impoundments, etc.) and non-structural improvements are constructed to improve the efficiency of the County's rivers and streams.
8. Transplantation of beavers are limited to areas approved by the Commission and that will not impede the free flow of water.
9. Undesirable vegetation and noxious weeds are eradicated from all of the County's public land rivers and streams and their associated riparian zones.

Social-economic Benefits:

As these 9 desired conditions are achieved the following social-economic benefits will be realized.

1. Increased water shed health and water yield
2. Increased water security through additional storage capacity.
3. Increased flood control capacity.
4. Increased social-economic sustainability.

5. Increased water quality and reduced sediment in rivers and streams
6. Increased soil health and productivity
7. Increased vegetation and vegetative diversity
8. Improved landscape health
9. Increased wildlife habitat and species diversity
10. Increased economic benefit from public land through services and goods.
11. Less erosion by wind and water
12. Decreased tension between residents and agency personnel.
13. Fewer wildfires with their associated air quality, water quality, biologic, erosion, and other costs.
14. View-sheds are maintained and in some cases enhanced.
15. Increased opportunities for non-consumptive uses of water resources.

Floodplains & River Terraces:

Juab County Desires:

1. Floodplains, especially on undeveloped federal lands, are restored to properly functioning conditions.
2. Coordinated, strategic planning is implemented to outline a plan of attack to restore uplands, floodplains and vegetation and to improve rangeland health.
3. Structural and non-structural improvements are made to degraded watercourses and floodplains.
4. The role of upland watershed management is recognized and incorporated in floodplain management and restoration.
5. Structural and non-structural improvements are made to degraded uplands to a) replace Class II and Class III pinyon/juniper woodlands with desirable historic vegetative communities, b) reduce runoff and c) reduce the amount of bare ground.
6. Check dams and restoration projects are implemented to arrest down-cutting and to restore natural stream grade and sinuosity.
7. Active management and restoration projects on federal lands are implemented to restore sinuosity, vegetation and floodplain function which mimic the natural hydrologic system.
8. Long term hydrologic function is prioritized over short term ground disturbance.
9. Analysis/approval processes for floodplain restoration are simplified and authorized as categorical exclusions under NEPA. Corps of Engineers and other federal agency involvement are eliminated or reduced to the minimum required under law.

10. Land managers restore to properly functioning condition at least 1% or 10 miles of non-functioning floodplains per year.

Social-economic Benefits:

As these 10 desired conditions are achieved the following social-economic benefits will be realized.

1. Increased water shed health and water yield
2. Increased water security through additional aquifer recharge.
3. Increased flood control capacity by health floodplain's water-holding capacity and slow return to flowing rivers and stream.
4. Increased social-economic sustainability by reducing damage outside the floodplain.
5. Increased water quality and reduced sediment in rivers and streams
6. Increased soil health and productivity
7. Increased vegetation and vegetative diversity
8. Improved landscape health
9. Increased wildlife habitat and species diversity
10. Increased economic benefit from public land through non-consumptive uses.
11. Less erosion by wind and water
12. Decreased tension between residents and agency personnel.
13. View-sheds are maintained and in some cases enhanced.

Dry Washes & Ephemeral Streams:

Juab County Desires:

1. Dry washes and ephemeral streams, especially on undeveloped federal lands, are restored to properly functioning conditions.
2. Coordinated, strategic planning is implemented to restore uplands, vegetation and to improve rangeland health associated with dry washes and ephemeral streams.
3. Structural and non-structural improvements are made to degraded watercourses, dry washes and ephemeral streams.
4. The role of upland watershed management is recognized and incorporated in dry wash and ephemeral stream management and restoration.
5. Structural and non-structural improvements are made to degraded uplands to a) replace Class II and Class III pinyon/juniper woodlands with desirable historic vegetative communities, b) reduce runoff and c) reduce the amount of bare ground.

6. Check dams and restoration projects are implemented to arrest downcutting and to restore natural grade, vegetation, cross section, and sinuosity in dry washes and ephemeral streams.
7. Active management and restoration projects on federal lands are implemented to restore sinuosity, vegetation and floodplain function which mimic the natural hydrologic system.
8. Long term hydrologic function is prioritized over short term ground disturbance.
9. Analysis/approval processes for dry wash and ephemeral stream restoration are simplified and authorized as categorical exclusions under NEPA. Corps of Engineers and other federal agency involvement are eliminated or reduced to the minimum required under law.
10. Land managers restore to properly functioning condition at least 2% of non-functioning dry washes and ephemeral streams per year.

Social-economic Benefits:

As these 10 desired conditions are achieved the following social-economic benefits will be realized.

1. Increased water shed health and water yield
2. Increased water security through additional aquifer recharge.
3. Increased flood control capacity by slowing the water velocity as it flows into constantly flowing rivers and stream.
4. Increased social-economic sustainability by reducing damage outside the floodplain.
5. Increased water quality and reduced sediment in rivers and streams
6. Increased soil health and productivity
7. Increased vegetation and vegetative diversity
8. Improved landscape health
9. Increased wildlife habitat and species diversity
10. Increased economic benefit from public land through non-consumptive uses.
11. Less erosion by wind and water
12. Decreased tension between residents and agency personnel.
13. View-sheds are maintained and in some cases enhanced.

Groundwater:**Juab County Desires:**

1. Groundwater resources are preserved, improved and developed for the use of man while supporting multiple use and sustained yield principles.
2. Land managers comply with current and future laws and regulations promulgated by federal, state and local entities.
3. Land managers optimize forest and rangeland health and vegetative cover as a means of preserving and protecting groundwater resources.
4. Watersheds that are the source of supply for community and culinary water systems be managed for resistance and resilience to fire.
5. Groundwater resources are managed under the principles of multiple use and sustained yield, with community and culinary water systems as the highest priority.
6. Groundwater resources are protected through appropriate implementation of best management practices applied to human and multiple use/sustained yield activities.
7. Groundwater resources within the County are carefully managed to accommodate historic uses and potential growth.

Social-economic Benefits:

As these 6 desired conditions are achieved the following social-economic benefits will be realized.

1. Increased water shed health and water yield
2. Increased water security through additional aquifer recharge.
3. Increased social-economic sustainability through increased water security in droughts.
4. Increased water quality.
5. Increased vegetation and vegetative diversity
6. Improved landscape health
7. Increased wildlife habitat and species diversity
8. Increased economic benefit from public land through non-consumptive uses.
9. Less erosion by wind and water
10. Decreased tension between residents and agency personnel.
11. View-sheds are maintained and in some cases enhanced.

Water Quality:

Juab County Desires:

1. The quality and quantity of existing water resources be improved and enhanced.
2. The County has a more active role in water quality management.
3. Implementation of County water quality plans, regulations, ordinances and best management practices for forest and rangelands to reduce sediment and debris in the County's watercourses.
4. Without diminishing existing multiple use levels and uses, implement Best Management Practices, including vegetative treatments and restoration of invasive conifer woodlands to sagebrush/semi-desert grasslands, to reduce pollutant loading in impaired streams and to reduce sedimentation in all perennial, intermittent and ephemeral watercourses.
5. Degrading water quality, especially in ephemeral water courses, resulting from encroaching conifers and inadequate desirable vegetative cover be recognized for their impacts on water quality.
6. Site specific and cumulative impact analysis of Class II and Class III pinyon/juniper woodlands on water quality be included in future NEPA analysis.
7. Beneficial uses of water bodies in the County be coordinated, re-evaluated and brought in to consistency with this RMP.
8. Land managers actively manage for increased forage production to reduce sedimentation in and hydrologic modification of the County's perennial, intermittent and ephemeral water resources.
9. Land managers develop additional detention areas, lakes, ponds, wetlands, riparian areas, grade structures, and mesic conditions to slow stormwater and reduce erosion.
10. Consistent with ecologic site conditions, land managers replace biologic soils and pinyon/juniper woodlands with sagebrush, semi-desert grasslands to increase vegetative soil cover and reduce sediment transport and erosion.
11. While developing additional detention areas, lakes and ponds, land managers recognize stormwater management approaches that rely solely on peak flow storage do not usually targeted pollution reduction and only treat sediments after they have entered the watercourse.
12. Upland vegetative productivity and cover also needs to be enhanced and optimized with appropriate native and non-native seed mixes.
13. Consistent with ecologic site descriptions and the County's RMP, land managers improve the vegetative productivity of their soils.
14. Consistent with ecologic site descriptions, the County soils produce at least 50% of their potential by 2025 and at least 70% of their potential by 2050.

15. Consistent with ecologic site descriptions and based on a 10 year rolling average, land managers restore 25% of Class II and Class III pinyon/juniper woodlands to sagebrush/semi-desert grassland habitat

Social-economic Benefits:

As these 15 desired conditions are achieved the following social-economic benefits will be realized.

1. Increased water shed health and water yield
2. Increased water security through additional storage capacity.
3. Increased flood control capacity.
4. Increased social-economic sustainability.
5. Increased water quality and reduced sediment in rivers and streams
6. Increased soil health and productivity
7. Increased vegetation and vegetative diversity
8. Improved landscape health
9. Increased wildlife habitat and species diversity
10. Increased economic benefit from public land through services and goods.
11. Less erosion by wind and water
12. Decreased tension between residents and agency personnel.
13. Fewer wildfires with their associated air quality, water quality, biologic, erosion, and other costs.
14. View-sheds are maintained and in some cases enhanced.
15. Increased opportunities for non-consumptive uses of water resources.

Vegetation:

Juab County Desires:

1. All management decisions are based on reliable, objective, site-specific data analyzed in accordance with the Data Quality Act.
2. Eco-region, landscape level or remote sensing such as SWReGAP data is field verified and refined before it is incorporated into management actions, planning prescriptions, or site specific projects.
3. Land managers aggressively implement actions that are consistent with desired future conditions, findings, policies, goals and objectives outlined in this RMP to restore, improve and maintain the County's vegetative resources.

4. Land managers optimize vegetative resources in the County by using native and/or non-native vegetation that best meets the desired objectives.
5. Native only prescriptions are limited to actions a) required by law, or b) where greater optimization and conservation of targeted resources occurs.

Social-economic Benefits

As these 5 desired conditions are achieved the following social-economic benefits will be realized.

1. Increased water shed health and water yield
2. Increased water security through additional storage capacity.
3. Increased flood control capacity.
4. Increased social-economic sustainability.
5. Increased water quality and reduced sediment in rivers and streams
6. Increased soil health and productivity
7. Increased vegetation and vegetative diversity
8. Improved landscape health
9. Increased wildlife habitat and species diversity
10. Increased economic benefit from public land through services and goods.
11. Less erosion by wind and water
12. Decreased tension between residents and agency personnel.
13. Fewer wildfires with their associated air quality, water quality, biologic, erosion, and other costs.
14. View-sheds are maintained and in some cases enhanced.
15. Increased opportunities for non-consumptive uses of water resources.

Forests and Woodlands:

Juab County Desires:

1. Forest and woodland health is restored to the historical range of variability, including but not limited to composition, age, size, and density in accordance with ecologic site descriptions.
2. The use of timber harvesting is increased to restore resilience and resistance to fire, insects, and other disturbances.

3. Appraisals for timber sales are revised to reflect timber values in the County and to encouraged resurgence of timber harvesting infrastructure and the timber harvesting industry.
4. Insect and disease epidemics that could degrade forest and woodland health are prevented.
5. Silvicultural practices are used to increase the presence of large trees in Ponderosa Pine stands.
6. Biomass or other markets are developed for smaller diameter and other materials that promote competition and surface build up.
7. Mixed conifer forests are returned to earlier successional stages and have age and spatial diversity increased.
8. Prescribed fire is used judiciously after harvests, thinning, mechanical mastication, and other fuel reduction projects in mixed conifer forests to eliminate undesirable seedlings.
9. Additional forage resulting from improved forest health is allocated first to livestock to restore suspended or un-used AUMs, second to wildlife to meet objectives in place on January 1, 2015 and third equally between livestock and wildlife.
10. Spruce fir forests are restored and maintained in a healthy condition that resilient and resistant to fire and insect damage
11. Aspen are regenerated and rejuvenated.
12. The impact of elk on forests managed for aspen regeneration is controlled.
13. 80 million board feet of timber are harvested annually to reduce high risk stands and increase short term resilience and long term resistance to insect outbreaks and crown fires.
14. Restoration of a viable regional commercial forest products industry. In the forests of the 11 counties in the Five and Six County Associations of Governments there are 3.9 billion board feet of Aspen and 7.3 billion board feet of Conifers 5 inches and larger in diameter. Using a 150 harvest rotation 75.5 million board feet can be harvested each year. That is enough timber to support 5 sawmills using 15 million board feet each per year sustainable in perpetuity.
15. Each ranger district shall have a 150 year harvest plan.
16. Each ranger district shall have completed the required NEPA study two years before the planned harvest date.
17. No area larger than 50 acres shall have trees in a uniform stage of development.
18. Restoration after wildfires and prescribed burns shall provide for establishment of diverse development stages.

19. All restoration project and harvest projects shall be designed to develop and maintain an open canopy so that all future wildfires remain on the ground and not in the canopy.
20. Each ranger district shall have a watershed plan.
21. Each ranger district shall have a recreation plan that includes a wide range of recreational activities including but not limited to ATV, hiking, camping, and hunting.
22. Each ranger district shall have a transportation plan to provide access throughout the forest for recreation, grazing administration, public safety, wildfire management and control. The transportation plan shall provide for new logging roads and there continued use for multi-use activities such as those mentioned above.
23. Each ranger district shall have a grazing improvement plan for each grazing allotment.

Social-economic Benefits:

Forest restoration treatments cost approximately \$200 per acre. If the post treatment average yield over the 20 years of livestock grazing after a 2 year recovery period is 367 pounds per acre. For each 100 acres treated 36,700 pounds of forage is produced annually. If livestock harvest 33.33% then 12,232 pounds is harvested by livestock. At 790 pounds per AUM 15.48 AUMs were harvested. At \$56.95 per AUM, the average value per AUM for the past 5 years using Cedar City Livestock Auction November prices for cattle, yields \$881.90 in revenue to ranchers and another \$182.97 in economic activity in the County. Each increased AUM is worth \$68.77 in economic output to the County.

Restoration of a viable commercial forest products industry in the 11 county region is worth approximately \$22.7 million annually direct output impact at a composite price of \$300 for both lumber and fiber, \$1.1 million indirect output and \$32.3 inducted output for a total output effect of \$56.1 million. Employing Approximately 2,100 directly, 36 indirectly and 635 induced for a total employment effect of approximately 2,800.

As these 23 desired conditions are achieved the following social-economic benefits will be realized.

1. Restoration and enhancement of an important historic and cultural significant economic sector of Juab County.
2. Increased social-economic sustainability through a more diverse economy and more and better recreational opportunities.
3. Increased water shed health and water yield.
4. Increased water quality and reduced sediment in rivers and streams
5. Increased soil health and productivity
6. Increased vegetation and vegetative diversity
7. Improved landscape health
8. Increased wildlife habitat and species diversity

9. Increased economic benefit from public land through services and goods.
10. Less erosion by water
11. Decreased tension between residents and agency personnel.
12. Fewer wildfires with their associated air quality, water quality, biologic, erosion, and other costs.
13. View-sheds are maintained and in some cases enhanced.

Sagebrush - Steppe/Semi-Desert:

Juab County Desires:

1. Sagebrush dominant vegetation communities are be restored to the historical range of variability, including but not limited to composition, age, size, and density in accordance with ecologic site descriptions.
2. Managers increase vegetative treatments in sagebrush ecosystems to restore the historic and natural range of variability.
3. Invading conifers, especially pinyon/juniper associations, are recognized as the greatest threat to a desired and healthy sagebrush ecosystem in the County; and treatments are implemented to restore sagebrush ecosystems to their historic range.
4. Loss of sagebrush ecosystems to invading conifers needs be recognized for its impact on water quality, wildlife, erosion and other ecological resources.
5. Suspended AUMs for livestock need to be restored commensurate with restoration of invading conifers to desirable sagebrush communities.
6. Water gain from restoration of invading conifers to sagebrush communities needs to be optimized for rangeland health and multiple uses.
7. Additional water needs to be developed in current and restored sagebrush ecosystems to optimize multiple use/sustained yield benefits.
8. Prescribed fire is used judiciously after thinning, mechanical mastication, and other treatment projects are completed.
9. Additional forage resulting from improved rangeland health is allocated first to livestock to restore suspended or un-used AUMs, second to wildlife to meet objectives on January 1, 2015 and third equally between livestock and wildlife.
10. As sagebrush communities are restored, sage-grouse related prescriptions need to be removed

Social-economic Benefits:

Rangeland restoration treatments for class 3 or phase 3 pinion-juniper cost approximately \$200 per acre. If the post treatment average yield over the 20 years of livestock grazing after a 2 year recovery period is 367 pounds per acre. For each 100 acres treated 36,700 pounds of forage is produced annually. If livestock harvest 33.33% then 12,232 pounds is harvested by livestock. At 790 pounds per AUM 15.48 AUMs were harvested. At \$56.97 per AUM, the average value per AUM for the past 5 years using Cedar City Livestock Auction November prices for cattle, yields \$881.90 in revenue to ranchers and another \$182.97 in economic activity in the County. Each increased AUM is worth \$68.77 in economic output to the County.

As these 10 desired conditions are achieved the following social-economic benefits will be realized.

1. Preservation and enhancement of an important historic and cultural significant economic sector of the County.
2. Increased social-economic sustainability.
3. Increased water shed health and water yield.
4. Increased water quality and reduced sediment in rivers and streams
5. Increased soil health and productivity
6. Increased vegetation and vegetative diversity
7. Improved landscape health
8. Increased wildlife habitat and species diversity
9. Increased economic benefit from public land through services and goods.
10. Less erosion by wind and water
11. Decreased tension between residents and agency personnel.
12. Fewer wildfires with their associated air quality, water quality, biologic, erosion, and other costs.
13. View-sheds are maintained and in some cases enhanced.

Desert Shrub-Scrub:

Juab County Desires:

1. Land managers implement a full complement of integrated management techniques to restore appropriate disturbance regimes, desirable seral stages and to enhance rangeland health and the vigor of arid vegetative communities.
2. Undesirable annual grasses/cheatgrass is reduced by 5% annually until it can be eradicated.

3. Additional water resources are developed to diversify forage utilization by livestock and wildlife.
4. Intense early season grazing, herbicide treatments and biologic agents are aggressively employed in areas of undesirable annual grass expansion.
5. Additional encroachment by undesirable native species, invasive non-native vegetation, and noxious weeds is eliminated.
6. Other than cheatgrass, areas previously encroached by undesirable native species, invasive non-native vegetation, and noxious weeds are restored to properly functioning and desired future conditions at a rate of 25% based on a 10 year average.
7. Unless prohibited by law, naturalized or biologically equivalent non-native species be allowed/used when they optimizes vegetative cover or improve land health.
8. Managers enhance vegetative production and forage by livestock and wildlife to combat any effects of climate change.
9. Where native grasslands or non-native seedings have been lost to pinyon and juniper encroachment, cheatgrass/halogeton invasion or other undesirable vegetation, lands are restored to the native or treated condition. The desired future condition is that vegetative community (native or non-native) that optimizes rangeland health, ground cover and vegetative production.
10. Salt desert shrub communities consist of native and/or naturalized and biologically equivalent non-native open salt desert scrub vegetation with little to no cheatgrass or halogeton cover, and scattered pockets and patches of herbaceous material and forbs, primarily in the lower areas of the terrain.
11. Blackbrush and shrubland communities consist of dense-to-scattered shrubs and dense-to-open native and/or naturalized and biologically equivalent non-native grasses. Where surface disturbance occurs, areas are aggressively seeded with a seed mix optimized to reduce invasion of undesirable species and erosion.
12. Following fire, vegetative communities in this biome are seeded and revegetated, prior to the first rains supporting germination with a native and non-native mix designed to optimize short term and long term rangeland health.

Social-economic Benefits:

If the post treatment average yield over the 20 years of livestock grazing after a 2 year recovery period is 220 pounds per acre. For each 100 acres treated 22,000 pounds of forage is produced annually. If livestock harvest 33.33% then 12,232 pounds is harvested by livestock. At 790 pounds per AUM 9.28 AUMs were harvested. At \$56.97 per AUM, the average value per AUM for the past 5 years using Cedar City Livestock Auction November prices for cattle, yields \$528.68 in revenue to ranchers and another \$109.69 in economic activity in the County. Each increased AUM is worth \$68.77 in economic output to the County.

As these 12 desired conditions are achieved the following social-economic benefits will be realized.

1. Preservation and enhancement of an important historic and cultural significant economic sector of the County.
2. Increased social-economic sustainability.
3. Increased water shed health and water yield.
4. Increased water quality and reduced sediment in rivers and streams
5. Increased soil health and productivity
6. Increased vegetation and vegetative diversity
7. Improved landscape health
8. Increased wildlife habitat and species diversity
9. Increased economic benefit from public land through services and goods.
10. Less erosion by wind and water
11. Decreased tension between residents and agency personnel.
12. Fewer wildfires with their associated air quality, water quality, biologic, erosion, and other costs.
13. View-sheds are maintained and in some cases enhanced.

Invasive Plants and Noxious Weeds:

The social economic impacts of Invasive Plants and Noxious Weeds are complex because the past monetary costs to county governments, state agencies, and federal agencies of invasive plants and noxious weeds control are easily calculated the non-monetary costs of lost production, water yield loss, and environmental degradation are not. The benefits of efforts to eliminate or control the spread of invasive plants and noxious weeds are not easily calculated. The reason is the benefit take place over a much longer time period and over a large diverse population of beneficiaries that are difficult to identify each one and everyone.

The management of social economic activities of 72% of the landmass is done by federal agencies. Therefore, how these agencies operate is a major determinate of invasive plants and noxious weeds control and management in the county. The other 28% fall under Utah Department Agriculture and Food and county government.

The costs and benefits of efforts to control and manage invasive plants and noxious weeds are not quantified in this report. Agencies and others are always concerned about the costs but have more difficulty identifying the benefits. This reports identifies some of the benefits that are expected to occur over time has the County's desired future conditions are met.

Juab County Desires:

1. All noxious weed infestations on federal lands be identified and mapped prior to January 2020.

2. Land managers significantly increase efforts to eradicate noxious weeds and replace invasive species with desirable historic plant communities.
3. All noxious weed infestations on state and federal lands be eradicated by January 2025.
4. Native and non-native invasives replaced with desirable plant communities, consistent with ecologic site descriptions. Class II and Class III pinyon/juniper woodlands are reduced by 25% based on a 10 year rolling average.
5. Sage-grouse management areas are aggressively treated to eradicate all noxious weeds and replace invasive species with desirable vegetation.
6. All herbicides and treatments authorized for use on private lands are available for use on federal lands with the same restrictions that apply to the general public.
7. The most efficient techniques possible are used to control cheatgrass, invasive conifers, rabbitbrush and noxious weeds.
8. Fire breaks are created in cheatgrass and other fire susceptible habitats to reduce the impacts of future wildfire.
9. Noxious weeds and invasive species, especially cheatgrass, rabbitbrush and conifers that are inconsistent with historic vegetative communities are recognized as a visible impact of man; and lands occupied by such species are designated as not a) natural, b) possessing wilderness characteristics, or c) suitable for management as wilderness, wilderness study areas or non-WSA lands with wilderness characteristics.
10. Conditions which promote infestation by noxious weeds and invasive species, such as bare ground, be minimized through active and adaptive management.
11. Federal agencies spend an amount on noxious weed control on their lands in proportion to the acres under their control as the County does for private lands under County control.
12. 40% ground cover is retained in areas of prescribed fire and 60% recruitment is achieved by the next rainy season.
13. Lands impacted by wildfire are reseeded with desirable native and/or non-native plant communities prior to infestation by noxious or invasive weeds.

Social-economic Benefits:

As these 13 desired conditions are achieved the following social-economic benefits will be realized.

1. Increased watershed health and water yield
2. Increased flood control capacity.
3. Increased social-economic sustainability.
4. Increased water quality and reduced sediment in rivers and streams

5. Increased soil health and productivity
6. Increased vegetation and vegetative diversity
7. Improved landscape health
8. Increased wildlife habitat and species diversity
9. Increased economic benefit from public land through services and goods.
10. Less erosion by wind and water
11. Decreased tension between residents and agency personnel.
12. Fewer wildfires with their associated air quality, water quality, biologic, erosion, and other costs.
13. View-sheds are maintained and in some cases enhanced.
14. Increased opportunities for non-consumptive uses of water resources.

Special Status species:

The social economic impacts of Endangered Species Act with its associated Special Status species are complex because the ESA set a value of an endangered species as infinite. As a species is to be saved at all costs in all locations. No single piece of legislation has had a great negative impact on rural counties in the West. Environmental groups have used the ESA and the courts to stop commercial logging, new mining and reduce grazing throughout the western U.S. including the County.

The management of social economic activities of 72% of the landmass is done by federal agencies. Therefore, how these agencies operate is a major determinate of how much enforcement of ESA costs the county.

The costs and benefits of ESA and Special Status species are not quantified in this report. Agencies and others are always concerned about the costs expect for enforcing ESA. The benefits of saving a particular species is more difficult to identify at the county level. The costs of enforcing ESA are disproportionally carried by the local communities and counties while the benefits disproportionally go to distant beneficiaries. If the focus of the ESA was changed from population protection to habitat restoration and development the long run viability of the species would be greatly improved. A species prospers in a healthy habitat and declines in a deteriorating habitat. Habitat restoration and development shall be based on scientific research completed under similar geography and climate conditions and not on other dissimilar studies, untested theories, beliefs or hopes this reports identifies some of the benefits to the county from enforcing ESA in the leased costly manner available and within the policies and ordinances of the County. The expected benefits that occur over time has the County's desired future conditions are met.

Juab County Desires:

1. The need for future listings under the "Endangered species Act" is precluded through the use of proactive habitat enhancements and sound resource management.

2. Currently listed special status species are recovered to the point they are delisted and their future as viable populations is secured.
3. The Utah Wildlife Action Plan is used as a principal guide for implementing species conservation strategies until the County develops individual conservation plans for the various species.
4. When developed, the County's species conservation plans replace the Utah Wildlife Action Plan as a principal guide for implementing species conservation strategies in the County.
5. Threats and prioritizations outlined the Utah Wildlife Action Plan be re-evaluated for site specific conditions in the County.
6. Restrictions on land use associated with special status species are removed from lands that do not contain a) permanent populations or b) high value habitat of the targeted species.
7. Conservation/recovery plans and habitat evaluation guides are developed for each special status species in the County.
8. Existing conservation recovery plans and critical, crucial and priority habitat designations are reviewed and revised to reflect only those lands suitable for species recovery and long term conservation.
9. Goshawk management plans for forested lands in the County are amended to prioritize first healthy forests that are resistant and resilient to fire, second restoration of traditional timber harvests, and third management of resources for goshawk conservation.
10. Any current goshawk amendment for national forests is discarded and replaced with an effective plan that meets the County's priorities for the beneficial use of land and natural resources and goshawk conservation.
11. Special status species conservation and recovery is managed in concert with traditional multiple uses such as livestock grazing, timber harvest and energy development to promote the productive and enjoyable harmony between man and his environment.
12. The County communities thrive and are sustainable due to a healthy balance between man, development, natural resources, and land health.
13. Decisions regarding management of special status wildlife and plant species and their habitats are made based on the best available, site specific, biological and social scientific knowledge and information.
14. Critical habitats and recovery plans are not based on landscape or ecoregion level analysis but are based on local population and habitat conditions.
15. Scientifically accurate and scale-appropriate counts, data and maps concerning the location of special status species are available to assist with site-level analysis.

16. Spurious attempts to halt responsible land use through species listings, designation of critical habitats and other ESA and sensitive species-related strategies are precluded through active management emphasizing habitat vitality and vigor.
17. The County is recognized as a full and vital partner with state and federal agencies in the management of special status species and habitats.
18. The County's jurisdictional authority and expertise concerning land use, planning, zoning, site specific conditions, habitat, socio-economics, cultural impacts and other subjects is recognized, accepted and acknowledged by other levels governments.
19. A single special status species list and a single repository for conservation plans are developed for all governmental entities in the County.

Social-economic Benefits:

As these 19 desired conditions are achieved the following social-economic benefits will be realized.

1. Increased sustainability of endangered and special status species.
2. Healthy sustainable habitats for endangered and special status species.
3. Increased vegetation and vegetative diversity.
4. Increased wildlife habitat and species diversity
5. Increased water shed health and water yield
6. Increased flood control capacity.
7. Increased social-economic sustainability.
8. Increased water quality and reduced sediment in rivers and streams
9. Increased soil health and productivity
10. Improved landscape health
11. Increased economic benefit from public land through services and goods.
12. Less erosion by wind and water
13. Decreased tension between residents and agency personnel.
14. Fewer wildfires with their associated air quality, water quality, biologic, erosion, and other costs.
15. View-sheds are maintained and in some cases enhanced.

Fish and Wildlife:

In this section, the term "wildlife" includes fish, amphibians, birds, mammals, and reptiles unless otherwise noted.

The County contains a variety of aquatic and terrestrial habitats that have the biological and physical attributes that are important in the life cycles of many fish and wildlife species. Population levels are linked to a variety of factors, including vegetation quality and quantity; adequate space, shelter, and cover; water distribution; and regional weather patterns and trends such as prolonged drought. As water availability and distribution affects wildlife populations, water developments, whether constructed primarily for livestock or wildlife, can improve water availability in wildlife habitat.

Wildlife management in Utah is primarily done by UDWR. UDWR through cooperative transplants, introduction of elk, pronghorn, bighorn sheep, chukar, turkey, and fish species have historically occurred on lands within or adjacent to the County. The UDWR formally coordinates these activities with the BLM, Forest Service and other public and private entities on a case-by-case basis. However, state and federal agencies often exclude local government in the decision making process.

General Fish and Wildlife

Juab County Desires:

1. State and federal land managers recognize the County's role in land management and planning and comply with consistency, cooperation and coordination requirements to the maximum extent allowed by law.
2. Definitions used by wildlife agencies for terms such as habitat, crucial, native, high value, important, etc. be refined to accurately and precisely reflect fish, wildlife and habitat conditions.
3. Land managers take a more aggressive and active approach to habitat treatments and manipulation. In broad terms the County desires seral stages to be 30% to 50% for early stage, 30% to 40% for mid stage, and no more than 25% late stage.
4. Habitats employ a mix of desirable natives and biological equivalent non-natives to optimize land health and productivity.
5. Land managers actively manage for optimum desired conditions as established in the County's and State's resource management plans using appropriate native and non-native species. Passive management in hopes of achieving some historic condition based on an arbitrary definition of "native" violates consistency, cooperation and coordination requirements of federal law, unless otherwise approved by the Commission.
6. Land managers and UDWR cooperate and coordinate with the County to designate priority management habitats for targeted species in the County.

Fish

7. State and federal agencies consult, cooperate and coordinate with the County to reduce or eliminate primary impacts that adversely affect streams, waterbodies, and the fisheries they support.
8. Land managers concentrate efforts to improve streams, waterbodies and fisheries on optimizing desirable vegetative cover.

9. No new fish or species be introduced, reintroduced, transplanted or translocated in the County watercourses without coordination with the County and approval of the Commission. This includes the translocation and reintroduction of beaver.
10. A local water quality ordinance be developed under authority of the Clean Water Act to protect the County's streams, reservoirs and watercourses.
11. Existing aquatic invasive species, including *Myxobolus cerebralis* be eradicated from the County's watercourses, and new infestations be prevented from entering the County's waters. And other species??
12. Potential impacts to fisheries resulting from reasonably foreseeable actions such as mining, livestock grazing, wind energy development, geothermal exploration and facility development, pipeline and transmission line construction, urban development, and roadway and bridge construction be mitigate through the implementation of best management practices.
13. Land managers initiate actions to build additional resistance and resilience in the County's streams and riparian areas to prepare for the effects of potential climate change.
14. Prescribed fire is used as a last resort due to its potential to impact soil erosion, aquatic conditions and riparian values. Whenever prescribed burning is used and in the event of wildland fire, land managers must re-seed the affected area with an appropriate mix of native an non-natives capable of supporting multiple use/sustained yield activities while optimizing land health an productivity

Wildlife

15. Land managers implement aggressive, active and adaptive management to maximize land health while optimizing resource use in order to achieve harmony between man and his environment.
16. For each wildlife management unit not currently meeting objective, big game species be no more than 10% over objective by June 30, 2025. For each wildlife management unit currently meeting objective, big game species remain between 90% and 102% of objective based on accurate annual herd counts.
17. No wildlife species be translocated, transplanted, introduced or re-introduced in the County without consistency, cooperation and coordination with the County and without the expressed concurrence of the Commission.
18. Mapping and habitat descriptions developed as part of landscape level and rapid ecoregion assessments be field verified, corrected and refined prior to implementation in the County.
19. Consistent with ecologic site descriptions, encroaching Class II and III pinyon/juniper woodlands be reduced by 25% based on a rolling 10 year average.
20. Land managers eliminate inconsistent, conflicting and self-defeating management actions and implement active, adaptive management that optimizes land health and harmony between man and his environment.

21. Land managers abandon passive management aimed at allowing nature to achieve some arbitrarily determined "native" condition while implementing active, adaptive management actions aimed at reaching desired conditions consistent with this RMP.
22. UDWR and the County develop coordinated, site specific management plans for species and wildlife units in the County.
23. Land managers consider statistical significance and severity of impacts when surface disturbing activities are proposed in big game habitat. When impacts are statistically minimal or of low severity, surface disturbing impacts should be allowed to proceed with the minimum reasonable best management practices. Where surface disturbing activities are determined to be statistically significant or severe in priority big game habitat, land managers should employ avoid - minimize - mitigate protocols.
24. Land managers emphasize developing and enhancing healthy, vigorous and abundant migratory bird habitat rather than restricting human development when considering breeding habitat, wintering habitat, and the travel corridors interconnecting them for migratory birds.

Predator Management

25. The County's authority and responsibility to prevent the loss of life, property and wildlife values through appropriate predator control and this management plan be fully and completely recognized and respected.
26. Federal, state and local entities continue improving cooperation and coordination associated with predator control.
27. Ravens be eradicated in priority sage grouse habitats and significantly controlled in general habitat.
28. Predators in the County are controlled in a manner that supports resource use consistent with this RMP.
29. No wolves are allowed to enter the County.

Social-economic Benefits:

Wildlife is an important cultural and historic resource of the County. The social-economic implications of wildlife are complex because of the interactions among the various wildlife species and their respective habitats. The relationships with human activities including mining, recreation and livestock also adds to the complexity. The County desires a balanced approach in these interactions and outcomes. Multiple use of public lands is the key to historic cultural uses and social-economic sustainability. Because the desired conditions will not be achieved in a short time period benefits are described without being quantified in dollars.

As these 29 desired conditions are achieved the following social-economic benefits will be realized.

1. Increased sustainability of endangered and special status species.

2. Healthy sustainable habitats for endangered and special status species, other wildlife and livestock.
3. Increased vegetation and vegetative diversity.
4. Increased wildlife habitat and species diversity
5. Increased watershed health and water yield
6. Increased flood control capacity.
7. Increased social-economic sustainability.
8. Increased water quality and reduced sediment in rivers and streams
9. Increased soil health and productivity
10. Improved landscape health
11. Increased economic benefit from public land through services and goods and non-consumptive uses.
12. Less erosion by wind and water
13. Decreased tension between residents and agency personnel.
14. Fewer wildfires with their associated air quality, water quality, biologic, erosion, and other costs.
15. View-sheds are maintained and in some cases enhanced.
16. Sustainable wildlife and livestock populations.
17. Increased public support for wildlife and habitat restoration activities.
18. Reduced tension among federal, state, and local governments through coordination of both planning and implementation.

Wilderness:

The Wilderness Act of 1964 States: "A wilderness, in contrast with those areas where man and his works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this Act an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value."

Wilderness, simply defined, is an undeveloped tract of land retaining its primeval character and influence without permanent improvements or human habitation. Wilderness areas are federally protected and managed to preserve their natural conditions, which generally appear to have been affected primarily by the forces of nature and the imprint of man's activity is substantially unnoticeable; have outstanding opportunities for solitude or primitive, unconfined recreation, be at a minimum 5,000 acres, where man is a visitor and does not remain. They may have supplemental values such as features of scientific interest, educational interest, scenic qualities, or historical value as well as ecological and geological values of interest.

The Mount Nebo Wilderness was designated by Congress in 1984 and contains 27,008 acres. All of this wilderness area is located in the Spanish Fork Ranger District of the Uinta-Wasatch-Cache National Forest

The County recognizes the need for preservation of areas that exhibit true wilderness characteristics. However, managing public lands that have been historically used man to develop wilderness areas is not appropriate and must stop.

The County's recommendations for Wilderness (including a map of proposed area is included

Juab County Desires:

1. Lands identified by the Commission as eligible and suitable for wilderness be so designated.
2. All other lands be released from management for wilderness character and be managed in accordance with the County's General Plan.
3. The use and enjoyment of any future wilderness areas be expanded to the maximum extent allowed by law.
4. Federal agencies managing wilderness compensate the County for public services based on land area, visitation and use.
5. Only those lands identified and approved by the County for wilderness, primitive, semi-primitive non-motorized types of recreation be designated for such use. Non WSA lands with wilderness characteristics need to be managed in accordance with the County's Land Use Plan.
6. All lands not designated as wilderness be developed to the maximum extent allowed by law for other multiple uses, commodity production and socioeconomic growth.

Social-economic Benefits:

As these 6 desired conditions are achieved the following social-economic benefits will be realized.

1. Lands with true wilderness characteristics be designated wilderness following the procedures found in the wilderness act.
2. All other lands are managed with multiple use principles.

3. Costs for public services supplied to support the wilderness areas is born by all federal taxpayers not just the County taxpayers.
4. Assured multiple use opportunities on public lands in the County.
5. Increased economic sustainability in the County, its communities and families.
6. Reduced tension among federal, state, and local governments through coordination of both planning and implementation.

Wild and Scenic Rivers:

The Wild and Scenic Rivers Act of 1968 created the National Wild and Scenic Rivers System. The purpose of the Act was to preserve in their free-flowing conditions, certain selected rivers of the nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values. The Act directed federal agencies to consider the potential for National Wild, Scenic, and Recreational River areas in all planning for the use and development of water and related land resources. Rivers, or sections of rivers, so designated are preserved in their free-flowing condition and are not dammed or otherwise impeded. National wild and scenic designation essentially vetoes the licensing of new hydropower projects on or directly affecting the river. It also provides very strong protection against bank and channel alterations that adversely affect river values, protects riverfront public lands from oil, gas and mineral development.

The Wild and Scenic River Act identifies three classes of rivers:

1. Wild Rivers: Rivers or river sections free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.
2. Scenic Rivers: Rivers or river sections free of impoundments with watersheds still largely primitive and shorelines largely undeveloped but accessible in place by roads.
3. Recreational Rivers: Rivers or river sections readily accessible by road or railroad that may have some development along their shorelines and that may have undergone some impoundment or diversion in the past.

Juab County Desires:

1. Only river segments listed in the County Wild and Scenic River Recommendation be included in the Wild, Scenic, and Recreational Rivers System subject to concurrence from affected agencies. At present, no river segments have been proposed by the County.
2. A bill be drafted designating rivers listed by the respective Counties adopting the local Wild and Scenic River Recommendations, subject to concurrence from affected agencies.
3. Evaluation of rivers in the County for Wild and Scenic River Recommendation completed the process within the County and no further consideration or attempt by federal agencies be made to designate other stream channels without County participation and concurrence. Any attempts to do so will be considered a violation of local ordinances.

4. The effects of eliminating flow on Outstandingly Remarkable Values be analyzed as part of the eligibility criteria. If it is found that reduction or elimination of flow has no impact on the Outstandingly Remarkable value, then the value be declared not river related and dropped from consideration under the Wild and Scenic Rivers Act.
5. Before the County will support any recommendation for designation the following criteria must be met. River segments be consistent with the National expectations for criteria for Wild and Scenic Rivers. Segments, which have a minimum volume of 40 cubic foot per second with a minimum flow area of 80 square feet or a minimum width of 40 feet for at least 360 days per calendar year, are found to meet National expectations.
6. Wild and Scenic River Recommendations comply with the County's criteria for Outstandingly Remarkable Values.

Social-economic Benefits:

As these 6 desired conditions are achieved the following social-economic benefits will be realized.

1. Reduced tension among federal, state, and local governments through coordination of both planning and implementation.
2. Assured opportunities for development of water resources on all non-wild and scenic rivers and watersheds in the County.

Fire Ecology & Management:

Juab County Desires:

1. Resources are managed to ensure fire resilience and resistance. Desired Fire Regime Condition Classes (FRCCs) in the County are: 30% to 50% FRCC1; 30% to 40% FRCC2; and less than 25% FRCC3.
2. Prescribed fire is used as part of an integrated approach after mechanical, chemical, grazing, and vegetative harvesting techniques have been appropriately implemented.
3. Timber shall be harvested annually for the next 20 years to restore woodlands to desirable Fire Regime Condition Classes.
4. Managers implement aggressive vegetative treatments to restore vegetative resources to desirable Fire Regime Condition Classes.
5. Areas identified as FRCC3 and managed for potential climate change are reduced by at least 5% annually.
6. Managers are consistent with the County's plans, policies and programs for fire ecology and management and impacted/related resource values.
7. Managers prevent fire related impacts to WUI areas and other areas occupied by infrastructure.

8. Aggressive and effective emergency stabilization and rehabilitation programs are incorporated in all wildland and prescribed fire events.

Social-economic Benefits:

As these 8 desired conditions are achieved the following social-economic benefits will be realized.

1. Increased sustainability of endangered and special status species.
2. Healthy sustainable habitats for endangered and special status species.
3. Increased vegetation and vegetative diversity.
4. Increased wildlife habitat and species diversity
5. Increased watershed health and water yield
6. Increased flood control capacity.
7. Increased social-economic sustainability.
8. Increased water quality and reduced sediment in rivers and streams
9. Increased soil health and productivity
10. Improved landscape health
11. Increased economic benefit from public land through services and goods.
12. Less erosion by wind and water
13. Decreased tension between residents and agency personnel.
14. Fewer wildfires with their associated air quality, water quality, biologic, erosion, and other costs.
15. View-sheds are maintained and in some cases enhanced.

Social-economic Cost of Wildfires and Prescribed Burns:

U.S. taxpayers typically experience 10 to 50 times more costs and losses to wildfire each year than just the \$1 billion to \$2 billion in suppression costs commonly reported by USFS representatives and the media — that is, US taxpayers are losing \$20 billion to \$100 billion (or more) a year in such wildfire related damages as escalating fire management costs, human deaths, long-term public health problems, air pollution, soil degradation, wildlife habitat destruction, structural damage, water pollution, etc.

Agriculture:

Juab County Desires:

1. To the maximum extent allowed by law, federal actions are implemented in a way to ensure farmers and ranchers do not face undue or burdensome restrictions.

2. The social, custom, cultural and heritage value of local farms, ranches and agriculture are identified, analyzed and disclosed in NEPA analysis and land use plans developed by federal agencies.
3. Additional water is developed for agriculture and livestock interests on public and private land.
4. A permanent revenue source is established to fund ongoing water resource projects that support and expand agriculture; and additional water is developed to accommodate municipal growth without jeopardizing agricultural interests.
5. Federal and state agencies transfer suitable lands to private ownership for farming and ranching purposes.
6. The agricultural lifestyle of the County needs to be preserved and enhanced.
7. Federal and state agencies strictly adhere to the County's No Net Loss of Private Lands policy, especially regarding farms ranches and agricultural interests.
8. Federal and state agencies develop lands under their ownership for conservation of special status species, and, to the maximum extent allowed by law, relieve the burdens on private agricultural lands imposed by the Endangered Species Act.
9. Utah prairie dogs are removed from private lands and relocated on suitable federal lands.
10. The use and production of federal lands for livestock grazing is preserved and enhanced.
11. Wildlife impacts to agriculture and ranching interests are reduced.
12. Wildlife managers strictly adhere to population objectives established on or before January 1, 2015.
13. Federal agencies eradicate noxious weeds in their jurisdiction which are suspected of being the seed source for private lands.
14. Federal agencies restore lands occupied by invasive conifers and annual grasses to desired vegetative communities, consistent with ecologic site descriptions.

Social-economic Benefits:

As these 14 desired conditions are achieved the following social-economic benefits will be realized.

1. Preservation and enhancement of an important historic and cultural significant economic sector of the County.
2. Increased social-economic sustainability.
3. Increased water shed health and water yield.
4. Increased water quality and reduced sediment in rivers and streams
5. Increased soil health and productivity

6. Increased vegetation and vegetative diversity
7. Improved landscape health
8. Increased wildlife habitat and species diversity
9. Increased economic benefit from public land through services and goods.
10. Less erosion by wind and water
11. Decreased tension between residents and agency personnel.
12. Fewer wildfires with their associated air quality, water quality, biologic, erosion, and other costs.
13. View-sheds are maintained and in some cases enhanced.

Livestock Grazing

Juab County Desires:

1. Land management agencies recognize state and local designation of the significant historic role of livestock grazing and its value as a cultural resource
2. Land managers recognize the County's Register of Cultural Resources and this RMP and comply, to the maximum extent allowed by law, with the County's stated goals, plans, desires, and needs.
3. Federal agencies manage lands to maximize sustained yield, including optimization of available forage for livestock grazing.
4. Federal agencies restore forests and rangelands to a condition that supports the full number of permitted livestock and increases forage available for livestock grazing over time.
5. Prior to FY 2050 federal agencies enhance forests and rangelands to a condition that supports an additional 30% of forage over what is necessary to accommodate the full number of livestock and wildlife permitted at present.
6. Federal agencies restore Pinyon/Juniper stands to desired conditions, eliminate Tamarisk and Russian Olive, eradicate noxious weeds, and replace rabbit brush and other unproductive species with vegetation that will optimize sustained yield and benefit to wildlife, livestock, recreation and other multiple uses.
7. Water generated from Pinyon/Juniper, Tamarisk and Russian Olive removal be conserved, developed and enhanced to be used: a) for livestock on lands that are not designated as the focal point for visitors or that have water rights allocated to livestock; b) for recreation on lands designated as the focal point for visitors and that have water rights allocated to culinary/domestic uses; c) for livestock on lands designated by the County or the State of Utah where grazing is the highest and best use; and 4) for multiple use/sustained yield purposes in compliance with Utah State Water Law on lands that are undesignated.

8. New water be developed: 1) for livestock and wildlife on lands that are not designated as the focal point for visitors or that have water rights allocated to livestock and wildlife; 2) for recreation on lands designated as the focal point for visitors and that have water rights allocated to culinary/domestic uses; 3) for livestock on lands designated by the County or the State of Utah where grazing is the highest and best use; and 4) for multiple use/sustained yield purposes in compliance with Utah State Water Law on lands that are undesignated.
9. The full number of permitted livestock be restored and expanded at the earliest possible time in a phased approach as the conditions of paragraph d) are achieved.
10. Desired ecological site conditions identified by the Natural Resources Conservation Service be achieved

Social-economic Benefits:

Rangeland restoration treatments for class 3 or phase 3 pinion-juniper cost approximately \$200 per acre. If the post treatment average yield over the 20 years of livestock grazing after a 2 year recovery period is 367 pounds per acre. For each 100 acres treated 36,700 pounds of forage is produced annually. If livestock harvest 33.33% then 12,232 pounds is harvested by livestock. At 790 pounds per AUM 15.48 AUMs were harvested. At \$56.97 per AUM, the average value per AUM for the past 5 years using Cedar City Livestock Auction November prices for cattle, yields \$881.90 in revenue to ranchers and another \$182.69 in economic activity in the County. Each increased AUM is worth \$68.77 in economic output to the County.

As these 10 desired conditions are achieved the following social-economic benefits will be realized.

1. Preservation and enhancement of an important historic and cultural significant economic sector of the County.
2. Increased social-economic sustainability.
3. Increased water shed health and water yield.
4. Increased water quality and reduced sediment in rivers and streams
5. Increased soil health and productivity
6. Increased vegetation and vegetative diversity
7. Improved landscape health
8. Increased wildlife habitat and species diversity
9. Increased economic benefit from public land through services and goods.
10. Less erosion by wind and water
11. Decreased tension between residents and agency personnel.

12. Fewer wildfires with their associated air quality, water quality, biologic, erosion, and other costs.
13. View-sheds are maintained and in some cases enhanced.

Mining, Mineral and Fuel Resources

Juab County Desires:

1. Mineral development to protect and expand the tax base and level of economic activity which will provide a good standard of living and will provide the necessary county services for its residents and visitors.
2. Section 40-8-2 of the Utah Code is recognized and complied with by federal agencies. The code states that a mining industry is essential to the economic and physical well-being of the state. It is necessary to alter the earth's surface to extract minerals required by our society, but such mining should be done in a manner that minimizes undesirable effects and provides for reclamation of the surface when mining is completed.
3. Mineral and mining development is recognized and advanced as a valuable component of multiple use management and community development.
4. Permitting is streamlined and that regulations should be consistent and coordinated between federal and state agencies and consistent with this RMP.
5. Mineral and mining resources are developed at an expanded rate.
6. Mineral and mining resources are optimized to support community sustainability and stability.
7. The County and Conservation District is involved in any reclamation initiative, mitigation enforcement or compensatory action taken against mineral development entities.
8. Section 63J-8-104 of the Utah Code is recognized and complied with by federal agencies. The County supports the state's position, which requires federal land management agencies achieve and maintain at the highest reasonably sustainable levels, a continuing yield of energy, hard rock, and nuclear resources in those subject lands with economically recoverable amounts of such resources.
9. Mineral and mining resources located outside Park Service lands and designated wilderness are available for development to the maximum extent allowed by law.
10. Additional material pits are developed near communities.
11. Additional material pits are developed for road maintenance, erosion control, stream stabilization and other activities that promote productive and enjoyable harmony between man and his environment.
12. WSA lands that are not suitable for Wilderness designation as identified in the County land use plan are released from further consideration and made available for mineral and mining extraction.

Social-economic Benefits:

As these 12 desired conditions are achieved the following social-economic benefits will be realized.

1. Preservation and enhancement of an important historic and cultural significant economic sector of the County.
2. Increased social-economic sustainability through addition of good paying jobs.
3. Increased water shed health and water yield through remediation and reclamation projects.
4. Increased water quality and reduced sediment in rivers and streams through operation planning, mitigation and reclamation.
5. Increased soil health and productivity through reclamation and vegetation projects
6. Increased vegetation and vegetative diversity through vegetation reclamation planning and implementation.
7. Improved landscape health through reclamation planning and implementation
8. Increased wildlife habitat and species diversity
9. Increased economic benefit from public land through mineral and fuel services and goods.
10. Less erosion by wind and water through operation planning and implementation.
11. Decreased tension between residents and agency personnel.
12. View-sheds are maintained and in some cases enhanced after reclamation.

Law Enforcement:

Juab County Desires

1. The authority of the County Sheriff as the primary law enforcement officer is recognized by all agencies.
2. Federal employees engaged in law enforcement activities work under the direction of the County Sheriff.
3. Agreements are executed with the County Sheriff prior to federal employees exercising any general police powers.
4. Federal employees do not exercise any general police powers prior to being deputized by the County Sheriff.
5. Federal agencies work in cooperation with and under the direction of the County Sheriff prior to exercising any general police powers.

6. Federal law enforcement activities need to be discontinued, and agencies need to execute appropriate agreements with the Juab County Sheriff to fulfill law enforcement functions.

Social-economic Benefits:

As these 6 desired conditions are achieved the following social-economic benefits will be realized.

1. Decreased tension among residents, local law officers and agency personnel.
2. Personal safety of agency personnel improved.
3. Improved communications between local law officers and agency personnel.

1.8 POLICIES

Finding: The powers delegated by the Constitution to the federal government are few and defined. Those which remain in the State government are numerous and indefinite. Any federal supremacy is strictly limited to that defined by the U.S. Constitution and federal law. Federal authority is also limited to the minimum authorized under the appropriate jurisdiction (exclusive, concurrent, partial, or proprietary).

Finding: The County's duly elected officers represent and speak for the local public to the maximum extent allowed by law.

Policy: It is the County's policy to maximize the health, safety, welfare, custom, culture, heritage and socio-economic well-being of the residents and visitors of the County.

Policy: It is the County's policy to maximize influence over federal agencies through consistency, cooperation and coordination.

Policy: It is the County's policy to demand consideration of cooperating agency status for all federal actions. Federal agencies are required to offer such status at the earliest possible time and before scoping. The County finds "earliest possible time" means as soon as an agency considers an action and includes data gathering, NFMA, pre-NEPA, and other preliminary stages.

Policy: The County finds meaningful involvement includes but is not limited to complete access to federal process consistent with interdisciplinary team membership; attendance at meetings; access to preliminary, draft and other documents; access to data, maps and reports; submission of information; and participation as a full partner in the agency environmental process.

Policy: Federal management plans and actions shall be consistent with state and local plans to the maximum extent allowed by law.

Policy: Although authorities among agencies may differ, all federal agencies shall perform discretionary functions consistent with the County's plan, program and policy to the maximum extent allowed by law.

Finding: All federal lands in the County affect the County's mission and responsibility for health, safety, welfare, custom, culture, heritage, and socio-economic well-being. Among other resources, air, water, wildlife, pollen, soil, wildlife, smoke, seeds, cultural resources, and paleontological resources do not confine themselves only to federal land. Activities that rely on

resources including but not limited to hunting, rock hounding, fishing, recreation, mining, livestock grazing, sightseeing, and camping are intricately connected to public lands and impact the custom, culture and heritage of the County. Any action, activity, process or plan taken by federal land management agencies in the County impacts the county and is subject to coordination, cooperation and consistency requirements.

Policy: Cooperating Agency Status is authorized in federal statute for states, local governments and tribal governments. There is no know law requiring differentiation between the various levels of non-federal entities. The County demands treatment as a Cooperating Agency equal to other federal entities, states and tribal governments, until such time as it is prohibited by law.

Policy: The County asserts jurisdiction by law and expertise on all federal projects within the county and files a permanent request for Cooperating Agency Status. There may be circumstances where the County chooses not to participate as a cooperating agency. Such instances will be identified on a case by case basis.

CHAPTER 2

Resource Management

2.1 AUTHORITIES

An exhaustive Authorities Section has not been completed. The plan complies with existing federal, state, and local law as described in Section 1.4, Section 1.5 and elsewhere in this plan. It is intended that an expanded Authorities Section will be completed, subject to public comment, and adopted at some point in the future.

This Land Use Plan, as amended, is the primary comprehensive planning document for resources in the County, Utah. Its purpose is to ensure there is a unifying set of policies for proper coordination and consistency between all agencies that have regulatory responsibility within the county, the industries and business utilizing the resources within the county, and all landowners including private, county, state and federal. This RMP is the only planning effort that crosses all agency boundaries, takes into account all interests and sets forth policy that allows each entity to fulfill their necessary purpose. The Commission is responsible for governing the County in the best interest of all residents, described by state statutes as protecting their “health, safety, morals and general welfare,” as well as the County’s economic base and the natural environment. This RMP sets forth management policies that support multiple use and sustained yield of the natural resources in the County to protect the social, cultural and economic values while limiting adverse effects to the natural environment. It establishes a baseline for encouraging a productive and enjoyable harmony between man and his environment. It is expected that all entities, whether private or government, operating within the County will be consistent with the policies within this plan as they carry out their responsibilities.

This RMP shall also serve as the comprehensive planning document for the natural resources in the County as it relates to the management of federal and state lands. The Commission has the unique authority to require federal and state agencies to coordinate their plans and policies with the County, therefore ensuring that all entities with responsibilities for habitat, species and other natural resources as well as for public access to the resources, are working together efficiently and effectively and not pursuing counter-productive measures.

While recognizing that each agency has its own planning processes, federal agencies are required to not only consider the County’s policies, but work to resolve conflicts and make federal plans consistent with the County’s policies (43 USC 1712). Federal statutes require that the County’s policies are integrated into the federal planning process on federal lands within the County’s borders. The State of Utah has given the County planning authority over lands within the County’s borders, ensuring the coordination of the County’s policies with state agencies as well.

Implementation of this plan will be conducted through a formal coordination process with all agencies that have jurisdiction and/or responsibility for natural resources within the County. This RMP will serve as the unifying and primary planning document.

Numerous federal statutes require federal agencies to coordinate their planning and management activities with the County. These include the Federal Land Policy and Management Act, the National Forest Management Act, and the National Environmental Policy Act, which guide the management of federal lands and directly impact the County’s interests. Therefore, it is essential

that federal and state agencies coordinate continually with the County to ensure consistency of policies.

Coordination recognizes that the responsibilities of local governments are “equal, not subordinate” to the duties of federal and state governments, and that the needs of the local government must be incorporated into the federal and state planning processes. Coordination is designed to resolve conflicts that may exist between local, state and federal objectives early in the process and throughout the implementation of policies. The County recognizes that federal law may supersede state and local law, and that it is federal law that requires agencies to coordinate and reach consistency with the County’s plans and policies.

The County asserts the minimum requirement for this government-to-government coordination requires federal agencies to:

1. Keep apprised of state, local and tribal land use plans;
2. Assure that consideration is given to local plans when developing a federal plan, policy or management action;
3. Provide early notification (prior to public notice/scoping) to local government of development of any plan, policy or action;
4. Provide opportunity for meaningful input by local government into development of the plan, policy or action; and
5. Make all practical effort to resolve conflicts between federal and local policy, and reach consistency.

Utah law authorizes the County to engage in coordination with federal agencies. Utah State Statute also provides for the development of county-level plans under Title 17-27a-401. In 2015, the Utah Legislature amended Title 17-27a-401 requiring that county general plans include a “resource management plan” to provide a basis for communicating and coordinating with the federal government on land and resource management issues. In its plan, the County has focused not only on the statutory requirements, but on issues identified as being important to the health, safety, welfare, custom, culture, heritage, socio-economic vitality, and community stability of the County. These issues are addressed in the Plan through “Findings,” “Policies,” “Objectives,” “Action/Implementation Steps,” and other directives.

The Board of Commissioners will work to establish a coordination process with all federal and state agencies to ensure conflicts are resolved early in planning processes and consistency is achieved with the County Land Use Plan as amended by the RMP.

During the preparation of Environmental Studies under the National Environmental Policy Act, the County may participate in the preparation of the analysis as a “Cooperating Agency.” Federal law allows the County to be represented in federal land planning decisions as a cooperating agency with special expertise and/or jurisdiction. the County will participate in the federal planning processes as a cooperating agency on a case by case basis. However, such participation does not replace or end the required federal coordination. Decision making processes and deliberation required to resolve conflicts between federal and county plans and to reach consistency with these plans will be conducted in open public meetings as required by Utah law.

The County may also participate in the collaborative processes only to the extent the process strictly complies with requirements of the Federal Advisory Committee Act (FACA). The County will consider participating in a collaborative process on a case-by-case basis, but will do so only with the understanding that such participation does not preclude the County from participating as a cooperating agency. Additionally participation in a collaborative process does not limit, replace or end government to government coordination with the federal agency. The County had statutory planning and fiduciary responsibilities to the residents of the county that must be protected and not placed on equal footing with other non-government agencies or special interests. In the event the County does participate in a collaboration process, it does so with the understanding that it will continue coordination with the federal agency on the same project for the purpose of ensuring the project is consistent with the County Land Use Plan and RMP.

2.2 AIR QUALITY

Introduction

This section outlines the existing condition and management of air quality in the County. Air quality impacts and is impacted by several resources and potential resource uses. Visibility, air quality standards, and sources of pollution will be addressed in this section. This section will provide decision makers with a better understanding of the air quality in the County and how air resources could be impacted from land use decisions. This section also identifies direction and information that serves as a baseline for consistency and coordination with the County's plan, program and policy. This section contains the latest and best data available as of January 1, 2016. Should additional data become available it shall be submitted to the County for confirmatory analysis. Baseline and background information will be updated as new information becomes available.

Current Setting

The Utah Division of Air Quality is responsible for regulating and monitoring air quality in Utah, except where local regulations mandate more stringent standards. Measurements are typically taken only in urban areas where ambient pollution levels are expected to be the highest and where data is required to assess attainment status. No air quality monitoring stations are located in the County. The closest monitoring station is located in Santaquin, Utah just north of the County. However, even in areas where air quality data is collected, the variability of site specific conditions creates uncertainty, subjectivity and generalizations regarding air quality over larger areas. Air quality can be impacted by precipitation, wind, temperature, topography along with a host of biogenic and human factors. And air quality can vary greatly over very short distances.

The Utah Division of Air Quality creates and maintains a triennial Statewide Emissions Inventory Report disclosing total emissions for particulate matter 10 micrometers or less in diameter (PM₁₀), particulate matter 2.5 micrometers or less in diameter (PM_{2.5}), Sulfur Oxides (SO_x), Nitrogen Oxides (NO_x), Volatile Organic Compounds (VOC), and Carbon Monoxide (CO). Table 2.2.1 depicts the most recently published values for the County.

Table 2.2.1. 2011 Criteria Pollutant Inventory (tons per year).

Area	PM10	PM2.5	SO_x	NO_x	VOC	CO
Juab Fire	84.33	75.90	0.00	19.84	119.06	696.99
Juab Human	2761.61	491.29	94.11	2822.84	1,061.39	11,718.01
Juab Natural	0.00	0.00	0.00	476.61	25,717.70	5907.63
Juab Total	2,845.94	567.19	94.11	3,319.29	26,898.15	18,322.63

Source: UDAQ (Utah 2011 Statewide Emissions Inventory)

The existing air quality in the County is typical of undeveloped regions in the western United States with slightly higher values in more developed areas adjacent to Interstate 15 and areas that are impacted by drift from the Wasatch Front. For much of the County, ambient pollutant levels are usually near or below measurable limits. Regional concentrations of SO₂, PM₁₀, and NO₂ are generally well below the NAAQS, and air quality in the County is most significantly impacted by drift from areas outside the County. No major air pollution sources or polluted airsheds have been identified in the County.

The greatest sources of pollutant emissions in the County are volatile organic compounds generated often from biogenic sources. Prescribed/wildland fire and native fugitive dust also have the potential to impact air quality, especially in the majority of the County where federal lands are dominant. Locations vulnerable to decreasing air quality include the immediate operation area associated with prescribed fire and drift from out of county sources. Area sources, small mobile sources, stationary sources, and on- road mobile sources contribute a relatively small component of the total emissions. Atmospheric visibility is generally quite good. Visual-range estimated measurements vary throughout the County. The good visibility is the result of low regional SO₂, and low ambient suspended particulate concentrations.

The County is designated as either attainment or unclassified with respect to National Ambient Air Quality Standards for all criteria pollutants. Most of the County and the surrounding area - except Utah County - have been designated as a Prevention of Significant Deterioration (PSD), Class II Airshed. However, parts of adjacent Utah County have been classified as non-attainment. The County's PSD classification permits moderate deterioration that normally accompanies well-controlled growth. The only mandatory Class I designated area in the County is the Mount Nebo Wilderness. VOC and fire related emissions from federal lands are a concern to the County, as is drift and fugitive dust.

Existing Management

Private lands are managed under the Utah Division of Air Quality's program for Ambient Air Quality Standards. No areas in the County exceed acceptable limits. Federal agencies and their authorized activities are also managed to maintain air quality within the thresholds established by the State of Utah Ambient Air Quality Standards and to ensure that those activities continue to: a) keep the area as attainment, b) meet PSD Class II standards, and c) protect any Class I

airshed. Prescribed burns, fugitive dust and biogenic VOCs generated on federal lands significantly impact air quality in the County. The BLM and the Forest Service recently adopted sage grouse planning amendments that increase sagebrush, the largest single contributor to VOC's in the County. Table 2.2.2 depicts National and Utah Ambient Air Quality Standards.

The prevention of significant deterioration of air quality applies to the County and other areas of the State designated as attainment or unclassifiable for particulate matter (PM₁₀), sulfur dioxide (SO₂), and nitrogen dioxide (NO₂). Significant deterioration is defined in terms of a system of area classifications and permissible concentration increases called increments. The maximum allowable increases in concentrations in Class I, Class II, and Class III areas are those increments specified in Utah Air Conservation Rule R307-405-4. In Class I areas, which are the most highly protected areas, only small increases in predicted PM₁₀, SO₂, and NO₂ concentrations are permitted. In Class II areas, larger concentration increases would be permitted. Class III areas, which are the least protected, assure that any increase will not result in concentrations that are higher than the lowest applicable NAAQS. Table 2.2.3 depicts Allowable PSD increments.

Table 2.2.2. National and Utah Ambient Air Quality Standards

Pollutant	Standard Value*	Standard Type
Carbon Monoxide (CO)		
8-hour Average ^a	9 ppm (10 mg/m ³)	Primary
1-hour Average ^a	35 ppm (40 mg/m ³)	Primary
Nitrogen Dioxide (NO₂)		
Annual Arithmetic Mean	0.053 ppm (100	Primary & Secondary
Ozone (O₃)		
1-hour Average ^b	0.12 ppm (235	Primary & Secondary
8-hour Average ^{**}	0.08 ppm (157	Primary & Secondary
Lead (Pb)		
Quarterly Average	1.5 μ g/m ³	Primary & Secondary
Particulate Matter (PM 10) Particles with diameters of 10 micrometers or less		
Annual Arithmetic Mean	50 μ g/m ³	Primary & Secondary
24-hour Average ^c	150 μ g/m ³	Primary & Secondary
Particulate Matter (PM 2.5) Particles with diameters of 2.5 micrometers or less		
Annual Arithmetic	15 μ g/m ³	Primary & Secondary
24-hour Average ^{**}	65 μ g/m ³	Primary & Secondary
Sulfur Dioxide (SO₂)		
Annual Arithmetic Mean	0.03 ppm (80 μ g/m ³)	Primary
24-hour Average ^a	0.14 ppm (365	Primary

3-hour Average ^a	0.50 ppm (1300	Secondary
* Parenthetical value is an approximately equivalent concentration		
** The ozone 8-hour standard and the PM 2.5 standards are included for information only.		
A—Maximum concentration not to exceed more than once per year		
B—Expected number of exceedance days shall not be more than one per year (3 year average) as determined by Appendix H of 40 CFR Part 50.		
C—Expected number of exceedance days shall not be more than one per year (3 year average) as determined by Appendix H of 40 CFR Part 50.		

Source: 40 CFR Part 50, July 2000

Table 2.2.3. Allowable PSD Increments ($\mu\text{g}/\text{m}^3$)

Pollutant	Time Period	Class I	Class II	Class III
PM10	Annual Arithmetic Mean	4	17	34
	24-Hour Maximum	8	30	60
SO2	Annual Arithmetic Mean	2	20	40
	24-Hour Maximum	5	91	182
	3-Hour Maximum	25	512	700
NO2	Annual Arithmetic Mean	2.5	25	50

Source: UACR R307/-405-4

PSD requires that certain new, major stationary sources and major modifications be subject to a preconstruction review, which includes an ambient air quality analysis. The process of reviewing proposals to construct major new sources or modifications is the principal means of carrying out the PSD program. Sources having emissions below the PSD major source threshold are subject to New Source Review (NSR) permitting with the State of Utah. Such sources are required to demonstrate that they will not cause or contribute to a violation of the ambient air quality standards (Utah Air Conservation Rule R307- 405-6).

Sources of Air Pollution

The most recent UDAQ Annual Report (2015) and the most recent (2011) UDAQ Annual Inventory Summary were examined to determine the sources of pollution as well as current emission rates for the County. The report provided the following observations:

There are no major point sources of air pollution in the County.

The greatest amount of air pollution emissions in the area result from biogenic VOC emissions and carbon monoxide.

There are no point sources listed for the County.

The primary air pollutant in the County is volatile organic compounds (VOC).

Area sources and biogenic emissions account for the most emissions in the County.

Air Quality Modeling Requirements

Utah Air Conservation Rule R307-410-4 requires new sources, or modifications to existing sources, proposing increase of hazardous air pollutants (HAP) emissions to submit HAP emission levels and pollutant release information for their facility. The information submitted must include the emission threshold value (ETV). The ETV is the emission level above which a dispersion modeling analysis is required as part of a complete NOI. No source in the County is generating HAPs.

New PSD or major modifications to PSD sources are required to conduct plume visibility modeling if they are deemed as having a significant impact in a Class I area. PSD sources that propose to permit any net emissions increase and are located within 10 km of a Class I area are also required to conduct plume visibility modeling. There are no such areas in the County.

Need For Change in Management

1. The County should develop an air quality ordinance to assist land managers in protecting air quality and to serve as a detailed standard for project evaluation.
2. No empirical site specific data exists for air quality in the County. The Statewide Triennial Emissions Inventory is based on modeling and may not be applicable to site specific conditions, especially in remote areas. Land managers should be required to develop accurate, objective background data for lands within their jurisdiction. Those findings should be submitted to the Utah Division of Air Quality for inclusion in the Statewide Triennial Emissions Inventory.
3. The Statewide Triennial Emissions Inventory is based on modeling and does not accurately depict PM₁₀ and PM_{2.5} emissions associated with native fugitive dust, drift and other site specific factors. The 2011 inventory indicates there are no naturally occurring PM₁₀ or PM_{2.5} emissions. However, native fugitive dust is irrefutable as evidenced by the presence of dust in the air in remote areas and variable fugitive dust conditions associated with changing weather events. Land managers should develop ambient background levels for PM₁₀ or PM_{2.5} emissions within their jurisdictions and for drift from their adjacent lands outside the County. Projects on private lands should continue to be managed under existing air quality laws and regulations.
4. The Statewide Triennial Emissions Inventory is based on modeling and does not accurately depict potential emissions from wildland and prescribed fire or from such emissions that occurred outside the inventory period. The inventory indicates there were limited wildland or prescribed fire events in the County during the reporting period. However, review of the inventory for areas that experienced fires indicates wildland and prescribed fire are significant contributors to an area's air quality. Federal agencies need to control emissions from wildland and prescribed fire on their own lands prior to implementing restrictive regulations that impact projects deemed to promote socio-economic stability in the County.
5. Revised regulations regarding air quality are under consideration by the federal government. Compliance with these potential regulations is significantly impacted by emissions from biogenic sources, soils, wildfires, and prescribed fires on federal lands in

the County and in the region. Federal agencies need to control emissions from sources on their own lands prior to implementing regulations that impact areas of the County under state and local management and prior to negatively impacting federal land projects deemed to promote socio-economic stability in the County.

6. PSD requires that certain new, major stationary sources and major modifications be subject to a preconstruction review, which includes an ambient air quality analysis. Federal agencies do not have accurate, site specific ambient air quality inventories. Such inventories are needed to accurately assess programs associated with wildland and prescribed fires.
7. Smoke emissions resulting from prescribed burning projects or treatments are conducted and managed in compliance with guidelines found in the Utah Smoke Management Plan (SMP) and interagency group program. The purpose of the program and the SMP is to ensure that mitigation measures are taken to reduce the impacts on public health, safety and visibility from prescribed fire and wildland fire used for resource benefits (UDAQ 2004). Compliance with the SMP is the primary mechanism for land managers to implement prescribed burns, but it is insufficient to protect air quality in the County. Often fire management plans cannot adapt to changing conditions fast enough to protect air quality. The SMP and interagency group program needs to be improved to reduce fire related emissions and protect air quality in the County.
8. Regional haze has been an issue of growing concern throughout the west. Regional haze causes visual impairment by obscuring the clarity, color, texture, and form of what can be seen. Haze is significantly impacted by the reaction of VOCs with other air pollutants. The largest source of VOCs in the County is biogenic generation on federal lands, and the largest potential sources of other pollutants are wildland and prescribed fires – also on federal lands. Federal agencies need to minimize regional haze on their own lands while advancing projects deemed to promote socio-economic stability in the County.
9. Atmospheric deposition of air pollutants can increase acidity of soils and water resources. Measurements of atmospheric deposition are currently being taken in Class I areas of Grand Canyon National Park, Bryce Canyon National Park, and Canyonlands National Park by the National Acid Deposition Program. The 2004 Annual Performance Report on Air Quality Goals at National Parks indicates rates of atmospheric deposition of nitrogen and sulfur in rain is relatively low in Bryce Canyon National Park, but elevated above natural conditions. Trend analysis shows that nitrogen deposition has slightly increased while sulfur deposition has slightly decreased. Federal agencies in the County should develop similar data, so deposition of air pollutants can be properly analyzed.
10. Ambient air quality in the County is not exceeding standards; visibility is typical of clear skies associated with remote areas in the western United States; and atmospheric deposition levels are below Federal levels of concern. However, the lack of available data limits forecasting trends of air quality. Future changes to air quality conditions will occur according to the intensity and expansion or reduction of activities that produce air pollutants. However, the use of air pollution mitigation techniques can reduce

emissions from sources, and in some cases, also minimize air quality impacts. At this time, future impacts to air quality within and affecting the County are uncertain; however, emissions from these existing sources are not anticipated to increase. The County needs accurate baseline information from land managers regarding pollutants and concentrations from existing and proposed activities.

11. Potential adverse impacts are often mitigated through site-specific measures identified in NEPA documents prepared at the time an action is proposed. Mitigation needs to be developed as part of the State permitting process and PSD review. However, federal agencies have excluded County participation in these processes. Federal agencies should include impacted local governments as cooperating agencies in the NEPA process and shall coordinate with the County in accordance with federal law.

Prescribed and Wildland Fire

1. The EPA notes in the Regional Haze Regulations (Federal Register/Vol. 64, No. 126) that fire emissions have a natural and a manmade component. The EPA also recognizes that all kinds of fire (wildfire, prescribed fire, etc.) contribute to regional haze, and a complex relationship exists between what is considered a natural source of fire versus a human-caused source of fire. The County asserts all fires impact air quality and commercial harvesting of excess fuels is the best method for reducing the potential for fire related air pollutants and for achieving harmony between man and his environment and for preserving
2. The EPA agrees that fire is an important emission source to include in air quality impact analysis, but current data do not show that fire is the predominant source of visibility impairment in the County. Federal agencies need to improve the disclosure and analysis of fire related air quality impacts.
3. Visual resources are a growing tool used by special interests to undermine reasonable projects. Visibility could be impacted by natural suspended PM₁₀ or by construction activities, vehicles traveling on access roads, off-highway vehicles (OHV), and wind-blown dust over exposed areas and smoke from fires and prescribed burns. No site specific data exists to accurately analyze differences between natural/ambient air quality and man-made impacts. Of particular concern are private efforts to restrict beneficial projects in the name of air quality. Vehicle use on unpaved roads may result in temporary, localized increases in fugitive dust that would not exceed air quality standards. Area emission of fugitive dust is not subject to State air quality permitting procedures and would not constitute any threat to human health and safety. However, such emissions are subject to control measures to prevent public nuisance under Utah Air Conservation Rule 307-205-3. Utah Air Conservation Rule 307-205-4 does not require dust control on unpaved roads when the average daily traffic level does not exceed 150 vehicles averaged over a five-day period. Few, if any of the County's roads exceed 150 vpd, and proposed projects should be analyzed using accurate site specific data, including background levels.
4. Although fugitive dust would cause some localized visible dust clouds, the emissions are expected to have minimal effect on regional haze. PM smaller than 2.5 microns is a

primary contributor to visual haze and adverse health effects. Less than 30 percent of the fugitive dust generated from unpaved roads is below 2.5 microns. Non-road generators of fugitive dust need to be confirmed using site specific measurements before management restrictions are implemented.

5. BLM needs to expand its air quality program to consider impacts of prescribed and wildland fire and vegetation improvements to reduce fugitive dust.
6. New ozone regulations may make the biogenic VOC emissions from federal lands a significant factor in achieving attainment. Federal agencies need to manage emissions so attainment can be maintained.

Desired Future Conditions

Juab County Desires:

1. The County's air quality be maintained or improved while allowing development of projects needed for socio-economic stability.
2. Federal agencies quantify and mitigate impacts from drift, fugitive dust and fires prior to restricting projects needed for socio-economic stability.
3. Natural fugitive dust is reduced through improved vegetative cover, vigor and utilization.
4. Federal agencies resolve inconsistencies with biogenic pollutants, natural fugitive dust, wildland fire and prescribed fire prior to restricting projects needed for socio-economic stability.
5. Air quality should be cooperatively managed and coordinated by local, State and Federal agencies.
6. Federal agencies fully coordinate air quality programs with the County and comply with the County's plan to the maximum extent allowed by law.

Findings, Policies, Goals & Objectives

Goal Assure compliance with the Clean Air Act.

Objective Maintain compliance with the Clean Air Act through the application of the appropriate review process on a case-by-case basis.

Objective: Ensure that air quality on federally managed lands complies with Clean Air Act National Ambient Air Quality Standards, and that authorized activities do not impair air quality on the agency's land or on adjacent lands.

Implementation Action: Coordinate with state and federal agencies to bring about the best achievable air quality in Juab and Utah in general.

Goal: Develop and maintain an effective site specific data collection and monitoring system for remote area in the County.

Finding The Richfield Field Office Resource Management Plan and the Fishlake National Forest

Management Plan are outdated and should be brought into consistency with this plan to the maximum extent allowed by law.

Finding Currently, there is insufficient data to determine site specific conditions in the County.

Policy Unless waived by the Commission after public hearing, land owners and managers shall submit an accurate pollutant criteria inventory:

Contain more than 5000 contiguous acres

Are managed as Class I airsheds

Are adjacent to a Class I airshed and are owned/managed by the same department

Policy BLM and Forest Service units shall develop background data for pollutants identified in the Statewide Emissions inventory for lands under their jurisdiction.

Finding The SMP and interagency group program are insufficient to protect air quality in the County from fire related emissions.

Policy Federal agencies shall coordinate wildland fire and prescribed fire management, including fuel reduction through commercial harvesting, thinning and vegetation treatments, with the County prior to authorizing fire related emissions.

Finding: BLM has centered their air quality and analysis on emissions from oil and gas developments. Additional effort needs to be given to assessing air quality impacts associated with prescribed and wildland fire. Effort also needs to be given to assessing benefits of improved vegetative cover to reduce fugitive dust.

Policy: The County adopts an adaptive management policy based on the concept of measure, predict, mitigate, implement, monitor and adapt. If monitoring reveals actions and mitigation are not accomplishing the expected results, or new information becomes available that more clearly

Policy: If attainment standards change for ozone, federal agencies will make changes in natural biogenic emissions necessary to allow the standards to be met throughout the County.

When conducting air quality modeling analysis, BLM will:

- ☐ ☐ Use appropriate tools and resources consistent with the best science, technical guidance, and rules;
- ☐ ☐ Build on existing air quality analyses, when appropriate;
- ☐ ☐ Seek concurrence from interested RTAG members; and
- ☐ ☐ Document its decisions.

There are three general categories of air quality models used in NEPA: near-field models, far-field models, and photochemical models. Each will be described below along with their appropriate application in the ARMS.

Near-field Modeling

Near-field models are used to evaluate actions likely to result in local air quality impacts at transport distances less than 50km. These models will typically be used to conduct local scale modeling analysis with emission estimates, meteorological, and geographic information for single sources. They may also be used when the local air quality impact potential is estimated to be high. Near-field models include: AERMOD/AERSCREEN, VISCSCREEN, and PLUVUE II.

Far-field Modeling

Far-field models are used to evaluate actions that contain single (or small group) source scenarios at transport distances greater than 50km. These models are conducive to providing regional assessments of cumulative and incremental impacts. Typically project specific emission information will be needed, along with more regional meteorological and geographic information. Currently available far-field models include: CALPUFF and SCIPUFF.

Photochemical Modeling July 2011

Photochemical models are used to conduct regional scale modeling with project specific emission, meteorological, and geographic information with complex photochemical processes. This approach utilizes a regional scale one atmosphere simulation of a wide variety of pollutants with a large geographic extent. Emissions are gridded, allow for chemical transformation, and offer a variety of transportation mechanisms to address near and far-field transport. Impact estimates are generated for ambient concentration, atmospheric deposition, and AQRVs. Project-specific direct and indirect impacts will be determined using the ARMS regional photochemical model, either through a model sensitivity simulation, or by running the regional model utilizing source apportionment. Photochemical models include: CMAQ and CAMx.

EPA and other Agencies have been monitoring visibility in national parks and wilderness areas since 1988. In 1999, the U.S. Environmental Protection Agency announced a major effort to improve air quality in national parks and wilderness areas. The Regional Haze Rule calls for state and federal agencies to work together to improve visibility in 156 national parks and wilderness areas such as the Grand Canyon, Yosemite, the Great Smokies and Shenandoah. The rule requires the states, in coordination with the Environmental Protection Agency, the National Park Service, U.S. Fish and Wildlife Service, the U.S. Forest Service, and other interested parties, to develop and implement air quality protection plans to reduce the pollution that causes visibility impairment. The first State plans for regional haze were due in December 2007. States, tribes, and five multi-jurisdictional regional planning organizations worked together to develop the technical basis for these plans. Comprehensive periodic revisions to these initial plans are currently due in 2018, 2028, and every 10 years thereafter.

<https://www.epa.gov/visibility/visibility-regional-haze-program>

2.5 WATER RESOURCES

Current Setting

Water is one of the most important if not the most important natural resource in the County. More than 72% of the County is federal land, and most of the 17% private lands are concentrated in valley bottoms and along water courses. Consequently, almost all surface water and the majority of watersheds are located on federal land. The County is home to 5 major sub basin watersheds: Utah Lake, Lower Sevier, Southern Great Salt Lake, Tule Valley and Hamlin-Snake

Valleys. Three of the watersheds in the western portion of the County develop surface waters which flow north and eventually terminate at the Great Salt Lake. One accepts water from the Sevier River basin from as far away as the Dixie National Forest and transfers it to its terminus at Sevier Lake in Millard County. The Utah Lake watershed collects water from the western side of Mount Nebo and drains into Utah Lake via Current Creek.



Figure 2.5.1. Juab County Sub Basin Watersheds

The County has numerous small creeks but only one major watercourse, the Sevier River which flows only for a short distance in the southeast corner of the County. These small streams and creeks are fed mainly by snowmelt and groundwater discharge from nearby mountains and are augmented by storage impoundments and rainfall, especially during the late summer monsoon season. Rainfall in the County is not adequate for most commonly grown crops and is generally the limiting factor for vegetative cover on state and federal lands. Supplemental irrigation is required to obtain acceptable crop yields, and most irrigation water is diverted from the rivers and streams and stored in reservoirs. The northern portion of Yuba Lake and Mona Reservoir are the most prominent storage facilities in the County. In addition, many smaller reservoirs and ponds have been built in the area, but they are used mainly for water regulation, rather than large scale storage.

Domestic water comes from natural springs and wells around the county. According to recent agricultural census, there are about 333,000 acres in farms and ranches (15% of the land base) and only 22,000 acres under irrigation (1% of the land base) in the County. Irrigation water in the County comes primarily from the surface waters cited above. In 2015 approximately 15 irrigation companies were listed as operating in the County.

Need for Management Change

1. Land managers need to continue recognizing the invaluable role of water and optimize scarce water resources.
2. Eradication of noxious and invasive weeds, restoration of encroaching conifer woodlands to desirable vegetative communities and minimization of bare ground are needed to maximize beneficial use and quality of scarce water resources.

3. To optimize water resources, land managers need to focus on restoration of desirable vegetative communities rather than restricting human activities.

Desired Future Conditions

Juab County Desires:

1. Scarce water resources are maximized for the beneficial use of man.
2. Land managers prepare for changing climatic conditions by optimizing land health by while protecting and enhancing multiple use activities.
3. A greater emphasis be placed on water development projects that optimize use and benefit of scarce water resources.
4. Land managers eradicate undesirable riparian species and noxious weeds in the County.
5. Land mangers maximize desirable native and non-native vegetative cover to optimize use of water resources.

Findings, Policies, Goals & Objectives, Criteria

Finding: Water is a scarce commodity and its beneficial use needs to be maximized to promote and achieve a productive and enjoyable harmony between man and his environment.

Policy: Federal, state, local and private land managers shall cooperate and coordinate with the County to maximize beneficial use scarce water resources.

Policy: Land managers shall optimize vegetative cover to improve streambank stabilization and protect upland and rangelands from excessive runoff.

Finding: Consistency with this RMP optimizes use of water resources and promotes a productive and enjoyable harmony between man and his environment.

Policy, Goal & Objective: To the maximum extent allowed by law, land managers shall be consistent with this RMP, unless otherwise approved by the Commission.

Policy: The County will cooperate and coordinate with private landowners, permittees, state agencies, and federal partners with planning and implementation efforts to improve water quality and quantity on private and public lands.

2.5.1 HYDROLOGY

Current Setting

Hydrology is the science that encompasses the occurrence, distribution, movement and properties of the waters of the earth and their relationship with the environment within each phase of the hydrologic cycle. The hydrologic cycle (also known as the water cycle) is a continuous process by which water is deposited on the land, purified by evaporation and transported from the earth to the atmosphere and then back to the land. There are many pathways the water may take in its continuous cycle of falling as rainfall or snowfall and returning to the atmosphere. It may be captured for millions of years in polar ice caps. It may flow to rivers and

finally to the sea. It may soak into the soil to be evaporated directly from the soil surface as it dries or be transpired by growing plants. It may percolate through the soil to groundwater aquifers, or it may flow to wells or springs or back to streams by seepage. The cycle for water may be short, or it may take many years. Nature and man each employ portions of the hydrologic cycle for their own purposes. After use, water is returned to another part of the cycle through discharge, allowing it to soak into the ground or through evaporation. Water that has been in contact with the land is often lower in quality, even after treatment, than that which falls as precipitation.

This section discusses fundamental transport processes as water moves through the cycle and associated watershed management.

The County is an arid environment. Even in mountainous areas of the County where precipitation is higher, water is in limited supply. Generally, eastern Juab County is at higher elevation and receives a greater amount of annual precipitation than the western portion of the County, but central and western mountains receive more precipitation than valley bottoms. Mountain and forested areas in the east generally have sufficient vegetative cover and ground litter to allow infiltration of precipitation, especially during the spring when snowmelt occurs gradually. A notable exception is where encroaching conifers have been allowed to invade and replace historic sagebrush/grassland ecosystems.

The foothills and lowlands of the county are characterized by sparse vegetation, exposed soils and more arid conditions. Intense late summer rain storms often result in flash flood conditions with attendant sediment transport and erosion. Many if not most of the watercourses are ephemeral washes with little or no riparian vegetation. Over the past several years, storm runoff intensity appears to have increased. There has been little to no human development in the area, but banks are not stabilized, and streambeds are often subject to downcutting. Sediment transport is at unacceptable levels and is impacting water quality.

Additionally, many of the watercourses in dryer portions of the County are infested with undesirable riparian vegetation. These invasive species replace desirable vegetation and dominate limited water resources.

Need for Management Change

1. Land management agencies have no control over timing and quantity of precipitation, so management efforts need to concentrate on activities within their control such as vegetative cover, active stream bank stabilization, water detention, and eradication of undesirable invasive species.
2. Many areas of the County lack desirable vegetative ground cover. Land managers need to implement project to increase native and non-native vegetative ground cover percentages to acceptable levels.
3. Land managers need to prioritize structural and non-structural projects and best management practices that are designed to reduce storm water volume, peak flows, and/or nonpoint source pollution through evapotranspiration, infiltration, detention, hydrograph extension, and filtration over restricting human development and multiple use/sustained yield activities.

4. Land managers need to implement structural and non-structural perennial, intermittent and ephemeral stream stabilization projects that reduce stream sedimentation and erosion while enhancing riparian areas, wetlands and vegetation for wildlife and livestock.
5. Undesirable vegetation, particularly adjacent to watercourses, needs to be removed and replaced with desirable native and non-native vegetation communities that retain bank stability and provide appropriate channel shade.
6. Prior to the first season prone to erosive storms, acceptable ground cover needs to be recruited, established, re-established, or retained after prescribed or wildland fire.
7. Land managers need to coordinate programmatic agreements, best management practices and prioritization schedules for improving hydrologic functions and conditions with the County.
8. Enhanced programmatic agreements and best management practices associated with prescribed and wildland fire need to be implemented to protect hydrologic function and condition in the County.

Desired Future Conditions

Juab County Desires:

1. Land management agencies significantly increase implementation of projects to improve vegetative cover, stream bank stabilization, water detention, and eradication of undesirable invasive species.
2. Land managers increase native and non-native vegetative ground cover percentages to at least 50% of soil potential by 2025 and at least 70% by 2050.
3. Land managers prioritize structural and non-structural projects and best management practices that are designed to reduce storm water volume, peak flows, and/or nonpoint source pollution through evapotranspiration, infiltration, detention, hydrograph extension, and filtration over restricting human development and multiple use/sustained yield activities.
4. Land managers implement structural and non-structural perennial, intermittent and ephemeral stream stabilization projects that reduce stream sedimentation and erosion while enhancing riparian areas, wetlands and vegetation for wildlife and livestock.
5. Undesirable vegetation in and near watercourses is removed and replaced with desirable native and non-native vegetation communities that retain bank stability and provide appropriate channel shade.
6. Acceptable ground cover is recruited, established, re-established, or retained after prescribed or wildland fire prior to the first season prone to erosive storms,
7. Land managers coordinate programmatic agreements, best management practices and prioritization schedules for improving hydrologic functions and conditions with the County.

8. Enhanced programmatic agreements and best management practices associated with prescribed and wildland fire are implemented to protect hydrologic function and condition in the County.

Findings, Policies, Goal & Objectives

Finding: Consistent with ecologic site descriptions, vigorous native and non-native vegetative ground cover is the most influential factor land managers can control to maintain and enhance hydrologic function and condition.

Finding: Many areas of the County lack adequate vegetative ground cover, and projects need to be implemented to increase desirable native and non-native vegetative communities consistent with ecological site descriptions.

Objective: Where capability exists, restore, maintain and improve hydrologic function through reduction of overland flow, increased infiltration, and replacement of invasive/undesirable species with desirable native and non-native vegetative communities.

Policy: Livestock grazing is compatible with proper hydrologic function when lands are actively managed to optimize land health in accordance with the provisions of this RMP. Land managers have sufficient resources and techniques to be consistent with the County's RMP. If sufficient resources and techniques become unavailable, land managers shall – to the maximum extent allowed by law – develop and implement alternate plans in cooperation and coordination with the County and as approved by the Commission.

Policy: Consistent with this RMP and in cooperation and coordination with the County, land managers shall implement appropriate best management practices, mitigating measures and management actions affecting soil health to decrease wind and water erosion and sedimentation, to achieve and maintain ecologic stability, and to support the hydrologic cycle by providing for water capture, storage, and release.

Policy: Vegetative resources shall be managed in a condition that will provide sufficient cover and litter to protect the soil surface from excessive wind and water erosion, reduce bare ground, promote infiltration, detain surface flow, and reduce soil moisture loss by evaporation. This includes making provisions for a) reducing the percentage of unvegetated ground; b) reducing the percentage of undesirable, invasive or noxious vegetation in relation to desired plant communities; and c) restoration or enhancement of perennial, intermittent and ephemeral watercourses to properly functioning condition.

Finding & Policy: Vegetative cover is more desirable and effective than biologic soils when managing for land health in the County. Desirable native and non-native vegetative cover shall be given preference over biologic soil crusts when ecologic site conditions permit.

Policy: Appropriate native and non-native plant species shall be used for vegetation and reseeded treatments to protect and optimize site stability, hydrological function, and biological integrity. Native only seedings may be used when required by law or when proven to provide greater ecologic benefit than native/non-native mixtures.

Goals & Objectives: Unless otherwise approved by the County and consistent with ecologic site conditions, the following minimum objectives are established when lands experience prescribed

or wildland fire:

1. Retain 40 percent ground cover after the burn with recruitment to 60 percent ground cover before the first rainy season following the burn.
2. Do not reduce perennial and intermittent channel shading more than 20 percent of the natural range of variability or by an amount that will take more than three years to recover, whichever is smaller.
3. “Burn” and/or “feeder” piles will not be made in channels or swales within the area occupied when the bank full width is doubled.
4. Burned piles within riparian areas will be left “messy” in order to retain sediment on site.
5. Ignitions will not occur within 15 feet of riparian areas.
6. Any firelines created during burning operations will follow *The Five-D System for Effective Fireline Waterbars* (Hauge et al., 1979).
7. Firelines that need to cross riparian areas will do so perpendicular to the channel and should not have more than 40 feet of hydrologic connectivity.
8. Cupped firelines should have water gaps every 20 feet to allow captured water to exit.
9. Existing disturbance areas, such as roads and trails, should be used to the extent possible as fire lines.

Goals & Objectives: Unless otherwise approved by the County and consistent with ecologic site conditions, the following minimum objectives are established when lands experience mechanical treatments:

1. Retain a 60 percent ground cover or pre-treatment level ground cover (if less than 60 percent) over the treatment area.
2. Mechanical equipment should not cross live streams or those channels supporting riparian vegetation except at designated crossing sites. Every effort to use existing crossings should be made.
3. Crossings at watercourses should be as close to perpendicular to the channel as possible to limit the area of disturbance.
4. Hydrologic connectivity of crossings should be limited to 20 feet on either side of the stream course wherever possible.
5. Any sediment or debris pushed into the channel to facilitate a crossing shall be removed as soon as practical. The disturbed area will be rehabilitated to reduce erosion within the channel and may include adding mulch, slash or debris from the project area to reduce flow and erosion potential.
6. Mechanical treatments should occur on the contour as much as practical.

7. Mechanical equipment should be limited to areas where slopes are less than 35 percent. Stretches of 200 feet or less on slopes of up to 50 percent may be treated to achieve desired objectives.
8. Mechanical equipment should not operate when the soil exceeds 20 percent moisture content, or when equipment is creating ruts deeper than nine inches in muddy soil.

Goals & Objectives: Unless otherwise approved by the County and consistent with ecologic site conditions, the following minimum objectives are established when lands undergo vegetative treatments:

1. No sediment or slash will be introduced into stream channels. Inadvertently introduced material will be removed except where it would cause more damage to retrieve than would occur due to its remaining.
2. Roads, paths, ways, and trails shall be maintained, restored or improved to a condition equal to or better than that which existed at the start of the project.
3. Project related damage to roads and their drainage features shall be repaired before the next rain or the close of the construction season, whichever is sooner.
4. Fueling of drip torches and other equipment shall not occur within riparian areas.

References: Hauge, C.J., M.J. Furniss and F.D. Euphrat. 1979. *Soil Erosion in California's Coast Forest District*. California

2.5.2 WATER RIGHTS & IRRIGATION

Introduction

Utah is one of the driest states in the nation, and water is one of the County's most precious natural resources. Existing water supplies have been carefully managed through established law; and developing any significant new supplies may be difficult and costly.

2.5.2.1 Water Rights

Current Setting

Since the beginning of time, man has used water to sustain life and for his personal needs; and for thousands of years, farmers all over the world have used irrigation—diverting water from streams and rivers to water their fields. The Ancestral Puebloan people in the Four Corners region irrigated small plots of corn, bean, and squash. But the early Utah pioneers of the late 1840's were the first Anglo-Saxons to practice irrigation on an extensive scale in the United States. Being a desert, Utah contained much more cultivable land than could be watered from the incoming mountain streams. The principle was established that those who first made beneficial use of water should be entitled to continued use in preference to those who came later. This fundamental principal was later sanctioned in law, and is known as the Doctrine of Prior Appropriation. This means those holding water rights with the earliest priority dates, and who have continued beneficial use of the water, have the right to water from a certain source before others with water rights having later priority dates.

In the early territorial days, rights to the use of public streams of water were acquired by physical diversion and application of water to beneficial use, or by legislative grant. A “county courts” water allocation system was enacted in 1852 and was in effect until 1880 when it was replaced by a statute providing for county water commissioners.

The Office of the State Engineer was created in 1897. The State Engineer is the chief water rights administrative officer. A complete “water code” was enacted in 1903 and was revised and reenacted in 1919. This law, with succeeding complete reenactments and amendments is presently in force mostly as Utah Code, Title 73. In 1967 the name of the Office of the State Engineer was changed to the Division of Water Rights with the State Engineer designated as the Director, but the public sometimes still refers to the Division as the State Engineer's Office.

All waters in Utah are public property. A “water right” is a right to divert (remove from its natural source) and beneficially use water. The defining elements of a typical water right will include:

- A defined nature and extent of beneficial use;
- A priority date;
- A defined quantity of water allowed for diversion;
- A specified point of diversion and source of water;
- A specified place of beneficial use.

Rights for water diversion and use established prior to 1903 for surface water or prior to 1935 for groundwater can be established by filing a “diligence claim” with the Division. Such claims are subject to public notice and judicial review and may be barred by court decree in some areas of the state.

All other rights to the use of water in the State of Utah must be established through the appropriation process administered by the Division of Water Rights. The steps to this process for an “Application to Appropriate Water” are as follows:

- An Application to Appropriate Water is filed with the Division.
- The application is advertised and protests may be received and a hearing may be held.
- The State Engineer renders a decision on the application based upon principles established in statute and by prior court decisions.
- If the application is approved, the applicant is allowed a set period of time within which to develop the proposed diversion and use water. When the diversion and use are fully developed, the applicant retains the services of a professional engineer or land surveyor who files “proof” documentation with the Division showing the details of the development.
- Upon verification of acceptably complete proof documentation, the State Engineer issues a Certificate of Appropriation, thus “perfecting” the water right.

Many areas of the state are administratively “closed” to new appropriations of water. In those

areas, new diversions and uses of water are established by the modification of existing water rights. Such modifications are accomplished by the filing of “change applications.” These applications are filed and processed in a manner very similar to that described above for Applications to Appropriate Water.

Water appropriation issues in specific geographic areas of the state are often administered using policies and guidelines designed to address local conditions. These policies and guidelines are generally developed for all or part of a defined drainage basin.

The Division of Water Rights is the state agency that regulates the appropriation and distribution of water in the State of Utah. Throughout the United States, the federal government generally acquires water rights under state law. For instance, the United States has numerous stockwatering rights under state law on BLM and national forest lands. The United States has also received partial decrees for state water rights for domestic, irrigation and other uses, such as wildlife, commercial, power, and recreation for Forest Service lands and partial decrees for water uses associated with irrigation on BLM lands. In addition, the United States typically acquires water rights for federal reclamation projects under state law.

In recent years, there has been significant discussion regarding acquisition of water rights by federal land management agencies for livestock grazing, wildlife and other authorized purposes. Some argue the water rights should be in the name of the federal agency. Others assert water rights should be perfected under the name of the permit holder or authorized user.

Federal Reserved Water Rights

In addition to water rights appropriated through the State Engineer's office, certain federal agencies may also acquire water rights for their primary purposes as described in their enabling legislation. These rights are known as "federal reserved water rights" and may be created when federal lands are withdrawn from the public domain for national parks, wildlife refuges, national forests and other specific uses.

Federal reserved water rights are different from state appropriated water rights. They may apply to instream and out-of-stream water uses, may be created without actual diversion or beneficial use, are not lost by non-use, and have priority dates established as the date the land was withdrawn. Another important aspect of federal reserved water rights is they are limited to the minimum amount of water reasonably necessary to satisfy both existing and foreseeable future uses of water for the primary purposes for which the land is withdrawn. All other water rights for federal purposes must be obtained under state law.

Federal reserved water rights are a judicial creation with the United States Supreme Court first recognizing reserved water rights in the 1908 *Winters v United States* case. Since that time there have been numerous court actions further defining applicable law. Most recently, the State of Utah and federal agencies have chosen to employ a negotiated approach rather than engage in expensive and often contentious litigation. Negotiated agreements have been reached for Zion National Park, Rainbow Bridge, Hovenweep, Cedar Breaks, and Timpanogos Cave National Monuments; and for the Golden Spike National Historic Site. Negotiations are currently underway for Bryce Canyon National Park.

Need for Management Change

1. Adequate water needs to be developed to meet the diverse current and future needs of the County. Federal, state and local entities need to coordinate and cooperate in the preservation and development of water resources in the County

2. Water related issues need to be coordinated between federal, state, local and private stakeholders.
3. Federal, state and local entities need to coordinate definitive resolution of federal reserved water rights.
4. The State of Utah needs to resolve issues regarding ownership of water rights on federal lands for wildlife, livestock and other authorized purposes.
5. Increasing basal areas and unhealthy tree densities, conifer encroachment and progression of invasive species diminish water resources in the County; and land managers need to manage for historic forest and sagebrush semi-desert grassland conditions in order to optimize hydrologic function and land health.
6. Failure of land managers to maintain historic vegetative communities has resulted in a loss of water resources which needs correction.

Desired Future Conditions

Juab County Desires:

1. Adequate water is developed to meet the diverse current and future needs of the County.
2. Existing water resources be augmented and historic resources be restored through appropriate timber harvests, restoration of at least 2% annually of Class II and Class III pinyon/juniper woodlands to sagebrush/grassland habitats, and control of invasive weeds.
3. Water related issues are coordinated with the County and managed consistent with the This RMP
4. Federally reserved water rights be limited to the minimum allowed by an entity's enabling legislation.
5. Federal, state and local entities coordinate definitive resolution of federal reserved water rights consistent with the provisions of this RMP.
6. The State of Utah develops definitive resolution regarding ownership of water rights on federal lands for wildlife, livestock and other authorized uses.
7. Irrigation rights be preserved to the maximum extent allowed by law.

Findings, Policies, Goal & Objectives

Finding: Water is a scarce resource and needs to be developed to the maximum extent possible to promote productive and enjoyable harmony between man and his environment.

Policy: Water is a vital component in almost all aspects of the environment, and water development is prioritized over other multiple use/sustained yield activities unless otherwise approved by the Commission.

Finding & Policy: Additional water needs to be developed, to the maximum extent practical and in accordance with Utah water law.

Policy: Water related issues shall be coordinated with the County and managed consistent with this RMP to the maximum extent allowed by law.

Goal & Objective: Resolve issues associated with federal reserved water rights in accordance with law and consistent with this RMP.

Goal & Objective: Resolve issues associated with ownership of water rights on federal lands for wildlife, livestock and other authorized uses.

Finding: Federal agencies in the County were created subject to the historic climatic conditions of the area, and no additional water resources are needed unless approved by the Commission.

Policy: Unless new water developments are created upstream from federal reservations after January 1, 2017, the natural hydrologic process provides the necessary resources to achieve their primary purposes.

Finding: The existing system of water right appropriation and adjudication is adequate for privately held water rights.

2.5.2.2 Irrigation

Current Setting

In July 1847, Utah's pioneers arrived in the arid West from their rainy roots in the East. One of their initial tasks was to divert water from the Salt Lake Valley streams for irrigation use. They realized that irrigation systems were the key to growing crops and surviving in this desert land. As additional people arrived in the harsh climate, scouts were sent out to survey undeveloped land and identify potential water sources before new areas could be settled. Once it was determined that there was water for irrigation, people established self-sufficient agricultural communities and set up "water rights." the County's settlements were formed under this pattern.

An irrigation system must include a water source, a conveyance system and some way to distribute the water to the crops. The source of water may be a reservoir, pond, well, stream or river. A reservoir or pond is a more reliable source of water because it can be managed to retain a desired amount of water. Rivers and streams are more susceptible to fluctuations in weather patterns. In the western United States, there is usually plenty of water running in streams and rivers during the spring, but not nearly enough for crops in the summer and fall. If an irrigation system has some storage capacity, such as a reservoir, water resources may be more easily controlled throughout the year.

The conveyance system allows water to be transferred from a water source to the place of use. This can be achieved with canals, ditches, pipelines or any combination of these. Ditches and canals are usually open to the air and are more susceptible to seepage (leaking) and evaporation than pipes. A ditch or canal can be unlined or lined with concrete, clay or impermeable membranes. Lined canals are much more efficient than unlined canals because they prevent water from seeping into the earth. Irrigation systems are necessary in the County and are a vital part of the area's socio-economic stability

There are two basic types of agricultural irrigation systems: flood and sprinkler. Flood irrigation consists of releasing water over the surface of the land to flood the area. Flood irrigation is the

oldest form of irrigation and can be used for any crop. Ideally, the land is slightly sloped, but level enough for the water to distribute evenly over the surface. The more level the land, the more efficient the flooding. On average, flood irrigation systems in Utah have efficiencies of roughly 35 to 55 percent. These efficiencies take into account the reservoirs, canals and ditches that transport the water to the field, and not just the time when the water is soaking into the plant roots. Most of the inefficiencies in the flood irrigation systems come from evaporation loss and water soaking into the soil in canals and ditches.

Sprinkler irrigation systems utilize pipes and sprinklers to distribute water to the desired area and are usually more efficient than flood irrigation systems. On average, agricultural sprinkler systems in Utah are about 60 percent efficient. But sprinklers are more susceptible to wind than flood systems and can have much lower efficiencies in windy conditions. As technology improves, irrigation systems are becoming increasingly efficient.

The County contains approximately 333,000 acres in farms or ranches with an average size of about 1,650 acres. The County has about 22,000 acres in cropland which are irrigated. Sprinkler irrigation has been an important part of Utah's agricultural production since the early 1950s. About 40% of Utah's 1.3 million irrigated acres are watered with sprinklers, including hand move, wheel move, center pivot and other types. Although many smaller ponds and reservoirs exist, Yuba Lake, Chicken Creek Reservoir and Mona/Current Creek Reservoir are the primary irrigation storage facilities in the County.

Need for Management Change

1. Irrigation is part of the County's custom, culture and heritage and is vital to community and socio-economic stability. Irrigation needs to be preserved, improved and enhanced.
2. Land management practices need to support preservation, improvement and enhancement of irrigation resources.
3. Land managers need to recognize irrigation as a cultural resource and take management actions on their lands that will result in preserved, improved and enhanced irrigation.
4. Land managers need to implement avoidance, minimization and mitigation techniques and best management practices to support irrigation while allowing appropriate multiple use/sustained yield activities to proceed.

Desired Future Conditions:

Juab County Desires:

1. Irrigation be preserved, improved and enhanced and federal land managers support preservation, improvement and enhancement of irrigation on private lands through appropriate actions on federal lands.
2. Irrigation be recognized a cultural resource and management actions be taken that will result in preserved, improved and enhanced irrigation.
3. Land managers implement avoidance, minimization and mitigation techniques and best management practices to support irrigation while allowing appropriate multiple use/sustained yield activities to proceed.

4. Land managers recognize the County is the primary headwaters of the Sevier River and actions in the County impact numerous activities downstream.
5. Unimpeded and efficient flow of current and future irrigation waters across federal lands.
6. Appropriate irrigation related resources be added to the County's list of historic/cultural resources and landmarks.
7. Removal of encroaching pinyon/juniper woodlands, undesirable riparian vegetation, and cheatgrass which negatively impact water quality, water quantity and irrigation resources in the County and for downstream users.
8. Lands are managed to increase water development and resources.

Findings, Policies, Goals & Objectives

Finding: Irrigation was one of the first beneficial uses for water resources when the County was settled and has become more efficient over the years. Decline of ecosystem health during the last 50 years – especially on federal lands - is a result of failures to implement active management rather than a result of limited human influences associated with multiple use/sustained yield projects.

Finding & Policy: Properly designed human influences including dam construction, irrigation projects, water development, culvert installation, road maintenance and road development improve water quality, water quantity and ecosystem health.

Policy: The County opposes plans and/or policies on federal lands that limit a) development of or b) access to water and irrigation resources.

Finding & Policy: Irrigation structures, water and sources are a significant historic, cultural, socio-economic, and ecologic resource and shall be protected, improved and enhanced to the maximum extent allowed by law.

Finding & Policy: Consistent with ecologic site descriptions and based on a 10 year rolling average, land managers shall restore 25% of Class II and Class III pinyon/juniper woodlands to desirable native and/or non-native sagebrush/grassland communities in order to protect, preserve, improve and enhance irrigation resources in the County.

Policy: The County will cooperate and coordinate with water companies, irrigation companies, conservation districts, state agencies, federal agencies and other partners to manage and develop current and future irrigation and water resources.

Policy: NEPA analysis for projects that impact irrigation resources shall include detailed socio-economic impacts to irrigators, especially small farmers, water companies and municipalities. Provisions of the Regulatory Flexibility Act will serve as a model for such analysis.

2.5.3 Surface Waters

Current Setting

Almost 75% of the County is federal land, and most of the 17% private lands are concentrated in valley bottoms and along water courses. Consequently, almost all surface water and the majority

of watersheds are located on federal land. The County is home to 5 major sub basin watersheds: Utah Lake, Lower Sevier, Southern Great Salt Lake, Tule Valley and Hamlin-Snake Valleys. Three of the watersheds in the western portion of the County develop surface waters which flow north and eventually terminate at the Great Salt Lake. The Lower Sevier accepts water from the Sevier River basin from as far away as the Dixie National Forest and transfers it to its terminus at Sevier Lake in Millard County. The Utah Lake watershed collects water from the western side of Mount Nebo and drains into Utah Lake primarily via Current Creek.

Surface water can be generally described as a river, stream, waterbody, reservoir, lake, pond, or spring. Rivers and streams in natural channels are classified as being perennial, intermittent, or ephemeral. The County has many small rivers, streams and creeks, all of which are important. The most prominent watercourses include the Sevier River, Chicken Creek, Right Fork of Salt Creek, and Current Creek and their tributaries. These streams are fed mainly by snowmelt and groundwater discharge from nearby mountains and are augmented by rainfall, especially during the late summer monsoon season. Rainfall in the County is not adequate for the most commonly grown crops and is generally the limiting factor for vegetative cover on state and federal lands. Yuba Lake and Mona Reservoir are the major irrigation storage facilities in the area. In addition, many smaller reservoirs and ponds have been built in the area, but they are used mainly for water regulation, rather than large scale storage.

Over the past 50 years ecological conditions associated with many of the County's surface waters have declined. The declines are particularly pronounced on federal lands where pinyon/juniper woodlands have been allowed to encroach on more desirable sagebrush/grassland communities, where seeding maintenance and vegetation projects have been neglected and where undesirable vegetation in and near watercourses have not been controlled. Often, these conditions occur in sandier soils where sparse vegetative cover is inadequate to prevent soil erosion accompanying intense precipitation events. Currently Creek, Salt Creek, and Chicken Creek are currently assessed as impaired.

Land manager often incorrectly cite human influences (dam construction, irrigation projects, poorly designed culverts, livestock grazing, roads, farming/ranching practices, mining, recreational use, etc.) as the primary cause for the ecologic decline. However, much of the decline is attributable to loss of historic sagebrush/grassland vegetative communities, especially in lower elevations with sandier soils.

Most human use of the water from rivers, streams, and waterbodies is for agricultural purposes. Other beneficial uses are limited to recreational pursuits with fishing in the mountain streams being one of the most popular.

Historically numerous small springs, seeps and mesic areas were widely scattered across the County, often located on valley margins or mountain blocks but extended throughout various landforms. The small springs and seeps were extremely important for their riparian values, as wildlife habitat, and as drinking water for domestic livestock and wildlife.

Many of these springs have dried over the last several decades as a result of encroaching pinyon/juniper woodlands and invasion of undesirable vegetation in and near watercourses. Where pinyon/juniper woodlands in neighboring counties have been restored to sagebrush/grassland communities, the springs and seeps are returning and providing water for a variety of wildlife. When needed, the water resources are protected from livestock and wildlife trampling by enclosures and off stream watering practices.

Watersheds on public lands often supply water to communities in the County. Surface water is generally used for irrigation purposes, but watershed health and surface water quality and quantity can impact groundwater resources that are used for municipal domestic water supply. Actions on public lands in these watersheds are likely to affect such factors as water quality, water quantity, erosion rates, and groundwater recharge. There is currently a high degree of interest regarding surface water and other water resources.

Need for Management Change

1. During the last few decades land managers have not implemented active management actions to preserve, enhance, improve or optimize surface water resources. Federal, state and local entities need to cooperate and coordinate surface water management to optimize water quantity, quality and beneficial use.
2. Land managers need to recognize authorities granted under the Clean Water Act to local governments in managing surface waters within their jurisdictions. Federal agencies are subject to and must comply with state, tribal, interstate and local requirements respecting the control and abatement of water pollution. (CWA (33 U.S.C. § 1323)). The CWA's regulations (40 C.F.R. part 131) describe state responsibilities for developing, reviewing, revising, and approving water quality standards, which may be more stringent than those required by federal regulation and include designation of uses of waters, establishment of water quality criteria, and adoption of an anti-degradation policy.
3. Land managers need to comply with cooperation and coordination requirements of federal laws, regulations, rules and manuals (e.g. BLM Manual 7240 and Forest Service Manual 2532) regarding state and local direction of water resource management issues.
4. Surface waters in the County need to be re-evaluated to verify the designated beneficial use is consistent with hydrologic and environmental conditions. Stream reaches identified as not meeting standards for cold water fisheries need to be reconsidered for classification as a warm water fishery.
5. Upland soil loss due to lack of desired vegetative ground cover needs to be addressed as the primary source of nonpoint pollution in the County.
6. Until such time as state and federal agencies can coordinate surface water management plans with the County, the provisions of this RMP need to control maintenance, mitigation, enhancement, and improvement of surface water resources in the County.

Desired Future Conditions

Juab County Desires:

1. Land managers preserve, enhance, improve or optimize surface water resources through active management, especially watershed restoration and improving desirable native and non-native vegetative ground cover.
2. The regulatory control of surface waters under the Clean Water Act needs to be recognized and implemented.
3. Land managers need to cooperate and coordinate in accordance with federal laws, regulations, rules, and manuals regarding state and local direction of water resource management issues.
4. Surface waters be re-evaluated to verify the designated beneficial use is consistent with hydrologic and environmental conditions. Stream reaches identified as not meeting standards for cold water fisheries need to be reconsidered for classification as a warm water fishery.
5. Upland soil loss due to lack of desired vegetative ground cover be recognized as the primary source of nonpoint pollution in the County.
6. The provisions of this RMP be accepted as the controlling maintenance, mitigation, enhancement, and improvement standard for surface water resources in the County, until such time as state and federal agencies coordinate surface water management and implementation plans with the County.
7. Invasion and encroachment of undesirable watercourse vegetation, pinyon/juniper woodlands and other undesirable species is recognized as negatively impacting surface waters to a much greater extent than human development and impacts from man.

Findings, Policies, Goals & Objectives

Finding: Statistically, human development is extremely limited on the 74% of the land in the County that is managed by federal agencies.

Finding: Land managers have not implemented active management to preserve, enhance, improve, or optimize surface water resources. Federal, state and local entities need to cooperate and coordinate surface water management to optimize water quantity, quality and beneficial use.

Goal: Maintain, improve or enhance surface water resources, while complying with applicable federal, state and local water quality standards.

Objective: Protect, restore and maintain the chemical, physical, and biological (ecological) services of surface waters to support multiple use/sustained yield resource management needs.

Objective: Protect, restore and maintain the hydrologic regime (i.e., timing, magnitude, recharge, duration, stream network/groundwater connectivity, temperature, and spatial distribution of peak, high, and low flows) of surface and groundwater, through management of vegetation in upland, riparian, aquatic, and wetland habitats.

Policy: Until such time as total maximum daily loads are determined for individual perennial, intermittent and ephemeral streams in the County, land managers shall control non-point source pollution, including sediment, by: a) optimizing desirable upland, riparian, aquatic, and wetland vegetation; b) restoring 25% of Class II and Class III pinyon/juniper woodlands to desirable sagebrush semi-desert grasslands, based on a 10 year rolling average; c) eliminating noxious weeds and undesirable watercourse vegetation; and d) using desirable non-native biological equivalents when soil retention and vegetative performance is better than native species.

Policy: Land managers shall comply with applicable federal law, and to the extent applicable under the provisions of the Clean Water Act (specifically 33 U.S.C. 1323), state, tribal, and local water laws and regulations.

Policy: The County shall coordinate, cooperate, and consult with federal, tribal, state, and local agencies, private landowners, and stakeholder organizations to foster a watershed-based approach to water resource stewardship.

Policy: Consistent with federal, state and local water quality programs, federal actions shall include at least one alternative that incorporates a science-based watershed approach for water quality protection and restoration, including assessment methods, monitoring and reduction of non-point pollution through vegetative restoration.

Finding: Modification and pollution of surface-water, wetlands, riparian habitats, seeps, and springs in the County are more influenced by vegetative cover, prescribed fire and wildland fire than by mitigated impacts from residential, commercial, and urban development, roadway and bridge construction, oil and gas development, livestock grazing, hydroelectric, wind and solar energy development, geothermal exploration and plant development, pipeline and transmission line construction, and other human activities.

Finding & Policy: New water developments are beneficial to all forms of life. In priority wildlife management areas new water developments shall be allowed if it is demonstrated, among other benefits, the improved water resources will benefit the prioritized species.

Finding: The County's watercourses provide naturally fragmented habitat for native Colorado River cutthroat trout and other cold-water species. Warm temperatures and high sediment loads restrict native cutthroat use of many stream segments for much of the year, and allow only limited connectivity between tributaries. The existing salmonid fish distribution and habitat conditions suggest the County streams may provide seasonal fish passage to tributaries, but may not support year-round cold water fish use.

Policy & Goal: Priorities for improving water quality in the County's watershed are: a) enhancement of desirable upland and riparian vegetative cover; b) elimination of undesirable vegetation, particularly near watercourses; and c) enhance channel bank vegetation, riparian forest buffers and herbaceous cover, streambank protection, and channel stabilization.

Policy: Prior to adopting best management practices for surface waters in the County, federal agencies shall coordinate proposed practices with the County and shall comply to the maximum extent allowed by law with the County's plans, policies and programs.

Finding: Forests, grasslands and rangelands are capable of producing high-quality water, especially when the ecosystems are healthy and functioning properly. Water quality is influenced by the pattern, magnitude, intensity, and location of land use and management activities. Excess sediment (turbidity and bedload), nutrients, and their resulting effects on water chemistry and aquatic habitats, are the most significant water quality issues resulting from land uses and management activities on the County's forests, rangelands and grasslands

Policy: Preventing negative water quality impacts is more efficient than attempting to restore the damage. To ensure water quality is protected, land managers shall develop procedures, methods, and controls, consistent with federal, state and local requirements, to address sedimentation and potential pollutants at their source. Implementation and monitoring of Best Management Practices (BMPs) is a fundamental basis of water quality management programs to protect, restore, or mitigate water quality impacts from activities on the County lands.

Policy: The County's policy for control of nonpoint source pollution is to a) enhance desirable vegetative cover wherever possible; b) apply appropriate adaptive management principles; and c) implement effective site specific best management practices.

Goal: Avoid, minimize or mitigate adverse effects to soil, water quality, and riparian resources that may result from prescribed or wildland fire.

Objective: Rehabilitate watershed features and functions damaged by wildland fire control and suppression related activities to avoid, minimize, or mitigate long-term adverse effects to soil, water quality, and riparian resources.

Objective: Avoid, minimize, or mitigate adverse effects to soil, water quality, and riparian resources by managing vegetative resources and upland sites to maintain desirable ground cover, maintain soil quality and control runoff to minimize the discharge of nonpoint source pollutants and maintain streambank and riparian area integrity.

Goal: Retain 40 percent ground cover after prescribed or wildland fire with recruitment to 60 percent ground cover before the first rainy season following the burn.

References:

Utah Statewide Nonpoint Source Pollution Management Plan, Utah Department of Environmental Quality, May 2014

National Best Management Practices for Water Quality Management on National Forest System Lands, United States Department of Agriculture Forest Service, April 2012

Federal Land Policy and Management Act of 1976 (FLPMA); 43 U.S.C. §§ 1701-1785).

Clean Water Act (CWA) of 1977 as amended.

Safe Drinking Water Act (SDWA) of 1974 (42 U.S.C. §§ 300f-300j).

Resource Conservation and Recovery Act of 1976 (RCRA) (42 U.S.C. § 6901 et seq.).

National Environmental Policy Act of 1969 (NEPA) (42 U.S.C. § 4321 et seq.).

2.5.3.1 Ditches & Canals

Current Setting

Ditches and canals are open waterways whose purpose is to carry water from one place to another. Canals generally refer to main waterways supplying water to one or more farms or distribution points. Ditches are smaller systems and convey water from farm entrances to irrigated fields. At times the nomenclature for ditches and canals is used interchangeably.

For thousands of years, farmers all over the world have used irrigation—diverting water from streams and rivers to water their fields. The Ancestral Puebloan in the Four Corners region irrigated small plots of corn, bean, and squash. But the Mormons settling in Utah were the first to use irrigation on a large scale in the American West. They established the first irrigation-based economy in the Western Hemisphere in modern times. One of the first things the settlers in Salt Lake Valley did in July 1847 was to dam City Creek so the overflowing waters would soften the soil, and they could plant potatoes. By 1865, approximately 1,000 miles of canals had been established in Utah.

In the last two decades of the 19th century, private companies attempted to replicate the early settler's irrigation techniques and established irrigation companies in an attempt to provide more land for agriculture. The attempts were met with limited success. In 1902, the U.S. Congress passed the Federal Reclamation Act and began building big dams in the West. The act encouraged the development of larger water storage and conveyance projects. The resulting dams, reservoirs and water pipelines allowed for bigger cities and larger agricultural, industrial, and recreation endeavors.

The County's development of canals and ditches paralleled that of other communities in Utah. Ditches and irrigation canals were dug in and around agricultural interests near communities and in outlying valleys. The small amount of private land and the rugged, remote nature of many of the federal lands limited the extent to which ditches and canals could be constructed. However, natural conveyance systems (riverbeds, creeks and streams) were used to transport water from natural sources and storage facilities to locations where it was regulated and allowed to enter the developed distribution system. Most populated areas of the County and associated agricultural activities had ditches and canals constructed early in the community's development, and they remained relatively unchanged for approximately 100 years. During these years ditches and canals served dual purposes of conveying irrigation water and providing an outlet for dispersing flood waters resulting from frequent high intensity storms common to the area.

In the latter third of the 20th century, improved techniques and construction methods led to the conversion of earth-lined ditches to lined canals and pipelines. Although more efficient in the use of water, the developments resulted in many historic ditches falling into disrepair and the loss of flood control capabilities. Many of the larger conveyance networks have remained operational and provide continued service, while many of the smaller facilities associated with individual farms and irrigation companies have been replaced by pipelines.

In Utah, like most parts of the arid West, water often has to be conveyed a long distance between the source and the place of use. Accordingly, there are numerous ditches, canals, and pipelines that cross one person's private property in order to convey water to another private party. The person using the ditch, canal, or pipeline generally has an easement, either by prescription or by

an express grant of easement. Whether prescriptive or express, the easement includes the right to maintain the ditch, canal, or pipeline.

Utah case law establishes that the easement holder has the right to enter upon the land of the other party in order to maintain, clean, and/or repair the ditch, canal, or pipeline--provided that the easement holder does not cause any unnecessary damage or create additional burdens on the land. Additionally, the easement holder has the right to improve the method of carrying the water; i.e., the easement holder generally has the right to convert an unlined ditch into a lined ditch, or convert an open canal to a pipeline.

The property owner cannot limit the easement holder's access to the easement for maintenance and repairs. For example, the property owner should not "fence out" the easement holder with locked gates, unless the property owner provides the easement holder with keys for the locks.

The underlying property owner also does not have the right to interfere with the easement holder's use of the easement. For example, the property owner cannot change the course of the ditch or canal without the easement holder's consent. The property owner also cannot construct facilities on or in the easement that would restrict the easement holder's access to or use of the easement.

In the late 1800s and early 1900s several laws were enacted granting ditch and water companies easements for their conveyance systems across federal lands. Given the distances between water sources and areas of beneficial use, many of the ditches and canals were located in natural water courses. Those watercourses continue to be use today as primary conveyance systems connecting lakes and reservoirs with private irrigation systems.

Need for Management Change

1. Ditches and Canals need to be maintained in order to perform dual functions of water conveyance and flood control.
2. Where ditches and canals exist on federal lands, appropriate authorizations need to be executed to preserve their function.
3. Ditches and canals need to be recognized as important historic and current cultural resources.
4. Ditches and canals need to be preserved, enhanced and improved to benefit man and his environment.

Desired Future Conditions

Juab County Desires:

1. Existing ditches be preserved, enhanced and improved to permit the unimpeded flow of water.
2. Ditches and canals be recognized as important cultural resources and their function be preserved, enhanced and improved.

Findings, Policies, Goals & Objectives

Finding: Ditches and canals were an important component of settling the County and continue to have functional, historic and cultural value.

Finding: Ditches and canals are generally private property rights managed and controlled by individuals or private irrigation companies.

Policy: the County supports the continued safe and efficient use and maintenance of ditches and canals in accordance with law and private property rights.

Policy: Ditch and canal use, maintenance and improvements shall be protected in accordance with existing law and best management practices. Consistent with law, safety and efficiency, the County supports the unimpeded flow of water in ditches and canals.

Policy: Ditches and canals shall be managed for safety, efficiency and conservation.

Policy: The County supports efforts by irrigation companies, water conservancy districts and others to protect, facilitate and improve the efficient supply of water.

Policy: Ditches and canals shall be protected, used and managed in compliance with law.

Policy: Private ditches and canals may be used for flood control when the need exists.

Finding: U.C.A. 73-5-7 authorizes the State Engineer to inspect canals and ditches and order necessary repairs to protect public safety.

Finding & Policy: The State Engineer is required to inventory all open, human made water conveyance systems prior to July 1, 2017. The State Engineer's inventory is incorporated by reference.

References

<http://ilovehistory.utah.gov/topics/water/irrigation.html>, September, 2016

Jeff Gittins, <http://utahwaterrights.blogspot.com/2011/04/does-easement-for-ditch-include-right.html>, September 8, 2016

2.5.3.2 Rivers & Streams

The County is traversed by numerous small rivers, streams and tributaries that eventually flow into the Sevier River.

The Sevier River flows from Yuba Lake to Millard County and has its origins in the Dixie National Forest near Panguitch Lake and near the Kane County/Garfield County line. Chicken Creek is a major tributary in the County that feeds into the Sevier River. Many minor tributaries also augment the Sevier River's flow.

Currant Creek originates in the western slope of Mount Nebo and flows through Mona Reservoir to its terminus at Utah Lake. Currant Creek is also augmented by numerous smaller tributaries.

The Sevier River and Currant Creek are fed from mountain snowmelt and runoff. Additionally, they receive major flow from annual late summer thundershowers. Rivers and streams make up

a very small percentage of the land base but are influenced by conditions in their much larger watersheds. There are no known pollution point sources that are discharging directly into the County's rivers and streams. Pollution in the County is primarily erosional sediments and other conditions resulting from insufficient or undesirable vegetative ground cover. Discharge from human developments is controlled by a) implementation of storm water regulations applied to municipalities and communities or b) implementation of best management practices on sparsely placed developed uses of federal lands.

Need for Management Change

1. More aggressive vegetative management needs to be implemented throughout the entire area encompassed by the County's watersheds to improve the County's rivers and streams and in their associated watersheds to optimize and protect water resources.
2. Land managers need to be consistent with the County's plans, programs and policies for resources impacting rivers and streams, including but not limited to actions for vegetation, water quality, pinyon/juniper reduction, fish & wildlife, livestock grazing, special status species, and soil resources.
3. Wild, scenic and recreational river evaluations and designations need to be consistent with the County's criteria, plans, programs and policies.
4. Increased access needs to be provided to rivers and streams on public lands, including but not limited to access for law enforcement and emergency medical services, solid waste collection services, human waste collection services, recreation, and for the general public.
5. Impaired waters in the Sevier River drainage need to be reclassified to include only those reaches and tributaries with native targeted fish populations and conditions suitable for current designations.
6. Class II and Class III pinyon/juniper woodlands need to be replaced with desirable vegetative communities in the entire watersheds to reduce erosion and impacts to the County's rivers and streams.
7. Additional structural (dams, reservoirs, impoundments, etc.) and non-structural improvements need to be constructed to improve the efficiency of the County's rivers and streams.
8. Transplantation of beavers needs to be limited to areas approved by the Commission and that will not impede the free flow of water.
9. Undesirable vegetation and noxious weeds need to be eradicated from all of the County's public land rivers and streams and their associated riparian zones.

Desired Future Conditions

Juab County Desires:

1. The beneficial use of the County's rivers and streams be maximized through protection and development of water quantity and quality and through more aggressive vegetative management in watersheds and other areas impacting rivers and streams.
2. Land managers are consistent with the County's plans, programs and policies for resources impacting rivers and streams, including but not limited to actions for vegetation, water quality, pinyon/juniper reduction, fish & wildlife, livestock grazing, special status species, and soil resources to the maximum extent allowed by law.
3. Wild, scenic and recreational river evaluations and designations are consistent with the County's criteria, plans, programs and policies.
4. Increased access for law enforcement and emergency medical services, solid waste collection services, human waste collection services, recreation, and the general public is provided to the County's rivers and streams, especially on public lands.
5. Impaired waters in the Sevier River watershed are reclassified to include only those tributaries with native targeted fish populations and conditions suitable current designations.
6. Class II and Class III pinyon/juniper woodlands are reduced by 25% on a rolling 10 year average and replaced with desirable vegetative communities in the County and in the upstream watersheds to reduce erosion and impacts to the County's rivers and streams.
7. Additional structural (dams, reservoirs, impoundments, etc.) and non-structural improvements are constructed to improve the efficiency of the County's rivers and streams.
8. Transplantation of beavers are limited to areas approved by the Commission and that will not impede the free flow of water.
9. Undesirable vegetation and noxious weeds are eradicated from all of the County's public land rivers and streams and their associated riparian zones.

Findings, Policies, Goals & Objectives

Finding & Policy: The County's water resources are downstream facilities that are significantly impacted by upstream activities. Land managers in outside of the County whose upstream activities affect the County's waters shall include impacts to the County in cumulative analysis.

Finding: The County's rivers and streams are important natural resources and are a vital component of the County's health, safety, welfare, custom, culture, heritage, community viability and socio-economic stability.

Policy, Goal & Objective: Land managers shall recognize the County's jurisdictional role over rivers and streams and shall comply with the County's plans, programs and policies to the maximum extent allowed by law.

Policy & Implementation Action: The beneficial use of the County's rivers and streams shall be maximized through protection and development of water quantity and quality and through more aggressive vegetative management in the County's and upstream watersheds and other areas impacting rivers and streams.

Policy: Land managers shall be consistent with the County's plans, programs and policies for resources impacting rivers and streams to the maximum extent allowed by law, including but not limited to actions for vegetation, water quality, pinyon/juniper reduction, fish & wildlife, livestock grazing, special status species, and soil resources.

Policy: Wild, scenic and recreational river evaluations and designations shall be consistent with the County's criteria, plans, programs and policies.

Policy, Goal & Objective: Increased access for law enforcement, emergency medical services, solid waste collection services, human waste collection services, recreation, and the general public shall be developed for the County's rivers and streams, especially on public lands.

Policy & Objective: Impaired waters in the Sevier River watershed will be appropriately reclassified to include only those tributaries with native targeted fish populations and conditions suitable for designated uses at the earliest possible date.

Policy, Goal & Objective: Class II and Class III pinyon/juniper woodlands shall be reduced by 25% on a rolling 10 year average and replaced with desirable vegetative communities to reduce erosion and impacts to the County's rivers and streams. This includes areas outside the County that are part of upstream watersheds, consistent with local governments' plans, programs and policies for those particular areas.

Policy, Goal & Objective: Additional structural (dams, reservoirs, impoundments, etc.) and non-structural improvements shall be constructed to improve the efficiency of the County's rivers and streams.

Policy: Transplantation of beavers is limited to areas approved by the Commission and that will not impede the free flow of water.

Policy, Goal & Objective: Undesirable vegetation and noxious weeds shall be eradicated from all of the County's public land rivers and streams and their associated riparian zones. Land managers shall reduce undesirable vegetation and noxious weeds within 200 feet of the County's live rivers and streams by 25% based on a rolling 5 year average.

2.5.3.3 Flood Plains & River Terraces

Introduction

A floodplain or flood plain is an area of land adjacent to a stream or river that stretches from the banks of its primary channel to the topographic elevation marking the historic high water line and encompasses an area that experiences flooding during periods of high discharge. It includes the floodway, which consists of the stream channel and adjacent areas that actively carry flood flows downstream as well as the flood fringe. Floodplains are overflow areas which are inundated by flooding, but which do not necessarily experience a strong current. Flood plains are made by river meanders eroding sideways as they travels downstream. When a river breaks its

banks and floods, it leaves behind layers of material called alluvium. These layers gradually build up to create the floor of the flood plain. Floodplains generally contain unconsolidated sediments comprised of sand, gravel, loam, silt, and/or clay, often extending below the bed of the stream. These accumulations often create aquifers, and the water drawn from them is usually of a higher quality when compared to the water in the river.

Geologically ancient floodplains are often represented in the landscape by older deposits known as river terraces. These terraces are old floodplains that remain relatively high above the present floodplain and indicate former courses of a stream. In simple terms, a floodplain is an area near a river or a stream which floods during high water, and river terraces are benches or steps that extend along the side of a valley and represents a former level of the valley floor.

The floodplain during its formation is marked by meandering streams, oxbows, wetlands or small pools and is occasionally completely covered by water. When the drainage system has ceased to act or is entirely diverted for any reason, the floodplain may become a level area of great fertility, similar in appearance to the floor of an old lake. The floodplain differs, however, because it is not altogether flat. It has a gentle slope downstream, and often, for a distance, from its exterior to its center.

Floodplains are a natural place for a river to dissipate its energy. Meanders form over the floodplain to slow down the flow of water, and when the channel is at capacity water spills over the floodplain where it is temporarily stored. In terms of flood management the upper part of the floodplain (piedmont zone) is the area where natural flood water control begins. Channelization in this zone may increase velocities and have significant impact on downstream flooding.

Floodplains can support particularly rich ecosystems (known as riparian zones), both in quantity and diversity. A floodplain can contain more than 100 times as many species as a river. Wetting of the floodplain soil releases an immediate surge of nutrients, including those left over from the last flood and those that result from the rapid decomposition of organic matter accumulated in the floodplain. Microscopic organisms thrive, and larger species enter a rapid breeding cycle. Opportunistic feeders (particularly birds) move in to take advantage. The production of nutrients peaks and falls quickly; however the surge of new growth endures for some time. This makes floodplains particularly valuable for wildlife and agriculture.

Current Setting

Historically, towns in rural Utah have been built in close proximity to rivers and their floodplains, where water was readily available for irrigation and landforms were conducive to agriculture. The County is no exception. Communities in the County have been located near rivers. Early on, pioneers recognized the problems associated with locating homes and structures too close to flood prone rivers, but in recent years an increased desire for recreational homes and riverfront property has resulted in added pressure to make floodplains available for development.

In cooperation with local government, the Federal Emergency Management Agency (FEMA) manages development in flood prone areas through the National Flood Insurance Program

(NFIP). The program typically focuses on delineation of the 100-year flood zone, also known as the Special Flood Hazard Area. Where a detailed study of a waterway has been done, the 100-year floodplain will also include the floodway, the critical portion of the floodplain which includes the stream channel and any adjacent areas that must be kept free of encroachments that might block flood flows or restrict storage of flood waters.

In order for flood-prone property to qualify for government-subsidized insurance, a local community must adopt an ordinance that protects the floodway and requires that new residential structures built in Special Flood Hazard Areas be elevated to at least the level of the 100-year flood. Commercial structures can be elevated or flood proofed to or above this level. In some areas without detailed study information, structures may be required to be elevated to at least two feet above the surrounding grade. Many State and local governments have, in addition, adopted local floodplain construction regulations which are more restrictive than those mandated by the NFIP.

Communities in the County generally participate with FEMA in managing floodplains and often adopt more stringent requirements for human development in the floodplain. However, maps are not always accurate and alterations of the watershed upstream of the point in question can potentially affect the ability of the watershed to handle water, and thus potentially affects the levels of the periodic floods. But the maps are rarely revisited, and are frequently ineffective at accurately predicting areas of flooding or flood levels. Notwithstanding, developments in floodplains and on river terraces on private lands are being adequately managed through local planning and zoning ordinances and local building codes.

Impacts to floodplains and river terraces on developed state and federal lands are similar to controls used in community and private settings. Best management practices are employed to mitigate any detrimental effects, so limited human developments associated with authorized multiple use activities have little to no effect on floodplains and river terraces.

Large expanses of undeveloped federal land in the County are not afforded similar protection. Passive land management, conversion of historical vegetative communities to Class II and Class III conifer woodlands, increased bare ground, altered fire regimes, and other factors have resulted in modified watersheds and degraded upland conditions. Some estimates indicated uplands comprise as much as 95% of the federal lands not occupied by water bodies in the County. Degraded conditions in dominant uplands, largely as a result of encroaching conifers, have resulted in increased surface flows and expanding flooding in remote floodplains. Sparsely vegetated sandy soils have responded with increased erosion, downcutting of primary channels and steepening of banks. These unstable conditions are characteristic of formative floodplains that have not reached equilibrium.

Impacts associated with upland induced, unstable floodplains are exacerbated by natural hydrologic cycles typical of the Great Basin and the County. Flooding generally occurs from two distinct events: spring runoff from melting snowpacks and intense summer thundershowers. While either event can trigger flooding, the dynamics are different. Snowmelt is a relatively predictable occurrence dependent on the amounts of winter snowpack and the timing of rising spring temperatures. Large accumulations of snowpack melting in the spring contributes to some localized flooding, usually in the larger drainage basins. In contrast, summer cloudbursts cause site specific and localized flooding events in otherwise dry washes and canyons. Both kinds of

events can have profound impacts on the floodplains and hydrologic systems. But the thunderstorms often occur in soils that are more susceptible to erosion and create incised channels without functioning floodplains.

Wildland and prescribed fire are secondary causes of flooding. When vegetation is burned, soils are exposed to erosion. Debris flows below fire scars is a considerable risk until vegetation is reestablished. Planning for revegetation through seeding and other mitigation efforts after fires are addressed in resources management documents and in agency practices.

For the most part, flooding is a natural process that supports channel maintenance, ecological processes, and riparian vegetation. However, flooding in areas without properly functioning floodplains has the opposite effect as nature tries to reach equilibrium by widening banks and decreasing the hydrologic grade.

Need For Management Change

1. Floodplains, especially on undeveloped federal lands, need to be restored to properly functioning conditions.
2. Coordinated, strategic planning is needed to outline a plan of attack to restore uplands, floodplains and vegetation and to improve rangeland health.
3. Structural and non-structural improvements need to be made to degraded watercourses and floodplains.
4. The role of upland watershed management needs to be recognized and incorporated in floodplain management and restoration.
5. Structural and non-structural improvements need to be made to degraded uplands to a) replace Class II and Class III pinyon/juniper woodlands with desirable historic vegetative communities, b) reduce runoff and c) reduce the amount of bare ground.
6. Check dams need to be installed to arrest downcutting and to restore natural stream grade.
7. Active management and restoration projects on federal lands need to be implemented to restore sinuosity, vegetation and floodplain function which mimic the natural hydrologic system.
8. Long term hydrologic function needs to be prioritized over short term ground disturbance.
9. Analysis/approval processes for floodplain restoration need to be simplified and authorized as categorical exclusions under NEPA. Corps of Engineers and other federal agency involvement needs to be reduced to the minimum required under law.

Desired Future Conditions

Juab County Desires:

1. Floodplains, especially on undeveloped federal lands, are restored to properly functioning conditions.

2. Coordinated, strategic planning is implemented to outline a plan of attack to restore uplands, floodplains and vegetation and to improve rangeland health.
3. Structural and non-structural improvements are made to degraded watercourses and floodplains.
4. The role of upland watershed management is recognized and incorporated in floodplain management and restoration.
5. Structural and non-structural improvements are made to degraded uplands to a) replace Class II and Class III pinyon/juniper woodlands with desirable historic vegetative communities, b) reduce runoff and c) reduce the amount of bare ground.
6. Check dams and restoration projects are implemented to arrest downcutting and to restore natural stream grade and sinuosity.
7. Active management and restoration projects on federal lands are implemented to restore sinuosity, vegetation and floodplain function which mimic the natural hydrologic system.
8. Long term hydrologic function is prioritized over short term ground disturbance.
9. Analysis/approval processes for floodplain restoration are simplified and authorized as categorical exclusions under NEPA. Corps of Engineers and other federal agency involvement are eliminated or reduced to the minimum required under law.
10. Land managers restore to properly functioning condition at least 1% or 10 miles of non-functioning floodplains per year.

Findings, Policies, Goals & Objectives

Policy: Long term hydrologic function is prioritized over short term ground disturbance.

Finding: Floodplains, especially on undeveloped federal lands, need active structural and non-structural modifications to restore properly functioning and desirable conditions.

Finding: Upland vegetative conditions have a significant impact on floodplain function in any given watershed.

Finding & Policy: A coordinated, strategic plan recognizing the condition of the County's floodplains, especially on undeveloped federal land, does not exist. Land managers shall include a coordinated floodplain restoration and improvement program in agency resource management plans during the next regular planning cycle or prior to January 2021, whichever occurs first.

Finding: Structural and non-structural deficiencies in floodplains, river terraces and associated watersheds are present in the County, especially on undeveloped federal lands and threaten a) harmony between man and his environment, b) resources and resource uses, c) enjoyment of resources by current and future generations, d) rangeland health, e) water quality, and f) the County's custom, culture, heritage, and socio-economic stability.

Policy: Land managers, especially of undeveloped federal lands, shall implement an active program of structural and non-structural improvements to deficient floodplains, river terraces and associated watersheds - including uplands - to protect a) harmony between man and his

environment, b) resources and resource uses, c) enjoyment of resources by current and future generations, d) rangeland health, e) water quality, and f) the County's custom, culture, heritage, and socio-economic stability.

Policy, Goal & Objective: Analysis/approval processes for floodplain restoration shall be simplified to the maximum extent allowed by law and shall be authorized as categorical exclusions under NEPA wherever possible. Corps of Engineers and other federal agency involvement shall be eliminated or reduced to the minimum required under law.

Goal & Objective: Active floodplain management and restoration, especially on undeveloped federal lands, are implemented to restore sinuosity, vegetation and floodplain function which mimic natural hydrologic conditions on 25% of the non-functioning floodplains prior to 2040.

Policy: Land managers, especially of undeveloped federal lands, shall restore to properly functioning condition at least 1% or 10 miles of non-functioning floodplains per year. Floodplain restoration shall include structural and non-structural topographic and vegetative improvements which mimic natural, stable conditions. Check dams and restoration projects that arrest downcutting and/or restore natural grade, cross section and sinuosity shall be augmented with appropriate native and non-native vegetation.

Finding & Policy: Land managers in the County have little if any control over climate change or impacts attendant thereto. Land managers shall prioritize management actions on activities that improve the productivity of resources and resource uses under their management control. Restoration of invasive conifers to desirable vegetative communities, maintenance of seedings, vegetation projects to reduce bare ground, appropriate use of prescribed fire and response to wildfire, structural projects to restore floodplains to historical topographic and ecological conditions and other pro-active solutions shall be implemented prior to prescriptive actions associated with climate change.

Policy, Goal & Objective: Based on a 10 year rolling average and consistent with ecologic site descriptions, land managers shall restore 25% of Class II and Class III pinyon/juniper woodlands to desirable sagebrush/grassland vegetation communities.

Finding: For some agencies, as much as 95% of the land is classified as upland. Failure to restore uplands to desirable vegetative conditions prevents reasonable restoration of non-functioning floodplains in the associated watershed.

Policy: Where land managers are unable to restore 1% or 10 miles of non-functioning floodplain due to associated substandard upland conditions, floodplain restoration may postponed for up to three years.

References

<https://en.wikipedia.org/wiki/Floodplain>, February 2017

2.5.3.4 Dry Washes & Ephemeral Streams

For this RMP, dry washes and ephemeral streams are defined as: a watercourse or portion of a watercourse which flows briefly in direct response to precipitation in the immediate vicinity, and whose channel is dry for significant periods of time throughout the year. Riparian areas are

defined as: the strip of vegetation along an ephemeral, intermittent, or perennial stream, which is of distinct composition and density from the surrounding uplands.

Dry washes and ephemeral streams make up a significant portion of the hydrologic system in the County and the arid southwest. According to the U.S. Geological Survey National Hydrography Dataset, ephemeral and intermittent (a stream where portions flow continuously only at certain times of the year) streams make up approximately 79% of all streams in Utah and over 81% in the arid and semi-arid Southwest. (Arizona, New Mexico, Nevada, Utah, Colorado and California). They are often the hydrologic sources and upper-most headwaters for major tributaries and perennial streams in the Southwest.

Ephemeral streams and dry washes provide essentially the same ecological and hydrological functions as perennial streams by moving water, nutrients, and sediment throughout the watershed. When functioning properly, these dry streams provide landscape hydrologic connections; stream energy dissipation during high-water flows to reduce erosion and improve water quality; surface and subsurface water storage and exchange; ground-water recharge and discharge; sediment transport, storage, and deposition to aid in floodplain maintenance and development; nutrient storage and cycling; wildlife habitat and migration corridors; support for vegetation communities to help stabilize stream banks and provide wildlife services; and water supply and water-quality filtering. In varying degrees, they provide a wide array of ecological functions including forage, cover, nesting, and movement corridors for wildlife. Depending on the frequency and availability of water, vegetation and wildlife abundance and diversity in and near them may be proportionally higher than in the surrounding uplands. In other locations streambank conditions may be nearly identical to adjacent uplands. Consideration of the site specific and cumulative influence of these streams is critical in watershed-based assessments and land management decisions to maintain overall watershed health and water quality.

Dry washes and ephemeral streams are connected to perennial stream systems and other “waters of the United States” as protected under the Clean Water Act (CWA). The CWA was established to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” Its goal is to prevent pollution of waters of the U.S., and to ensure that citizens have safe, clean water. In recent years, there have been numerous discussions as to whether dry washes and ephemeral streams are “waters of the United States” under the Act, and if the Act applies to those streams. A broad reading of the definition of waters of the U.S. would include any land on which precipitation fell and that precipitation eventually reached a stream or waterbody. Under such a reading there would be no ground anywhere in the United States and the entire land surface would be a “water of the U.S.”

Dry washes and ephemeral streams are the defining characteristic of many public land watersheds in the County, especially outside high precipitation forests and densely vegetated lands. Individual washes and ephemeral stream segments are not generally examined in isolation for landscape level planning purposes. However, site specific projects often rely on the impacts associated with individual watercourses.

Dry washes and ephemeral streams are found across the Earth’s land surface in arid and semiarid regions that are commonly referred to as “drylands.” Approximately one-third of the Earth’s land surface is classified as arid or semi-arid, including significant portions of the County. These lands are characterized by low and highly variable annual precipitation, where evapotranspiration

exceeds precipitation. Riparian ecosystems associated with dry washes and ephemeral streams occupy a very small portion of the landscape, yet they may exert substantial influence on hydrologic, geomorphic, and ecological processes of a watershed.

Dry washes and ephemeral streams are unique in that they lack permanent flow except in response to rainfall events but may perform the same critical hydrologic functions as perennial streams. Although arid and semi-arid region streams perform the same functions as perennial streams, their hydrology and sediment transport characteristics cannot be reliably predicted. This is due to a much higher degree of spatial and temporal variability in hydrologic processes and also in the resulting erosion and sedimentation processes than are higher than near perennial streams. Desert environments typically produce more runoff and erosion per unit area than in temperate regions for a given intensity of rainfall due to sparse vegetation cover and poorly developed soils with little organic matter. The variability of flood magnitudes is also much greater for dry washes and ephemeral stream channels as compared to that of perennial stream systems.

Floods in dry washes and ephemeral streams often occur as flash floods, single-peak events, multiple-peak events and seasonal floods. The highly variable stream flow in ephemeral and dry washes most often occurs as a flash flood, lasting only minutes or hours. Flash floods may occur any time of the year in response to a short-duration high-intensity precipitation event, and after the watershed has received enough precipitation to generate runoff.

Water flowing in normally dry stream channels is subject to two key forces: (1) gravity that moves the water downslope and (2) friction between the water and channel boundaries that resists the downslope movement. These two forces determine, to a large degree, the ability of the water to modify the channel geometry and transport debris. In addition, channel roughness, slope, and depth determine the velocity of the flowing water. Channel slopes in the County are often large, so when flows do occur they have high velocities and consequently significant energy and erosive power. Dissipation of energy in channels can occur due to vegetation, curvature (stream sinuosity), obstructions (rocks, debris, dams), and the size, character and configuration of material in the bed and banks.

As noted previously, although ephemeral streams do not flow at all times, they still perform the major functions of a stream: the transportation of water, nutrients, and sediment. However, unlike perennial streams that continuously move sediment through the watershed, sediment movement in non-perennial stream channels generally occurs as a pulse in response to runoff generated by the short duration, high intensity thunderstorms that are typical of the area. These thunderstorms often result in flash floods and yield rapidly rising runoff. Normally dry channels tend to have deep sediments that are mostly sands and gravels, with only widely scattered shrubs that are resistant to violent flood waters. The unconsolidated sediments can be easily mobilized during flows, unlike the clay bedded, vegetated or armored channels in perennial streams. These deep sediments cause large bed and bank losses in the downstream direction, resulting in reduced flow volume and velocity over the length of the stream, and subsequent deposition of bed load materials and coarser suspended sediments. In simple terms, dry washes and ephemeral streams are usually erosive and unstable.

Because the small, uppermost channels of a drainage network are important in determining the amount of sediment transported downstream during storm events, they influence sedimentation

rates in downstream channels. Increased sediment load can have negative effects on channel stability, fish, invertebrates, and overall stream productivity.

Some desert washes are easily recognizable when their dense corridor of vegetation is in strongly contrasted with more sparsely vegetated uplands. Where vegetative communities exist along dry washes and ephemeral streams, they provide structural elements of food, cover, nesting and breeding habitat, and movement/migration corridors for wildlife that are not as available in adjacent uplands. Functional services of these communities include moderating soil and air temperatures, stabilizing channel banks and interfluvies, seed banking and trapping of silt and fine sediment favorable to the establishment of diverse floral and faunal species, and dissipating stream energy which aids in flood management.

Generally in the County, dry washes and ephemeral streams do not exhibit dominant riparian vegetation characteristics. Often there is little differentiation between upland vegetation and bank vegetation. Structural, biologic and ecological functions do not exist; and banks and streambeds are prone to erosion.

Vegetation in arid and semi-arid regions is largely controlled by the availability of water, with flood disturbance and soil conditions further shaping plant distribution patterns. Depending on attributes of the particular dry watercourse, the highest density of vegetation may occur along the stream bank or within the channel bed. By providing channel and stream bank roughness through standing or downed material, vegetation can influence flow velocities, flow depths, bank and floodplain erosion, and sediment transport and deposition, and can be a major factor contributing both to channel stability and to channel instability.

Vegetation along the stream bank stabilizes the soil through the reinforcing nature of their roots, and prevents erosion. In dry washes and ephemeral stream channels, vegetation may establish on sand bars, and subsequently initiate the formation of various depositional features such as small current shadows, bars, benches, ridges, or islands. Spatially extensive assemblages of any plant species have the potential to alter geomorphology and geomorphic processes through disturbance of sedimentary deposits, alteration of nutrient or fire cycles, and patterns of succession.

The goal of the CWA is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters, and to prevent pollution of those waters. Historically, major desert washes have sometimes been considered to be jurisdictional under the CWA. However, as a result of Supreme Court decisions, the definition of the Nation's waters or jurisdictional waters of the United States under the CWA has required additional clarification, specifically with respect to tributaries that are "not relatively permanent" (i.e. dry washes and ephemeral streams). Recent guidance from the U.S. EPA and Army Corps of Engineers requires that a significant nexus exist between a dry washes or ephemeral stream and a traditional navigable water of the United States for the dry washes or ephemeral streams to be jurisdictional under the CWA. This significant nexus evaluation must consider flow characteristics and functions of the tributary to determine if it has a significant effect on the chemical, physical, and biological integrity of downstream traditional navigable waters.

Need for Management Change

1. Dry washes and ephemeral stream, especially on undeveloped federal lands, need to be restored to properly functioning conditions.

2. Coordinated, strategic planning is needed to restore dry washes and ephemeral stream to improve rangeland health.
3. Structural and non-structural improvements need to be made to degraded dry washes and ephemeral stream.
4. The role of upland watershed management needs to be recognized and incorporated in dry wash and ephemeral stream restoration.
5. Structural and non-structural improvements need to be made to degraded uplands to a) replace Class II and Class III pinyon/juniper woodlands with desirable historic vegetative communities, b) reduce runoff and c) reduce the amount of bare ground.
6. Check dams need to be installed to arrest downcutting and to restore natural stream grade in dry washes and ephemeral streams.
7. Active management and restoration projects on federal lands need to be implemented to restore grade control, sinuosity and vegetation which mimic the natural hydrologic system in dry washes and ephemeral streams.
8. Long term hydrologic function needs to be prioritized over short term ground disturbance.
9. Analysis/approval processes for dry wash and ephemeral stream restoration need to be simplified and authorized as categorical exclusions under NEPA.
10. Corps of Engineers and other federal agency involvement needs to be reduced to the minimum required under law. Dry washes and ephemeral streams need to be recognized as outside Corps of Engineers jurisdiction.

Desired Future Conditions

Juab County Desires:

1. Dry washes and ephemeral streams, especially on undeveloped federal lands, are restored to properly functioning conditions.
2. Coordinated, strategic planning is implemented to restore uplands, vegetation and to improve rangeland health associated with dry washes and ephemeral streams.
3. Structural and non-structural improvements are made to degraded watercourses, dry washes and ephemeral streams.
4. The role of upland watershed management is recognized and incorporated in dry wash and ephemeral stream management and restoration.
5. Structural and non-structural improvements are made to degraded uplands to a) replace Class II and Class III pinyon/juniper woodlands with desirable historic vegetative communities, b) reduce runoff and c) reduce the amount of bare ground.

6. Check dams and restoration projects are implemented to arrest downcutting and to restore natural grade, vegetation, cross section, and sinuosity in dry washes and ephemeral streams.
7. Active management and restoration projects on federal lands are implemented to restore sinuosity, vegetation and floodplain function which mimic the natural hydrologic system.
8. Long term hydrologic function is prioritized over short term ground disturbance.
9. Analysis/approval processes for dry wash and ephemeral stream restoration are simplified and authorized as categorical exclusions under NEPA. Corps of Engineers and other federal agency involvement are eliminated or reduced to the minimum required under law.
10. Land managers restore to properly functioning condition at least 2% of non-functioning dry washes and ephemeral streams per year.

Findings, Policies, Goals & Objectives

Policy: Long term hydrologic function is prioritized over short term ground disturbance.

Finding: Dry washes and ephemeral streams, especially on undeveloped federal lands, need active structural and non-structural modifications to restore properly functioning and desirable conditions.

Finding: Upland vegetative conditions have a significant impact on dry wash and ephemeral stream function in any given watershed.

Finding & Policy: A coordinated, strategic plan recognizing the condition of the County's dry washes and ephemeral streams, especially on undeveloped federal land, does not exist. Land managers shall include a coordinated dry wash and ephemeral stream restoration and improvement program in agency resource management plans during the next regular planning cycle.

Finding: Structural and non-structural deficiencies in dry washes, ephemeral streams and associated watersheds are present in the County, especially on undeveloped federal lands and threaten a) harmony between man and his environment, b) resources and resource uses, c) enjoyment of resources by current and future generations, d) rangeland health, e) water quality, and f) the County's custom, culture, heritage, and socio-economic stability.

Policy: Land managers, especially of undeveloped federal lands, shall implement an active program of structural and non-structural improvements to deficient dry washes, ephemeral streams and associated watersheds - including uplands - to protect a) harmony between man and his environment, b) resources and resource uses, c) enjoyment of resources by current and future generations, d) rangeland health, e) water quality, and f) the County's custom, culture, heritage, and socio-economic stability.

Policy, Goal & Objective: Analysis/approval processes for dry wash and ephemeral stream restoration shall be simplified to the maximum extent allowed by law and shall be authorized as categorical exclusions under NEPA wherever possible. Corps of Engineers and other federal agency involvement shall be eliminated or reduced to the minimum required under law.

Goal & Objective: Active dry wash and ephemeral stream management and restoration, especially on undeveloped federal lands, are implemented to restore sinuosity, vegetation and floodplain function which mimic natural hydrologic conditions on 25% of the non-functioning floodplains prior to 2040.

Policy: Land managers, especially of undeveloped federal lands, shall restore to properly functioning condition at least 1% of non-functioning dry washes and ephemeral streams per year. Dry wash and ephemeral stream restoration shall include structural and non-structural topographic and vegetative improvements which mimic natural, stable conditions. Check dams and restoration projects that arrest downcutting and/or restore natural grade, cross section and sinuosity shall be augmented with appropriate native and non-native vegetation.

Finding & Policy: Land managers in the County have little if any control over climate change or impacts attendant thereto. Land managers shall prioritize management actions on activities that improve the productivity of resources and resource uses under their management control. Restoration of invasive conifers to desirable vegetative communities, maintenance of seedings, vegetation projects to reduce bare ground, appropriate use of prescribed fire and response to wildfire, structural projects to restore dry washes and ephemeral streams to historical topographic and ecological conditions and other pro-active solutions shall be implemented prior to prescriptive actions associated with climate change.

Policy, Goal & Objective: Based on a 10 year rolling average and consistent with ecologic site descriptions, land managers shall restore 25% of Class II and Class III pinyon/juniper woodlands to desirable sagebrush/grassland vegetation communities.

Finding: For some agencies, as much as 95% of the land is classified as upland. Failure to restore uplands to desirable vegetative conditions prevents reasonable restoration of non-functioning dry washes and ephemeral streams in the associated watershed.

Policy: Where land managers are unable to restore 1% of non-functioning floodplain due to associated substandard upland conditions, dry wash and ephemeral stream restoration may be postponed for up to three years.

Finding & Policy: All lands receiving precipitation are ecologically and hydrologically connected to downstream waters. However, not all lands have a significant effect on the chemical, physical, and biological integrity of those waters. Dry washes and ephemeral streams are primarily dry lands similar to uplands and do not qualify as watercourses having a significant effect on the chemical, physical, and biological integrity of waters of the U.S.

Finding & Policy: Ecologically responsible land management attempts to meet economic and social objectives while maintaining environmental health. NEPA analysis requires cumulative analysis, but individual site specific impacts may not have statistical or scientific significance. Dry washes and ephemeral streams that a) provide less than 0.1 % of the end resource's physical, biological or chemical components or b) are in properly functioning condition are deemed not to impact the end resource.

References

The Ecological and Hydrological Significance of Dry washes and ephemeral streams in the Arid and Semi-arid American Southwest, EPA/600/R-08/134, ARS/233046, November 2008

2.5.4 Groundwater

Introduction

Groundwater is the water found underground in cracks and spaces in soil, sand and rock. It is stored in and moves slowly through geologic formations called aquifers. Aquifers are typically made up of gravel, sand, sandstone, or fractured rock. Water moves through these materials in the connected spaces that make them permeable. The speed at which groundwater flows depends on the size of the spaces in the soil or rock and how well the spaces are connected.

Groundwater can be found almost everywhere. The depth of groundwater below the surface is known as the water table and may rise or fall depending on many natural and human induced factors. Groundwater supplies are recharged by rain and snow melt that infiltrates into the earth's surface.

Water in aquifers is brought to the surface naturally through a spring or can be discharged into lakes and streams. Groundwater can also be extracted through wells drilled into the aquifer. Some wells, called artesian wells, do not need a pump because of natural pressures that force the water up and out of the well.

In areas where material above an aquifer is permeable, pollutants deposited on the surface can readily sink into groundwater supplies, making them unfit for specific uses, including drinking water. Groundwater can be polluted by landfills, septic tanks, leaky underground gas tanks, overuse of fertilizers and pesticides and other sources.

Current Setting

Groundwater is the County's principal reserve of fresh water and represents much of its potential future water supply. Groundwater on federal lands is a major contributor to flow in many streams and rivers and has a strong influence on the health and diversity of plant and animal species in forests, rangelands, grasslands, riparian areas, lakes, wetlands, and springs. It also provides drinking water for all of the public water systems and is connected to many of the private water systems in the County.

Awareness of groundwater's importance, the need for safe drinking water and requirements to maintain healthy ecosystems are increasing. Many of the concerns about groundwater resources on private and public lands involve questions regarding dependability of long term supply, depletion of groundwater storage, reductions in streamflow, potential loss of groundwater-dependent ecosystems, and changes in groundwater quality. The effects human activities common to more populated areas, land subsidence and saltwater intrusion are not applicable to the County. Contamination from landfills, septic tanks, leaky underground gas tanks, and from overuse of fertilizers and pesticides is prevented and controlled through various federal, state and local regulatory mechanisms.

Groundwater and surface water are interconnected and interdependent in almost all ecosystems. Groundwater plays a significant role in sustaining the flow, chemistry, and temperature of streams, lakes, springs, wetlands, and other hydrologic systems, while surface waters provide valuable recharge to groundwater resources. Groundwater has a major influence on rock weathering, streambank erosion, and the progression of stream channels. In steep terrain, it governs slope stability; in flat terrain, it limits soil compaction and land subsidence. Pumping of

groundwater can reduce river flows, lower lake levels, and reduce or eliminate discharges to wetlands and springs. Pumping can also influence the sustainability of drinking-water supplies and maintenance of critical groundwater-dependent habitats.

Groundwater wells in the County are utilized primarily for irrigation and drinking water with much smaller quantities are used for livestock watering.. Due to the low amount of oil and gas development in the County and requirements that all wells be drilled in accordance with the standards of the Utah State Engineer's Office and implement best management practices, groundwater quality has not been identified as a major concern for aquifers and recharge zones underlying the County.

Potential drawdown of groundwater resources is managed by the Utah State Engineer. The Sevier River and Utah Valley watersheds in the eastern portion of the County are closed to all new appropriations. All new groundwater development in these areas is be based on the acquisition and changing of existing valid water rights from surface (including direct flow and reservoir storage) and underground sources. Groundwater resources in the Great Salt Lake drainage basin are still open to appropriation. There is a small area between the two where appropriation is restricted.

Ground water is a valuable commodity and its use is increasingly important. Federal lands contain substantial ground water resources, for which stewardship and protection are mandated by various congressional acts. Many other natural resources rely, directly or indirectly, on ground water and could be damaged or destroyed if that water were depleted or contaminated.

Groundwater resources in the County are vary greatly from relatively deep to quite shallow in the western portion of the county. As pumping has increased the county is experiencing a drop in water levels as identified by actual measurement and the drying up of flowing wells and meadows as well as springs and seeps. However, overuse of ground water may impact streams, wetlands, riparian areas, forest stands, meadows, grasslands, seeps, springs, and livestock and wildlife watering holes on a site specific basis. Reduced water-table levels near the earth's surface can impact biota that depend on ground water, particularly in riparian and wetland ecosystems.

Groundwater quality is highly variable and is dependent on the formation in which the aquifer is located, potential pollutants and the recharge mechanism. Groundwater quality is classified by the Utah Water Quality Board based primarily on the amount of total dissolved solids (TDS). Lower amounts of TDSs indicate higher water quality. Potential pollution from private lands has been reduced in recent years with greater knowledge, conversion of flood irrigation to sprinkler and added emphasis on groundwater quality. Limited development and pollution sources on federal lands suggests a low risk, except for wildland and prescribed fire which still have the potential to affect groundwater and primary sources of culinary water in the County.

Recharge to the unconsolidated basin-fill deposits containing groundwater is by seepage from streams, unconsumed irrigation water, and distribution systems; infiltration of precipitation; and subsurface inflow from consolidated rocks that surround the aquifer. Recharge varies annually but can be estimated through water budget calculations for most conditions.

All of the perennial streams that enter Juab Valley from the east have been connected to a distribution system for irrigation. Groundwater recharge during the irrigation season (April to September) is from losses during transmission or as unconsumed irrigation water because most

of the flow during this period is diverted for irrigation. Streamflow that occurs during the non-irrigation season is used to refill Mona Reservoir and some is assumed to recharge the ground-water system. Recharge to the groundwater system from ephemeral streams is considered to be small and present only after periods of greater than average precipitation or intense storms.

The average annual precipitation near Nephi is approximately 15.5 inches per year and the western part of the County is considerably less. Previous studies by Razem and Steiger in the early 1980s done on other alluvial basins in Utah indicate that 1 to 25 percent of precipitation infiltrates to the ground-water system in areas receiving 8 to 16 in. of precipitation annually, with most of the infiltration coming in the spring after winter snow melts.

Discharges from the groundwater reserves in the County come from wells, springs and evaporation. Ground-water discharge from wells in Juab Valley is a major component of the ground-water budget. Large-scale ground-water development for irrigation began in 1947, when the first well with a relatively large yield was drilled. Ground water in most of the Juab Valley is used to supplement surface water for irrigation, and wells capable of discharging large quantities of water generally begin pumping after the spring snowmelt runoff ends. More surface water is available for irrigation when precipitation is greater than average.

Ground-water discharge from unconsolidated basin-fill deposits occurs as flow from distinct springs and as diffuse seepage, mainly in the low-lying areas of the County where the hydraulic head of the ground water is above land surface. Discharge to springs and seeps generally has decreased as pumping from wells has increased in order for the ground-water system to approach a new state of equilibrium. Ground-water discharge from unconsolidated basin-fill deposits by evapotranspiration occurs where the water table is near enough to land surface to support plants that depends on water from at or below the water table, generally in lower-altitude areas of the County. Principal water dependent plants in the County are meadow grasses, salt grass, and greasewood with stands of salt cedar, cottonwood, and willow. Evapotranspiration in irrigated areas is accounted for in the estimated amount of water consumed by the crops and evaporated from irrigated fields.

Southern Nevada Water Authority has filed applications to withdraw water from norther Nevada including from Snake Valley which lies with Nevada and Utah. Research has shown that other valleys in Nevada contribute the water resources in Snake Valley. The County had protested these filings and has been very active with other affected entities in try to stop the export of water from Utah to the Las Vegas area.

Need for Management Change

1. Water resources that are utilized within Utah must be protected from export outside the state. All state and local authorities with jurisdiction must remain vigilant in protection of these water resources.
2. Inventories of the quantity and quality of ground water on federal land are needed to provide sufficient information to appraise the value and provide appropriate stewardship of these ground water resources, especially in landscape level planning.

3. Protection and sustainable development of ground water resources are appropriate components of land and resource management planning for federal lands and need to be included in future planning processes.
4. Land managers need to ensure adequate groundwater resources are available for authorized purposes and to support local communities.
5. Land managers need to prevent or minimize adverse impacts to groundwater resources through appropriate vegetative treatments that optimize forest and rangeland health.
6. Land managers need to comply with federal, state and local requirements for well head protection and sole source aquifer use. Managers also need to ensure all public water systems on their lands comply with applicable groundwater regulations.
7. Land managers need to protect ecological processes and biodiversity of groundwater dependent ecosystems by a) maintaining natural patterns of recharge and discharge, and minimizing disruption to ground water levels that are critical for ecosystems; b) not polluting or causing significant changes in ground water quality; and c) rehabilitating degraded ground water systems where possible.
8. Land managers need to manage groundwater dependent ecosystems under principles of multiple use and sustained yield, while emphasizing protection and improvement of soil, water and vegetation.
9. Based on site specific characteristics of water, geology, flora and fauna, land managers need to identify, inventory and determine boundaries of groundwater dependent ecosystems as part of land use planning processes.
10. Humans need to be recognized as a subset of groundwater dependent fauna and development of resources for their use needs to be given priority.

Desired Future Conditions

Juab County Desires:

1. Groundwater resources are preserved, improved and developed for the use of man while supporting multiple use and sustained yield principles.
2. No water from that benefits resident of Utah be allowed to be depleted for the use of others.
3. Land managers comply with current and future laws and regulations promulgated by federal, state and local entities.
4. Land managers optimize forest and rangeland health and vegetative cover as a means of preserving and protecting groundwater resources.
5. Watersheds that are the source of supply for community and culinary water systems be managed for resistance and resilience to fire.
6. Groundwater resources are managed under the principles of multiple use and sustained yield, with community and culinary water systems as the highest priority.

7. Groundwater resources are protected through appropriate implementation of best management practices applied to human and multiple use/sustained yield activities.

Findings, Policies, Goals & Objectives

Finding: Protection, enhancement and development of groundwater resources is vital to the health, safety and welfare of residents and visitors of the County.

Finding: Under the concept of climate change, scientists expect more severe storms, larger wildfires and an increase in invasive species. Land managers must counteract these problems with increased active management and restoration of desirable plant communities to protect groundwater resources.

Goal: Maintain, improve and develop groundwater resources, while complying with applicable federal, state and local water quality standards; improve water quality where practical.

Policy: The County will cooperate and coordinate with federal, state and local land managers to implement active management and vegetative restoration projects to preserve and improve groundwater resources.

Goal: Minimize adverse groundwater impacts through active management and optimization of vegetative resources that support hydrologic function.

Policy: Groundwater resources are preserved and protected when at least 25% of Class II and Class III pinyon juniper woodlands are restored to sagebrush – grassland vegetative communities based on a 10 year rolling average.

Finding: Pine forests with more than 160 trees per acre and spruce/fir forests with more than 320 trees per acre are not resistant or resilient to fire and put groundwater resources at risk.

Finding & Goal: Groundwater resources are best preserved and protected when the following minimum objectives are established when lands experience prescribed or wildland fire:

1. Retain 40 percent ground cover after the burn with recruitment to 60 percent ground cover before the first rainy season following the burn.
2. Do not reduce perennial and intermittent channel shading more than 20 percent of the natural range of variability or by an amount that will take more than three years to recover, whichever is smaller.
3. “Burn” and/or “feeder” piles will not be made in channels or swales within the area occupied when the bank full width is doubled.
4. Burned piles within riparian areas will be left “messy” in order to retain sediment on site.
5. Ignitions will not occur within 15 feet of riparian areas.
6. Any firelines created during burning operations will follow *The Five-D System for Effective Fireline Waterbars* (Hauge et al., 1979).
7. Firelines that need to cross riparian areas will do so perpendicular to the channel and should not have more than 40 feet of hydrologic connectivity.

8. Cupped fire lines should have water gaps every 20 feet to allow captured water to exit.
9. Existing disturbance areas, such as roads and trails, should be used to the extent possible as fire lines.

Policy: Land managers shall optimize forest and rangeland health and vegetative cover as a means of preserving and protecting groundwater resources.

Policy: In order to reach a full range of reasonable alternatives, federal planning processes shall fully analyze at least one alternative that includes groundwater preservation and protection provisions outlined in the This RMP

Policy: Pine stands that have more than 160 trees per acre and spruce-fir stands that have more than 320 trees per acre are subject to catastrophic fire and are not being managed for fire resistance and resilience. Tree densities in excess of these limits are subject to catastrophic fire and threaten groundwater resources

References

Technical Guide to Managing Groundwater Resources, United States Department of Agriculture, Forest Service, May 2007

Hydrology and Simulation of Ground-Water Flow in Juab Valley, Juab County, Utah, State of Utah Department Of Natural Resources, Technical Publication No. 114, 1996

2.5.5 Water Quality

Introduction

The Clean Water Act (CWA, 33 U.S.C. §1251 et seq. (1972)) establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. The basis of the CWA was enacted in 1948 and was called the Federal Water Pollution Control Act, but the Act was significantly reorganized and expanded in 1972. “Clean Water Act” became the Act’s common name with amendments in 1972. Additional amendments have occurred over time including direction for control of nonpoint source pollution and procedures for state implementation of total maximum daily load standards of impaired waters.

Under the CWA and with approval of the EPA, the State of Utah has primacy for water quality and has implemented pollution control programs such as setting wastewater standards for industry and water quality standards for all contaminants in surface waters. The CWA made it unlawful to discharge any pollutant from a point source into navigable waters, unless a permit was obtained. EPA’s National Pollutant Discharge Elimination System (NPDES) permit program controls discharges. Point sources are discrete conveyances such as pipes or man-made ditches. Individual homes that are connected to a municipal system, use a septic system, or do not have a surface discharge do not need an NPDES permit; however, industrial, municipal, and other facilities must obtain permits if their discharges go directly to surface waters. Permits are managed by Utah’s Division of Water Quality through the Utah Pollution Discharge and Elimination System (UPDES).

Discharges from nonpoint sources are also controlled. Nonpoint source pollution generally results from stormwater runoff, precipitation, atmospheric deposition, drainage, seepage or hydrologic modification. Nonpoint source (NPS) pollution, unlike point source pollution from industrial and sewage treatment plants, comes from many diffuse sources. NPS pollution is caused by rainfall or snowmelt moving over and through the ground. As the runoff moves, it picks up and carries away natural and human-made pollutants, finally depositing them into lakes, rivers, wetlands, coastal waters and ground waters. Monitoring and regulation of nonpoint source pollution is more complex than point source pollution because it results from numerous and diverse contributors.

Current Setting

The County is a small, sparsely populated county in southcentral Utah and has very limited industrial and municipal development. Approximately 72% of the land is under federal ownership, and only 17% is held by private interests. Consequently, population growth and the development of urban/urbanized areas and industries which have major influences on water quality are minimal. Point source discharges are controlled by state and local regulations; and overall water quality is within established standards. Industrial and municipal discharges are almost entirely limited to municipalities. Communities in the County rely on approved wastewater systems. No point source discharge issues are known to exist in the County.

Nonpoint source discharges are also characteristic of rural, sparsely populated areas. Relatively few perennial streams and water bodies exist in the County. Four individual reaches of three watercourses in the County have been identified on the state's list of 303(d) impaired waters: Currant Creek (Temperature), Chicken Creek (Salinity/TDS/Chloride), Sevier River 20 (Phosphorous, Temperature) and Sevier River 22 (Phosphorous, Salinity/TDS/Chloride, and Temperature). TMDL reports, which include water quality data and implementation plans typically carried out by various federal, state, and local governments and private cooperators, have been prepared for these waters.

In addition to point and nonpoint pollution sources that are commonly recognized as impacting perennial waterbodies, the County is also impacted by pollution from ephemeral streams. Stormwater runoff is generated from rain and snowmelt events that flow over land and do not soak into the ground. The runoff picks up pollutants like organic debris and dirt/sediment that can harm rivers, streams, and lakes. Concentrated flows also cause damage to ephemeral stream banks and dry washes, threatening rangeland health and stability. Although detailed empirical data is not available, runoff intensity has notably increased over the past few decades. Larger and more damaging runoff events have taken place, and sediment and debris flows have increased proportionally. Together, they can cause changes in hydrology and water quality that result in habitat modification and loss, increased flooding, decreased aquatic biological diversity, and increased sedimentation and erosion. The benefits of effective stormwater runoff control and management of ephemeral watercourses include: protection of wetlands, riparian and aquatic ecosystems; improved quality of receiving waterbodies; conservation of soil resources, and improved range/land forest health.

To protect water quality and associated resources from point and nonpoint pollution, stormwater controls, known as best management practices (BMPs), have been implemented by various agencies. These BMPs filter out pollutants and/or prevent pollution by controlling it at its source.

The State of Utah and local governments are authorized under the Clean Water Act to implement permitting and management actions, including BMPs to protect water quality and water resources.

Another form of nonpoint source pollution is hydrologic modification. This term refers to activities that affect the natural pathways of surface water, such as stream channel modification and channelization, deposition which inhibits natural flow patterns and streambank erosion. Although these activities don't seem like forms of pollution, they nevertheless are considered to be part of the non-point source pollution problem. Many rivers and streams have natural flood control areas, such as oxbows, adjacent wetlands, and riparian ones. When these areas are modified or removed, significant changes in the ecological functions of surrounding lands are likely to occur. Channel modifications – even when occurring naturally - frequently degrade instream and riparian habitat for fish and wildlife. Other impacts include erosion and the reduction of the system's ability to filter pollutants. Similarly, upland vegetative modifications, especially adjacent to riparian areas and wetlands can change surface hydrology and reduce natural buffers.

Need for Management Change

1. The Clean Water Act authorizes states and local governments to control water quality within their jurisdictions. The State of Utah through its Division of Water Quality has obtained primacy for water quality in the County and throughout the state. However, The County has not taken an active role in management of its water quality. The County needs to take a more active role in water quality management and develop plans, regulations, ordinances and best management practices, as appropriate.
2. Degrading water quality, especially in ephemeral water courses, resulting from encroaching conifers has not been recognized for its impacts on water quality. Site specific and cumulative impact analysis of Class II and Class III pinyon/juniper woodlands on water quality needs to be included in future NEPA analysis.
3. Beneficial uses of water bodies in the County need to be coordinated, re-evaluated and brought in to consistency with the This RMP
4. Land managers need to actively manage for increased forage production to reduce sedimentation in and hydrologic modification of the County's perennial, intermittent and ephemeral water resources.
5. Land managers need to develop additional detention areas, lakes, ponds, wetlands, riparian areas, grade structures, and mesic conditions to slow stormwater and reduce erosion.
6. Consistent with ecologic site conditions, land managers need to replace biologic soils and pinyon/juniper woodlands with sagebrush, semi-desert grasslands to increase vegetative soil cover and reduce sediment transport and erosion.
7. While developing additional detention areas, lakes and ponds, land managers need to recognize stormwater management approaches that rely solely on peak flow storage have not usually targeted pollution reduction and only treat sediments after they have entered

the watercourse. Upland vegetative productivity and cover also needs to be enhanced and optimized with appropriate native and non-native seed mixes.

8. The County needs to develop policies, goals, objectives and best management practices for forest and rangelands to reduce sediment and debris in the County's watercourses.
9. Natural Conservation Service (NRCS) soils reports indicate County soils are producing considerably less than their potential. Consistent with ecologic site conditions and this RMP, land managers need to improve the vegetative productivity of their soils.

Desired Future Conditions

Juab County Desires:

1. The quality and quantity of existing water resources be improved and enhanced.
2. The County has a more active role in water quality management.
3. Implementation of County water quality plans, regulations, ordinances and best management practices for forest and rangelands to reduce sediment and debris in the County's watercourses.
4. Without diminishing existing multiple use levels and uses, implement Best Management Practices, including vegetative treatments and restoration of invasive conifer woodlands to sagebrush/semi-desert grasslands, to reduce pollutant loading in impaired streams and to reduce sedimentation in all perennial, intermittent and ephemeral watercourses.
5. Degrading water quality, especially in ephemeral water courses, resulting from encroaching conifers and inadequate desirable vegetative cover be recognized for their impacts on water quality.
6. Site specific and cumulative impact analysis of Class II and Class III pinyon/juniper woodlands on water quality be included in future NEPA analysis.
7. Beneficial uses of water bodies in the County be coordinated, re-evaluated and brought in to consistency with the This RMP
8. Land managers actively manage for increased forage production to reduce sedimentation in and hydrologic modification of the County's perennial, intermittent and ephemeral water resources.
9. Land managers develop additional detention areas, lakes, ponds, wetlands, riparian areas, grade structures, and mesic conditions to slow stormwater and reduce erosion.
10. Consistent with ecologic site conditions, land managers replace biologic soils and pinyon/juniper woodlands with sagebrush, semi-desert grasslands to increase vegetative soil cover and reduce sediment transport and erosion.
11. While developing additional detention areas, lakes and ponds, land managers recognize stormwater management approaches that rely solely on peak flow storage do not usually target pollution reduction and only treat sediments after they have entered the watercourse.

12. Upland vegetative productivity and cover also needs to be enhanced and optimized with appropriate native and non-native seed mixes.
13. Consistent with ecologic site descriptions and the County's RMP, land managers improve the vegetative productivity of their soils.
14. Consistent with ecologic site descriptions, The County soils produce at least 50% of their potential by 2025 and at least 70% of their potential by 2050.
15. Consistent with ecologic site descriptions and based on a 10 year rolling average, land managers restore 25% of Class II and Class III pinyon/juniper woodlands to sagebrush/semi-desert grassland habitat.

Findings, Policies, Goals & Objectives

Finding & Policy: Water quality in the County is impacted by upstream land management actions that affect downstream resources. Upstream land managers shall be consistent with this RMP to the maximum extent allowed by law and consistent with and with deference to local government's plans, policies and programs where the management actions are taking place.

Finding: Given the County's existing population distribution, industries and percentage of privately owned lands, the largest threat to water quality is sedimentation from lands lacking optimum vegetative cover.

Finding: The County has not taken a sufficiently active role in managing water quality to the extent allowed by law.

Finding: Water quality, point source pollution, nonpoint source pollution, and hydrologic modification associated with private lands are being appropriately managed by the Utah Division of Water Quality. Future efforts need to focus on the vast majority of lands in the County that are not in private ownership.

Goal: The County will take a more active role in managing water quality and will implement policies, goals, objectives and best management practices for forest and rangelands to reduce sediment and debris in the County's watercourses.

Policy & Goal: The County will cooperate and coordinate with the State of Utah to review and revised Total Daily Maximum Loads (TDMLs) for hydrologic units listed on the 303(d) list of impaired streams and to develop water quality management plans for other watercourses in the County.

Goal: Improve and enhance the quality and quantity of water resources in the County.

Goal: Manage designated municipal watersheds to preserve or enhance the quantity, quality and health of the water resources.

Goal: Without diminishing existing multiple use levels and uses, The County will adopt and implement Best Management Practices, including vegetative treatments and restoration of invasive conifer woodlands to sagebrush/semi-desert grasslands, to reduce pollutant loading in impaired streams and to reduce sedimentation in all perennial, intermittent and ephemeral watercourses.

Finding: Water quality, especially in ephemeral watercourses is degraded as a result of encroaching conifers and inadequate desirable vegetative cover.

Policy: The impact of encroaching conifers and inadequate desirable vegetative cover on water quality shall be identified, analyzed and disclosed in NEPA processes evaluating major federal actions. Site specific and cumulative impact analysis of Class II and Class III pinyon/juniper woodlands on water quality shall be included in future NEPA analysis.

Finding: Beneficial uses of water bodies in the County need to be re-evaluated and brought in to consistency with the This RMP

Policy: The County will coordinate with the Utah Division of Water Quality to re-evaluate and refine beneficial use designations of the County's water bodies.

Finding: Multiple Use/Sustained Yield principles implement best management practices for oil & gas leasing, mining, timber harvesting, recreation, OHV use, roads, travel designations, livestock grazing and other activities. Implementation of existing best management practices on site specific projects protects water quality in the County and promotes enjoyable and productive harmony between man and his environment.

Policy: The County supports expanded livestock grazing adaptive management including extended on/off dates, intense seasonal grazing to control invasive species and vegetation based use criteria. Unless coordinated with and approved by the County, livestock grazing restrictions shall not be implemented until water quality prioritizations and provisions outlined in this RMP are completed.

Policy: Land managers shall control water runoff from disturbed or developed sites and shall control soil erosion from undeveloped sites through implementation of provisions contained in the County's RMP. With concurrence of the Commission, land managers may implement alternate provisions that have been coordinated with the County and are demonstrated to advance the findings, policies, goals, and objectives of the County RMP.

Policy: Land managers shall actively manage for increased forage production to reduce sedimentation in and hydrologic modification of the County's perennial, intermittent and ephemeral water resources.

Policy: While supporting existing levels and uses, land managers shall develop additional detention areas, lakes, ponds, wetlands, riparian areas, grade structures, and mesic conditions to slow stormwater and reduce erosion.

Policy: Consistent with ecologic site conditions, land managers shall replace biologic soils and pinyon/juniper woodlands with sagebrush, semi-desert grasslands to increase vegetative soil cover and reduce sediment transport and erosion.

Finding: Development of detention areas, lakes, ponds, and other areas that rely solely on peak flow storage for stormwater management is desirable but does not prevent the movement of pollutants and sediment across the land and only treats waters after they have been impacted.

Finding: Optimization of vegetative cover with appropriate and desirable native and non-native vegetative communities provides the best opportunity to promote enjoyable and productive

harmony between man and his environment.

Policy: The County supports an integrated approach to stormwater management without negatively impacting existing resource levels and uses. Based on existing conditions, current technology, acreages in need of improvement, effectiveness of potential actions, and other factors, the County adopts the following prioritization to improve water quality:

1. Optimization of upland vegetative cover through restoration, improvement and enhancement of desirable native and non-native vegetative communities, including restoration of Class II and Class III to sagebrush/semi-desert grasslands, especially in areas of accelerated erosion.
2. Development, enhancement and expansion of detention areas, lakes, ponds, wetlands, riparian areas, grade structures, and mesic conditions to slow stormwater and reduce erosion.
3. Maintenance of existing biologic soil communities where it is scientifically and statistically demonstrated their positive impact on water quality exceeds benefits from optimizing vegetative cover by more than 20%.
4. Modification of existing Best Management Practices for oil & gas leasing, mining, timber harvesting, recreation, OHV use, roads, travel designations, livestock grazing and other multiple use/sustained yield activities.

Policy: Consistent to the maximum extent allowed by law, land managers shall a) reduce impacts to water quality by complying with the provisions of this RMP; or b) as approved by the County, develop and implement a cooperative and coordinated water quality management plan prior to the first day of their 2020 fiscal year.

Policy: Consistent with ecologic site descriptions, land managers shall improve the productivity of their soils to produce at least 50% of the soils and at least 70% of the soil's potential as soon as practical, unless otherwise coordinated with the County.

Policy: Consistent with ecologic site descriptions and based on a 10 year rolling average, land managers restore 25% of Class II and Class III pinyon/juniper woodlands to sagebrush/semi-desert grassland habitat.

Policy: Surface disturbing activities within withdrawn Drinking Water Source Protection Zones may be allowed if the disturbance does not degrade water resources and best management practices are implemented.

Policy: Proper disposal, other beneficial use and appropriate surface discharge of produced water from new activities on public land is allowed if mitigation measures and/or best management practices are implemented to address impacts from the produced water.

References:

Utah's 2004 303(d) List of Impaired Waters, Utah Department of Environmental Quality - Division of Water Quality

TMDL Water Quality Study of the Middle and Lower Sevier River Watersheds, Utah Department

of Environmental Quality - Division of Water Quality, 2004 Clean Water Act, 33 U.S.C. §1251 et seq. (1972)

2.6 VEGETATION

Introduction

Vegetation along with water is one of the most important renewable resources in the County, and is perhaps the only single resource that allows land managers the greatest opportunity for impacting land health, improving species habitat, protecting water resources, restoring streams, stabilizing riparian areas and watercourses and counteracting any effects of wildland fire and potential climate change.

Vegetation plays an important role in many key ecological processes and social values. Vegetation impacts water cycling (precipitation capture, storage, and redistribution), energy capture and cycling (conversion of sunlight to plant matter), and nutrient cycling (the cycle of nutrients such as nitrogen and phosphorus through the physical and biotic components of the environment). Vegetation also provides root systems that help maintain soil integrity and reduce erosion (particularly on steep slopes and areas adjacent to waterways) and provides soil-site stability by limiting redistribution and loss of soil resources (including nutrients and organic matter) by wind and water. Vegetation allows a site to capture, store, and release water from rainfall, run-on, and snowmelt.

Vegetation supports clean water, fish and wildlife habitat, livestock and wild horse forage and desirable conditions for recreation, carbon sequestration, and scenery. Vegetation provides such benefits as hiding cover, browse, and nesting habitat for a variety of wildlife species. All healthy vegetative communities, especially healthy forests, forbs and grasses, sequester vast amounts of carbon. Vegetation is a key component in establishing the capacity of a site to support characteristic functional and structural communities in the context of normal ecological variability and is the dominant indicator of productivity and land health.

The County's plans, policies and programs for maintenance of soil and water resources, special status species conservation, protection of water quality, fish and wildlife health, forest management, livestock grazing, recreation and scenery incorporate a strong vegetative component. Conversely, ecological processes and resources that are not currently in Properly Functioning Condition are largely attributable to a substandard vegetative component.

The capacity of a site to a) support characteristic benefits, b) resist loss of function and structure due to disturbance, and c) to recover following disturbance is in direct correlation to the vegetation present at a site.

Vegetation can generally be characterized by ecological provinces, and more specifically by plant communities and associations. Plant communities and associations are groups of plant populations that coexist in space and time and directly or indirectly affect each other's population dynamics. Distinct plant communities are influenced by characteristics such as soil depth, texture, and salinity; climate variables, particularly temperature, total and seasonal distribution of precipitation, and wind; and topographic features, most importantly elevation, aspect and slope. The following discussions of plant communities that occur within the County show the diverse and complex nature of vegetation resources in the area. Plant communities can

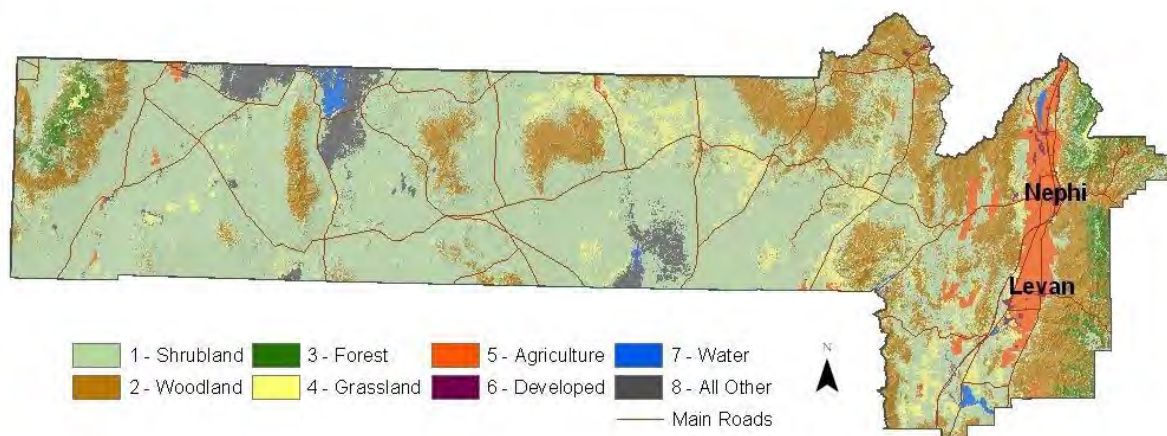
be represented by plant cover types that reflect the dominant species present in an area.

Plant communities and associations are often represented by regional, landscape level, rapid ecoregion, or remotely assessed processes such as the plant cover types documented by the Southwest Regional Gap Analysis Project (SWReGAP) data. The SWReGAP is an update of the Gap Analysis Program's mapping and assessment of biodiversity for the five-state region encompassing Arizona, Colorado, Nevada, New Mexico, and Utah. 43 SWReGAP land cover types were combined into nine vegetation cover types intended to reflect BLM's management of vegetation communities and associations. Due to the dispersed nature, large land area and generalized application of the process, SWReGAP landscape level remote sensing is not an accurate method for detailed inventories or condition assessments necessary for management decisions. However, they may be suitable for very broad planning processes that are followed by site specific refinement.

Vegetation communities can be represented by plant-cover types that reflect the dominant species of an area. However, nature is rarely as definitive as planning descriptions, so plant communities in the County have been combined to facilitate planning level descriptions. The vegetation communities and associations generally discussed in this section comprise the major vegetation communities and associations in the County. Upland vegetation, riparian/wetland vegetation and bare ground are discussed in this section. Invasive species are discussed in Section 2.6.2 Invasive Species and Noxious Weeds. Special status plant species (T&E and sensitive plant species) are discussed in Section 2.7 Special Status Species.

The vegetation communities and associations generally discussed in this section comprise the major vegetation communities and associations in the County. Upland vegetation, riparian/wetland vegetation, and invasive species are discussed in this section. Special status plant species (T&E and sensitive species) are discussed in the Special Status Species section.

Figure 2.6.1 Vegetative Cover Types



Need for Management Change

1. SWReGAP data needs to be refined before it is used for management actions, planning prescriptions, or site specific projects.

2. Management decisions need to be based on reliable, objective, site-specific data analyzed in accordance with the Data Quality Act (sometimes referred to as the Information Quality Act).
3. It needs to be recognized that there are no places left in the County that are completely void of man's impact. Historic vegetative conditions need to be recognized as arbitrarily selected snapshots in time and space that may no longer be desirable or achievable.
4. In order to achieve a productive and enjoyable harmony between man and his environment, land managers need to aggressively implement actions that are consistent with desired future conditions, findings, policies, goals and objectives outlined in this RMP.
5. Desirable native and/or non-native species need to be used when allowed by law. Native only vegetation needs to be used only when a) required by law, or b) it provides greater optimization and conservation of targeted resources.
6. Land managers need to implement more aggressive actions to restore, improve and maintain the County's vegetative resources.

Desired Future Conditions

Juab County Desires:

1. All management decisions are based on reliable, objective, site-specific data analyzed in accordance with the Data Quality Act.
2. Eco-region, landscape level or remote sensing such as SWReGAP data is field verified and refined before it is incorporated into management actions, planning prescriptions, or site specific projects.
3. Land managers aggressively implement actions that are consistent with desired future conditions, findings, policies, goals and objectives outlined in this RMP to restore, improve and maintain the County's vegetative resources.
4. Land managers optimize vegetative resources in the County by using native and/or non-native vegetation that best meets the desired objectives.
5. Native only prescriptions are limited to actions a) required by law, or b) where greater optimization and conservation of targeted resources occurs.

Findings, Policies, Goals and Objectives

Finding: Eco-region, landscape level or remote sensing such as SWReGAP data is insufficient for land use planning in the County unless it is field verified and refined before it is incorporated into management actions, planning prescriptions, or site specific projects.

Policy, Goal & Objective: Land managers shall aggressively implement actions that are consistent with desired future conditions, findings, policies, goals and objectives outlined in this RMP to restore, improve and maintain the County's vegetative resources.

Policy, Goal & Objective: Land managers shall optimize vegetative resources in the County by using native and/or non-native vegetation that best meets the desired objectives.

Policy, Goal & Objective: Native only prescriptions shall be limited to actions a) required by law, or b) where greater optimization and conservation of targeted resources occurs.

2.6.1 Desired Vegetation Communities

2.6.1.1 Upland Vegetation

Upland vegetation refers to the dominant vegetation communities that are not directly associated with wetlands or streams. This vegetation type makes up the vast majority of the County's vegetation with some estimates indicating upland composition in excess of 95% of all lands in the County not covered by water. Although not directly associated with water, upland vegetation, or lack thereof, can have a significant impact on water quality, runoff, erosion, and aquatic habitat. The County's upland vegetation types and dominant plant communities are discussed below.

2.6.1.1a Forests and Woodlands

Forests and woodlands are found throughout the County, especially in higher elevations, and consist of deciduous and coniferous species of trees and shrubs. These areas play a major role in the local ecosystem by providing wildlife habitat, stabilizing soils, reducing erosion, contributing to water quality, producing vegetative biomass, sequestering carbon dioxide from the air, producing oxygen, and serving as indicators of overall ecosystem health. Forests and woodlands have been subject to long-term natural and human manipulation. Historically forests and woodlands have been subject to wildland fire and since the mid-1800s timber harvests that supported local communities. More recently these valuable resources have been impacted through fire suppression and management approaches that exclude active and appropriate timber management. The primary components of this vegetation type are discussed below.

Pinyon/Juniper (PJ) Pinyon-juniper woodlands are the most widely distributed and largest forest type community in the County. This community generally occurs on a variety of slopes and aspects, and its soils are usually coarse-texture, calcareous alluvium derived from sandstone and shale. There are significant amounts of bare ground, litter, and desert pavement at the soil surface. These woodlands—one of the most xeric forest types in the United States—occupy about 48 million acres primarily in Nevada, Utah, Arizona, New Mexico, and Colorado. Several associations of pinyon and juniper trees comprise the woodlands throughout its range including pure or nearly pure stands of pinyon or juniper trees and varying mixtures of the two species. Complete crown closure of overstory trees is rare, but tree roots causing a suppression of understory vegetation often occupy the soils underneath well-developed stands. Estimates indicate PJ woodlands are the increasingly dominant forest type and make up approximately 74% of all forested areas in the County

PJ forests, as a result of their chemically competitive nature, inhibit grasses and forbs from germination, thereby creating and maintaining a nearly homogenous, sterile vegetation community. These habitat types provide very little forage opportunities to wildlife, especially big game. PJ woodland communities are increasing in the Western United States as other vegetation communities are invaded by pinyon-juniper woodland species. Utah juniper is

expanding into open meadows, grasslands, sagebrush steppe communities, quaking aspen groves, riparian communities, and forestlands. The replacement of shrub steppe communities with juniper woodland has been largely attributed to the reduced role of fire, primarily facilitated by passive vegetative management and active fire suppression. The reduction of fine fuels through livestock grazing prior to the Taylor Grazing Act in 1934 may have played a role in initiating PJ encroachment, but failure to reintroduce a fire component in invasive woodlands has significantly expanded any such impact. This expansion of pinyon-juniper woodlands has been facilitated by a combination of climatic changes/drought and the removal of understory vegetation.

Pinyon-juniper woodlands areas also include lower montane riparian woodlands. These are linear areas or patches occurring primarily in the lowest elevations. The areas are dependent on the natural hydrologic regime and flooding and are often found near wet meadows.

Pinyon-juniper woodland stands can be classified as ephemeral or persistent on a landscape. Persistent stands are those that occupy a given site for a long period and typically have little fire disturbance or very infrequent fire disturbance (fire return intervals in excess of 200 years).

Ephemeral stands are those that periodically share a landscape with other vegetation types, such as sagebrush. The dynamic of area dominance has typically been controlled by the periodicity of fire on the site. Given that fire frequency on many of these sites has been altered (reduced) since pioneer times, more acres are now dominated by pinyon-juniper woodland than were historically reported, and the trees on these sites are often older than would have been expected in a pre-settlement stand.

These changes in fire occurrence and frequency incrementally modify vegetation cover, effecting wildlife habitat and overall landscape condition. Where fires in the sagebrush-steppe were once fueled primarily by herbaceous vegetation, many are now fueled by taller woody vegetation with higher fuel loads. This results in more intense fires that can be damaging to soils, creating habitat for noxious, invasive, and nonnative early successional species in the area.

In the absence of fire or mechanical treatment projects, ephemeral pinyon-juniper woodland will continue to opportunistically expand and increase in density. As tree density increases and tree canopies close, fewer resources are available for understory species. In this situation, understory species (grasses, forbs, and shrubs) will be reduced and wildlife habitat and forage production will be adversely affected. Under juniper-dominated canopies, increases in bare ground and impaired hydrological function, resulting in high levels of erosion, are additional consequences of increasing juniper dominance.

A potential exacerbating force to the spread of pinyon-juniper woodland are the potential effects of climate change, which could limit resistance and resilience to PJ expansion into adjacent big sagebrush shrublands by expanding drought conditions and fire return intervals. In addition, the expanding range of pinyon-juniper woodlands will result in greater erosion loss of wildlife habitat

Due to increased fuel loadings and increased continuity of tree canopies, wildfires can burn readily and more intensively than historically through ephemeral pinyon-juniper woodland stands, causing both damage to the soil A-horizon and increased erosion from post-fire rains and snow runoff. The threat of canopy-burning fires at high intensities and rapid rates of spread can

also impact stands of persistent pinyon-juniper woodland, ponderosa pine, and other tree species, as well as adjacent non-forest vegetation types.

Ponderosa Pine Ponderosa pine (*Pinus ponderosa*) is the most widely distributed pine species in North America, ranging from southern British Columbia to central Mexico and from central Nebraska to the west coast. In climax forests, ponderosa pine stands often contain many small, even-aged groups rather than a true uneven-aged structure. Interior ponderosa pine or shrub communities in central and southern Utah are usually the lowest coniferous forest type, and border shrublands or pinyon-juniper woodlands.

Ponderosa pine is found scattered through many of the mountain ranges in the region. It is a minor component in many stands of mixed conifer, pinyon-juniper woodland, aspen, and mountain mahogany. In a few areas it forms stands where it is the dominant cover type. Ponderosa pine is an important habitat type, providing high-quality wildlife habitat and visual diversity, often in areas that are otherwise dominated by low-growing woody vegetation.

As with other vegetation types, the fire regime of the ponderosa pine has been altered since pioneer times, and less frequent fires have allowed increases in understory vegetation. This understory vegetation is often pinyon, juniper, or mountain mahogany, all of which provide fuel “ladders” that allow damaging fires to move into the crowns of the taller ponderosa pine. Historically, fires remained largely in the understory of larger trees, causing little damage to the pine.

Wildfires have reduced acreages of mature ponderosa pine for several decades in many parts of southern Utah. Centuries-old trees that once withstood multiple ground-based fires have been lost to canopy fires. These trees are not a replaceable resource within the foreseeable future. Ponderosa pine will continue to be lost in the planning area if the current stand conditions, with substantial understory vegetation, are allowed to persist and spread throughout a stand. Mechanical removal through selective harvest, coupled with the removal of understory growth and judicious use of prescribed fire, can be a long-term solution to promote fire resistance/resilience and to reduce stand-eliminating fires.

Mixed Conifer Mixed conifer stands can be composed of one or more of several species: Douglas-fir, white fir, ponderosa pine, limber pine, Great Basin bristlecone pine, and aspen. Occasionally, and primarily on the western side of the County at higher elevations, subalpine fir, Engelmann spruce, and blue spruce can make up a small percentage of a mixed conifer stand. Where aspen is a stand component, it typically indicates the site was once dominated or mostly dominated by aspen, and it likely indicates that fire has not played the same role in the ecosystem it once did.

Many parts Utah have seen an increase in drought-related bark beetle activity that has resulted in mortality of white fir and Douglas-fir. Many of the mixed conifer stands are in areas managed for primitive recreation, making managers reluctant to approve use of mechanical management tools. In addition, many mixed conifer stands are on steep, inaccessible slopes where active management is limited.

Mixed conifer vegetation communities within the planning area are dominated by two primary associations: white fir and Douglas fir. Mixed conifer vegetation communities and associations are found at elevations ranging from 5,000 to 8,500 feet. This mesic vegetation community

generally occurs on steep, lower slopes and benches with northern aspects, and in narrow canyons and ravines. Mixed conifer vegetation communities include upper montane/subalpine riparian forests, shrublands and herbaceous riparian areas. These riparian areas are linear or patches confined to specific environments occurring on floodplains or terraces of rivers and streams. Shrubs are often found in these areas. Understory conditions vary widely from dry, open-canopy forests with grassy undergrowth on open slopes and ridges to moist, closed-canopied stands dominated by numerous herbaceous plants in the canyons and ravines.

Species composition, forest density, structure, and disturbance regimes have been altered in many mixed conifer forests of southern Utah since settlement. Interruption of natural fire regimes has allowed succession to move these forests toward more shade-tolerant species. As a result, ponderosa pine is no longer dominant in mixed conifer forests and aspen populations have declined dramatically. Ponderosa pine has lost acreage to both Douglas-fir and white fir, and in turn, Douglas-fir has lost acreage to white fir.

Selective harvesting and fire exclusion has caused dense, multistoried Douglas-fir and white fir to largely replace the ponderosa pine component in mixed conifer stands. As a result, mixed conifer forests are now very susceptible to western spruce budworm, root disease, bark beetles, dwarf mistletoe, and stand-replacing fires. The higher densities and contiguity of forests has led to large regional insect outbreaks that are more severe than in the past. Larger outbreaks will result in continued changes in forest structure, composition, and function, including creation of openings, depletion of large diameter trees, and an increase in fire hazard due to greater surface fuel accumulations. With continued fire exclusion in mixed conifer forests, surface and ladder fuels will continue to coalesce with crowns of over-story trees. This change in vertical fuel structure will further increase the probability of severe stand replacement crown fires.

Spruce – Fir Mixed Engelmann spruce and subalpine fir forests comprise the upper extent of forest vegetation in southern Utah, occupying the coldest and wettest sites in the altitudinal continuum of ecologic conditions in the area. Precipitation regimes in these forests are dominated by snow, which can occupy these sites for 6 to 8 months of the year. Spruce-fir forests can exist on-site for extremely long periods, sometimes as long as 500 to 600 years, with reports of even longer periods. Harsh climates and short growing seasons result in infrequent, but large-scale disturbances including fire, insect attacks, wind, and avalanches, which historically interacted to create coarse-scaled mosaics of different aged patches on the landscape.

Spruce-fir forests have expanded into the mixed coniferous forests, as well as into high elevation meadows of southern Utah. Expansion into the lower elevations is a result of succession from aspen forests to mixed conifer forests due to fire suppression and because aspens provide suitable habitat for the establishment of shade tolerant conifers. Expansion into some higher meadows has also occurred over the past 100 years. If climatic warming is occurring, it would increase the length and warmth of the growing season, possibly improving seedling survival. Furthermore, fire suppression has allowed seedlings to establish on the edges of meadows and reduce the extremely high soil moisture making it easier for additional seedlings to establish in the center of the meadows.

The structure of spruce-fir forests in Utah is predominately uneven-aged. Engelmann spruce is the major species, followed by subalpine fir and aspen. Pure Engelmann spruce stands and spruce-fir forests (where spruce and subalpine fir are codominant) consist of all ages, although

the majority of these trees are 51 to 150 years old. In addition, there are some Engelmann spruce trees 151 to 250 years old. Often, subalpine fir is also present indicating its ability to maintain itself under the Engelmann spruce canopy for long periods. The predominance of subalpine fir seedlings in the understory of Utah forests is indicative of its ability to successfully reproduce on duff-covered seedbeds, but spruce's average longevity over subalpine fir keeps it dominant in the over-story.

Insect activity has also dramatically increased in Utah in recent years. Spruce bark beetle populations have been at epidemic levels since 1991 on the Dixie National Forest. And since 1989, large areas of the Dixie, Fishlake, and Manti-LaSal National Forests have experienced severe disturbances caused by spruce bark beetle. Most spruce trees greater than 6 to 8 inches were killed during these outbreaks. It is estimated from 2000 to 2004, spruce bark beetles have killed over 366,000 trees on over 100,000 acres of Utah National Forests. Hazard ratings indicate that 45 percent of spruce-fir forest types are at moderate to high risk of attack by bark beetles.

Aspen Quaking aspen is the most widely distributed tree in North America. Aspen stands provide excellent diversity for wildlife and ecological settings. The largest stands are in mountain environments at higher elevations. Other stands can be found scattered in many of the mountain ranges, typically in riparian areas or on the more mesic sites. Stands tend to be small, and sometimes clones can be composed of just a few individuals. Aspen has become subordinate to conifer in some stands, which are now classified as mixed conifer stands. On these sites, typically white fir, one of the most shade-tolerant conifers, has become the dominant species. On the drier aspen sites, junipers and pinyons have become a prominent understory component of aspen stands. The increase in coniferous species in aspen- and once-aspen-dominated stands is an indicator that fire has not played its former role in the ecosystem. While aspen produces abundant seed, the seed contains no endosperm; therefore, the seedlings cannot survive even short periods of drought during their first year of establishment. In the County, aspen reproduces primarily by vegetative reproduction. Without active management or fire use, aspen will likely continue to decline within the region. Aspen stands could regenerate following fire events in mixed conifer stands that have an aspen component.

Aspen provides habitat for a wide variety of wildlife needing young forests, including black bear, deer, elk, ruffed grouse, and a number of smaller birds and animals. Compared to conifer forests, aspen forests allow more surface water and/or groundwater recharge and streamflow because of their lower seasonal water losses to interception and transpiration. Aspen stands also produce abundant forage that amounts to as much as 1,000 to 2,500 pounds per acre annually, or three to six times more than typical conifer stands. These amounts are comparable to forage production on some grasslands.

Fire is a natural feature in much of the aspen ecosystem of western North America. It is responsible for the abundance of aspen in the West and for the even-aged structure of most stands. In some areas, many aspen stands are the same age, dating from a single great fire or a year of widespread fires. Fire appears to be necessary for the continued well-being of aspen on most sites. Many aspen stands are replaced by grass, forbs, shrubs, or conifers in the absence of fire. Because of low fuel accumulations, aspen stands have low flammability and make excellent firebreaks.

Aspen is considered a fire-induced successional species that will dominate a site until it is

replaced by less fire-enduring and more shade-tolerant species, such as conifers - provided a coniferous seed source is present. Fire reduces the over-story, stimulates shoots to sprout, and kills invading conifers growing in the aspen clone. Since aspen can sprout from existing roots and these suckers grow faster than the new slowing growing conifers, aspen can dominate a grove for many years after a fire. Otherwise, aspen can be replaced relatively quickly by conifers, within 100-200 years, or the replacement may be slower taking more than 1,000 years.

Aspen forests do not readily burn. Aspen trees have moist green leaves and thick twigs that do not burn easily, unlike conifers, which have dry needles and twigs. Crown fires running through coniferous forest drop to the ground when they come to an aspen stand and may even extinguish after burning into the aspen only a few yards. Fires sometimes bypass stands of aspen enclosed within coniferous forest.

Although aspen forests do not burn readily, aspen trees are extremely sensitive to fire. A fire intense enough to kill the aspen over-story will stimulate abundant suckering, though some suckers arise after any fire. As many as 50,000 to 100,000 suckers can sprout and grow on a single acre after a fire.

Although many diseases attack aspen, relatively few kill or seriously injure living trees. Generally, the common leaf diseases are found throughout the range of aspen, while decay fungi and major canker-causing organisms are more locally distributed. Much remains to be learned of the disease organisms that infect aspen.

The aspen ecosystem is rich in number and species of animals, especially in comparison to associated coniferous forest types. Aspen forest types produce an abundance of forage, as much as many grasslands and more than 10 times that produced under associated conifers. Cattle and sheep grazing the aspen understory has been the primary consumptive use of the aspen forest in the West.

Browsing has a direct impact on aspen trees in this forest community. Through the early sapling stage, browsing reduces aspen growth, vigor, and numbers. Heavy browsing by large ungulates such as deer, elk, or sheep can drastically reduce or eliminate aspen sucker regeneration.

Beaver can also affect aspen. Beaver have the ability to cut and remove saplings to mature-sized aspen trees. Cutting, by itself, stimulates abundant aspen suckering. Beaver cut aspen of all diameters, feed on the bark and small branches of the felled trees, and utilize stems of medium diameter in their dams. The flooding resulting from the beaver dams may change the entire plant community, and even the landscape. A series of benches may result from siltation behind beaver dams. Each bench is relatively flat and wet along the stream course, often too wet for aspen to develop. These benches may become dominated by other vegetation for centuries.

Aspen is especially susceptible to gnawing or stripping of its bark by several species of mammals, such as elk, deer, rabbits, hares, mice, voles, and porcupines. Aspen buds are an important winter food source for wildlife. Aspen seedlings and saplings may also be trampled by large ungulates and may be affected by digging and feeding upon their roots by pocket gophers and other burrowing creatures.

Need for Management Change

1. Forest and woodland health needs to be restored to the historical range of variability, including but not limited to composition, age, size, and density in accordance with ecologic site descriptions.
2. Land managers need to increase the use of timber harvesting to restore resilience and resistance to fire, insects, and other disturbances.
3. Timber harvest appraisals need to be revised to reflect timber values in the County and to encouraged resurgence of timber harvesting infrastructure and the timber harvesting industry.
4. Insect and disease epidemics that could degrade forest and woodland health need to be prevented.
5. Land managers need to use silvicultural practices to increase the presence of large trees in Ponderosa Pine stands.
6. Biomass or other markets need to be developed for smaller diameter materials to reduce competition and surface build up.
7. Mixed conifer forests need to be returned to earlier successional stages and have age and spatial diversity increased.
8. In mixed conifer forests, prescribed fire needs to be used judiciously after harvests, thinning, mechanical mastication, and other fuel reduction projects to eliminate undesirable seedlings.
9. Additional forage resulting from improved forest health needs to be allocated to livestock and wildlife in accordance with the County's plans, programs and policies.
10. Spruce fir forests need to be restored to healthy conditions and maintained in a condition that is resilient and resistant to fire and insect damage.
11. Aspen regeneration and rejuvenation need to be increased.
12. The impact of elk on forests managed for aspen regeneration needs to be controlled.

Desired Future Conditions

Juab County Desires:

1. Forest and woodland health is restored to the historical range of variability, including but not limited to composition, age, size, and density in accordance with ecologic site descriptions.
2. The use of timber harvesting is increased to restore resilience and resistance to fire, insects, and other disturbances.
3. Appraisals for timber sales are revised to reflect timber values in the County and to encouraged resurgence of timber harvesting infrastructure and the timber harvesting industry.

4. Insect and disease epidemics that could degrade forest and woodland health are prevented.
5. Silvicultural practices are used to increase the presence of large trees in Ponderosa Pine stands.
6. Biomass or other markets are developed for smaller diameter and other materials that promote competition and surface build up.
7. Mixed conifer forests are returned to earlier successional stages and have age and spatial diversity increased.
8. Prescribed fire is used judiciously after harvests, thinning, mechanical mastication, and other fuel reduction projects in mixed conifer forests to eliminate undesirable seedlings.
9. Additional forage resulting from improved forest health is allocated first to livestock to restore suspended or un-used AUMs, second to wildlife to meet objectives on January 1, 2015 and third equally between livestock and wildlife.
10. Spruce fir forests are restored and maintained in a healthy condition that resilient and resistant to fire and insect damage
11. Aspen are regenerated and rejuvenated.
12. The impact of elk on forests managed for aspen regeneration is controlled.
13. Commercial timber production should be allowed where the resources are available.

Findings, Policies, Goals and Objectives

Finding: Forests and woodlands impact land health and the health, safety, welfare, custom, culture and heritage of the County. It is imperative that forests and woodlands are restored to and maintained in a properly functioning condition.

Finding: Forests and woodlands that are susceptible to catastrophic fire, insects and disease threaten air quality, water quality, soil stability, wildlife, recreation and the health, safety, welfare, custom, culture and heritage of the County.

Finding: Forests and woodlands that are a) outside a desirable range of variation or b) not in properly functioning condition fail to support an enjoyable and productive harmony between man and his environment.

Goal & Objective: Restore and maintain the County's forests and woodlands to a properly functioning condition consistent with the historical range of variability and ecologic site descriptions, including but not limited to composition, age, size, and density.

Goal & Objective: Restore and maintain the vigor of the County's timber harvest infrastructure and industry.

Goal & Objective: Timber harvesting is increased to restore resilience and resistance to fire, insects, and other disturbances.

Policy: Timber sale appraisals shall be specific to the area of the sale and shall reflect timber values in the County. Wherever proposed harvests are susceptible to catastrophic fire, appraisals shall consider and include potential costs for no action and a fire taking place.

Policy: Timber and woodland resources shall be managed to prevent insect and disease epidemics that could degrade forest and woodland health. Integrated forest management, including harvesting, thinning, mulching, prescribed fire and other appropriate techniques, shall be implemented to restore forests and woodlands to a condition that prevents insect and disease epidemics.

Policy: Silvicultural practices are the preferred method of increasing the presence of large trees in Ponderosa Pine stands.

Goal & Objective: In order to improve forest and woodland health, develop biomass industries and other markets to process small diameter trees and other materials that promote surface fuel build up.

Goal & Objective: Return mixed conifer forests to earlier successional stages and have age and spatial diversity increased.

Policy: Consistent with forest/woodland health and ecologic site conditions and coordinated with the County, ranger districts and field offices shall develop target values for successional stages, age diversity, basal area, tree density, and spatial diversity for forests and woodlands within their jurisdictions. Until site specific target values are developed by ranger districts and field offices the following target values shall apply: a) Successional Stages: 30% to 50% early; 20% to 40% middle; less than 25% late b) Age, Basal Area, Tree Density and Spatial Diversity: Within 10% of historic, pre-settlement values

Policy: Where stand conditions exceed the target values identified above for late successional stage, age, basal area or density by more than 5%, tree stands will be deemed a) susceptible to catastrophic fire, insect infestation and disease and b) failing to meet resistant and resilient conditions.

Policy, Goal & Objective: Land managers should focus treatment area prioritization on ponderosa pine and mixed conifer forests types where fire regimes and vegetation attributes have been significantly altered from their historical range of variability. These areas require moderate to high levels of mechanical restoration treatments before fire can be reintroduced to restore the historical fire regime.

Policy, Goal & Objective: In ponderosa pine forests, treatments should focus on converting to uneven-aged management, reducing or removing shade tolerant conifers and oak, and re-introducing frequent prescribed surface fires.

Policy, Goal & Objective: Mixed conifer forest treatments should focus on reducing the amount of shade tolerant species and leaving more fire-resistant tree species such as ponderosa pine and Douglas-fir.

Policy, Goal & Objective: Spruce-fir forest treatments should focus on maintaining a landscape of different age structures, successional stages, and fuel breaks to lessen the risk of catastrophic fire.

Policy: Based on a 10 year rolling average and consistent with desired ecological site descriptions, restore at least 25% of the Class II and Class III pinyon/juniper woodlands having a median age of less than 200 years to sagebrush/semi-desert grassland vegetation communities.

Policy: Prescribed fire is an appropriate tool for maintaining forest health and should be used judiciously after harvests, thinning, mechanical mastication, and other fuel reduction projects have been appropriately implemented.

Policy: Additional forage resulting from improved forest health shall be allocated on the following priority:

First – To restore suspended or un-used livestock AUMs;

Second - To wildlife to meet January 1, 2015 objectives;

Third - Equally between livestock and wildlife.

Goal & Objective: Spruce fir forests are restored and maintained in a healthy condition that are resilient and resistant to fire and insect damage.

Policy, Goal & Objective: Land managers shall restore forests impacted by insects and disease to properly functioning condition with appropriate seral stages, ages, basal area, tree densities and spatial diversity at a rate of 10% annually.

Goal & Objective: Aspen are regenerated and rejuvenated.

Policy: Wildlife managers shall control the impact of elk on forests managed for aspen regeneration.

Goal & Objective: Commercial timber production should be allowed where the resources are available.

2.6.1.1b Sagebrush – Steppe/Semi-Desert

The word “steppe” is used to describe a large, dry, level, grassland or scrubland having few or no trees. Steppe areas, also referred to as “semi-desert,” are dry, cold, grasslands found between deserts and forest or woodlands. Under natural conditions, steppes are covered with grasses and shrubs. Sagebrush steppe or sagebrush semi-desert is a dry site vegetation community with a mix of sagebrush, other shrubs, grasses, and forbs. The names come from sagebrush, which is the most abundant plant species that grows in this ecosystem.

Sagebrush steppe vegetation communities and associations are common in Utah, Washington, Oregon, Idaho, and adjacent Wyoming, and Nevada. Sagebrush steppes are mostly found at elevations between 2,000 and 6,000 feet. Sagebrush steppe is a major vegetation community in the County and is usually interspersed with pinyon-juniper woodlands and desert scrub vegetation communities. Precipitation in these areas is between 8–15 inches per year, and soils are dry with a thin organic horizon

Widely distributed in the Great Basin, this vegetation community is often found in the valley portions of Juab Counties west of the I-15 corridor. Sagebrush steppe communities generally occur on the drier portions of pinyon-juniper woodlands and mesic portions of the desert shrub

community. Characteristic and dominant shrubs in this habitat may include basin sagebrush, Wyoming sagebrush, mountain sagebrush, antelope bitterbrush, and silver sagebrush. Each of these species can be the only shrub or appear in complex seral conditions with other shrubs. Rabbitbrush and short-spine horsebrush are common associates and often dominate sites after disturbance. Forbs with shallow root systems are favored in wetter years, whereas deeply rooted shrubs have the competitive advantage during droughts and survive by tapping deeply infiltrated moisture.

Numerous bird and mammal species are found in sagebrush steppe communities. These species can be grouped into sagebrush obligates (e.g., sage grouse, sage thrasher, sage sparrow, Brewer's sparrow, pygmy rabbit, sagebrush vole, sagebrush lizard and pronghorn); shrubland species (e.g., green-tailed towhee, black-throated sparrow, and lark sparrow); and Shrubland-Grassland species (e.g., Swainson's hawk, ferruginous hawk, prairie falcon, sharp-tailed grouse, and loggerhead shrike).

Shrubs typically provide 10 to 60 percent of the vegetation cover in undisturbed conditions, and in disturbed areas shrub cover varies between 10 and 30 percent. Vegetation structure in this community is characterized by an open shrub layer over a moderately open to closed bunchgrass layer. The more productive sites generally have a denser grass layer and sparser shrub layer than more xeric sites. The bunchgrass layer may also contain a variety of forbs. Sagebrush steppe vegetation communities generally have relatively little exposed bare ground, and mosses and lichens may carpet the area between taller plants. Moist sites may support tall bunchgrasses greater than 3.3 feet or rhizomatous grasses.

Sagebrush ecosystems have been degraded in the past several decades, largely as a result of invading pinyon/juniper, suppression of fire and failure to maintain historic disturbance cycles.

Need for Management Change

1. Sagebrush dominant vegetation communities need to be restored to the historical range of variability, including but not limited to composition, age, size, and density in accordance with ecologic site descriptions.
2. Land managers need to increase vegetative treatments in sagebrush ecosystems to restore the historic and natural range of variability.
3. Invading conifers, especially pinyon/juniper associations, need to be recognized as the greatest threat to a desired and healthy sagebrush ecosystem in the County, and treatments need to be implemented to restore sagebrush ecosystems to their historic range.
4. Loss of sagebrush ecosystems to invading conifers needs be recognized for its impact on water quality, wildlife, erosion and other ecological resources.
5. Suspended AUMs for livestock need to be restored commensurate with restoration of invading conifers to desirable sagebrush communities.
6. Water gain from restoration of invading conifers to sagebrush communities needs to be optimized for rangeland health and multiple uses.

7. Additional water needs to be developed in current and restored sagebrush ecosystems to optimize multiple use/sustained yield benefits.
8. As sagebrush communities are restored, sage-grouse related prescriptions need to be removed.

Desired Future Conditions

Juab County Desires:

1. Sagebrush dominant vegetation communities are to be restored to the historical range of variability, including but not limited to composition, age, size, and density in accordance with ecologic site descriptions.
2. Managers increase vegetative treatments in sagebrush ecosystems to restore the historic and natural range of variability.
3. Invading conifers, especially pinyon/juniper associations, are recognized as the greatest threat to a desired and healthy sagebrush ecosystem in the County; and treatments are implemented to restore sagebrush ecosystems to their historic range.
4. Loss of sagebrush ecosystems to invading conifers needs be recognized for its impact on water quality, wildlife, erosion and other ecological resources.
5. Suspended AUMs for livestock need to be restored commensurate with restoration of invading conifers to desirable sagebrush communities.
6. Water gain from restoration of invading conifers to sagebrush communities needs to be optimized for rangeland health and multiple uses.
7. Additional water needs to be developed in current and restored sagebrush ecosystems to optimize multiple use/sustained yield benefits.
8. Prescribed fire is used judiciously after thinning, mechanical mastication, and other treatment projects are completed.
9. Additional forage resulting from improved rangeland health is allocated first to livestock to restore suspended or un-used AUMs, second to wildlife to meet objectives on January 1, 2015 and third equally between livestock and wildlife.
10. As sagebrush communities are restored, sage-grouse related prescriptions need to be removed

Findings, Policies, Goals and Objectives

Goal: Manage sagebrush steppe/semi-desert communities for desired future conditions, ensuring ecologically diversity, stability and sustainability.

Objective: Maintain or enhance the integrity of current sagebrush and sage-brush semi-desert communities and identify areas in need of restoration due to pinyon-juniper expansion or decadent stands of sagebrush.

Objective: Initiate restoration and/or rehabilitation efforts to ensure sustainable population of greater sage-grouse and other sagebrush-obligate species.

Objective: Maintain vegetation treatment areas to provide suitable habitats and forage for wildlife and livestock.

Objective: Respond to effects of possible climate change by maintaining vegetation communities in good vegetation and soil health. Manage communities to a standard that has decadent, dying, or dead vegetation less than 10 percent compared to live, vigorous vegetation.

Objective: Provide for vegetative restoration in semi-desert ecosystems, including control of noxious weed infestations, and invasive and undesirable nonnative species using optimal mixes of native and non-native species.

Objective: Utilize adaptive management principles for resource uses during times of extended drought and during times of abundant forage.

Goal: Restore sagebrush dominant vegetation communities to historical range of variability, including but not limited to composition, age, size, and density in accordance with ecologic site descriptions.

Policy: Managers shall increase vegetative treatments in sagebrush ecosystems to restore the historic and natural range of variability.

Finding & Policy: Invading conifers, especially pinyon/juniper associations, are recognized as the greatest threat to a desired and healthy sagebrush ecosystem in the County. Treatments to arrest conifer invasion and restore sagebrush communities shall be prioritized.

Finding & Policy: Loss of sagebrush ecosystems to invading conifers is recognized for its impact on water quality, wildlife, erosion, potential climate change and other ecological resources.

Policy: Suspended AUMs for livestock will be restored commensurate with restoration of invading conifers to desirable sagebrush communities.

Policy: Water gain from restoration of invading conifers to sagebrush communities will be optimized for rangeland health and multiple uses.

Policy: Additional water needs to be developed in current and restored sagebrush ecosystems to optimize multiple use/sustained yield benefits.

Policy: Prescribed fire is most judiciously used after thinning, mechanical mastication, and other treatment projects are completed.

Goals & Objectives: Unless otherwise approved by the County and consistent with ecologic site conditions, the following minimum objectives are established when lands are treated with prescribed or wildland fire in sagebrush habitats:

1. Retain 40 percent ground cover after the burn with recruitment to 60 percent ground cover before the first rainy season following the burn.
2. Cupped fire lines should have water gaps every 20 feet to allow captured water to exit.

3. Existing disturbance areas, such as roads and trails, should be used to the extent possible as fire lines.

Policy: Additional forage resulting from improved rangeland health and vegetative treatments in sagebrush communities shall be allocated first to livestock to restore suspended or un-used AUMs, second to wildlife to meet objectives of January 1, 2015 and third equally between livestock and wildlife.

Policy: As sagebrush communities are restored, sage-grouse related prescriptions need to be removed.

Policy: Managers of sage-grouse focal areas and sage-grouse priority habitat management areas shall ensure at least 75% of any focal area or priority habitat area in their jurisdiction maintain an NRCS Wildlife Habitat Evaluation Guide score of 0.7 or higher, consistent with ecologic site descriptions.

Policy: Managers of sage-grouse focal areas and sage-grouse priority habitat management areas shall ensure not more than 20% of any focal area or priority habitat area in their jurisdiction will have an NRCS Wildlife Habitat Evaluation Guide score of lower than 0.4, consistent with ecologic site descriptions.

Policy: Managers shall use of the full range of upland vegetation treatment methods and tools (i.e., prescribed fire, chaining, plowing, bull hog, pipe harrow, hand cutting, herbicide, aerial seeding, drill seeding, and broadcast seeding) to make progress toward achieving desired future conditions in sagebrush ecosystems.

Policy: Managers shall treat all vegetation types to achieve or make progress toward achieving desired future conditions in sagebrush ecosystems. Seed mixes shall be comprised of an optimum combination of native and non-native species and will be based on factors such as soil type, precipitation, and elevation, to provide for effective rehabilitation and the greatest opportunity for success of vegetation treatments. Seed mixes will be comprised of a diverse composition of appropriate species to allow for progress within the range of variability provided by the appropriate Ecological Site Description.

Policy: In PHMA and GHMA, conduct a) land health assessments that include indicators and measurements of structure, condition, composition, etc., of vegetation specific to achieving GRSG habitat objectives and b) NRCS Wildlife Habitat Evaluation Guide analysis to prioritize treatments in sage-grouse habitat.

Policy: Managers shall treat areas that contain cheatgrass and other invasive or noxious species in sagebrush habitats and shall reduce invasive species and noxious weeds by 10% annually.

Policy: Managers shall treat sage-brush semi-desert communities to a) provide a healthy, diverse mosaic of different height and age structures with components of native and non-native grasses and forbs, and b) limit the pinyon-juniper component for a given ecological site to Class II and Class III PJ woodlands with a median age of at least 200 years.

Policy: Implementation of vegetation treatments in sage-grouse habitat shall be consistent with this RMP and Sage-Grouse Conservation Plan to the maximum extent allowed by law.

Policy: Based on a 10 year rolling average and consistent with desired ecological site descriptions, restore at least 25% of the Class II and Class III pinyon/juniper woodlands having a median age of less than 200 years to sagebrush/semi-desert grassland vegetation communities.

Policy: Vegetation treatments conducted within 0.6 miles of a lek shall completely remove all conifers less than 200 years old.

Finding & Policy: Class I pinyon juniper trees and Class II and Class III pinyon juniper woodlands with a median age less than 200 years are invasive conifers that are inconsistent with managing for sage-grouse habitat or rangeland health.

Finding & Policy: Pinyon and juniper trees are invasive conifers that degrade rangeland health, water quality, soil stability, vegetative ground cover and other resources. Pinyon/juniper trees and stands shall not be protected as old growth unless they have an age greater than 300 years.

Finding & Policy: Managers have not objectively or scientifically proven native seeds have greater adaptability, probability of success or availability. In sage-grouse management areas and when restoring sagebrush communities, managers shall use an optimum mixture of native and non-native seeds until such time as native only seed mixtures are proven more productive and efficient.

2.6.1.1c Desert Shrub-Scrub

Desert shrub includes the salt shrubs; greasewood, black brush, and desert grassland vegetation cover types. Comprising large portions of western the County, this is the largest vegetation community in the driest parts of the County. This vegetation community is primarily located on the valley floors and is most common on well-drained, sandy to rocky soils; however, saline and alkaline soils are tolerated. Plants within this community are adapted to a wide temperature range, and many are capable of photosynthesis at temperatures as low as 11°F. Desert shrub areas are typically at elevations between 2,500 and 8,000 feet. Structural and compositional variations in this habitat are related to changes in salinity and fluctuations in the water table and can be described as occurring in two primary vegetation associations — saltbush and salt desert shrub.

The saltbush vegetation association is perhaps the most arid vegetation type in the intermountain West. These areas are characterized by accumulations of salt in poorly developed deep soils. Soils in these areas usually have a pH of 7.8 to 9, which restricts the uptake of water by all but the most salt-tolerant plants (halophytes). Halophytes function essentially to redistribute salts from the soil depths to the surface, thereby concentrating salts around the perimeter of the plant. This enables the plant to eliminate competition for scarce water and nutrients from other less salt-tolerant plants.

The salt desert shrub association is characterized by drought tolerant shrubs, with few grasses and forbs in the understory. The soils in these areas are shallow saline clays and loams. Typical shrubs in these vegetation types are shadescale, four-wing saltbush, spiny hopsage, greasewood, winterfat, broom snakeweed and bud sagebrush.

Black brush is less tolerant of saline soils than greasewood or salt shrubs and can form nearly monotypic stands with a high percent shrub cover. Fourwing saltbush is tolerant of saline or alkaline soils and has adaptations that enable it to concentrate and secrete salts on the leaf surface.

Wildlife and livestock use of desert shrub vegetation varies depending on the species present. Fourwing saltbush is very palatable and provides high-quality forage for wildlife and livestock even during drought conditions. Black greasewood is a valuable browse for livestock and wildlife, particularly during fall and winter; however, when consumed in large quantities, the soluble oxalates it contains may be poisonous to livestock. The forage value for black brush is principally as browse for bighorn sheep. Domestic sheep and goats, and to a lesser extent cattle, browse black brush. During the winter in southwestern Utah, black brush provides fair forage for domestic sheep and cattle.

Grasslands are comprised of native, non-native naturalized and undesirable annuals. Arid grasslands are dominated by drought resistant plants that have adapted to harsh conditions by developing extensive root systems. Historically, this grassland system was maintained by frequent fires and was sometimes associated with specific soils, often well drained clay soils. A combination of precipitation, temperature, and soils limits this system to the lower elevations within the region. The dominant perennial bunch grasses and shrubs are all very drought resistant plants. Grasses that dominate these communities often develop a dense network of roots concentrated in the upper parts of the soil where rainfall penetrates most frequently. Blue grama, james galleta, indian ricegrass and other common species are generally tolerant to properly managed livestock grazing. Each of the native species has specific characteristics which allow them to adapt to their site specific soil and precipitation conditions.

Naturalized and biologically equivalent non-native species have also been introduced in the County. These species often serve as nurse crops or are used in specific applications such as seedings or post fire restoration. Naturalized and biologically equivalent non-native species are a valuable component of the desired vegetative regime, especially where rangeland health is threatened by the invasion of undesirable species.

Undesirable annual grasslands are generally isolated and are typically located in disturbed areas, especially those burned by wildfire. Areas that are dominated by undesirable annual grasses have typically achieved an ecological threshold and will require significant effort to restore native and biological equivalent non-native species.

Need for Management Change

1. Consistent with ecologic site descriptions and desired future conditions, land managers need to implement active treatments to restore and enhance rangeland health and the vigor of arid vegetative communities.
2. Undesirable annual grasses/cheatgrass needs to be controlled and reduced until it can be eradicated.
3. Where livestock grazing is allowed, additional water needs to be developed to diversify the use of available forage by livestock and wildlife.

4. Intense early season grazing, herbicide treatments and biologic agents need to be aggressively employed in areas of undesirable annual grass expansion.
5. Encroachment by undesirable native species, invasive non-native vegetation, and noxious weeds needs to be eliminated.
6. Areas previously encroached by undesirable native species, invasive non-native vegetation, and noxious weeds need to be restored to properly functioning and desired future conditions.
7. Naturalized and biologically equivalent non-native species need to be allowed when their use improves land health unless prohibited by law.
8. Managers need to restore an appropriate disturbance regime to maintain a desirable mix of seral stages.

Desired Future Conditions

Juab County Desires:

1. Land managers implement a full complement of integrated management techniques to restore appropriate disturbance regimes, desirable seral stages and to enhance rangeland health and the vigor of arid vegetative communities.
2. Undesirable annual grasses/cheatgrass is reduced by 5% annually until it can be eradicated.
3. Additional water resources are developed to diversify forage utilization by livestock and wildlife.
4. Intense early season grazing, herbicide treatments and biologic agents are aggressively employed in areas of undesirable annual grass expansion.
5. Additional encroachment by undesirable native species, invasive non-native vegetation, and noxious weeds is eliminated.
6. Other than cheatgrass, areas previously encroached by undesirable native species, invasive non-native vegetation, and noxious weeds are restored to properly functioning and desired future conditions at a rate of 25% based on a 10 year average.
7. Unless prohibited by law, naturalized or biologically equivalent non-native species be allowed/used when they optimizes vegetative cover or improve land health.
8. Managers enhance vegetative production and forage by livestock and wildlife to combat any effects of climate change.
9. Where native grasslands or non-native seedings have been lost to pinyon and juniper encroachment, cheatgrass/halogeton invasion or other undesirable vegetation, lands are restored to the native or treated condition. The desired future condition is that vegetative community (native or non-native) that optimizes rangeland health, ground cover and vegetative production.

10. Salt desert shrub communities consist of native and/or naturalized and biologically equivalent non-native open salt desert scrub vegetation with little to no cheatgrass or halogeton cover, and scattered pockets and patches of herbaceous material and forbs, primarily in the lower areas of the terrain.
11. Blackbrush and shrubland communities consist of dense-to-scattered shrubs and dense-to-open native and/or naturalized and biologically equivalent non-native grasses. Where surface disturbance occurs, areas are aggressively seeded with a seed mix optimized to reduce invasion of undesirable species and erosion.
12. Following fire, vegetative communities in this biome are seeded and revegetated, prior to the first rains supporting germination with a native and non-native mix designed to optimize short term and long term rangeland health.

Findings, Policies, Goals & Objectives

Finding: Rangeland health is optimized and the effects of drought and potential climate change are minimized when managers implement an integrated combination of mechanical, chemical, seeding and biological treatments to reduce cheatgrass and halogeton cover and restore native and desirable non-native communities.

Policy: Land managers shall implement an integrated combination of mechanical, chemical, seeding and biological treatments to optimize rangeland health and minimize the effects of drought and potential climate change.

Policy: Land managers shall implement an integrated combination of mechanical, chemical, seeding and biological treatments to reduce cheatgrass, halogeton and other undesirable vegetation and to restore native and desirable non-native communities

Policy, Goal & Objective: Undesirable annual grasses/cheatgrass shall be reduced by 5% annually until eradicated.

Policy, Goal & Objective: Additional water resources shall developed to diversify forage utilization by livestock and wildlife.

Finding: Intense early season grazing, herbicide treatments and biologic agents are appropriate and valuable techniques in combating undesirable annual grass expansion.

Policy, Goal & Objective: Land managers shall aggressively employ intense early season grazing, herbicide treatments and biologic agents in areas of undesirable annual grass expansion prior to prescribed management of other multiple uses.

Policy: Areas historically occupied by desert shrub/grassland communities that have been encroached upon by undesirable native species, invasive non-native vegetation, and noxious weeds shall be restored to properly functioning and desired future conditions at a rate of 25% based on a rolling 10 year average.

Policy: Unless prohibited by law, naturalized or biologically equivalent non-native species shall be allowed/used when they optimizes vegetative cover or improve land health.

Policy: Managers shall enhance vegetative production and forage by livestock and wildlife to combat any effects of potential climate change.

Policy: Where native grasslands or non-native seedings have been lost to pinyon and juniper encroachment, cheatgrass/halogeton invasion or other undesirable vegetation, lands shall be restored to the native or treated condition. The desired future condition is that vegetative community (native or non-native) that optimizes rangeland health, ground cover and vegetative production.

Policy, Goal & Objective: Salt desert shrub communities shall consist of native and/or naturalized and biologically equivalent non-native open salt desert scrub vegetation with little to no cheatgrass or halogeton cover, and scattered pockets and patches of herbaceous material and forbs.

Policy, Goal & Objective: Blackbrush and shrubland communities shall consist of dense-to-scattered shrubs and dense-to-open native and/or naturalized and biologically equivalent non-native grasses. Where surface disturbance occurs, areas are aggressively seeded with a native/non-native seed mix optimized to reduce invasion of undesirable species and erosion.

Policy, Goal & Objective: Following fire, vegetative communities in this biome are seeded and/or revegetated, prior to the first rains supporting germination with a native and non-native mix designed to optimize short term and long term rangeland health.

2.6.1.2 Riparian & Wetlands

Riparian and wetland systems are found throughout the Rocky Mountain and Great Basin regions within a broad range terrain and elevation conditions. These systems often occur as a mosaic of multiple communities that are often tree-dominated with a diverse shrub and grass component. Riparian areas are typically dependent on a natural hydrologic regime, especially annual to episodic flooding. Wetland areas are typically dependent upon continuous saturation or inundation of soils to support wetland obligate species. Riparian occurrences are found within the flood zone of rivers, on islands, sand or cobble bars, and immediately adjacent to streambanks. They can form large, wide occurrences on mid-channel islands in larger rivers or narrow bands on small, rocky canyon tributaries and well-drained benches. Wetlands are typically found in backwater channels and other perennially wet but less scoured sites, such as floodplains, swales and irrigation ditches. Both riparian and wetland systems may also occur in upland dominant areas of mesic swales and hillslopes below seeps and springs.

Riparian and wetland systems in the County experience typically cold winters and hot summers. Surface water is generally high for variable periods. Soils are typically alluvial deposits of sand, clays, silts and cobbles that are highly stratified with depth due to flood scour and deposition. Highly stratified profiles consist of alternating layers of clay loam and organic material with coarser sand or thin layers of sandy loam over very coarse alluvium. Soils are often fine-textured with organic material over coarser alluvium. Some soils are more developed due to a slightly more stable environment and greater input of organic matter.

Riparian/wetland areas commonly contain specialized vegetation associated with surface or subsurface moisture. Riparian resources include wetland areas which require prolonged saturation of soils and contain certain vegetative species dependent upon saturation. Only a

small percentage of lands in the County contain riparian/wetland resources. Riparian and wetland ecological systems comprise less than 1 percent of the approximately 22 million acres of BLM-administered public lands in Utah, but are among the most important, productive, and diverse ecosystems on the landscape. Most of these resources are commonly located along major rivers, drainages, or spring sites with a higher density located in forests and areas of higher precipitation than in the arid lowlands.

Moisture for wet meadow community types is acquired from groundwater, stream discharge, overland flow, overbank flow, and on-site precipitation. Salinity and alkalinity are generally low due to the frequent flushing of moisture through the meadow. Depending on the slope, topography, hydrology, soils and substrate, intermittent, ephemeral, or permanent pools may be present. These areas may support species more representative of purely aquatic environments. Standing water may be present during some or all of the growing season, with water tables typically remaining at or near the soil surface. However, fluctuations of the water table throughout the growing season are not uncommon. On drier sites supporting the less mesic types, the late-season water table may be several feet or more below the surface. Soils typically possess a high proportion of organic matter, but this may vary considerably depending on the frequency and magnitude of alluvial deposition and flood conditions. Organic composition of the soil may include a thin layer near the soil surface or accumulations of material several feet thick.

Wet meadow ecological systems provide important water filtration, flow attenuation, and wildlife habitat functions. Properly functioning riparian/wetland areas help maintain the quality and quantity of water regularly used for both culinary and agricultural purposes. Riparian and wetland areas also support habitat for migratory birds, raptors, and fish; support forage and browse for wildlife, wild horses, and livestock; and provide numerous recreation opportunities.

Riparian areas occur throughout the County as long strips of vegetation adjacent to streams, rivers, lakes, reservoirs, and other inland aquatic systems that affect or are affected by the presence of water. This vegetation contributes to unique ecosystems that perform a large variety of ecological functions. Riparian areas are classified as lotic riparian resources (flowing water streams and rivers) or lentic riparian resources (non-flowing wetlands, meadows, lakes, and reservoirs).

Wetland areas differ greatly in species composition, hydrologic regime, geophysical orientation, and climactic circumstances than adjacent uplands. Wetland areas can generally be described as areas influenced by subsurface or surface hydrology, creating anaerobic soil conditions and hydrologic conditions suitable for the establishment of plant species growing wholly or partially in water.

For this discussion, riparian areas and wetlands are considered coincidental because a) these community types typically occur in similar ecological components (e.g., soil moisture, terrain, and precipitation) and b) the resources demonstrate similar response patterns from impacts generated by surface disturbing influences.

Riparian/wetland resources are described through reference to the Properly Functioning Condition (PFC), which is a qualitative analysis used to assess the condition of riparian/wetland areas. The term is used to describe the assessment process and define the potential functional capacity a particular riparian/wetland area could reach with appropriate management practices. PFC is a state of resiliency that measures the potential for an area to produce anticipated ecologic

values. Riparian/wetland areas that are not reaching the functional capacity determined to be PFC are at risk of losing these values. Functioning condition is rated by category to reflect ecosystem health as follows:

Proper Functioning Condition – When adequate vegetation, landform, or large woody debris is present to dissipate energy associated with high flow; filter sediment, capture bedload and aid floodplain development; improve floodwater retention and groundwater recharge; develop root masses that stabilize streambanks against cutting action; develop diverse ponding and channel characteristics; and support greater biodiversity.

Functioning at Risk – Riparian/wetland areas that are in functioning condition, but an existing soil, water, or vegetation attribute makes them susceptible to degradation.

Nonfunctional – Riparian/wetland areas that clearly are not providing adequate vegetation, landform, or large woody debris to dissipate stream energy associated with high flows, and therefore are not reducing erosion, improving water quality, etc.

Unknown – Riparian/wetland areas that have not been inventoried or where there is insufficient information to make any form of determination.

Riparian/wetland areas are meeting PFC when a stream channel exhibits morphology and functionality similar to riparian and wetland areas in the planning area that have not been substantially altered by outside influences. These areas would have vegetation capable of attenuating flood flows, reducing erosion, and creating conditions suitable for the long-term and vigorous occupation of native vegetation on streambanks or in wetlands.

Riparian/wetland areas also can be monitored using quantitative short-term and long-term indicators. This monitoring procedure evaluates indicators for long-term trend, including vegetative composition near the water's edge, woody species regeneration, streambank stability, channel and water width and depth, and substrate composition. The procedures also help determine if short-term management practices are meeting allowable-use criteria. Examples of short-term indicators include woody species use, stubble height, and streambank alteration.

Vegetation in riparian areas and wetlands is a dominant characteristic and includes trees, shrubs, sedges, and grasses. Invasive vegetation is common within riparian areas and often consists of exotic trees (Russian Olive and Tamarisk) and other noxious species (Russian Knapweed and Purple Loosestrife). Generally, the upland vegetation surrounding riparian systems is different and definable and ranges from grasslands to forests. In recent decades pinyon and juniper have also invaded riparian areas, putting additional pressure on limited water supplies.

Grass communities and species are a major component in most riparian and wetland areas. A mix of grasses can normally be found, with wide variability in the number of species, extent or location within the riparian/wetland area. Depending on the degree of inundation or saturation, grasses can include obligate wetland species where sufficient saturation occurs yearlong, facultative wetland grasses, or upland grass species.

This ecological system contains early, mid and late-seral riparian plant associations. It also contains non-obligate riparian species. Cottonwood communities are early, mid or late-seral,

depending on the age class of the trees and the associated species of the occurrence. Mature cottonwood occurrences do not reach a climax stage and do not regenerate in place, but regenerate by "moving" up and down a river reach. Over time a healthy riparian area with appropriate ecological site conditions supports all stages of cottonwood communities. Riparian ecosystems are extremely susceptible to fire, containing native woody species which are fire intolerant, often resulting in catastrophic loss to fire, especially when invaded by exotic species including tamarisk.

Associations in this ecological system are adapted to soils that may be flooded or saturated throughout the growing season. They may also occur on areas with soils that are only saturated early in the growing season, or intermittently. Typically these associations are tolerant of moderate-intensity ground fires and late-season livestock and wildlife grazing. Most appear to be relatively stable types, although in some areas these may be impacted temporarily by intensive livestock grazing.

Causal factors for riparian/wetland areas not meeting PFC vary across the rangelands in the County. These factors are inside and outside management control; and in most cases, no single factor is responsible for conditions less than PFC. Common causal factors include (in no particular order of importance) dewatering, drought, incised channels, excessive erosion/sedimentation because of poor upland conditions (i.e., pinyon-juniper woodland expansion), OHV use, wildlife & livestock grazing, and invasive species.

Federal land managers emphasize maintenance of riparian areas and wetlands. Management actions and projects have been implemented to improve riparian/wetland conditions include planting willows to reintroduce a native-woody species component, stream bank stabilization, sediment reduction, flood attenuation, and vegetative recovery in riparian areas and wetlands. Agencies have also initiated adaptive livestock and wildlife management actions to balance grazing and resource protection.

Need for Management Change

1. Active management needs to be implemented to improve and enhance riparian and wetland resources to provide for appropriate physical, biological, and chemical function.
2. Vegetation, soil, landform, and water need to be managed to meet or make progress toward attainment of the Utah Standards and Guidelines for Healthy Rangelands according to riparian and wetland site capability.
3. Vegetative and soil resources need to be managed to increase the land area occupied by riparian and wetland areas.
4. Additional water needs to be developed on federal lands to increase the percentage of lands occupied by riparian and wetland areas.
5. Managers need to implement structural and non-structural improvements in unstable water courses to restore riparian and wetlands to properly functioning/desired future conditions.
6. Riparian areas and wetlands need to be prioritized and managed to attain desired future conditions for riparian-related resources (e.g. fishery habitat, water quality, wildlife and livestock forage, and soil stability).

7. Riparian areas and wetlands need to be expanded and enhanced through integrated management of all types of vegetation including upland, pinyon/juniper woodlands, rabbitbrush, tamarisk, and Russian olive.
8. Riparian areas and wetlands need to be available for disposal and transfer to state and local entities for uses which meet or move toward desired future conditions.
9. Passive riparian and wetland management need to be abandoned and replaced with aggressive, active management aimed at enhancing existing resources and developing new riparian areas and wetlands.

Desired Future Conditions

Juab County Desires:

1. Riparian and wetland areas are maximized to provide the greatest productive harmony between man and his environment.
2. Properly functioning condition is achieved on riparian areas and wetlands in the County.
3. Riparian/wetland areas support the appropriate ecological conditions, composition and age-class of native and desirable non-native communities to maintain a healthy and properly functioning ecosystem.
4. Managers implement a full suite of structural and non-structural projects (mechanical, chemical, biological and appropriate fire) to improve and expand the health and extent of existing riparian and wetland areas.
5. Managers aggressively implement a full suite of structural and non-structural projects (mechanical, chemical, biological and appropriate fire) to create new riparian areas and wetlands.
6. The impacts of uplands (especially rabbitbrush, encroaching conifers and Class II and Class III pinyon/juniper woodlands) on riparian areas and wetlands are recognized and mitigated.
7. Riparian areas and wetlands are managed for the mutual and maximum benefit of wildlife, livestock and special status species.
8. Russian olive, tamarisk, noxious weeds and undesirable native and non-native vegetation are eradicated in the County's riparian areas and wetlands.
9. The optimum mixture of native and desirable non-native species are used to maximize riparian and wetland productivity, function and condition.
10. Land managers cooperate and coordinate with the County in the development of new riparian and wetland resources, especially at culvert crossings, bridges, drainage ditches and road related infrastructure.
11. Riparian areas and wetlands are transferred to state or local control when managers are unwilling or unable to aggressively and actively expand the extent and health of riparian/wetland resources.

Findings, Policies, Goals & Objectives

Finding: Riparian and wetland resources have not been managed to maximize a) the productive and enjoyable harmony between man and his environment or b) their appropriate physical, biological and chemical functions.

Finding: Upland resources have not been managed to maximize the extent, health and condition of riparian and wetland resources.

Policy, Goal & Objective: Riparian and wetland areas shall be maximized to provide the greatest productive harmony between man and his environment and their appropriate physical, biological and chemical functions.

Goal & Objective: Properly functioning condition is achieved on riparian areas and wetlands in the County.

Goal & Objective: Riparian/wetland areas support the appropriate ecological conditions, composition and age-class of native and desirable non-native communities to maintain a healthy and properly functioning ecosystem.

Policy: The optimal mix of native and desirable non-native species shall be used to support desired ecologic conditions and a properly functioning ecosystem. Native only communities shall be limited to areas where they optimize productivity and function.

Policy, Goal & Objective: Managers shall implement a full suite of structural and non-structural projects (mechanical, chemical, biological and appropriate fire) to improve and expand the health and extent of existing riparian and wetland areas. Active restoration techniques are preferred over passive methods.

Policy, Goal & Objective: Managers shall aggressively implement a full suite of structural and non-structural projects (mechanical, chemical, biological and appropriate fire) to create new riparian areas and wetlands.

Finding: Passive management of uplands (especially rabbitbrush, encroaching conifers and Class II and Class III pinyon/juniper woodlands) has had a negative impact on riparian areas and wetlands in the County.

Policy, Goal & Objective: Aggressive, active management of uplands (especially rabbitbrush, encroaching conifers and Class II and Class III pinyon/juniper woodlands) shall be implemented to restore, enhance and develop riparian areas and wetlands in the County.

Policy: Based on a 10 year rolling average and consistent with desired ecological site descriptions, restore at least 25% of the Class II and Class III pinyon/juniper woodlands having a median age of less than 200 years to sagebrush/semi-desert grassland vegetation communities.

Policy, Goal & Objective: Remove 5% of encroaching conifers in federal riparian areas and wetlands annually. In priority sage grouse habitat remove 10% of encroaching conifers in wet meadows, riparian areas and wetlands.

Policy, Goal & Objective: Riparian areas and wetlands shall be managed for the mutual and maximum benefit of wildlife, livestock and special status species.

Policy: Managers shall refrain from implementing utilization standards less than 50%, unless a) implementing a utilization standard between 30% and 50% on a temporary basis not to exceed 2 years is necessary to resolve site-specific concerns; and b) the federal agency consults, coordinates, and cooperates fully with local government.

Policy: Prior to implementing actions that reduce livestock grazing in riparian areas where livestock grazing is not the primary cause of substandard conditions, land managers shall implement structural and non-structural improvements designed to restore properly functioning conditions.

Policy, Goal & Objective: Russian olive, tamarisk, noxious weeds, encroaching conifers, and undesirable native and non-native vegetation shall be removed from the County's riparian areas and wetlands at a rate of not less than 5% annually.

Policy: Optimum mixtures of native and desirable non-native species shall be used in the County to maximize riparian and wetland productivity, function and condition.

Policy: Land managers shall cooperate and coordinate with the County in the development of new riparian and wetland resources, especially at culvert crossings, bridges, drainage ditches and road related infrastructure.

Policy: Prescriptions on livestock grazing in riparian areas shall not be more restrictive than prescriptions for other large herbivores such as elk and wild horses.

Policy: Wildlife, wild horse and wild burro populations shall be maintained at or below objectives adopted prior to January 1, 2015 prior to implementing restrictions to livestock grazing in riparian areas and wetlands impacted by multiple species.

Policy: Structural and non-structural projects designed to restore wetlands and riparian areas to properly functioning condition are prioritized over livestock enclosures, especially where resources are being impacted by wildlife, wild horses or wild burros.

Finding & Policy: The County finds that riparian areas and wetlands that are not properly functioning after 2 years of livestock grazing exclusions are not impacted by livestock grazing. Land managers shall implement active structural and non-structural restoration projects and restore appropriate livestock grazing at the earliest possible date.

Policy, Goal & Objective: Riparian areas and wetlands are transferred to state or local control when managers are unwilling or unable to aggressively and actively expand the extent and health of riparian/wetland resources.

Finding: Exotic and native invasive plant species will continue to threaten and degrade riparian/wetland areas and adjacent uplands until land managers implement projects designed to restore properly functioning conditions and provide the desired vegetative communities.

Policy: Land managers shall implement the following priorities in restoring and maintaining riparian and wetland areas to properly functioning condition:

1. Structural improvements that support desired cross section, grade, slopes, sinuosity and other physical characteristics of the area.

2. Maintenance of wildlife, wild horses and wild burros within population objectives and limited to herd management areas established on January 1, 2015.
3. Removal of undesirable native and non-native vegetative species.
4. Establishment of robust communities of desirable vegetative species, consistent with ecologic site descriptions.
5. Implementation of adaptive livestock grazing management techniques, consistent with principles of rangeland health.
6. Temporary (not to exceed 2 years) reduction of livestock grazing, when items 1 through 5 are proven to be ineffective.

Finding & Policy: Implementation of the County's priorities for restoring and maintaining riparian and wetland areas is the most effective method for preserving resource health and preventing loss of riparian/wetland resources due to potential climate change.

Finding & Policy: Rapid ecoregion assessments and landscape level planning are insufficient to meet the management needs for riparian and wetland resources in the County. Due to the limited area occupied by riparian areas and wetlands and the value of these resources to ecosystem health, site specific analysis shall be incorporated into actions which impact riparian and wetland resources.

Finding & Policy: Properly located and designed roads minimize impacts to riparian areas and wetlands. Where practical, roads located in riparian areas, wetlands and adjacent uplands will a) be located to minimize impacts to riparian/wetland resources, b) cross streams as close to right angles as possible, c) implement drainage systems which minimize vehicular contact with water and vegetation, d) incorporate slopes that can be revegetated, e) minimized soil loss and sedimentation, and f) optimize ecologic harmony between the road and resources.

Policy: Roads in riparian areas and wetlands claimed by federal agencies under 23 CFR 460 shall not be closed, gated or have seasonal restrictions without consultation, cooperation and coordination with the County. Roads in riparian areas and wetlands not claimed by federal agencies under 23 CFR 460 shall be managed in accordance with this RMP and shall not be closed, gated or subject to seasonal restrictions without the County approval.

Finding & Policy: Qualitative and quantitative monitoring provides limited snapshots in time and space and often mischaracterizes the overall health of riparian areas and wetlands. Monitoring data shall be used as indicators to identify areas where additional information may be needed and shall not serve as hard triggers that implement prescriptive management actions. Prescriptive management actions in riparian areas and wetlands shall be limited to those areas where accurate trends and conditions are known through comprehensive site specific analysis.

Policy: When land managers determine riparian areas and wetlands are not meeting or moving toward PFC, they shall coordinate with the County by informing the Commission of the location, extent, causes, and proposed remedy of the condition.

Policy: Surface disturbing activities will be avoided within 330 ft. of riparian areas and wetlands, unless it can be demonstrated a) there are no practicable alternatives, b) all long-term impacts can be fully mitigated, c) the activity will benefit and enhance the riparian area, or d) the activity will maintain the area's condition in a desired state.

Policy: Managers will implement changes in livestock grazing or recreation management to improve riparian areas before fencing water sources. Managers shall provide offsite water for resource uses when necessary.

2.6.1.3 Non Vegetated & Bare Ground

Non-vegetated lands consist of areas with less than 30 percent vegetation cover and occur in long term natural conditions, through natural events (wildfire, floods, landslides, etc.) or man-made disturbances.

Natural areas include lava outcrops, canyon cliffs, slickrock, and sparsely vegetated sand dunes. Volcanic areas are mostly exposed rock (usually greater than 90 percent of the groundcover with sparse alpine vegetation). These areas are often small but may be extensive and are mostly located at upper elevations in the mountainous portions of the County.

Lava outcrops occur throughout the intermountain west and are limited to non-vegetated and sparsely vegetated volcanic substrates such as basalt lava, basalt dikes, and basalt cliff faces with associated loose deposits of rock debris

Great Basin cliffs, talus slopes, and canyons are in foothills to subalpine elevations and include non-vegetated and sparsely vegetated landscapes of steep cliff faces, narrow canyons, and smaller rock outcrops of various igneous, sedimentary rocks. The Great Basin cliffs and canyons are largely composed of exposed bedrock (usually sedimentary) and scree; whereas the Rocky Mountain cliffs and canyons are composed of various igneous, sedimentary, and metamorphic rocks.

Active and stabilized sand dune areas are primarily located in the lower/drier portions of the County. These sand areas may have sparse to moderate vegetation adapted to unstable coarse sands. The soil supporting vegetation is unconsolidated windblown sand on active dunes. The surrounding habitat is either vegetated, stabilized sands, sandstone slickrock, or various exposed shales and other fine grained exposed geologic rock types or their finer grained developed soils. Plants associated with sand dunes may include a wide variety of species such as sand mulesears, blowout grass, sand dropseed, giant dropseed, Indian ricegrass, sandhill muhly, silky sophora, Kanab yucca, rubber rabbitbrush, winged wild-buckwheat, and Ponderosa pine, pinyon pine, Utah juniper, and Welsh's milkweed.

Areas impacted by natural events such as wildfires, floods and landslides were generally vegetated before the event and may or may not be restored to a vegetated condition. Where adequate soil conditions remain, it is likely vegetation will return, but may take a considerable length of time if left to the natural environment. Some natural events alter the ecological site descriptions to the point that restoration to the original ecologic community is not possible. This may leave an areas susceptible to invasion by noxious weeds or undesirable species.

Man-made disturbances in modern times generally result in temporary non-vegetated/bare ground conditions. Best management practices require restoration after disturbance, and man's activities are controllable when compared to the forces of nature.

Need for Management Change

1. Managers need to optimize the use of non-vegetated/bare ground to accommodate surface disturbing activities that would be unacceptable in vegetated areas.
2. Slickrock areas need to be made available for mountain biking and canyoneering.
3. Sand dunes and other appropriate areas need to be made available for off road/atv open areas.
4. Areas disturbed by natural events need to be restored as quickly as possible to desired ecological conditions.
5. Noxious weeds and invasive species need to be prevented from areas disturbed by natural events, especially wildfire, and man's activities.
6. Managers need to identify at least 5% of the lands in the County for open ATV use.

Desired Future Conditions

Juab County Desires:

1. Managers optimize the use of non-vegetated/bare ground to accommodate surface disturbing activities that would be unacceptable in vegetated areas.
2. Slickrock and other suitable areas are made available for mountain biking, canyoneering and activities that are not fitting for vegetated areas.
3. At least 5% of the lands in the County are designated as open for cross-country ATV use, including sand dunes.
4. Areas disturbed by natural events are restored to acceptable conditions as soon as possible.
5. Lands impacted by wildfire are reseeded prior to the first season with acceptable moisture for germination. A minimum of 60% recruitment of vegetative ground cover consistent with ecologic site descriptions is desired within the first year after a wildfire event.
6. Vegetative resources are managed in a manner that prevents establishment or expansion of noxious weeds and invasive species in areas disturbed by wildfire, other natural events and man's activities.
7. Desirable vegetative communities are prioritized over biologic soil crusts in the restoration of bare ground. Where ecologic site conditions permit, biologic soil crusts serve as a nurse crop succeeded by vascular plants as soon as practical.
8. Native and non-native vegetative communities are allowed to optimize the attainment of vegetative cover standards and to assure sites remain productive and stable.

Findings, Policies, Goals & Objectives

Finding: Bare ground or non-vegetated areas are often natural conditions that are suitable for multiple use activities that are not desired in vegetated areas.

Finding & Policy: Not all bare ground or non-vegetated areas are suitable for vegetation.

Policy, Goal & Objective: Managers shall optimize the use of non-vegetated/bare ground to accommodate surface disturbing, multiple use activities that would be unacceptable in vegetated areas.

Policy, Goal & Objective: Suitable areas shall be made available for mountain biking, canyoneering, ATV use and other multiple use activities that are not desired in vegetated areas.

Policy, Goal & Objective: At least 5% of the lands in the County shall be designated as open for cross-country ATV use.

Policy, Goal & Objective: Areas denuded of vegetation by natural events will be reseeded prior to the first moisture capable of germination and will be restored to properly functioning/desired ecological conditions condition as quickly as possible.

Policy: Bared ground and non-vegetated areas shall be managed to prevent establishment or expansion of noxious weeds and invasive species.

Policy, Goal & Objective: Lands impacted by wildfire shall be reseeded prior to the first season with acceptable moisture for germination. A minimum of 60% recruitment of vegetative ground cover consistent with ecologic site descriptions shall be attained within the first year after a wildfire event.

Policy: Desirable vegetative communities are prioritized over biologic soil crusts in the restoration of bare ground. Where ecologic site conditions permit, biologic soil crusts will serve as a nurse crop succeeded by vascular plants as soon as practical.

Policy: Optimum mixtures of native and non-native vegetative communities shall be used to maximize the attainment of vegetative cover standards and to assure sites remain productive and stable.

References:

Ponderosa Pine, Mixed Conifer, and Spruce-fir Forests, USDA Forest Service Gen. Tech. Rep. RMRS-GTR-202, Michael A. Battaglia and Wayne D. Shepperd, 2007

2.6.2 Invasive Plants and Noxious Weeds

Invasive species are plants that have adaptive characteristics such as high seed production; are aggressive and difficult to manage; are capable of invading native habitats; and can often substantially change vegetation communities and affect ecological relationships. Noxious weeds are a subset of invasive plant species. They are legally designated by state or federal law to have these characteristics and require prevention and control measures to help contain or eradicate them.

Invasive plant and noxious weed species are present at various locations in the County and occur

along waterways, roads, recreation sites, rangeland, infrastructure ROW, and livestock/wild horse/wildlife use areas (e.g., trails, watering areas, feeding areas, and corrals). Different species of invasive plants and noxious weeds have the capacity to invade almost any natural vegetative habitat. Invasive plants and noxious weeds are pioneer species, establishing quickly following ground-disturbing activities such as wildland or prescribed fire, ground disturbing construction projects, unauthorized OHV use, and livestock grazing. Once invasive plants and noxious weeds populate a disturbed area, they can outcompete desirable, native, or naturalized vegetation.

Establishment of invasive plants and noxious weeds following ground disturbance is of particular concern because invasive species aggressively outcompete native plant and naturalized species, often altering the physical and biotic features of an ecological community and sometimes affecting the large portions of the landscape. The State of Utah defines noxious weeds in U.C.A. 4-17-2 as "... any plant the Commissioner of Agriculture and Food determines to be especially injurious to public health, crops, livestock, land, or other property." Noxious weeds are nonnative plants that are especially undesirable because they have no forage value and are sometimes toxic or are capable of invading plant communities and displacing native species. Some federal agencies recognize noxious weeds as one of the greatest threats to the health of rangelands nationwide.

The introduction of most of the County's invasive plants and noxious weeds from Europe and Asia was unintentional. Once established, these plants spread rapidly by natural (e.g., wind, water, and wildlife) and human influenced means. A notable exception is the invasion of pinyon/juniper woodlands into sagebrush/grassland habitats that has occurred significantly in the last several decades. Invasive and noxious weeds typically have reproductive, morphological, and physiological attributes that allow them to effectively establish populations and outcompete native vegetation. Most invasive species have several of the following characteristics: a) perennial growth, reproducing by rhizomes, roots, and/or vegetative parts; b) continuous seed production throughout the growing season; c) high seed production; d) highly effective seed dispersal; e) long periods of seed dormancy; f) ability to grow under adverse conditions; g) adaptable to a wide variety of soil and climatic conditions; h) compete well for soil moisture and nutrients; and i) possess genetic adaptability.

Management of invasive plants and noxious weeds in the County is aimed at reducing the spread of undesirable species and protecting the integrity of native and desirable non-native/naturalized plant communities. Each year, the County allocates a considerable budget to fund weed management activities on private lands and support cooperative and coordinated weed management on federal and state lands. The County practices and supports an integrated management approach to controlling invasive plants and noxious weeds through close coordination and cooperation with other federal, state, and local entities, and private landowners through a cooperative weed management area.

The State of Utah, through the Commissioner of Agriculture and Food under the Utah Noxious Weed Act has published a list of designated noxious weed species. Utah's noxious weeds are classified below. Technical names may be obtained from <http://ag.utah.gov/divs-progs/50-plants-and-pests/hay-grain-seed/599-noxious-weed-list.html>.

Class 1A: Early Detection Rapid Response (EDRR) Watch List Declared noxious and invasive weeds not native to the state of Utah and not known to exist in the State that pose a serious threat to the state and should be considered as a very high priority.

Class 1A: Early Detection Rapid Response (EDRR) Weeds	
Common crupina	African rue
Small bugloss	Mediterranean sage
Spring millet Syrian beancaper	Ventenata (North Africa grass)
Plumeless thistle	Malta starthistle

Class 1B: Early Detection Rapid Response (EDRR) Declared noxious and invasive weeds not native to the State of Utah that are known to exist in the state in very limited populations and pose a serious threat to the state and should be considered as a very high priority.

Class 1B: Early Detection Rapid Response (EDRR) Weeds	
Camelthorn	Japanese knotweed
Garlic mustard	Blueweed (Vipers bugloss)
Purple starthistle	Elongated mustard
Goatsrue	Common St. Johnswort
African mustard	Oxeye daisy
Giant reed	Cutleaf vipergrass

Class 2: Control Declared noxious and invasive weeds not native to the state of Utah that pose a threat to the state and should be considered a high priority for control. Weeds listed in the control list are known to exist in varying populations throughout the state. The concentration of these weeds is at a level where control or eradication may be possible.

Class 2: Control Weeds	
Leafy spurge	Dyers woad
Medusahead	Yellow starthistle
Rush skeletonweed	Yellow toadflax
Spotted knapweed	Diffuse knapweed
Purple loosestrife	Black henbane
Squarrose knapweed	Dalmation toadflax

Class 3: Containment Declared noxious and invasive weeds not native to the State of Utah that are widely spread. Weeds listed in the containment noxious weeds list are known to exist in various populations throughout the state. Weed control efforts may be directed at reducing or eliminating new or expanding weed populations. Known and established weed populations, as determined by the weed control authority, may be managed by any approved weed control methodology, as determined by the weed control authority. These weeds pose a threat to the agricultural industry and agricultural products.

Class 3: Containment Weeds	
Russian knapweed	Quackgrass
Houndstounge	Jointed goatgrass
Perennial pepperweed (Tall whitetop)	Bermudagrass
Phragmites (Common reed)	Perennial Sorghum spp.: Johnson Grass
Tamarisk (Saltcedar)	Sorghum alnum
Hoary cress.	Scotch thistle (Cotton thistle)
Canada thistle	Field bindweed (Wild Morning-glory).
Poison hemlock	Puncturevine (Goathead)
Musk thistle	

Class 4: Prohibited Declared noxious and invasive weeds, not native to the state of Utah, that pose a threat to the state through the retail sale or propagation in the nursery and greenhouse industry. Prohibited noxious weeds are annual, biennial, or perennial plants that the commissioner designates as having the potential or are known to be detrimental to human or animal health, the environment, public roads, crops, or other property.

Class 4: Prohibited Weeds	
Cogongrass (Japanese blood grass)	Scotch broom
Myrtle spurge	Russian olive
Dames Rocket	

Each county in Utah may have different priorities regarding specific State designated Noxious Weeds and is therefore able to reprioritize these weeds for their own needs. Counties may also designate noxious weed for their specific County.

The County Weed Supervisor coordinates weed control activities among the county weed organizations and the agricultural field representatives. Surveys of serious weed infestations are conducted and control programs are developed through the county supervisors, county weed boards, and various landowning agencies. The weed specialist and the inspectors work continually with extension and research personnel in encouraging the use of the most effective methods to control the more serious weeds.

Certain weed eradication methods, such as herbicide spraying, must be consistent with federal and state laws governing the use of chemicals. Federal agencies may also be under additional regulations regarding vegetation treatments and the use of herbicides on federal lands. The use of certified weed-free hay is a common guideline implemented to control the spread of noxious weeds and is consistent with the Forest Service's and BLM's rangeland health standards.

For vegetative purposes, the use and perpetuation of native species is often cited as a priority. However, naturalized and non-intrusive, nonnative species are often more ecologically or economically feasible and provide greater resource optimization and benefit. In all cases, the use of weed-free seed in reclamation and rehabilitation projects is standard practice.

Invasive plants and noxious weeds on public lands in the planning area are typically managed by integrated weed management practices including hand methods, mechanical removal, or herbicide application.

Invasive plants and noxious weeds in the County are generally a) widespread invasives covering large areas of the County (e.g. state noxious weed list, etc.) or site specific infestations with localized impact. Agency vegetation projects have focused on larger scale invasives that have crowded out more desirable vegetation. Cooperative weed management efforts have concentrated on eradication of site specific noxious weeds that have the potential to spread rapidly.

Overall, areas that have been actively managed to prevent the spread of noxious weeds and invasive species have demonstrated a decrease in prevalence, indicating that current management techniques are effective at controlling outbreaks of invasive plants and noxious weeds. Early detection, rapid response, integrated management and interagency cooperation have been effective in helping eliminate new infestations and reducing existing ones. Introductions of new infestations associated with ground disturbing activities (recreation areas, fire, rights of way, etc.) are controlled through implementation of best management practices and appear to be reasonably effective.

Need for Management Change

1. Noxious weed infestations are generally known on private lands in the County. Additional inventory needs to be completed to identify all noxious weed infestations on state and federal lands in the County.
2. Due to the vastness and remoteness of federal lands in the County, all noxious weed infestations on federal lands need to be identified and mapped with eddm maps and/or GPS/GIS technology.
3. Efforts to restore desirable vegetation in areas dominated by native invasive species need to be implemented.
4. Land managers need to eradicate noxious weed within their jurisdiction and prevent additional infestations. Native and non-native invasives need to be replaced with desirable plant communities, consistent with ecologic site descriptions.
5. In Sage-grouse management areas, land managers need to prioritize aggressive eradication of noxious weeds and replacement of invasive species with desirable vegetation.

6. All herbicides and treatments authorized for use on private lands need to be available for use on federal lands with the same restrictions that apply to the general public.
7. State listed noxious weeds need to be controlled with the most efficient techniques possible including adaptive livestock grazing, herbicides, biologic control and any other legal method.
8. Noxious weeds and invasive species that are inconsistent with historic vegetative communities are a visible impact of man; and lands occupied by such species are not a) natural, b) possessing wilderness characteristics, or c) suitable for management as wilderness, wilderness study areas or non-WSA lands with wilderness characteristics.
9. Where cheatgrass or other fire susceptible invasive species occupy large land areas, fire breaks need to be created to limit wildfire extent.
10. Conditions which promote infestation by noxious weeds and invasive species, such as bare ground, be minimized through active and adaptive management.

Desired Future Conditions

Juab County Desires:

1. State listed noxious weed infestations on federal lands be identified and mapped prior to January 2020.
2. Land managers significantly increase efforts to control noxious weeds and replace invasive species with desirable historic plant communities.
3. Best efforts shall be used to eradicate State listed noxious weed infestations on state and federal by January 2025.
4. Native and non-native invasives replaced with desirable plant communities, consistent with ecologic site descriptions. Class II and Class III pinyon/juniper woodlands are reduced by 25% based on a 10 year rolling average.
5. Sage-grouse management areas are aggressively treated to control noxious weeds and replace invasive species with desirable vegetation.
6. All herbicides and treatments authorized for use on private lands are available for use on federal lands with the same restrictions that apply to the general public.
7. The most efficient techniques possible are used to control state noxious weeds.
8. Fire breaks are created in cheatgrass and other fire susceptible habitats to reduce the impacts of future wildfire.
9. Noxious weeds and invasive species, that are inconsistent with historic vegetative communities are recognized as a visible impact of man; and lands occupied by such species are designated as not a) natural, b) possessing wilderness characteristics, or c) suitable for management as wilderness, wilderness study areas or non-wsa lands with wilderness characteristics.

10. Conditions which promote infestation by noxious weeds and invasive species, such as bare ground, be minimized through active and adaptive management.
11. Federal agencies spend an amount on noxious weed control on their lands in proportion to the acres under their control as the County does for private lands under County control.
12. 40% ground cover is retained in areas of prescribed fire and 60% recruitment is achieved by the next rainy season.
13. Lands impacted by wildfire are reseeded with desirable native and/or non-native plant communities prior to infestation by noxious or invasive weeds. Noxious weeds need to be sprayed prior to reseeding. Noxious weeds normally will be the first ones to grow back, so extra precaution needs to take place so that spraying is done before seeding takes place after a fire.

Finding, Policies, Goals & Objectives

Objective: Reduce the percentage of invasive or noxious weeds in relation to desired plant populations.

Finding & Policy: Federal lands occupy a significantly larger acreage than private lands in the County and are considerably less observable, so undetected propagation of noxious weeds is a significant threat on federal lands. State listed noxious weed infestations on federal lands should be identified and mapped prior to January 2020.

Policy & Goal: Best efforts shall be used State listed noxious weeds on state and federal lands shall be controlled prior to January 2025.

Policy: To the maximum extent allowed by law, Integrated Weed Management using the full complement of treatment methods shall be used for invasive species and noxious weed control. Treatment methods shall be compatible with maintaining special status plant species where applicable.

Finding, Policy & Objective: Noxious weeds generally are unproductive plant that degrades land health. Land managers shall replace noxious weeds with desirable vegetation that is more compatible with land health and resource use.

Finding & Policy: Noxious weeds and invasive species that are inconsistent with historic vegetative communities are a visible impact of man; and lands occupied by such species are not a) natural, b) possessing wilderness characteristics, or c) suitable for management as wilderness, wilderness study areas or non-WSA lands with wilderness characteristics.

Finding & Policy: Climate change has significantly less impact on noxious weeds than the actions of land managers. NEPA actions including analysis of noxious weeds and invasive species shall clearly identify uncertainties between alternatives that consider climate change and active management. Active, aggressive management of noxious weeds and invasive species shall be prioritized above passive actions, unless proven less effective by objective science.

Policy, Goal & Objective: Class II and Class III pinyon/juniper woodlands shall be reduced by 25% based on a 10 year rolling average.

Policy: Priority and general Sage-grouse management areas shall be aggressively treated to control noxious weeds prior to January 2025. Land managers shall also prioritize replacement of invasive species with desirable vegetation in priority Sage-grouse management areas.

Policy: In PHMA and GHMA, integrated Vegetation Management using all available methods will be used to control, and suppress noxious and invasive species.

Policy: Land managers shall prioritize control of noxious weeds and replacement of invasive species with desirable vegetation communities in Sage-grouse management and special status species areas prior to restricting resource and land uses.

Policy: All herbicides and treatments authorized for use on private lands shall be available for use on federal lands with the same restrictions that apply to the general public.

Finding & Policy: Noxious weeds, are invasive species that can have severe detrimental impacts on land health and productivity. Land managers shall employ the most efficient techniques legally available to state and county noxious weed control.

Policy: Federal agencies shall cooperate with the County to develop preventative fire breaks along roads, powerlines and other human and natural disturbances in areas infested by cheatgrass and other fire susceptible fuels.

Policy: Conditions which promote infestation by noxious weeds and invasive species, such as bare ground and post fire vegetative loss shall be minimized through active restoration and seeding with native and non-native vegetation communities consistent with ecologic site descriptions.

Policy & Goal: Federal Agencies spend an amount on noxious weed control on their lands in proportion to the acres under their control as the County does for private lands under County control. $\text{Agency Expenditure} = (\text{Federal agency acres/private acres}) \times \text{Juab noxious weed expenditures}$.

Goal & Objective: In areas subject to prescribed fire land managers shall retain 40% ground cover and achieve 60% ground cover prior to the next rainy season.

Policy: Lands impacted by wildfire shall be reseeded with desirable native and/or non-native plant communities prior to infestation by noxious weeds or invasive species. Noxious weeds need to be sprayed prior to reseeding. Noxious weeds will be the first ones to grow back, so extra precaution needs to take place so that spraying is done before seeding takes place after a fire.

References

Utah Noxious Weed Act, U.C.A. 4-17

<http://ag.utah.gov/divs-progs/50-plants-and-pests/hay-grain-seed/599-noxious-weed-list.html>, February 18, 2017

The Utah Strategic Plan for Managing Noxious and Invasive Weeds, Utah Weed Control Association, 2004

2.8 FISH & WILDLIFE

Current Setting

This section includes general species accounts and fish and wildlife conditions in the County, derived from information obtained from the Utah Division of Wildlife Resources (UDWR) and/or reported in federal documents. In the context of this section, the term “wildlife” includes fish, amphibians, birds, mammals, and reptiles unless otherwise noted. Special status wildlife species including threatened and endangered species listed under the Endangered Species Act and other sensitive species are described in the Special Status Species Section this RMP.

Federal agencies are required to cooperate, coordinate and be consistent with state and local plans, programs and policies. Forest Service, BLM and other agencies often rely on the UDWR to maintain and reestablish populations of native, non-native and game species on public lands while the individual federal agency participates through habitat management and restoration. The UDWR is responsible for managing wildlife population levels, while the federal agencies are responsible for managing wildlife habitat in a condition that will support them. Local entities provide the basic direction by delineating desired conditions, policies, goals, objectives and criteria through County resource management planning processes mandated by the state legislature and recognized by federal law. NEPA, CEQ Regulations, FLPMA, NFMA, the Clean Air Act, the Clean Water Act, agency directives, and other federal and state law establish local governments as the entity closest to the resource and best qualified to ensure the health, safety and welfare of the public while promoting harmony between man and his environment.

The County contains a variety of aquatic and terrestrial habitats that have the biological and physical attributes that are important in the life cycles of many fish and wildlife species. General habitat descriptions depict aquatic conditions, vegetative resource conditions, habitat quality, densities, use or species conflicts, and artificial and natural threats to occupying species. All fish and wildlife habitat is important to species occupying the area; but not all habitat is crucial, and not all habitat has the same relative value. Crucial habitats are defined by UDWR as those high value areas that wildlife depend on in order to avoid unacceptable life cycle stressors or population declines. If “crucial” areas are lost, occupying species experience and are vulnerable to drastic, irreversible declines. In addition, crucial habitats are often difficult to replace. Generally, habitat quality is reflected by species population levels and vigor.

The phrase “crucial habitat” has no regulatory or legal meaning. State and federal laws define “critical habitat” under the federal Endangered Species Act. However, the term “crucial habitat” refers strictly to a non-regulatory identification of lands and waters occupied by a species. The Western Governor’s Wildlife Council defines “crucial habitat” as: *places containing the resources (including food, water, cover, shelter and important wildlife corridors) that are necessary for the survival and reproduction of aquatic and terrestrial wildlife and to prevent unacceptable declines, or facilitate future recovery of, wildlife populations; or are important ecological systems with high biological diversity value.* “Crucial habitat,” when used to describe fish and wildlife conditions in the County is equivalent to the word “range.” Descriptions or rankings of relative habitat value in the County are identified in the chart below.

There can be crucial time periods in an animal’s life cycle during which specific biologic requirements are essential to an individual’s survival. During those times, the species’ use area and/or biologic requirements may be described as being of crucial value. However, large scale or

rapid population declines are largely prevented by implementation of laws requiring consistency, cooperation and coordination and through appropriate application of multiple use/sustained yield and adaptive management principles.

Juab County	Utah DWR	Description
Critical	Critical	A term defined and used in the Endangered Species Act as a specific geographic area(s) that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection
Range	Crucial	Habitat providing for biological and/or behavioral requisites necessary to sustain the existence of wildlife populations
High Value	High Priority	Habitat that provides for intensive use
General	Substantial	Habitat that provides for frequent use
Low Value	Limited	Habitat that provides for occasional use
Priority Management	Not Defined	Those areas designated by the County where management actions give preferential treatment to one or more targeted species

Fish and wildlife depend on a variety of different waters and lands for food, shelter, and reproduction. Ineffective or passive land management can impact natural habitats, which can have serious consequences for fish and wildlife populations. Habitat loss and fragmentation due to human development is often cited as the cause of habitat loss, but in the County, failure to actively and aggressively manage forests and rangelands is the leading cause of species decline.

Wildlife habitat needs vary significantly by species. Wildlife habitat can occur as continuous or disjunctive features and extend from low elevations to high elevations. Climate, precipitation, soils, and biota respond to varying elevations, slope, and aspect. Big game populations are managed based on habitat condition and the quality of the animals being produced. Population levels are linked to a variety of factors, including vegetation quality and quantity; adequate space, shelter, and cover; water distribution; and regional weather patterns and trends such as prolonged drought. As water availability and distribution affects wildlife populations, water developments, whether constructed primarily for livestock or wildlife, can improve water availability in wildlife habitat.

Wildlife management in Utah is divided by UDWR into 30 wildlife management units spread throughout the state. the County contains portions of the Central Mountains – Nebo (#16a), West Desert – Deep Creek (#19a), West Desert - Vernon (#19b), West Desert – North Tintic (#19c), and Fillmore - Oak Creek (#21a) wildlife management units.

Through cooperative transplants, introduction of elk, pronghorn, bighorn sheep, chukar, turkey, and fish species have historically occurred on lands within or adjacent to the County. The UDWR formally coordinates these activities with the BLM, Forest Service and other public and private entities on a case-by-case basis. However, state and federal agencies often exclude local government in the decision making process. Important species in the County are described below.

Need for Management Change

1. Resource management plans mandated by the state of Utah recognize local governments as the entity best suited to establish management priorities for fish and wildlife resources. State and federal agencies need to implement consistency, cooperating and coordination requirements of state and federal law to optimize management of fish and wildlife resources.
2. Definitions used by wildlife agencies for terms such as habitat, crucial, native, high value, important, etc. are imprecise/inaccurate and skew analysis in a biased manner. Fish, wildlife and habitat descriptions need to accurately reflect actual conditions in order to properly manage related resources.
3. The dynamic nature of fish, wildlife and habitat conditions needs to be recognized, and land managers need to manage resources on a) active management; b) multiple use/sustained yield; and c) adaptive management principles while optimizing harmony between man and his environment.
4. Fish and wildlife adapt to changing conditions, and man's impact on public lands is relatively limited. So land managers need to recognize site specific disturbances may impact some individuals, but cumulative impact over an entire population or range is limited.
5. Protection and enhancement of fish and wildlife resources is optimized by active management of habitat that produces healthy, resilient, resistant, vigorous, and diverse vegetation consistent with land health, ecological site descriptions and desired conditions.
6. Land managers and UDWR need to cooperate and coordinate with the County to designate priority management habitats for targeted species in the County. UDWR is a single purpose agency and lacks the County's authority to manage lands under a broad range of federal and state laws.

Desired Future Conditions

Juab County Desires:

1. State and federal land managers recognize the County's role in land management and planning and comply with consistency, cooperation and coordination requirements to the maximum extent allowed by law.
2. Consistent with the County's RMP, definitions used by wildlife agencies for terms such as habitat, crucial, native, high value, important, etc. be refined to accurately and precisely reflect fish, wildlife and habitat conditions.

3. Land managers take a more aggressive and active approach to habitat treatments and manipulation. In broad terms the County desires seral stages to be 30% to 50% for early stage, 30% to 40% for mid stage, and no more than 25% late stage.
4. Habitats employ a mix of desirable natives and biological equivalent non-natives to optimize land health and productivity.
5. Land managers actively manage for optimum desired conditions as established in the County's and State's resource management plans using appropriate native and non-native species. Passive management in hopes of achieving some historic condition based on an arbitrary definition of "native" violates consistency, cooperation and coordination requirements of federal law, unless otherwise approved by the Commission.
6. Land managers and UDWR cooperate and coordinate with the County to designate priority management habitats for targeted species in the County.

Findings, Policies, Goals & Objectives, Criteria

Policy: The County is the entity closest to fish and wildlife resources and is best suited to establish management priorities for fish and wildlife resources in consultation, cooperation and coordination with other state and federal agencies.

Policy: State and federal agencies shall implement consistency, cooperation and coordination requirements of state and federal law to optimize management of fish and wildlife resources in the County.

Finding: The policies adopted in this RMP optimize common interests across agency boundaries and provide the best opportunity to:

1. Recognize that wildlife and its habitat are an essential part of a healthy, productive environment;
2. Recognize the impact of wildlife on man, his economic activities, private property rights, state and federal lands, and local economies;
3. Balance the habitat requirements of wildlife with the social and economic activities of man;
4. Recognize the social and economic values of wildlife, including fishing, hunting, viewing, conservation, and other uses; and
5. Maintain wildlife on a sustainable basis.

Policy: The County is the only governmental entity capable of providing consistency, across agency boundaries, between federal, state and local plans regarding management of fish, wildlife and habitat. This RMP will serve as the primary document for fish, wildlife and habitat management. Other federal, state and local entities, agencies, boards and/or councils shall coordinate their fish, wildlife and habitat management plans with the County to the maximum extent allowed by law.

Finding: Habitat and crucial habitat mapping by state and federal agencies has no legal or regulatory meaning and generally depicts only the estimated range for the identified species. Mapping often includes developed areas that do not have biologic conditions necessary to support wildlife species. Until state and federal maps are refined to accurately depict species habitat, the maps included in this RMP constitute the highest and best data available for site specific and landscape level planning.

Goal: Prior to December 31, 2025, land managers will seek to have habitats supporting important fish and wildlife species meet the following seral stage ranges:

Early Stage	30% to 50%
Mid Stage	30% to 40%
Late Stage	Less than 25%

Finding: Fish, wildlife and associated habitat conditions are dynamic and are best managed under the principles of a) active management, b) multiple use/sustained yield, and c) adaptive management. Management of fish and wildlife resources and habitats to meet perceived native conditions for some arbitrarily selected time is inconsistent with the This RMP

Finding: All habitats in the County have been and are impacted to some degree by man. There are no habitats in the County that are in a completely natural state.

Finding: Land managers have allowed conifer encroachment, invasive species and passive management to degrade fish and wildlife habitat. Active management needs to be implemented to restore degraded habitats.

Objective: Optimize fish and wildlife habitats through an appropriate mix of desirable native and non-native plant communities.

Policy: Based on a 10 year rolling average and consistent with desired ecological site descriptions, restore at least 25% of the Class II and Class III pinyon/juniper woodlands having a median age of less than 200 years to sagebrush/semi-desert grassland vegetation communities.

Finding: Fish and wildlife adapt to changing conditions, and man's significant impact on public lands is limited to site specific areas which can be mitigated.

Policy: Harmony between man and his environment is promoted by NEPA and is achieved when responsible human development and fish, wildlife and habitat resources are optimized to the mutual benefit of all. Technology exists and resources are available to balance human development and resource enhancement. Failure to do so is inconsistent with the County's RMP and an abrogation of management responsibilities.

Policy: Landscape level planning is only as accurate as the site specific information upon which it is based. Where site specific conditions are inconsistent with landscape level/rapid ecoregion analysis, local site specific conditions shall be recognized, used in analysis and appropriately displayed.

Policy: Consistent with ecologic site conditions, land managers shall use an appropriate mix of native and non-native ecologic equivalents to maintain, restore and enhance fish and wildlife

habitats. Native only mixes may be used a) when it can be demonstrated the native only mix provides equal or better habitat conditions or b) when native/non-native mixes are practically or economically infeasible.

Policy, Goal & Objective: Actively and aggressively manage fish, wildlife and habitat resources to optimize protection and enhancement of the resources and to produce healthy, resilient, resistant, vigorous, and diverse vegetation consistent with land health, ecological site descriptions and desired conditions.

Policy & Definition: *Priority Management Habitats* are those areas designated by the County where management actions give preferential treatment to one or more targeted species. Priority management habitats may include stand-alone migration/travel corridors deemed vital to the management of a targeted species. No lands in the County shall be managed as priority management habitat and no lands shall be managed under any other name as if they were priority management habitat without the concurrence of the Commission.

Policy: The County extends its full cooperation to coordinate designation of appropriate priority management habitats in the County. The Commission extends an open invitation to UDWR, federal land managers and other agencies with wildlife jurisdiction to assist the County in establishment of priority management habitats. Priority management habitats designated by the County shall be mapped and included in the This RMP

2.8.1 Fish

Current Setting

Several habitat attributes are necessary for healthy fish populations and sustainability, including healthy riparian conditions, channel stability, habitat diversity, appropriate sediment load, high-flow frequency, low-flow frequency, oxygen, temperature, and pollutants. Through appropriate management actions land owners can influence many if not all of these stream characteristics except high and low flows, which are highly variable and depend on weather, snow accumulation, rainfall intensity, and water rights.

Many different species of bass, chub, trout and other fish potentially occur in the County. The survival, growth, and diversity of species in a stream depend on the amounts and types of life cycle products available in that stream system. Fish and other aquatic lifeforms require good water quality for survival. Certain water quality standards are needed to meet basic biological needs for fish, including turbidity, pH (measure of acidity or alkalinity), dissolved oxygen, stream temperature, and pollutants. Land managers often work with the State of Utah to manage fisheries on public lands. However, local/county entities are generally ignored when coordinating actions to improve aquatic habitats or to reduce/eliminate negative factors on streams and reservoirs.

Fish habitat is generally limited to lakes, ponds, reservoirs, perennial or intermittent streams containing sufficient water to provide reliable food and cover. In general, stream health, water quality, and in-stream fish habitat have been degraded over the years. Rearing and spawning areas have been reduced in size, quality and quantity as rivers have been straightened, large wood removed, pool habitat reduced and/or eliminated, side channels and wetlands removed, beavers removed, and stream bottoms compacted by fine sediment. Many streams do not

maintain temperatures suitable for fish for at least a few days a year. The loss of water volume during summer low flows, which is at least partially due to water withdrawal from encroaching conifers, has directly affected stream temperature. Increasing air temperatures in summer months can also directly affect stream temperatures, especially in areas that lack riparian vegetation and stream shade. In many areas, almost the entire fish-bearing stream is reduced to no flow or almost no flow during summer months.

Overall condition of the fisheries in the County is not only linked to the condition of the riparian area and stream channel but also to upland sites that contribute to sediment loading, impact infiltration of precipitation, and reduce available water due to encroaching woody vegetation. Stream, channel and riparian conditions are dynamic and vary throughout the different watersheds in the County. Stream habitat conditions on private lands in the County may be impacted by livestock grazing and human activities. However on public lands, human related surface disturbing activities are statistically limited, and fisheries are largely impacted by natural events, alone or in combination with degraded riparian and upland habitat conditions often resulting from loss of historic vegetative communities to encroaching conifer woodlands. In areas where invasive pinyon/juniper woodlands have dominated vegetation, streams are increasingly susceptible to storm events that can impact water quality and reduce soils and vegetation in the floodplain. In conifer woodlands, many of the tributary creeks and washes that feed into the larger water courses are on steep ground with highly erodible soils and can have high sediment yields, especially during storm events.

The County's aquatic habitats have gradually declined over the last century due to a combination of influences. Dam construction, irrigation projects, livestock grazing, and farming/ranching practices have sought to minimize fluctuations in stream flows and maximize scarce water resources. During the last decade, federal land managers have been making a strong effort to inventory and identify activities responsible for streams remaining relatively healthy, and for streams declining in health or remaining in poor condition. Based on such inventories, changes have been made in livestock grazing or other activities, which have led or will lead to improvements in stream conditions. However, failure to a) implement vegetative restoration projects, b) arrest loss of historic vegetative communities to encroaching conifers, and c) maintain forests and rangelands that are resistant and resilient to fire have led to a loss of wetland and riparian habitats, reduced water quantity and quality, increased water temperatures, increased sediment loading, increased loss of in-stream habitat, and fragmented stream reaches, all of which have led to declining native fish populations. These declining conditions, which often originate on federally managed lands, impact downstream habitat, particularly where soil resources are lost to erosive storm events in degraded upland habitats. The survival, growth, and persistence of fish species, the aquatic and terrestrial species of plants that provide habitat, and the insects that provide food for fish depend on upstream conditions and influences that affect stream ecosystem health.

Aquatic invasive species also pose a major risk to fisheries in the planning area. Before discovery of quagga mussels in nearby waters, aquatic invasive species in the County's was a minor issue. However, attention associated with quagga mussels alerted land managers and the public of potential degradation from the spread of aquatic invasive species, and has let them to formulate management ideas and actions to avoid introduction of aquatic invasive species to waters of the state. UDWR has three quagga mussel monitoring stations in or adjacent to the County. Testing in 2014 did not detect any quagga mussel infestations at any of the stations.

Another species of specific concern in the County is the invasive species *Myxobolus cerebralis*, a parasite that causes whirling disease in trout, salmon, whitefish, and grayling. This parasite is found in relatively few waters in Utah, but has been detected in waters of nearby counties, including Utah County. Comparison of data obtained in 2008 and 2012 indicates watercourses infested by the parasite are increasing, but as of January 2017 no known infestations occur in the County.

Need for Management Change

1. Fish and other aquatic biota require good water quality for survival. Certain water quality standards are needed to meet basic biological needs for fish, including turbidity, pH, dissolved oxygen, stream temperature, and pollutants. Aquatic resources are being degraded due to a) failure to protect and enhance sagebrush/semi-desert grasslands and b) failure to arrest conifer encroachment and restore invasive Class II and Class III pinyon/juniper woodlands to desirable ecologic site conditions.
2. Land managers place undue emphasis on human development while passively managing resources in their control such as habitat vegetation, encroaching conifers, and removal of undesirable vegetation in riparian areas. Land managers need to actively manage fish and fish habitat to enhance riparian conditions, channel stability and habitat diversity.
3. The loss of sagebrush/semi-desert grasslands to conifer encroachment is increasing sediment loading and turbidity in streams and watercourses. the County needs to develop a local water quality ordinance under provisions of the clean water act to assure land managers protect the County's fisheries.
4. *Myxobolus cerebralis*, the parasite that causes whirling disease needs to be prevented from entering the County waters. If detected, it needs to be immediately controlled and eradicated from the County waters.

Desired Future Conditions

Juab County Desires:

1. State and federal agencies consult, cooperate and coordinate with the County to reduce or eliminate primary impacts that adversely affect streams, waterbodies, and the fisheries they support.
2. Land mangers concentrate efforts to improve streams, waterbodies and fisheries on optimizing desirable vegetative cover.
3. No new fish or species be introduced, reintroduced, transplanted or translocated in the County watercourses without coordination with the County and approval of the Commission. This includes the translocation and reintroduction of beaver.
4. A local water quality ordinance be developed under authority of the Clean Water Act to protect the County's streams, reservoirs and watercourses.
5. Any existing aquatic invasive species be eradicated from the County's watercourses, and new infestations especially quagga mussels and *Myxobolus cerebralis* be prevented from entering the County's waters. Other aquatic invasive species must also be controlled

6. Potential impacts to fisheries resulting from reasonably foreseeable actions such as mining, livestock grazing, wind energy development, geothermal exploration and facility development, pipeline and transmission line construction, urban development, and roadway and bridge construction be mitigate through the implementation of best management practices.
7. Land managers initiate actions to build additional resistance and resilience in the County's streams and riparian areas to prepare for the effects of potential climate change.
8. Prescribed fire is used as a last resort due to its potential to impact soil erosion, aquatic conditions and riparian values. Whenever prescribed burning is used and in the event of wildland fire, land managers must re-seed the affected area with an appropriate mix of native and non-natives capable of supporting multiple use/sustained yield activities while optimizing land health an productivity

Findings, Policies, Goals & Objectives, Criteria

Finding: Land managers can control many stream ecosystem attributes that contribute to healthy fish populations and sustainability including but not limited to healthy riparian conditions, channel stability, habitat diversity, sediment load, bank stability, and pollutants. Active and adaptive management techniques exist to achieve desirable stream characteristics without jeopardizing historic multiple use activities.

Finding: The survival, growth, and persistence of fish species, the aquatic and terrestrial species of plants that provide habitat, and the insects that provide food for fish depend on upstream conditions and upland influences that affect stream ecosystem health.

Finding: Replacing invasive conifers with desirable native and non-native upland vegetative communities will a) reduce soil erosion, b) reduce resultant stream sedimentation, c) increase water availability for soil retention and stream recharge, and d) is a key element in sustaining healthy fish populations and aquatic habitat.

Policy: Land managers shall consult, cooperate and coordinate with the County to manage public lands to reduce or eliminate factors that adversely affect streams, waterbodies, and the fisheries they support in the County.

Policy: In order to promote harmony between man and his environment, land managers should concentrate/prioritize efforts to improve streams, waterbodies and fisheries on optimizing desirable vegetative cover and improving terrestrial conditions rather than restricting historic and developing human activities.

Policy: No new fish or wildlife species may be introduced, reintroduced, transplanted or translocated in the County watercourses without coordination with the County and approval of the Commission. This includes the translocation and reintroduction of beaver.

Objective: A local water quality ordinance should be developed under authority of the Clean Water Act to protect the County's streams, reservoirs and watercourses.

Goal: All aquatic invasive species be eradicated from the County's watercourses prior to January 2026, and new infestations especially quagga mussels and *Myxobolus cerebralis* be prevented from entering the County's waters. Other aquatic invasive species must also be controlled

Objective: Mitigate potential impacts to fisheries resulting from reasonably foreseeable actions such as mining, livestock grazing, wind energy development, geothermal exploration and facility development, pipeline and transmission line construction, urban development, and roadway and bridge construction through the implementation of best management practices while allowing multiple use/sustained yield activities to proceed.

Policy, Goal & Objective: Land managers initiate actions to build additional resistance and resilience in the County's streams and riparian areas to prepare for the effects of potential climate change.

Policy: Prescribed fire is used as a last resort due to its potential to impact soil erosion, aquatic conditions and riparian values. Other methods to restore land health should be considered before prescribed fire.

Policy: Whenever prescribed burning is used and in the event of wildfire, land managers must re-seed the affected area with an appropriate mix of native and non-natives capable of supporting multiple use/sustained yield activities while optimizing land health and productivity.

Policy: Design route crossings of perennial and ephemeral streams to accommodate aquatic species passage, habitat, and natural stream processes (e.g., sediment and debris transport). For roads, paths, ways, trails, and other routes that have been determined by a court of competent jurisdiction to be under the control of the land manager and have been claimed by land managers under 23 CFR 460 as of January 1, 2016 land managers shall determine: a) the priority between species passage, habitat, and natural stream processes; and b) design standards. For roads, paths, ways, trails, and other routes that have not been determined by a court of competent jurisdiction to be under the control of the land manager and have not been claimed by land managers under 23 CFR 460 as of January 1, 2016 the County shall determine: a) the priority between species passage, habitat, and natural stream processes; and b) design standards.

Policy & Criteria: Deterioration of riparian/fisheries habitat will be avoided, minimized and/mitigated by implementing actions and best management practices that are the least restrictive and most harmonious with existing multiple use/sustained yield activities in the vicinity. Where existing multiple use/sustained yield activities must be restricted or temporarily eliminated to restore riparian/existing fisheries habitat in perennial streams, it will be done in the shortest period possible and not more than 3 growing seasons or 27 months, whichever is less. Without the Commission concurrence, existing multiple use/sustained yield activities shall not be restricted or temporarily eliminated in order to restore aquatic species that were a) not present in a perennial stream on January 1, 2016 or b) in an ephemeral stream.

Policy: On public land, new impoundments with potential fisheries and existing reservoirs where fisheries currently exist will be managed to maintain minimum pool depth needed to sustain viable fisheries.

Policy: Public access to fisheries on public land will be ensured through ROWs or other legal instruments on a willing buyer/willing seller basis. The County has a "No Net Loss of Private

Land” policy. Transfer of land out of private ownership shall not occur without concurrence of the Commission.

Policy: Wild and Scenic river segments shall not be designated for fisheries in the County without the concurrence of the Commission. All wild and scenic river designations shall comply with criteria established in this RMP, unless otherwise approved by the Commission.

2.8.2 Wildlife

Current Setting

Wildlife species, including big game, upland game, migratory birds, reptiles, small mammals, predators, bats, raptors, and many others, depend on the condition of their habitat for survival. Important indicators of wildlife habitat health, such as plant composition, distribution, and structure, are directly tied to wildlife populations. All wildlife species have their own specific set of forage, water, shelter, and special life cycle requirements. Rangeland, desert, riparian, and forest plant communities, along with climate, topography, soils, and natural or artificial threats contribute to wildlife habitats.

The Utah Division of Wildlife Resources (UDWR) is responsible for managing wildlife populations - with the notable exception of federally listed species under the Endangered Species Act, which are the responsibility of the United States Fish and Wildlife Service (USFWS). The USFWS also regulates hunted migratory species such as waterfowl and non-game migratory birds. The USFWS may delegate certain responsibilities to the UDWR and may encourage collaboration with academics and other recognized technical experts to aid in recovery efforts. However, federally mandated consistency, cooperation and coordination with local governmental entities is often ignored.

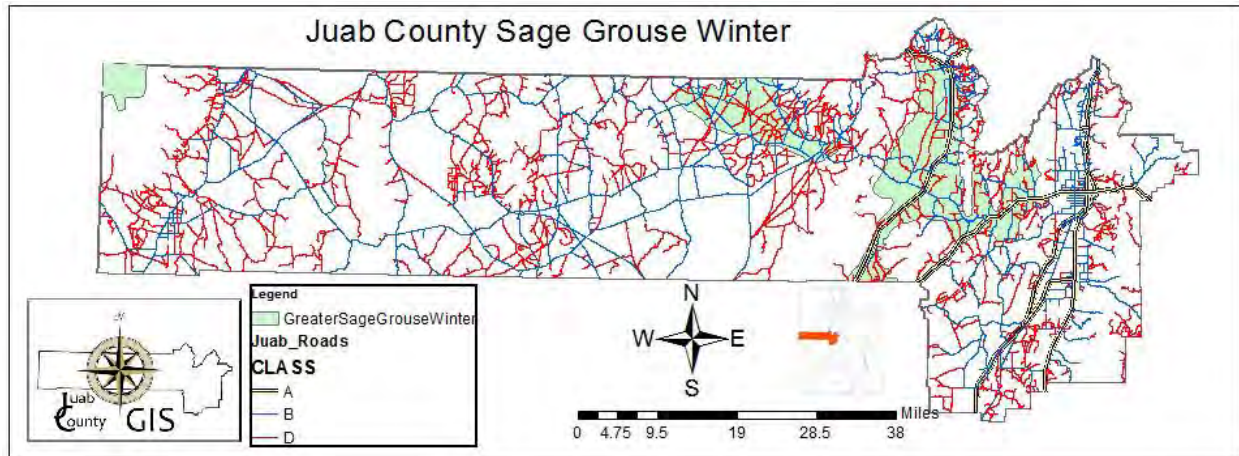
Wildlife typically utilizes habitats in predictable ways based on life history requirements of the individual species. For example, pronghorn occupy habitats that provide low visual structure, such as low sagebrush communities while avoiding dense shrub canopy cover. Sage grouse, on the other hand, depend on dense shrub canopy cover for hiding, nesting, thermal shelter, and secure travel. These predictable behaviors are known as “wildlife/habitat relationships” and are frequently used to analyze impacts from various land management activities. In general, wildlife response to habitat condition is predictable and reasonably well understood for many species. Knowledge of wildlife and wildlife habitat relationships based on relevant habitat indicators allow land managers to make informed predictions about the impacts of fires, grazing, development, recreational use, or forest management operations.

In addition to habitat relationships, federal land managers often consider publications, studies and other information pertaining to wildlife management. Because human disturbances and introduced structures can also impact wildlife, land managers also consider more than just physical and ecological attributes of native habitats. Habitat loss and fragmentation, noise and other potential stressors caused by structural developments (such as fences, signs, powerlines, meteorological towers, communication towers, mines, solar energy developments, wind energy generators, pipeline water tanks, and livestock troughs) associated with multiple-use land management are evaluated.

Structural development and habitat security considerations are not necessarily associated with

measurable plant community indicators. Hypothetically, the potential adverse impacts of structures, roads, energy developments, and other human activities, singularly or in combination (i.e., cumulative impacts) could result in harmful impacts to wildlife. It is also possible that other energy-related developments such as powerlines or meteorological towers could adversely affect wildlife because of collision hazards, behavioral avoidance reactions to overhead structures, and/or possible increased raptor predation caused by elevated hunting perches.

During the past few decades, land managers have moved away from significant habitat related factors which they control that affect fish and wildlife and have magnified their focus unfairly on human related impacts. For example, in the recent sage grouse plan amendments federal agencies focused on man-made, elevated perches, fence markings and human disturbances while ignoring the more significant issues of lost habitat resulting from large scale, invasive conifer encroachment, misrepresented habitat, and massive predation from ravens and coyotes. In another example, Utah prairie dog inventories in Iron County document a significant population increase in areas most heavily impacted by humans and a drastic population decline in native lands under the protection of the federal government.



Map 2.8.1

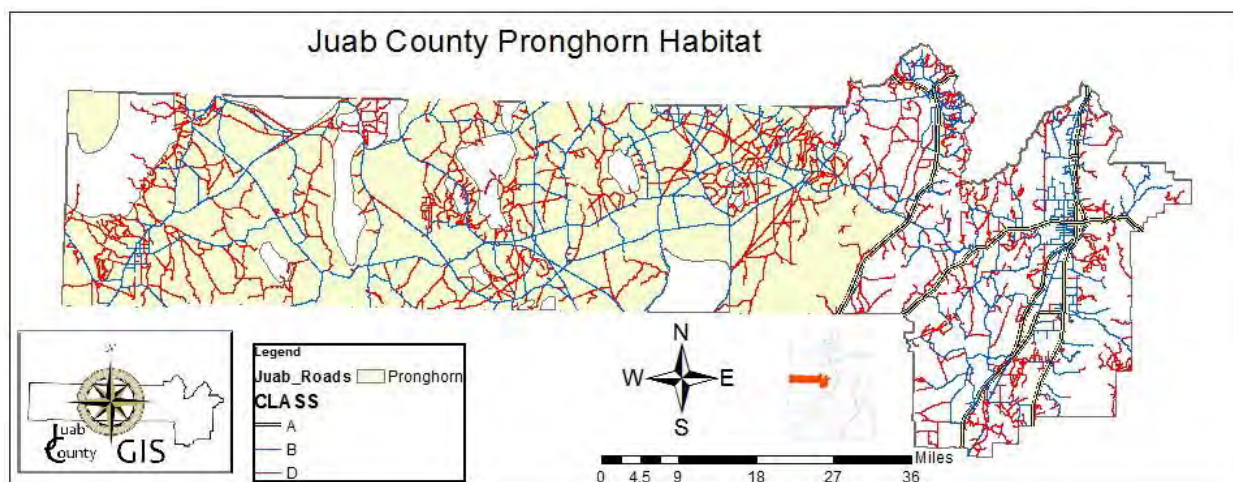
While quality wildlife habitat will likely sustain wildlife populations over several generations, some factors completely unrelated to physical habitat qualities, such as disease, accidents, drought, wildfire, severe weather events, natural population cycles, and other mechanisms could drastically suppress or limit wildlife populations. Population limitations could occur temporarily or for very long periods, even where there are healthy habitats present on public lands.

Upland game birds in the County include greater sage-grouse, dusky grouse, mourning dove, ring-necked pheasant, Rio Grande and Merriam's wild turkey, and chukar partridge. The habitat for these species varies and depends on season of use and availability of food and shelter. Annual fluctuations for most upland game bird populations closely correlate with annual climatic patterns. Mild winters and early spring precipitation from March through May can improve conditions for upland game species, and have been shown to increase populations. Warm, dry weather, especially during June, is generally considered a vital requirement for the survival of newly born young of many upland game species. Cool, wet springs, dry summers, and harsh winters can depress upland game bird numbers.

Raptors, including hawks, eagles, owls, and falcons, are protected wildlife and are widely regarded as indicator species of environmental quality due in part to their position at the top of the food chain. The planning area contains suitable habitat for many relatively common raptors. Breeding populations, summer residents, winter residents, and year-round resident species are found in suitable rangeland, canyon, riparian, and forest habitats throughout most of the region.

Migratory birds are species that in the course of their annual migration traverse certain parts of the United States, Canada, Mexico, Russia, or Japan. This includes not only neotropical (long-distance/bi-equatorial) migrants, but also temperate (short-distance) migrants and migrants to Japan and Russia. For many species, breeding habitat, wintering habitat, and the travel corridors interconnecting them are purported to be rapidly disappearing due to development, fragmentation, lack of adequate protective measures, and other factors. However, considering the County's rural nature, open landscapes and the more heavily impacted human developments that must be traversed in other areas of the migratory routes, diminishing habitat is not a significant factor.

Land managers often work closely with the UDWR to achieve and maintain suitable habitat, desired population levels, and distribution of big game species on federally administered lands. Portions of the Central Mountains – Nebo, West Desert – Deep Creek, West Desert - Vernon, West Desert – North Tintic, and Fillmore - Oak Creek UDWR Wildlife Management Units are located in the County. A map of UDWR Wildlife Management Units is available at <http://wildlife.utah.gov/hunting/biggame/wmas.php>.

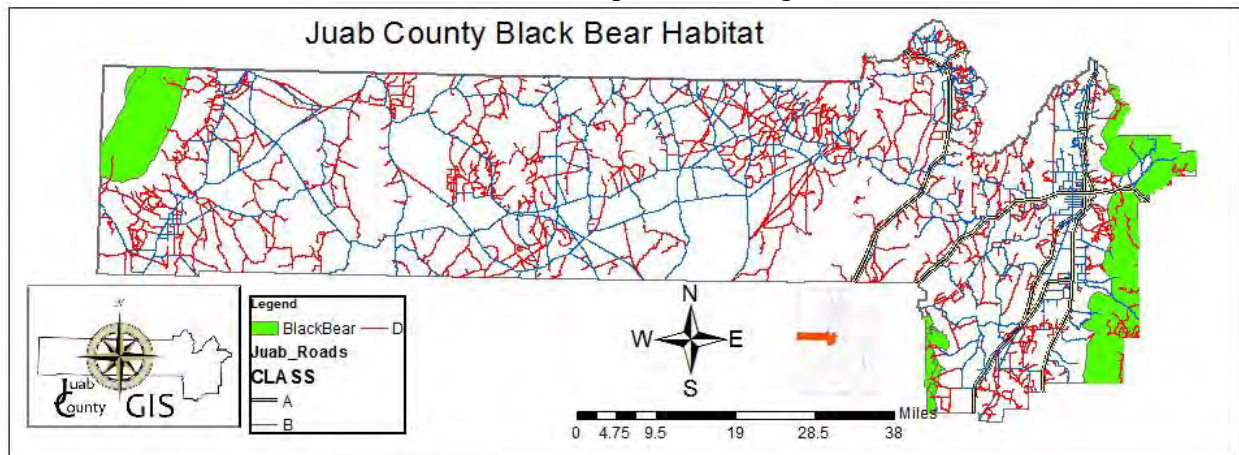


Map 2.8.2

Mule deer are the most abundant big game animal in Utah and occur in a variety of habitats throughout the area, and their range covers most of the higher elevations in the County. The northern Confusion Mountains and the forested area east of Interstate 15 have the largest concentration of deer habitat in the County. Mule deer feed on forbs, grasses, and shrubs throughout spring and summer, and primarily shrubs during fall and winter. Mule deer fawn during spring on their migration back to their summer range.

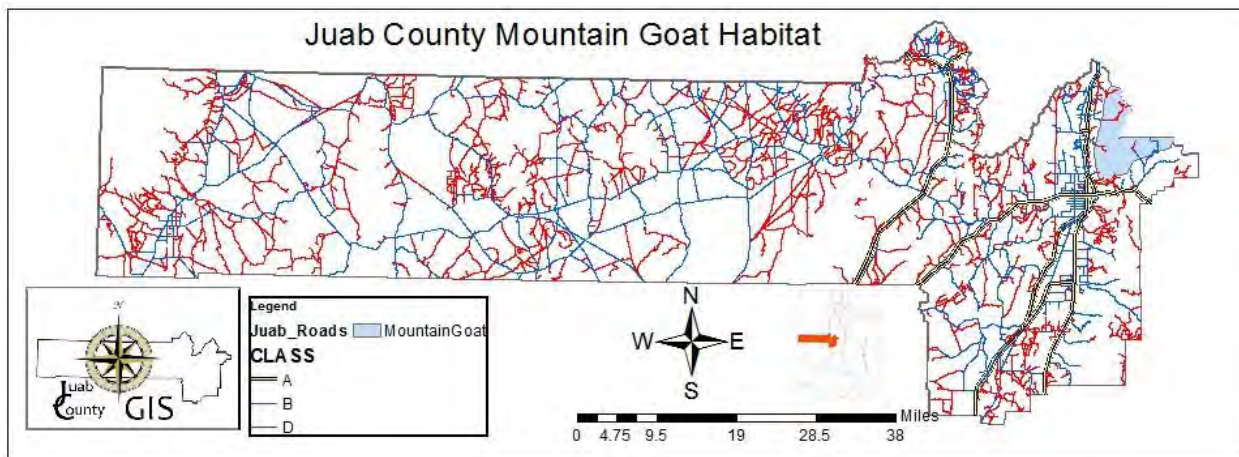
Pronghorn are widely distributed throughout most of the desert valleys in the County. Local populations are most abundant in the West Desert – Deep Creeks management unit. Pronghorn prefer very open vegetation communities such as salt desert shrub, sagebrush steppe, and other

treeless areas. Typically, pronghorn prefer flat terrain with slopes flatter than 5:1. Pronghorn fawning occurs throughout the range of this species, and their diet consists of a variety of forbs, shrubs, and grasses. Forbs are of particular importance during spring and summer, whereas shrubs are more important during winter



. Map 2.8.3

Rocky Mountain Elk are less widespread in the County than in many other areas of the state, with populations largely restricted the west hills west of Nephi and to the highest mountains east of Interstate 15 in the Central Mountain – Nebo management unit. Recent radio collaring efforts in other areas of the state have demonstrated the migratory nature of certain elk populations. Elk are quite capable of wandering and can colonize new areas.



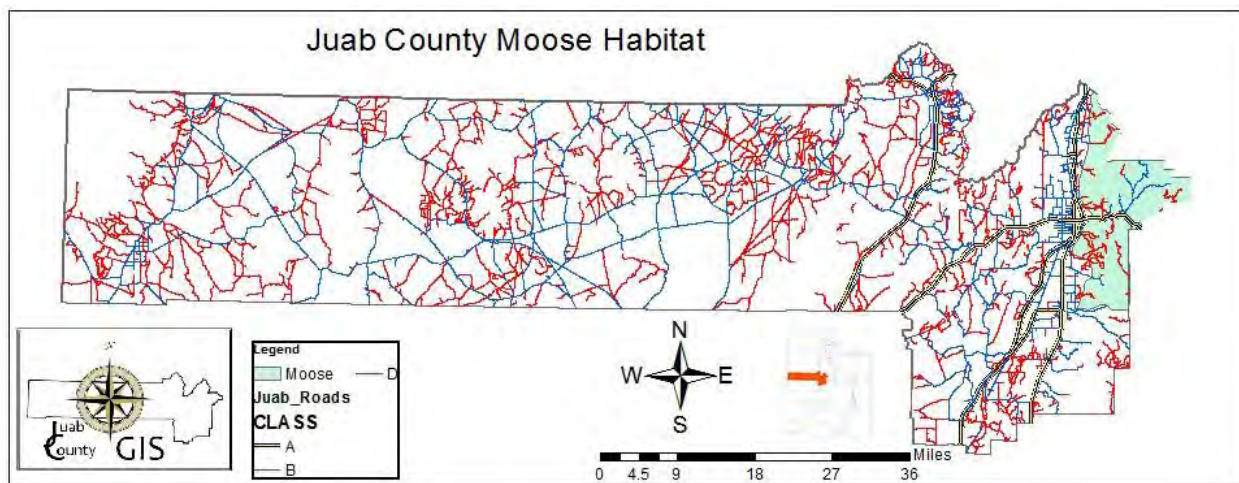
Map 2.8.4

Bighorn sheep were estimated to be more numerous than elk or mule deer prior to European settlement. Bighorn sheep have been introduced into the Mt. Nebo area of the county. The heard has struggled to survive. Domestic sheep are often trailed down highway 132 near the bighorn habitat. It is believed that domestic sheep being lost on the drive and ended up mingling somewhat with the bighorn. Domestic sheep carry disease that is often fatal to the bighorn. DWR evaluating the situation to determine of the bighorn population can be successful in this area. There are rocky mountain bighorn population is located in the extreme western mountains. Reintroduction of bighorn sheep in the planning area has not been identified as a goal in the Utah

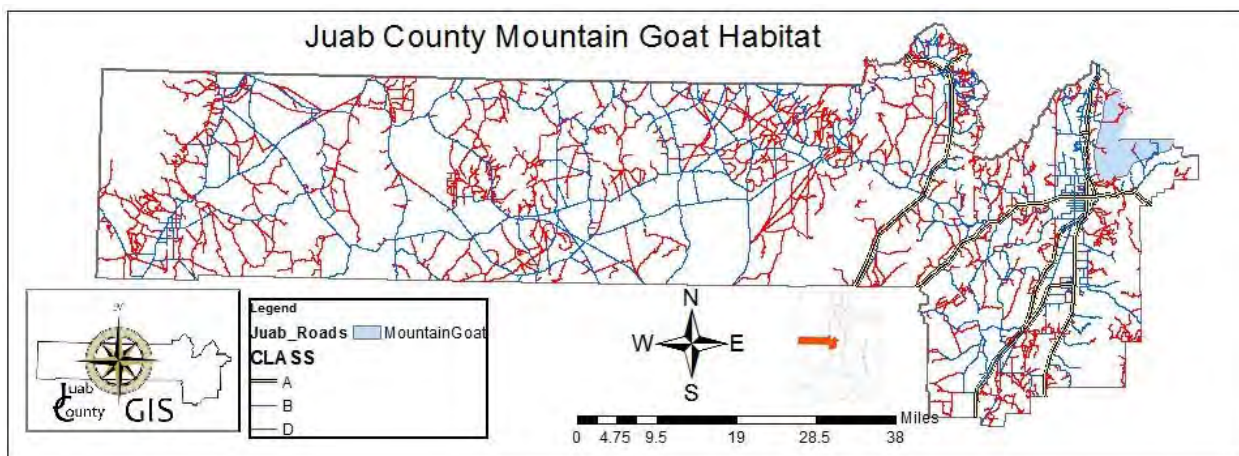
Bighorn Sheep Statewide Management Plan. If the UDWR desires to consider future transplants of bighorn sheep in the County, it is anticipated coordination efforts will be initiated. Rocky mountain goats have also been introduced to Utah. Recently goats have been introduced in the Mt. Nebo area of the County. According to DWR the heard is now flourishing.

Black bears are native and common in Utah. There is bear habitat only in the mountains on the extreme eastern edge of the County. According to the Utah Black Bear Management Plan, 80 % of bear observations occur between 7,000 feet and 10,000 feet elevation; and the remaining 20% occur within 2400 feet of those elevations. Black bears are omnivorous and eat a wide variety of foods during late spring, summer, and fall before they go into hibernation for 5 to 7 months. The spatial arrangement, abundance, and dependability of seasonally important food sources might explain much of the variation in black bear densities, home range size, and seasonal habitat use in the planning area.

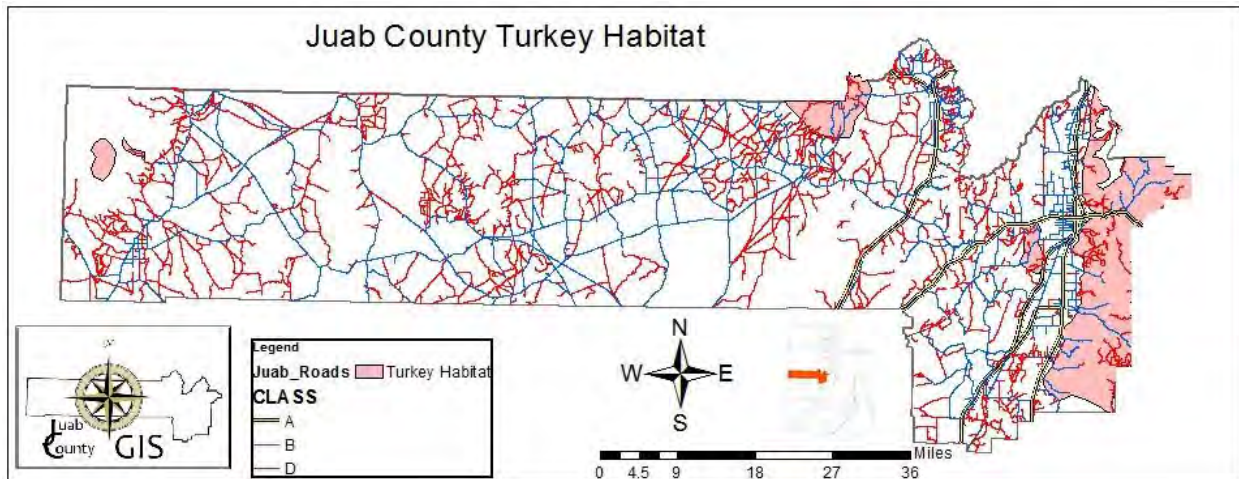
Cougar, or mountain lions, are found statewide in Utah, occupying habitat types ranging from rugged desert areas to above timberline. Although the species is fairly common throughout Utah



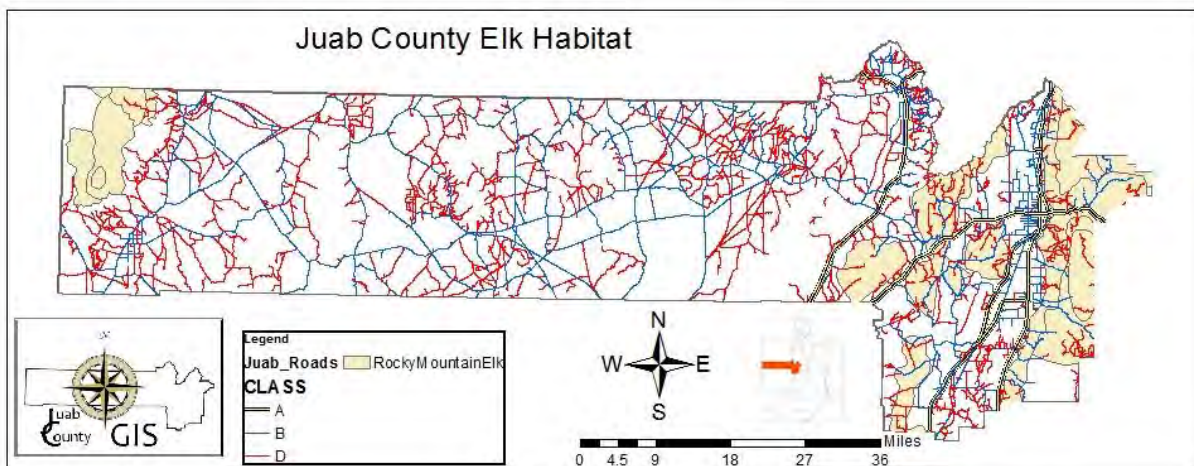
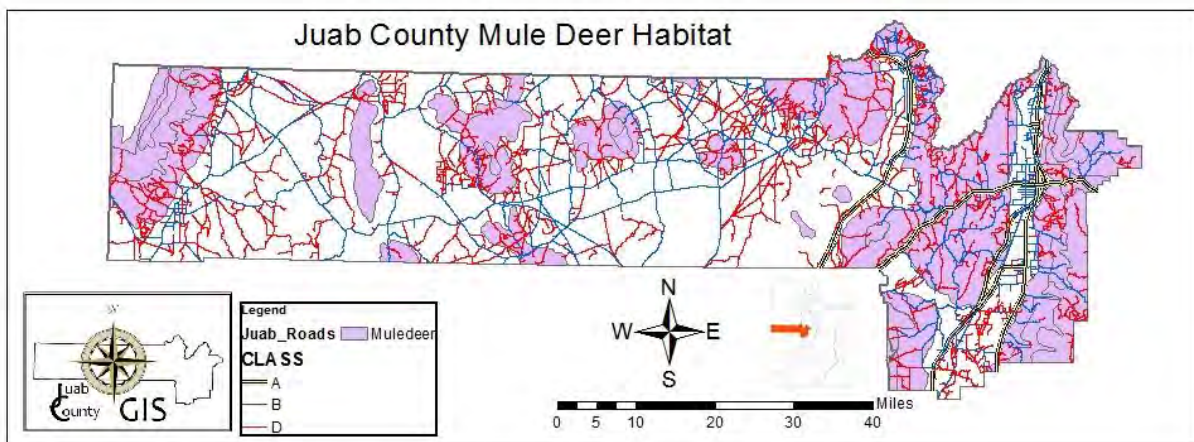
Map 2.8.5



Map 2.8.6



Map 2.8.7



Map 2.8.8

and in eastern Juab County, individuals are rarely seen because of their secretive nature. Seasonally, their movements follow their main prey, mule deer. Cougar will also feed on rabbits, elk, wild horses, or other animals, but approximately 80 percent of their diet consists of deer. Cougars are active year-round, during day and night, although most activity occurs at dawn and

dusk. They are hunted on a limited and are closely monitored in Utah. Cougar range in the County is relatively limited and is nearly identical to mule deer range countywide and black bear range in the eastern mountains.

Several furbearer species are also located in the County and are managed according to Utah Furbearer Regulations. UDWR-defined furbearers include gray fox, kit fox, red fox, bobcat, raccoon, badger, ringtail, spotted skunk, striped skunk, American marten, weasels, mink and beaver.

Special status species also occupy portions of the County. Special status species include species listed under the Endangered Species Act as *Endangered*, *Threatened* or *Candidate*, species designated as sensitive by agency managers and sensitive species designated by state and local entities. Special status species are discussed in Section 2.7 Special Status Species.

Other wildlife species not specifically discussed above also exist in the County. There is a general lack of definitive information about small animals such as rodents, bats, amphibians, reptiles, and invertebrates in the planning area. Databases maintained by various state and private programs document general occurrences for many less-studied species of wildlife, but site-specific inventories have not been completed.

Need for Management Change

1. Mapping and descriptions for the various habitat types needs to be improved. Landscape level and rapid ecoregion assessments are too inaccurate to evaluate site specific, watershed, field office or statewide conditions.
2. Encroaching conifers have significantly reduced available forage for wildlife. Based on a rolling 10 year average, land managers need to achieve a 25% reduction in Class II and III pinyon/juniper woodlands.
3. Big game management is often over objective. Big game needs to be managed within 10% of objective.
4. Land managers are prevented from taking beneficial action due to inconsistent, onerous, self-imposed policies. For example, an overabundant raven population is the largest predator of sage grouse and has a significant negative impact on sage grouse recovery. Land managers will protect ravens citing the Migratory Bird Act while simultaneously attempting to manage for the restoration of sage grouse. Relying on faulty landscape level planning, the agency implements unreasonable restrictions on human activity – which have little to no impact on sage grouse. Inconsistent, conflicting and self-defeating management actions need to be replaced with active, adaptive management that optimizes land health and harmony between man and his environment.
5. Land managers need to abandon passive management aimed at allowing nature to achieve some arbitrarily determined “native” condition and need to implement active, adaptive management actions aimed at reaching desired conditions consistent with the This RMP
6. UDWR is a single purpose agency and their statewide wildlife management plans can adequately serve as a general framework and designation of a species’ range. However they lack detail necessary to provide site specific direction and designation of priority

management habitats and populations. UDWR and the County need to develop site specific plans for species and wildlife management units in the County through cooperation and coordination.

7. Based on current conditions, surface disturbing activities in big game habitat need to be considered for statistical significance and severity of impacts as well as whether the activity occurs in a species' range. When impacts are statistically minimal or of low severity, surface disturbing impacts should be allowed to proceed with the minimum reasonable best management practices. Where surface disturbing activities are determined to be statistically significant or severe in priority big game habitat, land managers should employ avoid – minimize – mitigate protocols.
8. Given the County's rural nature, open landscapes and more heavily impacted human developments that must be traversed in other areas of migratory routes, and when considering breeding habitat, wintering habitat, and the travel corridors interconnecting them for migratory birds, land managers should focus on developing and enhancing healthy, vigorous and abundant habitats rather than restricting human development.

Desired Future Conditions

Juab County Desires:

1. Land managers implement aggressive, active and adaptive management to maximize land health while optimizing resource use in order to achieve harmony between man and his environment.
2. For each wildlife management unit not currently meeting objective, big game species be no more than 10% over objective by June 30, 2025. For each wildlife management unit currently meeting objective, big game species remain between 90% and 102% of objective based on accurate annual herd counts.
3. No wildlife species be translocated, transplanted, introduced or re-introduced in the County without consistency, cooperation and coordination with the County and without the expressed concurrence of the Commission.
4. Mapping and habitat descriptions developed as part of landscape level and rapid ecoregion assessments be field verified, corrected and refined prior to implementation in the County.
5. Consistent with ecologic site descriptions, encroaching Class II and III pinyon/juniper woodlands be reduced by 25% based on a rolling 10 year average.
6. Land managers eliminate inconsistent, conflicting and self-defeating management actions and implement active, adaptive management that optimizes land health and harmony between man and his environment.
7. Land managers abandon passive management aimed at allowing nature to achieve some arbitrarily determined "native" condition while implementing active, adaptive management actions aimed at reaching desired conditions consistent with the This RMP

8. UDWR and the County develop coordinated, site specific management plans for species and wildlife units in the County.
9. Land managers consider statistical significance and severity of impacts when surface disturbing activities are proposed in big game habitat. When impacts are statistically minimal or of low severity, surface disturbing impacts should be allowed to proceed with the minimum reasonable best management practices. Where surface disturbing activities are determined to be statistically significant or severe in priority big game habitat, land managers should employ avoid – minimize – mitigate protocols.
10. Land managers emphasize developing and enhancing healthy, vigorous and abundant migratory bird habitat rather than restricting human development when considering breeding habitat, wintering habitat, and the travel corridors interconnecting them for migratory birds.

Findings, Policies, Goals & Objectives, Criteria

Goal: Manage the biological integrity of terrestrial and aquatic ecosystems to sustain or improve habitat and fish and wildlife populations, with emphasis on ecosystem health, and species biodiversity.

Objective: Manage important wildlife habitats in cooperation and coordination with state and local entities, transferring public ownership to state and local entities that have management jurisdiction over wildlife when ranges, habitat and life cycle requirements extend beyond agency boundaries.

Policy: Land managers shall maximize use of the Recreation and Public Purpose Act (R&PPA) and other laws to transfer public ownership of important wildlife and fishery habitats to state and local entities when ranges, habitat and life cycle requirements extend beyond agency boundaries.

Finding: Given the connection between the local custom, culture and heritage with fishing, hunting and wildlife viewing, transfer of federal lands for wildlife management purposes under the R&PPA constitutes a transfer for recreation purposes with a maximum of 6,400 acres per eligible entity per year.

Finding: State and local entities that manage site specific fish and wildlife populations are better suited to manage habitats that cross agency boundaries than federal agencies who are limited by jurisdictional boundaries, national policy, and landscape level planning.

Finding & Policy: Acquisition of private lands into state or federal ownership for wildlife management purposes violates the County's No Net Loss of Private Property policy. There shall be no transfer of private lands into state or federal ownership for wildlife management purposes unless it is coordinated with and approved by the Commission.

Policy: Land managers must be aware of wildlife population trends and must take appropriate, active, and adaptive management actions to conserve or improve habitats, which will sustain species through a population decline.

Finding: Consistent with ecological site conditions, optimizing land health with an appropriate mix of desirable, native and nonnative vegetation provides the greatest benefit for fish and

wildlife health, vigor and prosperity.

Goal: Manage to optimize land, fish, wildlife and habitat health while avoiding, minimizing, or mitigating adverse impacts to fish and wildlife species and their habitat.

Objective: Manage to reduce or eliminate adverse impacts to or conflicts between resource uses and fish and wildlife populations and their habitats by optimizing land health, optimizing vegetative cover with desirable native and non-native species, water development, reducing undesirable and invasive vegetative communities, predator control, and other active and adaptive management actions.

Goal: Maintain habitat connectivity and wildlife movement between ecological zones and seasonal-use areas.

Objective: Maintain and enhance movement corridors and seasonal habitat-use patterns for important species by optimizing land health, optimizing vegetative cover with desirable native and non-native species, water development, reducing undesirable and invasive vegetative communities, predator control, and other active and adaptive management actions.

Objective: Maximize consistency, cooperation and coordinated management opportunities to maintain or reestablish habitat connectivity across agency boundaries and federal and non-federal lands.

Objective: Consistent with this RMP, manage habitats to maintain or improve functional ecosystems on public lands while preserving and enhancing resource uses.

Goal: Manage for the continuity and productivity of fish and wildlife and their habitat to support local wildlife population objectives.

Policy & Implementation Action: Invoke federal, state and local consultation, consistency, cooperation, and coordination requirements to unify wildlife population objectives and other management plans.

Policy & Implementation Action: Invoke federal, state and local consultation, consistency, cooperation, and coordination requirements to manage the introduction, translocation, augmentation, reestablishment, restoration, and enhancement of fish and wildlife populations in appropriate habitats.

Policy & Implementation Action: Invoke federal, state and local consultation, consistency, cooperation, and coordination requirements to unify introduction, translocation, augmentation, reestablishment of fish and wildlife to restore or expand populations in appropriate habitats.

Policy: NEPA requirements to harmonize man's impact with his environment mandate active management of fish and wildlife habitat has priority over passive neglect of vegetative communities and encroaching woodlands.

Policy & Criteria: Big game objectives are set at those numbers established on January 1, 2016, unless otherwise approved by the Commission. Big game population objectives in the County will not be changed after January 1, 2016 without consistency, consultation, cooperation, coordination, and concurrence with the Commission.

Policy, Goal & Objective: Each wildlife management unit in the County not meeting big game population objectives will be not more than 10% over objective prior to June 30, 2025. For each wildlife management unit meeting objective, big game populations remain between 90% and 102% of objective based on accurate annual herd counts.

Policy: No wildlife species will be translocated, transplanted, introduced or re-introduced in the County without consistency, cooperation and coordination with the County and without the expressed concurrence of the Commission.

Goal: Improve, maintain, or restore native and non-native desired plant communities in important wildlife habitat

Policy, Goal & Objective: Consistent with ecologic site descriptions, land managers will achieve 25% reduction in encroaching Class II and III pinyon/juniper woodlands, based on a rolling 10 year average.

Policy: Mule deer will be managed to minimize impacts to agricultural fields and croplands.

Policy: UDWR will work cooperatively with transportation officials to reduce the frequency and severity of vehicle/wildlife conflicts.

Objective: Manage pesticide, rodenticide, and herbicide application in a manner compatible with land, fish and wildlife health.

Objective: Manage to prevent or control predators and disease that threaten fish and wildlife populations or their habitat.

Objective: Manage to prevent the spread of terrestrial and aquatic invasive species.

Objective: Maintain or improve desired fish and wildlife populations and habitats to achieve goals established in this RMP or as modified, updated and/or approved by the Commission.

Implementation Action: Promote, support and allow appropriate improvement, construction and maintenance of water developments that benefit wildlife. Evaluate the effectiveness of existing wildlife water developments and install, improve, repair, replace, or relocate water developments as needed.

Implementation Action: Protect and conserve raptor nesting and foraging habitat, prioritizing active forest and rangeland management to restore resilient and resistant vegetation communities, while allowing other resource uses, consistent with the This RMP

Implementation Action: Require all new powerlines (transmission and distribution), communication towers, and meteorological towers in priority management habitat areas to be built to industry standards to minimize electrocutions and collision risks for protection of migratory birds and their habitat. Encourage all new powerlines (transmission and distribution), communication towers, and meteorological towers in non-priority management habitat areas to be built to industry standards to minimize electrocutions and collision risks for protection of migratory birds and their habitat.

Implementation Action: Develop and construct fish and wildlife habitat improvement projects (including vegetation treatments) to meet fish and wildlife goals and objectives, while optimizing

land health and other resource uses.

Implementation Action: Coordinate predator and animal damage control with federal, state and other agencies, consistent with the This RMP

Implementation Action: Manage migratory birds and their habitats to optimize species enhancement and resource uses, while maximizing harmony with man and his environment and consistency with the This RMP

Implementation Action: Protect, conserve, and restore priority aquatic, riparian, and wetland habitats to provide for desirable self-sustaining fish or other aquatic species populations, while optimizing resource use and maximizing consistency with the County's plans, programs, policies, and RMP.

Implementation Action: Consistent with this RMP, avoid, minimize and mitigate damaging resource uses in high priority big game habitat through cooperation and coordination with land managers and UDWR.

Finding: UDWR and agency habitat mapping inaccurately designates areas as crucial, priority, high value, important and other similar wording. In many cases mapping only depicts a species' range.

Policy: Unless otherwise mandated by superior law, the County's habitat designations, descriptions, and definitions shall be used. Where conflicts in law exist, the County invokes consistency, cooperation and coordination requirements to the maximum extent allowed by law. Habitat designations shall comply with Data Quality Act requirements, actual site specific conditions and biologic life cycle requirements, unless otherwise approved by the Commission.

Finding: Roads, paths, ways and trails are important cultural and historic resources, and their continued use is vital to fishing, hunting and wildlife viewing and the County's custom, culture and heritage. Severity and frequency of wildlife/vehicle conflicts is commensurate with the amount and speed of traffic. The amount of land used for roads, paths, ways and trails is statistically insignificant when compared with available habitat for almost all species.

Policy: Prior to closing any road, path, way, or trail to motorized use for wildlife protection purposes, land managers shall obtain concurrence from the Commission. Commission concurrence shall be based on agency evidence documenting site specific and cumulative data regarding traffic counts, vehicular speed, number and severity of conflicts, species mortality, and comparative data with other roads, paths, ways and trails in the wildlife management unit.

Implementation Action: Roads paths ways and trails should be opened or re-opened to the maximum extent allowed by law to manage fishing, hunting and wildlife viewing and to support the County's custom, culture and heritage.

Finding: Properly designed, implemented and maintained habitat vegetation treatments benefit a variety of species. It is impractical to attempt to design a treatment to maximize the benefit to a particular species without impacting other competing species.

Policy: Habitat vegetation treatments shall be designed, implemented and maintained to optimize the harmonious benefit of the major species occupying an area unless it has been designated by the County as a priority management area for one or more species.

Policy: Until such time as they are adjusted by the Commission, wildlife objectives for the various species in the respective UDWR wildlife management units shall be the wildlife objectives established by UDWR as of January 1, 2016. Unless otherwise approved by the Commission, when a wildlife population exceed the County's population objectives by more than 10% in any wildlife management area, wildlife managers shall take steps to reduce the population to 90% of the objective or less within 2 years.

Policy & Criteria: Where forage supports wildlife and livestock grazing, and as forage quantities change over the course of time, available forage shall be allocated on the following priority:

1. Active and inactive permitted AUMs for livestock use.
2. Wildlife up to 100% of objective or existing population, whichever is less.
3. Suspended AUMs for livestock use.
4. 50% for additional livestock use and 50% for additional wildlife objectives, unless otherwise coordinated between state and federal agencies and the County.

Forage shall be allocated to item 1 before allocating any forage to item 2 and so forth through the priority schedule. Forage may be adaptively managed according to the schedule listed above during each grazing season when all of the allotted forage will not be used by the designated activity. Forage allocations will be reset to the prioritization listed above at the end of each grazing year.

Policy: Habitat treatments will be generally designed, implemented and maintained based on attaining a balance between different wildlife species and other resources and uses. Where UDWR and the County collectively agree species specific needs are a concern, design, implement and maintain habitat treatments to improve or maximize habitat function for the designated species.

Finding: UDWR's statewide wildlife management plans provide a general framework of biological function and range for the designated species. However, the statewide plans lack sufficient specificity to properly manage wildlife in the County.

Policy: The County and UDWR will cooperate and coordinate to develop site specific wildlife management plans for species and wildlife management units in the County. To the maximum extent allowed by law, land managers shall be consistent with the County/UDWR site specific plans.

Policy: Land managers shall design, implement and maintain forest, range, riparian, and watershed habitat projects to enhance and improve aquatic and terrestrial species habitat.

Policy: Consistent with resource use, protection or enhancement identified in the County RMP, fences shall be designed, constructed and maintained to accommodate wildlife and livestock movement and migration. Fences that demonstrate a specific impediment to wildlife and/or

livestock, may be modified. Fences that are no longer needed may be removed. Fences may be marked as needed, and exceptions may be granted by the Commission on a case by case basis.

Policy: Wherever possible, wildlife escape ramps will be installed and/or maintained in new and existing water tanks or troughs.

Policy: Where practical, new water troughs should be installed at a height between ground level and 20 inches. Water should be maintained throughout the year when livestock are present, unless otherwise collectively determined by UDWR, the County and the land manager.

Policy: In areas designated by the County as priority management habitat, vegetation treatments shall be maintained at a seral stage that best benefits the target species. In areas not designated by the County as priority management habitat, vegetation treatments shall be maintained at the seral stage ranges listed above.

Policy: Federal land managers shall analyze, consider and disclose local and cumulative statistical significance and severity of impacts when surface disturbing activities are proposed in priority management habitat. When impacts are statistically minimal or of low severity, surface disturbing impacts shall be allowed to proceed with the minimum reasonable best management practices. Where surface disturbing activities are determined to be statistically significant or severe in priority big game habitat, land managers shall employ avoid – minimize – mitigate protocols to reduce detrimental impacts. The Commission may consider and grant exceptions on a case by case basis.

Policy: Federal land managers shall analyze, consider and disclose local and cumulative statistical significance and severity of impacts when surface disturbing or disruptive activities are proposed within 0.25 mile of identified surface waters in waterfowl wintering habitat from November 1st through March 15th and with nesting waterfowl from March 15th through July 15th. When activities benefit waterfowl or when impacts are statistically minimal or of low severity, surface disturbing impacts shall be allowed to proceed with the minimum reasonable best management practices. Where surface disturbing activities are determined to be statistically significant or severe, land managers shall employ avoid – minimize – mitigate protocols to reduce detrimental impacts. The Commission will consider and grant exceptions on a case by case basis.

Policy: Federal land managers shall analyze, consider and disclose local and cumulative statistical significance and severity of impacts when surface disturbing and disruptive activities are proposed in key migration corridors, in nesting habitat or in priority migratory bird habitats from March 15th to July 31st. When activities are: a) compatible or consistent with enhancement, protection, or maintenance of priority management habitat or populations; b) located or designed to eliminate or reduce detrimental effects to an acceptable level; or c) statistically minimal or of low severity, surface disturbing impacts shall be allowed to proceed with the minimum reasonable best management practices. Where surface disturbing activities are determined to be statistically significant or severe in priority big game habitat, land managers shall a) redesign or relocate the activity or b) employ avoid – minimize – mitigate protocols to reduce or eliminate detrimental impacts to an acceptable level. The Commission will consider and grant exceptions on a case by case basis.

Policy: Prior to making any allotments unavailable for livestock grazing, land managers desiring

to reduce livestock/wildlife conflicts shall analyze, consider and disclose local and cumulative statistical significance and severity of impacts of the individual allotments to the Commission. Land managers shall cooperate and coordinate with the Commission and shall strictly comply with NEPA, CEQ Regulations, the Data Quality Act, the Regulatory Flexibility Act and other federal law. No allotments that have been available for livestock grazing any year from January 1, 2010 to the present shall be made unavailable with the intent of reducing wildlife conflicts without concurrence of the Commission. The Commission will consider and grant exceptions on a case by case basis.

Policy: Land managers shall analyze, consider and disclose local and cumulative statistical significance and severity of impacts when surface disturbing and disruptive activities impact wildlife migration/travel corridors in or designated as priority management habitat. When activities are: a) compatible or consistent with enhancement, protection, or maintenance of priority management habitat or populations; b) located or designed to eliminate or reduce detrimental effects to an acceptable level; or c) statistically minimal or of low severity, surface disturbing impacts shall be allowed to proceed with the minimum reasonable best management practices. Where surface disturbing activities are determined to be statistically significant or severe to wildlife migration/travel corridors in or designated as priority management habitat, land managers shall a) redesign or relocate the activity or b) employ avoid – minimize – mitigate protocols to reduce or eliminate detrimental impacts to an acceptable level. The Commission will consider and grant exceptions on a case by case basis.

Finding & Policy: Prescribed and wildland fire have positive and negative impacts on a wide variety of resources, including wildlife. Fires, of all types, need to be wisely, carefully and judiciously managed. The County recognizes the advantages and problems with prescribed and wildland fire. Land managers shall analyze, consider and disclose local and cumulative statistical significance and severity of impacts regarding prescribed and wildland fire in priority management habitat. When prescribed or wildland fire is: a) compatible or consistent with enhancement, protection, or maintenance of priority management habitat or populations; b) located or designed to eliminate or reduce detrimental effects to an acceptable level; or c) statistically minimal or of low severity, prescribed and wildland fire may be used for management purposes while employing aggressive best management practices. Where prescribed or wildland fire is determined to have statistically significant or severe impacts to priority management habitat, land managers shall a) redesign or relocate the activity or b) employ avoid – minimize – mitigate protocols to reduce or eliminate detrimental impacts to an acceptable level. All fire, prescribed and wildland, shall be managed consistent with all of the provisions of this RMP and shall include appropriate, optimal provisions for reseed and reclamation. The Commission will consider and grant exceptions on a case by case basis.

Finding & Policy: Water is vital to life in the County. Water is a key element in land health and the survival of the species that live on the land. Development of water in the County is beneficial to all land management activities, including wildlife. The County supports and encourages responsible water development for wildlife, livestock, and other water dependent species. The County supports and encourages water development in priority management habitats and other important habitats. Restrictions on responsible livestock related or other water development in priority management habitats, other important habitats and lands in general is inconsistent with this RMP.

Finding: Given the County's rural nature, open landscapes and the more heavily impacted human developments that must be traversed in other areas of migratory routes, human impacts resulting in disappearing migratory bird breeding habitat, wintering habitat, and the travel corridors interconnecting them are not a significant factor.

Policy: For migratory bird actions, land managers shall prioritize and emphasize developing and enhancing healthy, vigorous and abundant migratory bird habitat rather than restricting human development when considering breeding habitat, wintering habitat, and the travel corridors interconnecting them.

2.8.3 Predator Management

Introduction

Ever since intelligent man began occupying the planet, he has attempted to control his environment to provide safe, healthy and productive living conditions. Whenever a group of individuals colonized an area, one of their first activities was to eliminate or control undesirable species, particularly those that threatened their personal safety and the productivity of their crops and animals. It was no different when the west was colonized; and the same philosophy is equally valid today. We observe man controlling his environment in urban settings, and he has an equal opportunity and responsibility to appropriately manage his surroundings in the County, including the management and control of predators.

Current Setting

Predator/prey relationships can be very complex and encompass the entire, multi-level ecological spectrum. To a large extent, every species is a predator to the species it uses for food and prey to the species which use it for food. In the context of this RMP, predators will be limited to those species which cause significant damage to desirable resources, particularly wildlife (including special status species) and livestock. No effort is made to create a complete list of all predators, but principles described herein are applicable to a wide variety of circumstances and may be applied as adaptive management principles. The plan specifically addresses large carnivores that are common to the County (cougar and coyote), bears, and ravens. The Plan will also identify management actions for wolves, in consideration of the significant danger or threat they cause to man, livestock, wildlife, and desired ecologic conditions. No effort will be made to discuss small carnivores, except in Section 2.7 in connection with special status species. It is recognized that predator management is becoming increasingly controversial, particularly for those individuals who a) do not live in the area; b) are not impacted by actions of predators; and c) reside in urbanized areas where predators have been completely eradicated.

North America settlers recognized the need to control predators when they colonized the continent. Predator extirpation was one of the early activities of many colonial, territorial and state governments. For instance, in 1630, the Massachusetts settlers adopted a bounty on wolves, and one of the first political actions taken by Oregon Territory settlers was establishing assessments to pay for predator bounties. By the early 1900s, the federal government was controlling wolves on forest lands in exchange for livestock grazing fees. The goal of all of these programs was to drastically reduce or eliminate predators that were causing damage to desired programs and were a threat to societal desired conditions.

Currently, predator control programs are managed primarily by UDWR and are augmented by local county programs and activities conducted by the U.S. Fish & Wildlife Service (USFWS). The State of Utah has provided funding to the USFWS for coyote control, specifically to help reduce coyote populations in areas where deer fawn survival is low. Coyotes are not a protected wildlife species, and there is a bounty program to encourage coyote control. In addition, targeted efforts using hunters and trappers helps ensure removal of coyotes from the targeted areas, during the appropriate seasons to improve fawn survival.

UDWR also is working to limit the impact of cougars on Utah's deer herds, while maintaining a healthy cougar population statewide. Cougar harvest has been liberalized where mule deer or bighorn sheep populations fall below the population management objective, and where adult deer or bighorn sheep survival is lower than normal. More detail can be found in the Utah's Statewide Cougar Management Plan. Programs conducted by UDWR to control predators include:

- Ravens, coyotes, red foxes, and badgers that prey on sage-grouse/eggs
- Raccoons and red foxes that prey on waterfowl/eggs
- Cougars that prey on adult mule deer or bighorn sheep
- Coyotes that prey on mule deer fawns or pronghorn fawns

Of these programs, the one that targets coyotes is the largest and most costly. Appropriately targeting and timing of predator removal is essential for reducing the impact that coyotes have on fawn survival. In Utah, targeted contracts allow removal of coyotes from fawning grounds from March through August, and the coyote bounty program is most effective during the coyote breeding season (January–March).

Utah's Mule Deer Protection Act went into effect in July of 2012. The primary goal of the program was to remove coyotes from areas where they may prey on deer fawns. The Utah Legislature set aside \$500,000 from the General Fund to pay individuals to kill coyotes in Utah. To process the payments and track harvest and participation, UDWR created the General Predator Control Program. This took the place of previous coyote bounty programs administered by participating counties.

UDWR established locations throughout the state where people can check-in coyotes for a \$50 payment. Each participant is required to submit the scalp of the animal with both ears attached, the lower jaw, and a data sheet reporting where the coyote was killed. Approximately 7,000 coyotes were taken under the bounty program each year for the first two years of the program. In 2015, nearly 8,200 coyotes were submitted for bounty payments. Completed reports, including maps depicting results of the coyote control program can be found at <https://wildlife.utah.gov/hunting-in-utah/hunting-information/762.html>.

Success of coyote control under the Mule Deer Protection Act has varied across the state. Six mule deer management units (Box Elder, West Desert, Southwest Desert, Fillmore, Beaver, and Pine Valley) accounted for approximately 50% of all coyotes removed. The bounty program likely increased the number of coyotes killed in Utah and provided government-supplied economic rewards to individuals and businesses throughout the state. It may take several years of program implementation before improvements in fawn/doe ratios are observed. Both location and timing are essential in reducing the impact of coyote predation on mule deer fawn survival.

An essential element of the authorizing legislation is the requirement for UDWR to coordinate its targeted predator control activities with local governments. This plan serves as the basis for that coordination until modified by the Commission.

At times, two additional wildlife species exhibit predatory behavior in Utah: black bears and cougar. Both of these species are managed under specific plans. Utah's Black Bear Management Plan is located at https://wildlife.utah.gov/bear/pdf/2011_plan.pdf, and the Cougar Management plan can be found at <https://wildlife.utah.gov/pdf/cmgtplan.pdf>.

Black bears occur in stable, healthy populations across certain parts of Utah. Normally, they don't occur in the mountain ranges of the western deserts. Geographic Information System (GIS) data showing black bear distribution and hunt boundaries can be downloaded from UDWR's Index of Available GIS Data website. Bears are more of an omnivore than a carnivore, and the vast majority of their diet is composed of plant material and, at certain times of year, insects or insect larvae. Often when bears do eat meat, they are relying on carrion which they have happened upon, not fresh prey. Black bears can also cause site-specific depredation problems among livestock, especially domestic sheep bedded down for the night during the summer months.

Although cougars prey primarily on adult deer, they are opportunistic predators, and can also cause site-specific livestock depredation problems. Livestock depredation incidents are immediately referred to Wildlife Services staff specializing in removal of specific predators associated with depredation incidents. UDWR provides compensation to ranchers with documented livestock losses attributed to cougar or bear. UDWR also issues increased cougar and bear permits in areas with chronic livestock losses caused by predation from these species.

Wolves, although not currently present in the County, are recognized for their threatening and dangerous impact. As mentioned above, one of the first management acts of early American and Oregon settlers was to control wolf populations, and early pioneers in the intermountain west took similar action. Wolves exhibit behavior patterns, such as cooperative hunting in packs, which clearly separate them from bears and other predators. By any measure, wolves are highly effective and efficient predators. Currently, there are not any established breeding populations of wolves in Utah. However, there are occasional transients and migrants.

The Wolf Management Act created by Senate Bill 36 of the 2010 General Legislative Session directed the Division of Wildlife Resources to prevent any wolf packs from establishing in the portion of the state where wolves are removed from the protection of the Endangered Species Act. That area includes only the portion of Utah located north of I-80 and east of I-84. UDWR has granted authority to the U.S. Department of Agriculture-Wildlife Services to act on the State's behalf to resolve livestock depredation incidents which involve wolves in the statutorily defined area.

For the remainder of the state, including the County, wolves are classified as a federally endangered species, and management authority lies with the U.S. Fish and Wildlife Service (FWS). The state law referenced above also directs the UDWR to request that the FWS immediately remove any wolves discovered in areas of Utah where they are still protected under the Endangered Species Act. The Utah Wolf Management Act suspends the portion of UDWR's Wolf Management Plan that would allow two packs to become established in Utah, although the remaining strategies of the plan are still in effect. If wolves are delisted across all of Utah, the

management plan then would be fully implemented. Wolves do not present significant predator management challenges to wildlife managers in the County at this time (January 2017).

Ravens, although protected by the Migratory Bird Act, are one of the most detrimental predators in the County and impose significant damage on Sage Grouse. Research in southern Wyoming conducted by Jonathan Dinkins found nest success in areas where ravens were not present within 1/3 mile was almost twice that of areas where ravens were present in that distance. Ravens prey on sage grouse eggs and negatively impact nest success and sage grouse populations. Ravens can flourish in a wide variety of habitats including those areas of significant human development and abundant threats. Some studies indicate more than half of all sage grouse nest predation is attributable to ravens.

The Animal Damage Control Act of 1931 directs federal agencies to protect livestock, property, wildlife, and public health and safety from damage caused by predators. In *Southern Utah Wilderness Alliance et al. v. Thompson, H. et al., Forest Supervisor* (U.S. District Court of Utah, Civil No. 92-C-0052A) the court ruled agencies need not show a certain level of damage is occurring before it implements a predator control action. The Court further ruled the agency need only show that damage from predators is threatened.

Need for Management Change

1. Man's authority and responsibility to prevent the loss of life, property and wildlife through appropriate predator control needs to be recognized.
2. Federal, state and local entities need to continue improving cooperation and coordination associated with predator control.
3. Land managers need to be consistent with state and local wildlife and predator management plans to the maximum extent allowed by law.
4. In areas designated for sage grouse management, ravens need to be controlled in general habitat and eradicated in areas designated as priority habitat. The County recognizes the significant conflict in designations among the various agencies. Land managers should apply control and eradication efforts consistent with their adopted plans until agreement is reached.
5. The County needs to take every reasonable action to prevent the introduction of wolves in the County.

Desired Future Conditions

Juab County Desires:

1. The County's authority and responsibility to prevent the loss of life, property and wildlife values through appropriate predator control and this management plan be fully and completely recognized and respected.
2. Federal, state and local entities continue improving cooperation and coordination associated with predator control.

3. Ravens be eradicated in priority sage grouse habitats and significantly controlled in general habitat.
4. Predators in the County are controlled in a manner that supports resource use consistent with the This RMP
5. No wolves are allowed to enter the County.

Findings, Policies, Goals & Objectives

Finding: Coyotes, ravens and mountain lions are common predators in the County. While predators are important to a balanced ecosystem, in some areas of the state, these predators endanger the establishment of new wildlife populations, or contribute to the decline of existing species, and must be controlled.

Policy: The County supports existing and enhanced bounties and predator control programs instituted to protect wildlife, livestock, and human health and property.

Finding & Policy: Predator management can be effective when well-defined predator impacts are identified. When human life, property, livestock or sensitive wildlife are threatened or endangered by predators, controls must be implemented to arrest population declines. Predator management is a valuable and legitimate wildlife management/conservation tool.

Policy: Predator management is a tool that should be applied efficiently and strategically. Predator management may include but is not limited to lethal removal of predators – including corvids, nonlethal management of predators, habitat management to promote more robust prey populations which are better able to sustain predation, and adaptive management options.

Finding: Predators generally impact a large portion of their prey's range and create direct impact on priority species populations. Human disturbances impact a relatively small portion of the range of priority species in the County and only create indirect impacts on priority species.

Policy: The County supports integrated predator management, including the use of all available tools and the most up-to-date science, including strategic use of lethal predator control, to optimize wildlife and other desired uses.

Goal: Manage coyotes, mountain lions, bears, corvids and other predators to minimize conflicts with humans, priority wildlife species and livestock.

Policy: Land managers shall develop site-specific management plans when predators inhibit the ability of UDWR or the County to attain management goals and objectives for priority wildlife species and livestock. Statewide management goals and objectives can be found in UDWR's documents and websites. Site specific management plans for the targeted predator species shall be consistent with the County's management goals and objectives and shall comply with biological and legal constraints. Threats to human health and safety will be handled on a case by case basis or in accordance with any the County and UDWR wildlife/human interaction policy.

Finding: In cooperation and coordination with state and local entities, federal agencies are authorized and directed to resolve conflicts involving animals preying on, or harassing, livestock and wildlife, damaging property or threatening human health and safety.

Policy: Predator management and control shall be conducted in compliance with relevant state and local laws, regulations, policies, ordinances, and procedures.

Finding: The Animal Damage Control Act of 1931 directs federal agencies to protect livestock, property, wildlife, and public health and safety from damage caused by predators.

Policy & Implementation Action: The County adopts a strict No Wolf policy for all lands in the County; and the County will develop ordinances, regulations, laws and other mechanisms to prevent wolves from establishing a presence in the County. To the maximum extent allowed by law, the County will establish criminal penalties for land managers that fail to prevent wolves from entering the County.

Finding: Inasmuch as there have been no wolves in the County for multiple generations, the Commission finds there is no wolf critical habitat, no wolf priority habitat, no wolf general habitat, and no wolf habitat of any kind whatsoever within the County boundaries.

Appendix 2.8.1 Fish & Wildlife References

Wildlife 2000,

The Riparian-Wetlands Initiative for the 1990s,

A Strategy for Future Waterfowl Habitat Management on Public Lands,

Watchable Wildlife, and Recreational Fisheries Program,

National Sage-grouse Habitat Conservation Strategy (BLM 2004c)

Utah's Raptor Best Management Practices (BMPs) (BLM 2006a)

Utah Statewide Pronghorn Management Plan, 2009

Utah Statewide Elk Management Plan, 2015

Utah Statewide Mule Deer Management Plan, 2014

Utah Black Bear Management Plan, 2011

Utah Cougar Management Plan, 2015

2.9 WILDLAND FIRE ECOLOGY

Current Setting

Fire is a natural and historical component of ecological processes in the County. Historically, fire has played an important role in the promotion of plant succession and the development of plant communities and wildlife habitat. The environment created prior to European settlement was developed under a regime of natural and man-induced intermittent fire. Artificial suppression of fire during the past century combined with several decades of passive federal land management have changed plant communities and resulted in conditions that are often incapable of resilience from and resistance to fire. These conditions have led to an imbalance in fire adapted plant and animal communities and an increase in extreme wildfire potential. Management on public lands has resulted in vegetation and fuel loadings that support uncharacteristically large, catastrophic fires. Complicating management further, fire susceptibility and behavior vary with many factors, including vegetation type, topography, stand health/density, drought, wind, and site productivity.

The County's fire management program focuses on two general categories of fire: unplanned ignitions (wildfires) and planned ignitions (prescribed fires). Lands in the County are managed by the Central Utah Fire Management Plan. The fire management plan (FMP) was prepared in response to the Federal Wildland Fire Management Policy, which directs federal agencies to have an FMP for all areas with burnable vegetation.

National fire management policy has evolved in response to increased fatalities, property losses, local economic disruptions, risks to ecosystems associated with increasingly severe wildland fires, and increasing wildland urban interface (WUI) conflicts. National policy requires that federal fire management practices reflect protection of human life and safety and reduce risk to natural resources and private property. This section of this RMP provides fire management direction that is compliant with national and interagency direction.

The County's fire management program requires coordination among local and regional jurisdictions, including the BLM, Forest Service and Utah Department of Forestry, Fire and State Lands. The FMP, in accordance with federal policy, provides for firefighter and public safety and include fire management strategies, tactics, and alternatives based on direction outlined in RMPs. Suppression tactics outlined in the FMP vary by vegetation type and resource values at risk. Land use management direction influenced portions of the FMP that include lands managed by the various state and federal agencies. A vast majority of the land in the County is under federal ownership, so details regarding methodologies for prescribed fires, non-fire fuels treatment, community assistance/protection procedures, emergency stabilization, and rehabilitation for federal lands are applicable to federal agencies.

National and state fire policy for federal agencies requires current and desired resource conditions related to fire management be described in terms of five fire regimes and three condition classes tabulated below. The Healthy Forest Restoration Act adopted this classification system, known as the Fire Regime Condition Class (FRCC), which describes the amount of departure of an area or landscape from historic vegetation conditions to present vegetation conditions. This departure from the natural state can be a result of changes in one or more ecosystem processes. This information can be used to prioritize areas for treatment.

Fire Regimes
I (0-35 year frequency and low to mixed severity-surface fires most)
II (0-35 year frequency and high severity-stand replacement fires)
III (35-100+ year frequency and mixed severity)
IV (35-100+ year frequency and high severity-stand replacement fires)
V (200+ year frequency and high severity-stand replacement fires)

Fire Regime Condition Classes defined vegetative communities in terms of the relative risk of losing one or more key components that define an ecological system based on five ecosystem attributes—disturbance regimes (patterns and frequency of insect, disease, fire), disturbance agents, smoke production, hydrologic function (sedimentation, stream flow), and vegetation attributes (composition, structure, and resilience to disturbance agents). Condition Classes are described as follows:

Condition	Condition Class Description
Condition Class 1	Fire regimes are within an historical range and the risk of losing key ecosystem components is low. Vegetation attributes (species composition and structure) are intact and functioning within an historical range. Where appropriate, these areas can
Condition Class 2	Fire regimes have been moderately altered from their historical range. The risk of losing key ecosystem components is moderate. Fire frequencies have departed from historical frequencies by one or more return intervals (either increased or decreased). This results in moderate changes to one or more of the following: fire size, intensity and severity, and landscape patterns. Vegetation attributes have been moderately altered from their historical range. Where appropriate, these areas may need
Condition Class 3	Fire regimes have been significantly altered from their historical range. The risk of losing key ecosystem components is high. Fire frequencies have departed from historical frequencies by multiple return intervals. This results in dramatic changes to one or more of the following: fire size, intensity, severity, and landscape patterns. Vegetation attributes have been significantly altered from their historical range.

Lands classified as Condition Class 1 have the smallest amount of acres in the County. Some estimates indicate fire regimes within the historical range make up less than 5% to 10% of all lands in the County, and some agencies may have less than 5% within their specific jurisdiction. Class 2 lands are estimated to be 10% to 20% of the County's land base. Lands identified as Condition Class 3 make up the vast majority of lands in the County. Some estimates indicate lands where fire has been significantly altered from the historic condition comprise as much as 60% to 90% of the County.

Federal agencies have also divided the County into fire management units (FMUs) defined by fire management objectives, management constraints, topographic features, access, values to protect, political boundaries, and fuel types. The FMUs generally have prescribed management objectives and preselected fire suppression strategies assigned to accomplish the specific objectives.

Fuel structure in the County is gradually changing due to management practices and incursion of non-native annual grasses, especially cheatgrass, and the encroachment of pinyon/juniper woodlands. In areas where fuels are continuous, there is the potential for fires to spread readily and rapidly during the height of the average fire season. Much of this area is grouped typically in fire regimes I and II, but many of the pinyon and juniper stands have much older stand characteristics, which often have heavier fuel accumulations and burn with stand replacement fire behavior. Extensive areas exist where vegetation is dominated by native and non-native grasses that are susceptible to wildfire and sufficient barriers limit the spread of wildfires do not exist. Most are dry sites where the vegetation is of a moderate to old age class distribution. In specific locations, cheatgrass has significantly increased from historically inhabiting scattered pockets to becoming a dominant fine fuel component intermixed with sagebrush and pinyon-juniper stands. Vegetative communities dominated by Rye also exhibit characteristics that are susceptible to fire.

The moderate to long return fire interval, fire exclusion and other management practices, and passive management of forests and rangelands have rendered many of the vegetative communities in peril of large severe wildland fires. These areas have achieved a level of vegetation stocking and dead and down fuel loads to exacerbate large fire spread through the dry seasons of the year. Recent insect and wind episodes have also increased fuel loadings in localized areas to critical levels.

The hazard component varies across the County from very low to very high. Mature stands of pinyon/juniper woodlands inhabit much of the lands formerly occupied by sagebrush vegetative communities. Decadent stands of sagebrush are common. Insect-killed forest stands also contribute to high hazard areas. Cheatgrass and rye dominate lowlands establishing conditions susceptible to large wildfires.

Historically, the most prolific wildfire events have been wind-driven, especially in the grass and brush plant cover types. Plume-dominated fires have occurred particularly during very dry years in the older stands of pinyon-juniper and the mixed conifer stands. Rates of fire spread through the canopies of sagebrush can exceed three miles per hour, while spread through mixed conifer and pinyon-juniper stands of one-half mile per hour are not uncommon. Periods of better than average moisture tend to keep the light fuels (i.e., grasses) green, which helps curtail fire progression. The incursion of annual grasses, such as cheatgrass, is changing the fire environment. Light fuels available to burn through the height of the fire season are becoming more abundant by way of the species morphology. Much of the timbered lands in the County experience long return intervals between fire events. Burn severity in these communities tends to be moderate to severe resulting in stand replacement of the dominant species. Examples of these vegetation types are high elevation sub-alpine fir and spruce and some pinyon-juniper stands. Examples of a more moderate to frequent return interval would be sage/grasslands and the lower elevation shrub communities.

Wildfire in many of Utah's vegetation communities was historically a regular occurrence that helped define species composition, structure, and productivity. As such, many plants that make up these communities are adapted to withstand wildland fire. Grasslands, sagebrush, mountain shrub, aspen and mixed conifer forests are examples of fire-adapted communities in Utah. In contrast, frequent wildland fire is not part of the normal ecology of other vegetation communities with long fire return intervals such as salt desert scrub and blackbrush, which typically are not dominated by fire adapted species. Fire in these communities is generally viewed as detrimental because plant succession may take decades to centuries for the vegetation to recover. Some species may never recuperate.

The widespread presence of invasive nonnative species has greatly altered the resource character and values across the landscape and may pose an even greater threat in the future. Historic post-fire recovery processes may no longer dominate the recovery and regeneration process due to introduced species. Cheatgrass and some of the knapweeds are known to alter (shorten) fire return intervals and may dramatically expand their range and coverage after fires. Degraded communities may facilitate expansion of invasive species (e.g., cheatgrass), have lower biological resource values, and pose increased fire hazards. For location of acres and additional descriptions of these vegetation types in the planning area, refer to agency specific fire management documents.

Land management agencies use planned ignitions (prescribed fires) in a controlled manner for specific purposes, such as improving habitat, plant community health, including protection and enhancement of desirable age class stands, and reducing hazardous fuels. Projects in agency fuels programs generally focus on achieving two goals: a) reducing fire hazard, with an emphasis on Wildland Urban Interface (WUI) areas, and b) restoring and/or improving FRCC. These goals supported through interdisciplinary partnerships such as the Utah Watershed Restoration Initiative (UWRI). Together, these partnerships identify priority watersheds to address a variety of interdependent resource issues and improve long-term watershed conservation and restoration.

Specific watersheds are targeted and prioritized for treatment and are coordinated through participating federal, state and local entities. Treatment types include prescribed fire and mechanical and chemical treatments. These treatments are completed for a variety of reasons, including fuels reduction, protecting WUI areas, improving wildlife habitat, improving watershed conditions, and improving rangeland resources. Prescribed burns, if conducted properly, will also return less carbon dioxide to the atmosphere than uncontrolled wildfires, which helps to maintain the carbon dioxide sequestration capacity of vegetation communities.

Most prescribed fire projects on public lands in the planning area are closely tied to habitat, watershed, and other natural-resource objectives, and hazardous fuels reduction. These projects are almost always followed by seeding/planting and additional vegetation enhancement work.

Prescribed burns are carried out to reduce fuel loads (existing dead and dormant vegetation) and reduce the threat and severity from wildfires should one occur. Prescribed burns also reduce woody plant encroachment and are beneficial for many native plant species in a way mechanical and chemical management treatments cannot duplicate. Wildlife, both game and nongame species, also benefit from prescribed burning which results in new plant growth and restoration of habitats which they utilize for food and cover. Purposes for conducting prescribed burn activities may include

- Reduce hazardous fuels, protect communities from wildfires
- Reduce the spread of pests and disease
- Provide habitat and forage for game and nongame species
- Recycle nutrients back into the soil
- Promote desirable native and non-native species
- Promote a diverse natural landscape

Drivers for future increases in wildland fires in the County include steady increases in live and dead fuels, continued encroachment of invasive annual grasses and conifer woodlands into sagebrush and native grass areas, and unfavorable climatic conditions. Indicators of stress on vegetation in the planning area include periods of drought, expansion of invasive weeds such as cheatgrass, and reduced areas of sagebrush presence.

Fire frequency and fire severity are expected to be higher than historical levels because most of the County is in FRCC 2 and FRCC 3 condition. It is expected that due to the current fire regime conditions in the County and factors affecting wildfires (e.g., invasive weed control, vegetation management issues, drought, and timber harvest), FRCC categories will be maintained at or in excess of their current conditions. Based on current management, prolonged drought conditions and establishment of invasive species, the potential for uncharacteristic wildfire effects will likely continue. It is also anticipated that under present management, live and dead fuel loadings in forest stands and conifer/juniper encroachment into aspen and higher-elevation sagebrush communities will continue to increase with a proportional increase in the risk for wildfires with potentially uncharacteristic fire effects.

Need for Management Change

1. Lands in in FRCC 2 and FRCC 3 condition need to be significantly reduced.
2. Prescribed fire needs to be used as part of an integrated approach after mechanical, chemical, grazing, and vegetative harvesting techniques have been appropriately used.
3. Managers need to harvest an average of at least 5% of the high risk stands annually for the next 20 years to restore woodlands to desirable Fire Regime Condition Classes.
4. Managers need to implement aggressive vegetative treatments to restore vegetative resources to desirable Fire Regime Condition Classes.
5. When managing for potential climate change, managers need to reduce areas in FRCC 3 by at least 5% annually.
6. Managers need to be consistent with the County's fire ecology and management plans, programs and policies, including air, water quality, vegetation and other impacted resources. Land managers need to coordinate wildfire management and prescribed fire programs with the County.
7. Managers need to reduce fire hazards for WUI areas and around other infrastructure through non-fire fuel treatments prior to implementing prescribed fire.

8. Effective emergency stabilization and rehabilitation programs need to be incorporated in all wildland and prescribed fire events.
9. Additional width or vegetation that is resistant to fire needs to be provided on roads, rights of way and other disturbances to create fire breaks that will reduce the impacts of wildfire.

Desired Future Conditions

Juab County Desires:

1. Resources are managed to ensure fire resilience and resistance. Desired FRCCs in the County are: 30% to 50% FRCC1; 30% to 40% FRCC2; and less than 25% FRCC3.
2. Prescribed fire is used as part of an integrated approach after mechanical, chemical, grazing, and vegetative harvesting techniques have been appropriately implemented.
3. An average of at least 5% of the high risk stands are harvested annually for the next 20 years to restore woodlands to desirable Fire Regime Condition Classes.
4. Managers implement aggressive vegetative treatments to restore vegetative resources to desirable Fire Regime Condition Classes.
5. Areas identified as FRCC3 and managed for potential climate change are reduced by at least 5% annually.
6. Managers are consistent with the County's plans, policies and programs for fire ecology and management and impacted/related resource values.
7. Managers prevent fire related impacts to WUI areas and other areas occupied by infrastructure.
8. Aggressive and effective emergency stabilization and rehabilitation programs are incorporated in all wildland and prescribed fire events.
9. Additional width or vegetation that provides greater resistant to fire is provided on roads, rights of way and other disturbances to create fire breaks that will reduce the impacts of wildfire.

Policy: Public health, safety and welfare and firefighter safety are compatible, co-equal priorities for wildland and prescribed fire management in the County. All fire management plans and activities shall maximize a) public health, safety and welfare and b) firefighter safety.

Finding: Land managers have failed to actively manage resources in the County to provide resilience and resistance to wildfire.

Finding: Wildfires impact a wide variety of the County's resources and can be reasonably controlled by implementing an integrated approach of mechanical, chemical, grazing, and harvesting techniques to provide resilience and resistance to wildfire.

Policy, Goal & Objective: Managers shall maintain resources in a condition that they are resilient and resistant to fire, including rehabilitation and restoration efforts undertaken to protect and sustain ecosystems, public health and safety, and to protect infrastructure.

Policy, Goal & Objective: Consistent with the County's plans, policies and programs for fire ecology and management and impacted/related resource values, land managers shall implement an aggressive integrated program to ensure all lands in the County are resilient and resistant to fire and to restore woodlands to desirable Fire Regime Condition Classes.

Policy: Lands in the County will be deemed to be making progress toward resilience and resistance when the following ranges for Fire Regime Condition Classes are met:

FRCC 1	30% to 50%
FRCC2	30% to 40%
FRCC3	Less than 25%

Finding & Policy: Positive impacts of wildland fire can be mimicked through integrated mechanical, chemical, grazing, and harvesting techniques that provide resilience and resistance to wildfire.

Policy: Where fire is used to as an ecological process and natural change agent lands will be seeded and restored to desirable vegetative conditions prior to the first rainy season following the burn.

Policy, Goal & Objective: An average of at least 5% of the high risk stands shall be harvested annually in the County for the next 20 years to restore woodlands to desirable Fire Regime Condition Classes.

Finding & Policy: Allowing lands to remain in FRCC3 is inconsistent with managing for potential climate change. Where land managers are required to manage for potential climate change, FRCC3 lands in their jurisdiction shall be reduced by at least 5% annually.

Policy, Goal & Objective: Based on a 10 year rolling average and consistent with desired ecological site descriptions, at least 25% of the Class II and Class III pinyon/juniper woodlands having a median age of less than 200 years shall be restored to sagebrush/semi-desert grassland vegetation communities.

Finding & Policy: Bull hogging, accompanied by appropriate seeding, is the environmentally preferred method of vegetative treatment in Class II and Class III pinyon juniper woodlands. Bull hogging and seeding shall be prioritized over use of fire in restoring Class II and Class III pinyon juniper woodlands to desirable vegetative communities.

Policy: Prescribed fire is most judiciously used after thinning, harvesting, mechanical mastication, and other treatment techniques are completed.

Policy, Goal & Objective: Aggressive and effective emergency stabilization and rehabilitation programs shall be incorporated in all wildland and prescribed fire events.

Policy, Goal & Objective: Unless otherwise approved by the County and consistent with

ecologic site conditions, the following minimum objectives are established when lands are treated with prescribed fire or experience wildland fire in sagebrush habitats:

1. Retain 40 percent ground cover after the burn with recruitment to 60 percent ground cover before the first rainy season following the burn.
2. Cupped fire lines should have water gaps every 20 feet to allow captured water to exit.
3. Existing disturbance areas, such as roads and trails, should be used as fire lines to the greatest extent possible.

Policy: Land managers shall prevent fire related impacts to WUI areas and other areas occupied by infrastructure.

Finding & Policy: All wildland and prescribed fires impact air quality. Prior to wildland or prescribed fire, land managers shall analyze and disclose ambient and proposed air quality conditions, including BACTs that can be implemented to reduce air quality impacts.

Policy: Land managers shall initiate BACTs, including commercial harvesting of excess fuels and other methods for reducing potential fire related air pollutants and for achieving harmony between man and his environment.

Policy: Managers of wildland and prescribed fire shall comply with the County Air quality plans, policies, programs and ordinances.

Policy: The County will cooperated and coordinate with federal, state and local entities to address barriers and challenges associated with fire and fuels management in areas impacting the County's resources.

Finding & Policy: Restoration of a natural fire regime is neither desirable nor attainable. As a result of past management and the extent of vegetative ecosystem alteration, natural conditions no longer exist in the County. While it is known that there have been large vegetation alterations since historical times, the extent or severity of most of these alterations remains uncertain. As a result of ecosystem change, passive restoration techniques, such as restoring naturally occurring fires to the land, would not have the same benefit to ecosystems as in the past. Without active restoration techniques, fires dramatically increase resource damage which could result in the permanent loss of historical ecosystem structure and function.

Finding & Policy: The principles and policies in this plan provide an optimum approach to wildland and prescribed fire management on federal, state and local lands. Managers are encouraged to use fire as a tool for accomplishing resource management objectives after other integrated management techniques have been exhausted. Consistent with public health and ecologic processes, agencies are encouraged to emphasize active, integrated resource management over passive fire suppression.

Policy, Goal & Objective: Land managers shall incorporate emergency stabilization and burned-area rehabilitation as part of a holistic approach to addressing post wildland and prescribed fire impacts and shall include suppression activity damage and long term restoration. Emergency stabilization shall be completed 1 year of wildland fire containment. Short-term actions shall minimize and mitigate threats to life or property, and stabilize/prevent unacceptable

degradation to natural and cultural resources resulting from the effects of fire. Burned area rehabilitation to repair or improve damaged lands to acceptable conditions or to repair or replace facilities damaged by fire shall be completed within 3 years the fire event.

Policy: The use of fire in priority, crucial, and general wildlife habitat shall be allowed when compatible with protection, maintenance, enhancement, or development of desirable habitat conditions.

Finding & Policy: Fire is often a destructive force that impacts sensitive species. The use of motorized vehicles to construct fire lines and control fire in habitat for special status plant and animal species is allowed.

Policy: Low intensity ground fires from natural or management ignitions in ponderosa pine or aspen stands are allowed.

Policy: The full range of upland vegetation treatment methods and tools (i.e. chaining, plowing, bull hog, pipe harrow, hand cutting, herbicide, aerial seeding, drill seeding, and broadcast seeding) are encouraged and allowed prior to the use of prescribed fire in vegetative treatment and enhancement projects.

Policy: The use of native and non-native seeds for fuels management treatment shall be based on availability, adaptation (site potential), and probability of success. Desirable non-native seeds may be used to meet Sage Grouse habitat objectives. When reseeding, use fire resistant native and desirable non-native species for fire breaks is allowed.

Policy: Where land managers implement an integrated approach using the full range of upland treatment methods, prescribed burning shall be allowed on all suitable lands up to 20% of the lands within the manager's jurisdiction.

Policy: In Sage Grouse management areas, post burn stabilization and rehabilitation shall be completed within two growing seasons. Changes in livestock grazing shall be limited to two full growing seasons or less.

Policy: Greater Sager Grouse Landscape Wildland Fire and Invasive Species Habitat Assessments shall be developed in cooperation and coordination with the County and shall be consistent with the County's RMP to the maximum extent allowed by law.

Finding & Policy: The County's plan program and policy for wildland and prescribed fire provides the highest and best management across agency boundaries. Annual treatment needs for wildfire and invasive species management as identified in local unit level Landscape Wildfire and Invasive Species Assessments shall be coordinated across jurisdictional boundaries and shall be consistent with the County's RMP.

Finding & Policy: Lands impacted by wildland fire no longer retain desirable qualities of naturalness, solitude, or opportunities for primitive, unconfined recreation and no longer exhibit wilderness characteristics. Lands impacted by natural fire shall not be managed for wilderness values until such time as native vegetative communities consistent with ecologic site descriptions are restored and the visual effects of fire are eliminated.

Finding & Policy: Post fire restoration and rehabilitation of lands managed for wilderness

character is prioritized over management for wilderness values that have been impaired due to wildfire. Use of vehicles, motorized tools and other restoration and rehabilitation techniques that optimize recovery of desirable vegetative communities and eliminate the visual effects of fire shall be allowed in areas formerly managed for wilderness characteristics.

Finding & Policy: Lands managed for wilderness values that have been impacted by wildfire are impaired and no longer qualify for wilderness management until such time as the ecologic and visual impacts of the fire event are eliminated.

Policy, Goal & Objective: Land managers shall provide additional width or vegetation that is resistant to fire on roads, rights of way and other disturbances to create fire breaks that will reduce the impacts of wildfire. Land use plans shall consider at least one alternative that transfers lands needed for fire breaks to County jurisdiction.

References:

Central Utah Interagency Fire Management Plan, Fishlake National Forest, Richfield BLM Field Office, Fillmore BLM Field Office, 2010

Using Resistance and Resilience Concepts to Reduce Impacts of Invasive Annual Grasses and Altered Fire Regimes on the Sagebrush Ecosystem and Greater Sage-Grouse: A Strategic Multi-Scale Approach, Chambers et al., September 2014

2.10 CULTURAL RESOURCE MANAGEMENT

Introduction

Cultural resources are sensitive, irreplaceable resources with potential public and scientific uses, and are an important and integral part of the County's national and local heritage. Cultural resources constitute "a definite location of human activity, occupation, or use identifiable through field inventories (i.e., surveys), historical documentation, or oral evidence" (BLM Manual 8110).

The term "cultural resource" includes "historic or architectural sites, structures, or places with important public and scientific uses, and may include definite locations (i.e., sites or places) of traditional cultural or religious importance to specified social and/or cultural groups. Cultural resources are concrete, material places and things that are located, classified, ranked, and managed through the system of identifying, protecting, and utilizing for public benefit."

Archaeological resources, a subset of cultural resources, are "any material remains of human life or activities that are at least 100 years of age, and that are of archaeological interest" as further defined in 43 CFR 7.3.

Ethnographic landscapes are broader resources that do not depend on NRHP eligibility criteria for their existence, and importantly, are identified and defined by the cultural groups associated with them rather than by historic preservation professionals.

The National Historic Preservation Act (NHPA) recognizes five property types: districts, sites, buildings, structures, and objects. As called for in the Act, these categories are used in the National Register of Historic Places (NRHP). National Park Service documents included in

Appendix 2.10 explain the following: NPS categorizes cultural resources as archeological resources, cultural landscapes, structures, museum objects, and ethnographic resources.

Archeological resources are the remains of past human activity and records documenting the scientific analysis of these remains. Archeological resources include stratified layers of household debris and the weathered pages of a field notebook, laboratory records of pollen analysis and museum cases of pottery. Archeological features are typically buried but may extend above ground; they are commonly associated with prehistoric peoples but may be products of more contemporary society. What matters most about an archeological resource is its potential to describe and explain human behavior. Archeological resources have shed light on societal organization and have helped us understand the spread of ideas over time and the development of settlements from place to place.

Cultural landscapes are settings humans have created in the natural world. They reveal fundamental ties between people and the land – ties based on the need to grow food, form settlements, meet requirements for recreation, and find suitable places to bury the dead. Landscapes are intertwined patterns of things both natural and constructed: plants and fences, watercourses and buildings. They range from formal gardens to cattle ranches, from cemeteries and pilgrimage routes to village squares. They are expressions of human manipulation and adaptation of the land.

Structures are material assemblies that extend the limits of human capability. They allow us to move beyond temperate climates, the distances we can walk and the loads we can carry. They include dwellings, fences & repositories, roads & bridges, vehicles, tools & machines, signs & monuments which demonstrate human productive ability and artistic sensitivity.

Museum Objects are manifestations and records of behavior and ideas that span the breadth of human experience and depth of natural history. They are evidence of technical development and scientific observation, of personal expression and curiosity about the past, of common enterprise and daily habits. Museum objects range from a butterfly collection to the woven fragments of a prehistoric sandal. They include the walking cane of an American president, a blacksmith's tools, and the field notes of a marine biologist. They encompass fossilized dinosaur bones and business journals, household furnishings and love letters bound with a faded ribbon. They are invaluable samples and fragments of the world through time and the multitude of life therein.

Ethnographic resources are basic expressions of human culture and form the basis for continuity of cultural systems and ongoing development of cultural resources. Cultural systems encompass tangible and intangible resources including traditional arts and native languages, religious beliefs and subsistence activities. Some of these traditions are supported by ethnographic resources: special places in the natural world, structures with historic associations, and natural materials. An ethnographic resource might be a riverbank used as a ceremonial or recreation site, a schoolhouse associated with cultural or historic education, sea grass needed to make baskets, a particular tool or method to accomplish a task, or traditional use of a road or area by a particular group of people. Management of ethnographic resources acknowledges that culturally diverse groups have their own ways of viewing the world and a right to maintain their traditions.

Current Setting

A variety of cultural resource types attributed to distinct chronological periods ranging from 10,000 years ago to the present have been identified in the County, and there is potential for finding additional resources. Archaeological investigations and discoveries began, at least informally, in the County as early as the Dominguez/Escalante expedition and have continued to the present day. In response to legislative requirements, formal inventories have more recently been conducted to support site specific surface disturbing projects and to comply with the requirements of Section 106 of the National Historic Preservation Act (NHPA) and other cultural resource preservation laws. Additionally, academic institutions have performed some research projects, although such scientific investigations may be relatively limited.

Detailed inventories have not been conducted on all of the cultural resources in the County. Intensive cultural resource inventories meeting Utah Class III standards (i.e. 15 meter transect intervals) have only been completed on a small percentage of the lands in the County. Within the County, numerous cultural resource sites are listed in the State Historic Preservation Office (SHPO) database. Cultural resource densities range from non-existent in rugged remote terrain to more than 100 sites per square mile in favorable locations. Based on the County's size, tens of thousands of cultural resources may exist within the County limits.

It is believed that there are numerous unknown cultural resources in the County. Many of these resources are not able to be associated with specific events or time periods. Some resources lack any diagnostic information that would enable interpretation of small and previously impacted sites. Other resources are easily visible and contain characteristics suitable for interpretation, use and enjoyment. The size/influence of cultural resources can be determined from the field measurements and GPS technology. It is believed that reliable documents have not been developed for most of the cultural resources within the County. Many cultural resources are eligible for listing in the National Register of Historic Places (NRHP) and are managed as directed by local, state, and federal regulation. State Historical Preservation Office records for the County indicates two cultural resources are listed in the National Register of Historic Places; one cultural resource is nominated for listing and 1,765 resources have been evaluated as being National Register quality.

Additionally, untold ethnographic resources and activities exist in the County. Continuation of these uses forms the basis for traditions, custom, culture, and heritage of the County's residents and visitors.

Need For Management Change

1. Traditional uses and activities on federal lands need to be recognized as cultural resources and must be continued and protected from restrictive land management decisions that negatively impact the custom culture and heritage of the County.
2. Cultural resources have monetary, social, scientific and cultural value. When the resources are destroyed or exported from the County (even for scientific purposes,) there is a net loss of cultural value. The County needs to have a "No Net Loss of Cultural Resource Value" policy.

3. Cultural resources have not been adequately identified, mapped, or surveyed in the County. To a large extent, the cultural resources are unknown and therefore cannot be adequately managed, developed, used, enjoyed, or protected. Cultural resources need to be identified and inventoried. The lack of reliable data and specific inventories has resulted in cultural resources being used as a club to support special designation and prevent otherwise acceptable uses of the land or has left the resource unprotected.
4. Agencies lack specific direction regarding Outstandingly Remarkable/Relevant and Important values associated with cultural resources. Criteria need to be provided to federal and state land managers, so a consistent, legal management approach can be implemented.
5. Artifacts and other cultural resources have cultural, social, scientific and monetary value. Resources are being extracted and exported without the County receiving any value in return. A system needs to be established for the County's residents and visitors to receive a cultural, social, scientific and/or monetary value for resources that are exported from the County. This is in addition to any intrinsic value that may be available for cultural resources having been here for some time.
6. Rural natural resource based communities are struggling to survive. Increasing environmental legislation and prescriptive, recreation oriented management have resulted in loss of economic opportunity and business capabilities associated with traditional natural resource extraction industries. In addition to efforts to revive such industries, educational and interpretive opportunities need to be greatly expanded for residents and visitors to rural communities like the County.
7. Some cultural resources in the area have been described as "world class." Educational opportunities, interpretive facilities, programs, and understanding of cultural resources need to be world-class for all of the residents and visitors to the County. The school children, residents and visitors of the County need to have the greatest opportunities for field trips, hands-on experience, understanding, use, and enjoyment of these resources.
8. A facility needs to be constructed for the study, interpretation, use, enjoyment, display, and curation of cultural resources.
9. The Commission needs to be recognized as the duly elected, authoritative voice regarding custom, culture and heritage in the County and land use decisions must be consistent with this RMP and receive Commission concurrence.

Desired Conditions

Juab County Desires:

1. Consistent criteria for Outstandingly Remarkable/Relevant-Important values as they relate to cultural resources be developed. There are thousands of cultural resources within the County. Some are of greater value, and some are of lesser value. Those of lesser value need to be treated in accordance with law and in a manner that permits the multiple use/sustained yield of lands located in the County. Those that are determined to be Outstandingly Remarkable/Relevant-Important need to be developed to provide for interpretive opportunities, use and the enjoyment of current and future generations.

Special designations should only occur in those situations where the cultural resource is of such quality and value that it meets or exceeds the Outstandingly Remarkable/Relevant-Important minimum criteria.

2. All cultural resources within the County be identified and evaluated as part of a level I, and Level II Inventory. Until cultural resources are adequately identified, mapped, and inventoried, they cannot be adequately protected and are considered speculative. All federal and state agencies need to conduct Level I, and Level II inventories on their lands to identify any cultural resources located in the County.
3. Necessary compliance work for projects be conducted in a timely and expeditious manner and in such a way that science is expanded, interpretive opportunities are developed and projects are allowed to move forward in an economically viable manner.
4. Existing cultural resources be retained. In situations where it is impossible to retain a cultural resource, an equal/adequate social, cultural, and/or economic compensation needs to be provided to the County. Such compensation may be in the form of educational opportunities, interpretive development, increased facilities, cultural programs, and/or monetary contributions.
5. A facility be constructed for the study, interpretation, use, enjoyment, display, and curation of cultural materials and resources. Residents and visitors to the County need to have a facility where they can view, interpret, and enjoy many of the artifacts and resources that are located here. Ideally, the facility needs to provide research opportunities, so experts from around the world can share their expertise with others. A regional facility shared with adjacent counties should be considered
6. Any new cultural resource discoveries are made and are used to solve the riddles of the past. New and expanded interpretive opportunities need to be developed for cultural resources, including opportunities for world-class experiences throughout the County.
7. Economic opportunities associated with identification, excavation, research, and interpretation of cultural resources be provided throughout the County. Study of cultural resources is no less an extraction industry than mining or timber harvesting. Those industries provided jobs and supported families within the County. Natural resource extraction industries were eliminated, largely through federal regulation. Extraction of cultural resources and associated research help replace traditional industries and provide equal or greater economic opportunities and support for local families.
8. Cultural resources are not used to prevent multiple use/sustained yield of public lands or to create special area designations to promote single use recreation. Cultural resources need to be used for the understanding, benefit, use, and enjoyment of the public and not be use as a pry bar to force the political will of others on the residents and visitors to the County.
9. The items listed above be given funding and manpower by Federal and State agencies for the accomplishment of the work outlined in this chapter.
10. Federal agencies recognize the Commission as the duly elected, authoritative voice regarding custom, culture and heritage in the County.

11. Land use decisions that impact County designated cultural resources be consistent with the County's RMP to the maximum extent allowed by law or receive the Commission concurrence.

Findings, Policies, Goals, & Objectives

Finding: The Commission is the duly elected, authoritative voice regarding custom, culture and heritage in the County.

Policy: Land use decisions that impact County designated cultural or ethnographic resources shall be consistent with the County's RMP to the maximum extent allowed by law or receive Commission concurrence.

Finding: the County contains many cultural resources that have monetary and intrinsic value but are protected by federal law and cannot be bought, sold or excavated for economic purposes. The County needs to be compensated when these valuable resources are taken outside the County.

Policy: The County adopts a "No Net Loss of Resources and Opportunity Policy" as it relates to cultural resources. The County asserts these cultural resources should remain in the general area from which they came.

Objective: The County will pursue a regional facility for the purpose of housing, researching, interpreting, and displaying local cultural resources. The facility will also provide opportunities for the use and enjoyment of cultural resources by the residents and visitors of the County.

Policy: The County will pursue funding from grants, partnerships, and other available Federal, State, and local funding sources to bring this to expand their cultural resource program.

Policy: The County will issue permits for activities that impact cultural resources. These permits are in addition to permits issued by other federal or state agencies. It is considered a violation of local law to extract, remove without authorization or damage cultural resources in the County.

Policy: The County will develop an ordinance protecting cultural resources and adopting a permitting process. Approved ordinances will be added to the Appendix.

Objective: The County desires to keep existing cultural resources extracted in the County. If existing resources are removed from the County, compensation is required to replace the intrinsic and/or monetary loss in value.

Objective: Develop criteria for identifying and determining relevance, and outstandingly remarkable values for important cultural resources. Actions that do not comply with the criteria will be inconsistent with the County General Plan and in violation of local law.

Objective: Pursue opportunities to inventory, map and determine the relevance of cultural resources in the County.

Policy: The County recognizes only known, inventoried resources. Resources that have not been mapped and been the subject of a Level III inventory are considered speculative until adequately documented. Land management decisions that are based on speculative cultural resource information are inconsistent with the local plan and are arbitrary and capricious.

Finding: Roads, paths, ways and trails and associated camping sites, fire pits and activity areas are cultural resources and are protected by County Ordinances.

Policy: Closure of roads, paths, ways and trails without coordination with and concurrence of the Commission constitutes damage to the County's cultural resources and violates County Ordinances.

2.11 PALEONTOLOGICAL RESOURCES

2.11.1 INTRODUCTION

Paleontological resources constitute a fragile and nonrenewable scientific record of the history of life on earth. It is the County's policy to manage paleontological resources for scientific, educational, interpretive, and recreational values, and to protect or mitigate these resources from adverse impacts while enhancing their use and enjoyment.

2.11.2 CURRENT SETTING

The scientific value of fossils, especially vertebrates, generally drives management decisions. However, these resources are also enjoyed by many of the general public as objects of wonder and beauty. Although a comprehensive paleontological resource inventory has not been completed within the County, review of paleontological research regarding geologic formations contained in the County has identified the types of formations where fossil resources are known to be present, and significant resources have already been discovered. Many formations in the County are known to contain vertebrate or trace vertebrate fossils. Some formations have higher potential than others to contain significant numbers of fossils.

In addition to the general potential for formations to contain paleontological resources, specific paleontological localities have been identified by the Utah Geological Survey. The County contains 846 localities in the Survey's database. Research of the County's paleontological resources has been minimal, but it is expected that as research increases the number of localities will increase and interest in using and enjoying the resource will increase as well. Fossils in the County represent a diverse array of plants, invertebrates, and vertebrates. Numerous scientifically significant specimens have been found on Forest Service, State, and Interior Department lands. It is anticipated demand for paleontological resources for public and private purposes will increase.

Paleontological resources have monetary, social, scientific, and cultural value. When the resources are destroyed or exported from the County (even for scientific purposes,) there is a net loss of value. The County has a "No Net Loss of Paleontological Resource Value" policy.

A variety of paleontological resource types attributed to distinct geologic periods have been discovered in the County, and there is potential for finding additional resources. Paleontological investigations began in or near the County in the early 1900s. In response to legislative requirements, more recent inventories have traditionally been conducted to support site specific surface disturbing projects, and academic institutions have performed some research projects, although such scientific investigations are relatively limited.

Detailed inventories have not been conducted on all of the paleontological resources in the County. Intensive paleontological resource inventories have only been completed on a small

percentage of the lands in the County. Within the County, a total of 846 specific paleontological localities are identified in the Utah Geologic Survey database. The total extent of the County's paleontological resources is unknown. Based on the County's size and land form, thousands of paleontological resources may exist within the County.

It is believed that there are numerous unknown paleontological resources in the County. Many of these resources are not able to be associated with specific events or time periods. Some resources lack any diagnostic information that would enable interpretation of small and previously impacted sites. Other resources are easily visible and contain characteristics suitable for interpretation, use and enjoyment. The size/influence of paleontological resources can be determined from field measurements and GPS technology. It is believed that reliable documents have not been developed for most of the paleontological resources within the County.

2.11.3 NEED FOR CHANGE IN MANAGEMENT DIRECTION

Paleontological resources have monetary, social, scientific and cultural value. When the resources are destroyed or exported from the County (even for scientific purposes,) there is a net loss of paleontological value. The County needs to implement its "No Net Loss of Paleontological Resource Value" policy.

Paleontological resources have not been adequately identified, mapped, or surveyed in the County. To a large extent the paleontological resources are unknown and therefore cannot be adequately managed, developed, used, enjoyed, or protected. Paleontological resources need to be identified and inventoried. The lack of reliable data and specific inventories has resulted in paleontological resources being damaged and vandalized or has left the resource unprotected.

Agencies lack specific direction regarding Outstandingly Remarkable/Relevant and Important values associated with paleontological resources. Criteria need to be provided to federal and state land managers, so a consistent, legal management approach can be implemented.

Paleontological resources are being extracted and exported without the County receiving any value in return. A system needs to be established for the County's residents and visitors to receive a cultural, social, scientific and/or monetary value for resources that are exported from the County. This is in addition to any intrinsic value that may be available for paleontological resources being located in the area.

Rural natural resource based communities are struggling to survive. Increasing environmental legislation and prescriptive, recreation oriented management have resulted in loss of economic opportunity and business capabilities associated with traditional natural resource extraction industries. In addition to efforts to revive such industries, educational and interpretive opportunities associated with paleontological resources need to be greatly expanded for residents and visitors of rural communities like the County.

Some paleontological resources in the area have been described as "world class." Educational opportunities, interpretive facilities, programs, and understanding of paleontological resources need to be world-class for the residents and visitors of the County. The school children residents and visitors of the County need to have the greatest opportunities for field trips, hands-on experience, understanding, use, and enjoyment of these resources.

A facility needs to be constructed for the study, interpretation, use, enjoyment, display, and curation of paleontological resources.

2.11.4 DESIRED FUTURE CONDITION

Juab County Desires:

1. Consistent criteria for Outstandingly Remarkable/Relevant-Important values as they relate to paleontological resources be developed. There are thousands of paleontological resources within the County. Some are of greater value, and some are of lesser value. Those of lesser value need to be treated in accordance with law and in a manner that permits the multiple use/sustained yields of lands located in the County. Those that are determined to be Outstandingly Remarkable/Relevant-Important need to be developed to provide for interpretive opportunities, use and the enjoyment of current and future generations. Special designations should only occur in those situations where the paleontological resource is of such quality and value that it meets or exceeds the Outstandingly Remarkable/Relevant-Important minimum criteria.
2. All paleontological resources within the County be identified and evaluated as part of a detailed on the ground survey. Until paleontological resources are adequately identified, mapped, and inventoried, they cannot be adequately protected and are considered speculative. All federal and state agencies need to conduct detailed surveys similar to Archeological Level I, and Level II inventories on their lands to identify any paleontological resources located in the County.
3. Necessary compliance work for projects be conducted in a timely and expeditious manner and in such a way that science is expanded, interpretive opportunities are developed and projects are allowed to move forward in an economically viable manner.
4. To retain existing paleontological resources. In situations where it is impossible to retain a paleontological resource, an equal/adequate social, cultural, and/or economic compensation needs to be provided to the County. Such compensation may be in the form of educational opportunities, interpretive development, increased facilities, paleontological programs, and/or monetary contributions.
5. A facility be constructed for the study, interpretation, use, enjoyment, display, and curation of paleontological materials and resources. Residents and visitors of the County need to have a facility where they can view, interpret, and enjoy many of the artifacts and resources that are located here. Ideally, the facility needs to provide research opportunities, so experts from around the world can share their expertise with others.
6. Paleontological resource discoveries are made and are used to solve the riddles of the past. New and expanded interpretive opportunities need to be developed for paleontological resources, including opportunities for world-class experiences throughout the County.
7. Economic opportunities associated with identification, excavation, research, and interpretation of paleontological resources be provided throughout the County. Study of paleontological resources is no less an extraction industry than mining or timber harvesting. Those industries provided jobs and supported families within the County.

Natural resources extraction industries were eliminated largely through federal regulation. Extraction of paleontological resources and research attached thereto should help replace traditional industry and provide equal or greater economic opportunities and support for local families.

8. The use of paleontological resources not be used to prevent multiple use/sustained yield of public lands and to create special area designations to promote single use recreation. Paleontological resources need to be used for the understanding, benefit, use, and enjoyment of the public.
9. The items listed above be given funding and manpower by Federal and State agencies for the accomplishment of the work outlined in this chapter.

2.11.5 POLICIES AND GOALS

Prescriptive management of specially designated public lands precludes or severely limits extractive uses and traditional natural resource based industries.

Coupled with this is there are vast expanses of paleontological resources in the County. These resources are protected by Federal law and cannot be extracted, bought, sold or in any way excavated or destroyed for economic purposes.

Their basic value may be derived in two ways. First, and perhaps most important would be through fees charged the public for viewing displays and educational opportunities through a world class repository/museum located within the bounds of the County.

The second opportunity for compensating value is through the inventory, mapping, recordation, stabilization, research, and housing of these resources.

Policy: It is the policy of the County that there be a “No Net Loss of Paleontological Resources and Opportunity.” The belief of the County is that these resources should benefit the area from which they came.

Objective: It will be the objective of the County to obtain a world class facility for the purpose of housing, displaying, researching, and generally providing for the residents and visitors of the County a place where the cultural, social, scientific, and monetary values derived from paleontological resources can be met.

At the present time there are only a few places where these valuable resources are housed, displayed and scientifically studied within the State of Utah. Probably none are of world-class status. Therefore, the County will actively pursue funding from grants, partnerships, and other available Federal, State, and local funding sources to bring this to fruition.

Policy: It is the policy of the County to issue permits for activities that impact paleontological resources.

Objective: The County is desirous of keeping paleontological resources extracted from lands within the County in the County. If they are removed from the County, compensation (monetary, social, educational, or otherwise) must be made to the County.

These permits are above and beyond those issued by other Federal or State agencies as required by law. It will be considered a violation of local law to extract, remove without authorization or in any way violate the County ordinance protecting paleontological resources. Violators will be prosecuted.

Objective: The County will adopt a County Ordinance protecting paleontological resources and adopting a permitting process.

Objective: Develop criteria for identifying and determining relevance, and outstandingly remarkable values for important paleontological resource values. Actions that do not comply with this criteria will be considered to be out of compliance with the County General Plan and in violation of local law.

Objective: Pursue opportunities to inventory, map and determine the relevance of paleontological resources within the County.

At the present time the County recognizes only known, inventoried resources. Resources that have not been mapped and been the subject of a detailed inventory are considered speculative until adequately documented. The County believes that land management decisions that are based on speculative paleontological resource information are considered inconsistent with the local plan and a violation of the County ordinance.

2.12 LAW ENFORCEMENT

Current Setting

The U.S. Constitution and laws of Congress have never provided for a general grant of law enforcement authority to the federal government. The national government was purposefully created to be a government of “limited” powers; and federal law enforcement authority is limited to those situations where states have ceded exclusive jurisdiction to the United States.

State and county law enforcement jurisdiction is increasingly usurped by armed federal employees, acting under color of office. Generally, armed employees of the BLM, U.S. Forest Service, U.S. Fish and Wildlife Service and other federal land management agencies exercise only the power of citizen’s arrest, unless otherwise authorized by the County Sheriff. The Sheriff is the chief law enforcement officer in the County and is charged with protecting the health, safety and welfare of the public. In the County, where the majority of the land is managed by federal agencies, the issue of jurisdiction becomes paramount to determine whether the federal or state government has police power and other governmental rights and responsibilities.

Both civil and criminal jurisdiction were vested by the Constitution in the States, including in instances where lands within the State’s boundaries are managed by the Bureau of the Land Management (BLM), U.S. Forest Service (USFS), U.S. Fish and Wildlife Service (USFWS), etc. In 1956, the U.S. Attorney General issued a comprehensive two-volume report: *Jurisdiction over Federal Areas within the States: Report of the Interdepartmental Committee for the Study of Jurisdiction over Federal Areas within the States*. The Report was the first comprehensive federal study on the subject of jurisdiction on federally managed or owned lands and included an inventory of all federal areas to determine what type of legislative jurisdiction (exclusive, concurrent, partial, or proprietary) applied to those lands. The vast majority of federal lands in the County are in proprietary ownership.

Proprietary interest only is applied to those instances wherein a federal agency has acquired some right or title to an area in a State but has not obtained any measure of the State's authority over the area. In applying this definition recognition should be given to the fact that the United States, by virtue of its functions and authority under various provisions of the Constitution, has many powers and immunities not possessed by ordinary landholders with respect to areas in which it acquires an interest, and of the further fact that all its properties and functions are held or performed in a governmental rather than a proprietary capacity. Where a federal agency has no legislative jurisdiction over its land, it holds such land in a proprietary interest only and has the same rights as does any other landowner. In addition, however, there exists a federal right to perform the limited functions or enumerated powers delegated to it by the Constitution.

Congress has consistently and expressly reserved civil and criminal jurisdiction to the states. In fact, every federal land law passed by Congress contains protections for both preexisting property rights and the states' civil and criminal jurisdiction. Authority rests with the County Sheriff unless delegated to federal officers.

Need for Management Change

1. All federal agencies need to recognize the authority of the County Sheriff as the Chief Law Enforcement Officer in the County.
2. Federal employees engaged in law enforcement activities need to work under the direction of the County Sheriff.
3. Federal agencies need to execute an agreement with the County Sheriff and be deputized prior to exercising general police powers.
4. Federal agencies need to work cooperatively with the County Sheriff in all law enforcement activities.
5. Federal law enforcement activities need to be discontinued, and agencies need to execute appropriate agreements with the County Sheriff to fulfill law enforcement functions.

Desired Future Conditions

1. The authority of the County Sheriff as the primary law enforcement officer is recognized by all agencies.
2. Federal employees engaged in law enforcement activities work under the direction of the County Sheriff.
3. Agreements are executed with the County Sheriff prior to federal employees exercising any general police powers.
4. Federal employees do not exercise any general police powers prior to being deputized by the County Sheriff.
5. Federal agencies work in cooperation with and under the direction of the County Sheriff prior to exercising any general police powers.
6. Federal law enforcement activities need to be discontinued, and agencies need to execute appropriate agreements with the County Sheriff to fulfill law enforcement functions.

Findings, Policies, Goals and Objectives

Finding & Policy: The County Sheriff is the primary law enforcement officer in the County and exercises control over general police powers and health, safety and welfare.

Policy, Goal & Objective: The health, safety, welfare, peace and prosperity of the County are promoted only when the authority of the County Sheriff as the primary law enforcement officer is recognized and respected.

Policy, Goal & Objective: Federal agencies and employees shall work in cooperation with and under the direction of the County Sheriff in activities involving any general police power.

Finding & Policy: The County Sheriff is the primary law enforcement officer in the County, and general police powers shall be conducted under his/her direction.

Finding & Policy: Federal employees are prohibited from exercising general police powers except where a) lands have been ceded to the exclusive jurisdiction of the United States by appropriate legislative action; or b) specifically authorized by the County Sheriff.

Policy: Agreements with the County Sheriff shall be executed prior to federal employees exercising any general police powers. Where deemed appropriate and at his/her sole discretion, the County Sheriff may deputize federal employees.

Finding, Policy, Goal & Objective: The current system for law enforcement on federal lands in the County is largely inefficient and threatens the health, safety and welfare of the public. Unless authorized otherwise by the County Sheriff, all federal agencies shall discontinue law enforcement activities in the County and shall develop cooperative agreements with the County Sheriff for the execution of law enforcement and general police power activities prior to the close of fiscal year 2020.

CHAPTER 3

RESOURCE USES

3.1 FOREST MANAGEMENT & WOODLAND PRODUCTS

3.2 LIVESTOCK GRAZING

Introduction

In managing livestock grazing on public and private lands, the County's overall objective is to promote public health, safety and welfare by ensuring the long-term health and productivity of a) public and private lands, b) the County's watersheds, c) the livestock industry, d) multiple social and environmental benefits that result from the custom, culture and heritage associated with the livestock industry, and e) cultural resources, ethnographic resources, and traditional uses associated with the livestock industry. Grazing is administered on public lands in accordance with the Taylor Grazing Act of 1934, and in so doing provides livestock-based economic opportunities in rural communities while contributing to the County's, the West's and America's social fabric and identity. Together, the County's public lands and private ranches maintain open spaces, provide habitat for wildlife, offer a myriad of recreational opportunities for public land users, and help preserve the custom, culture, heritage and character of the rural West. Livestock Grazing in the County is considered a resource of cultural and historic significance. Livestock Grazing is protected by the County's Protection of Cultural Resources Ordinance and is on the County Register of Cultural Resources. In some instances Livestock Grazing may also be suitable for special protection as provided by law.

A Brief History of Public Lands Grazing

The Spanish brought livestock into the American southwest in the 1500's, and in 1776 the Dominguez – Escalante expedition, including several horses crossed the county passing near present day Nephi. However the first permanent domestic livestock operations were not introduced to the area until Mormon pioneers settled in the County in 1851. The settlers economy was based primarily on agriculture, and they brought small numbers of livestock to the area. The valleys were thought to provide good grazing, and livestock remains important to the local economy today.

During the era of homesteading, federal lands were often grazed because of national policies designed to promote the settlement of the West and the desire to provide food and fiber for the nation. Grazing was largely unregulated and some problems occurred, but a significant understanding was gained regarding livestock grazing in arid ecosystems. In response to requests from Western ranchers, Congress passed the Taylor Grazing Act of 1934, which led to the creation of grazing districts in which grazing use was apportioned and regulated. The Division of Grazing was created within the Interior Department to administer the grazing districts; this division later became the U.S. Grazing Service and was headquartered in Salt Lake City. In 1946 the Grazing Service was merged with the General Land Office to become the Bureau of Land Management.

Unregulated grazing that took place before enactment of the Taylor Grazing Act resulted in unintended damage to soil, plants, streams, and springs. As a result, grazing management was initially designed to increase productivity and reduce soil erosion by controlling grazing through

fencing and water projects and by conducting forage surveys to balance forage demands with the land's productivity/carrying capacity. These initial improvements in livestock management arrested the degradation of public rangelands while improving watersheds, and were successful in restoring acceptable conditions.

But by the 1960s and 1970s, regulation of public lands and unrealistic expectations for their management through restrictive federal policies rose to a new level, as made clear by congressional passage of such laws as the National Environmental Policy Act of 1969, the Endangered Species Act of 1973, the National Forest Management Act of 1976, and the Federal Land Policy and Management Act of 1976. Consequently, federal agencies moved away from managing natural resources, vegetation and grazing and toward lengthy studies, litigation and altered fire regimes that have resulted in proliferation of invasive species, loss of wildlife and a morass of bureaucratic delay. In general, regulations were intended to provide better management or protection of specific rangeland resources, such as riparian areas, threatened and endangered species, sensitive plant species, and cultural or historical objects. However, a backlog of litigation, environmental studies and regulation has hampered land management activities aimed at production and healthy ecosystems. Consistent with this enhanced regulatory role, federal agencies developed or modified the terms and conditions of grazing permits and leases and implemented new policies which have delayed range improvement projects which address specific resource issues and which have prevented continued improvement of public rangeland conditions.

Current setting:

Today federal agencies and permittees manage livestock grazing in a manner aimed at achieving and maintaining health of the land and sustaining resources. To achieve desired conditions, the agencies use forest and rangeland health standards and guidelines, which were generally developed in the 1990s with input from citizen-based Resource Advisory Councils across the West. Standards describe specific conditions needed for long term sustainability, such as the presence of stream bank vegetation and adequate canopy and ground cover. Guidelines are the management techniques designed to achieve or maintain healthy public lands, as defined by the standards. These techniques include such methods as seed dissemination, periodic rest or deferment from grazing in specific allotments during critical growth periods, water development, vegetation treatments, and land treatments aimed at making the land more productive.

Currently, grazing on public lands is relatively stable. Except for a few isolated locations, problems from the early 1900s have been largely corrected as designed by the Taylor Grazing Act. Forest and rangeland health has improved over the past few decades, and there is continual effort on the part of federal agencies and permittees to maintain healthy conditions. (See CAST Report Grazing on Public Lands 1996 – 2002)

Livestock grazing on federal lands has been declared an activity of historic and cultural significance in the County and has been placed on the County's register of cultural resources. In addition, the State of Utah has passed legislation recognizing the value of the livestock industry and outlining basic concepts to preserve its vigor. The American cowboy has been recognized by the Congress and the President of the United States for his role in settling the West. Livestock grazing may be the last human endeavor of the American West that continues to pit man against nature and is shaped by the environment. Livestock grazing continues to play a vital role in the

health, welfare, safety, custom, culture and heritage of the County.

In spite of ongoing improvements in livestock management and federal, state and local recognition of its importance, inflexible federal regulations, altered fire regimes, encroachment of undesirable vegetation (cheatgrass, pinyon/juniper, rabbitbrush, etc.), and private efforts to eliminate public land grazing put the industry at significant risk.

Grazing, one of the earliest and longest uses of the County's public lands, continues to be an important activity for those same lands today. Livestock grazing now competes with more uses than it did in the past, as other industries and the general public look to the public lands as sources of both conventional and renewable energy and as places for outdoor recreation, including primitive and motorized use. Among the key issues that face land managers today are drought, severe wildfires, invasive plants, loss of historic plant communities, and dramatic increases in recreation.

Modern, well-managed grazing provides numerous environmental benefits. For example, well-managed grazing can be used to control undesirable vegetation. And intensively managed "targeted" grazing can control some invasive plant species or reduce the fuels that contribute to severe wildfires improve control of large scale wildfires. Besides providing such traditional products as meat and fiber, well-managed rangelands support healthy watersheds, carbon sequestration, recreational opportunities, and wildlife habitat. Livestock grazing on public lands helps maintain the private ranches that, in turn, preserve the open spaces that have helped write the County's history and will continue to shape this region's character in the years to come.

Need for Management Change:

Various conditions exist that create a need for changes in management related to grazing including but not limited to:

1. Designation of grazing as an object of historic and cultural significance to the County and placement of livestock grazing on a the County Register of Cultural Resources;
2. Potential creation of the grazing commodity zones by the County and by the State of Utah;
3. Recognition of the ongoing threat to the health, safety, welfare, custom, culture, heritage and values of the County resulting from reductions in grazing or harm to the livestock industry;
4. Neglect of natural resources (failure to maintain water developments and desirable vegetation; uncontrolled expansion of State designated noxious weeds, etc.) resulting from failure to aggressively manage the land for optimum forest/rangeland health and forage potential.
5. Failure to allow for maintenance and enhancement of grazing related infrastructure including but not limited to roads, corrals, seedings, water developments, vegetative resources, fences, cattle guards, desirable ecologic site conditions, etc.
6. Creation of bureaucratic management systems and subsequent management actions that diminish land health and forage production.

7. Failure of federal agencies to create, update and modify land management plans to optimize multiple use/sustained yield principles and to comply with coordination and consistency requirements mandated by law.
8. Ongoing threats by private groups to eliminate livestock grazing on public lands in the County.
9. Lack of flexibility in managing livestock related resources and permitted activities.
10. Threats to livestock and wildlife resulting from loss of desirable ecologic site conditions and failure to control invasive confers, cheatgrass, rabbitbrush, noxious weeds, and other undesirable vegetation.
11. Increased recreationist created conflicts, especially in areas that are not the focal point of visitation and where water is appropriated for stock watering.
12. Ongoing threats to forest and rangeland health by limiting vegetation to only native species.

Desired Conditions:

Juab County Desires:

1. Land management agencies recognize state and local designation of the significant historic role of livestock grazing and its value as a cultural resource
2. Land managers recognize the County's Register of Cultural Resources and this RMP and comply, to the maximum extent allowed by law, with the County's stated goals, plans, desires, and needs.
3. Federal agencies manage lands to maximize sustained yield, including optimization of available forage for livestock grazing.
4. Federal agencies restore forests and rangelands to a condition that supports the full number of permitted livestock and increases forage available for livestock grazing over time.
5. Prior to FY 2050 federal agencies enhance forests and rangelands to a condition that supports an additional 30% of forage over what is necessary to accommodate the full number of livestock and wildlife permitted at present.
6. Federal agencies restore Pinyon/juniper stands to desired conditions, eliminate undesirable riparian vegetation, eradicate noxious weeds, and replace rabbitbrush and other unproductive species with vegetation that will optimize sustained yield and benefit to wildlife, livestock, recreation and other multiple uses.
7. Water generated from pinyon/juniper, Tamarisk and Russian Olive removal be conserved, developed and enhanced to be used: a) for livestock on lands that are not designated as the focal point for visitors or that have water rights allocated to livestock; b) for recreation on lands designated as the focal point for visitors and that have water rights allocated to culinary/domestic uses; c) for livestock on lands designated by the

County or the State of Utah where grazing is the highest and best use; and 4) for multiple use/sustained yield purposes in compliance with Utah State Water Law on lands that are undesignated.

8. New water be developed: a) for livestock and wildlife on lands that are not designated as the focal point for visitors or that have water rights allocated to livestock and wildlife; b) for recreation on lands designated as the focal point for visitors and that have water rights allocated to culinary/domestic uses; c) for livestock on lands designated by the County or the State of Utah where grazing is the highest and best use; and 4) for multiple use/sustained yield purposes in compliance with Utah State Water Law on lands that are undesignated.
9. The full number of permitted livestock be restored and expanded at the earliest possible time in a phased approach as the conditions of paragraph 4) are achieved. Work closely with the BLM on what the “full number of permitted livestock to be restored” might be.
10. Every wild fire in the County be re-seeded using an aggressive seed mix of both native and non-native species that will out compete cheatgrass.
11. Desired ecological site conditions identified by the Natural Resources Conservation Service be achieved.

Findings, Policies, Goals, Objectives, and Criteria

Goal: Preserve the history, culture, custom, and values of the grazing industry within the County. Maximize efficient and responsible preservation, enhancement, and development of grazing resources, practices and affected natural, historical, and cultural activities within the County.

Goal: On SITLA, Forest Service and BLM lands, manage livestock grazing to provide for multiple uses while maintaining healthy ecosystems and protecting biological and cultural resources consistent with federal law.

Policy & Objective: On SITLA, Forest Service and BLM lands, manage vegetative resources to become as productive as feasible for livestock grazing, with a goal of restoring suspended and under-utilized AUMs, while maintaining a thriving, ecological balance and multiple-use relationships.

Goal: The County’s goals regarding livestock grazing are threefold: a) Maintain and enhance land health and productivity; b) Actively manage land to optimize resource use including livestock grazing; and c) Ensure a healthy, stable and economically viable livestock grazing program to preserve and enhance this important cultural and historic activity. For information purposes, livestock grazing provides year round income of approximately \$100 per AUM. (See GSENM Grazing Economic Baseline Report, circa 2015 for details)

Policy: Grazing on private and State lands in the County is managed under the requirements of the County, Utah Land Use Ordinance, as amended. Grazing on federal lands in the County is managed under the requirements of this RMP, 2017, as amended.

Finding & Policy: Livestock grazing shall continue to be implemented and managed based on Utah’s Standards for Healthy Rangelands and Guidelines for Grazing. Management systems that

are based on arbitrary departure standards from selected reference conditions fail to consider natural variability and the complex relationship between ecologic variables. Livestock management systems that are based on departure standards and reference conditions are deemed arbitrary, capricious, scientifically unsubstantiated, statistically unsupported, and inconsistent with the This RMP

Policy: In strict compliance with 40 CFR 1502.22, land managers considering any grazing management alternative that includes reference areas and/or departure standards shall include in any environmental analysis all information relevant to reasonably foreseeable and/or significant impacts. If the information relevant to reasonably foreseeable and/or significant impacts cannot be obtained, the agency shall include within the environmental document: a) A statement that such information is incomplete or unavailable; b) a statement of the relevance of the incomplete or unavailable information to evaluating reasonably foreseeable significant adverse impacts on the human environment; c) a summary of existing credible scientific evidence which is relevant to evaluating the reasonably foreseeable significant adverse impacts on the human environment, and d) the agency's evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community. For the purposes of this policy, “reasonably foreseeable” includes impacts which have catastrophic consequences, even if their probability of occurrence is low, provided that the analysis of the impacts is supported by credible scientific evidence, is not based on pure conjecture, and is within the rule of reason.

Goal: Manage livestock grazing in accordance with applicable federal, state and local laws, regulations, standards and guidelines.

Goal: Manage livestock grazing, including use of adaptive management principles, to meet or make progress toward meeting Utah Forest and Rangeland Health Standards where livestock grazing is a causal factor.

Criteria: The County has adopted the BLM Utah Rangeland Health Standards for public lands and has adopted the U.S. Department of Agriculture Natural Resource Conservation Service’s Greater Sage Grouse Habitat Evaluation Method for Greater Sage-Grouse habitats.

Policy: Meet or make progress toward meeting BLM Utah Rangeland Health Standard 2 and Standard 4. Land managers shall comply with water quality standards established by the State of Utah and the County under the federal Clean Water and Safe Drinking Water Acts. Activities on federal and state lands will fully support the designated beneficial uses described in applicable water quality standards.

Finding: Livestock grazing is a cultural resource, an ethnographic resource, part of the County’s heritage, and a traditional activity of significance. It is protected under the County’s Protection of Cultural Resources Ordinance, FLPMA, NFMA, and other applicable law.

Finding: Failure to control Tamarisk, Russian Olive and pinyon/juniper, and noxious weeds beyond desired levels is a detriment to the health, safety and welfare of the County, is inconsistent with the County’s plan, program and policy, and is a violation of local law.

Finding: Tamarisk and Russian Olive are not native and constitute evidence/presence of man on the environment. Land bases that contain Tamarisk and/or Russian Olive are trammled by man and contain permanent evidence of man's impact. Until Tamarisk and Russian Olive are eradicated a land area is not eligible for wilderness designation due to man's longstanding/permanent impact on the land.

Finding: Grazing commodity zones may be necessary for the preservation of the health, safety, welfare, custom, culture and heritage of the County and grazing commodity zones should be considered by the Commission.

Finding: For more than 100 years areas eligible for Grazing Commodity Zone status have provided and continue to provide a significant contribution to the history, custom, culture, heritage, economy, welfare and other values of the County. Properly managed, abundant natural and vegetative resources exist within the commodity zones to support and expand current livestock grazing activities and wildlife habitat.

Policy: Livestock grazing activities in the County constitute historic resources, ongoing human history, places where nature shapes human endeavors in the American West, a variety of cultural resources, landmarks, structures, and other objects of historic or scientific interest that are worthy of recognition, preservation, protection, and expansion.

Finding: The highest management priority for lands not impacted by other multiple use/sustained yield activities is a preservation, restoration, and enhancement of watershed, forest and rangeland health conditions to sustain and expand forage production for livestock grazing and wildlife habitat. Other multiple uses (mining, timber harvest, oil & gas extraction, recreation, commodity development, etc.) are compatible with rangeland health when properly managed.

Finding: Managing the County lands for livestock grazing and wildlife habitat does not preclude or restrict other multiple use/sustained yield activities including but not limited to mining, timber harvest, oil & gas extraction, and recreation.

Finding: There are numerous National Parks, State Parks and other sites in and near the County that provide outstanding opportunities for recreation where livestock grazing is not allowed.

Policy: Within land available for livestock grazing, minimal, site specific recreation infrastructure may be installed on a case by case basis to enhance resources significantly impacted by livestock and wildlife grazing. However, livestock grazing shall not be diminished to reduce conflicts created by recreationists that choose to visit lands available for grazing when and where livestock grazing is allowed.

Finding: Vegetative treatments that restore lands to desired ecological site condition and existing seedings are substantially unnoticeable in Recreation Ia and Recreation Ib management zones.

Finding: The existence of pinyon/juniper woodlands inconsistent with desired and/or historical sagebrush and grassland ecological site descriptions or the existence of Tamarisk, Russian Olive, noxious weeds, or cheatgrass are evidence of man's presence and constitute a trammeling by man.

Finding & Policy: Tamarisk and Russian Olive are species introduced by man and are not attributable to livestock grazing. Where lands fail to meet rangeland health as a result of

Tamarisk and/or Russian Olive, the deficiency shall not be attributed to livestock.

Policy: The existence of pinyon/juniper woodlands inconsistent with desired and/or historical sagebrush and grassland ecological site descriptions or the existence of Tamarisk, Russian Olive, noxious weeds, or cheatgrass are not natural conditions, and land occupied by such species are impaired by man until such time as a natural condition where the land retains its primeval character and influence is restored.

Policy: Lands occupied by Pinyon/juniper woodlands inconsistent with desired and/or historical sagebrush and grassland ecological site descriptions or by Tamarisk, Russian Olive, noxious weeds, or cheatgrass are not suitable for management as wilderness, Recreation Ia or Recreation Ib until a primeval character and influence is restored and such management is approved by the Commission.

Finding: The historic levels of livestock grazing activity and other values in the County have greatly diminished, or are under other serious threat, due to: (a) unreasonable, arbitrary, and unlawfully restrictive federal management policies, including: de facto management for primitive recreation in non-wilderness areas and non-WSAs; (b) abandonment of Taylor Grazing Act designations applicable to each of these zones; (c) arbitrary administrative reductions in animal unit months and available forage; (d) inflexible federal grazing practices that disallow grazing at different times each year; (e) encroachment of pinyon, juniper, cheatgrass, invasive species, and woody vegetation that compromise watershed and rangeland health, reduce desirable forage, degrade habitat, limit wildlife populations, reduce water yield, and heighten the risk of catastrophic wildfire; and f) more than 100 years of fire suppression that has promoted invasion of forb/grassland habitats with undesirable species including but not limited to decadent sagebrush, pinyon, juniper, rabbitbrush, cheatgrass, etc.

Policy: Lands designated by the County as Forestry, Forage, Multiple Use Sustained Yield, and Commercial Product Development are targeted areas for livestock grazing improvement projects including but not limited to seedings, seeding maintenance, conifer removal, invasive removal, water development, and re-vegetation projects.

Policy: Lands designated by the County as Recreation Ia and Recreation Ib shall be available for Livestock Grazing to the maximum extent allowed by law.

Policy: Lands designated by the County as Recreation II and Recreation III shall be available for Livestock Grazing; and Livestock Grazing related resources shall be improved to the maximum extent allowed by law.

Finding: Restrictive federal regulation has resulted in the loss of a natural/pre-settlement fire regime, the invasive encroachment of conifers in former semi-desert/sagebrush ecosystems, the proliferation of undesirable species (including but not limited to Tamarisk, Russian Olive, cheatgrass), and a reduction in available forage for livestock and wildlife grazing.

Policy: Federal land managers shall refrain from implementing policies and programs that reduce livestock levels on lands in the County that are available for livestock grazing. Prior to any reduction in AUMs on lands available for livestock grazing in the County, federal land managers shall coordinate with the County and shall implement all reasonable actions to provide necessary forage to accommodate permitted levels of livestock grazing.

Policy: Federal land managers shall refrain from implementing utilization standards less than 50%, unless: a) implementing a standard of less than 50% utilization on a temporary basis is necessary to resolve site-specific concerns; and b) the federal agency consults, coordinates, and cooperates fully with the County and affected local governments.

Policy: Federal land managers shall refrain from utilizing stubble height heights. These are typically inaccurately constructed to show permittees as over utilization of the range land.

Policy: For the purposes of livestock grazing related analysis the following shall apply:

1. Immediate impact is defined as impact which lasts less than one year. Immediate impacts do not need to be mitigated, if desired conditions are achieved within the one year period.
2. Short term impact is defined as impact which lasts longer than one year but less than five years. Short term impacts do not need to be mitigated, if desired conditions are achieved within the five year period.
3. Long term ground impact is defined as impact which lasts more than five years but less than twenty years. Long term impacts do not need to be mitigated, if desired conditions are phased and achieved within a five year period of phased disturbance.
4. Permanent ground disturbance is defined as any ground disturbing activity which lasts longer than twenty years. Permanent disturbances need to be mitigated or offset by other enhancements initiated within five years.

Finding: Federal land managers have a) failed to accurately map general habitat and critical habitat for special status species, b) incorrectly designated special status species habitat where the species is not present, and c) ignored site specific conditions and special status species life cycle requirements to adopt generalized habitat polygons that are not consistent with objective science.

Finding: Federal land managers have a) failed to accurately map Greater Sage-Grouse habitat, b) incorrectly designated pinyon/juniper woodlands as Greater Sage-Grouse habitat, and c) ignored the two greatest impacts on Greater Sage-Grouse in the County: invasive conifer encroachment and predation (primarily from corvids and canids).

Finding: The County finds that sage-grouse populations and habitats are compatible with livestock and grazing management which conforms to the This RMP Practices, such as rotational grazing systems can enhance plant community vigor, suppress noxious weeds, and sustain diverse plant communities with forb components that benefit sage-grouse habitat.

Policy: Prior to implementing livestock grazing restrictions for the purposes of conserving sage-grouse, federal agencies shall:

1. Implement effective vegetative manipulation to achieve sage-grouse habitat objectives and maintain or improve vegetation conditions or trends.
2. Design and implement grazing management systems that maintain or enhance herbaceous understory cover, height, and species diversity that occurs during the spring nesting season, consistent with ecological site characteristics and potential.

3. Maintain residual herbaceous vegetation at the end of the livestock grazing season to contribute to nesting and brood-rearing habitat during the coming nesting season. Amounts of herbaceous vegetation will be determined on a site specific basis in Coordination with the County.
4. Minimize wildlife grazing effects on the cover and height of primary forage species in occupied habitat during the nesting season.
5. Manage wildlife grazing of riparian areas, meadows, springs, and seeps in a manner that promotes vegetation structure and composition appropriate to the site.
6. Place salt and mineral supplements to optimize benefits to sage-grouse breeding habitat and to improve management of livestock for the benefit of sage-grouse and livestock.
7. Design new spring developments in priority sage-grouse habitat to maintain or enhance springs and wet meadows. Retrofit existing water developments during normal maintenance activities. Costs should be borne by the land managing agency unless other agreeable arrangements are made with livestock producers
8. Ensure that new and existing livestock troughs and open water storage tanks are fitted with ramps to facilitate the use of and escape from troughs by sage-grouse and other wildlife.
9. Avoid placing new water developments into higher quality native breeding/early brood habitats that have not had significant prior grazing use.

Finding & Policy: Livestock grazing decisions that are not consistent/compliant with this RMP need to be revisited by the managing agency within 5 years or at the next amendment/revision process whichever occurs first.

Goal: Create sustainable rangelands and forests that are resilient and resistant to fire with diverse vegetation and wildlife and which supports optimal levels of livestock grazing.

Policy: All allotments are open and available for livestock use to the maximum extent allowed by law and consistent with land health. Where allotments are unavailable for livestock grazing or otherwise restricted, management shall be consistent with the County's resource plan or approved by the Commission.

Policy: The County requires forage enhancement on all allotments which are suitable for livestock grazing to the maximum extent practical.

Policy: In areas available for livestock grazing, livestock water shall be available at distances of not more than 3 miles. Where livestock water is not available within the 3 mile distance, land managers shall, to the maximum extent practical, take appropriate action to develop additional water resources to meet the 3 mile requirement.

Policy: Land managers shall maintain rangelands in stable or improving conditions by increasing forage and water resources. Active and aggressive management shall be implemented to comply with this policy.

Policy: Class I pinyon/juniper stands impacting land health, species diversity or desired vegetative conditions should be eradicated in the most feasible and cost effective manner possible at a rate of 10% annually. Class II & III pinyon/juniper stands must be reduced to less than 1,000 acres of contiguous trees in a mosaic pattern and 2% must be treated annually based on a rolling 5 year average. Alternatively, land managers may implement vegetative treatments that convert 25% of Class II & III pinyon/juniper woodlands to desirable vegetative communities based on a rolling 10 year average.

Policy: Decadent sagebrush stands of over 1,000 acres must have 10% treated annually.

Policy: Land managers shall increase diversity in vegetation through optimization of native and non-native species to the maximum extent available by law. Limiting vegetative communities to “native species only” shall only be implemented when a) required by federal or state law, b) scientifically proven to optimize land health and/or desirable forage production, c) consistent with this RMP, or d) approved by the Commission.

Policy: Wildlife populations in excess of population objectives must be corrected within one year. If livestock grazing is being restricted due to lack of forage or drought, restrictions shall occur as follows: First, wildlife that is over objective; Second proportional decreases in wildlife meeting objectives and permitted livestock.

Policy: Adaptive management must be implemented. The conditions of forage may vary each year which may lead to changes in a specific grazing plan. Livestock numbers, on dates may be moved forward and off dates may be extended. Extending days available for grazing should be managed based on conditions.

Policy: Prior to closure or reductions of livestock AUMs on allotments in the County, NEPA analysis shall be conducted, and the County shall be offered cooperating agency status.

Finding & Policy: Grazing agricultural commodity zones as established in U.C.A. 63J-8-105.8(2) preserve and protect the agricultural livestock industry from ongoing threats; preserve and protect the history, culture, custom, and economic value of the agricultural livestock industry from ongoing threats; and maximize efficient and responsible restoration, reclamation, preservation, enhancement, and development of forage and water resources for grazing, wildlife practices and affected natural, historical, and cultural activities. Grazing agricultural commodity zones will be implemented on a case by case basis as needed.

Goal: Achieve and maintain livestock grazing in the County at the highest reasonably sustainable level.

Policy: Domestic livestock forage in the County, expressed in animal unit months, for permitted, active use, as well as wildlife forage included in that amount, shall be no less than the maximum number of animal unit months sustainable by range conditions in grazing districts and allotments in the County, based on an on-the-ground and scientific analysis.

Policy: Where once-available grazing forage in Non-WSA lands with wilderness characteristics has succeeded to pinion, juniper or other woody vegetation, or where rangeland health has suffered for any other reason, a vigorous program of mechanical treatments such as chaining, logging, seeding, lopping, thinning, bull-hogging, burning or other mechanical treatments shall be applied to remove undesirable woody vegetation and biomass and stimulate the return of the

grazing forage to its historic levels for the mutual benefit of livestock, wildlife and other multiple uses in the County.

Policy: To the maximum extent allowed by law, where once-available grazing forage in wilderness and WSA lands has succeeded to pinion, juniper or other woody vegetation, or where land health has suffered for other reasons, a vigorous program of treatments such as chaining, logging, seeding, lopping, thinning, bull-hogging, burning or other methods shall be applied to remove undesirable woody vegetation and biomass and stimulate the return of forage to its historic levels for the benefit of rangeland and ecologic health.

Finding & Policy: The County finds lands comprising grazing districts and allotments in the County as more valuable for grazing than for any other incompatible multiple uses which might exclude livestock grazing. Such other uses include but are not limited to conversion of AUM's to wildlife or wilderness uses. Accordingly, it is the County's plan, policy and program that animal unit months are not be relinquished or retired in favor of conservation, wildlife or other uses.

Policy: The County recognizes that from time to time a bona fide livestock permittee, acting in good faith and not to circumvent the intent of federal grazing regulations, may temporarily cease grazing operations without losing permitted AUM's. However, agency-imposed suspensions or other reductions in domestic livestock AUM's shall be temporary and based on rangeland conditions and best science.

Finding & Policy: The transfer of livestock AUM's to wildlife for purported rangeland health is illogical, arbitrary and capricious and is opposed by the County. There is already imputed in each AUM a reasonable amount of forage for the wildlife component and allocation of additional forage is inconsistent with the This RMP

Policy: Livestock AUM's that may have been reduced due to rangeland health concerns shall be restored immediately to livestock use when rangeland conditions improve. Rangeland health concerns shall be resolved within 3 years and reduced livestock AUM's shall be restored. The reduced AUM's shall not be converted to wildlife use without Commission approval.

Policy: Where water resources have diminished because historic vegetative communities have succeeded to pinion, juniper or other undesirable woody vegetation and associated biomass, a vigorous program of mechanical treatments shall be implemented to promptly remove undesirable woody vegetation and biomass, stimulate the return of the grasses to historic levels, and thereby provide a watershed that maximizes water yield and water quality for livestock, wildlife, and other multiple uses.

References:

Utah BLM Rangeland Health Standards

Chapter 4 Pinyon/juniper Woodlands, USDA Forest Service Gen. Tech. Rep. RMRS-GTR-202. 2007

https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5434337.pdf, January 19, 2017, *Pinyon-Juniper Natural Range of Variation*

3.3 RECREATION AND TOURISM

Introduction

Recreation and tourism are related activities that occur throughout the County. For this RMP, recreation is any discretionary leisure activity that is intended to amuse, stimulate, divert or relax. Tourism is the act of travelling or sightseeing, particularly away from ones normal activity space. Tourism generally relies on visitor services and often supports businesses and communities. Recreationist's activities are often self-directed and frequently occur in remote areas without significant benefits to local economies. Residents and visitors to the County can engage in these related activities simultaneously or separately. Often one, usually tourism, leads to the other.

Recreation activities can be organized, community based activities or self-directed functions that primarily involve close-knit groups like friends or families. Community based recreation activities are centered in municipalities and are managed under guidelines established by the governing body. They are largely conducted in developed settings and can be generally described as rural or urban. When conducted outside municipalities, community base recreation activities usually rely on developed sites and have minimal impact on resources as a whole.

Recreation/tourism has become one of the major resource uses within the region. The term recreation includes a variety of activities that affect and are affected by resources and other resource uses. Juab and its adjoining counties offer a wide variety of recreational opportunities, especially for dispersed use, which rely on developed and undeveloped open space. These activities include wildlife viewing, hunting, hiking, backpacking, horseback riding, OHV use, fishing, bicycling, photography, camping, orienteering, river running, rock climbing, mountain biking, and sightseeing, among others.

Recreation resources include infrastructure, recreation sites and dispersed public lands, wildlife resources, visual resources, waterways, lakes, and other resources (physical, historical, etc.), each of which provides different recreational opportunities. In areas where recreation resources receive heavy use, developed recreation sites or facilities are often constructed to aid in managing impacts. Consequently, developed recreation sites are primarily located near high-use recreation attractions. Developed recreation areas may include such permanent features as picnic tables, drinking water, vault toilets/shower facilities, campsites, signage, and interpretive areas.

Regardless of the level of development, all tourism and recreation (dispersed and developed) rely to some degree on access. Even the most remote site begins at some point with motorized transportation; and loss of transportation infrastructure negatively impacts all aspects of recreation and tourism.

Current Setting

The County uses the Recreation Opportunity Spectrum (ROS), a system of inventorying and managing recreation activities, settings, and experiences on public lands. The County primarily manages for five of the six ROS classes, including primitive, semi-primitive non-motorized,

semi-primitive motorized, roaded natural, and rural. Roaded natural and rural ROS classes require very few restrictions. The primitive and semi-primitive non-motorized classifications are designed to provide certain types of recreation settings and may require restrictions to meet management objectives. Semi-primitive motorized areas approach roaded natural settings in many cases. A baseline ROS inventory, consistent with federal guidelines has been completed for the County, and management classes have been designated. Forest Service and BLM ROS designations are discretionary and are not required to conform to individual ROS inventories. Where land managers are required to Coordinate or be consistent with County land use plan, they must conform to the County plan to meet Coordination and consistency standards.

Recreation Management Areas (RMA) are a means used by the County to manage recreational use of state and federal lands. State and federal lands fall within either a Special Recreation Management Area (SRMA) or Extensive Recreation Management Area (ERMA). SRMAs are areas where more intensive recreation management is needed, and where recreation is a principal management objective. These areas often have high levels of recreation activity and valuable natural resources. Little Sahara Recreation Area, a 60,000 acre OHV play area managed by the BLM and Yuba Lake State Park are the County's primary areas being considered for SRMA designation. The OHV play areas hosts as many as 20,000 during high use weekends. Yuba State Park incorporates multi-agency management and is an example of government to government coordination of recreation.

All areas outside of SRMAs are classified as Extensive Recreation Management Areas. ERMAs may contain recreation sites; but recreation is not specialized, and activities do not require intensive management. Although the primary management objective of an ERMA is not necessarily recreation, a large number of attractive recreation sites and areas may make actions toward management a consideration.

The Land and Water Conservation Fund Act authorizes five types of uses for which special recreation permits (SRP) are required: commercial, competitive, vending, individual or group use in special areas, and organized group activity and event use. Agencies also issue SRPs for noncommercial use in certain "special areas," including long-term visitor areas, and wilderness, river use, and backcountry hiking or camping areas.

Commercial SRPs are issued for commercial and competitive uses of public lands and organized events. SRPs may be issued for 10 years or less, with annual renewal, after which time outfitters must reapply for permits. The permits are issued as a means of managing visitor use, protecting natural and cultural resources, and providing a mechanism for accommodating commercial recreational uses.

OHV use has become a substantial recreation component over the past few decades, and the number of users who participate in this recreation opportunity steadily increases. The County has contemplated OHV concerns regarding resource conflicts and the desire to identify, designate, and increase opportunities for OHV-related recreation. Over the past 20 years, OHV use has become one of the fastest growing recreation activities in southcentral Utah, bringing thousands of visitors each year. Visitors are drawn to these areas to experience the numerous roads and trails available for OHV use, the diverse backcountry opportunities and spectacular scenery along with the challenging OHV opportunities the landscape and terrain provide. This trend is expected to continue.

The number of OHV registrations in Utah has increased substantially over the past several years, as have registrations in the County. The Transportation section of this RMP provides additional information regarding OHV use in the planning area. When the previous federal land use plans were completed, the level of OHV use in the planning area did not warrant extensive management restrictions. As a result, much of the area was open to cross-country use, although most use occurred along roads, trails or other areas that were already disturbed. OHV management in some areas did not adequately address the issues and conflicts that were a result of increased OHV use.

Several federal, state, and county agencies in the region have cooperated in developing trail systems to provide these varied opportunities. However, recent federal management plans have overreacted to purported conflicts and eliminated almost all open/cross country OHV opportunities in the County. The Little Sahara Recreation Area may be the premier OHV recreation opportunity in central Utah and is an example of an open play area that allows for increased OHV use while managing impacts. In addition, the State of Utah Parks and Recreation Division has identified and publicized motorized trail systems throughout the region. Federal agencies have failed to resolve issues associated with longstanding road and trail networks on federal lands confusion and uncertainty for OHV users and managers.

OHV management is regulated by various entities in the County including the County, State of Utah, BLM and Forest Service. The County exercises primary planning authority, and federal agencies are required to be consistent with the County Plan unless otherwise mandated by law. RMPs also define the management of OHVs through travel management plans that designate roads and trails according to BLM regulations. This RMP identified a reasonable network of OHV trails in the County. Map 3.4.2, shows the OHV use designations for the County.

Need for Management Change

1. Land managers need to be consistent with this RMP, ROS, Recreation Management Plan, and OHV Plan to the maximum extent allowed by law.
2. Traditional natural resource industries (timber harvest, mining, energy production, livestock grazing, etc.) that support local health, safety, welfare, prosperity, custom, culture and heritage and provide for stable communities need to be prioritized over discretionary recreation activities for people who live outside the County.
3. Consistent with land health, traditional natural resource industries (timber harvest, mining, energy production, livestock grazing, etc.) need to be maximized while optimizing recreational opportunities in the County.
4. All recreation and tourism activities need to have motorized access and appropriate solid and human waste collection and disposal mitigation.
5. Special Recreation Management Areas need to be limited to high value areas approved by the Commission.
6. Land managers need to resolve ownership issues associated with roads, paths, ways and trails in the County.
7. Recreation limitations in Sage grouse habitat need to be limited in to areas with WHEG values greater than 0.7.

8. At least 5% of the land in the County needs to be designated for open/cross country OHV use.

Desired Future Conditions

Juab County Desires:

1. Land managers Coordinate and are consistent with this RMP, ROS, Recreation Management Plan, and OHV Plan to the maximum extent allowed by law.
2. Traditional natural resource industries (timber harvest, mining, energy production, livestock grazing, etc.) are prioritized over discretionary recreation activities for people who live outside the County.
3. Consistent with land health, traditional natural resource industries (timber harvest, mining, energy production, livestock grazing, etc.) are maximized while optimizing recreational activities.
4. Motorized access is maximized and consistent with the County's Transportation and OHV Plans.
5. Appropriate public services (law enforcement, access, emergency medical, solid waste, human waste, etc.) are provided for all recreational activities.
6. Agencies increase the use of Recreation and Public Purpose grants, especially to develop open/cross country OHV play areas.
7. Lands are managed for primitive recreation only when a) consistent with this RMP and b) when formally approved by the Commission.
8. Not less than 5% of the land in the County is designated for open/cross country OHV use.

Findings, Policies, Goal & Objectives:

Finding & Policy: Recreation is a discretionary function and is compatible with other appropriately managed multiple use activities. Where recreation interests perceive conflicts with other multiple use activities, recreation shall be subordinate to other multiple uses unless otherwise a) mandated by law or b) approved by the Commission.

Finding & Policy: Community based recreation is concentrated in developed areas and on private lands. Community based recreation activities will be managed under authorities of the municipality or management authority where they are conducted.

Finding & Policy: Motorized roads, paths, ways and trails provide access and are vital, in some degree, to every recreation and tourism activity. Closure of used by motor vehicles is a negative impact on recreation and tourism and shall be fully disclosed in any NEPA analysis. It is the County's policy to strongly resist the closure of any road, path, way, or trail listed on the County Transportation Map.

Finding & Policy: Agency ROS designations are discretionary and are not required to conform to ROS inventories. Where land managers are required to Coordinate or be consistent with the County land use plan, they must conform to County designations to meet Coordination and

consistency standards. Failure to do so, unless specifically mandated otherwise by law, is arbitrary, capricious and an abrogation of authority.

Finding, Policy, Goal & Objective: Managers shall optimize and maximize use of existing resources including motorized and non-motorized roads, paths ways and trails. All motorized and non-motorized roads, paths ways and trails in existence prior to January 1, 2015 are cultural resources created because of some human need. They are part of the County transportation and recreation system and shall continue in use until formally discontinued/abandoned by action of the Commission. Land managers shall Coordinate and cooperate with the County in the management of the County's transportation and recreation system, including inventories, planning, maintenance, use, and abandonment.

Finding & Policy: All motorized and non-motorized roads, paths ways and trails on non-private lands in existence prior to January 1, 2015 were created as a result of some human need and constitute a recreation, transportation and cultural resource. Inclusion of a road, path, way, trail, campsite, overlook, trailhead, parking area, facility, human disturbance or other transportation, recreation or cultural resource in inventories, maps, descriptions, studies, plans, or documents of a) any federal, state or local government agency or b) any non-profit, non-governmental or environmental organization/corporation constitutes evidence of the resource's past, current and continued need as a public resource.

Policy: To facilitate Coordination between land management agencies and the County, the following shall apply when managing recreation, transportation and cultural resources in existence on January 1, 2015:

1. All open public roads, paths, ways, and trails not claimed by a federal agency under 23 CFR 460 on January 1, 2015 are under the jurisdiction of the State or County where they are located.
2. All roads, paths, ways, trails, campsites, overlooks, trailheads, parking areas, facilities, human disturbances or other transportation, recreation or cultural resources whose existence is included in inventories, maps, descriptions, studies, plans, or documents of any federal, state or local government agency or any non-profit, non-governmental or environmental organization between January 1, 1970 and January 1, 2015 that are not the subject of a) a NEPA environmental document analyzing their creation, b) a decision authorizing their creation, or c) a trespass objecting to their creation between January 1, 1970 and January 1, 2015 are deemed to be legally authorized and in existence prior to January 1, 1970 and under the jurisdiction of the County.
3. Agencies disputing any determination for any resource identified in paragraph 2) shall provide evidence supporting their dispute in a public meeting of the Commission and shall disclose: a discussion of the resource; the evidence documenting its creation; the dispute; and the agency's effort to resolve the dispute in any future environmental document or decision impacting the disputed resource.
4. All roads, paths, ways, trails, campsites, overlooks, trailheads, parking areas, facilities, human disturbances or other transportation, recreation or cultural resources whose existence is included in inventories, maps, descriptions, studies, plans, or documents of any federal, state or local government agency or any non-profit, non-governmental or

environmental organization between January 1, 1970 and January 1, 2015 that are the subject of a) a NEPA environmental document analyzing their creation, b) a decision authorizing their creation, or c) a trespass objecting to their creation between January 1, 1970 and January 1, 2015 are under the jurisdiction of the land manager.

Policy: Roads, paths, ways, trails, campsites, overlooks, trailheads, parking areas, facilities, human disturbances or other transportation, recreation or cultural resources inventoried under directives of the Wilderness Act of 1964.

Finding & Policy: The health, safety, welfare and prosperity of the County's families and the stability of its communities are prioritized over discretionary recreational pursuits of those living outside the County. Consistent with land health and to the maximum extent allowed by law, recreation shall be subordinate to development of natural resource based industries that promote the health, safety, welfare, and prosperity of the County's families and the stability of its communities.

Finding & Policy: Economic resources derived from recreation and tourism on federal lands in the County are insufficient to be the primary source for encouraging a productive and enjoyable harmony between man and his environment. Consistent with land health, managers shall encourage a productive and enjoyable harmony between man and his environment by a) maximizing re-vitalization of traditional timber harvest, mining, energy production, and livestock grazing industries and b) optimizing recreation and tourism subordinate to timber harvest, mining, energy production, and livestock grazing industries.

Finding & Policy: Geocaching impacts are similar to impacts from primitive recreation. Geocaching is allowed throughout the County unless otherwise restricted by the Commission.

Policy: Dispersed – primitive camping shall be allowed within 300 feet of roads and in ERMA's, unless otherwise restricted by the Commission.

Policy: Camping shall be allowed in riparian areas and at isolated springs and water sources.

Policy: Developed recreation sites smaller than 2 acres are allowed in ERMA's unless prohibited by the Commission.

Policy: At least 5% of each agency's land in ERMA's shall be available for open/cross country OHV use. Lands transferred to the County for open OHV designation shall count toward the 5% minimum.

Policy, Goal & Objective: Legally established ATV Trails shall be supported, developed, maintained and enhanced. Little Sahara Recreation Area shall be managed to optimize recreation.

Policy: Establishment of fee sites shall be avoided whenever possible. Fee sites shall only be established when a) necessary to maintain developed sites and amenities and b) approved by the Commission.

Policy: Special Recreation Permits that include cross country travel will be authorized on a case by case basis.

Policy: In addition to the County's OHV designations, agencies are encouraged to develop and implement OHV trail systems that provide a wide range of motorized opportunities.

Policy: Dispersed camping by groups of less than 300 should be allowed in ERMAs, except where resource damage has been documented. In SRMAs and in ERMAs where resource damage has occurred, camping by groups of more than 75 may be managed by special recreation permit.

Policy: Parking for dispersed camping within 300 feet of open roads, paths, ways, and trails shall be allowed unless signed to protect sensitive resources.

Policy: Recreation limitations in Sage grouse habitat shall be limited in to areas in priority habitat with WHEG values greater than 0.7.

Policy: SRMAs may be closed to fluid minerals exploration, solid mineral leasing, mineral material disposal, and locatable mineral entry with Commission approval.

Policy: SRMAs shall be managed under avoidance/minimize/mitigate protocols of Rights of Way.

3.4 TRANSPORTATION & ACCESS

One of Juab's greatest management challenges is providing reasonable transportation and access to federal, state and local lands and providing areas for a wide variety of both motorized and non-motorized travel related activities. Travel and transportation are an integral part of every activity on public and private lands, including recreation, timber harvest, grazing, wildlife management, vegetation management, conventional and renewable energy development, mineral exploration and development, commodity resources management, ROWs to private inholdings, communications site maintenance, and overall public lands management and monitoring.

Prominent among the travel management issues in the County is the challenge of managing motorized activities on public lands. The combined effect of increased interest in public land recreation, rapid growth in the use of OHVs, and federal resistance to use of historic roads and RS 2477 rights of ways has generated increased social conflicts and uncertainty regarding transportation resources on public lands. These conflicts result in the loss of historic access, loss of cultural resources and diminish the County's health, safety, welfare, custom, culture and heritage.

Current Setting

The current transportation system in the County consists of federal and state highways, a comprehensive County transportation network, U. S. Forest Service roads and private roads. For the past two decades the Bureau of Land Management has not claimed any open public roads under federal statutes requiring such declarations.

The highest level vehicular transportation facility in the County is Interstate 15, which enters the northeast portion of the County near Santaquin at the Utah County line and traverses the eastern portion of Juab County in a southwesterly direction, exiting north of Scipio into Millard County. Three state highways (US 6, SR 28 and SR-132) are located in the eastern third of the County and run southwesterly. The Interstate and state highways constitute the major arterial network in the County. These major highways are augmented by a vast and intricate system of County collector, local and resource roads, which provide needed access to the bulk of the County's land base.

Collector roads distribute traffic from major highways to local roads which in turn distribute traffic to numerous smaller routes and resource roads that connect more remote locations to the larger roads. These routes are used for recreational purposes and access to range improvements, mineral development, and state and private inholdings. Most of the lower level routes are not paved and many are unimproved or have dirt or gravel surfaces. Each route provides access to some distinct location.

Public roads under state or local jurisdiction in the State of Utah are classified in a variety of ways with the most common system being funding categories. Funded roads include State highways (Class A), county roads (Class B), and city streets (Class C). In addition to the funded roads, Utah State Code recognizes Class D roads as important County transportation routes that are not given state funding but provide vital access to many less developed areas. The original Class D legislation was adopted at the time when the Federal Land Policy and Management Act repealed longstanding federal law authorizing the construction of highway across federal lands not reserved for other public uses. The repealed law, known as Revised Statute 2477 or RS 2477, had been used for 110 years, since its inception in 1866, to authorize the construction of the majority of the network of public roads in the western United States.

RS 2477 did not require any formal recognition or documentation process, so roads vested as soon as they were created either by public construction or consistent use. During the last three decades (from 1986 to the present), well-funded selfish interest groups have taken advantage of the documentation gap and have opposed continued use of the County's historic RS 2477 rights of ways – often in an effort to create roadless/wilderness areas where none exist. The selfish interests have initiated numerous lawsuits and invoked delay tactics resulting in expensive conflicts over almost all roads in Utah's public land Counties. For its part, the federal government (and BLM in particular) has vacillated between support of and opposition to the Counties' rights of way with each changing administration. In the late 1990s, BLM abandoned all claims to maintenance of any open public roads on its lands; and since that time has BLM reported under 23 CFR 460 it has jurisdiction over zero (0) public road miles in the State of Utah.

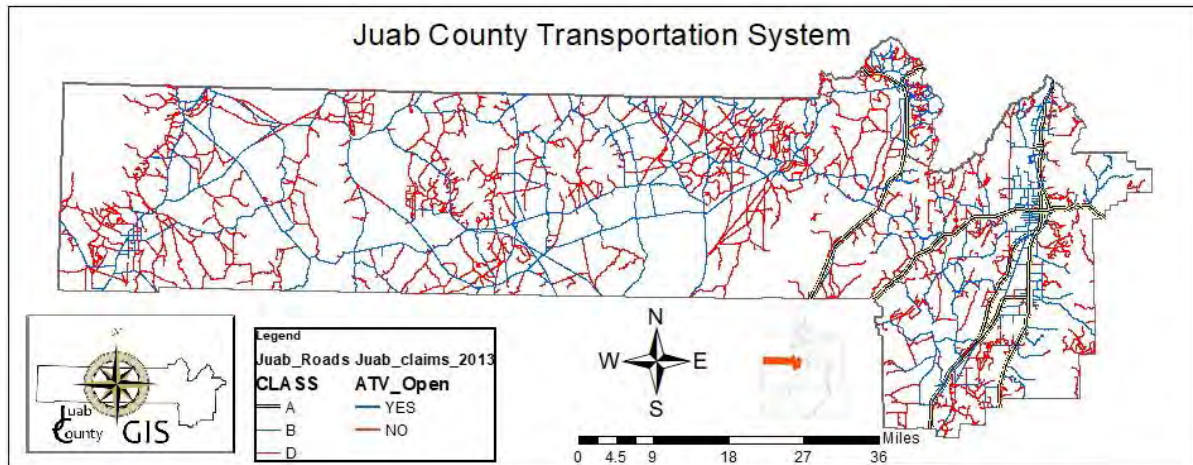
Public roads on Forest Service lands are less problematic because RS 2477 required the road exist on the ground prior to national forest designation. Most of the national forests in Utah were designated near the first decade of the 20th century, so lack of documentation has made RS 2477 more difficult on Forest lands. In recent years, local forest leadership have also succumbed to special interest pressure and have inappropriately closed roads that have provided historic and needed access to many areas of the County.

In order to preserve public access, the State of Utah and its Counties have been forced to file more than 12,000 lawsuits in federal court to have RS 2477 rights recognized on the most easily documented roads throughout the State. Some estimates indicate there are likely more than 25,000 additional roads eligible for RS 2477 recognition, but costs for documentation and litigation are far in excess of available funding.

Resolution of RS 2477 issues is complicated by disingenuous federal positions which disavow federal jurisdiction over the roads but also fail to recognize the rights of the County or State. Some federal resource management plans indicate federal agencies have no knowledge of local governments' interest in preserving historic rights of way. Other agencies of the federal

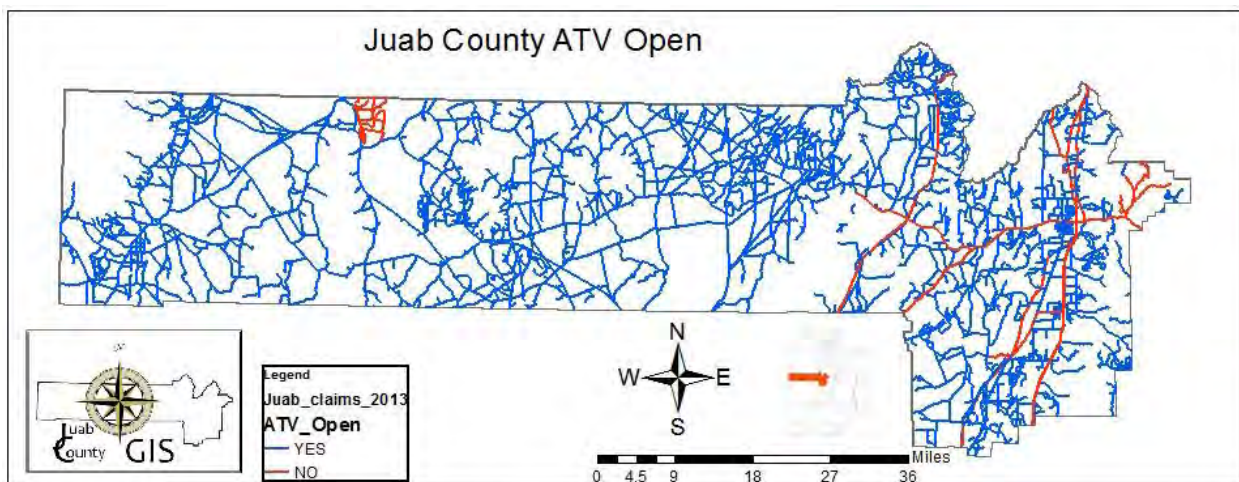
government claim there is no dispute or courts don't have jurisdiction or local governments should have resolved the issue earlier and have lost the right to use the road. In every case, the spurious positions are, in some way, tied to an unhealthy desire to eliminate the presence of man on the land.

The County's transportation network is depicted on Map 3.4.1. Most of the County's road network was developed under provisions of RS 2477 or prescriptive easement law identified in Utah Code. Mapping was developed using information from state and county governments, GPS ground truthing, testimony of local individuals, and photo-enhanced aerial photography.



Map 3.4.1

The County's transportation network also supports an expanding recreational and non-recreational OHV component. Utah law authorizes Counties to designate road, paths, ways and trails for public OHV use. Additionally administrative OHV use occurs in association with permitted activities, administration of grazing operations and a variety of other uses. OHV use has also become a popular method of recreation in of itself, and a means of transportation while hunting, fishing, or camping. Snowmobile use occurs in certain areas during the winter months when sufficient snow is present. The County's public OHV network is depicted on Map 3.4.2



Map 3.4.2

In addition to motorized use, The County's transportation network is the primary component in the County's non-motorized travel. Biking, hiking and equestrian use are authorized on County rights of way unless otherwise prohibited. Generally, Juab County's roads, paths, ways and trails are designated for multimodal use unless resource concerns or safety require restrictions on some uses.

The Special Designations section of this RMP identifies additional areas where transportation facilities impact or are impacted by transportation facilities. Information on scenic byways and backways, wilderness areas, wilderness study areas, areas of critical environmental concern, and special recreation management areas can be found in the Special Designation and Recreation sections of this plan.

Many of the federal lands in the County, including those with management restrictions, have state or private lands adjacent to or within their boundaries. State and private lands that are completely or almost entirely surrounded by federally administered lands are called inholdings. Access to these lands varies and may or may not currently exist. In *United States v. Cotter Corp. (State of Utah v. Andrus*, 486F. Supp. 995, 1979) the Court ruled the state must be allowed access to the state school trust lands so that those lands can be developed in a manner that will provide funds for the common school. The decision confirmed the issue of access to situations directly involving economic revenues generated for the school trust. However, similar principles may apply to other situations. Utah State Code recognizes County easements across school trust lands, and SITLA has worked with local governments to resolve access issues in a mutually beneficial manner. Similarly Utah State Code recognizes prescriptive rights for County roads that have existed on private lands for more than 10 years.

The County's transportation network also includes airports and airstrips. Airports are developed facilities that are managed by federal, state and local authorities where they are located. Airstrips are generally undeveloped landing areas located in remote locations. Often the airstrips were developed under RS 2477 principles and are located in remote back-country areas. Although still limited, use of back-country airstrips is increasing, and known facilities are identified as part of the County's transportation network.

The County employs a comprehensive interdisciplinary, multi-modal approach to transportation planning to address all resources, including public and administrative access needs. The full range of various modes of travel on public land is considered to develop a system of roads, primitive roads, paths, ways, trails, airstrips and travel areas for appropriate uses. During the land use planning process, the County has identified OHV and Travel Management areas.

Travel management areas are a planning and management designation used to address specific travel issues, such as the need for higher-level public involvement, consideration of special resource characteristics, or manageability of the area. Travel management areas are discrete areas where the County identifies acceptable modes of access and travel including over-land, over-water, over-snow, and fly-in access. In developing these areas, the County considers consistency with other program areas, the primary type of travel the area receives, the objectives for the area, and the area's setting (land use, visual and recreation opportunity spectrum) characteristics.

Juab County has designated open, limited and closed OHV management designations for lands under County jurisdiction. The designations apply to state and federal lands in the County and are as follows: Open means an area where all types of vehicle use are permitted at all times

subject to state operating regulations and vehicle standards; Limited means an area restricted at certain times, in certain areas, and/or to certain vehicle use. Closed means an area closed to motorized travel, unless otherwise approved by the County or required by law.

Some locations in the County receive intensive OHV use, based on landscape characteristics, accessibility, or support facilities. One such area is Little Sahara Recreation area and the adjacent public lands. Where intensive use is appropriate, areas have been designated as open. Elsewhere, travel restrictions protect resources and limit OHV use to roads, paths, ways, and trails. Closed areas will be used for areas determined to be unsuitable for OHV use, wilderness and other areas designated by the Commission.

Need for Management Change

1. Land managers need to inventory and document every transportation facility that currently exists on their land.
2. Land managers need to develop a system where historical transportation facilities can be evaluated, considered and recognized in normal planning processes.
3. Federal agencies need to revise existing management plans to bring them into consistency with the local transportation network, and in compliance with State and Federal law.
4. The County, State, and Federal land managers need to develop a system to prevent unauthorized development of transportation facilities.
5. Federal and State land managers need to recognize the existing, on the ground transportation network as the minimum necessary to fulfill Congressional mandates, to complete purposes delineated in enabling legislation, and to preserve the health, welfare, custom, culture, heritage, and socioeconomic viability of the County.
6. The County and land managing agencies need to work cooperatively to resolve transportation issues that are affecting sensitive resources.
7. All highways, roads, paths, ways, and trails in Wilderness Areas, Wilderness Study areas, and Non-WSA lands with Wilderness Character need to be carefully and accurately field inventoried using GPS technology to identify the existing on the ground network and to prevent proliferation of future unauthorized routes.
8. All transportation facilities not claimed by a federal agency under 23 CFR 460 need to be recognized as being under County jurisdiction.
9. Land managers need to identify and disclose the County's potential RS 2477 rights of way.

Desired Future Conditions:

Juab County Desires:

1. Transportation issues be resolved in a manner which preserves access to public and private lands while protecting resources.

2. Federal and State land managers recognize the County's Transportation Network and comply, to the maximum extent allowed by law, with the County's stated goals, plans, desires, and needs.
3. RS 2477 issues are resolved and the County's needs for access to public lands be recognized and accommodated.
4. If NEPA authorized rights-of-way are used to resolve RS 2477 transportation issues, at a minimum, the rights of way need to include: a) rights enjoyed under the non NEPA rights-of-way; b) sufficient width and scope to allow ultimate development of the transportation facilities without additional analysis; and c) provisions to allow a blanket resolution of transportation issues rather than a case-by-case basis.
5. Unauthorized use of cross-country travel on public and private lands is eliminated.
6. To work cooperatively with State and Federal agencies in educating the public and preventing unauthorized travel on public and private lands.
7. The County's Transportation Network be recognized and authorized by State and Federal agencies.
8. That as historical facilities are identified through expanding technology, they are appropriately documented evaluated and authorized.
9. Roads, paths, ways, and trails need to be preserved and enhanced consistent with this RMP.
10. RS 2477 rights of way are identified, analyzed, acknowledged, and recognized by federal agencies.

Findings, Policies, Goals & Objectives

Goal & Objective: Preserve, protect and enhance a transportation system that maintains harmony between man and his environment by a) optimizing a variety of uses, b) minimizing user conflicts and c) contributing to protection and conservation of sensitive resources.

Goal & Objective: Provide for the optimal range of motorized and non-motorized access opportunities to public and private lands in the County.

Policy, Goal & Objective: The County will integrate best management practices into travel and transportation management to optimize harmony between man and his environment.

Policy, Goal & Objective: The County will Coordinate with state officials, federal agencies and other stakeholders to enhance the County's transportation network while maximizing harmony between man and his environment.

Finding: Transportation facilities are vital to the preservation of the County's custom, culture and heritage and constitute cultural resources. Well maintained transportation facilities benefit all public land resources, uses and users.

Finding & Policy: The County's transportation network identified in this RMP is the minimum necessary to a) provide for the health, safety, welfare, custom, culture, heritage and community

stability of the County's residents and visitors; and b) ensure a productive and enjoyable harmony between man and his environment.

Finding & Policy: Closure of any transportation facility without County concurrence is a negative impact on the County's health, safety, welfare, custom, culture and heritage and is inconsistent with the County General Plan.

Policy: The County asserts claim and jurisdiction over all RS 2477 rights of way located inside the County and outside municipal boundaries.

Finding & Policy: The County desires to Coordinate and cooperate with state and federal agencies in the management of transportation facilities in the County. The County may accept easements, rights of way, agreements, memorandums, or other mechanisms that preserve, protect and enhance the County's transportation network.

Finding & Policy: Transportation facilities in the County not claimed by state or federal agencies under 23 CFR 460 as of January 1, 2015 are under the jurisdiction of the County.

Finding & Policy: Transportation facilities identified in this RMP shall continue until formally abandoned by the County in accordance with Utah State Law. When transportation facilities are no longer of beneficial use, as determined by the Commission, the provisions of UCA 72-3-108 will be followed.

Finding & Policy: All transportation facilities in the County are cultural resources and provide needed access to a specific place. Existence of the transportation facility is prima facie evidence of a) the need for the facility and b) human desire to access a specific destination.

Policy, Goal & Objective: Agencies shall identify and disclose all highways constructed prior to October 21, 1976 on federal lands not reserved for other public uses in NEPA analysis for areas where such highways are located. Transportation facilities shall be deemed to pre-date October 21, 1976 unless documented evidence (NEPA analysis, contracts, trespass notices, etc.) prove otherwise.

Finding, Policy, Goal & Objective: On federal lands reserved for public purposes, agencies shall identify and disclose all transportation facilities constructed prior to their enabling legislation in NEPA analysis for areas where such highways are located. Transportation facilities shall be deemed to pre-date enabling legislation unless documented evidence (NEPA analysis, contracts, trespass notices, etc.) prove otherwise.

Policy: The County asserts jurisdiction over all highways, roads, paths, ways, trails, airports, airstrips, landing strips, and other transportation facilities, unless they have been determined to be invalid and/or under the jurisdiction of another agency by a court of competent jurisdiction.

Finding & Policy: The County finds and declares the existing on the ground and/or mapped network of roads, paths, ways, trails, highways, airports, airstrips, and other transportation facilities is the minimum necessary to provide for the health and welfare, custom, culture, and socioeconomic viability of the County.

Policy: The County asserts the maximum extent of the federal road, path, way, trail, highway network are those facilities claimed by federal agencies under 23 CFR 460 or proven by documented evidence; and all other transportation facilities are under the jurisdiction of the County.

Finding & Policy: To the extent roads include segments located on private and SITLA lands, and to the extent the County has rights-of-way over these lands and federal agencies do not, the County asserts that it has jurisdictional responsibility over adjoining segments of these transportation facilities and federal agencies do not.

Policy: The County will Coordinate with state and federal agencies to resolve valid existing rights, transportation needs, maintenance requirements, improvement projects, and other right-of-way and/or scope issues.

Finding & Policy: Well-maintained roads achieve a productive and enjoyable harmony between man and his environment while preserving and enhancing land health.

Policy: For roads determined not to be a valid existing right by a court of competent jurisdiction, the County will apply for an appropriate right-of-way or will abandon the road in accordance with State law.

Policy: For transportation facilities the County no longer desires to have under its jurisdiction, the County will initiate the abandonment process in accordance with state law.

Policy: For all transportation facilities, the County will, over the course of time, improve the facility to meet AASHTO, national or other applicable standards.

Policy: Prior to closure of any transportation facility on federal lands, the following information shall be identified, analyzed and disclosed:

1. Date of the original construction and use
2. Method of original construction and use
3. Detailed GPS centerline
4. Purpose for which the facility was developed
5. Length of time the facility was used
6. Users of the facility
7. Map, plan, GLO plats, and study data citing the facility
8. Jurisdictions asserting ownership of the facility
9. County position regarding proposed status
10. Level 3 cultural resource survey

Closure of any transportation facility without identification of the information listed above is inconsistent with the County General Plan.

Finding & Policy: The County asserts federal agencies have complied with statutes requiring appropriate environmental analysis, permitting and management processes prior to implementation of transportation projects. Transportation facilities that are not subject to trespass as of January 1, 2006 or that lack accurate evidence documenting their construction after the passage of enabling legislation, are presumed to be valid and existing rights that were developed prior to the creation of such legislation.

Policy: Closure of transportation facilities as part of federal planning processes without County concurrence, and/or without final determination of jurisdiction by a court of competent jurisdiction is a violation of valid existing rights and is arbitrary and capricious.

Policy: Closure of existing transportation facilities without County concurrence and/or determination of jurisdiction by a court of competent jurisdiction damages the health, safety, welfare, custom, and culture of the County and is inconsistent with the County General Plan.

Policy: State and federal that fail to identify and disclose potential valid, existing rights are inconsistent with the County's General Plan. The County encourages these entities to review and revise their transportation plans and bring them into consistency, to the maximum extent allowed by law, with the County's General Plan at the earliest possible date and in accordance with agency review schedules.

Policy: Some transportation facilities that were originally developed for motorized use may, at present, be more suitable for non-motorized use. The County's concurrence for non-motorized restrictions is required, and such non-motorized use at the present time does not abandon opportunities for future motorized use.

Finding & Policy: All highways in existence prior to October 21, 1976 are valid, existing rights of way. Closure of any such facility without concurrence of the County violates requirements that management plans be subject to valid existing rights. Absent trespass actions filed prior to January 2006 and/or objective evidence, assuming existing transportation facilities are not valid rights is arbitrary and capricious.

Finding & Policy: All transportation facilities identified as part of the intense study phase associated with the 1964 Wilderness Act or in existence at that time constitute roads and ways that impact wilderness status. Failure to depict inventoried roads and ways in current and future planning documents is inconsistent with agency responsibilities to disclosed environmental consequences and is a misrepresentation of factual data.

Finding & Policy: Transportation facilities located within the boundaries of WSAs and non-WSA lands with wilderness character have not been or were not adequately inventoried. Unless there is objective evidence to the contrary, the County finds that the transportation facilities that currently exist within WSAs and in non-WSA lands with wilderness character existed at the time of the original inventory and were either ignored or overlooked. The County further finds that these transportation facilities are evidence of man or are indications that man was not a visitor and may constitute valid existing rights.

Finding & Policy: The County finds that it has the authority to maintain its transportation network without contacting the land management agencies where the facilities are located. The County also finds that prior to implementing improvement or construction projects, the appropriate land management agency must be consulted.

Finding & Policy: The County finds its transportation network has not been fully developed and is largely underutilized. Closure of more than 5% or expansion of more than 10% of the existing facilities in any project area or agency boundary without County concurrence constitutes a significant negative impact to the health and welfare, custom, culture, and socioeconomic viability of the County.

Finding & Policy: The County finds it is in the public's best interest for the County, and land management agencies to Coordinate and cooperate regarding right-of-way issues.

Finding & Policy: The County finds that its transportation network is the system that best meets the needs of the traveling public and best achieves a productive and enjoyable harmony between man and his environment.

Finding & Policy: Management actions, which are contrary to the County's transportation plans, programs and policies, are not consistent to the maximum extent allowed by law and are inconsistent with agency responsibility and/or the County's General Plan.

3.5 LANDS & REALTY

Current Setting

The lands and realty program is a support program to all other resources and resource uses. The goals of the County's lands and realty program are to a) acquire federal and state lands to support the goals and objectives of other resource programs, b) provide for uses of public lands in accordance with applicable laws and regulations while protecting sensitive resources, and c) improve use of federal and state lands through land tenure adjustments. The program prepares requests for ROWs, permits, leases, withdrawals, and land tenure adjustments for other programs or outside entities. The frequency of such requests is anticipated to increase as communities grow and the demand for use of public lands increases. As a result, future efforts of the lands and realty program will likely become more intense, complex, and costly.

The following sections describe the current features, forecasts, and key features of lands and realty in the County.

Utility Corridors

Utility corridors are preferred routes that collocate multiple linear utility ROWs and are often adjacent to existing highways or county roads. Utilities in these corridors can include gas and water pipelines, electric transmission and distribution powerlines, and communications lines such as telephone or cable. Federal and state managers prefer the placement of new ROWs within designated transportation and utility corridors, to the extent practicable. However, factors such as origination, destination, purpose, compatibility, saturation, and Western Electricity Coordinating Council (WECC) reliability standards for existing corridors, can prevent or limit the placement of a new line within an existing corridor.

Section 368 of the Energy Policy Act of 2005 (Public Law 109-58, August 8, 2005) directed the Secretaries of Agriculture, Commerce, Defense, Energy, and the Interior to designate under their respective authorities, corridors on federal land in 11 western states for oil, gas, and hydrogen pipelines, electric transmission and distribution facilities, or energy corridors. The West-Wide Energy Corridor Programmatic EIS designated corridors on public lands in the County. Maps are available from the West-Wide Energy Corridor Programmatic EIS website.

Designation and use of utility corridors for the collocation of ROWs has become a relatively common practice for federal agencies. Similar to past and present development, future development of linear utility infrastructure projects (particularly large projects) will likely continue to be preferred in designated utility corridors or other areas adjacent to existing development. Collocation of utility infrastructure could continue to concentrate development, and associated surface disturbance, to certain areas, including areas adjacent to highways, major county roads, Section 368 Corridors, and other designated corridors.

The County has designated defined utility corridors within the count as identified in [Map #](#)

Drivers for development in utility corridors include population growth, residential and commercial development, demand and delivery of energy resources, increased reliability of infrastructure (e.g., transmission lines), and improvements to aging infrastructure.

One challenge facing the land managers, as it pertains to the desire for using and establishing corridors, is the WECC reliability capacity rating standards for transmission. According to WECC, placing transmission lines too close to one another can limit transfer capacity of a line. Project developers must comply with the WECC reliability capacity rating system and are finding that siting proposed transmission lines in existing corridors might not be feasible to achieve the maximum transfer capacity rating from WECC. To date, the BLM has not established guidance on the issue, but could consider the WECC guidance during the planning process.

Areas with the highest demand potential for utility corridors include the corridors designated by the West-Wide Energy Corridor PEIS and other existing linear corridor areas, including state highways and county roads. In addition, areas targeted for designated utility corridors include existing major roads, trans-regional pipelines, electric transmission powerlines, and railways.

Communication Sites

Federal agencies typically issue Communications Use Leases for communications facilities on their lands. There are numerous authorized communications facilities on federal and state administered lands in the County. Agencies have permitted past and ongoing development case by case, and communications sites have typically been constructed on ridges, mountaintops, and other high-elevation locations that provide the greatest coverage for consumers. Based on public need, topography, and other factors, past and ongoing communications site development will likely be focused on acceptable areas.

Similar to past and present actions, future communication sites will likely be on mountaintops and other high-elevation locations to attain maximum coverage to meet the needs of federal, state, and local governments, and the public for reliable telecommunication service. The BLM will continue to authorize ROWs for communication use leases for site development and maintenance.

Drivers for the development of communication sites and demand for leases include increasing public demand for communication coverage throughout the country, new and emerging technologies and equipment, and the need to upgrade existing facilities. The probability of companies applying for communication use leases on public lands in the planning area is high. Telecommunication companies want to expand communication coverage along the Interstate 15 corridor and in parts of the planning area. New equipment to support data services over the wireless interface is being deployed, and in certain cases, where signals only cover about half the distance of the existing system, more wireless facility locations will be required to meet capacity objectives for coverage and network.

Indicators of stress on existing communication site leases include increases in applications for communication site facilities in expanded or new areas. Agencies generally encourage and prefer collocation at existing sites when possible, and many sites have multiple users who are compatible with other users at the sites. However, there will be an increase in applications for new sites on federal lands as these existing sites fill to capacity and more consumers utilize new and existing technology, especially in rural areas.

Land Use Authorizations

Rights-of-Way - Various statutes give BLM and Forest service the authority to issue rights of way on federal lands for oil and gas pipelines, highways and related material sites. A right of way grant is an authorization to use a specific parcel of public land for a certain use, such as roads, pipelines, transmission lines, and communications sites. A right of way grant authorizes rights and privileges for a specific use of the land for a specific period. In general, the right of way is granted for a term appropriate to the life of the project. Right of ways are authorized by grants, leases for communications sites, or temporary use permits related to the Mineral Leasing Act. A right of way authorizes the holder to construct, operate, maintain, and/or terminate a new or existing facility over, under, upon, or through public lands. Such authorizations are issued for commercial and non-commercial purposes, and can be for energy- or non-energy-related uses. Rights of way may be issued to other federal agencies, state, county, and local agencies and governments, and private individuals, associations, or corporations.

While a right of way is typically authorized through a grant, some agencies also issue communications use leases for communications facilities.

Federal and state lands throughout the County have generally been available for all types of rights of way, and agencies have analyzed past and ongoing applications case by case. Land use authorizations have typically been limited in areas managed or allocated for specific resource concerns and uses, including ACECs, Special Recreation Management Areas (SRMAs), and WSAs. Past and ongoing land use authorizations (e.g., high wind resource areas for wind projects) are generally ideal for specific authorizations that would collocate facilities or otherwise limit resource conflicts and surface disturbance.

Trespass – Trespass is the unauthorized use of property. Land managers have the responsibility to protect the public lands from trespass and encroachment through means of prevention, detection, and resolution. Land use authorizations, including grants, permits, and land exchanges, have been issued to resolve trespass issues. Locations on public lands where trespass is most likely include areas where residential and commercial development interface with public lands. There are few known occurrences of trespass on public lands in the County, and federal agencies continually monitor for new occurrences.

Leases & Permits – Land managers may authorize the use, occupancy, and development of public lands, through leases and permits, for uses not authorized through other authorities. Applicants can be state and local governments, companies, non-profit organizations, or private individuals. These uses of public lands include agricultural development, residential use (under certain conditions), commercial use, advertising, and National Guard use. Permits are usually short-term authorizations not to exceed 3 years.

A lease is an authorization to possess and use public land for a fixed period. Leases are issued when there is going to be substantial construction, development, and improvement, and there is an investment of large amounts of capital that will be amortized over time.

Agencies authorize permits when uses of public lands will be short in duration and involve little or no land improvement, construction, or investment. Permits have been used as a method to resolve unauthorized use, stipulating that the applicant remove or halt the unauthorized use and rehabilitate the land, if necessary.

There is high probability that the number of land use authorizations in the County will increase due to renewable energy-related, residential, and commercial development, and public lands that interface with areas of increasing population and development.

Land Tenure

Generally, provisions of FLPMA and NFMA require public lands are to be retained in federal ownership, unless as a result of the land use planning procedure provided for in the acts, it is determined that disposal of a particular parcel will serve the national interest. Land can often be identified for disposal by sale, exchange, state indemnity selection, or other authorized methods. Land types are identified for acquisition based on public benefits, management considerations, and public access needs. Specific actions that meet land tenure adjustment criteria established are partially established in this RMP and will require consultation and coordination various levels of government.

The County has a mixed ownership land pattern. Although the potential for resource values might be high on some parcels, lack of access to these parcels or isolation from other resources make them very difficult for federal agencies to manage. Land tenure adjustments help to resolve split-mineral-estate situations, consolidate public lands (through sale, exchange, or acquisition), acquire access, and resolve cases of unauthorized use. Such adjustments are also important to local and state governments to consolidate ownership and to make lands available for public purposes.

Sale - The BLM manages public land sales under the disposal criteria in FLPMA Section 203. Public lands determined suitable for sale are offered on the initiative of the BLM, identified in an agency resource management plan, and sold at not less than fair market value. Public lands classified, withdrawn, reserved, or otherwise designated as not available or not subject to sale, are unavailable. Lands to be disposed of by sale that are not identified in the current agency resource management plan require a plan amendment before a sale.

Sale authority under 43 CFR 2710.0-3 a) authorized by FLPMA allows the BLM to sell public lands where, as a result of land use planning, it is determined that 1) the tract was acquired for a specific purpose but is no longer required for that or any other federal purpose, 2) disposal of

such tracts serves important public objectives, including expansion of communities and economic development, and 3) such tracts are difficult and uneconomical to manage because of their location or other characteristics.

According to FLPMA, sales of public lands under 43 CFR 2710.0-6 shall be conducted under competitive bidding procedures. However, if the Secretary of the Interior determines it necessary and proper so as to ensure equitable distribution among purchasers of lands, or to recognize equitable considerations or public policies, lands may be sold by modified competitive bidding, or without competitive bidding. There are three methods of sales: competitive, modified competitive, and direct sale.

Acquisition – the County has a no net loss of private land policy. However, after coordination with the County and with concurrence of the Commission, acquisition of private land may be authorized under FLPMA Section 205(a) if pursued to facilitate various resource management objectives. Approved acquisitions, including easements, can be completed through exchange, Land and Water Conservation Fund purchases, donations, or receipts from the Federal Land Transaction Facilitation Act. In 1964, Congress established the Land and Water Conservation Fund (Public Law 88-578) to provide for the acquisition of public lands to meet the needs of all Americans for outdoor recreation and open space. The purposes of acquiring these lands include improving manageability and ensuring access to BLM-administered lands, and to protect or enhance important resources.

Exchange - Exchanges of public land are conducted in accordance with FLPMA Section 206, which requires a determination that the public interest will be well served by making an exchange. However, the Secretary must consider better public land management and the needs of the state and the local population, including land needs for the economy, community expansion, recreation areas, food, fiber, minerals, and fish and wildlife. The Secretary must also find that the values and objectives that public lands or interests considered for exchange could serve if retained in federal ownership are not more than the values of the non-public lands or interests and the public objectives they could serve if exchanged.

Public lands have potential for disposal when they are isolated and/or difficult to manage. Lands identified for disposal must meet public objectives, such as community expansion and economic development. Other lands can be considered for exchange on a case by case basis. Disposal actions are usually in response to public requests or applications that result in a title transfer, under which the lands leave the public domain.

Recreation and Public Purposes Act

Recognizing the strong public need for a nationwide system of parks and other recreation and public purposes areas, Congress enacted the Recreation and Public Purposes (R&PP) Act (43

U.S.C. 869 et. seq.) In 1954 as a complete revision of the Recreation Act of 1926 (44 Statute 741). FLPMA Section 212 further amended the R&PP Act to require that suitable public lands be available for established or definitely proposed projects, and to establish annual acreage limitations. The BLM administers the R&PP Act, which authorizes the sale or lease of public lands for recreational or public purposes to state and local governments, and to qualified nonprofit organizations. Lands disposed of under this act are done so with a reversionary clause in the patent.

Examples of typical uses under the R&PP Act include historic-monument sites, parks, campgrounds, schools, firehouses, law enforcement facilities, municipal facilities, hospitals, and fairgrounds. Throughout rural Utah, R&PP sales and leases have included shooting ranges, parks, schools, boy scout camps, landfills, and recreation sites. Any state, state agency, or political subdivision of a state, may purchase for recreational purposes up to 6,400 acres annually, and as many small roadside parks and rest sites (up to 10 acres each) as needed. In addition, any state agency or political subdivision of a state may acquire 640 acres annually for each public purpose program other than recreation.

R&PP leases with reversionary clauses are not be used for the purpose of authorizing solid waste disposal sites (sanitary landfills) or for any other purpose that the authorized officer determines may include the disposal, placement, or release of any hazardous substance (e.g. wastewater treatment facility, shooting range, firefighting training facility, etc.). Existing leases for solid waste disposal sites or other uses which the authorized officer determines may include the disposal, placement, or release of any hazardous substance should be converted to patents without a reversionary clause.

Withdrawals

The A withdrawal is a formal land designation which has the effect of reserving land for a certain use. Withdrawals remove certain public lands from the operation of one or more of the public land laws, excluding lands from settlement, sale, location, or entry, including under the general mining laws and mineral leasing laws. Withdrawals are used to protect major Federal investments in facilities or other improvements, reserve lands for specific purposes and use, support national security, protect resources, and provide for public health and safety. Section 204(l) of FLPMA requires the review of existing withdrawals to determine if they are still serving the purposes for which they were made. If the withdrawals are no longer serving their intended purpose, they are to be revoked and the lands opened or partially opened to the uses that were previously prohibited. If withdrawals are determined to still be meeting the purposes for which they were made, they are recommended for extension for a specific term. While BLM can make recommendations to designate, revoke, or extend withdrawals, only the Secretary has the authority to actually take these actions.

Most of the existing withdrawals in the County involve Public Water Reserve withdrawals for the protection of spring resources. Past and ongoing withdrawals have reduced potential resource uses in withdrawn areas; however, compared to the total acreage available for various resource uses on public lands in the planning area, these effects are minimal.

FLPMA Section 204 gives the Secretary the authority to make, modify, extend, or revoke withdrawals, and mandates review of withdrawals (including reviewing continued need of existing Public Water Reserve withdrawals). Interior Department Policy (Departmental Manual 603) further requires that a) all withdrawals be kept to a minimum, consistent with the demonstrated needs of the agency requesting the withdrawals, b) lands shall be available for other public uses to the fullest extent possible, consistent with the purposes of the withdrawal, and c) a current and continuing review of existing withdrawals shall be instituted. The BLM will manage the withdrawn lands in accordance with the objectives of the new RMP whether the withdrawals are continued, modified, or terminated.

Need for Management Change

1. Managers need to identify criteria, exceptions, and other stipulations associated with transmission reliability in designated corridors.
2. The County needs to maximize acquisitions under R&PP.
3. The County needs to reinforce its “No Net Loss of Private Land” Policy.
4. Managers need to administer new and existing withdrawals in accordance with federal law and on a case-by-case and site-specific basis.
5. Where withdrawals are revoked, lands need to be managed in accordance with the surrounding lands and the objectives of this RMP.
6. Withdrawals need to be used a) as a last resort; b) consistent with this RMP; and c) with concurrence of the Commission.
7. Managers need to coordinate use of other designations with the Commission prior to considering withdrawals.

Desired Future Conditions

Juab County Desires:

1. Managers identify criteria, exceptions, and other stipulations associated with transmission reliability in designated corridors.
2. Additional communication sites be authorized as technology and needs advance.
3. Managers cooperate with the County to maximize acquisitions under R&PP.
4. The County’s No Net Loss of Private Land policy is recognized and followed.
5. New and existing withdrawals are administered in accordance with federal law and on a case-by-case and site-specific basis.
6. When withdrawals are revoked, lands are managed in accordance with the County’s General Plan.
7. Withdrawals are used a) only as a last resort; b) consistent with this RMP; and c) with concurrence of the Commission.
8. Managers implement and coordinate use of other management tools prior to considering withdrawals.
9. Adequate communications sites are located to provide cellular telephone coverage on all County Class B roads.
10. Rights of way are sufficient to provide high speed internet to at least 90% of the homes and businesses in the County.

Findings, Policies, Goals, & Objectives

Goals & Objectives: The goals of the County's lands and realty program are to a) acquire federal and state lands to support the goals and objectives of other resource programs, b) provide for uses of public lands in accordance with applicable laws and regulations while protecting sensitive resources, and c) improve use of federal and state lands through land tenure adjustments.

Policy, Goal & Objective: The County encourages the placement of new ROWs within designated transportation and utility corridors, to the extent practicable.

Policy: When existing right of way or utility corridors are insufficient to meet infrastructure needs, additional rights of way or utility corridors shall be developed.

Policy: In coordination with the County, managers shall identify criteria, exceptions, and other stipulations associated with transmission reliability in designated corridors.

Finding & Policy: The location of communication sites is critical to attaining an optimum functioning telecommunication network and to the well-being of the County. Land managers play an important role in meeting consumer demands for broadband coverage by permitting telecommunication companies to locate their communication sites on mountaintops, ridges, and in and on other locations on public lands. Managers shall cooperate in locating telecommunication facilities at elevations that attain the most coverage for the consumers of digital products.

Policy: Land managers shall authorize additional communications sites to the greatest flexibility allowed by law and as technology and needs advance.

Policy: The County will increase efforts to acquire lands under the Recreation and Public Purposes Act. Land managers shall cooperate with the County to maximize lands acquired by the County under the R&PP Act.

Finding & Policy: The County has insufficient roadside parks and rest areas adjacent to its road network. The County will increase its efforts to develop roadside parks and rest areas adjacent to its road network.

Goal & Objective: The County will increase the number roadside parks and rest areas as needed and funding is available.

Policy: The County adopts a strict. Unless required by law, land managers shall not implement any action that decreases the acreage of private lands in the County. The Commission may waive this policy on a case by case basis after determining loss of private land acreage is a benefit to the County and after public hearing.

Policy: Land managers and land use plans shall recognize and adopt the County's No Net Loss of Private Land policy to the maximum extent allowed by law.

Policy: Land managers shall minimize areas that have potential to be managed as Right of Way avoidance and exclusion areas.

Finding & Policy: Exercising the Commission's constitutional police powers, the County finds federal lands prioritized by the Commission for exchange or sale enhance public resource values,

improve land ownership patterns, improve management capabilities for public and private lands, reduce conflicts, and provide the greatest opportunity for harmony between man and his environment. The County also finds the Commission's prioritization is necessary to protect and promote the health, safety, welfare, and well-being of the County, its residents, its visitors, its lands, and its resources. Unless specifically mandated by law, actions that are inconsistent with the County's prioritization are arbitrary, capricious and violate constitutional police powers.

Finding & Policy: Federal lands smaller than 320 contiguous acres are deemed to be small, isolated parcels and shall be prioritized for exchange or sale. Federal lands within one mile of municipal boundaries or developable private lands are deemed necessary for community expansion and economic development and shall be prioritized for exchange or sale. On a case by case basis, the Commission may designate additional lands that shall be prioritized for exchange or sale.

Finding & Policy: Unless specific resources dictate otherwise, BLM lands within 1 mile of municipal boundaries are identified as needed for community expansion and development.

Policy: Eligible lands located within one mile of municipal boundaries and BLM lands containing less than 320 contiguous acres shall be identified as suitable for exchange and/or Section 203 sales.

Policy: New and existing withdrawals shall be minimized and administered a) in accordance with existing law and b) in coordination with the Commission. Withdrawals shall be temporary and limited to the minimum amount of time possible.

Policy: When withdrawals are revoked, lands are managed in accordance with the County's General Plan.

Finding & Policy: Withdrawals are deemed to have a negative impact on the County's health, safety, welfare and economic stability. Withdrawals shall be used a) only as a last resort; b) consistent with this RMP; and c) with concurrence of the County.

Policy: Prior to any withdrawal, land managers shall implement and coordinate use of all other reasonable management tools. Prior to any withdrawal, land managers shall document in appropriate NEPA analysis efforts to implement and coordinate use of all other reasonable management tools.

Policy: Land managers shall ensure sufficient land is available to locate communication sites that are capable of providing cellular telephone coverage on all County Class B and Class D roads.

Policy: Land managers shall ensure sufficient land is available to locate communication sites that are capable of providing high speed internet to at least 90% of the County's homes and businesses.

Finding & Policy: Known land uses including but not limited to roads, airstrips, water developments, utilities, communication sites, and range improvements that have not been subject to a trespass claim prior to January 1, 2015 are deemed valid existing rights and will continue under current use until determined otherwise by the Commission or a court of competent jurisdiction.

Finding & Policy: Where unresolved land tenure/authorization conflicts have existed between a federal agency and a) private entity, or b) the County since January 1, 2012 or earlier, the conflict shall be resolved in favor of the private entity or County to the maximum extent allowed by law.

Policy: Federal agencies shall authorize agricultural permits for agricultural trespasses on public lands that occurred prior to January 1, 2017 until the trespass can be resolved and the lands under the agricultural permits can be disposed of or the agricultural use removed and the lands remediated.

Finding & Policy: Where federal agencies are unable to find suitable lands to achieve the County's 5% goal for open ATV use, additional lands will be obtained by the County under the R&PP Act to compensate for the shortfall.

Finding, Policy, Goal & Objective: The County finds an increasing need for land exchanges, acquisitions, easements, R&PP requests, indemnity selections, and potential sales in the County. The County also finds an increasing need for efficient processing of land tenure adjustment applications. Land managers shall efficiently process land tenure adjustment applications and shall complete processes in the shortest time possible. Land managers shall prioritize personnel and workload priorities to process land tenure adjustments within 6 months. Land managers shall prioritize R&PP applications for: community parks; firehouses; recreation areas for picnicking, camping, and hiking; schools; golf courses; public works buildings; and other public uses.

3.6 MINERALS & MINING

Mineral development is an important land use within the federal, state and local multiple-use mandate in the County. In communities across the country, mining provides jobs, economic activity and important commodities that are essential to maintain a high quality of life. Mineral and mining resources are located throughout the County; and resources located on state and private lands have been developed to the extent economically and practically feasible. This section of this RMP identifies the County's plans, programs and policies for non-energy mineral and mining resources. Energy related resources are discussed in the Energy section of this plan. Maps of mineral resources located in the County are located in Appendix A.

Minerals on Federal lands are divided into three categories, each subject to different laws and regulations.

1. Locatable, which are subject to the Mining Law of 1872, as amended, include gold, silver, copper and other hard rock minerals.
2. Leasable minerals, such as coal and a host of other commodities, are subject to various Mineral Leasing Acts.
3. Saleable minerals, such as sand and gravel that are essential to construction and roadbuilding, are subject to the Materials Act of 1947, as amended.

Current Setting

Locatable Minerals Locatable minerals include both metallic minerals (gold, silver, lead, copper, zinc, nickel, etc.), nonmetallic minerals (fluorspar, mica, certain limestones and gypsum, tantalum, heavy minerals in placer form, and gemstones) and certain uncommon variety

minerals. The County has a rich history in locatable minerals and in silver, gold, copper and fluorine production. The County, Utah has more than 34,000 records of mining claims on public land managed by the Bureau of Land Management and almost 700 records of mineral deposits listed by the United States Geological Service.

Currently, base metals are being developed by approximately 100 producers in The County and records indicate as many as 400 past producers of gold, silver, lead, tungsten and beryllium. Other base and precious metal deposits may be present, and if found, could be developed depending on market conditions. Based on current market conditions and exploration activity, development of metals on a large scale is likely to continue during the planning horizon. Additionally, small-scale prospecting and development is also likely to take place.

Uranium is found in a variety of geologic environments within the beryllium belt in The County. Large, low-grade uranium deposits are found specific geologic regions. In 1978, the U.S Department of Energy funded a study to determine the preliminary favorability for uranium deposits in The County. The report concluded the best potential for large, low-grade uranium deposits in The County was the perimeter of the volcanic centers in the Thomas Range and the Honeycomb Hills. Additionally, delineation of the northern and eastern positions of the ring-fracture zone in the Thomas caldera was reported as critical in defining favorable areas for uranium deposits. The report also identified potential for lower grade deposits in the Dugway Dell area and the Deep Creek Range.

Leasable Minerals Since 1920, the Federal Government has leased fuels and certain other minerals (43 CFR Parts 3000-3590). Today, minerals that are subject to lease include oil and gas, oil shale, geothermal resources, potash, sodium, potassium, sulfur, native asphalt, solid and semisolid bitumen, bituminous rock, phosphate, and coal. In addition, some hardrock minerals, depending on their location, may be considered leasable. Federal agencies may also lease these minerals on certain private lands, provided the mineral rights are owned by the federal government. Most of the minerals leased under this program are used to make fertilizer or feed stock (mineral supplement for livestock) or have other industrial processes. There are limited non-energy leasable minerals in the County. Petroleum, gas and geothermal resources are discussed in section 3.7 Energy Resources.

Salable Minerals Salable minerals or mineral materials are the largest group of mineral resources and are often termed industrial minerals. Salable minerals include sand and gravel, stone, and clay. The rights to industrial minerals on federal lands can be acquired by claim, lease or purchase from the federal agency. Manufacturing processes that consume these minerals, produce items that are sold to consumers, usually located within a reasonable transportation distance of the mine site.

There are several mineral material pits authorized within the County. Many of the pits are available to the public, while others are only available for Federal Highway Administration or governmental use.

Sand and gravel have been some of the most significant mineral commodities mined from the area. The single greatest use has been for construction activities including highways, and most mining has been near existing roads. With the creation of additional layers of federal regulation,

future sand and gravel production from the County will be focused even more on limited areas where material deposits do not conflict with other uses.

The development potential for sand and gravel deposits in the County is rated as high in areas of past or present sand and gravel extraction, as well as where the proper host formations are found within three miles of a paved road. Areas of high sand and gravel occurrence potential are primarily found along larger alluvial valleys throughout the County. The areas outside the larger valleys also have sand and gravel resources, and sand and gravel development potential is moderate where the host formations are more than three miles from a paved road, and low where the host formations are administratively or logistically restricted from future development. Continued exploration and development activities for sand and gravel are expected for the next 15 years at a level that increases slightly from past rates. Most of the activity would be in the areas of high development potential, but some would also occur farther from paved roads to allow maintenance of unpaved county roads.

Building stone is used for rip rap, building and for the support and ornamentation of buildings. This includes stone used for facades, counter tops and other decorative uses. With the advent of concrete foundations, the use of stone for foundations has stopped. The market for various stones depends on architectural style and interior decor fashions. Early settlers used field stone and quarry stone mostly for home and building construction. A small number of building/dimension stone quarries remain active, and there are several that are inactive or abandoned. In addition, there are a small number of decorative stone quarries, as well as quarries for rip-rap. The development potential for stone is rated as high at past and present quarry sites and moderate outside these areas where the proper host formations occur. Stone exploration or development activity is expected to continue during the next 15 years at rates slightly higher than historic activity levels.

The term clay is both a particle size term and a group of crystalline minerals. As a rock type it is a very fine grained sedimentary rock where most of the grains are composed of the crystalline minerals also called clays and other detrital grains less than 4 microns in size. Clay behaves plastically when wet and has an amazing variety of uses. The most common types are two-layer clay minerals called the kaolin group and three-layer type called the montmorillonite group. These clays have swelling characteristics when wet, and are used to line water impoundments, and in oil well drilling muds. Clay deposits in The County are located in the Arapien Shale and Canyon Range formation on the east side of the County.

Need for Management Change

1. Mineral and mining resources need to be recognized as valuable components of multiple use management and as an appropriate use of federal lands.
2. Mineral and mining resources need to be responsibly developed for the benefit man.
3. Managers need to support community development by facilitating use of mineral and mining resources.
4. Mineral and mining resources located on all lands in The County need to be available for development.

5. Additional sand, gravel and construction material pits need to be developed near communities.
6. Additional sand, gravel and construction material need to be made available in remote locations for watershed, facility and road maintenance.

Desired Future Conditions

Juab County Desires:

1. Mineral and mining development is recognized and advanced as a valuable component of multiple use management and community development.
2. Mineral and mining resources are developed at an expanded rate.
3. Mineral and mining resources are optimized to support community sustainability and stability.
4. Mineral and mining resources located on all lands in The County are available for development to the maximum extent allowed by law.
5. Additional material pits are developed near communities.
6. Additional material pits are developed for road maintenance, erosion control, stream stabilization and other activities that promote productive and enjoyable harmony between man and his environment.
7. Lands that have not been identified as Wilderness Study Areas by BLM as part of the 1991 submission to Congress are excluded from wilderness management and made available for mineral and mining extraction.
8. Land identified as Wilderness Study Areas by BLM as part of the 1991 submission to Congress that are not identified in the County's General Plan as suitable for wilderness designation be released from further wilderness consideration and made available for mineral and mining extraction.

Findings, Policies, Goals & Objectives

Goal & Objective: Manage mineral and mining resources to a) prevent undue and unnecessary degradation; and b) optimize use of the resources without compromising the long-term health and diversity of lands in the County.

Goal & Objective: Manage mineral and mining resources provide minerals and industries needed for community stability and economic purposes while minimizing impacts to other resources.

Policy: The County adopts the principles expressed in Section 63J-8-104 of the Utah Code regarding mineral and mining on federal land. Federal land managers shall achieve and maintain at the highest reasonably sustainable levels, a continuing yield of mineral and mining resources in those subject lands with economically recoverable amounts of such resources.

Finding & Policy: A vibrant mineral and mining industry is an important component of a healthy, sustainable and stable economy and the communities and families it supports.

Goal & Objective: Manage mineral and mining resources to provide for the responsible use and prosperity of man and local communities.

Finding: Increasing restrictions on the development of mineral and mining resources over the last few decades has had a negative impact on The County's economic welfare, community stability and sustainability.

Policy, Goal & Objective: Managers shall encourage and facilitate development of mineral and mining resources by private and governmental industries in a manner that satisfies national, state and local needs and provides for economically and environmentally sound exploration, extraction and reclamation.

Finding: Increasing restrictions on the development of mineral and mining resources over the last few decades has had a negative impact on The County's economic welfare, community stability and sustainability.

Policy, Goal & Objective: Managers shall encourage and facilitate development of mineral and mining resources by private and governmental industries in a manner that satisfies national, state and local needs and provides for economically and environmentally sound exploration, extraction and reclamation.

Policy: The County supports implementation of reasonable Best Management Practices for exploration, extraction and reclamation of mineral and mining projects.

Policy: Where surface occupancy would be undesirable (cemeteries, culinary water sources, landfills, National Registry of Historic Places (NRHP) sites, developed recreation sites, etc.), manage for optimal leasing with no surface occupancy stipulations.

Policy: The County will Coordinate and work cooperatively with federal state and local agencies to maximize responsible, environmentally sound development of mineral and mining resources.

Policy: Land managers shall reconsider mineral and mining operations for lands that are designated as No Surface Occupancy or closed when a) the circumstances or relative resource values have changed; b) less restrictive requirements could be developed to protect resources of concern; c) operations could be conducted without causing unacceptable impacts to resources of concern; d) projects are proposed that provide at least 5 full time jobs for a period of not less than 3 years; e) during the next regular planning cycle; or f) prior to the end fiscal year 2025, whichever occurs first.

Policy: Consistent with The County's Visual Plan, managers shall not consider surface disturbing mineral and mining operations in VRM Class I areas. VRM Class II, III, and IV areas shall be available for surface disturbing mineral and mining operations with appropriate BMPs. Where questions arise regarding allowable activities in VRM Class II, III, and IV areas, managers shall Coordinate with the County to assure consistency to the maximum extent allowed by law.

Policy, Goal & Objective: Opportunities shall be maintained to access mineral and energy resources to sustain viable rural economies and to contribute to the health, welfare and economic growth of the region, state and nation.

Policy: Lands disturbed by mineral and energy activities shall be reclaimed using the best techniques and principles and returned to other productive uses.

Finding & Policy: Mineral and mining activities occur on a very small percentage of the land, generally less than 1%. Mineral and mining exploration, development, extraction and reclamation are compatible with other uses and can occur concurrently or sequentially with such uses.

Policy: Mineral and mining activities will be prioritized outside special status species habitat. When mineral and mining activities are proposed in special status species habitat, priority will be given to development in non/low value habitat first and then in the least suitable habitat and will implement avoid, minimize, mitigate protocols.

Policy: Surface disturbing mineral and mining activities in special status species habitat shall comply with the County conservation plan for the species of concern. If no County plan has been adopted for the particular species of concern, land managers shall coordinate species conservation plans and habitat evaluation guides with The County as part of environmental analysis for the proposed mineral/mining activity.

Finding & Policy: The County has sufficient areas managed for primitive recreation in existing parks, monuments, recreation areas, and designated wilderness. Managers shall prioritize exploration, development, extraction and reclamation of mineral and mining resources over wilderness values and primitive recreation unless specifically mandated otherwise by federal law.

Policy: Mineral and mining exploration, development and extraction shall be allowed in Class II and Class III pinyon/juniper woodlands with an median age less than 200 years to the maximum extent allowed by law. Consistent with ecologic site descriptions, reclamation activities in such areas may restore lands to desired future conditions consistent with management objectives.

Finding and Policy: No Surface Occupancy restrictions are not suitable for special status species habitat where the Wildlife Habitat Evaluation Guide score is less than 70% of the maximum, unless approved by the Commission. Mineral and mining projects that include reclamation anticipated to improve a Wildlife Habitat Evaluation Guide score at least 10% are found to be a net benefit to the species of concern.

Policy: Management of the County's mineral and mining resources in areas designated for sage grouse management shall be consistent with this RMP to the maximum extent allowed by law.

Policy: Land shall not be managed for wilderness characteristics if they contain mining and mineral resources that have the potential of being developed prior to the subsequent resource management planning event or 25 years, whichever is longer.

Policy: Areas shall not be closed to locatable mineral entry, new mineral material sales, solid mineral leasing, and similar activities without consultation, cooperation and Coordination with the Commission.

Policy: The least restrictive terms and conditions allowed by law shall apply to exploration, development, extraction, and reclamation of mineral and mining resources in The County.

Policy: All federal land management plans with mineral/mining development provisions applicable to lands in the County, shall include an environmental analysis that clearly discloses: a) the planning agency has considered and evaluated the mineral and mining potential in all areas of the planning area as if the areas were open to mineral development under standard lease agreements; b) the planning agency has evaluated any management plan prescription for its impact on the areas baseline mineral and mining potential; c) development provisions do not unduly restrict access to public lands for mineral exploration and development; d) the planning agency has analyzed all proposed mineral/mining stipulations and considered adopting the least restrictive necessary to prevent or reduce damage to other significant resource values; and e) the planning agency evaluated mineral/mining restrictions to determine whether to waive, modify or make exceptions to the restrictions on the basis that they are no longer necessary or effective.

References

Preliminary Study of Favorability for Uranium Resources in Juab County, Utah, S. H. Leedom & T. P. M Mithchell, Bendix Field Engineering Corporation, Prepared For The U. S. Department Of Energy, Grand Junction Office Under Contract No. Ey-76-C-13-1664, February 1978

3.7 ENERGY

Introduction

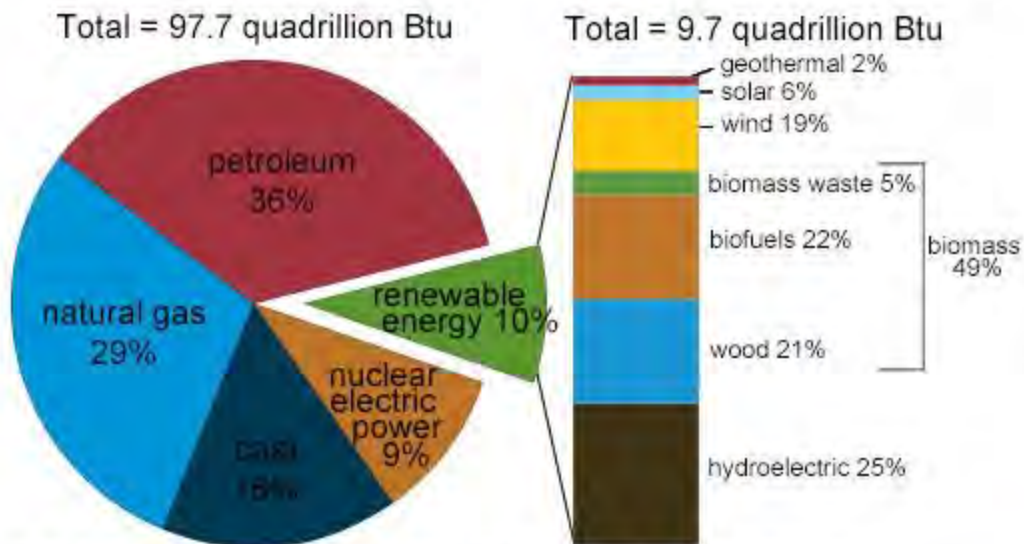
Energy is the ability to do work and comes in various forms. Energy resources can be divided into two groups: nonrenewable – energy resources that cannot be easily replenished; and renewable – energy resources that can be easily replenished. Renewable and nonrenewable energy sources can be used as primary energy sources to produce useful energy such as fuel for vehicles and heat or used to produce secondary energy sources such as [electricity](#).

When people use electricity in their homes, the electrical power was probably generated from burning coal or natural gas, a nuclear reactor, or a hydroelectric plant on a dam or river, to name a few possible energy sources. The gasoline people use to fuel their cars is made from crude oil (nonrenewable energy) and may contain a biofuel (renewable energy) like ethanol, which is made from processed corn.

Current Setting

The chart below shows energy consumption by the various energy sources used in the United States in 2015. Nonrenewable energy sources accounted for about 90% of all energy consumption. Biomass, which includes wood, biofuels, and biomass waste, is the largest renewable energy source, and it accounted for about half of all renewable energy and about 5% of total U.S. energy consumption.

U.S. energy consumption by energy source, 2015



Note: Sum of components may not equal 100% because of independent rounding.

Source: U.S. Energy Information Administration. *Monthly Energy Review*. Table 1.3 and 10.1 (April 2016), preliminary data



Need for Management Change

1. Nonrenewable energy resources need to be responsibly developed while renewable energy technology advances to the point of providing for the energy needs of the nation and the County.
2. Land managers need to permit, to the maximum extent allowed by law, energy development projects while implementing technologic advances, best management practices and reclamation which achieve a productive and enjoyable harmony between man and his environment.
3. Responsible development and production of energy resources need to be prioritized over conservation of lands for primitive recreation.
4. Energy development and extraction industries need to be revitalized and expanded in the County.
5. Where necessary, federal, state and local laws and designations need to be modified to promote reasonable exploration, development and production of energy resources in the County.
6. Where compatible, existing disturbances - including roads, paths, ways and trails identified in federal, state and local documents, plans and maps – need to be prioritized and reserved for potential energy exploration, development, production, and infrastructure location.

7. Federal agencies need to include at least one alternative identifying, analyzing and disclosing maximum energy development in all NEPA documents considering energy resources.
8. Land managers need to include a detailed socio-economic analysis, including at least one alternative considering maximum energy development, in NEPA documents where energy impacts are evaluated. The socio-economic analysis will clearly disclose the impacts energy development will have on jobs, wages, family incomes, community stability and other pertinent factors.
9. Where necessary, existing designations need to be revised to allow responsible development and production of renewable and non-renewable energy resources.

Desired Future Conditions

Juab County Desires:

1. Responsible nonrenewable energy development is optimized while renewable energy technology advances to the point of providing for the energy needs of the nation and the County.
2. Land managers permit, to the maximum extent allowed by law, energy development projects while implementing technologic advances, best management practices and reclamation which achieve a productive and enjoyable harmony between man and his environment.
3. Responsible development and production of energy resources are prioritized over conservation of lands for primitive recreation.
4. Energy extraction industries are developed, revitalized and expanded in the County.
5. Federal, state and local laws are modified to promote reasonable exploration, development and production of energy resources in the County.
6. Where compatible, existing disturbances - including roads, paths, ways and trails identified in federal, state and local documents, plans and maps – are prioritized and reserved for potential energy exploration, development, production, and infrastructure location.
7. Federal agencies include at least one alternative identifying, analyzing and disclosing maximum energy development in all NEPA documents considering energy resources.
8. Land managers include a detailed socio-economic analysis, including at least one alternative considering maximum energy development, in NEPA documents where energy impacts are evaluated. The socio-economic analysis will clearly disclose the impacts energy development will have on jobs, wages, family incomes, community stability and other pertinent factors.
9. Where necessary, existing designations are revised to allow responsible development and production of energy resources.

Findings, Policies, Goals & Objectives

Finding & Policy: Energy resources are located in limited, finite areas and shall be permitted for exploration and development to the maximum extent allowed by law.

Policy: To the maximum extent allowed by law, land managers shall optimize nonrenewable energy exploration and development while renewable energy advances to the point that it can provide for the nation's and the County's energy needs.

Policy: To the maximum extent allowed by law, managers shall permit responsible energy development projects. Technologic advances, best management practices and reclamation will be implemented to achieve a productive and enjoyable harmony between man and his environment.

Finding & Policy: Adequate opportunities for primitive recreation exist in locations that do not contain energy resources or where exploration and development are prohibited. In the County, responsible development and production of energy resources are prioritized over conservation of lands for primitive recreation, unless prohibited by law.

Policy: The County supports modification of federal, state and local laws to facilitate responsible exploration, development and production of energy resources in the County.

Finding & Policy: Where compatible, existing disturbances - including roads, paths, ways and trails identified in federal, state and local documents, plans and maps – are ideal locations for potential energy exploration, development, production, and infrastructure location. Land managers shall prioritize and optimize existing disturbances for potential energy exploration, development, production, and infrastructure location

Policy: In all NEPA documents considering energy resources, federal agencies shall include at least one alternative identifying, analyzing and disclosing maximum potential energy development.

Policy: Land managers shall include a detailed socio-economic analysis, including at least one alternative considering maximum energy development, in NEPA documents where energy impacts are evaluated. The socio-economic analysis will clearly disclose the impacts energy development will have on jobs, wages, family incomes, community stability and other pertinent factors.

3.7.1 Nonrenewable Energy Resources

Most of the energy consumed in the United States is from nonrenewable energy sources. Non-renewable energy resources include coal, petroleum products, hydrocarbon gas liquids, natural gas, and nuclear materials.

Crude oil, natural gas, and coal are called fossil fuels because they were formed over millions of years by the action of heat from the earth's core and pressure from rock and soil on the remains (or fossils) of dead plants and creatures like microscopic diatoms. Most of the petroleum products consumed in the United States are made from crude oil, but petroleum liquids can also be made from natural gas and coal.

The County contains limited nonrenewable energy resources. There are no developable coal, oil, or natural gas reserves in the County.

Nuclear energy is produced from uranium, a nonrenewable energy source whose atoms are split (through a process called nuclear fission) to create heat and, eventually, electricity. Uranium is found in a variety of geologic environments within the beryllium belt in the County. Large, low-grade uranium deposits are found specific geologic regions. In 1978, the U.S Department of Energy funded a study to determine the preliminary favorability for uranium deposits in the County. The report concluded the best potential for large, low-grade uranium deposits in the County was the perimeter of the volcanic centers in the Thomas Range and the Honeycomb Hills. Additionally, delineation of the northern and eastern positions of the ring-fracture zone in the Thomas caldera was reported as critical in defining favorable areas for uranium deposits. The report also identified potential for lower grade deposits in the Dugway Dell area and the Deep Creek Range.

Need for Management Change

1. Nonrenewable energy resources need to be responsibly developed while including appropriate best management practices and reclamation.
2. Land managers need to permit, to the maximum extent allowed by law, nonrenewable energy development projects while implementing technologic advances, best management practices and reclamation which achieve a productive and enjoyable harmony between man and his environment.
3. Responsible development and production of nonrenewable energy resources including best management practices and reclamation need to be prioritized over conservation of lands for primitive recreation.
4. Nonrenewable energy development and extraction industries need to be identified in the County.
5. Where necessary, federal, state and local laws need to be modified to promote reasonable exploration, development and production of nonrenewable energy resources in the County.
6. Where compatible, existing disturbances - including roads, paths, ways, trails, chainings, seedings, and material pits identified in federal, state and local documents, plans and maps – need to be prioritized and reserved for potential nonrenewable energy exploration, development, production, and infrastructure location.
7. Federal agencies need to include at least one alternative identifying, analyzing and disclosing maximum nonrenewable energy development in all NEPA documents considering energy resources.
8. Land managers need to include a detailed socio-economic analysis, including at least one alternative considering maximum nonrenewable energy development, in NEPA documents where energy impacts are evaluated. The socio-economic analysis needs to clearly disclose the impacts nonrenewable energy development would have on jobs, wages, family incomes, community stability and other pertinent factors.

9. Disturbances created by nonrenewable energy development need to be recognized more no more intrusive than disturbances created by renewable energy development. Both disturbances need to be appropriately avoided, minimized and/or mitigated.

Desired Future Conditions

Juab County Desires:

1. Responsible nonrenewable energy development is optimized while renewable energy technology advances to the point of providing for the energy needs of the nation and the County.
2. Land managers promote, to the maximum extent allowed by law, nonrenewable energy development projects while implementing technologic advances, best management practices and reclamation which achieve a productive and enjoyable harmony between man and his environment.
3. Responsible development and production of nonrenewable energy resources are prioritized over conservation of lands for primitive recreation.
4. Nonrenewable energy extraction industries are developed in the County.
5. Federal, state and local laws are modified to promote reasonable exploration, development and production of nonrenewable energy resources in the County.
6. Where compatible, existing disturbances - including roads, paths, ways, trails, chainings, seedings, and material pits identified in federal, state and local documents, plans and maps – are prioritized and reserved for potential nonrenewable energy exploration, development, production, and infrastructure location.
7. Federal agencies include at least one alternative identifying, analyzing and disclosing maximum nonrenewable energy development in all NEPA documents considering energy resources.
8. Land managers include a detailed socio-economic analysis, including at least one alternative considering maximum nonrenewable energy development, in NEPA documents where energy impacts are evaluated. The socio-economic analysis will clearly disclose the impacts energy development will have on jobs, wages, family incomes, community stability and other pertinent factors.

Findings, Policies, Goals & Objectives

Finding: Since the mid-1800s, development of nonrenewable energy resources has played a pivotal role in the welfare and prosperity of the American nation. Renewable energy resources are not currently capable of replacing nonrenewable energy resources and will not be during the life of this plan.

Goal: Manage and provide opportunities for maximum exploration, development and production of nonrenewable energy resources and uses in the County.

Goal & Policy: Consistent with long term ecologic health, allow nonrenewable energy exploration, development and production with as few restrictions as possible.

Goal & Objective: Establish and implement authorization policies and design/mitigation features applicable to nonrenewable energy exploration, development and production.

Goal & Policy: Identify and minimize lands excluded from nonrenewable energy exploration, development and production.

Goal & Policy: Identify lands suitable and prioritized for nonrenewable energy exploration, development and production.

Objective: Define areas with development potential for nonrenewable energy and develop management strategies which maximize exploration, development and production while considering other resource values. Designate nonrenewable energy zones as needed.

Objective: In cooperation with federal agencies, support scientific research of nonrenewable energy development and how impacts on other resources may be avoided, minimized or mitigated.

Objective: Provide for maximum use of nonrenewable energy resources in consideration of ecosystem health while achieving a productive and enjoyable harmony between man and his environment.

Policy: Land managers shall consider at least one alternative expanding nonrenewable energy development and production above current levels in all NEPA actions considering energy resources.

Finding & Policy: Nonrenewable energy resources are located in limited, finite areas and shall be promoted and permitted for exploration and development to the maximum extent allowed by law.

Policy: To the maximum extent allowed by law, land managers shall optimize nonrenewable energy exploration and development while renewable energy advances to the point that it can provide for the nation's and the County's energy needs. Exploration, development and production of nonrenewable energy resources shall be prioritized, promoted and encouraged until 85% of the County's energy needs, 80% of the State's energy needs or 75% of the nation's energy needs are supplied by renewable energy resources.

Policy: To the maximum extent allowed by law, managers shall prioritize and permit responsible nonrenewable energy development projects. Technologic advances, best management practices and reclamation shall be implemented to achieve a productive and enjoyable harmony between man and his environment. For NEPA actions considering energy resources, comparative site specific and cumulative analysis between nonrenewable and renewable energy resources shall be disclosed identifying potential energy production, production reliability, area of disturbance, life of resource, costs, jobs provided, average and median salaries, condition of reclaimed area, maintenance requirements, royalty payments, and other pertinent information.

Finding & Policy: Adequate opportunities for primitive recreation exist in locations that do not contain energy resources or where exploration and development are prohibited. In the County,

responsible development and production of energy resources are prioritized over conservation of lands for primitive recreation, unless prohibited by law.

Finding & Policy: Where surface disturbance associated with nonrenewable energy production is less than 40 acres or 3% of lands managed for wilderness characteristics, whichever is greater, energy related disturbance is substantially unnoticeable.

Policy: The County supports modification of federal, state and local laws to facilitate responsible exploration, development and production of nonrenewable energy resources in the County.

Finding & Policy: Where compatible, existing disturbances - including roads, paths, ways, trails, chainings, seedings, and material pits identified in federal, state and local documents, plans and maps – are favorable locations for potential energy exploration, development, production, and infrastructure location. Land managers shall prioritize and optimize existing disturbances for potential energy exploration, development, production, and infrastructure location

Policy: In all NEPA documents considering energy resources, federal agencies shall include at least one alternative identifying, analyzing and disclosing maximum potential energy development.

Policy: Land managers shall include a detailed socio-economic analysis, including at least one alternative considering maximum energy development, in NEPA documents where energy impacts are evaluated. The socio-economic analysis will clearly disclose the impacts energy development will have on jobs, wages, family incomes, community stability and other pertinent factors.

Finding & Policy: It has been demonstrated the nonrenewable energy projects can enhance conservation and recovery of special status species, especially sage grouse. When analyzing energy impacts, land managers shall include a detailed, comparative analysis of impacts proposed alternatives have on conservation and recovery of special status species in NEPA documents. The detailed comparative analysis will clearly disclose proposed mitigation and the long term impacts energy development will have on Wildlife Habitation Evaluation Guide (WHEG) values, habitat conditions, mitigated acres, composition, health and vigor of vegetative communities, conformance with local species conservation plans, and other pertinent factors.

Policy: Nonrenewable energy exploration, development and production shall be avoided in priority sage grouse habitat with WHEG values greater than 0.7. Unless prohibited by law, nonrenewable energy exploration, development and production shall be allowed in priority sage grouse habitat with WHEG values less than 0.7, and in general and opportunity sage grouse habitat. Unless otherwise approved by the Commission, surface disturbing activities are allowed when post reclamation WHEG values are equal to or greater than pre-project WHEG values.

Policy: Nonrenewable energy development in priority habitat shall conform to the County's recovery and conservation plan for targeted species, unless approved otherwise by the Commission.

Policy: Surface disturbance and surface occupancy restrictions for nonrenewable energy resources shall be based on site specific WHEG evaluations for targeted wildlife species. Where

WHEG values are not available, land managers shall work in cooperation and coordination with the County to develop WHEG evaluation criteria as part of the environmental analysis for proposed nonrenewable energy projects.

Finding & Policy: Critical/crucial habitat are areas that are decisive to the success or failure of a targeted species. When considering nonrenewable energy projects, areas shall not be defined as critical or crucial unless disturbance of the area would result in the loss of at least 70% of the County's, 40% if the states or 20% of the nation's targeted species population. When critical or crucial habitats are considered in a nonrenewable energy NEPA analysis, land managers shall disclose total population of the targeted species in the County, the percentage of targeted species individuals lost as a result of the various alternatives, and qualitative analysis of the impact loss of the individuals has on populations of the targeted species in the County, region and state.

Finding & Policy: Substantial habitat are areas that are of considerable/significant importance to a targeted species. When considering nonrenewable energy projects, areas shall not be defined as substantial unless disturbance of the area would result in significant negative impacts to at least 50% of the County's targeted species population. When substantial habitats are considered in a nonrenewable energy NEPA analysis, land managers shall disclose total population of the targeted species in the County, the percentage of targeted species individuals significantly impacted as a result of the various alternatives, and qualitative analysis of the impacts on populations of the targeted species in the County, region and state.

3.7.2 Renewable Energy Resources

Unlike fossil fuels and other non-renewable resources, which are finite in the short term, renewable energy sources regenerate relatively quickly. There are five commonly used renewable energy sources: hydropower; geothermal; wind; solar; and biomass (including wood, vegetative waste, municipal solid waste, landfill gas, ethanol and biodiesel).

Until the mid-1800s, wood was the primary – if not sole - source of energy consumption. Beginning in the second half of the 19th century, nonrenewable energy sources (coal, petroleum and natural gas) dominated energy sources in the United States. Energy sources were augmented by the development of hydropower near 1900 and have been expanded to include nuclear, wind, solar, and biomass components during the last three decades. Current energy in the US is still dominated by nonrenewable sources; and renewable sources only generate 10% of the nation's energy consumption.

Hydropower is the largest renewable energy source for electricity generation in the United States. In 2015, hydropower accounted for about 6% of total U.S. electricity generation and 46% of electricity generation from all renewables. Because the source of hydroelectric power is water, hydroelectric power plants must generally be located on or near a reliable water source.

Geothermal energy is a renewable energy source that is continuously produced inside the earth. The word geothermal comes from the Greek words *geo* (earth) and *therme* (heat). The slow decay of radioactive particles in the earth's core, a process that happens in all rocks, produces geothermal energy. The earth's core is hotter than the sun's surface, and energy developers can use this heat as steam or as hot water to heat buildings or to generate electricity.

Societies around the world use geothermal energy to heat their homes and to produce electricity by drilling deep wells and pumping the hot underground water or steam to the surface. Entities can also use the stable temperatures near the surface of the earth to heat and cool buildings.

The Basin and Range Province of western Utah is noted for numerous north-south oriented, fault-tilted mountain ranges separated by intervening, broad, sediment-filled basins. The mountain ranges are typically 12 to 31 miles apart, 28 to 50 miles long, and bounded on one, sometimes two, sides by high-angle faults. Typical ranges are asymmetric in cross section, having a steep slope on one side and a gentle slope on the other.

The Sevier thermal area (STA) is a region of southwestern Utah where most of Utah's known moderate- and high-temperature ($>90^{\circ}\text{C}$) hydrothermal-geothermal systems occur. The STA covers a portion of the eastern Basin and Range Province, and part of the Basin and Range-Colorado Plateau transition zone. The geology of this region, which encompasses all of the Sevier, Black Rock, and Escalante Deserts of southwestern Utah, includes abundant faults, plutonic and volcanic rocks, basalt and rhyolite, high regional heat flow, and zones of active seismicity.

The STA is centered on the Roosevelt Hot Springs and Cove Fort-Sulphurdale Known Geothermal Resource Areas (KGRAs), where geothermal power development began some 20 years ago. Other developments in the region include a hot spring resort at the Monroe-Joseph area, commercial greenhouses at Newcastle, near Fish Springs, and Baker Hot Springs.

Geothermal power generation at Thermo Hot Springs. An area with development potential that has been explored, but lacked identified resources, is the Drum Mountains-Whirlwind Valley area in the south central part of the County.

The terms "wind energy" or "wind power" describe the process by which the wind is used to generate mechanical power or electricity. Wind turbines convert the kinetic energy in the wind into mechanical power. This mechanical power can be used for specific tasks (such as grinding grain or pumping water); or a generator can convert this mechanical power into electricity to power homes, businesses, schools, and the like.

Wind energy is very abundant in many parts of the United States and at various locations in the County. Wind resources are characterized by wind-power density classes, ranging from class 1 (the lowest) to class 7 (the highest). Good wind resources (e.g., class 3 and above, which have an average annual wind speed of at least 13 miles per hour) are found in many locations. Wind speed is a critical feature of wind resources, because the energy in wind is proportional to the cube of the wind speed. In other words, a stronger wind means a more power.

Even though the cost of wind power has decreased dramatically in the past 10 years, the technology requires a higher initial investment than fossil-fueled generators. Roughly 80% of the cost is the machinery, with the balance being site preparation and installation. When compared to other energy producing methods, life cycle costs for wind related energy become increasingly competitive with the length of the life cycle because there is no fuel to purchase and operating expenses are minimal. Wind power plants have few emissions that can impact the environment compared to fossil fuel power plants. However, there is some concern over the noise produced by the rotor blades, aesthetic/visual impacts, and bird and bat mortality from rotor collisions. Proper siting of wind plants and technologic advances can mitigate negative impacts.

The major challenge to using wind as a source of power is wind is **intermittent** and does not always blow when electricity is needed. Wind cannot be stored (although wind-generated electricity can be stored, if batteries are used), and not all winds can be harnessed to meet the timing of electricity demands. Further, suitable wind sites are often located in **remote locations** far from areas of electric power demand or transmission. Additionally, wind resource development may compete with other land uses that may be more valued than generation of electricity. However, wind turbines can be located on land that is also used for other purposes, including grazing and are better suited for multiple use management than solar arrays.

The Utah Renewable Energy Zones Task Force Phase I Report identified three potential areas for wind development in the County: the Boulter Summit, Eureka and Dog Valley areas near the Tooele and Utah County borders. There is a low confidence rating for each of these sites, respectively. Combined, the areas are estimated to have a generation potential of 420 MW.

Another form of renewable energy is available from the sun. The sun has produced energy for millions of years and is the ultimate source for all of the energy sources and fuels that we use today. The sun's rays (solar radiation) have been used for thousands of years for warmth and to dry meat, fruit, and grains. Over time, devices and technology have been developed to collect solar energy for heat and to convert it into electricity.

A variety of technologies are presently used for collecting and converting solar radiation into useful heat energy for a variety of purposes. Currently solar energy is used to a) heat water for homes, buildings and pools; b) heat the inside of homes and other buildings; and c) heat fluids to high temperatures to generate electricity in solar power plants.

Solar photovoltaic (PV) devices, or solar cells, change sunlight directly into electricity. Small PV cells can power calculators, watches, and other small electronic devices. Arrangements of many solar cells in PV panels and arrangements of multiple PV panels in PV arrays can produce electricity for an entire house. Some PV power plants have large arrays that cover hundreds of acres and produce electricity for thousands of homes.

Two main benefits of solar energy are a) solar systems do not produce air emissions and b) individual solar systems can be placed on buildings, having minimal impact on land surface activities. However, the amount of sunlight that reaches the earth's surface is not constant and varies depending on location, time of day, season, and weather conditions. Additionally, the amount of sunlight reaching a square foot of the earth's surface is relatively small, so a large surface area is necessary to absorb or collect a useful amount of energy for public use.

The Utah Renewable Energy Zones Task Force Phase I Report identified scattered areas in the western 2/3rds of the County with potential areas for solar development. Comparatively speaking, the County's solar resource development potential appears to be more viable than resources located in the state east of I-15.

Energy resources are also found in the County's biomass reserves. Biomass includes wood, vegetative waste, municipal solid waste, landfill gas, ethanol and biodiesel. Biomass is organic material that comes from plants and animals, and contains stored energy from the sun. When biomass is burned, the chemical energy in biomass is released as heat. Biomass can be burned directly or converted to liquid biofuels and biogas that are burned as fuels

Wood is the largest biomass energy resource; and the most common technique for generating power is the use of direct-fired systems, which burn bioenergy feedstocks directly to produce steam. This steam drives a turbine, which turns a generator that converts the power into electricity.

In the County, woody biomass is primarily composed of the wood residues of forest restoration projects designed to improve wildlife habitat, increase forest and rangeland health, and reduce the risks of wildfire. Restoration projects consist primarily of land treatments, which thin and clear overstocked forest and woodland stands, removing understory, smaller diameter trees, and brush. The by-product of thinning and clearing is biomass. Woody biomass is primarily composed of restoration residues and smaller diameter trees and brush from forestry, fuels, and rangeland treatments.

Not all vegetation types have the potential for bioenergy production. In the the County, the dominant forested species and the primary source of woody biomass with the potential for energy production are the Great Basin and Colorado Plateau pinyon-juniper woodlands.

Biomass projects on federally administered lands are often associated with stewardship contracts. The stewardship program allows federal agencies to enter into long-term contracts with local small businesses, communities, and non-profit organizations to thin vegetated areas while improving forest, woodland, and rangeland health, fish and wildlife habitat, and reduce the risk of wildfires.

Estimates of existing biomass resources on federal lands in the planning area are expressed in tons per acre (TPA) of biomass yield. Potential biomass yield ranges from less than 12 TPA to more than 44 TPA. Biomass levels are divided into three categories of resource potential: low (0 to 5 TPA), medium (5 to 20 TPA), and high (more than 20 TPA). A detailed assessment of biomass resource potential for the County has not been prepared. However, forested areas and Class II and Class III pinyon/juniper woodlands are likely to have high potential for biomass energy.

Approximately 8,000 dry tons of biomass are necessary to produce 1 MW of power. However, the theoretical maximum annual energy capacity from biomass resources could be substantially less depending on a number of factors, including stand density, exclusion/avoidance areas, or adjustments resulting from technical, economic, or market constraints. Drivers of biomass energy development in the area include accessibility of biomass resources, state and federal subsidies, increased state and national population and demand for additional energy, shifts in technology, shift in renewable/nonrenewable resource reliance, and reduced costs for biomass energy development.

Use of biomass from federally and state administered lands is expected to increase as new bioenergy facilities come online. Most of the biomass resource will be derived from fuel reduction projects and from pinyon-juniper woodlands cleared during vegetation treatments. Other trees and smaller woody species could also be used if they are being removed for habitat, forest health, development, or biodiversity improvements.

Technical, economic, or market constraints that could affect the siting and development of biomass projects differ from those for wind, solar, and geothermal energy. These factors are site specific and will vary with each individual project and may include biomass facility efficiency, hauling distances, steep terrain, and soil compaction/erosion impacts.

Need for Management Change

1. Renewable energy resources need to be responsibly developed while including appropriate best management practices and reclamation.
2. Land managers need to permit, to the maximum extent allowed by law, renewable energy development projects while implementing technologic advances, best management practices and reclamation which achieve a productive and enjoyable harmony between man and his environment.
3. Responsible development and production of renewable energy resources including best management practices and reclamation need to be prioritized over conservation of lands for primitive recreation and passive research.
4. Renewable energy development and extraction industries need to be developed and expanded in the County.
5. Where necessary, federal, state and local laws need to be modified to promote reasonable exploration, development and production of renewable energy resources in the County.
6. Existing disturbances - including roads, paths, ways, trails, chainings, seedings, and material pits identified in federal, state and local documents, plans and maps – need to be avoided when potential renewable energy exploration, development, production, and infrastructure are located, unless the energy development is compatible with the existing disturbance.
7. Federal agencies need to include at least one alternative identifying, analyzing and disclosing maximum renewable energy development in all NEPA documents considering energy resources.
8. Land managers need to include a detailed socio-economic analysis, including at least one alternative considering maximum renewable energy development, in NEPA documents where energy impacts are evaluated. The socio-economic analysis needs to clearly disclose the impacts renewable energy development would have on jobs, wages, family incomes, community stability and other pertinent factors.
9. Disturbances created by renewable energy development need to be recognized as no less intrusive than disturbances created by nonrenewable energy development. Both disturbances need to be appropriately avoided, minimized and/or mitigated.
10. Biomass technology needs to be combined with reduction of Class II and Class III pinyon/juniper woodlands and excessive forest fuel loading to optimize energy production.

Desired Future Conditions

Juab County Desires:

1. Responsible renewable energy development advances to the point of providing for the energy needs of the nation and the County while nonrenewable energy resource extraction is revitalized and optimized.
2. Land managers promote, to the maximum extent allowed by law, renewable energy development projects while implementing technologic advances, best management practices and reclamation which achieve a productive and enjoyable harmony between man and his environment.
3. Biomass technology is combined with reduction of Class II and Class III pinyon/juniper woodlands and excessive forest fuel loading to optimize energy production.
4. Responsible development and production of renewable energy resources are prioritized over conservation of lands for primitive recreation and passive research.
5. Renewable energy extraction industries are developed and expanded in the County except in congressionally designated wilderness, unless renewable energy development is compatible with the purposes of those designations.
6. Federal, state and local laws are modified to promote reasonable exploration, development and production of renewable energy resources in the County.
7. Existing disturbances - including roads, paths, ways, trails, chainings, seedings, and material pits identified in federal, state and local documents, plans and maps – need to be avoided when potential renewable energy exploration, development, production, and infrastructure are located, unless the energy development is compatible with the existing disturbance.
8. Federal agencies include at least one alternative identifying, analyzing and disclosing maximum renewable energy development in all NEPA documents considering energy resources.
9. Land managers include a detailed socio-economic analysis, including at least one alternative considering maximum renewable energy development, in NEPA documents where energy impacts are evaluated. The socio-economic analysis will clearly disclose the impacts energy development will have on jobs, wages, family incomes, community stability and other pertinent factors.

Findings, Policies, Goals & Objectives

Finding: To date, development of renewable energy resources have not played a significant role in the welfare and prosperity of the American nation. Renewable energy resources are not currently capable of replacing nonrenewable energy resources and will not be during the life of this plan.

Goal: Manage and provide opportunities for maximum exploration, development and production of renewable energy resources and uses.

Goal & Policy: Consistent with long term ecologic health, allow renewable energy exploration, development and production with as few restrictions as possible.

Goal & Objective: Establish and implement authorization policies and design/mitigation features applicable to renewable energy exploration, development and production.

Goal & Policy: Identify and minimize lands excluded from renewable energy exploration, development and production.

Goal & Policy: Identify lands suitable and prioritized for renewable energy exploration, development and production.

Objective: Define areas with development potential for renewable energy and develop management strategies which maximize exploration, development and production while considering other resource values. Designate renewable energy zones as needed.

Objective: In cooperation with federal agencies, support scientific research of renewable energy development and how impacts on other resources may be avoided, minimized or mitigated.

Objective: Provide for maximum use of renewable energy resources in consideration of ecosystem health while achieving a productive and enjoyable harmony between man and his environment.

Policy: Land managers shall consider at least one alternative a) expanding renewable energy development and production above current levels and b) expanding renewable energy development and production to at least 70% of potential in all NEPA actions considering energy resources.

Finding & Policy: Renewable energy resources are located in limited, finite areas and shall be promoted and permitted for exploration and development to the maximum extent allowed by law.

Policy: To the maximum extent allowed by law, land managers shall optimize renewable energy exploration and development while nonrenewable energy continues to provide for the nation's and the County's energy needs. Exploration, development and production of renewable energy resources shall be prioritized, promoted and encouraged until 85% of the County's energy needs, 80% of the State's energy needs and 75% of the nation's energy needs are supplied by renewable energy resources.

Policy: To the maximum extent allowed by law, managers shall prioritize and permit responsible renewable energy development projects. Technologic advances, best management practices and reclamation shall be implemented to achieve a productive and enjoyable harmony between man and his environment. For NEPA actions considering energy resources, comparative site specific and cumulative analysis between renewable and renewable energy resources shall be disclosed identifying potential energy production, production reliability, area of disturbance, life of resource, costs, jobs provided, average and median salaries, condition of reclaimed area, maintenance requirements, royalty payments, and other pertinent information.

Finding & Policy: Adequate opportunities for primitive recreation exist in locations that do not contain energy resources or where exploration and development are prohibited. In the County, responsible development and production of energy resources are prioritized over conservation of

lands for primitive recreation and passive research, except in congressionally designated wilderness, unless prohibited by law.

Finding & Policy: Management for climate change through biomass, wind and solar energy and simultaneous management for wilderness characteristics are inconsistent and incompatible because biomass projects, wind farms and solar arrays are substantial intrusions. Development of energy resources is vital to the stability and security of the Nation and the County; and wilderness values are an inessential luxury. Where conflicts occur, land managers shall prioritize energy development over wilderness management, unless otherwise mandated by law.

Finding & Policy: Proper socio-economic analysis will identify comparative benefits from competing energy development and wilderness or recreation management. Where comparative socio-economic analysis demonstrates energy related projects produce at least 5% more jobs, wages paid or income, managers shall give priority to energy related projects.

Policy: The County supports modification of federal, state and local laws to facilitate responsible exploration, development and production of renewable energy resources in the County.

Finding & Policy: Existing disturbances - including roads, paths, ways, trails, chainings, seedings, and material pits identified in federal, state and local documents, plans and maps – shall be avoided when potential renewable energy exploration, development, production, and infrastructure are located.

Policy: In all NEPA documents considering energy resources, federal agencies shall include at least one alternative identifying, analyzing and disclosing maximum potential renewable energy development.

Policy: Land managers shall include a detailed socio-economic analysis, including at least one alternative considering maximum renewable energy development, in NEPA documents where energy impacts are evaluated. The socio-economic analysis will clearly disclose the impacts renewable energy development will have on jobs, wages, family incomes, community stability and other pertinent factors.

Finding & Policy: Renewable energy projects can enhance conservation and recovery of special status species under certain conditions. Land managers shall include a detailed, comparative analysis of impacts proposed alternatives have on conservation and recovery of special status species in NEPA documents where energy impacts are evaluated. The detailed comparative analysis will clearly disclose proposed mitigation and the long term impacts energy development will have on WHEG values, habitat conditions, mitigated acres, composition, health and vigor of vegetative communities, conformance with local species conservation plans, and other pertinent factors.

Policy: Renewable energy exploration, development and production shall be avoided in priority sage grouse habitat with WHEG values greater than 0.7. Unless prohibited by law, renewable energy exploration, development and production shall be allowed in sage grouse habitat with WHEG values less than 0.3. Unless otherwise approved by the Commission, surface disturbing activities are allowed when post reclamation WHEG values are equal to or greater than pre-project WHEG values.

Policy: Wind farms are not suitable for priority sage grouse habitat with WHEG values greater than 0.5, unless otherwise approved by the Commission.

Policy: Renewable energy development in priority habitat shall conform to the County's recovery and conservation plan for targeted species, unless approved otherwise by the Commission.

Policy: Surface disturbance and surface occupancy restrictions for renewable energy resources shall be based on site specific WHEG evaluations for targeted wildlife species. Where WHEG values are not available, land managers shall work in cooperation and coordination with the County to develop WHEG evaluation criteria as part of the environmental analysis for proposed renewable energy projects.

Finding & Policy: Critical/crucial habitat are areas that are decisive to the success or failure of a targeted species. When considering renewable energy projects, areas shall not be defined as critical or crucial unless disturbance of the area would result in the loss of at least 70% of the County's targeted species population. When critical or crucial habitats are considered in a renewable energy NEPA analysis, land managers shall disclose total population of the targeted species in the County, the percentage of targeted species individuals lost as a result of the various alternatives, and qualitative analysis of the impact loss of the individuals has on populations of the targeted species in the County, region and state.

Finding & Policy: Substantial habitat are areas that are of considerable/significant importance to a targeted species. When considering renewable energy projects, areas shall not be defined as substantial unless disturbance of the area would result in significant negative impacts to at least 50% of the County's targeted species population. When substantial habitats are considered in a renewable energy NEPA analysis, land managers shall disclose total population of the targeted species in the County, the percentage of targeted species individuals significantly impacted as a result of the various alternatives, and qualitative analysis of the impacts on populations of the targeted species in the County, region and state.

Policy: Based on a 10 year rolling average, Class II and Class III pinyon/juniper woodlands with a median age of less than 200 years are reduced by at least 25%. Biomass resources shall be used in renewable energy production to the extent practical and economical.

Policy: Materials generated from forest health restoration projects, and not suitable for commercial timber harvest, shall be used in renewable energy production to the extent practical and economical.

References

U.S. Energy Information Administration website, April 15, 2015,
https://www.eia.gov/energyexplained/?page=renewable_home

Utah Renewable Energy Zones Task Force Phase I Report, Renewable Energy Zone Resource Identification, Miscellaneous Publication 09-1 Utah Geological Survey, 2009

3.8 AGRICULTURE

Current Setting: Although rural, the County is not considered by many as an agricultural county when compared to other areas of the nation. Good crop land is limited; water is scarce; and federal or state lands dominate the landscape. However, throughout the last 150 plus years the County has been agriculturally based in its attitudes and lifestyle. Agriculture continues to have a cultural impact out of proportion to any economic, acreage or production standards. The mindset of the County's residents remains in large measure rural with an emphasis on family life. Local influences play an important part in government and social life. Like the early settlers of the County, modern-day residents still see security in agriculture and their lives take form and context from land-related influences.

Early settlers came to the County in hopes of finding suitable lands, waters and soils for agriculturally based settlements. Irrigation infrastructure and fields were some of the first improvements as each of the communities were populated. And similar to pioneer settlers, current residents prefer an agricultural approach to the land in contrast to development of large population centers or metropolitan areas. Abundant crop land with adequate water is limited, and further restricted by dominant federal ownership in the County. Agricultural interests are generally centered on livestock related activities.

Mountain streams have been diverted, and the farming community has become the dominant characteristic of the cultural landscape. In addition to farms concentrated near communities, livestock interests graze forest lands in the summer and dryer xeric lands in the winter. Concepts of stewardship have deterred overexpansion and exploitation of the land. For many of the County's residents, agricultural interests extend beyond economics and are a vital part of their custom, culture, heritage and nature. Even as fewer families derive a significant portion of their living from agriculture, the value of land ownership and rural ways continues to reflect strong sentiments and preferences. The County's attitudes regarding use of public and private lands are increasingly disparate from urban areas of the state and country.

The 2012 Census of Agriculture indicated there were 353 farms or ranches in the county with an average size of 688 acres. Total acreage was listed as 242,909 acres. 100 or 28% of the farmers/ranchers derived their primary living from agricultural operations. The county had 19.7% of the land in farms as cropland and 78.8% as pastureland. Cattle and calves were the largest livestock item with 17,314 units. Livestock generated \$16,826,000 of products sold. Crops produce \$11,531,000 of sales, and total production was \$28,357,000.

Need for Management Change

1. Regulations need to be reduced to ensure farmers and ranchers do not face undue or burdensome restrictions from state and national governments.
2. The social and cultural value of local farms, ranches and agriculture needs to be identified, analyzed and disclosed in NEPA analysis and land use plans developed by federal agencies.
3. A permanent revenue source needs to be established to fund ongoing water resource projects that support and expand agriculture. Additional water resources need to be developed to accommodate municipal growth without jeopardizing agricultural interests.

4. Additional water needs to be developed for agriculture and livestock interests on public and private land.
5. Federal and state agencies need to transfer suitable lands to private ownership for farming and ranching purposes.
6. The agricultural lifestyle of the County needs to be preserved and enhanced.
7. The County's strict no net loss of private lands policy needs to be observed, especially related to farms, ranches and agricultural interests.
8. Federal and state agencies need to develop land in their ownership for conservation of special status species.
9. The use and production of federal lands for livestock grazing needs to be preserved and enhanced.
10. Wildlife impacts to private and public land agriculture and ranching need to be reduced. Wildlife managers need to strictly adhere to population objectives established on or before January 1, 2015.
11. Federal agencies need to eradicate noxious weeds in their jurisdiction and prevent seeds from moving to private lands.
12. Federal agencies need to restore lands occupied by invasive conifers and annual grasses to desired vegetative communities, consistent with ecologic site descriptions.

Desired Future Conditions

Juab County Desires:

1. To the maximum extent allowed by law, federal actions are implemented in a way to ensure farmers and ranchers do not face undue or burdensome restrictions.
2. The social, custom, cultural and heritage value of local farms, ranches and agriculture are identified, analyzed and disclosed in NEPA analysis and land use plans developed by federal agencies.
3. Additional water is developed for agriculture and livestock interests on public and private land.
4. A permanent revenue source is established to fund ongoing water resource projects that support and expand agriculture; and additional water is developed to accommodate municipal growth without jeopardizing agricultural interests.
5. Federal and state agencies transfer suitable lands to private ownership for farming and ranching purposes.
6. The agricultural lifestyle of the County needs to be preserved and enhanced.
7. Federal and state agencies strictly adhere to the County's No Net Loss of Private Lands policy, especially regarding farms ranches and agricultural interests.

8. Federal and state agencies develop lands under their stewardship for conservation of special status species, and, to the maximum extent allowed by law, relieve the burdens on private agricultural lands imposed by the Endangered Species Act.
9. The use and production of federal lands for livestock grazing is preserved and enhanced.
10. Wildlife impacts to agriculture and ranching interests are reduced.
11. Wildlife managers strictly adhere to population objectives established on or before January 1, 2015.
12. Federal agencies eradicate noxious weeds in their jurisdiction which are suspected of being the seed source for private lands.
13. Federal agencies restore lands occupied by invasive conifers and annual grasses to desired vegetative communities, consistent with ecologic site descriptions.

Findings, Policies, Goals & Objectives

Finding, Policy, Goal & Objective: The agricultural lifestyle of the County shall be preserved and enhanced.

Finding, Policy, Goal & Objective: Agriculture and ranching interests are vital to the custom, culture, heritage and lifestyle of the County and shall be preserved and enhanced to the maximum extent allowed by law.

Policy: Federal and state agencies shall reduce the burdens on farmers and ranchers to the maximum extent allowed by law.

Policy: The social, custom, cultural and heritage value of local farms, ranches and agriculture shall be identified, analyzed and disclosed in NEPA analysis and land use plans developed by federal agencies. Local farms and ranches constitute small businesses under the Regulatory Flexibility Act and shall be analyzed in accordance with federal law.

Finding, Policy, Goal & Objective: Water is a vital resource that benefits all activities on public and private lands; and additional water needs to be developed for agriculture and livestock interests. Federal and state agencies shall develop additional water resources to the maximum extent allowed by law.

Goal & Objective: A permanent revenue source is established to fund ongoing water resource projects that support and expand agriculture.

Policy, Goal & Objective: As municipal needs increase, additional water will be developed to accommodate municipal growth without jeopardizing agricultural interests.

Policy: The County supports the transfer suitable state and federal lands to private ownership for farming and ranching purposes.

Policy: Federal and state agencies shall strictly adhere to the County's No Net Loss of Private Lands policy, especially regarding farms ranches and agricultural interests.

Finding, Policy, Goal & Objective: Adequate state and federal lands exist to conserve and recover special status species. To the maximum extent allowed by law, federal and state agencies shall develop lands under their ownership for conservation and recovery of special status species, and shall relieve the burdens on private agricultural lands imposed by the Endangered Species Act.

Finding, Policy, Goal & Objective: The use and production of federal lands for livestock grazing is a cultural and ethnographic resource and shall be preserved and enhanced.

Finding & Policy: Sufficient state and federal land exist for the management of wildlife. Wildlife impacts to agriculture and ranching interests shall be reduced; and wildlife managers shall strictly adhere to population objectives established on or before January 1, 2015.

Policy: Federal agencies shall use best efforts to eradicate noxious weeds in their jurisdiction which are suspected of being the seed source for private lands.

Policy: Federal agencies shall restore lands occupied by invasive conifers and annual grasses to desired vegetative communities, consistent with ecologic site descriptions.

Policy: The County supports ongoing training resources for agricultural interests to ensure residents are fully aware of available technological advances and funding sources.

Policy: The County supports active vegetative treatments on public lands and expansion of livestock grazing AUM as forage increases.

Policy: The County opposes grazing buyouts, and any other scheme to retire grazing AUMs and prohibit their proper public use by qualified grazers. When grazing AUM's are given up by a public lands livestock grazer, those AUMs shall be made available for other qualified grazers to acquire and utilize.

Policy, Goal & Objective: Consistent with ecologic site descriptions, vegetative resources shall be managed to optimize rangeland health and forage production.

CHAPTER 4

SPECIAL DESIGNATIONS

4.1 INTRODUCTION

Special Designation Areas are established to protect and preserve their unique values and uses. These areas require different management than would normally be applied to the surrounding lands. This section of the plan identifies existing special management areas within the County and addresses, to some degree, those existing conditions, as well as future objectives, suitability criteria, guidelines, qualities, uses, acceptable activities, goals, policies, and minimum requirements for establishment and/or management in the future. Establishment or management of specially designated areas described herein without complying with establish criteria is inconsistent with the Juab County General Plan and considered a violation of local law.

This section describes the current setting, need for management change, desired conditions, policies, goals, objectives, and criteria related to special designations in the County. It is recognized that there is a significant body of Law regarding various land management decisions. It is desired that all of the land management entities comply with the conditions identified below. Management actions must be consistent to the maximum extent allowed by law with the County's General Management Plan. Unless directed by federal or state law, management actions that are contrary to the stated positions are inconsistent with the County's General Management Plan. Where no federal body of law exists regarding land management decisions or where decisions are left to the agency's deference or discretion, management actions must be consistent with the positions identified in this plan.

Special designations can be grouped into three broad categories:

Congressional/Legislative Designations - Specially designated areas that are statutorily established by Congress or the Utah State Legislature include National Parks, National Recreation Areas, National Forests, National Monuments, National Wildlife Refuges State Parks, Wilderness, and Wild and Scenic River Corridors. Land managers and others may make preliminary recommendations that ultimately could result in congressional/legislative action, but final designation does not take place until the appropriate legislative body takes action. Generally, recommendations require evaluation processes conducted as part of land management plans or NEPA activities and may be administrative recommendations. Yuba State Park, Mt. Nebo Wilderness and Fish Springs National Wildlife Refuge are examples of Congressional/Legislative designations in the County.

Administrative Recommendations - In some cases, land managers may make recommendations for special management areas that are evaluated as part of a public land management planning process or that may need action at higher administrative levels to become final. These areas generally include locations managed under special/different management prescriptions. They may include but are not limited to research natural areas, experimental forests, scenic highways, Areas of Critical Environmental Concern (ACECs), wilderness study areas (WSAs), national trails, Wild and Scenic River recommendations, backcountry/roadless/primitive areas and SRMAs.

Areas Identified by Land Manager - Authority regarding this category of special area

generally rests with the individual land manager. The land manager may identify, remove, or provide some special management for these areas through approval of the land management plan, land management plan amendments, land management plan revision, or a special management order. These areas may include lands with specific resource management such as lands with wilderness character, visual resource/scenery management lands, No Surface Disturbance lands, or lands under special protective order.

4.2 CONGRESSIONAL/LEGISLATIVE DESIGNATIONS

Approximately 171,000 acres or about 8 % of the County is congressionally or legislatively designated. The County includes approximately 110,000 acres of Forest Service land in three separate forests, Mt. Nebo Wilderness containing 27,000 acres, the 17,992 acre Fish Springs National Wildlife refuge, and Yuba State Park which contains 990 acres of legislatively designated lands within a 15,940 acre Special Recreation Management Area. No other congressionally or legislatively designated areas are known to exist in the County, excepting the Goshute Indian Reservation which is considered an independent tribal government. In many rural counties, lands now designated as federal Parks, Monuments, and Recreation Areas place an onerous burden on residents and tax payers of neighboring counties. Given the relatively limited amount of land under special designation, the County has not experienced negative impacts to the same level as some of Utah's more heavily impacted areas. However, the County has experienced some negative impacts and opposes additional designations without Commission concurrence.

4.2.1 NATIONAL PARK SERVICE UNITS

Current Setting

There are no National Parks, National Recreation Areas, National Monuments or other units under management of the National Park Service in the County.

Need for Management Change

There is no need for management change regarding park service designations in the County. No lands are deemed suitable for Park Service designations. All federal lands in the County should continue to be managed for multiple use/sustained yield activities.

Desired Future Conditions

Juab County Desires:

1. No federal lands in the County be designated for National Park Service management without the concurrence of and coordination with the Commission.
2. The onerous burdens on local governments associated with Park Service designations be eliminated.

Policies, Goals, Objectives, and Criteria

Finding: No lands in the County are suitable for designation as National Park Service Units.

Policy: The County opposes any National Park Service designation that is not created with the full concurrence of and full coordination with the Commission.

Finding: National Park Service Units place an onerous burden on local governments. Public services including but not limited to law enforcement, emergency medical services, fire protection, road maintenance, search & rescue, and solid waste collection/disposal need to be coordinated with the County, and appropriate reimbursement agreements must be executed.

4.2.2 FISH SPRINGS NATIONAL WILDLIFE REFUGE

Current Setting

Fish Springs National Wildlife Refuge is one of the over 550 refuges in the National Wildlife Refuge System - a network of lands set aside and managed by the U.S. Fish & Wildlife Service specifically for wildlife. Fish Springs NWR was established in 1959 using proceeds from the sale of Federal Duck Stamps to provide habitat for migratory bird management within the Pacific Flyway. Approximately 10,000 acres of its 17,992 total acres are saline marshes and wetlands. Refuge waters are supplied by spring flows that arise under artesian pressure and hydrothermal convection along fracture zones in the Great Basin Carbonate Rock and Alluvial Aquifer. Refuge measurements indicate the springs discharge approximately 22,000 – 27,000 acre-feet per year, most of which is recharged from areas outside the Fish Springs Flat.

Located on the southern extreme of the Great Salt Lake Desert, Fish Springs is believed to have been a place of essential importance in meeting the needs of humans and wildlife for as many as 10,000 years. The Refuge provides managed wetland habitats for a diversity of species, with priority given to a variety of migratory birds, including wading birds, shorebirds, and waterfowl, as well as to species at risk of becoming listed as federally endangered. Fish Springs and the area also provide a rich cultural history prior to Refuge establishment. The year round water supply at Fish Springs made it an important stopping point for the Pony Express, Central Overland Stage Route, and the Lincoln Highway. Historical markers can be found along the present day Pony Express Route and within the Refuge.

Fish Springs National Wildlife Refuge is surrounded on the east, west, and south by Bureau of Land Management holdings and on the north by the United States Army's Dugway Proving Ground. Springs flowing from the eastern base of the Fish Springs Range feed the marsh which is divided into nine impoundments. The remaining portion is comprised of 6,000 acres of mud and alkali flat and 2,000 acres of semi-desert upland. More than 280 species of birds have been seen at the refuge, with 61 species known to nest on the refuge. Two caves within the boundary of the refuge are part of a national archaeological district. In 1913, the nation's first transcontinental automobile road—Lincoln Highway—passed through the refuge to skirt the often impassable salt flats to the north. At the peak usage period for the highway, an estimated 5,000 cars passed each year, compared to less than 2,500 cars now. Segments of the Lincoln Highway are still visible today.

Need for Management Change

1. Activities need to be coordinated more closely between Refuge management and the County.
2. Refuge managers need to understand and recognize County policies and designations concerning County roads with the Refuge boundaries such as OHV designations on these roads.
3. Planning for the refuge needs to consider this RMP and must be coordinated with the County.
4. Communication between the County and the Refuge need to be enhanced.
5. Law enforcement activities need to be coordinated with the County Sheriff.

Desired Future Conditions

Juab County Desires:

1. The refuge recognize the County Sheriff as the chief law enforcement authority with the County and Coordinate closely with him.
2. Enforcement of laws regarding OHV and other similar activities must conform to the County's OHV designations and regulations.
3. Communication between the Refuge and the County are consistent, effective, and properly maintained.
4. Closer Coordination between the Refuge and the County.

Policies, Goals, Objectives, and Criteria

Policy: the County opposes changes in direction of, management of, or other significant changes in operation or management with Coordination with the County.

Finding: Fish Springs is a valuable national resource and provides protection and other resources used by migratory and other birds. However, communication between the Refuge and the County are lacking.

Policy: The County opposes any national wildlife refuge designation that is not created with the full concurrence of and full coordination with the Commission.

Finding: National wildlife refuges may place an onerous burden on local governments. Public services including but not limited to law enforcement, emergency medical services, fire protection, road maintenance, search & rescue, and solid waste collection/disposal need to be coordinated with the County, and appropriate reimbursement agreements must be executed.

4.2.3 FOREST SERVICE UNITS

Current Setting

Almost 110,000 acres or 5 % of the land in the County is under Department of Agriculture

management administered by the Manti-La Sal National Forest, Sanpete Ranger District, Fishlake National Forest, Fillmore Ranger District, and the National Forest Spanish Fork Ranger District. The County contains approximately 21,227 acres in the Fishlake National Forest, about 47,527 acres in the Uinta-Wasatch-Cache National Forest, and about 56,404 acres in the Manti-La Sal National Forest. The Mt. Nebo Wilderness is located east of Nephi in the Uinta-Wasatch-Cache Forest and is described in more detail below.

The Forest Management Act of 1897 provided management provisions and defined the purpose of the Forest Reserves (the precursor of National Forests) as forest protection, watershed protection and a source of timber supply for the nation. For approximately 20 years, the Forest Service has been moving away from the original mandate and has focused primarily on natural features, wildlife and non-motorized recreation. This has resulted in negative economic and social impacts to the residents of the County and increased burdens for public services. The Forest Service's inability to provide consistent timber sales has resulted in closures of regional sawmills, devastating bug infestations, loss of natural resource based industries, greater risk of intense wildfires, and associated detrimental social and economic effects.

At the present time, forests in the County are generally classified as roaded natural or semi-primitive non-motorized with most areas having been noticeably impacted by man. Few areas, such as the Mt. Nebo wilderness, qualify as primitive setting. Visitor use surveys conducted by the National Forest document more than 80 % of their visitors are engaged in motorized activities and a minimal percentage are using the forests primarily for primitive recreation.

Need for Management Change

1. Forest Service units need to revive opportunities for natural resource based industries, specifically including commercial timber harvesting, and mining.
2. The County land use plan has carefully considered Forest Service planning. Forest Service planning efforts need to be consistent to the maximum extent allowed by law with the County's General Management Plan and this RMP.
3. The existing network of roads and trails needs to be preserved and better utilized or expanded. Visitation is largely motorized. Route elimination or closure should be limited to only those routes causing significant resource damage and only after obtaining concurrence with the Commission. Viable routes needs to be developed to connect the various public lands throughout the region.
4. The Forest Service should return to its original emphasis of protecting its lands and water while providing reliable sources of sustainable timber.
5. Forest lands should be managed for long term sustainability of natural resource development. Multiple use concepts should be re-instated, and primitive or semi-primitive recreation opportunities should be focused in designated wilderness areas. Roadless, backcountry and other non-motorized recreation oriented activities should give deference to natural resource industries as opportunities develop.
6. The Forest Service needs to compensate The County commensurate with use of public services, such as landfills, solid waste collection, emergency medical services, search and rescue, law enforcement, etc. Visual Resource management, Recreation Opportunity

Spectrum analysis, OHV designations, Outstandingly Remarkable/Relevant-Important evaluation, Transportation Networks, wild & scenic rivers, unroaded/undeveloped /inventoried roadless areas, and other management tools/criteria need to be consistent, to the maximum extent allowed by law, with comparable components of the County General Management and this RMP Plans. Where findings, policies, criteria, protocols, and procedures have been used in development of the County Plan, no new processes should be used without Commission concurrence.

7. Livestock grazing needs to be recognized as an activity of cultural and historic significance. Lands need to be managed to enhance forage for livestock operations and wildlife. Vegetative treatments should be implemented to expand livestock grazing opportunities on forest service lands.
8. In as much as lands within research natural areas have been withdrawn from multiple use management, Forest Service units need to expand natural resource extraction opportunities, economic, scientific, and cultural opportunities and increase beneficial uses for residents and visitors of the County to the maximum extent possible in areas outside research natural areas.
9. Visual Resource management, Recreation Opportunity Spectrum analysis, OHV designations, Outstandingly Remarkable/Relevant-Important evaluation, transportation networks, and other management tools and criteria need to be consistent, to the maximum extent allowed by law, with comparable components of the Juab County General Plan. Where criteria, protocols, and procedures have been used in development of the County Plan, no new processes should be used without Commission concurrence.

Desired Condition

Juab County Desires:

1. To develop a good working relationship with the United States Forest Service represented by the Uinta, Manti-La Sal, and Fishlake National Forests. the County desires that this relationship maximize:
 - Consistency with the County's plan, programs and policies
 - Opportunities for meaningful involvement through cooperating agency status, and
 - Government to government coordination
2. Natural resource based industries, particularly the timber industry be revived. The Forest Service should expend efforts comparable to those expended in the special status species program at reviving the timber industry. This can be done by easing industry liability and enhancing opportunity for allowable harvest of timber. Reasonable mining can also be revived.
3. Those areas that are now managed for backcountry experiences, such as roadless areas, or for primitive recreation be re-evaluated and brought into compliance with the County's General Management Plan and ROS analysis.

4. Forest Service units return to an emphasis on development and harvesting of water and timber resources, and vegetative management for livestock and wildlife. Primitive and non-motorized recreational opportunities should be focused on federal lands that have been reserved for those purposes and that are abundant elsewhere in the region.
5. If lands are managed for recreational purposes, recreation be identified as the lowest viable use and that natural resource based production industries including timber, grazing, and mining be given higher priority. Livestock grazing, timber harvesting and energy development must be considered the most valuable uses of Forest Land and be given deference over non-motorized recreation.
6. The stewardship concept be expanded and considerable effort be expended to develop viable, emerging, natural resource based industries, including but not limited to renewable resources.
7. No additional units of the National Forest be managed as wilderness and that areas managed for non-motorized activities comply with the County General and this RMP, the County ROS or be approved by the Commission.
8. The Forest Service recognizes all valid and existing rights.
9. The National Forest Service to be more aggressive in harvesting bug infested timber.
10. The Forest Service make its lands available for solid waste collection facilities, fire stations, and other vital public services when significant private recreational facilities exist within or adjacent to the National Forest boundaries.
11. Where small parcels of difficult to manage land exists in Forest Service jurisdiction, efforts should be made to resolve conflicts and establish viable management options.
12. Solid waste management facilities be made available inside of National Forest Service units and that waste management be handled on a county wide basis with a single billing procedure.
13. The motorized travel management plan be consistent with the County Off Highway Vehicle (OHV) Ordinance. Before any roads, paths, or ways be designated for closure or limited to only administrative use, they be must be fully evaluated for valid or existing rights and adjudicated by a court of competent jurisdiction prior to implementation of any restrictive action.
14. No new wilderness or roadless areas be designated within the National Forest.
15. Any routes that have heretofore been designated as unclassified or unauthorized roads be considered for wildlife or other management purposes. Unclassified/Unauthorized roads must also be designated or recognized as part of any recreation opportunity spectrum in accordance with Forest Service criteria for primitive routes. Roads used for wildlife need to be managed in coordination with the grazing of livestock; and purposes/benefits should be distributed equally or in favor of livestock.
16. Management priorities in order of importance for the Forest be:

- 1) Commodity production,
- 2) Natural resource enhancement,
- 3) General multiple use management,
- 4) Recreation

17. Routes to accommodate all modes of travel need to be expanded on Forest Service lands.

18. Forest Service units work cooperatively with the County and other agencies in developing OHV and bike trail facilities to permit travel to and from neighboring counties.

Policies, Goals, Objectives, and Criteria

Goal: Revive opportunities and capabilities for a natural resource based industries within the forest.

Policy: It is the County's policy to support planning and implementation actions that are consistent with the County's General Management and this RMP Plans. It is also the County's policy to oppose planning and implementation actions that are inconsistent with these Plans.

Policy: The pre-existing network of roads and trails on Forest Service lands prior to the latest travel management plan needs to be preserved, better utilized, and/or expanded. The County opposes closure of roads or implementation of management restrictions, unless the benefits of such proposals outweigh the negative impacts to access and unless such actions are fully coordinated with and receive full concurrence of the Commission.

Policy: Detailed information will be required to document the benefits of reduced access.

Goal/Objective: Resolve road related conflicts on all routes that existed at the time of the last Forest Management Plan or that have been created since that time.

Objective: Assist the Forest Service in its original emphasis on protecting its lands and water while providing reliable sources of timber. Included in this objective are a) revival of traditional natural resource based industries, b) development of stewardship industries and c) resource management that will provide for long-term stability and enhancement of local communities.

Policy: The County will support recreation management scenarios that are consistent with the County's Land Use Management Policy and Recreation Opportunity Spectrum. The County opposes designation of wilderness, backcountry, or primitive/unroaded areas without Commission concurrence.

Policy: The County will be compensated for solid waste at the rate of 2 pounds per visitor use day for Forest Service lands in the County, unless it can be demonstrated that solid waste produced by forest visitors is collected and disposed of by some other forest managed program. Additionally, the County will develop a procedure for a single billing for each forest associated with solid waste collection and disposal.

Objective: Develop cooperative agreements and systems necessary to compensate the County commensurate with use of public services by the National Forest and forest visitors.

Policy: The County will support National Forest Service programs, which are consistent with the Resource Management Section of the County General Plan, the County's Recreation Opportunity Spectrum Analysis, Land Use Management Policy, Transportation System, Visual Resource Management Designations, and other planning tools adopted by the County. The County will oppose management actions and scenarios that are inconsistent with such planning tools.

Finding: The Transportation System in the Forest that existed prior to the latest travel management plan revision is the minimum necessary for attainment of original Forest Service management goals of forest/watershed protection, timber supply for the nation, and current goals of vegetative, hydrologic, and geologic management, wildlife and recreation. Considering the increasing motorized travel needs, particularly regarding OHVs and the large percentage visitors to the forests using motorized recreation, closure of any roads on the forest without County concurrence is a negative impact to the custom, culture, socioeconomics, and viability of the County and needs to be offset with other management actions that enhance motorized recreation opportunities.

Finding: Juab County finds:

- Land owners and users are jointly responsible for impacts to public services.
- National Forest Service Units are responsible for 2 lbs. of solid waste per visitor day use

4.2.4 STATE PARKS

Current Setting

Yuba State Park is part of the Yuba Reservoir Recreation Area, a complex of recreation sites surrounding Yuba Reservoir with the southern portion extending into Sanpete County. The recreation area includes the state park and the Land Management's BLM's Yuba Special Recreation Management Area (SRMA). The Division of Utah State Parks and Recreation operates and manages the state-owned park and, through a cooperative agreement, the BLM sites within the recreation area. State-owned land includes the state park and parcels owned by School and Institutional Trust Lands Administration. These lands account for 990 acres, or six percent, of the recreation management area with the BLM owning 9,747 (61 percent), and the rest is in private ownership.

Yuba State Park was created on February 15, 1964, when five local irrigation companies deeded 40 acres of land to the Division of State Parks and Recreation. The deed for this tract of lands restricted use for public recreation. Five years later, in 1969, the Division purchased 80 acres from the State Land Board for \$20 per acre, and these lands eventually became the Oasis area of Yuba State Park. In 1983, the BLM leased 445 acres to the Division for a period of 17 years on the southeast shore of the lake under the Recreation and Public Purpose Act. This site, cooperatively managed with the BLM, is known as Painted Rocks. The site has recently-renovated campgrounds, boat ramps, power and restrooms. Drinking water is available at the site from a well drilled jointly by the BLM and the Division.

The entire Yuba Special Recreation Management Area is currently managed under a Cooperative Management Agreement between the Division, the County and the BLM. This agreement was

signed in 1997 and is supplemented by an annual operating plan negotiated between the BLM and the Division.

Yuba State Park is popular for boating, OHV trails, water skiing, fishing, zip lining, sunbathing, camping and riding personal watercraft. The park also offers opportunities for hiking, biking, bird watching and has a 3D archery course. The Oasis campground is close to the Paiute OHV Trail, a trail of over 900 miles, located in south-central Utah. Major reconstruction was completed on Yuba Dam in 2003. During that period, habitat improvements to the reservoir were also completed for yellow perch. Over time, as perch populations increase, walleye populations, which in the past were a popular sport fish at Yuba, should return as well.

The recreation area has five campgrounds—Oasis, Painted Rocks, Eagle View and primitive camping on North and West beaches. Oasis is on state-owned land while the remaining sites are on BLM land. Oasis, located on the north end of the reservoir, is the most developed, with 28 sites for tent and recreational vehicle camping, showers, water, power and restrooms, boat launching facilities, zip lines, a 3D archery course, fish cleaning station and a sewage disposal station.

In 2009, Utah State Parks, in cooperation with stakeholders and other interests developed a resource management plan and provided recommendations based on nine primary vision elements to will guide future management of Yuba State Park and the associated SRMA:

1. Developing, maintaining and enhancing facilities that offer safe and suitable water and land-based recreational opportunities for visitors year-round.
2. Providing a stable, productive fishery that is an economic asset to the surrounding area.
3. Providing seamless management of state and BLM lands that preserves traditional recreational experiences, while being open to appropriate new activities.
4. Being a positive factor for local and state economic stability and tourism development.
5. Addressing water and land resource conflicts in ways that benefit all stakeholders.
6. Planning and cooperating with residents, civic groups, businesses and governmental agencies to accomplish the park's mission.
7. Protecting and preserving park resources and the surrounding environment by exercising good stewardship practices.
8. Offering interpretive and educational programs that provide visitors the opportunity to develop a deeper appreciation of Yuba's ecological and cultural resources.
9. Ensuring Yuba has adequate funding, staff, equipment and support.

The nine objectives encompassed the entire SRMA and were geared toward improving and expanding Yuba's recreational opportunities, protecting its resources and providing visitors with safe, enjoyable experiences. Achievement of these vision elements will require the continued support of users, legislative and community leaders, and the Division.

Need for Management Change

10. Primarily, stakeholders need to continue implementing the actions identified in the 2009 Yuba State Park Resource Management Plan and adapting management strategies to meet current and future needs.
11. Opportunities for use - as appropriate - of State Park facilities by visitors and residents including anglers, boaters, bicyclists, OHV users, and others need to be expanded.
12. State Parks need to continue supporting the County's recreational trail use and OHV educational programs.
13. State Parks need to compensate the County commensurate with use of public services.
14. State Parks need to cooperate in Law Enforcement outside of State Park Boundaries working under the direction of the County Sheriff.

Desired Condition

Juab County Desires State Parks:

15. Be enhanced, and used to augment recreational opportunities that exist in other portions of the County.
16. Expand recreational opportunities and access to facilities for all modes of travel, especially OHVs.
17. Work under the direction of the County Sheriff regarding law enforcement.
18. Continue supporting the County's recreational trail use and OHV educational program.
19. Increase beneficial impacts resulting from State Parks and reduce uncompensated services.

Policies, Goals, Objectives, and Criteria

Goal: Enhance and expand existing State Parks where necessary, and create new State Park amenities where there is a demonstrated need to do so.

Policy: It is the policy of the County to support the enhancement/expansion of State Parks and Recreation Areas consistent with land use policies and this RMP. This will include, but not be limited to the development of amenities, structures, access routes, and any other needful infrastructure associated with the expansion and/or development of the State Parks system.

Action/Implementation: Work closely with State Parks and Recreation, the Utah State Legislature, and the federal government to procure lands, funding, and other necessities to develop and maintain expansion of existing facilities as well as new opportunities.

Goal/Objective: Develop an agreement with State Parks to work under the direction of the County Sheriff regarding Law Enforcement.

Action/Implementation: Work closely with State Parks and Recreation along with the Federal Agencies to enhance, establish, promote, and implement an OHV Education and Law Enforcement Programs.

Policy: The County supports expansion of recreation, economic, scientific, and cultural opportunities, which increase beneficial use and enjoyment for residents and visitors to the State Parks.

Policy: The County supports Utah State Parks in expanding beneficial impacts and reducing negative impacts on County services.

Goal/Objective: Develop cooperative agreements and systems necessary to compensate the County commensurate with use of public services by State Parks and their visitors.

4.2.5 WILDERNESS

Current Setting

Wilderness, simply defined, is an undeveloped tract of land retaining its primeval character and influence without permanent improvements or human habitation. Wilderness areas are federally protected and managed to preserve their natural conditions, which generally appear to have been affected primarily by the forces of nature and the imprint of man's activity is substantially unnoticeable; have outstanding opportunities for solitude or primitive, unconfined recreation, be at a minimum 5,000 acres, where man is a visitor and does not remain. They may have supplemental values such as features of scientific interest, educational interest, scenic qualities, or historical value as well as ecological and geological values of interest.

The Wilderness Act of 1964 directed federal agencies to complete a three-step process to preserve lands that met certain specific criteria establishing them as "Wilderness". The steps included: a) an initial inventory to distinguish lands that clearly and obviously lacked wilderness character from lands that could possibly have wilderness values; b) an intense study phase to identify lands that were suitable for congressional designation; and c) a recommendation phase where federal agencies submitted recommendations to be acted upon by Congress. As of January, 2016, Congress has acted on only one of the recommendations affecting the County lands.

The Mount Nebo Wilderness was designated by Congress in 1984 and contains 27,008 acres. All of this wilderness area is located in the Spanish Fork Ranger District of the Uinta-Wasatch-Cache National Forest. The Mount Nebo Wilderness is named after the southernmost and tallest mountain in the Wasatch Range. Containing three summits of similar height, the Mount Nebo Wilderness reaches elevations approaching 12,000 feet. The wilderness is bordered by Interstate 15 and the Nebo Loop Scenic Byway. No visitation figures are readily available for this wilderness, and it appears greater interest exists for motorized recreation on Nebo Loop Scenic Byway and the more readily accessible Devils Kitchen Geologic Site located adjacent to the eastern boundary of the wilderness. Economic benefits to the wilderness area are considered minimal and would be offset by almost any search and rescue, emergency medical, or law enforcement event.

Need for Management Change

1. In as much as lands within designated wilderness have been withdrawn from natural resource extraction opportunities, land managers with jurisdiction over designated wilderness need to expand recreation, economic, scientific, and cultural opportunities and increase beneficial uses to the maximum extent allowable for residents and visitors of the County.
2. Safe all weather access, solid waste collection and disposal, human waste collection and disposal, search and rescue access, emergency medical access, and law enforcement access need to be provided for Wilderness areas. These features need to be secured in perpetuity for the Mount Nebo Wilderness.
3. Additional specific needs for land management entities managing designated wilderness may be included in sections describing Wilderness Study Areas.
4. Visual Resource management, Recreation Opportunity Spectrum analysis, OHV designations, Outstandingly Remarkable/Relevant-Important evaluation, Transportation Networks, and other management tools/criteria need to be consistent, to the maximum extent allowed by law, with comparable components of the Juab County General Plan. Where criteria, protocols, and procedures have been used in development of the County Plan, no new processes should be used without Commission concurrence.
5. Impacts from fires, bug infestations, noxious weeds and other conditions in the wilderness need to be confined to the wilderness area. Impacts which cannot be confined within the wilderness boundaries need to be Coordinated with the County, must conform to this RMP and must be mitigated.

Desired Condition

Juab County Desires:

1. Lands identified by the Commission as eligible and suitable for wilderness be so designated.
2. All other lands be released from management for wilderness character and be managed in accordance with the County's Land Use Plan.
3. The use and enjoyment of wilderness areas be expanded to the maximum extent allowed by law.
4. Federal agencies managing wilderness compensate the County for public services based on visitation and use.
5. Only those lands identified and approved by the County for wilderness, primitive, semi-primitive non-motorized types of recreation be designated for such use. Non WSA lands with wilderness characteristics need to be managed in accordance with the County's Land Use Plan.
6. All lands not designated as wilderness be developed to the maximum extent allowed by law for commodity production and socioeconomic growth.

Policies, Goals, Objectives, and Criteria

Policy: It is the policy of the County to support wilderness designation only for those areas that have been inventoried, assessed and identified by the Commission as having true wilderness character.

Goal: Work with State and Federal Legislators to gain support for and draft an acceptable wilderness bill that includes only those areas that have been recommended for inclusion into the National Wilderness System as approved by the Commission.

Policy: It is the policy of the County that all lands not recommended by the Commission for wilderness designation be released from further consideration.

Action: Assist State and Federal legislators in developing legislation that will release lands identified as not recommended for wilderness from further consideration and will return them to Multiple Use/Sustained Yield or Commodity Production Management.

Policy: It is the policy of the County to oppose any efforts by federal agencies to implement wilderness evaluations or inventories conducted after the following dates:

National Park Service	December 31, 1978
National Forest Service	December 31, 1984
Bureau of Land Management	December 31, 1991

Findings

In the 1970s the BLM completed studies that were part of a thorough and professional inventory process that ensured no valid basis for questioning wilderness inventory results would occur. The intent of the initial inventory was to carry forward, for additional study any lands that may have possibly contained wilderness characteristics. The inventory process was done in an objective, professional manner prior to the time when emotion, politics, and lobbying interests drove the wilderness debate.

BLM submitted their final recommendation in 1991. In the mid-1990s Secretary Babbitt initiated efforts to overturn the objective recommendations submitted previously by Department of the Interior agencies and initiated a process aimed at lowering wilderness recommendation standards. Court action to stop the process was filed. The courts found that the wilderness recommendation process had ended and that no additional recommendations could be forwarded to Congress. However, the courts also found that federal agencies could inventory resources on their lands including wilderness characteristics.

The wilderness re inventory effort directed by Secretary Babbitt was politically driven and was inconsistent with previous criteria. As a result, it lacked the objectivity, professionalism, and integrity of previous studies and original recommendations. Therefore, discussions regarding Wilderness/WSAs consider only recommendations contained in the Utah BLM Statewide Wilderness Final Environmental Impact Statement completed in 1991. Later inventories are found to be arbitrary, capricious, and lacking factual data supporting wilderness claims.

As part of the original study phase, the BLM identified 99,820 acres of land in the County

suitable for additional study as WSAs. The County Master Plan in 1984 proposed that 111,053 acres of BLM lands in three WSAs and 31,000 acres in one National Forest District be designated wilderness. That recommendation was reevaluated in 1995 and again in 2003. In both of the subsequent evaluations the County identified 100,311 acres as suitable for wilderness designation. Maps depicting Wilderness Recommendations by the National Park Service and Wilderness Study Areas recommended for Wilderness by the Bureau of Land Management were reviewed in developing the County's Recommendations for Wilderness.

The County finds that the majority of WSAs in the County lack wilderness characteristics qualifying then for congressional designation. And lands Findings are supported by the BLM's 1991 Statewide Wilderness Final EIS and are tabulated below. The County finds the initial inventory, intense study phase and the recommendation phase of the wilderness process competed prior to 1992 as the most accurate evaluation of wilderness values in the County. The County finds that only those areas identified as Rec Ia in the Juab County General Plan are suitable for wilderness designation. All other lands are not suitable for wilderness and should be managed in accordance with the County's Land Use Plan.

Wilderness Table 1 summarizes agency study areas (lands identified in the original inventory as possibly containing wilderness values) and Juab county's finding of land that qualify for wilderness designation and near wilderness management.

WILDERNESS TABLE 1

<i>Agency</i>	<i>Designated</i>	<i>Wilderness</i>
<u><i>Name</i></u>	<u><i>Wilderness</i></u>	<u><i>Recommendation</i></u>
Forest Service	27,008 ac.	0 ac.
BLM	0 ac.	72,010 ac.
Total acres	27,008 ac.	72,010 ac.

4.3 ADMINISTRATIVE RECOMMENDATIONS

Special administrative areas serve a variety of functions and can be limited to a specific scope and size or can be general and large in nature. Administrative designations can be made at various levels of public land management, but do not require congressional or legislative approval. The County has several administrative special designations. Each designation is accompanied by its own set of impacts on the County.

Administrative designations are defined as those areas where designation is the responsibility of local land management administrators. These areas are subject to valid existing rights and are used to protect special land values that could be degraded. They are approved on a case-by-case basis and are subject to review of potential impacts affecting the area through appropriate NEPA analysis.

Desired Condition

Juab County Desires:

1. Designations, which fail to meet this standard, should be postponed, relocated, mitigated, or denied.
2. Administrative designations be consistent with this RMP and, absent federal law to the contrary, be subject to local law, ordinance, or other special concurrence.

Policies, Goals, Objectives, and Criteria

Finding: Each special designation brings with it, its own benefits, problems, and impacts on County resources, residents, and visitors. The County finds:

Administrative designations that occur without Commission concurrence are inconsistent with the County's General Management Plan. In addition, such inconsistent designations have significant negative direct, indirect, and cumulative impacts on the County's custom, culture, and socioeconomic stability.

Objective: It is the objective of the County to fully participate and Coordinate with federal agencies on a government to government level in the development of any special designations, verifying there is a demonstrated need and that no other management scenarios can be utilized to accomplish desired outcome.

4.3.1 RESEARCH NATURAL/GEOLOGICAL/BOTANICAL AREAS

Forest Service units manage Research Natural/Geologic/Botanical Areas (RNAs) to protect natural ecosystems for the purposes of scientific study and education and for maintenance of biological diversity. These areas constitute a valuable ecological resource for scientists, managers and educators and represent a wide variety of habitats and ecosystems. RNAs are permanently protected and maintained in natural conditions, for the purposes of conserving biological diversity, conducting non-manipulative research and monitoring, and fostering education.

Research Natural Areas can also serve as baseline or reference areas. RNAs are generally managed to maintain the natural features for which they were established, and to maintain natural processes. Because of the emphasis on natural conditions, they are excellent areas for studying ecosystems or their component parts and for monitoring succession and other long-term ecological changes. Non-manipulative research and monitoring activities are often encouraged in RNAs and can be compared with manipulative studies conducted in other areas.

Current Setting

The Interior West Region listing of Research Natural areas lists only 3 designations in the Uinta-Wasatch-Cache Forest and does not contain any designations in the Spanish Fork Ranger District or the County. At the eastern boundary of the Mount Nebo Wilderness is an area known as Devil's Kitchen Geological Interest Area. Although not officially designated as a Research Natural Area, Devils Kitchen is located in the Uinta-Wasatch-Cache National Forest between Payson City and Nephi, Utah. Natural forces have caused the unique geology at the site to

weather into spires and hoodoos reminiscent of those at Bryce Canyon National Park. Loosely compacted conglomerate soil in the area has been easily eroded into hoodoos and spires. The site contains a hiking trail, an overlook and interpretive signing.

No other Research Natural Areas are known to exist in the County.

Need for Management Change

1. Management for Research Natural/Geological/Botanical Areas needs to be Coordinated with the Commission to explain goals, objectives, research potential, benefits, detriments, and management prescriptions.
2. No Research Natural/Geological/Botanical Areas should be developed without Commission concurrence.
3. Beneficial, Social, Educational, and Economic impacts need to be expanded for existing Research Natural/Geological/Botanical Areas.

Desired Condition

Research Natural Areas are defined as areas where there is an occurrence in a natural condition which exemplifies typical or unique vegetation and associated biotic, soil, geologic, and aquatic features. The idea is to set aside to preserve a representative sample of an ecological community primarily for scientific and educational purposes; commercial and general public use is not allowed. The County asserts that examples of most of these types of designations have already been captured within the boundaries of other congressional designations or that relict species are captured on mesa tops or other lands where terrain has not allowed impact by man.

Juab County Desires:

1. Before any designations are made, the proposal needs to be fully coordinated with the County and meet all criteria set forth in the This RMP Prior to Commission concurrence the Forest Service shall conduct a) an assessment of impacts be made that considers cumulative impacts of the actions; and b) a thorough inventory be made to consider whether a similar area is already being protected within the boundaries of another Federal or State agency.
2. Research Natural, Geological, Botanical Areas be consistent with this RMP and, absent federal law to the contrary, be subject to local law, ordinance, or other special consideration.
3. Research Natural, Geological, Botanical Areas be limited to only those areas that can provide significant scientific information and interpretive opportunities while preserving the custom and culture and enhancing the socioeconomics of the County.
4. No Research Natural, Geological, Botanical Areas be designated without the County's support and concurrence.
5. The benefit associated with the existing Research Natural, Geological, and Botanical Areas be enhanced and become a focal point for scientific and interpretive activities.

Policies, Goals, Objectives, and Criteria

Policy: It is the policy of the County to support only Research/Natural/Geological/Botanical areas where there is a clear and demonstrated need, consistent with the terms and conditions of the County General Management and this RMP.

Action/Implementation: In addition to full Coordination with federal agencies, the County will be a cooperating agency in proposals that consider Research/Natural/Geological/Botanical areas.

Finding: Juab County finds:

1. Existing Research Natural/Geological/Botanical areas have not reached their full potential for use and enjoyment by the public and should be more highly promoted.

4.3.2 SCENIC HIGHWAYS

Current Setting

Scenic Highways are generally established as a promotional effort to highlight a road with the aim of increasing tourism. Although scenic highways (including byways, backways, etc.) are generally designated by a state or federal agency, the roads are almost always under the management and maintenance authority of the Utah Department of Transportation (UDOT) or the local government. In recent years some agencies have incorrectly attempted to use the word “scenic” in these designations as justification for additional management prescriptions or to meet specific criteria required for other designations. A map depicting designated scenic highways in the County will be included in this plan as updates are completed.

The National Scenic Byways Program was established under the Intermodal Surface Transportation Efficiency Act of 1991, and reauthorized in 1998 under the Transportation Equity Act for the 21st Century. Under the program, the U.S. Secretary of Transportation recognizes certain roads as National Scenic Byways or All-American Roads based on their archaeological, cultural, historic, natural, recreational, and scenic qualities. All-American Roads must exhibit multiple intrinsic qualities. For a highway to be considered, it must provide passage for passenger cars year-round; it must be designated a State Scenic Byway; and it must have a current corridor management plan in place.

There is one national scenic byway in the County. The Nebo Loop National Scenic Byway is a winding drive between Payson and Nephi with a length of 32 to 44 miles depending on the termini. The scenic drive crosses the Uinta-Wasatch National Forest and provides views of Utah Valley, the Wasatch Mountains and Mount Nebo. Segments of the road separate Mount Nebo Wilderness and Devil’s Kitchen Geological area. Heavy snows close it in the winter.

Utah Scenic Byways are similar to National Scenic Byways. Utah State Scenic Byways are paved highways that have been designated by official State declaration for their scenic, historic, recreational, cultural, archeological, or natural qualities that are generally suitable for year-round travel by passenger cars. There are no Utah Scenic Byways within the County.

State Scenic Backways (see Administrative Code R296) are roads that may not be generally conducive to year-round travel by passenger cars and are intended to be showcases of Multiple Use. They have been designated by official State declaration for their scenic, historic, and

recreational qualities. Backways often require four-wheel drive, and road conditions can vary due to such factors as season and weather. Other than Nebo Loop described above, there are currently no Utah Scenic Backways within the County. the County contains a portion of the Chicken Creek Scenic Backway as it leaves Levan and continues east to Wells in Sanpete County.

Need for Management Change

1. The most dominant feature of a scenic highway is generally the highway itself. Scenic Highway designations should not be used to justify establishment of other special designations. Lands adjacent to specially designated highways need to be evaluated on their own merit, and management prescriptions need to be consistent with established criteria.
2. Scenic byway or backway designation should not place prescriptive management on the road or its adjacent lands without Commission concurrence.

Desired Condition

Juab County Desires:

1. Scenic Highway designations be consistent with this RMP, be consistent with local law, policies and objectives and have approval from the Commission before designation.
2. Prior to any designation, the managing agency determines the significance of designation on other resource values and that an assessment of cumulative impacts be made. These assessments must consider both the positive and negative impacts that can be expected from designation.
3. Designated Scenic Byways and Backways be used to attract visitors, as a showcase of multiple use concepts, and to enhance socioeconomic activity while preserving custom and culture.
4. Scenic Highways be used to attract additional visitors while providing greater access to public lands.
5. Use of Scenic Highways as a justification for restrictive land management prescriptions be discontinued.
6. Scenic Highways within the County be designed, constructed, and maintained to an all-weather, year around condition meeting AASHTO Standards.
7. Right-of-way issues associated with Scenic Highways be resolved and County rights-of-way be recognized.
8. The rights-of-way have sufficient width, scope, and NEPA analysis to permit the improvement to an all-weather condition meeting AASHTO Standards, including paving if the County desires.
9. No Scenic Highways be designated without County concurrence.

10. Federal and State agencies expand promotion of the Scenic Highways and increase opportunities for multiple use activities along the highways, in as much as, Federal guidelines indicate Scenic Highways be a showcase of multiple use activities.

Policies, Goals, Objectives, and Criteria

Objective: It is the objective of the County to promote Scenic Byways and Backways as showcases of multiple use and to oppose management of adjacent lands that is inconsistent with the Juab County General Plan.

Policy: It is the policy of the County to cooperate with other agencies to determine the demonstrated need and the minimum land necessary to accomplish desired outcomes.

Policy: It is the policy of the County to support only Scenic Highways that are consistent with local bodies of law, ordinances, plans, and are the subject of a cumulative environmental review which determines the impact to local and regional environments, social and economic impacts caused by designation.

Action/Implementation: Scenic Highway proposals will be reviewed by the Planning Commission and the Commission, and may be the subject of public hearings to determine the support of local communities that will be affected.

Findings: The County finds Scenic Highways are showcases of multiple use principles; and restrictive land management is inconsistent with Federal and State policy establishing Scenic Highways and is inconsistent with the County's General and this RMP.

4.3.3 AREAS OF CRITICAL ENVIRONMENTAL CONCERN

Current Setting

ACECs are specifically designated areas where special management attention is required to protect relevant and important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes from irreparable damage, or to protect life and safety from natural hazards. As of January 2016, there are no ACECs in the County. Until the last round of BLM resource management plans (circa 2003-2007), ACECs were proposed on limited areas of public lands where special management attention was needed to protect/preserve outstanding, sensitive resources that were subject to imminent, irreparable damage from a verifiable threat. Beginning with planning processes conducted after 2002, ACEC proposals incorrectly considered large parcels where purported resources were described in the most general terms and where resources could not be specifically mapped, identified or described. From that time forward efforts have been made to disguise wilderness proposals as ACECs contrary to settlement agreements reached between the State of Utah and the United States government and inconsistent with federal planning regulations and local land use plans.

The Federal Land Policy and Management Act (FLPMA) defines an ACEC as an area within the public lands where special management attention is required to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards.

Other than the broad relevance and importance criteria listed immediately below there are very little objective criteria for establishing an ACEC. To date, agency determinations have been speculative at best. To some degree they have been used as an attempt to create wilderness, where it did not exist, or to implement prescriptive management action on large blocks of public land.

ACEC Relevance Criteria*

Must meet one or more of the following:

1. A significant historical, cultural, or scenic value (including but not limited to rare or sensitive archeological resources and religious or cultural resources important to Native Americans).
2. A fish and wildlife resource (including but not limited to habitat for endangered, threatened, or sensitive species, or habitat essential for maintaining species diversity).
3. A natural process or system (including but not limited to endangered sensitive, or threatened plant species; rare, endemic, or relic plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features).
4. Natural hazards (including but not limited to areas of avalanche, dangerous flooding, landslides, unstable soils, seismic activity, or dangerous cliffs). A hazard caused by human action may meet the relevance criteria if it is determined through the RMP process that it has become part of a natural process.

ACEC Importance Criteria*

The value, resource, system, process or hazard described in the relevance section must have substantial significance and values to meet the importance criteria. This generally means that the value, resource, system, process, or hazard is characterized by one or more of the following:

1. Has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource.
2. Has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change.
3. Has been recognized as warranting protection in order to satisfy national priority concerns or to carry out the mandates of FLPMA.
4. Has qualities that warrant highlighting in order to satisfy public or management concerns about safety and public welfare.
5. Poses a significant threat the human life and safety or to property.

*43 CFR 1610.7-2. BLM Manual 1613 – Areas of Critical Environmental Concern

Need for Management Change

1. There are limited objectives or consistent Federal criteria for evaluating potential ACECs. Recently large parcels have been evaluated for values loosely defined as “scenic” or “cultural.” Relevant and important values need to be identifiable, articulated, mapped, and distinctly characterized. Values for which an ACEC is considered need to meet standards identified in the Juab County General Plan.
2. There must be a threat to relevant and important values, which is imminent, irreparable, and must not be able to be controlled by other available management tools.
3. ACECs need to be limited to the smallest area necessary to protect relevant and important values from irreparable harm. At least 95% of any land considered for ACEC eligibility needs to meet the relevant and important criteria for which the ACEC is being considered. Areas not meeting relevant and important criteria need to be eliminated from ACEC consideration.
4. The County has evaluated lands recommended for ACEC designation. No lands have been identified that meet ACEC criteria. In cooperation with federal agencies, the County needs to continue to evaluate ACEC proposals as they become available.
5. ACECs need to be identified and designated only to protect those suitable, relevant and important resources that are subject to imminent threat of irreparable harm and that cannot be protected by normal management actions. In addition there is a strong need to hold ACECs areas to a very high standard and limited in size/number to permit the maximum opportunity for the use and enjoyment of public lands and multiple use - sustained yield management.

Desired Condition

Juab County Desires:

1. Before any ACEC designation is made, the proposal meets the criteria set forth in this RMP, that an assessment of impacts be made that considers cumulative impacts across agency boundaries, and that a thorough inventory be made to consider whether an similar area is already being protected within the boundaries of another Federal or State agency in the region of comparison.
2. ACEC designations be consistent with this RMP and, absent federal law to the contrary, be subject to local law, ordinance, or other special consideration.
3. Cooperative agreements regarding public safety and County services be developed between the County and Federal agencies and that ACEC proposals, evaluation and designation be fully Coordinated with the County prior to ACEC designation.
4. ACECs be designated only on those lands containing Relevant - Important Values that are threatened by irreparable harm and that cannot be managed in some other way.
5. At least 95% of the land contained in any ACEC proposal meet criteria for Relevant - Important Values contained in the County's General Management and this RMP.

6. Areas characterized by broad descriptions such as “scenic”, “cultural”, and “geologic” that fail to have important - relevant values described with specificity be eliminated from ACEC consideration.
7. No ACEC be designated without County concurrence.
8. ACEC designation be a temporary measure until threats of irreparable harm can be mitigated or until the area is classified in such a way as to preserve Relevant - Important Values while providing opportunities for public use and enjoyment of the protected resource.
9. The BLM adopt the County criteria for Relevant - Important Values when considering lands for ACEC designation in the County.
10. The least restrictive visual resource management classification be used in proposed ACECs, not to be more restrictive than the VRM classification which was present at ACEC nomination.
11. Multiple use - sustained yield concepts and commodity production continue to the maximum extent allowed by law within ACECs.
12. Prescriptive management practices be assigned to ACECs only to the extent that it has been objectively and scientifically documented that the management prescription will have a significant positive impact on enhancing the Relevant - Important Values or eliminating the threat to irreparable harm.
13. Relevant - Important Values associated with ACECs be preserved while expanding the use, enjoyment, and benefit by the public.

Policies, Goals, Objectives, Findings, and Criteria

Objective: The County will be proactive in the management of Areas of Critical Environmental Concern.

Policy: The County will support only those ACEC designations that contain demonstrated relevant and important values as defined herein that are being threatened with irreparable damage.

Actions/Implementation:

1. Develop criteria for ACEC nomination, selection and designation.
2. Adopt an ordinance to identify, evaluate, designate, and protect those relevant values discussed above. (*See Appendix A2.10b*)
3. The County will be involved in the designation and management of these areas to the maximum extent allowed by law.
4. The County will only support those management actions that are consistent with the Juab County General Plan and the County’s other land use decisions and policies.

5. The County will be a Cooperating Agency or Joint Lead Agency in management actions that seek to identify and designate ACECs.
6. The County will periodically review and compare management actions with those described in the General Management Plan and existing Ordinances for consistency.

Criteria: Relevant - Important resources are rare, unique, exemplary, significant, and deserving of special designation, protection, and use. They are outstanding, remarkable, one of kind resources that deserve special management when compared to other similar resources in the region.

Historic/Cultural

Any activity, business, district, building, structure, object, resource, or site may qualify as a Relevant - Important Historic/Cultural Resource if it is located within the official boundaries of the County, is approved by the Commission, has been the subject of a Class 3 inventory or equivalent and at least 95% of the designated area meets one or more of the following minimum criteria:

1. The resource is of sufficient value that it is a site for public or private facilities that enhance interpretive opportunities for the public. Parks, museums, monuments, businesses, and other permanent designations qualify historic/cultural resources for this criterion. Examples within the region of comparison include but are not limited to: Anasazi State Park, Pipe Springs National Monument, Fremont Indian State Park, CEU Museum, American West Heritage Center, This is the Place State Park, Emery County Museum, Edge of the Cedars State Park, etc.
2. The resource is of sufficient value that it requires paid or volunteer staff to assist with interpretation and/or protection of the resource. The presence of on-site guides, hosts, rangers, guards, specialists, or other similar staff for a minimum of 500 hours per year qualifies cultural resources for this criterion. Examples within the region of comparison include but are not limited to: Defiance House, Mormon Handcart Sites, Sand Island, Grand Gulch, Pine Lake Campground, etc.
3. The resource is of sufficient value that it is the subject of guided or self-guided tours promoted by land management agencies or private businesses. Resources that receive a minimum average visitation of 200 visits per month qualify for this criterion. Examples within the region of comparison include but are not limited to: San Juan River Site Tours, Cedar Mesa, Kane Gulch, Cowboy Cave, etc.
4. The resource is of sufficient renown that its location and nature are well known and recognizable throughout the inter mountain region. Resources that have been the subject of not less than 10 statewide mass media feature articles or programs may qualify for this criterion. Examples within the region of comparison include but are not limited to: Mormon Tabernacle, Range Creek, Nine Mile Canyon, Mormon Handcart Sites, Hole in the Rock, etc.
5. The resource value has been demonstrated to the Commission in a public hearing, and the Relevant - Important nature has been documented by a preponderance of the evidence as determined by the Commission.

Scenic

Scenic Resources may qualify as Relevant-Important if they can be graphically described with identifiable limits and meet all of the following criteria:

1. It is located within the official boundaries of the county.
2. It is designated as Class A Scenery or equivalent.
3. It has a Scenic Quality Rating greater than 28 or equivalent.
4. It has a land form rating of 5 or equivalent.
5. It has a vegetation rating of 5 or equivalent.
6. It has a color rating of 5 or equivalent.
7. It has a scarcity rating of 5 or greater.
8. It is renown throughout the state.
9. It is the primary destination for more than 2400 visitors per year as verified by actual visitor counts.
10. All of the land proposed for designation meets all of the criteria

If the scenery does not meet the requirements outlined above, it may qualify for designation if it can be graphically described with identifiable limits and at least 95% of the area meets one or more of the following requirements:

1. It is a National Monument and has a Scenic Quality Rating greater than 28 or equivalent.
2. It is part of a congressionally designated area and:
 - A. Has a minimum Scenic Quality Rating 30, and
 - B. Is the destination of more than 6000 visitors per year as verified by actual visitor counts?
3. It is a legislatively designated area by the State of Utah and
 - A. Has a minimum Scenic Quality Rating of 28 or equivalent, and
 - B. The governor of the State of Utah has requested its inclusion on the County Register of Relevant-Important Cultural Resources.

Fish and Wildlife Values

Relevant - Important fish and wildlife values are those populations which are rare, special or regionally significant. Although, it may include special status species, special status species designation, in and of itself, does not meet the outstandingly remarkable/ relevant - important threshold. The minimum criteria is as follows:

1. It is on the threatened or endangered species list and is the only population of the species in the region of comparison.
2. It is identified by the Commission as an outstandingly remarkable/ relevant - important fish and wildlife value.
3. It is on the threatened/endangered species list and comprises at least 80% of the known individuals for the species within the region of comparison.
4. It is of significant public interest evidenced by at least 2000 visitors per year to the specified area with the primary purpose of enjoying the value, as confirmed by documented field surveys.

Natural System or Processes

Natural systems and processes are those conditions that are produced primarily by nature without the intent, influence or impacts of man. Given man's dominant influence over the planet and his significant role in the harmony between man and the environment, there are very few systems or processes that have not been influenced, at least in part, by man. Relevant - Important values are those systems and processes which are rare, special and significant within the region of comparison. The presence of vegetation that has been introduced or influenced by man, roads, paths, ways and trails, non-native plants, altered fire regimes, vegetation inconsistent with ecologic site conditions, livestock grazing, introduced or reintroduced wildlife, cultural/archeologic/ethnographic resources, accelerated erosion, water diversions, climate change, and alterations to air and water that have occurred since the Paleolithic age are strong indications an area does not qualify for relevant – important classification. Systems and process that are relatively uninfluenced by man (i.e. volcanic eruptions, earthquakes, tidal activity, etc.) exemplify natural conditions. Threats associated with these values would have to be new and imminent to meet ACEC criteria established in law. To qualify for ACEC consideration in the County Natural Systems and Processes shall meet all of the following requirements:

1. The Natural System or Process must be endemic to the County, and its intrinsic value must be regionally recognized. Regional recognition will be evaluated on a case by case basis.
2. There must be quantifiable evidence that the threat to the Natural Process or System is of a serious nature with irreversible consequences without the protections afforded by an ACEC.
3. 95% of the land considered for ACEC designation must be free from man's influence for a period of not less than 200 years as documented by scientific proof.
4. Vegetation, wildlife, fire regimes, hydrology, and other conditions on at least 95% of the land considered for ACEC designation shall have been intact for a period of not less than 200 years as confirmed by scientific analysis.
5. The entire area considered for ACEC designation shall be free from human influenced climate change.

6. The entire area considered for ACEC designation shall be free from air quality that deviates from background levels by more than 10% at least 330 days per year.
7. For areas smaller than 160 acres, the Commission can waive criteria listed above. For areas equal to or larger than 160 acres, the Commission can waive criteria listed above after public hearing.

Hazards

Natural hazards include but may not be limited to areas of avalanche, dangerous flooding, landslides, unstable soils, seismic activity, or dangerous cliffs. A hazard caused by human action may also meet the relevance criteria if it is determined through government to government Coordination that it has become part of a natural process. Natural hazards threaten human life and are widely varied in how and where they might occur. Natural hazards in this context are much more than steep or rocky landscape features that exist in remote locations. Hazards meeting relevance/importance standards must demonstrate imminent danger as evidenced by history of accidents or the clear and obvious potential for harm. Identified hazards must occupy at least 95% of the land being considered for ACEC designation. In order to be considered for ACEC designation, natural hazards must receive the concurrence of the County Sheriff and the Commission and must meet at least one of the following criteria:

1. The Natural Hazard is of significant size and scope that local resources cannot mitigate it sufficiently, completely or in a timely manner.
2. The Natural Hazard cannot be mitigated through other measures (signage, fencing, education, etc.) or efforts of the federal land management agency, county and/or state.
3. The Natural Hazard has a history of serious accidents within defined boundaries and occupies the smallest area necessary to protect the public.
4. The proposed area is limited geographically to the specific area where a change in land management policy would be highly likely to significantly improve the safety and welfare of those potentially affected.
5. The proposed area is a popular destination within the region of comparison with a history of significant accidents to visitors who may be unaware of the potential danger. Steep cliffs used by rock climbers and other features sought out by experienced enthusiasts are not suitable for ACEC designation and should be managed under other scenarios.
6. There is a preponderance of evidence presented to the Commission and County Sheriff that a significant, verifiable threat to human life, health and/or safety exists and ACEC designation would provide the best protection and mitigate the problem.

Additional Resources

Additional resources proposed for ACEC designation do not qualify as Relevant - Important unless they are so designated in a public action by the Commission.

Finding

The Federal Land Policy and Management Act (FLPMA) defines an ACEC as an area on public lands where special management attention is required to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards.

Other than broad statements in the law, there are very little objective criteria for establishing ACECs. To date, agency determinations have been speculative at best. To some degree recent ACEC evaluations have been used as an attempt to create wilderness where it does not exist, or to implement prescriptive management actions on large blocks of public land.

The County finds that ACECs need to be identified and designated only to protect suitable, relevant and important resources. In addition there is a strong need to hold these areas to a very high standard and limited in size and number to permit the maximum opportunity for multiple use, sustained yield, development, and for the use and enjoyment of the public at large.

The County is surrounded by counties that contain National Parks, National Monuments, National Recreation areas, and numerous natural wonders. The County finds that the most relevant/important scenic, cultural, and recreation lands are already protected.

Finding

Juab County also finds:

1. Large blocks of land described with general values (cultural, geologic, scenic, etc.) do not qualify for ACEC consideration. Only those values that are specific, articulable, and identifiable with specificity shall be considered for ACEC consideration.
2. Consistent BLM criteria for evaluating relevant important values associated with ACEC consideration does not exist. The County has developed criteria for relevant important evaluation and finds that it is the most accurate and, best criteria available when considering the custom, culture, socioeconomic base, and land designations in the County.
3. Agencies that have not included the County in all aspects of the ACEC consideration process (public notice, scoping, comment evaluation, criteria development, relevant important value evaluation, boundary determination, etc.) have failed to include the County as a cooperating agency at the earliest possible date, have failed to Coordinate, have been inconsistent with this RMP and other County land management plans, and have not complied with federal law.
4. There are two ACECs within the County as of January 2016. These are both now included in a Wilderness Study Area (WSA). Designation of ACECs contrary to criteria established in the County's General Plan and this RMP or without the concurrence of the Commission is inconsistent with the County's plan and violates Federal and State law.

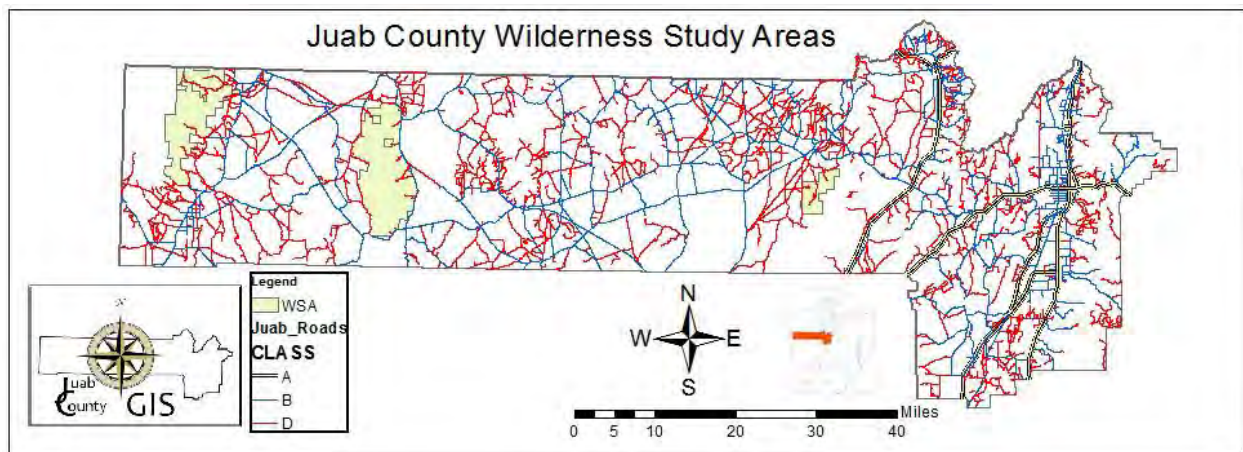
4.3.4 WILDERNESS STUDY AREAS

Current Setting

WSAs are those lands identified in the initial phase of the wilderness process as possibly having wilderness values. WSAs were the subject of an intense study phase, which resulted in agency recommendations for areas deemed as suitable segments to be considered by Congress for wilderness. In 1984 the Congress acted on Forest Service recommendations in Utah, but action on National Park Service and BLM lands has not been taken. WSAs are technically limited to BLM lands. However, interim management prescriptions for BLM and Park Service lands are very similar, if not identical, so they will both be discussed under the heading of WSAs.

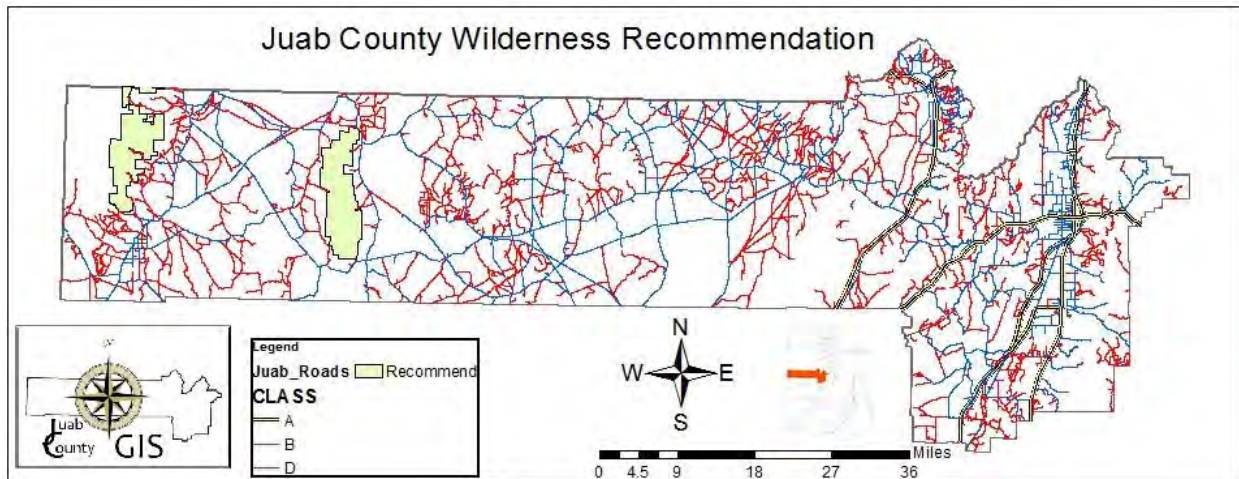
In the 1970s and 1980s the National Park Service and BLM completed studies that were a subsequent phase of a thorough and professional inventory process that ensured no valid basis for questioning wilderness inventory results. The intent of the initial inventory was to carry forward for additional study any lands that may have possibly contained wilderness characteristics. The inventory process was done in an objective professional manner prior to the time when emotion, politics, and lobbying interests drove the wilderness process. BLM submitted their final recommendation in 1991. In the mid-1990s Secretary Babbitt initiated efforts to re-evaluate the objective recommendations submitted previously by Department of the Interior agencies and initiated a process to expand wilderness recommendations.

After release of the Re-inventory proposals the County began an intensive ground examination of all of the areas in the report. Hundreds of man hours were spend visiting all of the areas and identifying and documenting areas of human disturbance and use. None of the areas were found to be suitable for Wilderness consideration. Those findings are included in the proposals contained in this RMP.



Map 4.3.1

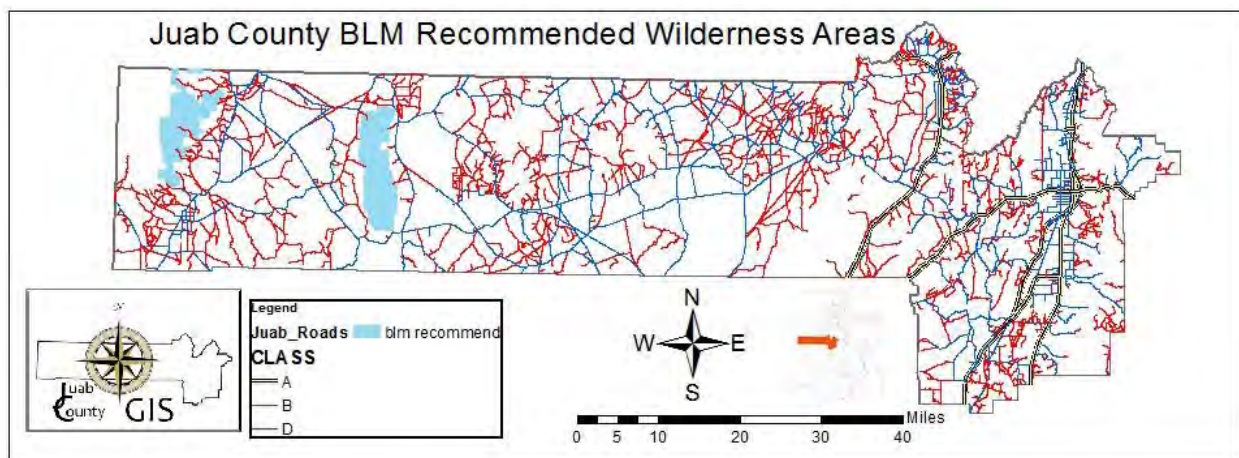
Court action to stop the process was initiated. The courts found that the wilderness recommendation process had ended and that no additional recommendations could be forwarded to Congress. However, the courts also found that federal agencies could inventory resources on their lands, including wilderness characteristics. The 1990s effort directed by Secretary Babbitt was politically driven and motivated by special interests. As a result it lacked the objectivity, professionalism, and integrity of previous studies and original recommendations.



Map 4.3.2

As part of the original study phase, the BLM identified 99,820 acres of land in the County suitable for additional study as WSAs. The County Master Plan in 1984 proposed that 111,053 acres of BLM lands in three WSAs and 31,000 acres in one National Forest District be designated wilderness. That recommendation was reevaluated in 1995 and again in 2003. In both of the subsequent evaluations the County identified 100,311 acres as suitable for wilderness designation. Maps depicting Wilderness Recommendations by the Wilderness Study Areas recommended for Wilderness by the Bureau of Land Management were reviewed in developing the County's Recommendations for Wilderness.

In 2007 the Commission undertook a review of wilderness recommendations by BLM and concurred with federal findings that no lands in the County are suitable for Wilderness Study Areas and all lands in the County should be released from further consideration.



Map 4.3.3

Need for Management Change

1. Wilderness Study Areas were the subject of a lengthy intense effort directed by the Wilderness Act of 1964. The *Utah Statewide Wilderness Final Environmental Impact Statement* identified BLM lands and portions of WSAs that did not have

wilderness characteristics. Those lands identified as lacking wilderness characteristics need to be released from prescriptive management and returned to multiple use management.

2. The intense study phase identified numerous manmade intrusions, roads, ways, and other features on BLM lands that were incompatible with wilderness character. Other features, of a similar nature, were missed all together. All roads, ways, and man-made features (including features that were not properly inventoried, vegetative changes, introduced/reintroduced species, etc.) which existed at the time of the final EIS, need to be shown on maps, resource inventories and in land use management plans until Congress resolves the wilderness issue.
3. The County holds numerous rights of way over non-federal lands inside federal boundaries. Access to these rights is assured through the “Cotter Decision”. Access to State Trust lands, County rights of way, and other non-federal rights in areas considered for wilderness protection need to be clearly identified, evaluated and, to the maximum extent allowed by law, resolved as part of any land use planning process which could affect valid and/or existing rights.
4. The *Utah Statewide Wilderness Final Environmental Impact Statement* identified numerous roads and ways in and outside WSAs. Roads and ways that are identified in areas that lack outstanding wilderness characteristics need to be maintained. Issues associated with roads and ways in areas that contain outstanding wilderness characteristics need to be resolved. The County and land managers need to initiate a process to identify, evaluate, and resolve road, way, and related issues through Government to Government Coordination.
5. Roads and ways inside and outside WSAs need to be managed as “limited” or “open” until agreement between land management entities and the County regarding their ultimate use is reached. When mutual agreement is reached to close a route, the County needs to complete the abandonment process in accordance with State Law.
6. The County has identified portions of WSAs recommended for wilderness that it believes qualify for wilderness designation. The identified lands need to be designated as wilderness, and other lands need to be released from consideration and returned to management as directed by agency regulation and the County Land Use Plan.
7. Safe all weather access, solid waste collection and disposal, human waste collection and disposal, search and rescue access, emergency medical access, and law enforcement access need to be provided for all WSAs in counties adjacent to the County.

Desired Condition

Juab County Desires:

1. WSAs and recommended wilderness identified by the County as being suitable for wilderness designation be so designated.

2. All WSAs recommended Wilderness Areas that have not been found to be suitable for wilderness designation by the County be released from prescriptive management practices associated with wilderness protection.
3. WSAs that were not identified as part of the Paramount or Recommended Proposals in the 1991 Final Wilderness EIS be released from prescriptive management and returned to use in accordance with the County's General Plan and this RMP.
4. Federal Planning documents and revisions include maps, data, classifications, depicting VRM classes, oil and gas management, rights-of-way, intrusions on the land, impacts by man, roads and ways, and other features that disqualified lands in the County from wilderness consideration at the time the Final Wilderness Environmental Impact Statement was published in 1991.
5. The VRM classifications, oil and gas management, roads and ways analysis, and other inventories that disqualified lands from wilderness consideration at the time of the initial inventory be considered the base line/no action condition for the BLM planning process.
6. All roads, paths, and ways that exist in the County be included in planning documents, NEPA analysis, and maps for all federal projects.
7. The BLM include the County assertions for roads and ways in any planning document or NEPA analysis that considers lands recommended for wilderness management.
8. Federal agencies and the County Coordinate efforts to eliminate the creation of unauthorized routes.
9. Access to County rights-of-way over and across non Federal lands inside WSAs be addressed in the first/earliest planning document or NEPA analysis considering such lands.
10. Documented and identified rights-of-way, access to the County's rights-of-way, and access over WSA lands to the County's rights-of-way held within WSAs be resolved. The access needs to be of sufficient scope and width to permit transportation facilities meeting AASHTO Standards.
11. Range improvements and other man-made intrusion on lands in the County be maintained in the condition that existed at the time the improvement was constructed, the wilderness inventory was conducted, the date of the adoption of the Final Wilderness EIS, or that currently exists, whichever is the highest condition.
12. Federal agencies adopt the County's Land Use Management Classifications and all lands in the County be released from interim management protection or future wilderness consideration.
13. Federal agencies reduce the burden on County services and resources associated with law enforcement, search and rescue, emergency medical services, solid waste collection and disposal, and human waste collection and disposal associated with WSAs and lands recommended for wilderness.

14. Federal agencies improve access and parking, provide registration boxes, provide dumpsters for solid waste collection and disposal, and provide sanitary facilities for human waste collection and disposal at known access points and trailheads adjacent to WSAs and lands with wilderness character.
15. Federal agencies Coordinate with the County in developing best management practices and response procedures to eliminate unauthorized motorized access in WSAs and lands recommended for wilderness designation.
16. No additional lands be managed for wilderness character until the lands the County has identified as suitable for wilderness designation have been so designated and the lands identified by the BLM as not being suitable under the Recommended or Paramount Proposal be released from prescriptive management, inasmuch as the BLM is currently managing for wilderness character lands that it has determined are not suitable/recommended as wilderness

Policies, Goals, Objectives, and Criteria

Criteria: Vegetative Manipulations - The simple fact that an area has undergone vegetative manipulations sometime in the past does not automatically disqualify a unit or a portion of the unit from a wilderness consideration. Whether the manipulation is substantially noticeable and the imprint of man depends on its age, extent, condition, etc. In order to provide consistency with federal planning regulations and with the County's General Plan and this RMP the following criteria are established. The criteria provides a consistent, objective, rational evaluation standard.

Age - Vegetative manipulations where the last manipulation, treatment, or impact by man is older than 100 years may be considered substantially unnoticeable, if no stumps, scars, piles, or any other impacts are present.

Extent - Any vegetative manipulation that has an extent less than 5000 square feet may be considered substantially unnoticeable.

Condition - A vegetative manipulation is considered substantially unnoticeable if after evaluating three random samples not less than 200 square feet inside the manipulated area and three random samples not less than 200 square feet outside the manipulated area on the following criteria are met:

1. If percentage composition for each species inside the manipulated area is within 3% of the composition for each type of species outside of the manipulated area;
2. If estimated age for 97% of the individuals in each species in the manipulated area are within two years of age for the individuals of the same species in the non-manipulated area;
3. If the species populations within the manipulated area are not less than 95% nor more than 105% of the species populations in the non-manipulated area;
4. If the species size in the manipulated area is not less than 95% or more than 105% of the height of the species in the non-manipulated area;

5. If the manipulated area is free from exotic or non-native species that are absent in the non-manipulated area; and
6. If the boundary between the manipulated area and the non-manipulated area is indistinguishable.

Objective: Complete the wilderness process in the County.

Policy: It is the County's policy to support Wilderness designation only for lands the County has deemed eligible and suitable for Wilderness under Public Law 88-577. The County's determination of lands in the County that are eligible for WSA consideration is consistent with BLM determinations made in the intense study phase of the wilderness evaluation process and is deemed valid.

It is the County's policy to oppose Wilderness designation and/or management for wilderness characteristics on lands the County and BLM have deemed are not eligible and suitable for Wilderness designation under Public Law 88-577.

It is the County's policy, to the maximum extent allowed by law, that all lands deemed not eligible and suitable for Wilderness designation and/or management for wilderness characteristics be released from prescriptive management and returned to commodity production or multiple use/sustained yield management.

It is the policy of the County to work cooperatively with land managing agencies, the State of Utah, and Utah's Congressional Delegation to have the lands identified through the County reviewed, studied, and recommended for wilderness.

Actions/Implementation:

1. Work with the public lands the County to gain support for releasing those lands identified by federal agencies in the intense inventory phase and by the Commission as obviously and clearly lacking wilderness characteristics.
2. Work with State Legislature to gain State support for adopting the plans approved by the Commission associated with wilderness, WSAs and wilderness characteristics.
3. Work with and assist the Utah Congressional Delegation in drafting a wilderness bill that will support the county position for wilderness designation, including release language for lands not recommended for Wilderness designation.

Policy: The County agrees that some public lands need specific restrictions, but it asserts those restrictions should be the minimum necessary and should be developed in a spirit of cooperation, assuring the greatest use and enjoyment by the public and local residents.

Specific concerns include:

1. Additional strain on County emergency services and law enforcement caused by restrictive federal land use decisions.
2. Unreasonable restrictions on existing and potential consumptive uses of public lands.
3. Unreasonable wildlife and wildlife habitat management schemes.

4. Unsubstantiated campsite, human and animal numbers as well as use regulations and restrictions.
5. Access, including but not limited to, road maintenance, maintenance of livestock and wildlife facilities, diversions, monitoring facilities and water resource, and other capital improvements.
6. Undue restriction on lands classified as crucial/critical habitat.

It is the position of the County that these concerns be specifically and adequately identified and addressed for any lands considered for future WSA status.

Criteria: Lands may be deemed eligible and suitable for future Wilderness Study Areas only if they meet all of the following criteria, as applicable:

1. Identified as Wilderness Study Area by the Bureau of Land Management in 1981;
2. Identified as primitive on the County's Recreation Opportunity Spectrum or qualify as primitive in Forest Service/BLM Recreation Opportunity Spectrum criteria;
3. Identified in Bureau of Land Management's Wilderness Final EIS as having outstanding wilderness characteristics in the Recommended or Paramount Wilderness Proposal; and
4. Approved by the Commission after appropriate public hearing.

Policy: Areas identified in the Utah BLM Statewide Wilderness Final Environmental Impact Statement as failing to meet outstanding solitude or primitive recreation standards shall not be managed for primitive or semi primitive non-motorized recreation.

Findings: As part of the Wilderness Act of 1964, an inventory was required of all federal lands for wilderness values. In compliance with administrative directives, the BLM considered any land greater than 5000 acres in size that was roadless and could possibly contain wilderness values for additional study. These areas became known as Wilderness Study Areas. The standard was held to a minimum, so no potential wilderness was missed.

Juab County finds:

1. The BLM determined WSAs in the County failed to meet standards for outstanding solitude or outstanding opportunities for primitive recreation required for wilderness designation.
2. The process identified all lands that could possibly contain wilderness values meeting criteria of the Wilderness Act and that all other lands evaluated by the BLM in the County clearly and obviously lacked wilderness character.
3. Some of the County's WSAs failed to meet minimum criteria necessary to be designated as wilderness.
4. The County accepts data presented in the BLM's Statewide Wilderness Final Environmental Impact Statement as the most detailed analysis of wilderness characteristics. The County believes that 67,210 acres is the maximum amount of BLM land in the County that is suitable for wilderness.

5. The BLM failed to compare its resources with similar resources in other areas of the region when considering outstanding opportunities for solitude and primitive recreation in studies conducted after 1990.
6. Only those lands classified as Recreation Ia - Wilderness in the County's Land Use Management Policy are suitable for wilderness/WSA designation. The County has 67,210 acres classified as Recreation Ia in its land use management plan.
7. Those lands classified as Recreation Ib- near Wilderness may be suitable for some level of preservation if properly Coordinated with the Commission. All other lands in the County are not suitable for protection of WSA values.
8. The BLM failed to identify all motorized roads, paths, ways, and trails within its lands.
9. Unless the BLM can specifically document construction occurred after WSA designation, the BLM conducted business in accordance with its responsibility to protect WSAs and existing roads, paths, ways, and trails were missed in its original inventory.
10. Intrusions in WSAs that were missed in BLM's original study can be verified through historical data, including maps, personal knowledge, affidavits, surveys, deductive reasoning, and other verifiable means
11. The BLM conducted business in accordance with its responsibility in the wilderness intense inventory phase and the determination that lands clearly and obviously lacked wilderness characteristics was valid.

Wilderness Table 2 summarizes BLM's recommendations for Wilderness Study Areas and the County's finding of lands that qualify for wilderness and near wilderness management.

Wilderness Table 3 summarizes BLM's Analysis of Wilderness Study Areas published in *Utah BLM Statewide Wilderness Final Environmental Impact Statement, 1990*.

WSA #	Wilderness Study Area Name	WSA Acreage	Paramount Wilderness *	BLM Proposal	County Proposal Rec Ia
UT-050-020	Deep Creek Mountains South	32,089 ac	-0-	20,778	33,957 ac
UT-050-127	Fish Springs	54,329 ac	-0-	33,140	33,252
UT-050-186	Rockwell	9,342 ac	-0-	-0-	-0-

**The Paramount Wilderness Alternative is defined by BLM as those areas the agency judged to be of the highest wilderness quality.*

*****Individual WSA acreages were developed from BLM GIS data. Total values were obtained from Table 6 in Chapter 1 of the Utah BLM Statewide Wilderness Final EIS. Discrepancies will be resolved as part of Wilderness Legislation.***

4.3.5 NATIONAL TRAILS

Current Setting

In 1968, Congress passed the National Trails System Act. The intent of the Act was to provide for outdoor recreation needs and promote the enjoyment, appreciation, and preservation of open-air outdoor areas and historic resources, and to encourage public access and citizen involvement.

A 2006 Memorandum of Understanding (MOU) directs federal agencies to cooperate in the management of National Public Trails by giving direction to enhance visitor satisfaction, coordinate trail wide administration and site specific management, protect the resource, promote cultural values, foster cooperative relationships, share technical expertise, and to fund lands and resources associated with the National Trails. The MOU recognizes the critical role of local government in National Trail administration and management.

National Historic Trails are extended trails which follow as closely as practicable to the original route or routes of travel of national historical significance. Designated for the public use and enjoyment along with identification and protection of the historic route and its historic remnants and artifacts, the Pony Express National Historic Trail was a cross-country route used by young men on horseback to carry the nation's priority mail from Missouri to California from 1860 to 1861. The horse-and-rider system was the United States' most direct and practical means of east-west communication for a short time before completion of the telegraph, delivering mail in the unprecedented time of only ten days. Now 150 years later, visitors can closely follow the historic route of the Pony Express across Utah's west desert in Juab county on a maintained National Backcountry Byway, stopping at various station sites and interpretive displays along the way. There is also a public campground located at the Simpson Springs open year-round, and the route also goes through the Fish Springs National Wildlife Refuge.

The Regional Forester also recommends National Recreation Trails. No National Recreation Trails currently exist in the County.

Need for Management Change

1. Consideration of any potential National Trails needs to be fully coordinated with the Commission and needs to be consistent with the County's Transportation Plan and OHV ordinance.
2. National Trails need to be managed to maximize use and enjoyment of designated trails and to develop opportunities to improve socioeconomic impacts to the County.
3. Safe all weather access, solid waste collection and disposal, human waste collection and disposal, search and rescue access, emergency medical access, and law enforcement access need to be provided for all National Trails.

Desired Condition

Juab County Desires:

1. National Trails only be designated in situations that will enhance interpretation, use, and enjoyment of the County's resources.
2. National Trails only be designated with the concurrence and support of the Commission.
3. National Trails utilize existing routes and corridors or parallel such corridors, to the extent practical.
4. Prior to designation, National Trails are analyzed for impacts to County services and such impacts are mitigated.
5. Any National Trail designated in the County enhances socioeconomic vitality, community viability, custom and culture in the County.

Policies, Goals, Objectives, and Criteria

Policy: It is the policy of the County to consider each proposed trail on a case by case basis, considering other values that might be affected by designation - subject to goals and objectives of the County General Management and this RMP and demonstrated need including Outstanding Remarkable Values emphasized by designation.

Objective: Coordinate and work cooperatively with State and Federal agencies to consider and designate suitable trails for the National Trails System.

Action/Implementation: The Commission will review proposed actions. A consistency review will be done for purposes of compliance with local law, ordinances, planning, etc. Agencies making the proposal may solicit the support of local community leaders. Upon completion of the review process by the Public Lands Steering Committee and community leaders, the Commission will either accept the recommendation(s) of the group, modify them, and/or reject them.

4.3.6 WILD AND SCENIC RIVERS

Current Setting

The Wild and Scenic Rivers Act of 1968 created the National Wild and Scenic Rivers System. The purpose of the Act was to preserve in their free-flowing conditions, certain selected rivers of the nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values. The Act directed federal agencies to consider the potential for National Wild, Scenic, and Recreational River areas in all planning for the use and development of water and related land resources. Rivers, or sections of rivers, so designated are preserved in their free-flowing condition and are not dammed or otherwise impeded. National wild and scenic designation essentially vetoes the licensing of new hydropower projects on or directly affecting the river. It also provides very strong protection against bank and channel alterations that adversely affect river values, protects riverfront public lands from oil, gas and mineral development, and creates a federal reserved water right to protect flow-dependent values.

The Wild and Scenic River Act identifies three classes of rivers:

1. Wild Rivers: Rivers or river sections free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.
2. Scenic Rivers: Rivers or river sections free of impoundments with watersheds still largely primitive and shorelines largely undeveloped but accessible in place by roads.
3. Recreational Rivers: Rivers or river sections readily accessible by road or railroad that may have some development along their shorelines and that may have undergone some impoundment or diversion in the past.

The Wild and Scenic River (WSR) review process was incorporated into planning efforts for the Uinta-Wasatch-Cache National Forest in their planning efforts circa 2007. The results of the eligibility study were published as a Record of Decision/Forest Plan Amendment, 2008. No eligible streams were found in the County. No record of wild and scenic river evaluations for the BLM Fillmore Field Office is known to exist.

Forest Service units in Utah conducted suitability analysis for eligible segments within their boundaries and identified what they consider eligible segments. The decisions were followed by recommendations to congress for inclusion in the Wild & Scenic Rivers program.

Evaluation efforts by the various BLM field offices prior to 2007 adopted criteria from other BLM agencies which failed to consider County policies related to Outstanding Remarkable Values and other river segments in the region of comparison.

The Wild and Scenic River evaluation developed as part of this County planning process, considers criteria applicable to the County and is consistent with federal law across Forest Service and BLM boundaries.

Forest Service The Record of Decision and Forest Plan Amendment, Wild and Scenic River Suitability Study for National Forest System Lands in Utah signed by the Uinta-Wasatch-Cache National Forest supervisor in November, 2008 does not recommend any river segments in the County as suitable for inclusion in the WSR system. The recommendation that no river segments are eligible for inclusion in the system is supported by the Commission and is consistent with the County's plan, policy and program.

Bureau of Land Management

Wild and scenic river suitability evaluations for BLM lands in the County have not been conducted as of January, 2016. No rivers in the County have been evaluated or found eligible or suitable for WSR recommendation or designation. All eligible rivers in the County are currently managed for other purposes in accordance with the authorized land use plans.

Need for Management Change

There are no congressionally designated Wild and Scenic River segments in the County as of January 2016.

1. The County needs to be involved in all phases of study for Wild and Scenic River designations including eligibility, suitability, and recommendation phases. This includes cooperating agency status prior to any public scoping and Government to Government Coordination throughout the entire process. All federally recommended segments in the County must be consistent with this RMP and have Commission concurrence prior to final recommendations going forward or final disposal.
2. No objective or consistent federal criteria exists for evaluating outstandingly remarkable values associated with potential wild and scenic river recommendations. Recent proposals have been evaluated for values loosely defined as “scenic,” “historic,” “fish,” or “cultural.” Outstandingly remarkable values need to be identifiable, articulated, mapped, and distinctly characterized. Outstandingly remarkable values for which a wild and scenic river proposal is considered must meet criteria identified below.
3. There are no specific requirements concerning minimum flow for an eligible/suitable wild and scenic river segment. However, flows need to be capable of creating or sustaining outstandingly remarkable resources and sufficient to make the river a worthy addition to the National System. Minimum flow requirements need to meet the criteria identified below. In addition, analysis needs to be conducted to determine if proposed outstandingly remarkable values are dependent on or influenced by existing flows.
4. Wild and scenic river recommendations need to be limited to the smallest area necessary to protect outstandingly remarkable values. At least 95% of any land considered for wild and scenic river eligibility needs to meet outstandingly remarkable criteria for which the wild and scenic river is being considered. Areas not meeting outstandingly remarkable criteria need to be eliminated from wild and scenic river consideration.
5. Criteria for evaluating eligibility and suitability for wild and scenic rivers needs to be consistent to the maximum extent allowed by law with criteria established in the Juab County General Plan. It also needs to be consistent across federal agency and political jurisdiction boundaries.
6. The County needs to be specifically sought out to recommend candidate segments for inclusion in the Wild and Scenic River System.
7. Review of federal plans and recommendations reveals significant inconsistencies between agency determinations regarding eligibility of potential Wild and Scenic River segments and requirements of the Wild & Scenic Rivers Act. Review of various federal documents indicates reports are replete with subjective conclusions, biased misconceptions, limited comparative analysis, and undocumented judgements. Evaluation efforts by some BLM field offices adopted criteria from other BLM agencies which failed to consider individual counties’ comparative relationship to Outstanding Remarkable Values with other river segments in the region of comparison. WSR reviews, analysis and recommendations need to focus on objective verifiable criteria and on

properly assessing the regional and national value of local streams. Agencies need to recognize above average values for a particular ranger district or field office do not qualify a stream segment for outstanding/remarkable classification when considering regional values.

8. Agencies should not consider silence in County plans or lack of vehement opposition as support for WSR designation. Unless expressly supported by the Commission , federal agencies should deem silence on a proposal as a lack of support.
9. Lack of commitment from public volunteers and partnerships and lack of stewardship commitments for management and/or funding of WSR river segments needs to be viewed as opposition rather than support.

Desired Condition

Juab County Desires:

1. Only river segments listed in the County Wild and Scenic River Recommendation be included in the Wild, Scenic, and Recreational Rivers System subject to concurrence from affected agencies. At present, no river segments have been proposed by the County.
2. Evaluation of rivers in the County for Wild and Scenic River Recommendation completed the process within the County and no further consideration or attempt by federal agencies be made to designate other stream channels without County participation and concurrence. Any attempts to do so will be considered a violation of local law.
3. The effects of eliminating flow on Outstandingly Remarkable Values be analyzed as part of the eligibility criteria. If it is found that reduction or elimination of flow has no impact on the Outstandingly Remarkable value, then the value be declared not river related and dropped from consideration under the Wild and Scenic Rivers Act.
4. River segments be consistent with the National expectations for criteria for Wild and Scenic Rivers. Segments, which have a minimum volume of 40 cubic foot per second with a minimum flow area of 80 square feet or a minimum width of 40 feet for at least 360 days per calendar year, are found to meet National expectations.
5. Wild and Scenic River Recommendations comply with the County's criteria for Outstandingly Remarkable Values.

Policies, Goals, Objectives, and Criteria

Policy: It is the County's policy that, once undertaken, all Wild and Scenic River evaluations be completed through the Suitability stage. It is the County's policy to support only those river segments which meet the quality standards set forth by the County in a public supported process.

Objective: Develop reasonable criteria for evaluating suitability and eligibility standards from which all recommendations for inclusion as a wild, scenic or recreational rivers will be based.

Actions/Implementation:

1. Work with the Planning Commission to gain support for designating only those rivers approved for Wild & Scenic River designation by the local Commission
2. Work with State Representatives to gain State support for only those rivers approved by the Commission s for Wild & Scenic River designation.
3. Work with and assist the Utah Congressional Delegation in drafting a Wild & Scenic River bill that will support the County positions for Wild & Scenic River designation, including release language for all other rivers not recommended for Wild & Scenic River designation.

Criteria: The following criteria will be applied to evaluate eligibility and suitability for proposed Wild & Scenic Rivers in the County.

Outstandingly Remarkable Resources are rare, unique, exemplary, significant, and deserving of special designation, protection, and use. They are outstanding, remarkable, one of kind resources that deserve special management when compared to other similar resources in the region.

Historic/Cultural -

Any activity, business, district, building, structure, object, historical/cultural resource, or site may qualify as an Outstandingly Remarkable Cultural Resource if it is located within the official boundaries of the County, has been the subject of a Class 3 cultural resource inventory, is approved by the Commission, and at least 95% of the designated reach meets one or more of the following minimum criteria:

1. The resource is of sufficient value that it is a site for public or private facilities that enhance interpretive opportunities for the public. Parks, museums, monuments, businesses, and other permanent designations qualify cultural resources for this criterion.
2. The resource is of sufficient value that it requires paid or volunteer staff to assist with interpretation and/or protection of the resource. The presence of on-site guides, hosts, rangers, guards, specialists, or other similar staff for a minimum of 500 hours per year qualifies cultural resources for this criterion.
3. The resource is of sufficient value that it is the subject of guided or self-guided tours promoted by land management agencies or private businesses. Resources that receive a minimum average visitation of 200 visits per month qualify for this criterion.
4. The resource is of sufficient renown that its location and nature are well known and recognizable throughout the inter-mountain region. Resources that have been the subject of not less than 10 multi-state mass media feature articles or programs qualify for this criterion.
5. The resource value has been demonstrated to the Commission in a public hearing and the Outstandingly Remarkable nature has been documented by a preponderance of the evidence as determined by the Commission.

Scenic-

Scenic Resources may qualify as Outstandingly Remarkable if they can be graphically described with identifiable limits and meets all of the following criteria:

1. It is located within the official boundaries of the County.
2. It is designated as Class A Scenery or equivalent.
3. It has a Scenic Quality Rating greater than 28 or equivalent.
4. It has a land form rating of 5 or equivalent.
5. It has a vegetation rating of 5 or equivalent.
6. It has a color rating of 5 or equivalent.
7. It has a scarcity rating of 5 or greater.
8. It is renown throughout the state
9. It is the primary destination for more than 2400 visitors per year as verified by actual visitor counts.
10. All of the land proposed for designation meets all of the criteria

If the scenery does not meet the requirements outlined above, it may qualify for designation if it can be graphically described with identifiable limits and at least 95% of the area meets one of the following requirements:

1. It is located in a National Park, National Recreation Area, or National Monument administered by the National Park Service and has a Scenic Quality Rating greater than 28 or equivalent.
2. It is part of a congressionally designated area and:
 - A. Has a minimum Scenic Quality Rating 30, and
 - B. Is the destination of more than 6000 visitors per year as verified by actual visitor counts.
3. It is a legislatively designated area by the state of Utah and
 - A. Has a minimum Scenic Quality Rating of 28 or equivalent, and
 - B. The governor of the State of Utah has requested its inclusion on the County Register of Outstandingly Remarkable Cultural Resources.

Fish and Wildlife Values -

Outstandingly remarkable fish and wildlife values are those populations which are rare, special or regionally significant. Although, it may include special status species, special status species designation, in and of itself, does not meet the outstandingly remarkable/ relevant - important

threshold. The minimum criteria is as follows:

It is on the threatened or endangered species list and is the only population of the species in the region of comparison. It is identified by the Commission has an outstandingly remarkable/relevant - important fish and wildlife value.

It is on the threatened/endangered species list and comprises at least 80% of the known individuals for the species within the region of comparison.

It is of significant public interest evidenced by at least 2000 visitors per year to the specified area with the primary purpose of enjoying the value, as confirmed by documented by field surveys.

Natural System or Processes

Natural systems and processes are those conditions that are produced primarily by nature without the intent, influence or impacts of man. Given man's dominant influence over the planet and his significant role in the harmony between man and the environment, there are very few systems or processes that have not been influenced, at least in part, by man. Outstandingly Remarkable Values are those systems and processes which are rare, special and significant within the region of comparison. The presence of vegetation that has been introduced or influenced by man, roads, paths, ways and trails, non-native plants, altered fire regimes, vegetation inconsistent with ecologic site conditions, livestock grazing, introduced or reintroduced wildlife, modern cultural/archeologic/ethnographic resources, accelerated erosion, water diversions, climate change, and alterations to air and water that have occurred since the Paleolithic age are strong indications an area does not qualify for Outstandingly Remarkable classification. Systems and process that are relatively uninfluenced by man (i.e. volcanic eruptions, earthquakes, tidal activity, etc.) exemplify natural conditions. To qualify for Wild & Scenic River consideration in the County Natural Systems and Processes shall meet all of the following requirements:

1. The Natural System or Process must be endemic to the county, and its intrinsic value must be regionally recognized. Regional recognition will be evaluated on a case by case basis.
2. There must be quantifiable evidence that there is a serious threat to the Natural Process or System with irreversible consequences unless the protections afforded by WSR designation are imposed.
3. 95% of the land considered for WSR designation must be free from man's influence for a period of not less than 200 years as documented by scientific proof.
4. Vegetation, wildlife, fire regimes, hydrology, and other conditions on at least 95% of the land considered for WSR designation shall have been intact for a period of not less than 200 years as confirmed by scientific analysis.
5. The entire area considered for WSR designation shall be free from human influenced climate change.
6. The entire area considered for WSR designation shall be free from air quality that deviates from background levels by more than 10% at least 330 days per year.

7. For areas smaller than 160 acres, the Commission can waive criteria listed above. For areas equal to or larger than 160 acres, the Commission can waive criteria listed above after public hearing.

Hazards

Natural hazards include but may not be limited to areas of avalanche, rapids, dangerous flooding, landslides, unstable soils, seismic activity, or dangerous cliffs. A hazard caused by human action may also meet the Outstandingly Remarkable criteria if it is determined through Government to Government Coordination that it has become part of a natural process. Natural hazards threaten human life and are widely varied in how and where they might occur. Natural hazards in this context are much more than flashy, fast flowing or deep waters that exist in remote locations. Hazards meeting relevance/importance standards must demonstrate imminent danger as evidenced by history of accidents or the clear and obvious potential for harm. Identified hazards must occupy at least 95% of the land being considered for WSR designation. In order to be considered for WSR designation, natural hazards must receive the concurrence of the County Sheriff and the Commission and must meet at least one of the following criteria:

1. The Natural Hazard is of significant size and scope that local resources cannot mitigate it sufficiently, completely or in a timely manner.
2. The Natural Hazard cannot be mitigated through other measures (signage, fencing, education, etc.) or efforts of the federal land management agency, county and/or state.
3. The Natural Hazard has a history of serious accidents within defined boundaries and occupies the smallest area necessary to protect the public.
4. The proposed area is limited geographically to the specific area where a change in land management policy would be highly likely to significantly improve the safety and welfare of those potentially affected.
5. The proposed area is a popular destination within the region of comparison with a history of significant accidents to visitors who may be unaware of the potential danger. Streams prone to flash floods, rapids, deep water, and other common features sought out by experienced enthusiasts are not suitable for WSR designation and should be managed under other scenarios.
6. There is a preponderance of evidence presented to the Commission and County Sheriff that a significant, verifiable threat to human life, health and/or safety exists and WSR designation would provide the best protection and mitigate the problem.

Additional Resources

Additional Resources that are considered as the basis of a Wild and Scenic River designation do not qualify for Outstandingly Remarkable status unless they meet one of the criteria above or are designated in a public action by the Commission.

Findings: The National Wild and Scenic Rivers System was created by the Wild and Scenic Rivers Act of 1968. The purpose of the Act was to preserve in their free-flowing conditions, certain selected rivers of the nation which with their immediate environments, possess

outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values. The Act directed federal agencies to consider the potential for National Wild, Scenic and Recreational River areas in all planning for the use and development of water and related land resources.

The County's Wild and Scenic River (WSR) review process incorporated planning efforts of the Uinta-Wasatch-Cache National Forest. No analysis for the BLM Fillmore Field Office was available. The County's process revealed the federal agencies applied substandard, inconsistent criteria. The Uinta-Wasatch-Cache National Forest eventually concluded no river segments in the County were suitable for T designation. BLM has made no recommendations as of January, 2016.

The County finds, through review of Management Plans and cooperation with federal agencies in that inconsistencies exist between federal agencies regarding application of the Wild and Scenic River Act. The County also finds only the County's evaluation provides consistent criteria across agency boundaries. Appropriate Wild and Scenic River recommendations have been developed as part of the County planning process which consider criteria applicable to the County, comparative analysis that considers other rivers in the region of comparison and that are consistent across all jurisdictional boundaries.

Finding: Juab County also finds:

1. Criteria and processes used for evaluating Wild and Scenic Rivers are inconsistent between Federal agencies and between agency offices.
2. Application of Outstandingly Remarkable Criteria by the Forest Service and BLM fails to appropriately consider resources in the County and in the broader region of comparison. The County opposes the notion that every agency office has resources that are Outstandingly Remarkable.
3. Federal agencies have failed to maintain an appropriate standard for evaluating Outstandingly Remarkable Values.
4. The most consistent, reliable criteria is the criteria established in this RMP.

Finding: The Commission has found no river segments eligible and suitable under the Wild and Scenic Rivers Act for WSR recommendation or designation. However, the County will review additional proposals for designation under the Wild and Scenic Rivers Act in accordance with criteria listed above as they are brought forth in federal planning processes.

Finding: Federal agencies' recommendations for including river segments in the WSR system without express support and commitment of the Commission is a failure to cooperate and Coordinate with local government and creates conflict and controversy between the federal and local government.

4.3.7 BACKCOUNTRY/ROADLESS/PRIMITIVE AREAS

Current Setting

Backcountry/Roadless/Primitive areas are specifically identified land where multiple use and sustained yield management has resulted in semi primitive conditions. Properly designated, these

areas are established to temporarily promote semi primitive non-motorized recreation opportunities, generally in areas where more outstanding opportunities are not present. In the County, land managers have used this designation to incorrectly apply wilderness protections to lands that would otherwise be suited for multiple use. In an effort to lower the qualifying standard for these areas, the Forest Service developed protocols classifying areas containing primitive, unclassified, and or unauthorized roads as roadless. As a result, the Forest Service considers management alternatives that classify semi-primitive motorized lands suitable for multiple use management as roadless or backcountry.

In some areas of southcentral Utah, BLM also mischaracterizes lands as primitive. Expanding wilderness protection to the lands that did not qualify, some BLM plans ignore valid existing rights, unilaterally close roads, ignore recreation opportunity spectrum principles, and reduce use and enjoyment of recreational resources by classifying semi primitive motorized or roaded natural lands as primitive. In the County Backcountry/Roadless/Primitive designations compound problems created by withdrawing federal lands from multiple use management. When compared with regional congressional designations associated with the national parks, national recreation areas and national monuments, wilderness and with lands currently being managed as wilderness study areas, Backcountry/Roadless/Primitive areas lack the quality and need for protection under the law.

Need for Management Change

1. Federal agencies in cooperation with the County need to identify lands set aside for primitive or semi-primitive non-motorized recreation. Lands set aside for those purposes far outweigh the need and are detrimental to other uses of public lands.
2. The County needs to establish standards for designating primitive, and semi-primitive non-motorized recreation areas consistent with recreational needs and desired land uses to provide consistency across agency boundaries.
3. To the maximum extent allowed by law, federal land managers need to revise the amount of land set aside for Backcountry/Roadless/Primitive Areas to be compatible with visitor use patterns in the County and to be consistent with the Juab County General Plan.
4. Prescriptions for lands managed for non-motorized recreation needs to allow for ongoing development of natural resource industries to the maximum extent allowed by law and as opportunities arise.
5. Backcountry/Roadless/Primitive Areas need to be compatible with the County Recreation Opportunity Spectrum Analysis.

Desired Condition

Juab County Desires Backcountry/Roadless/Primitive or similar areas:

1. Be designated in conformance with the County's General Plan and only in areas with ROS Classification of Semi Primitive Non-Motorized or Primitive or in areas that received specific written concurrence from the Commission.

2. Be considered multiple use lands with the backcountry recreation component being given preference only until such time that other multiple use functions (natural resource extraction, development, commodity production, etc.) are proposed or become viable.
3. Not be designated until detailed objective analysis has been conducted demonstrating the designation will enhance socioeconomic vitality, community viability, custom, and culture of County.
4. Be accompanied by cooperative agreements identifying management and fees associated with public services including law enforcement, search and rescue, emergency medical, solid waste collection and disposal, and human waste collection and disposal.
5. Be managed in such a way that socioeconomic vitality, community viability, custom, culture, and benefit use and enjoyment of the facility by local residents are realized.
6. Give deference to other multiple use proposals, when such proposals are considered.
7. Areas containing unclassified/unauthorized roads, ways, and trails, primitive roads, primitive campsites, vegetation treatments, logging, mining, oil and gas exploration are not eligible or suitable for Backcountry/Roadless/Primitive or similar designations.
8. In terms of future management, it is important that these areas be administered so the management techniques described above will in fact protect the desired quality of the experience. In conjunction with the County, design roads and trails that will provide consistent high quality access routes for motorized access to and from the areas of concern and trails that will be used to move the public into and out of the areas. At the trailheads high quality restroom facilities need to be developed and primitive restrooms need to be strategically placed in the backcountry so as not to degrade the primitive base.

Policies, Goals, Objectives, and Criteria

Goal: It is the goal of the County to work cooperatively with Federal land management agencies regarding designation of Backcountry/Roadless/Primitive Areas.

Policy: It is the policy of the County to manage only those areas identified in the Juab County General Plan as Rec Ib – Near Wilderness as Backcountry/Roadless/Primitive.

Action/Implementation: The County, through use of the definitions of federal agencies, developed an inventory of lands by using a Recreation Opportunity Spectrum Analysis. Areas have been identified on this RMP. The map, upon approval of the plan by the Commission, constitutes the implementation of the goals and policies and is the official decision of the County.

Policy: Any deviation from the plan, without approval of the Commission is inconsistent with the local planning process.

Policy: Backcountry/Roadless/Primitive Areas shall be designated and managed, to the maximum extent allowed by law, in accordance with Desired Conditions stated above.

Findings: Backcountry/Roadless/Primitive areas have been initiated by Federal agencies in an effort to provide wilderness protection for lands that are not protected by the Wilderness Act and/or do not meet the criteria for wilderness.

Juab County finds:

1. Backcountry/Roadless/Primitive areas are only suitable for lands identified in the County ROS Analysis as primitive or semi primitive non-motorized.
2. Federal agencies are currently managing more land than the amount of private land in the County) for wilderness values after having determined that the lands are not recommended/suitable for wilderness.
3. Considering regional lands currently protected by Congressional Designation (Parks, Recreation Areas, Monuments, Wilderness Areas) any lands managed in the County for wilderness purposes greatly exceed the need and lands suitable for such management.
4. Backcountry/Roadless/Primitive areas create an undue burden on the custom, culture and socioeconomic base of the County and are generally not consistent with the policies, goals, and objectives of the County.
5. There may be a few limited instances where Backcountry/Roadless/Primitive areas are appropriate and that such areas are acceptable only in conformance with the Juab County General Plan and with the concurrence of the Commission.
6. Characteristics described below for Backcountry/Roadless/Primitive areas are necessary to protect the custom, culture, socioeconomic vitality, and community viability of the County. Areas which do not comply with said characteristics are inconsistent with the Juab General Management Plan and jeopardize the custom, culture, socioeconomic vitality, and community viability of the County.
7. Backcountry/Roadless/Primitive area's emphasis on recreation is a temporary measure.
8. Backcountry/Roadless/Primitive values have been studied, reviewed and considered for inclusion into this RMP. Appropriate areas were considered and evaluated through the Recreation Opportunity Spectrum process.
9. The BLM has determined many of the WSAs in the region fail to have suitable characteristics to recommend them for wilderness. Yet, the BLM is continuing to manage the lands for primitive recreation. In addition, National Parks, National Recreation Area, and National Monument lands are being managed for primitive recreation as a result of enabling legislation and/or prescriptive management plans. Visitor use surveys and primitive recreation data in the region indicate a very small number and percentage of visitors participate primarily in primitive recreation. The same visitor use surveys and recreation data indicate that vast majority of visitors are primarily involved in some type of motorized recreation. In addition, OHV registration continues to rise rapidly; and federal and state agencies readily admit that OHV recreation is burgeoning. As a result, the County finds there is no need for Backcountry/Roadless/Primitive areas except in concurrence with the County Land Use Management Plan. the County finds that designation of Backcountry/ Roadless/Primitive areas without County concurrence is arbitrary and capricious, creates a significant negative impact on the County's custom, culture, socioeconomic base and community viability and is inconsistent with the Juab County General Plan.

The following criteria describe the required setting and prescriptions for Backcountry/Roadless/Primitive areas. Unless approved by the Commission, other settings and/or prescriptions are inconsistent with the Juab County General Plan:

Backcountry/Roadless/Primitive Areas are specifically identified lands where multiple use and sustained yield management have resulted in semi-primitive conditions. These areas will be managed to promote the perceived natural appearance while continuing to fulfill multiple use and sustained yield mandates for grazing, timber harvesting, mining, drilling, and water development in accordance with the Juab County General Plan.

Backcountry/Roadless/Primitive Areas shall contain and are identified to promote specific or unique recreational, ecological, or natural values. Although these may not be the only areas of the County that provide such opportunities, each Backcountry/Roadless/Primitive Areas shall offer a specific opportunity, characteristic, destination attraction, or have otherwise developed a sense of place. Backcountry/Roadless/Primitive Areas will also be used to help prioritize future investment for a variety of multiple use activities. Motorized access and trail development will generally be limited to those facilities that currently exist and additional facilities that are needed to enhance the area's experience or support multiple use/sustained yield principles. Upon completion of recreational and/or multiple use projects, human development may be removed or mitigated unless it is necessary to support recreational and multiple use activities for that specific area. Generally, Backcountry/Roadless/Primitive Areas are restricted to meet the physical, managerial and social settings consistent with the County's Recreation Opportunity Spectrum analysis for primitive or semi-primitive areas. However, specific locations within Backcountry/Roadless/Primitive Areas may be managed for other recreation opportunity spectrum designations or for other resource values. Prior to implementation each Backcountry/Roadless/Primitive Area will have a project plan to include desired conditions, existing conditions, targeted activities, acceptable activities, standards and costs for public services, detailed inventories of all classified, unclassified, authorized, and unauthorized roads, paths, ways, and trails, a delineation of potential valid and existing rights, a detailed analysis covering the entire County of direct, indirect, and cumulative impacts to custom, culture, and socioeconomic base as a result of the proposed area, and the County concurrence.

4.3.8 SPECIAL RECREATION MANAGEMENT AREAS (SRMAs)

Current Setting

Special Recreation Management Areas are areas officially designated by statute or Secretarial order including components of the National Trails System; the National Wild and Scenic Rivers System; the National Wilderness System; National Conservation Areas, National Monuments, or National Recreation Areas; an area covered by joint agreement between the BLM and a State Government; or any area where the authorized officer determines that the resources require special management and control measures for their protection and a permit system for individual use would achieve management objectives. Special areas can be designated by the State Director through Supplementary rules.

Special Recreation Management Areas (SRMAs) are areas where special management or intensive recreation management is needed. Recreation activity plans are required, and greater managerial investment in facilities or supervision can be anticipated. The Bureau of Land Management must ensure the continued availability of public lands and related waters for

diverse, resource dependent, outdoor recreation opportunities, while maintaining its commitment to managing the public lands as a national resource in harmony with the principle of balanced multiple use. In carrying out this policy, efforts must focus on:

1. Managing the majority of the public lands for traditional dispersed recreation use, and
2. Intensively managing certain areas of the public lands where outdoor recreation is a higher priority.

This second component of recreation management is classified as Special Recreation Management Areas or SRMAs. In these areas, agencies provide a more intensive visitor management, resource protection, and facility investments. SRMAs ensure the long-term availability of areas for high-quality outdoor recreation opportunities in specific settings. Major investments in recreation facilities and visitor assistance are carried out to deal with the identified issues and concerns related to SRMAs. There are two SRMAs in the BLM Fillmore Field Office and the County: the Little Sahara Recreation Area (sand dunes) and the Yuba Lake Recreation Area. Additional important recreation areas may also be considered as part of future public land planning processes.

The Little Sahara Recreation Area contains 60,000 acres of free-moving dunes, juniper-covered hills, and sagebrush flats and comprises some of the most heavily used public land in the State of Utah. The terrain and sand dunes features are ideally suited for ORV use, including four-wheel, motorcycle, dune buggy, and all-terrain vehicles (ATV) activities. BLM is currently managing the area under the Little Sahara Recreation Management Plan. Two-thirds of the area is managed for ORVs, while reserving the remaining land for nature study, picnicking, camping, and sand play. The Little Sahara Recreation Area contains three highly developed camp grounds, an ORV events area, and administrative complex, including a visitor center and bunkhouse and 15 miles of paved roads. There are certain times of the year when the current staffing is not adequate to properly supervise and assist the visiting public. Access to White Sands Campground is inadequate and needs to be improved.

Located south of Nephi between Interstate 15 on the west and State Highway 28 on the east BLM's Yuba Special Recreation Management Area is part of the Yuba Reservoir Recreation Area, a complex of recreation sites surrounding Yuba Reservoir. The complex includes Yuba State park and the USDI Bureau of Land Management's (BLM) Yuba Special Recreation Management Area, lands owned by School and Institutional Trust Lands Administration, and private lands. The park and reservoir are contained within the 15,940-acre Yuba Special Recreation Management Area and are managed in cooperation with the BLM. State-owned land account for 990 acres, or six percent, of the recreation management area with the BLM owning 9,747 (61 percent) and the rest in private ownership.

The Division of Utah State Parks and Recreation (Division) operates and manages the state-owned park and, through a cooperative agreement, the BLM sites within the recreation area.

In planning processes conducted circa 2009 Utah State Parks, BLM, local interests and other stakeholders determined their individual units were segments of a larger recreation area. The team felt that because the activities from the various parts of the recreation area were interrelated and all activities had direct impacts on other entities cooperative management of the larger complex provided the greatest benefit to the public. The Yuba SRMA is currently co-managed by

the BLM and the Division of State Parks. This cooperative management has allowed the Yuba complex to extend beyond lands owned by any one agency, to use substantial resources managed by other entities and to create new facilities for visitors. Under current operating agreements, Yuba State Park staff manages developed recreation sites on both state- and BLM-owned lands. (Yuba State Park Plan, May, 2009)

The Yuba Special Recreation Area offers a variety of water and camping related recreation opportunities. Warm summer water temperatures, sandy beaches, nearby off-highway vehicle areas, and fishing for walleye and yellow perch attract visitors year-round. Oasis campground and Eagle View beach area are highly developed campgrounds with a variety of amenities. Beach areas on the north and offer primitive camping along the shoreline. Public access to Yuba Reservoir for day use and overnight camping is abundant. The reservoir extremely popular for boating, waterskiing, personal watercraft, windsurfing, sailing, and swimming. Two boat ramps, one at Yuba State park and one at Painted Rocks, provide access for all types of watercraft. The reservoir is a year-round fishery for walleye, perch, catfish, rainbow trout, and northern pike. Other activities include camping, hiking, picnicking, rock hounding, bird watching, mountain biking, waterfowl hunting in season, and off-highway vehicle riding nearby.

Need for Management Change

1. Special Recreation Management Areas (SRMAs) need to be limited to lands that require more intense recreation management and that are targeted for recreation and socioeconomic development.
2. A financial commitment plan for SRMAs needs to be developed as part of the initial planning process.
3. Land use planning processes regarding SRMAs need to be consistent with the County's General Management Plan. Proposed SRMAs need to be consistent with the County's Recreation Opportunity Spectrum, and the establishment of SRMAs need to reflect visitor use volumes and patterns.
4. With federal policy changes for OHV use from open to limited areas, opportunities for motorized recreation have been drastically reduced. There needs to be 3% to 5% of the land in the County reserved for cross country/open motorized recreation. Additional SRMAs need to be established, where appropriate, to accommodate cross country/open motorized recreation.
5. A SRMA needs to be considered for recognition of an expanded OHV trail system in the County.

Desired Condition

Juab County Desires:

1. SRMAs only be established to promote specific recreation oriented resources and in accordance with desired conditions, policy, goals, objectives, and criteria described in this section.

2. Appropriate SRMAs be established to meet target values of 3% to 5% of County land reserved for cross country/open motorized recreation.
3. SRMAs be limited in size and at least 95% of the SRMA contains a specific recreational opportunity for which it was established, unless otherwise approved by the Commission.
4. SRMAs are established for motorized recreation. Areas identified as Rec Ia (Wilderness) or Rec Ib (Primitive/Semi Primitive Non-Motorized) should not be designated as SRMAs unless specific Commission approval has been obtained.
5. Prior to planning actions designating SRMAs, detailed site-specific studies identifying impacts to socioeconomic vitality, community stability, custom and culture be completed.
6. Government to Government Coordination regarding SRMA funding packages and cooperative agreements regarding law enforcement, search and rescue, emergency medical services, solid waste collection and disposal, human waste collection and disposal, and other pertinent issues are completed.
7. SRMAs be promoted, managed, and developed to meet the minimum visitation identified below.
8. At least one all-weather road meeting AASHTO standards for a 35 mph design speed accesses all SRMAs.
9. Each SRMA contain a visitor registration box, solid waste collection receptacle, and human waste collection receptacle at the main entrance, unless otherwise approved by the County.
10. Entrance and use of SRMAs be at no charge to the County residents unless an alternate fee schedule is approved by the Commission.
11. Environmental Analysis regarding SRMAs consider National Parks, National Recreation Areas, and National Monuments located within the region of comparison as SRMAs when considering cumulative impacts.
12. SRMAs be developed to promote the interpretation, use, and enjoyment of natural resources by the County residents and visitors.

Policies, Goals, Objectives, and Criteria

Goal: It is the goal of the County to establish SRMAs only for resources which significantly enhance the County's socioeconomic vitality, community viability, custom and culture while expanding agency financial, infrastructure, and management support to fully develop, use and enjoyment of the resource.

Policy: It is the policy of the County to oppose the designation of Special Recreation Management Areas where management scenarios restrict use and enjoyment of resources or where financial, infrastructure, and management commitments fail to fully develop use and enjoyment of the designated resources.

Action/Implementation: When there is an outstanding recreation value suitable for SRMA consideration it will be evaluated through interagency discussion, consideration by the Public Lands Steering Committee, or public hearings prior to approval by the Commission.

Policy: Areas are not eligible for SRMA designation unless the area meets the following criteria:

Size	0 to 40 acres
Minimum Visitation	No requirement
Comments	County concurrence required; 8 per agency maximum
Size	40 to 320 acres
Minimum Visitation	Average 10 visitors per day for at least 90 days per year.
Comments	County concurrence required
Size	320 acres to 2000 acres
Minimum Visitation	Average 25 visitors per day for at least 120 days per year.
Comments	County concurrence required
Size	Greater than 2000 acres
Minimum Visitation	Average 1 visitor/day/each 80 acres for at least 120 days/yr.
Comments	County concurrence required

Policy: SRMAs are inconsistent with primitive recreation because SRMAs require intense management, increased facilities, and investments that impact the land. These requirements conflict with the concepts of primitive recreation (“untrammeled by man”, “without man's influence”, and “infrequent contact with man and his influence”).

Policy: SRMAs are an appropriate management tool to fulfill agency responsibility to ensure traditional, diverse recreation relating to cross country travel and open OHV use.

Policy: Failure to allocate at least 1% of agency land in the County as SRMAs (or other appropriate designations) for cross country travel and/or open OHV use is considered an abrogation of recreation planning responsibility and is inconsistent with the Juab County General Plan.

Policy: The County will consider and support/oppose SRMA management on a case by case basis for lands that contain special features of recreation interest which do not qualify for ACEC, Wild & Scenic River, or other special designation status.

Findings: Special Recreation Management Areas are at the discretion of Federal land managers and must be consistent with the County's General management Plan to be consistent with FLPMA.

Juab County also finds:

1. SRMAs have a specific benefit only when a specific recreation destination is present.
2. Large blocks of land for designated general purposes (scenic, recreational, cultural) fail to meet the specific standard necessary for SRMAs management and development.
3. SRMAs need to meet specific visitation requirements in order to qualify for designation.
4. SRMAs should attract enough visitors to pay for all services that are required from the County.
5. SRMAs need to provide for human waste collection and disposal, solid waste collection and disposal, access for emergency services, law enforcement, etc.
6. SRMAs generate solid waste consistent with national averages for nonresident visitors, which is equivalent to 2 pounds per visitor per day.
7. SRMAs are not being used to their full potential or in accordance with their purpose. SRMAs should not be used over large blocks of land to manage dispersed recreation in a primitive setting. SRMAs should be used in limited areas where concentration of visitors is anticipated and special or intense recreation management needs exist.
8. Dispersed recreation is a multiple use activity and does not require special management actions.
9. Primitive recreation and semi primitive non-motorized recreation are a subset of dispersed recreation and should be emphasized in management areas set aside for those purposes in the Juab County General Plan and only in those areas.
10. SRMAs are not suitable where other management classifications (ACECs, Wild and Scenic Rivers, WSAs, etc.) exist.
11. It necessary to establish guidelines regarding size and visitation for SRMAs in order to preserve and enhance the custom, culture, socioeconomic vitality and community viability of the County and to provide consistency across office/agency boundaries. The minimum acreage and visitation figures for SRMAs are as follows:

0 acres to 40 acres	no requirement maximum of eight per agency
40 acres to 320 acres	10 visitors per day for at least 90 days per year.
320 acres to 2000 acres	25 visitors per day for at least 120 days per year.
Greater than 2000 acres	1 visitor per day per 80 acres for at least 120 days and County concurrence required.
12. SRMAs require a specific development plan identifying expenditures, public services, and cost reimbursement scenarios as part of the NEPA planning process. If these planning items are postponed until the implementation or project phase, inadequate management occurs during the interim.

13. Establishment of SRMAs as part of programmatic plans and implementation of the specific management actions without secured budgets, cooperative agreements for public services, facilities for the collection and disposal of solid or human waste, reliable all weather access, and other needs is inconsistent with the Juab County General Plan, is arbitrary and capricious, and is an abrogation of Federal responsibilities to the public.
14. Federal agencies need to identify suitable cross country/open motorized recreation areas targeting 3% to 5% and not exceeding 10% of the County's total land area as SRMAs or other similar management areas.

4.4 AREAS IDENTIFIED BY LAND MANAGERS

Inasmuch as lands identified by land managers are generally discretionary, Juab finds and desires (absent specific federal law to the contrary) lands in this classification be managed in accordance with the Juab County General Plan

Policy: These management actions are primarily at the discretion of the land managers. Unless specifically mandated by law, management plans/actions adopted without the concurrence of the Commission are inconsistent with the County's General Management Plan and are a violation of local law.

Finding: Federal Land Managers have a great deal of discretion when it comes to developing planning actions, alternatives, management scenarios and subsequent decisions. Usually plans are developed at the field level, with final approval at State or Regional levels. Appeals to plans are usually resolved at the Headquarters level. Given the discretionary nature of most federal plans, it is the policy of the County that all discretionary federal land manager decisions give deference to County government needs, desires and concerns. This is interpreted to mean that where there is no Federal body of law that would prevent an action from occurring, local bodies of law, ordinances, policies, County resource management plans, local environmental needs, economic concerns, and social well-being will be the guiding direction for federal planning efforts.

4.4.1 NON WSA LANDS WITH WILDERNESS CHARACTER

Current Setting

In 1996, under the guise of resolving differences regarding the "fundamental issue of how much BLM land has wilderness characteristics," Secretary Babbitt directed an inventory of BLM and non-BLM lands. The effort was to "apply the same legal criteria that were used in the original inventory." However, findings that trails "used by thousands of visitors annually" had outstanding opportunities for solitude; that criteria that areas did "not need to have outstanding opportunities on every acre;" that qualifying areas had only to meet the minimal standard of having "opportunities somewhere in the unit;" and that practices that considered units adjacent to WSAs as having outstanding opportunities regardless of whether the unit being considered or the WSA qualified for such consideration resulted in an inventory that created more disagreement and doubt and was less professional and objective than original inventories that identified lands "that clearly and obviously lacked wilderness character."

Areas identified in the 1996 process are compiled in UTAH *Wilderness Inventory*, 1999. When compared to National Park, National Recreation Area, National Monument, and WSA lands recommended for wilderness designation, Non WSA lands with wilderness character identified

in the 1999 inventory fail to meet the same value and /or quality standards as original studies. In addition, higher value lands set aside for preservation and non-motorized recreation are under-utilized and occupy an inordinate percentage of Utah land when considering current and estimated future visitation.

Need for Management Change

1. Non WSA lands with wilderness character need to manage for commodity production, development, multiple uses, and sustained yield with the fewest prescriptions allowed by law. These lands are of low wilderness value and quality
2. Lands set aside for preservation and non-motorized recreation in the County are under-utilized and far exceed current and foreseeable needs for these uses. Non WSA lands with wilderness character need to be available for natural resource based industries and multiple use management other than preservation or non-motorized recreation.
3. In as much as federal/state land use plans are to be consistent to the maximum extent allowed by law with local government plans, and in as much as there is no law requiring management of lands with wilderness character for preservation or non-motorized uses, prescriptive management of non WSA lands with wilderness character in the County needs to have the approval of the Commission.

Desired Condition

Juab County Desires non-WSA lands with wilderness character:

1. Be managed in accordance with the County's General Plan, as multiple use lands, or as commodity production lands.
2. Be evaluated in light of the original inventory identifying them as lands that clearly and obviously lacked wilderness character.
3. Prior to management for wilderness character have a detailed analysis be conducted identifying:
 - A. The percentage of lands with naturalness,
 - B. Percentage of lands with outstanding opportunities for solitude,
 - C. Percentage of lands with outstanding opportunities for primitive recreation,
 - D. Percentage and acreages of lands classified in each of the Visual Resource Management Classifications,
4. Factors that disqualified the lands from possibly containing wilderness values in the initial wilderness inventory,
5. Changes to the lands since the initial inventory,
6. Comparative analysis between and cumulative impact analysis of wilderness characteristics in the area being studied versus such characteristics recommended by the National Park Service, Forest Service designated wilderness areas, and lands identified

by the Bureau of Land Management in the Recommended or Paramount proposals of the BLM 1991 Final EIS.

7. Comparative analysis between and cumulative impact analysis of recreational opportunities offered by these lands versus recreational opportunities currently available in National Parks, National Recreation Areas, National Monuments, Wilderness Areas, and WSAs located in the County and the region.
8. Have a detailed inventory of all roads, paths, ways, trails, campgrounds, fence lines, range improvements, vegetation treatments, erosion control measures, noxious weeds, and any other man made impacts on lands as part of the evaluation of non-WSA lands with wilderness character prior to managing any lands for wilderness values.
9. In as much as the original wilderness inventory was conducted over a longer period of time expended greater funds, was in direct response to mandates by Congress, when conflicts occur between the original inventory and the re-inventory conducted by the BLM the late 1990s, the original inventory shall control.
10. The BLM give preference to multiple use, sustained yield, commodity production, natural resource extraction activities unless federal law specifically prohibiting/withdrawing the lands from such activities exists.
11. Have as few restrictions placed on them as possible or allowable by law. They should be managed under the principles of multiple use and sustained yield. Commodity production should be the guiding principle.

Policies, Goals, Objectives, and Criteria

Policy: The County accepts and adopts BLM determinations reached in the original wilderness inventory that these lands clearly and obviously lack wilderness character and incorporates the inventory and determinations by reference.

Policy: The County adopts and concurs with the determination identified on page A1, column 3, paragraph 1 of the UTAH 1996 Wilderness Re inventory that these areas do not have wilderness character on every acre.

Policy: The County adopts the determination identified on A1, column 3, paragraph 1 of the UTAH 1996 Wilderness Re inventory that non WSA lands with wilderness character located adjacent to WSAs were not evaluated.

Policy: Where inconsistencies exist between the original wilderness inventory conducted as directed by Congress in response to the Wilderness Act of 1964 and UTAH 1996 Wilderness Re inventory, the County adopts the original inventory and associated determinations as correct, accurate, and the best/most current data. In addition, the County rejects inconsistent findings of UTAH 1996 Wilderness Re inventory as inaccurate and based on subjective, unauthorized criteria.

Policy: No non WSA lands will be managed for wilderness character.

Policy: It is the policy of the County that non WSA lands with wilderness character be managed for commodity production or multiple use and sustained yield. Management actions must be consistent to the maximum extent allowed by law with the Juab County General Plan, and failure to comply will be

considered arbitrary and capricious.

Criteria: Non WSA lands that have been subject to vegetative treatments or manipulations are not suitable for management preserving wilderness characteristics unless they meet all of the following criteria:

Age - Vegetative manipulations where the last manipulation, treatment, or impact by a man is older than 100 years may be considered substantially unnoticeable, if no stumps, scars, piles, or any other impacts are present.

Extent - Vegetative manipulation that has an extent less than 5000 square feet is considered substantially unnoticeable.

Condition - A vegetative manipulation is considered substantially unnoticeable if, after comparing three random samples not less than 200 square feet inside the manipulated area and three random samples not less than 200 square feet outside the manipulated area, the following criteria is met:

1. If percentage composition for each species inside the manipulated area is within 3% of the composition for the same species outside of the manipulated area;
2. If estimated age for 97% of the individuals in each species in the manipulated area is within two years of age for the individuals of the same species in the non-manipulated area;
3. If the species populations within the manipulated area are not less than 95% nor more than 105% of the species populations in the non-manipulated area;
4. If the species height in the manipulated area is not less than 95% nor more than 105% of the height of the species in the non-manipulated area;
5. If the manipulated area is free from exotic or non-native species that are not present in the non-manipulated area; and
6. If the boundary between the manipulated area and the non-manipulated area is indistinguishable.

Criteria: Roads, paths, ways, and trails that are man-made and are substantial enough to be identified on maps, plans, inventories, original wilderness studies, subsequent wilderness studies, public comments associated with wilderness studies, mining claims, GPS inventories conducted by Federal, State, or local governments, or that can be visually distinguished on the ground are substantially noticeable and disqualify the land for wilderness management.

Criteria: Tamarisk, Russian Olive, noxious weeds, and non-native invasive species were introduced in the County by modern man. They are a clear and obvious evidence of man's presence and an indication of his trammeling of the land. Non-WSA lands with wilderness character that contain Tamarisk, Russian Olive, noxious weeds, or non-native invasive species exhibit evidence of man's presence, the long term presence of man and man's trammeling of the land. Non-WSA lands with wilderness character that contain Tamarisk, Russian Olive, noxious weeds, or non-native invasive species do not qualify for wilderness or management for wilderness characteristics.

Finding: The County finds all non WSA lands clearly and obviously lack wilderness character as determined in the federal detailed inventory phase directed by the Wilderness Act of 1964. The County also finds these lands have a lower percentage of natural appearance, outstanding opportunities for solitude and outstanding opportunities for primitive recreation than lands carried forward in the intense study phase of the process.

Finding: The County has evaluated lands identified by federal agencies as possibly containing wilderness values, lands recommended for wilderness designation, lands currently withdrawn from multiple use/sustained yield management, visitation on lands managed for primitive recreation, demand for primitive recreation, and higher value experiences on other lands available for primitive recreation. The County finds that lands designated as “Non-WSA lands with wilderness character” are to be managed for commodity production or multiple use/sustained yield activities.

Finding: Tamarisk, Russian Olive, noxious weeds, and non-native invasive species were introduced by modern man as he developed the West. They are non-native, invasive and an evidence of man's lack of understanding regarding his influence on the land. They were introduced by man and constitute a substantial evidence of his presence. The presence of Tamarisk and/or Russian Olive constitute a substantially noticeable evidence of man's presence/impact and disqualifies lands from wilderness management unless otherwise approved by the Commission.

Finding: The County has evaluated non WSA lands that were originally identified as “clearly and obviously lacking wilderness character” and that were reevaluated by the BLM as part of the later process directed by Secretary Babbitt. Management actions containing prescriptions that reduce opportunities to achieve the goals and objectives or that implement prescriptions giving preference to primitive recreation and/or wilderness values over the goals and objectives listed below are found to be inconsistent with the County’s General Management Plan and constitute significant negative direct, indirect and cumulative impacts on the County’s custom, culture and socioeconomic base. Prescriptive management actions on these lands are also found to be in deliberate conflict with the County’s plans, policies and programs, and are not consistent to the maximum extent allowed by law unless accompanied with objective, scientific data justifying the prescription and approval by the Commission. Managing part or all of the non WSA lands in the County with wilderness character for wilderness characteristics violates FLPMA, contradicts the State’s Public Land Policy and contradicts the plans of the County. Specifically The County finds the following:

7. As Utah Code ' 63-38d-401(6)(b) indicates, managing non-WSA lands with wilderness character under a wilderness characteristics management standard is not the State of Utah’s policy for multiple use-sustained yield management on public lands that are not wilderness or wilderness study areas. Nor is it the County’s. A so-called wilderness characteristics management standard for the non-WSA lands with wilderness character is de facto wilderness management by another name. It is incompatible with and would therefore frustrate and defeat the foregoing plans of the County for managing the non-WSA lands with wilderness character. the County has formally taken a position that only lands classified as Rec Ia should be designated as wilderness.

8. A so-called “wilderness characteristics management standard” for the non-WSA lands with wilderness character also violates FLPMA and the 2003 Settlement Agreement between Utah and Department of Interior.
9. Managing Post-603 Lands¹ pursuant to the Interim Management Policy of 1979 (IMP) is inconsistent with BLM authority. Agreement p. 6 & 13.a;
10. Managing Post-603 Lands to preserve alleged wilderness character strays from the multiple use mandate in a manner inconsistent with FLPMA ' Section 603 limited delegation of authority. Agreement p. 9 & 17;
11. The 1999 Utah Wilderness Re-inventory shall not be used to manage public lands as if they are or may become WSAs. Agreement p. 13 & 4;
12. DOI/BLM will not establish, manage *or otherwise treat* Post-603 Lands as WSAs or as wilderness pursuant to the Section 202 process absent congressional authorization. Agreement p. 14 & 7;
13. DOI/BLM will remove from the proposed revised resource management plans in the Richfield, Price, Richfield, Monticello and Moab District any and all references or plans to classify or manage Post-603 BLM lands *as if* they are or may become WSAs. (Agreement p.14 & 7).

Finding: The County finds the following goals and objectives vital to the County’s custom, culture, socioeconomic vitality, and community viability:

Achieve and Maintain A Continuing Yield of Mineral Resources At The Highest Reasonably Sustainable Levels.

1. Development of the solid, fluid and gaseous mineral resources in the non-WSA lands with wilderness character is an important part of the economy of the County.
2. The County recognizes that it is technically feasible to access mineral and energy resources while preserving non mineral and non-energy resources and uses.
3. All solid, fluid and gaseous mineral resources in the non-WSA lands with wilderness character that exist in economic quantities and are recoverable with existing or foreseeable technology should be available for development.
4. Physical and administrative access to mineral resources in the non-WSA lands with wilderness character must be maintained. These lands should be open to oil and gas leasing with economically and technically viable stipulations and conditions that will protect the lands against unreasonable and irreparable harm to significant resource values. This should include reasonable and effective mitigation and reclamation measures and bonding for such where necessary.
5. Fluid and gaseous minerals within developed areas should be protected from waste and drainage.

¹ As that term is defined in the *Utah v. Norton* settlement agreement of April 11, 2003.

6. Any previous lease restrictions in the non-WSA lands with wilderness character that are no longer necessary or effective should be modified, waived or removed.
7. Restrictions against surface occupancy should be modified, waived or if necessary removed where it is shown that directional drilling is not ecologically necessary, where directional drilling is not feasible from an economic or engineering standpoint, or where it is shown that directional drilling will in effect sterilize the mineral and energy resources beneath the area.
8. Applications for permission to drill that meet standard qualifications, including where appropriate reasonable and effective mitigation and reclamation requirements, should be expeditiously processed and granted.
9. Any moratorium or withdrawals that may exist against the issuance of additional mining patents and oil and gas leases in the non-WSA lands with wilderness character should be carefully evaluated for removal.

Achieve and Maintain Livestock Grazing At The Highest Reasonably Sustainable Levels Including Range Improvements, Access, Vegetation Treatments, Prescribed Fire, etc.

1. Domestic livestock forage in the non-WSA lands with wilderness character as expressed in animal unit months and allocated for permitted active use in the current RMP, should be no less than the maximum number of animal unit months sustainable by range conditions in grazing districts and allotments in the non-WSA lands with wilderness character, based on an on-the-ground and scientific analysis.
2. Where once-available grazing forage in the non-WSA lands with wilderness character has succeeded to pinion, juniper and other woody vegetation and associated biomass, or where rangeland health in the non-WSA lands with wilderness character has suffered for any other reason, a vigorous program of chemical or mechanical treatments such as chaining, logging, seeding, lopping, thinning, burning, range improvements and /or other treatments should be applied to remove this woody vegetation and biomass and stimulate the return of the grazing forage to its historic levels for the mutual benefit of livestock, wildlife and other agricultural industries.
3. The County regards the land which comprises the grazing districts and allotments in the non-WSA lands with wilderness character as more valuable for grazing than for the following uses which may exclude livestock grazing:
 - a) conversion of AUMs to wildlife, wild horses, or other special species;
 - b) recreation;
 - c) primitive recreation/wilderness values.

Accordingly, it is the County's finding that animal unit months in the non-WSA lands with wilderness character not be relinquished or retired in favor of conservation, wildlife and/or other uses.

4. The County recognizes that from time to time a bonafide livestock permittee in the non-WSA lands with wilderness character, acting in good faith and not to circumvent the intent of the BLM's grazing regulations, may temporarily cease grazing operations without losing his or her permitted AUMs. However, BLM imposed suspensions of use or other reductions in domestic livestock animal unit months in the non-WSA lands with wilderness character should be temporary and scientifically based on rangeland conditions.
5. The transfer of grazing animal unit months (AUMs) to wildlife, wild horses or watersheds for supposed reasons of rangeland health or any other purpose is opposed by the County as illogical. There is already imputed in each AUM a reasonable amount of forage for the wildlife component.
6. Any grazing animal unit months that may have been reduced in the non-WSA lands with wilderness character due to rangeland health concerns should be restored to livestock when rangeland conditions improve, and not converted to wildlife use. New AUMs resulting from increased range production should be divided appropriately between grazing and other uses with at least 50% of any AUM increase allocated to grazing unless otherwise approved by the County.

Manage the Watershed to Achieve and Maintain Water Resources at the Highest Reasonably Sustainable Levels

1. All water resources derived in the non-WSA lands with wilderness character are the property of the State of Utah. They are owned exclusively by the State in trust for its citizens.
2. As a political subdivision of the State, the County has a legitimate interest in seeing that all reasonable steps are taken to preserve, maintain, enhance and where reasonable develop those water resources.
3. With increased demands on water resources brought on by population increases in the Colorado River drainage area, and with recent drier precipitation trends which call into question in the minds of some whether the climate of the Colorado River drainage area is changing, it is important now more than ever that management practices be employed in the non-WSA lands with wilderness character to restore, maintain and maximize water resources there.
4. This includes ground disturbing restoration, maintenance and enhancement of the watershed in the non-WSA lands with wilderness character.
5. Where water resources in the non-WSA lands with wilderness character have diminished because desirable vegetation have succeeded to pinion, juniper, Tamarisk, Russian olive, and other woody vegetation and associated biomass, a vigorous program of chemical or mechanical treatments should be applied to promptly remove this woody vegetation and biomass, stimulate the return of the grasses to historic levels, and thereby provide a watershed that maximizes water yield and water quality for livestock, wildlife, and human uses.

6. Part of the County's strategy for enhancing watersheds includes deterring unauthorized cross-country travel. One of the best ways to deter unauthorized travel is to provide an adequate system of routes in designated open areas for OHV use, including non-WSA lands with wilderness character. The County finds the existing County transportation network (including some un-inventoried routes that are known to currently exist) is the minimum necessary to provide for OHV travel and that 3% to 5% of the land in the County needs to be designated for open OHV use to deter unauthorized travel. Failure to provide appropriate open areas comprising 3% to 5% of the County constitutes failure to protect watersheds from unauthorized use, disregard for non-WSA lands with wilderness character and encourages unauthorized cross-country travel.

Achieve and Maintain Traditional Motorized and Non-Motorized Access to Outdoor Recreational Opportunities

1. Historically, residents of the County and visitors have enjoyed many forms of outdoor recreation in the non-WSA lands with wilderness character, such as hunting, fishing, hiking, family and group parties, family and group campouts and campfires, rock hounding, OHV travel, geological exploring, pioneering, parking their RV, or just plain touring in their personal vehicles. Such activities make up an important component of the custom, culture, and socioeconomic base of the County.
2. All roads, paths, ways, and trails in the non-WSA lands with wilderness character, which historically have been open to OHV use, should remain open.
3. Historically, outdoor recreational opportunities in the non-WSA lands with wilderness character have been open and accessible to working class families, to families with small children, to the ill and persons with disabilities, to the middle aged and elderly, to persons of different cultures for whom a primitive or back country experience may not be the preferred form of recreating. Current use, demographics and area growth support a need for more dispersed and varied recreation opportunities in the non-WSA lands with wilderness character, as opposed to primitive or back country experiences. All of society should not be forced to participate in a solitude experience or a primitive experience as the one and only mode of outdoor recreation in the non-WSA lands with wilderness character.
4. Any segment of society who wants to recreate in the non-WSA lands with wilderness character are entitled to existing, authorized motorized access to traditional recreation uses and additional access where needed.
5. The County finds continued public motorized access to all traditional outdoor recreational destinations in all areas of the non-WSA lands with wilderness character for all such segments of the public is vital to the custom, culture, and economic viability of the County. The County specifically opposes restricting outdoor recreation in the non-WSA lands with wilderness character to non-motorized uses.
6. Accordingly, all roads, paths, ways, and trails in the non-WSA lands with wilderness character that currently exist are part of the County's duly adopted transportation plan should remain open to motorized travel. None of them should be closed, and the County should have the continued ability to maintain and repair those routes, and where

reasonably necessary make improvements thereon. All trails in the non-WSA lands with wilderness character that have been open to OHV use should continue to remain open. Traditional levels of wildlife hunting and fishing should continue. In addition, all roads administered by the BLM should remain open to public use, and any attempt to close those roads should be subject to the NEPA process.

Maintain and keep open all roads, paths, or ways on public lands that appear on the County's most recent transportation map, federal, state or local maps, original wilderness inventory data sheets, GLO plats, the land as of January 1, 2016 and provide for such additional roads, paths, ways, trails and other highways, rights of way and easements as may be necessary from time to time.

1. The County's General Plan includes an Official County-Wide Transportation Map, available to the public for viewing and copying, showing public roads and trails maintained by the County.
2. That portion of the County's official transportation map which shows public roads and trails in the non-WSA lands with wilderness character is considered to be part of the County's plan specifically applicable to the non-WSA lands with wilderness character. In addition, all roads administered by the BLM should remain open to public use, and any attempt to close those roads should be subject to the NEPA process and should provide an opportunity for the County to assume administration of the route if the County desires.
3. The County plans to keep all such roads in the non-WSA lands with wilderness character open and reasonably maintained and in good repair. The County will consult with the BLM about any required improvements to such roads, reserving the right to request court intervention and relief in the event the County and BLM cannot reach an agreement on such proposed improvements after reasonable efforts at consultation.
4. Additional roads, paths, ways, trails and other transportation corridors exist and/or maybe needed in the non-WSA lands with wilderness character from time to time to facilitate reasonable access to a broad range of resources and opportunities, including livestock operations and improvements, solid, fluid and gaseous mineral operations, energy transportation, recreational opportunities and operations, search and rescue needs, other public safety needs, access to public lands for people with disabilities and the elderly, and access to Utah school and Institutional Trust Lands. Additional access should be provided where a need is demonstrated and can be accomplished while providing required protection to other resources and uses.

Manage Cultural Resources in Conformance with the County's Cultural Resource Protection Ordinance, Federal Law and State Law.

1. Reasonable mineral development in the non-WSA lands with wilderness character can occur while protecting prehistoric rock art, three dimensional structures and other artifacts and sites recognized as culturally important and significant by the state historic preservation officer and the County. Federal, State, and Local laws and regulations adequately protect these resources.
2. Reasonable and effective stipulations and conditions to protect against damage to the above-described cultural resources should accompany decisions to issue mineral leases,

permit drilling or permit seismic activities in the non-WSA lands with wilderness character. Such drilling and seismic activities should not be disallowed merely because they are in the immediate vicinity of the above-described cultural resources if it is shown that such activities will not damage those resources. The primary method of protecting these important resources should be avoidance of the specific sites of their location, not avoidance of blanketed areas spread far and wide around those specific sites.

Manage Lands So As to Not Directly or Indirectly Interfere With The Property Rights of Private Landowners Located in Non WSA Lands with Wilderness Character.

1. There may be parcels of private fee land located in the non-WSA lands with wilderness character.
2. Land management policies and standards on non-WSA lands with wilderness character should not interfere with the property rights of private landowners in the region to enjoy and engage in traditional uses and activities on their private property, consistent with controlling County zoning and land use laws.
3. Nor should those landowners and their guests be denied the right of motorized access to their private property consistent with necessary uses of those private land parcels.

Manage lands so as to not directly or indirectly interfere with the fiduciary responsibility of the State School and Institutional Trust Lands Administration (SITLA) with respect to trust lands located near those lands.

1. Scattered throughout the non-WSA lands with wilderness character are sections of school and institutional trust land owned by the State of Utah and administered by SITLA in trust for the benefit of public schools and other institutions (school trust lands), as mandated in Utah's Enabling Act and State Constitution.
2. As trustee, SITLA has a fiduciary responsibility to manage those school trust lands to generate maximum revenue there from, by making them available for sale and private development, and for other multiple use consumptive activities such as mineral development, grazing, recreation, timber, agriculture and the like, all for the financial benefit of Utah's public schools and other institutional beneficiaries.
3. Land management policies and standards on non-WSA lands with wilderness character should not interfere with SITLA's ability to carry out its fiduciary responsibilities.
4. Nor should SITLA be denied the right of motorized access to those school trust sections to enable SITLA to put those sections to use in order to carry out SITLA's fiduciary responsibilities.
5. The County holds numerous rights-of-way and easements across SITLA lands. Reasonable access needs to be provided across non-WSA lands with wilderness character to allow the County to maintain, improve and enjoy of those rights-of-way and easements.

Support implementation of Areas Of Critical Environmental Concern (ACEC) designation only in conformance with criteria established in the County's General Management Plan and consistent with the

County's goals for managing non WSA lands with wilderness character.

1. It is the County's policy that no part of the non-WSA lands with wilderness character should be designated an ACEC unless the following is clearly demonstrated:
 - a) The proposed ACEC satisfies all the definitional requirements of the Federal Land Policy and Management Act of 1976, 43 U.S.C. ' 1702(a) and the County's criteria for Relevant – Important resources.
 - b) The proposed ACEC is limited in geographic size and that the proposed management prescriptions are limited in scope to the minimum necessary to specifically protect and prevent irreparable damage to values that are objectively shown to be relevant and important or to protect human life or safety from natural hazards.
 - c) The proposed ACEC is limited only to areas that are already developed or used or to areas where no development is required.
 - d) The proposed ACEC designation and protection is necessary to protect not just a change in ground conditions or visual resources that can be reclaimed or reversed eventually (like reclaiming a natural gas well site after pumping operations are complete). Rather, the damage must be shown in all respects to be truly irreparable and justified on short term and long term horizons.
 - e) The proposed ACEC designation and protection will not be applied redundantly over existing protections available under FLPMA multiple use sustained yield management, the Wilderness Act, threatened or endangered species designations or any other special designation or law.
 - f) The proposed ACEC designation is not a substitute for a wilderness suitability determination, nor is it offered as a means to manage a non WSA lands for wilderness characteristics.
2. The foregoing summarizes the ACEC criteria of the State of Utah and the County. See Utah Code ' 63-38d-401(8)(c). The foregoing summarizes the criteria of FLPMA.
3. As of September 1, 2007, none of the ACEC alternatives being considered in the Fillmore Resource Management Plan revision process meets the County's above-stated ACEC planning criteria.
4. The County Finds the alternatives being considered for the above-listed ACECs constitute de facto wilderness management in the non-WSA lands with wilderness character or fail to be consistent with the County's ACEC criteria. Adopting any of the ACECs without County Concurrence is incompatible with, frustrates and defeats the Management Plan of the County for non-WSA lands with wilderness character.

Support inclusion of river segments as part of the national wild and scenic rivers system only in conformance with criteria established in the County's general management plan and consistent with the county's goals for managing non WSA lands with wilderness character.

1. It is the County's policy that no river segment should be included in the National Wild and Scenic River System unless

- a) Water is present and flowing at all times.
 - b) The water-related value is considered outstandingly remarkable within a region of comparison consisting of the State of Utah, the Colorado Plateau and Anasazi Dwelling units, and that the rationale and justification for the conclusion are disclosed.
 - c) BLM fully disclaims in writing any interest in water rights with respect to the subject segment.
 - d) It is clearly demonstrated that including segment in the NWSR system will not prevent, reduce, impair, or otherwise interfere with the state and its citizen's enjoyment and development of complete and exclusive water rights in and to rivers of the state as determined by the laws of the state, nor interfere with or impair local, state, regional, or interstate water compacts to which the State or the County is a party.
 - e) The rationale and justification for the proposed addition, including a comparison with protections offered by other management tools, is clearly analyzed within the multiple-use mandate, and the results disclosed.
 - f) It is clearly demonstrated that BLM does not intend to use such a designation to impose Class I or II Visual Resource Management prescriptions.
 - g) It is clearly demonstrated that the proposed addition will not adversely impact the local economy agricultural and industrial operations, outdoor recreation, water rights, water quality, water resource planning, and access to and across river corridors in both upstream and downstream directions from the proposed river segment.
2. The foregoing also summarizes the wild and scenic river criteria of the State of Utah, Utah Code ' 63-38d-401(8) (a), as well as the criteria of the County.
 3. As of September 1, 2007, the terms prescribed in alternatives being considered in the proposed revised Richfield RMP for managing proposed wild and scenic river segments in non-WSA lands with wilderness character constitute de facto wilderness management. Without County concurrence, they are incompatible with and would therefore frustrate and defeat the foregoing plans of the County for managing the non-WSA lands with wilderness character.

Maintain the least restrictive Visual Resource Management Classification allowed by law, consistent with the County's VRM Acceptability Table. Oppose a Visual Resource Management Class I or II rating for lands not approved by the Commission.

1. The objectives of BLM Class I Visual Resource Management are not compatible with, and would therefore frustrate and interfere with, the County's General Management Plan regarding non-WSA lands with wilderness character.
2. The objectives of BLM Class II Visual Resource Management are generally not compatible with, and would therefore frustrate and interfere with, the County's General Management Plan regarding non-WSA lands with wilderness character. There are certain limited exceptions where a Class II objective may be compatible with the County's General Management Plan.

3. VRM Class II adversely affects existing rights such as mineral leases, livestock grazing and the ability to develop private lands. VRM inventories must be modified to permit full enjoyment and development of underlying land use authorizations and use potential. IBLA has held that VRM classes cannot be enforced if it conflicts with underlying land use or existing oil and gas leases.
4. The County's General Management Plan regarding non-WSA lands with wilderness character is consistent with either Class III or Class IV, depending on the precise area.

4.4.2 VISUAL RESOURCE/SCENERY MANAGEMENT

Current Setting

Each federal agency has its own system for classifying visual resources and for scenery management. BLM uses a Visual Resource Management system (VRM); Park Services has moved to a Visitor Experience and Resource Protection framework (VERP); and Forest Service has recently adopted a Scenery Classification System (SCS) that categorizes areas from 1 to 7 based on sensitivity. The most restrictive category for each agency - and often the second most restrictive - results in what is equivalent to a Special Designation. Although there may be some common traits, no two agencies are completely consistent with the other, the County's planning efforts or expressed desires. Often, Visual Classification Areas are more restrictive than needed outside National Parks and designated Wilderness.

Visual resources management is simply a tool to aid the federal land management agencies in quantifying lands in terms of basic terrain, geologic features, water features, vegetative patterns, and land use effects that typify a land unit and that influence the visual appeal of the areas and its visitors. It is not, in and of itself, a management decision and is used as a discretionary tool by land managers to aid in the decision making process. The County has considered visual resources within the scope of this RMP.

Need for Management Change

1. There has been increasing effort to use visual resource and scenery management prescriptions as a tool to remove lands from multiple use and sustained yield management. Visual resource and scenery classifications, which restrict use of the land, need to be limited to only those actions required by law and those actions Coordinated and mutually agreed upon by federal, state, and local entities.
2. The least restrictive visual resource and scenery management classification allowed by law needs to be applied to lands in the County.
3. The County needs to develop a scenery management component of the General Plan to provide consistency across agency boundaries.
4. The County needs to be provided an opportunity to coordinate and to participate as a cooperating agency in planning actions considering visual resource and scenery management.

Desired Condition

Juab County Desires:

1. Visual resources and scenery management be conducted in a manner that preserves the natural scenic beauty of the County without prohibiting resource use, development or extraction, and in accordance with this RMP
2. The strictest visual resource management practices be limited to National Parks and other areas approved by the Commission.
3. Federal lands have the minimum restrictions allowed by law regarding visual interpretive opportunities, use and enjoyment on designated lands.
4. Forest Service and BLM lands be classified with the least restrictive Visual Resource Management Classifications and comply with this RMP.
5. VRM Class 1 or equivalent and Class 2 or equivalent only be applied specifically to enhance, interpretive opportunities where consistent with the custom and culture of the area and in designated Rec I areas.
6. Federal agencies adopt the County's Visual Resource Management Classification System for all federal lands in order to provide consistency across agency boundaries and to preserve the County's socioeconomic vitality, custom, and culture.
7. Federal planning documents include a full range of scenery management alternatives and analysis evaluating direct, indirect, and cumulative impacts on socioeconomic vitality, community viability, custom, and culture.

Policies, Goals, Objectives, and Criteria

Policy: Visual Resource Management is subjective, and discretionary management that is not consistent with the County's General Management Plan fails to meet the standards required by FLPMA 202(c).

Policy: It is the policy of the County that any specific action to manage or change visual management or scenery classifications comply with the Juab County General Plan or be approved by the Commission.

Action/Implementation: Before any proposed action is approved, the Commission will have a review by its Public Lands Steering Committee, public hearings and/or interagency discussion to identify issues and concerns. The Commission will accept, reject or modify the proposal, or modify the General Management Plan as appropriate. Deviations from this process will be considered a violation of policy.

Policy: The Juab County General Plan will serve as the governing body of local law concerning the management of visual resources. Before any discretionary action can be taken or approved by federal land managers, it must be Coordinated with the County and shown that a) the action has been subjected to direct, indirect, and total cumulative impact analysis, b) the action has the support of the Commission and c) the action is consistent with this RMP.

Policy: Establishment of visual resource/scenery management classifications which place restrictions on public lands without considering cumulative impacts associated with Congressional designations and preservation areas (National Parks, National Monuments, National Recreation Areas, and Designated

Wilderness) in the region of comparison is inconsistent with the County's General Management Plan.

Policy: The County supports the least restrictive Visual Resource Classification allowed by law unless otherwise Coordinated and approved in the Juab County General Plan or by the Commission.

Policy: The County deems Visual Resource Management scenarios that are more restrictive than the least restrictive classification allowed by law in conflict and inconsistent with the Juab County General Plan unless authorized by the Plan or the Commission.

Finding: Visual Resource Management is a discretionary tool that is used by federal agencies to inventory and/or classify their lands to aid in making management decisions. VRM classification is not in and of itself a decision, but an aide or body of information that decision makers can use to guide their decision. Given the discretionary nature of this management tool, it is the finding of the County that County issues, needs, and concerns be given deference when it comes to future decisions made through federal planning and accompanying environmental documentation. All decisions relating to future actions regarding visual resources in the County shall be subject to local bodies of law, ordinances, policies, resource management plans and any other pertinent information. Failure to do so will be considered inconsistent with the County's General Plan and a violation of local law.

Finding: The County includes parts of the Colorado Plateau and Colorado Plateau/Basin and Range. A broad variety of visual settings are the result of the transition of physiographic provinces. Various visual features are scattered throughout the region including sand dunes, vast desert plateaus, and mountain overlooks. Several State Scenic Byways and Backways cross the County, providing views of the vistas, cliffs, and rural settings. The County contains a designated wilderness area. The proximity of undeveloped landscapes, national parks, national monuments, national recreational areas (NRA), and several state parks also contributes to the importance of visual resource management analysis of cumulative and comparative effects.

Finding: The County's VRM inventory identifies the existing scenic values in the area. The inventory includes an evaluation of scenic quality, analysis of sensitivity, and delineation of distance areas. Based on these three factors lands are placed into one of four VRM inventory classes. The inventory classes represent the relative value of the visual resources. Class I resources are the most sensitive, and Class II resources are somewhat sensitive, Class III resources are moderately sensitive, and Class IV resources are the least sensitive. The County's is currently working on a visual resource management plan.

Finding: The County's visual resource management classifications were developed considering technical, scenic, social, economic, and historic considerations. All lands within the County were considered, and the classification is consistent across agency boundaries. Agencies, which adopt more restrictive classifications, are inconsistent with the General Management Plan and often are inconsistent with their own previous planning documents. the County will consider revised visual resource management scenarios if: a) the alternative is based on objective data, b) all lands in the County are considered, c) detailed cumulative analysis across the entire county and region of comparison is developed, and d) the alternative is consistent with the agency's historic visual resource classifications and with the goals and objectives of the Juab County General Plan. Any deviation will be subject to prior approval of the County Board of Commissioners.

4.4.3 NO SURFACE DISTURBANCE

Current Setting

“No Surface Disturbance” is a management action reserved for situations where any surface disturbing activities would be detrimental to higher valued resources. Generally, these situations result from legislative action or withdrawing/removing lands from multiple use - sustained yield activities. The extent of no surface disturbance lands in the County is unknown at this time.

Need for Management Change

1. There has been increasing unjustified effort to identify lands for no surface disturbance. Technology currently exists to reclaim and enhance many specific resources after surface disturbing activities have taken place. No surface disturbance classifications need to be limited to only those actions required by law and those actions Coordinated and mutually agreed upon by federal, state, and local entities.
2. The least restrictive surface disturbing management classification allowed by law needs to be applied to lands in the County.
3. The County needs to develop a component for surface disturbing activities as part of the General Plan to provide consistency across agency boundaries.
4. The County needs to be provided an opportunity to participate as a cooperating agency in planning actions considering surface disturbing activities, and all such actions need to be Coordinated with the County.

Desired Condition

Juab County Desires that Non-surface Disturbance restrictions:

1. Be limited to only those lands where special protection is necessary that have been coordinated with and approved by the Commission.
2. Be replaced with opportunities for interpretation, use, and enjoyment consistent with the designation.
3. Be designated only after detailed, direct, indirect, and cumulative analysis considering all other special designations within the County and region.
4. Be used as a last resort when other management options are not available.

Policies, Goals, Objectives, and Criteria

Finding: There has been increasing effort to identify lands for no surface disturbance. Technology currently exists to reclaim and enhance specific resources after surface disturbing activities have taken place. No surface disturbance classifications need to be limited to only those actions required by law and those actions mutually agreed upon by federal, state, and local entities.

Policy: The least restrictive surface disturbing management classification allowed by law needs to be applied to lands in the County.

Goal: The County needs to be provided an opportunity to coordinate and to participate as a cooperating agency in planning actions considering surface disturbing activities.

Policy: The County has developed this component for surface disturbing activities as part of the General Plan to provide consistency across agency boundaries. Before any action is taken that will place an area into a no surface occupancy classification the criteria listed below shall be followed:

1. A demonstrated need, threat to human health, safety, or welfare of the human environment, or a critical environmental issue that can be managed by no other designation must exist.
2. A demonstrated need must be brought before the Commission for discussion.
3. Prior to a final agency action the proposal must be brought to the attention of the Public Lands Steering Committee, local community governments; and public hearings must be held so that all aspects, issues and concerns of local citizenry can be discussed.
4. Best management practices must be developed and an environmental document be completed addressing the total cumulative impacts to the biological environment, social and cultural impacts, ethnographic impacts, and what the economic impacts will be to the local area.
5. When the process is complete, the Commission will accept, reject, or suggest modifications of proposals and make a final decision on which action will be in the best interest of the County.
6. That decision will be considered as final local law in the County.

Criteria: Non Surface Disturbance Lands shall:

1. Be limited to only those lands where special protection is necessary that have been Coordinated and approved by the Commission.
2. Be replaced with opportunities for interpretation, use, and enjoyment consistent with the designation.
3. Be designated only after detailed, direct, in direct, and cumulative analysis considering all other special designations within the County and region of comparison.
4. Be used only as a last resort when other management options are not available.

Findings: Absent body of law directing implementation of no surface disturbance management, this tool is discretionary. Given the discretionary nature of this management tool, it is the County's finding that issues, needs, and policies identified by the General Plan must be given deference. Management actions that do not comply with the County's General Plan are deemed to not be consistent to the maximum extent allowed by law and are a violation of FLPMA. Any deviation from the general management plan must be approved by the Commission

4.4.4 SPECIAL PROTECTIVE ORDERS

Current Setting

Special protective areas are designated when land managers are required to take management action to protect resources/values under unusual or emergency conditions. No lands under special protective orders are identified in the County as of January 2016.

Need for Management Change

1. Special protective orders need to be based on current science, accurate inventories, and multiple use principles.
2. Special protective orders need to be consistent, to the maximum extent allowed by law, with goals, desires and actions identified in the Juab County General Plan.
3. The County needs to be provided the opportunity to coordinate and to participate as a cooperating agency in the development and implementation of special protective orders to the maximum extent allowed by law.
4. Special protective orders need to be removed as soon as the activity requiring the order is resolved.

Desired Condition

Juab County Desires Special Protection Orders:

1. Be instituted only in emergency situations with the concurrence the Commission.
2. Be based on objective scientific data indicating the protective order will solve the emergency situation.
3. Be temporary in nature.
4. Be removed as soon as the emergency situation is resolved or when other management options are developed to resolve the specific problem.

Policies, Goals, Objectives, and Criteria

Policy: Special Protective Orders will be considered only as a management tool utilized as a last resort.

Policy: It is the policy of the County that Special Protective Orders be utilized only in areas where there are remarkable values, a demonstrated need for the protection, safety, health, or welfare of human needs, emergency conditions and with the concurrence of the Commission.

Criteria: Special Protective Orders shall:

1. Be instituted only in emergency situations with the concurrence the Commission.
2. Be based on objective scientific data indicating the protective order will solve the emergency situation.

3. Be temporary in nature.
4. Be removed as soon as the emergency situation is resolved or when other management options are developed to resolve problems

Finding: The County finds that due to their emergency nature, special protective orders are often subjective and speculative. The County and Federal agencies have a common and equal interest in the protection of the land and its resources. The County finds that special protective orders must be developed and implemented based on the most objective, scientific and accurate data, closely coordinated between Federal, State and local officials and consistent to the maximum extent allowed by law with the Juab County General Plan.

4.5 MULTI AGENCY CONCERNS

This section considers issues that affect multiple agencies and/or are general in nature. Failure to comply with any policy/action identified herein is inconsistent with the County's General Management Plan and, to the extent authorized, a violation of local law.

Desired Condition

Juab County Desires:

1. Federal and State agencies assume responsibility for impacts to County services created by their agencies, lands, and visitors.
2. There be consistency across agency boundaries and that interagency jurisdictional disputes be eliminated. The County desires cumulative impacts consider, at a minimum, all lands within the County regardless of Agency jurisdiction. In many cases cumulative impacts should also be evaluated considering the region of comparison.
3. Improved and recognized access to public lands including roads, OHV routes, hiking trails, footpaths, self- guided tours, campgrounds, lodges, etc.
4. Disputes over access routes be resolved.
5. To maintain the traditional multiple use/sustained yield concepts for public lands within the County and to enhance community viability and socioeconomic vitality while preserving the custom, culture, and resources of the area.
6. All road issues be resolved in terms of ownership, widths, standards; and those roads deemed not to be RS2477 rights, should be given Title V right-of-way or other appropriate status.
7. All lands not designated for some specific purpose within the County should be managed under the principles of commodity production and multiple-use/sustained yield. Priority should be given to commodity production such as, grazing, oil and gas development, habitat manipulation, timber harvesting, developed or semi-developed recreation, mining, and all other opportunities needed to sustain a healthy economy in the County.
8. Solid waste and human waste issues resulting from recreation and other uses on public land be adequately addressed and resolved to the satisfaction of the County. This includes

development of facilities to handle such waste as well as reimbursing the County for expenses associated with disposal activities.

Policies, Goals, Objectives, and Criteria

Policy: The Commission is a duly elected body and represents a legal subdivision of State Government. The County must be a full partner in all laws, ordinances, policies, planning, and needful decisions relating to management of public lands in the County.

Policy: With the increasing influx of visitors to public lands, providing public services has become increasingly burdensome. Federal and State agencies must accept their share of the responsibility in providing or financing critical services. Managers and visitors are jointly responsible for impacts to public services.

Goal: Maintain and enhance the existing custom, culture and heritage. Residents of the County enjoy a rural lifestyle characterized by pastoral landscapes, open space, and small town qualities. The total population of the County is approximately 14,000 in 2016. Use and development of the public lands have been intertwined with the County's custom, culture, heritage, and socioeconomic base. Access to public lands, freedom to experience natural resources in the least restrictive manner practical and stewardship of the land are vital to the use and enjoyment of current and future generations in the County.

Goal: Maintain and enhance the environment, cultural diversity, clean air, and clean water. The County supports reasonable growth, natural resource enjoyment, use, and development. A healthy environment is a critical component of the custom, culture, and local values.

Goal: Maintain and enhance the quantity and quality of public services and facilities. As prescriptive management of public lands has increased negative impacts to County Services have also increased, and benefits have decreased. Public land managers must take responsibility for public services required by their visitors, even if at lower rates than high volume generators.

Goal: Maintain a usable public land base essential to the health and welfare of the County. Private lands within the County are sparse and disconnected. Maintaining the County's health, welfare, custom, and culture requires the wise use of public land resources.

Policy: The County will classify public lands in the County consistent with federal procedures for Visual Resource/Scenery management, Recreation Opportunity Spectrum analysis, wise stewardship and responsible protection of the health and welfare of the land.

Policy: The County will support management of public lands in accordance with the County's General Plan and Land Use Policy.

Objective: The County will actively coordinate with federal agencies and will participate in state and federal planning processes and will be a Joint Lead or Cooperating Agency in appropriate NEPA processes.

Policy: The County will have an active Public Lands Program.

Policy: Multiple Use - Lands administered by the Federal Government, unless specifically withdrawn through Congressional mandate for specific purposes, must be managed under the principles of "multiple use and sustained yield." Federal land managers are inconsistent with the

definition of “multiple use”. Multiple use means, but is not necessarily limited to those items historically and traditionally practiced, both consumptive and non-consumptive, which include grazing, mining, recreation, oil and gas exploration, timber production (to include wood products like fence posts and firewood), wildlife, vegetative management, and water use and development. the County asserts these uses are generally compatible and true “multiple use” management allows the land and its resources to be used for multiples uses simultaneously or in concert with each other. More than one use can occur at the same time, and many activities are mutually beneficial.

Policy: Wilderness values should not be applied as suitability criteria in determining grazing capacities. Rangeland health standards shall be used for grazing allocations.

Policy: County custom, culture, and economic stability depend on agriculture, livestock production, mining, tourism, recreation, the timber industry, the continued use and availability of public lands, and accompanying resources. Federal and state management plans must identify and address in detail the impacts of their proposed management decisions and practices have on traditional resource uses, custom, and culture.

Policy: Sufficient land within the region and the region of comparison has been designated for primitive recreation and preservation purposes (Parks, Monuments, Recreation Areas, and Wilderness). The County opposes additional lands administered under single use management schemes unless specifically approved by the Commission.

Policy: The County actively supports public land practices that a) provide for traditional multiple uses, b) support the custom and culture of the County, and c) enhance commodity production consistent with man’s role as steward of the land.

Policy: Public Access - The County supports motorized and non-motorized access to public lands. Access to public land has a direct impact on the County’s economic stability, custom, and culture. Open access maintains stability in the County. The County will participate in all relevant federal and state access decisions, including RS 2477 determinations, Title V issues, closure discussions, roadless area designations, and transportation decisions.

Policy: The County has developed a Transportation System that identifies the minimum infrastructure necessary to maintain the custom, culture, and socioeconomic needs of the County. County concurrence must be sought prior to access reduction to prevent negative impacts to the sustainability of local communities.

Policy: Given the importance of public land access, the County asserts roads, paths, ways, and trails constitute valid existing rights if created prior to the passage of FLPMA and/or enabling authority. The County also designates all existing roads, paths, ways, and trails as cultural resources protected by federal, state and local laws.

Policy: The County declares federal actions regarding RS 2477 are unjust, illegal, and have placed an unfair burden on the County to protect its rights-of-ways. The County will aggressively protect its right to public access. Agencies who adopt management alternatives that

impact the transportation network prior to final determination of jurisdiction, fail to recognize valid existing rights. Restrictions on existing roads, paths, ways, and trails prior to final determinations of jurisdiction is speculative, arbitrary, capricious, and is inconsistent with the Juab County General Plan.

Objective: The County will actively maintain and preserve public land access throughout the County.

Policy: Public Land Recreation and Tourism - The County and the surrounding areas contain some of the most scenic landscapes in the world. A great diversity of geological and vegetal landscapes exists in the County ranging from desert environments to Alpine and Sub-alpine landscapes. The close proximity of both desert and Forest landscapes provides contrast not found in many areas. Visitors to public lands have a direct bearing on the economic well-being of the County and its communities. Visitors also impact County services including search & rescue, emergency medical, solid waste collection and disposal, law enforcement, and fire response. The County supports increased recreational activity on public lands. However, federal and state agencies must acknowledge, and more aggressively address the impacts associated with their visitors.

Policy: Federal and state land managers are jointly responsible with their visitors to compensate the County for public services. The County concurs with visitor use surveys indicating a vast majority of visitors (80+ %) are involved in some type of motorized recreation and only about 2% of the visitors are primarily interested in primitive recreation. (See National Forest Visitor Use Surveys) The County adopts the BLM's Final Wilderness EIS finding that primitive recreationists only spend approximately \$4.10 per day.

Policy: Environmental Review and Public Land Use and Development - The County enjoys an abundance of natural resources and landscapes. Sensible stewardship and responsible development will enhance and preserve the quality of life, which County residents and visitors have come to enjoy while strengthening the custom, culture, and socioeconomic structure.

Policy: Responsible environmental review and planning for public lands can be a productive management tool. Responsible stewardship requires that the social and economic environment of local communities most impacted by public land use decisions be included in environmental reviews. Impacts and mitigation measures shall be considered a vital part of responsible land use decisions.

Policy: The County supports a responsible environmental review and decision-making process that incorporates cumulative impacts of similar actions across all agency boundaries in the County/region of comparison including evaluation of impacts to custom and culture, consistency comparisons between proposed actions and the County Plan, and a detailed socio-economic review. If such reviews areas not part of the process, the proposal is inconsistent with local law, fails to comply with NEPA and will not be supported by the County.

Policy: Private and Public Land Ratios - Public land acreage currently owned and managed by federal and state agencies is more than sufficient for the public interest. Almost three fourths of the County is owned, controlled or in some way managed by federal entities. Sufficient acreage already exists in the National Park System, National Monument System and other areas of special designation in Utah. The County has a "no net loss of private land" and "no expansion of

Special Designations position relative to Federal-State property exchanges and transfers without the approval of the Commission. The determination of “no net loss” should consider both acreage and values. The County supports a “net gain of private lands” regarding acreage and value.

The County directs Federal and State agencies involved in private-to-public ownership transactions to identify and make available for private ownership, an equivalent or greater amount and value of public land as a condition of the transaction. These lands, and the accompanying surface and subsurface resources, should be transferred to private ownership without use restrictions or clouded title.

The County also encourages state and federal agencies to privatize lands suitable for agriculture, roads, material pits, and other required activities. The County will expand efforts to acquire public lands through the Recreation and Public Purposes Act (R&PP) and other programs.

Policy: Recent surveys conducted by the units of the National Forests in Utah regarding visitor activities indicate a majority of visitors are involved in motorized recreation and viewing activities. It is recognized by the County that without roads, paths, and ways the public is greatly limited to the land they can see, appreciate, use, and enjoy. It is therefore the policy of the County to place maintenance and improvement of transportation facilities as a higher priority than protecting visual resources adjacent to those facilities. Where existing transportation facilities are present (roads, paths, ways, trails, airstrips, trailheads, parking areas, airports etc.), the area is considered to have enhanced visual characteristics, because the public has an opportunity to view it. Best management practices, which support appropriate visual resource objectives, will be applied on transportation maintenance and improvement projects.

FOREST RESOURCES OF JUAB COUNTY

Introduction

This report includes an overview of forest resources in the County of southern Utah. The value of these forests includes much more than just wood. The majority of this region's water comes from high-elevation forests and it can be argued that water, which plays a central role in the economy, politics and culture of the semi-arid West, is the most important forest resource. Recreation, quality wildlife habitat, and forage for domestic livestock are also exceedingly important forest resources.

An overarching theme for any discussion of vegetation, particularly forest vegetation, in the Interior Western United States is disturbance. Forests in this region are fundamentally shaped by disturbances, both natural and those associated with human use. The long history of use, and in some cases abuse, of these forest resources have in many cases resulted in unwanted consequences that are a major challenge to resources managers (Long 2003).

The focus of this analysis is the forests of the County. The objective is characterization of the major forest types including: 1) existing condition; 2) challenges to sustainability; and 3) general strategies for effective management.

Data Sources

USDA Forest Service Forest Inventory and Analysis (FIA)

Data used in this analysis were taken from USDA Forest Service Forest Inventory and Analysis (FIA) surveys (Woudenberg et al. 2010) conducted between 2005 and 2014. FIA plots are established on a systematic grid and the data, therefore, represent an unbiased sample of forest resources. From these surveys we identified 92 FIA plots within the County. FIA plots measured since 2000 follow a mapped-plot design, meaning that a plot footprint can sample forest and non-forest, or stands of differing composition. Characteristics normally attributed to stands in other inventories, such as forest type or stand density, are assigned to FIA conditions. Among condition-level variables is the proportion of the plot footprint that the condition occupies, and the sum of all condition proportions on a plot equals 1.0.

In this analysis the collective attributes associated with a condition (e.g., *Aspen forest type*) at a given sample location will be treated as reflecting an individual stand. The stand is the basic unit of forest vegetation assessment and management. A stand is relatively homogeneous forest which, for the purposes of management, is treated as a single unit (Reynolds et al. 2013). While silvicultural prescriptions are written and implemented on a stand by stand basis, effective resource management must also be undertaken in a broader context (i.e., multiple stands within a watershed or a landscape). One of the important advantages of the FIA database is that it will support county-level monitoring of forest condition, e.g., trends in the risk of high-severity fire and insect outbreaks.

LANDFIRE Raster Data

Species distribution maps were created using the 30m resolution Existing Vegetation Type (EVT) layer from LANDFIRE.gov (acquired 4/7/2016). EVT is mapped using decision tree models, field data, Landsat imagery, elevation, and biophysical gradient data. Decision tree models are

developed separately for each of the three lifeforms, tree, shrub, and herbaceous and are then used to generate lifeform specific EVT layers. (from website: <http://www.landfire.gov/NationalProductDescriptions21.php>).

The EVT SAF_SRM field was filtered in ArcGIS to extract the following species of interest:

SAF 206: Engelmann Spruce-Subalpine Fir

SAF 208: Whitebark Pine

SAF 209: Bristlecone Pine

SAF 210: Interior Douglas-Fir

SAF 211: White Fir

SAF 217: Aspen

SAF 219: Limber Pine

SAF 237: Interior Ponderosa Pine

*SAF 238: Western Juniper

*SRM 412: Juniper-Pinyon Woodland

SRM 413: Gambel Oak

SRM 415: Curlleaf Mountain-Mahogany

SRM 418: Bigtooth Maple

SRM 421: Chokecherry-Serviceberry-Rose

*SRM 504: Juniper-Pinyon Pine Woodland

*combined.

LANDSAT8 Raster Data

The basemap layer for the species distribution maps was mosaicked in ArcGIS using LANDSAT 8 data acquired 4/8/2016 from <http://earthexplorer.usgs.gov/>. More information about Landsat 8 can be found at <http://landsat.usgs.gov/landsat8.php>.

Current Setting

The County has a great diversity of natural vegetation which is reflective of a broad range of environmental conditions. Different types of vegetation are associated with differences in elevation. Increasing elevation is associated with increasing precipitation and decreasing temperatures (both summer and winter). These strong environmental gradients result in zones of vegetation types ranging from hot/dry low elevation desert to cold/wet high elevation alpine communities. Southern Utah, like the rest of the Middle and Southern Rocky Mountain Region, has both lower and upper treelines (Long 1994). Below the lower treeline, conditions are generally too dry for trees to survive; above the upper treeline, conditions are generally too cold.

The montane forest and woodland vegetation occurring between the upper limit of the pinyon-juniper woodlands and upper treeline is the subject of this assessment (Figure 1).

Juab County Forest Resources Forest Cover

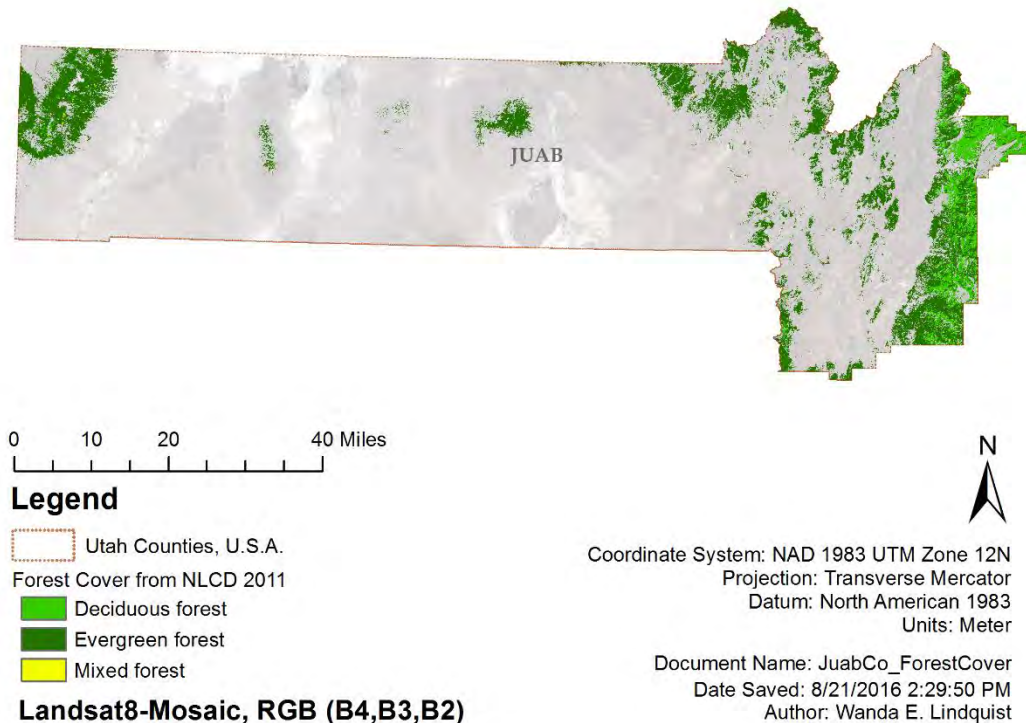


Figure 1. Forest cover in Juab County from the National Land Cover Database 2011 (NLCD 2011, Homer, C.G., Dewitz, J.A., Yang, L., Jin, S., Danielson, P., Xian, G., Coulston, J., Herold, N.D., Wickham, J.D., and Megown, K., 2015, Completion of the 2011 National Land Cover Database for the conterminous United States-Representing a decade of land cover change information. Photogrammetric Engineering and Remote Sensing, v. 81, no. 5, p. 345-354).

Area Estimates

The total area of the County is about 2.18 million acres. About 21.6% of this area is forested (i.e., vegetation dominated or potentially dominated by trees), with pinyon-juniper woodlands representing the largest proportion (Appendix X) (Figure 2). Montane forests and woodlands (i.e. excluding P-J) occupy about 0.11 million acres in the County. Of this area, 28.9% of forest land is further classified as higher productivity timberland with the potential to produce at least 20 cubic feet per acre per year. Nearly 0.5% of the total forest land within the County is in some form of reserve (e.g., parks).

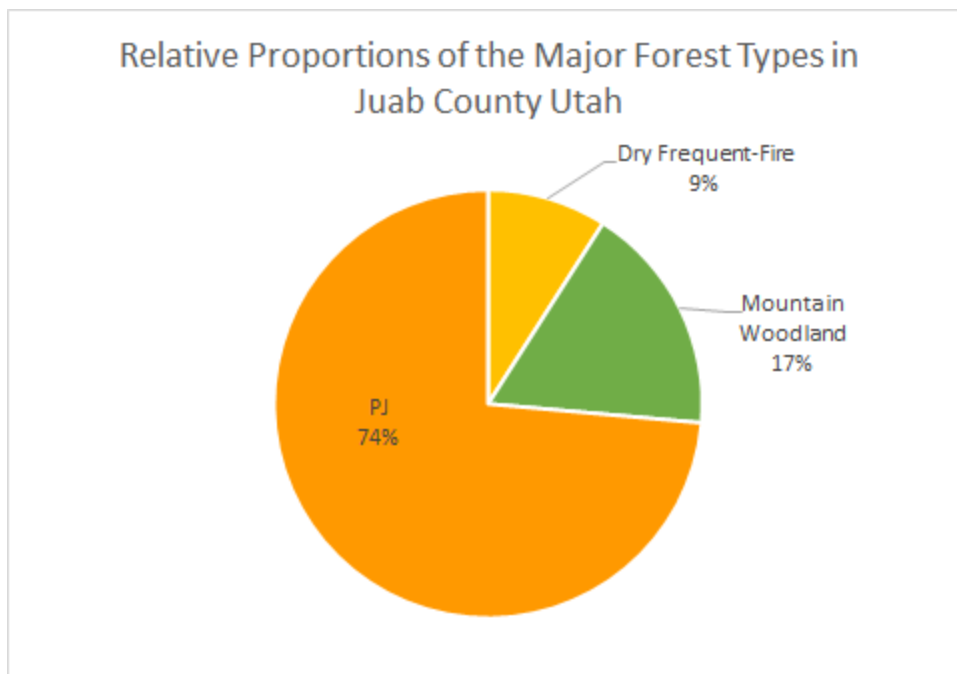


Figure 2. Relative proportions of the major forest types in Juab County (FIA 2000-2014).

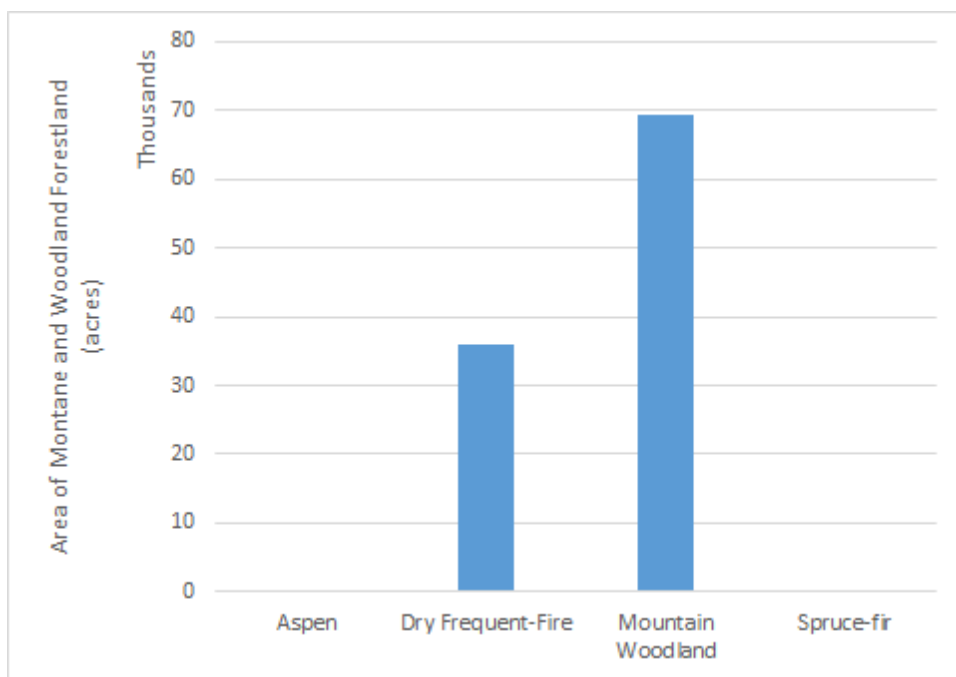
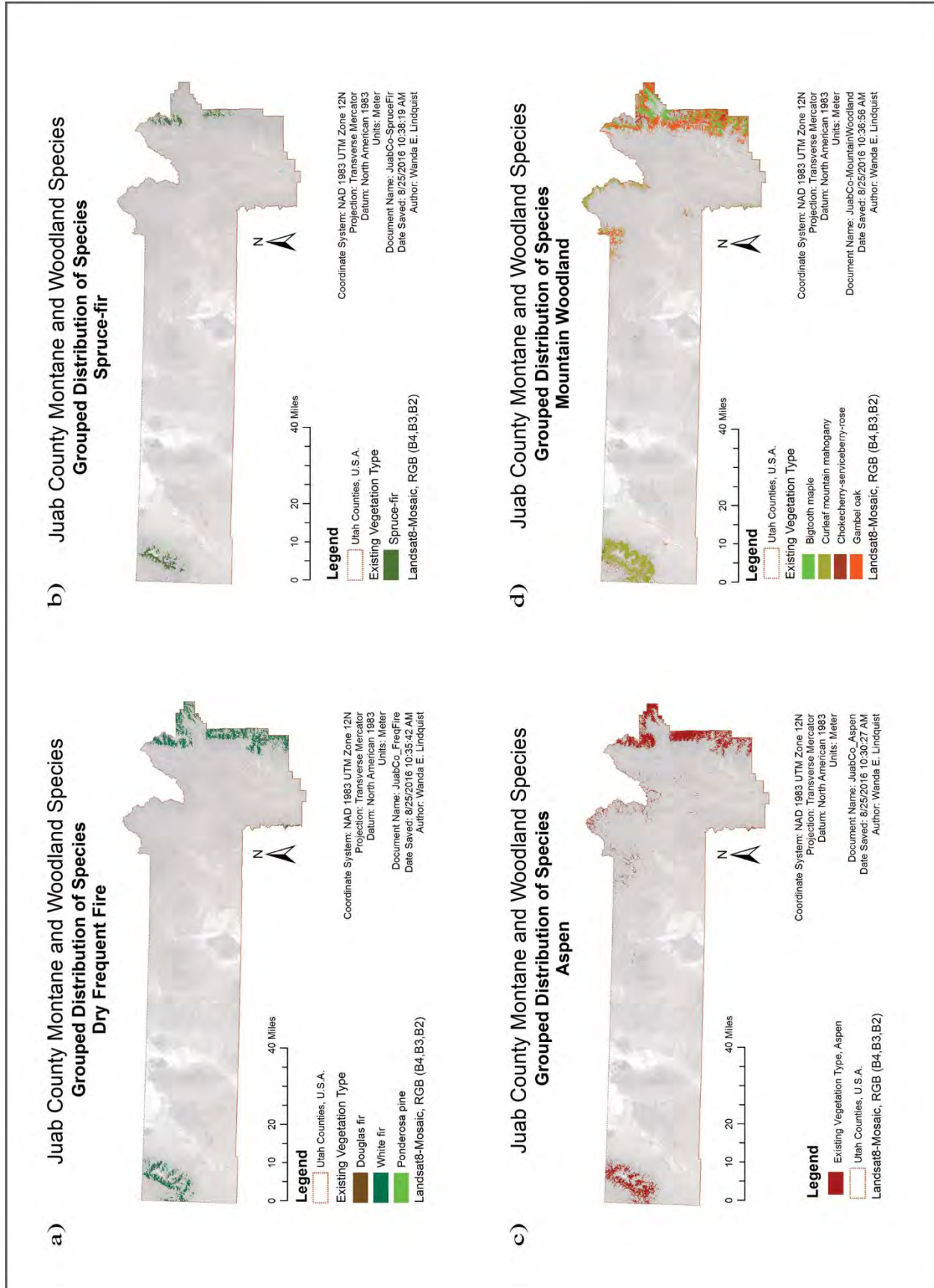


Figure 3. Acres of the major forest types in Juab County (FIA 2000-2014).

Ownership and management of forests (including Pinyon-Juniper) in the County are dominated by the federal government (75.5% of total and 73.2% of the unreserved forest). Private ownership accounts for about 18% of the total montane forest and woodlands.

Figure 4. Distribution maps of the important montane and woodland species in



Forest Types

Within Southwestern Utah there are 12 specifically recognized montane forest and woodland types (Table 1 includes the common and scientific names of the important tree species). Three types are pooled under the characterization *Dry frequent-fire type* (this includes ponderosa pine, Douglas-fir, white fir, and mixtures of these three species) (Figure 4a). The Spruce-fir and Aspen forest types are not common in the County (Figure 4b and 4c). The remaining type is *Mountain woodland* (Gambel oak, mountain mahogany and intermountain maple) (Figure 4d).

Table 1. Common and scientific names of important tree species occurring in the County (Little 1971; Van Buren et al. 2011)

COMMON_NAME	GENUS_SPECIES
white fir	<i>Abies concolor</i>
subalpine fir	<i>Abies lasiocarpa</i>
bigtooth maple	<i>Acer grandidentatum</i>
curlleaf mountain-mahogany	<i>Cercocarpus ledifolius</i>
Utah juniper	<i>Juniperus osteosperma</i>
Rocky Mountain juniper	<i>Juniperus scopulorum</i>
Engelmann spruce	<i>Picea engelmannii</i>
common or two-needle pinyon	<i>Pinus edulis</i>
limber pine	<i>Pinus flexilis</i>
singleleaf pinyon	<i>Pinus monophylla</i>
quaking aspen	<i>Populus tremuloides</i>
Douglas-fir	<i>Pseudotsuga menziesii</i>
Gambel oak	<i>Quercus gambelii</i>

Pinyon-juniper woodlands occur at lower treeline between shrub-steppe and montane forests (Brown et al. 2008; Long 1994); this broad and important type is covered elsewhere (Appendix X). Gambel oak can form pure woodland stands at lower elevations; it can also be a component of conifer-dominated (e.g., ponderosa pine) forests up to mid-elevations. Mountain mahogany and intermountain maple are less common than Gambel oak and for the purposes of this analysis,

are included in the *Mountain woodland type*. The *Dry frequent-fire type* can include various combinations of ponderosa pine, Douglas-fir and white fir. Ponderosa pine tends to dominate at lower elevations; Douglas-fir and white fir tend to increase in importance on relatively cooler and more mesic sites (e.g., north aspects). Within the broad *Dry frequent-fire type* individual mixed-conifer stands can, depending on specific environmental conditions and disturbance history, include any of the conifer species as well as Gambel oak and aspen.

Natural Disturbance Regimes

The species composition and structure of forests and woodlands are to a considerable extent reflections of disturbance history. There is, for example, broad consensus among scientists and forest managers that for many forests in the Southwest, changes in natural fire regimes, coupled with extended drought are responsible for increased size and severity of both wildfires and insect outbreaks (Swetnam and Lynch 1993; Shaw et al. 2005). An understanding of natural disturbance regimes, such as the frequency and severity of wildfire, is fundamental to the creation of effective management strategies. This management approach is not about mimicking the disturbances *per se*. Rather, the focus is on the legacies, e.g., species composition and stand structure, associated with the natural disturbance regimes (Perera and Buse 2004; Long 2009).

Natural disturbances in forests almost invariably involve some combination of biotic (e.g., insects and disease) and abiotic (e.g., fire, wind) agents. Of these, fire and insects are the most important for the forests of the County. A natural disturbance regime for a particular forest type is typically characterized by the dominant type of disturbance (e.g., frequent/low severity fire in the *Dry frequent-fire forest type* in contrast to infrequent/high severity fire in the higher elevation forests). Regardless of the dominant disturbance type, there is the potential for important interactions between different types of disturbances (e.g., DeRose and Long 2009; Jenkins et al. 2008; Jenkins et al. 2014). For example, a fire that weakens, but does not actually kill a tree, may make it susceptible to attack by bark beetles.

Natural fire regimes in the Southwest were arrayed from hot dry environments at low elevations to cool wet environments at high elevations (Figure 5). Reference regimes can be categorized along a gradient from ‘fuel-limited’ to ‘climate-limited’. In deserts and other non-forested vegetation types with very low productivity, the frequency of return fires is limited by the long period of time necessary for fuels to accumulate. The resulting ‘fuel-limited’ fire regime would

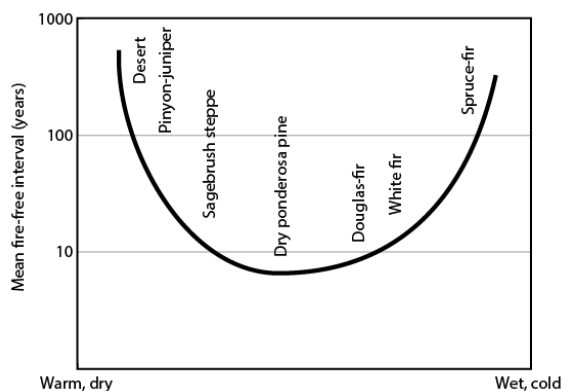


Figure 5. Infrequent/high severity natural fire regimes were characteristic of vegetation types that were either fuel-limited (e.g., deserts with low productivity) or climate-limited (e.g., high elevation spruce-fir forests with cool/wet summers). Frequent/low severity natural fire regimes were characteristic of forests that were neither fuel- nor climate-limited (e.g., ponderosa pine) (after Martin and Sapsis 1991).

be characterized by very infrequent but high severity fires. At the opposite environmental extreme are high elevation forests where relatively high productivity results in fairly rapid accumulation of fuels, but weather conditions conducive to wildfire may be rare. The resulting 'climate-limited' fire regime would also be characterized by very infrequent but high severity fires. Most of the forests in the County have natural fire regimes intermediate between these two extremes (Brown et al. 2008; Swetnam and Baison 1996).

For this assessment, the emphasis will be on the potential for 'uncharacteristic' disturbance. For example, we rely on the fire regime paradigm in a relative sense to help assess how 'characteristic' or 'uncharacteristic' a fire (or potential fire) might be (Hardy 2005). Fire hazard refers to the state of the fuels (e.g., presence or absence of fuel ladders), independent of the weather on a given day. Fire severity refers to the effect a fire has on wildland systems. Severity is not a characterization of the fire itself, but rather the fire's effect (Hardy 2005). For example, a 'high severity' fire results in the death of most overstory trees. In contrast, a 'low severity' fire might burn understory litter, grass, shrubs, and small trees, but leave most or all of the mature trees unburned.

Insects, particularly bark beetles and defoliators, can cause considerable damage in Southwestern forests. Each of the forest types represented in the County can have insect outbreaks but it is the conifer-dominated forests that are most likely to have substantial mortality during insect outbreaks. Currently all of the insect species causing substantial mortality of mature trees in Southwestern forests are native to the region. Under normal conditions these insects exist as endemic populations and the associated damage is limited in extent. Occasionally, during a prolonged drought for example, the population of a particular insect might transition to outbreak levels and mortality of the host tree species increases in both amount and extent. The impacts of these native insects, at both endemic and outbreak population levels, were natural parts of these forest ecosystems.

There are, however, region-wide changes in the frequency, extent, and severity of insect outbreaks (Swetnam and Lynch 1993; DeRose and Long 2009). Some of these changes in insect populations are certainly related to at least short-term changes in climate (e.g., the increased survival of high-elevation spruce beetle with increased winter temperatures and the increased success of pinyon Ips in drought-stressed host trees). Changes in insect impacts are also associated with changes in the various host forest types. Important stand and landscape changes include shifts in tree species composition, increases in stand density, and decreases in age-class diversity.

Mountain woodland type

This type represents a combination of Gambel oak, mountain mahogany and intermountain maple, with Gambel oak by far the most common. Based on research done in this type in northern Utah (Wadleigh et al. 1998), the following is a likely characterization of changes in the natural fire regime of Gambel oak woodlands in the County. Prior to the introduction of domestic livestock and effective fire suppression, a frequent/low-severity fire would have limited the extent of, and the continuity of fuels within, Gambel oak woodlands. With fire exclusion have come fundamental changes in the fuel profile and the increased likelihood of high-severity fires (Bradley et al. 1992; Wadleigh et al. 1998). Changes in the natural fire regime (i.e., decreased frequency and increased severity) has not only altered the structure of oak woodlands, but has

resulted in an increase in the abundance of Gambel oak in mixed-conifer stands of the *Dry frequent-fire forest type*.

Dry frequent-fire forest type

The natural fire regime in this forest type is best characterized as frequent/low-severity. Across the range of environmental conditions associated with this important type would have been a range in fire frequency and severity (e.g., Korb et al. 2013; Reynolds et al. 2013). Under the warmest and driest conditions (i.e., sites where ponderosa pine is the dominant species), fires would have been very frequent (< 10 years) and low severity. Under cooler and more mesic conditions (i.e., sites where, in addition to ponderosa pine, Douglas-fir and/or white fir are potentially important stand components) fires were somewhat less frequent (e.g., <35 years) and would have included a combination of low- and mixed-severity.

An overarching theme in the Southwest and Intermountain West is the implication of long-term fire exclusion. Reasons for fire exclusion can include historic overgrazing near the turn of the last century, elimination of burning by Native Americans, and especially effective fire-suppression starting in the middle of the last century. Fire exclusion is primarily an issue in the frequent-fire forest types, as exemplified by the *Dry frequent-fire forest type* in the County.

Long-term fire exclusion in the *Dry frequent-fire forest type* has had a substantial impact on stands and landscapes. Changes include shifts in species composition, increases in stand density, increases in the amount and continuity of fuels (both canopy fuels and fuel ladders) resulting in fundamental changes in fire behavior, and the nature of insect outbreaks. Changes in tree species composition have resulted where the elimination of low-severity fires has allowed the establishment of shade-tolerant Douglas-fir and white fir in stands that under the natural fire regime were almost entirely dominated by ponderosa pine.

Whereas the natural fire regime limited stand density, fire exclusion has allowed many stands to achieve relative densities associated with high competitive stress and continuity of canopy fuels. As a consequence, these stands are more susceptible to a range of insects (Fettig et al. 2007) as well as to high-severity fire (Graham et al. 2004). Changes in vertical structure, for example with the establishment of shade-tolerant Douglas-fir and white fir, represent fuel ladders via which a surface fire can transition to the upper canopy. Changes in composition and vertical structure can also make these stands more susceptible to western spruce budworm, an important defoliator of Douglas-fir and white fir (but not, ironically, spruce) (Long 1994).

Existing and desired future conditions.

A characteristic of many stands in the County is that they are dense, and high relative densities are associated with high competitive stress and density-related mortality (Long et al. 2004). In the *Dry frequent-fire forest type* (ponderosa pine, Douglas-fir, and white fir) high relative densities potentially makes these stands susceptible to insect attack (e.g., Kolb et al. 1998; Fettig et al. 2007). It is not possible to predict with certainty when or even if a given stand will be attacked; however, once beetles enter a stand, denser stands can be expected to have greater beetle attack (Chojnack et al. 2000). About 57.1% of stands in this important forest type have a risk rating for mountain pine beetle of moderate or higher.

Table 2. Volume of live and dead greater than 5 inches DBH (diameter at breast height) by Forest Type Group.

Forest Type Group	Volume of all live on forestland (greater than 5" dbh, cubic feet)	Volume of standing dead on forestland (greater than 5" dbh, cubic feet)
Aspen	0	0
Dry Frequent-fire	92,901,585	14,358,656
Spruce-fir	0	0

In addition, many stands currently have canopy fuel profiles (i.e., canopy bulk density and canopy base height) which make them prone to crown fires. For example, nearly 100. % of stands in the *Dry frequent-fire forest type* currently have low torching and/or crowning indexes indicating that fire entering these stands, even under less than extreme wind speeds, can be a crown fire.

Proactive management can be used to create and maintain species composition and structure in *Dry frequent-fire forest type* stands resistance to, and resilience from, disturbance (DeRose and Long 2014). The following example illustrates the potential for active management to create stand conditions where high severity fire would be unlikely. Figure 6a is a representative mixed-conifer stand from the FIA database. This stand is typical in that fire exclusion has resulted in moderate to high relative density and the development of fuel ladders. With this canopy fuels profile, fire entering the stand in extreme fire weather would be exceedingly destructive (Figure 6b). The Forest Vegetation Simulator and Fire and Fuels Extension (Dixon 2002; Rebain 2010) were used to simulate a thinning and fuels treatment in the stand and to model pre- and post-treatment fire behavior under severe weather conditions.

Thinning can be used to fundamentally alter stand structure and species composition (Figure 6c). Thinning can eliminate fuel ladders and favor the retention of large fire-resistant ponderosa pine and Douglas-fir. With this altered canopy fuels profile fire entering the stand even in extreme fire weather would be a low-severity surface fire (Figure 6d). Many of the large trees retained in the post-thinning stand would survive such a fire.

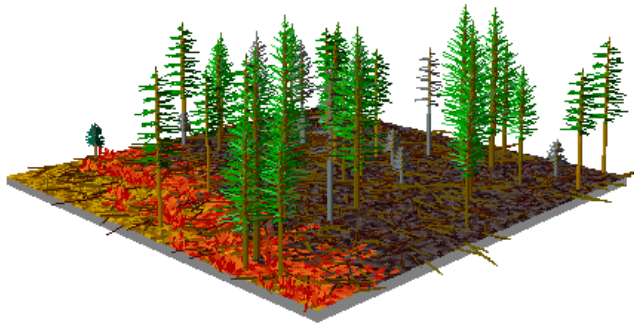
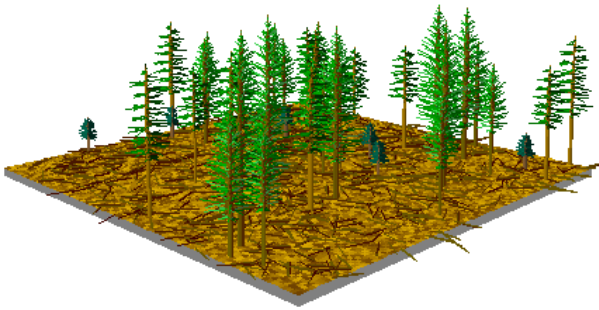
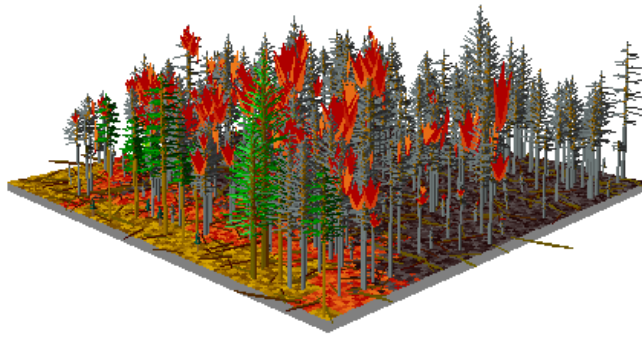


Figure 6. A representative mixed-conifer stand in the dry frequent-fire forest type.

A) With fire exclusion, there has been an increase in shade-tolerant species like white fir and an increase in fuel ladders.

B) Under severe weather conditions, fire behavior is likely to be extreme.

C) Simulated thinning and fuels treatment shows the reduction in stand density and fuel ladders and shifts species composition toward large, fire-resistance ponderosa pine and Douglas-fir.

D) Fire behavior in the treated stand is unlikely to be extreme even under severe weather conditions.

Policies and Objectives

Past successes in fire suppression and the limited scale of proactive forest management have resulted in widespread changes in forest structure and composition, particularly in the *Dry frequent-fire forest type*. These forest changes, exacerbated by drought, are associated with fire regime change from frequent/low-severity fire to infrequent/high-severity and mixed-severity fire. In the Southwest and Intermountain West, the increase in the number of ‘mega-fires’ (uncharacteristically large and severe fires) is a region-wide problem. The 8000+ acre Shingle fire in 2012 in Kane County is indicative that the condition of forests in southern Utah is a concern. The cost of the wildfire program in the US is enormous and growing. For the USDA Forest Service, which is but one of the state and federal agencies responsible for wildland fire management, wildfire suppression has gone from 16% of the annual budget in 1995 to more than half in 2015. It is projected to reach 67% of the Forest Service’s total annual budget in 10 years (USDA 2015). The inescapable conclusion is that traditional fire prevention and suppression approaches to wildland fire management are unsustainable; however, there are realistic alternative strategies which are well understood by wildland fire and natural resource managers (e.g., USDA 2015; Stephens et al. 2009).

Building and maintaining forests, particularly in the *Dry frequent-fire forest type*, which are resistant and resilient to both extreme fire and insect outbreaks requires proactive management including combinations of mechanical treatments (e.g., thinning) and prescribed fire. In this type of forest, mechanical treatments followed by prescribed fire or pile burning has been shown to be the most effective treatment for reducing the risk of crown fires (e.g., Stephens et al. 2009). Results of extensive research indicate that “mechanical plus fire, fire-only, and mechanical-only treatments using whole-tree harvest systems were all effective at reducing potential fire severity under severe fire weather conditions” (Stephens et al. 2009).

Management to create and maintain fire resilient forests is a clear alternative to the current unsustainable fire suppression strategy (USDA 2015). Under this alternative, wildland urban interface and back-country lands must be actively managed to maintain structure and tree species composition consistent with low severity fires. To be effective, this management does not have to be done in every stand and on every acre, but it must be extensive enough to achieve the goal of fire resilient forest landscapes (Fule et al. 2001). When “communities, adjacent lands, and back-county areas have been made fire-resilient, sustainable wildland fire management would then involve maintaining...” these structures and compositions over time (USDA 2015).

There is considerable consensus among scientists and forest resource managers in support of a combination of tools (thinning, mechanical treatments, and prescribed fire) to achieve forests which are resistant and resilient to a broad range of environmental challenges (e.g., Covington 2000; Allen et al. 2002; Roccaforte et al. 2008; Stephens et al. 2009; Reynolds et al. 2013; Fettig and McKelvey 2014; DeRose and Long 2014; Shepperd et al. 2015; North et al. 2015; Temperli et al. 2014; Windmuller-Campione and Long 2015). These strategies, however, can only be effective if they are actually implemented and barriers to implementation are more likely to be societal than scientific (e.g., Gill and Stephens 2009; Long 2009). The staffs of the National Forests in southern Utah have either begun or will soon begin development of new Land and Resource Management Plans (i.e., revised Forest Plans). It will be important to explicitly include provisions in the new Forest Plans for the proactive management necessary to build and maintain forest resilience.

References

- Allen, C.D., Savage, M., Falk, D.A., Suckling, K.F., Swetnam, T.W., Schulke, T., Stacey, P.B., Morgan, P., Hoffman, M. and Klingel, J.T. 2002. Ecological restoration of Southwestern ponderosa pine ecosystems: a broad perspective. *Ecological Applications* 12:1418–1433.
- Bradley, A., Noste, N. and Fischer, W. 1992. Fire ecology of forests and woodlands in Utah. USDA Forest Service, Intermountain Research Station, General Technical Report INT-287, 92 pp
- Brown, P.M., Heyerdahl, E.K., Kitchen, S.G. and Weber, M.H. 2008. Climate effects on historical fires (1630–1900) in Utah. *International Journal of Wildland Fire* 17:28-39.
- Chojnacky, D.C.; Bentz, B.J.; Logan, J.A. 2000. Mountain pine beetle attack in ponderosa pine: Comparing methods for rating susceptibility. Res. Pap. RMRS-RP-26. Ogden, UT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 10 p.
- Covington, W.W. 2000. Helping western forests heal. *Nature* 408, 135-136
doi:10.1038/35041641
- DeRose, R.J., B.J. Bentz, J.N. Long and J.D. Shaw. 2013. Effect of increasing temperature on the distribution of spruce beetle in Engelmann spruce forests of the Interior West, USA. *Forest Ecology and Management* 308:198-206.
- DeRose, R.J. and J.N. Long. 2009. Wildfires and spruce beetle outbreaks: interacting disturbances in the central Rocky Mountains. *EcoScience* 16:28-35.
- DeRose, R.J. and J.N. Long. 2010. Regeneration response and seedling bank dynamics on a *Dendroctonus rufipennis*-killed *Picea engelmannii* landscape. *Journal of Vegetation Science* 21:377-387.
- DeRose, R.J. and J.N. Long. 2014. Resistance and resilience: a conceptual framework for silviculture. *Forest Science* 60(6):1205-1212.
- Dixon, Gary E. comp. 2002. Essential FVS: A user's guide to the Forest Vegetation Simulator. Internal Rep. Fort Collins, CO: U. S. Department of Agriculture, Forest Service, Forest Management Service Center. 226p. Revised: February 25, 2015)
- Fettig, C.J., Klepzig, K.D., Billings R.F., Munson, A.S., Nebeker, T.E., Negrón, J.F. and Nowak, J.T. 2007. The effectiveness of vegetation management practices for prevention and control of bark beetle infestations in coniferous forests of the western and southern United States. *Forest Ecology and Management* 238: 24-53.
- Fettig, C.J. and McKelvey, S.R. 2014. Resiliency of an interior ponderosa pine forest to bark beetle infestations following fuel-reduction and forest-restoration treatments. *Forests* 5(1):153-176.
- Fule, P.Z., McHugh, C., Heinlein, T.A., Covington, W.W. 2001. Potential fire behavior is reduced following forest restoration treatments. Pp. 28-35 in R.K. Vance, C.B. Edminster, W.W.

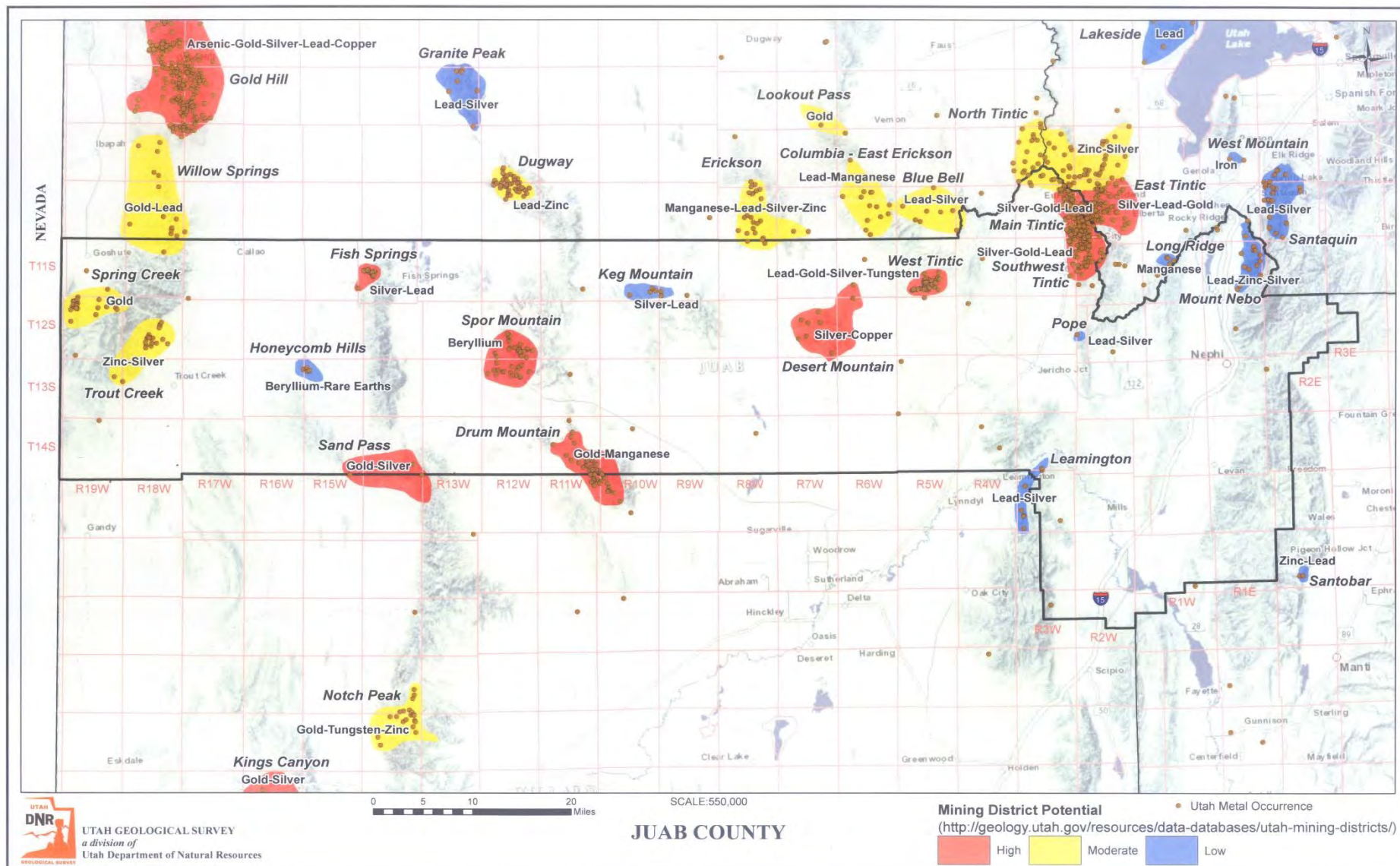
- Covington, and J.A. Blake (tech. coords.). Ponderosa Pine Ecosystem Restoration and Conservation: Steps Toward Stewardship. Proc. RMRS-P-22. USDA Forest Service, Rocky Mountain Research Station. 188p.
- Gill, A.M. and Stephens, S.L. 2009. Scientific and social challenges for the management of fire-prone wildland–urban interfaces. *Environmental Research Letters* 4, 034014.
- Graham, R.T., Mcaffrey, S. and Jain, T.B. (Tech. Eds.). 2004. Science basis for changing forest structure to modify wildfire behavior and severity. General Technical Report RMRS.GTR-120. USDA Forest Service Rocky Mountain Research Station. 43p.
- Hardy, C.C. 2005. Wildland fire hazard and risk: problems, definitions, and context. *Forest Ecology and Management* 211:73-82.
- Hart, S.J., Veblen, T.T., Eisenhart, K.S., Jarvis, D. and Kulakowski, D. 2014. Drought induces spruce beetle (*Dendroctonus rufipennis*) outbreaks across northwestern Colorado. *Ecology* 95:930–939. [dx.doi.org/10.1890/13-0230.1](https://doi.org/10.1890/13-0230.1)
- Homer, C.G., Dewitz, J.A., Yang, L., Jin, S., Danielson, P., Xian, G., Coulston, J., Herold, N.D., Wickham, J.D., and Megown, K., 2015, Completion of the 2011 National Land Cover Database for the conterminous United States-Representing a decade of land cover change information. *Photogrammetric Engineering and Remote Sensing*, v. 81, no. 5, p. 345-354
- Jenkins, M.J., Hebertson, E., Page, W.G. and Jorgenson, C.A. 2008. Bark beetles, fuels, fires and implications for forest management in the Intermountain West. *Forest Ecology and Management* 254:16-34.
- Jenkins, M.J., Runyon, J.B., Fettig, C.J., Page, W.G., and Bentz, B.J. 2014. Interactions among the mountain pine beetle, fires, and fuels. *Forest Science* 60 (3):489-501.
- Kolb, T.E., Holmberg, K.M., Wagner, M.K., and Stone, J.L. 1998. Regulation of ponderosa pine foliar physiology and insect resistance mechanisms by basal area treatments. *Tree Physiology* 18:375-381.
- Korb, J.E., Fule, P.Z. and Wu R. 2013. Variability of warm/dry mixed conifer forests in southwestern Colorado, USA: Implications for ecological restoration. *Forest Ecology and Management* 304:182-191.
- Little, E.L., Jr., 1971, Atlas of United States trees, volume 1, conifers and important hardwoods: U.S. Department of Agriculture Miscellaneous Publication 1146, 9 p., 200 maps
- Long, J.N. 2009. Emulating natural disturbance regimes as a basis for forest management: A North American view. *Forest Ecology and Management*. 257:1868-1873
- Long, J.N. 2003. Diversity, complexity, and interactions: an overview of Rocky Mountain forest ecosystems. *Tree Physiology* 23:1091-1099.
- Long, J.N. 1994. The middle and southern Rocky Mountain region. In J.W. Barrett (ed.), *Regional Silviculture of the United States*. Third Edition. John Wiley & Sons, New York. p. 335-386.

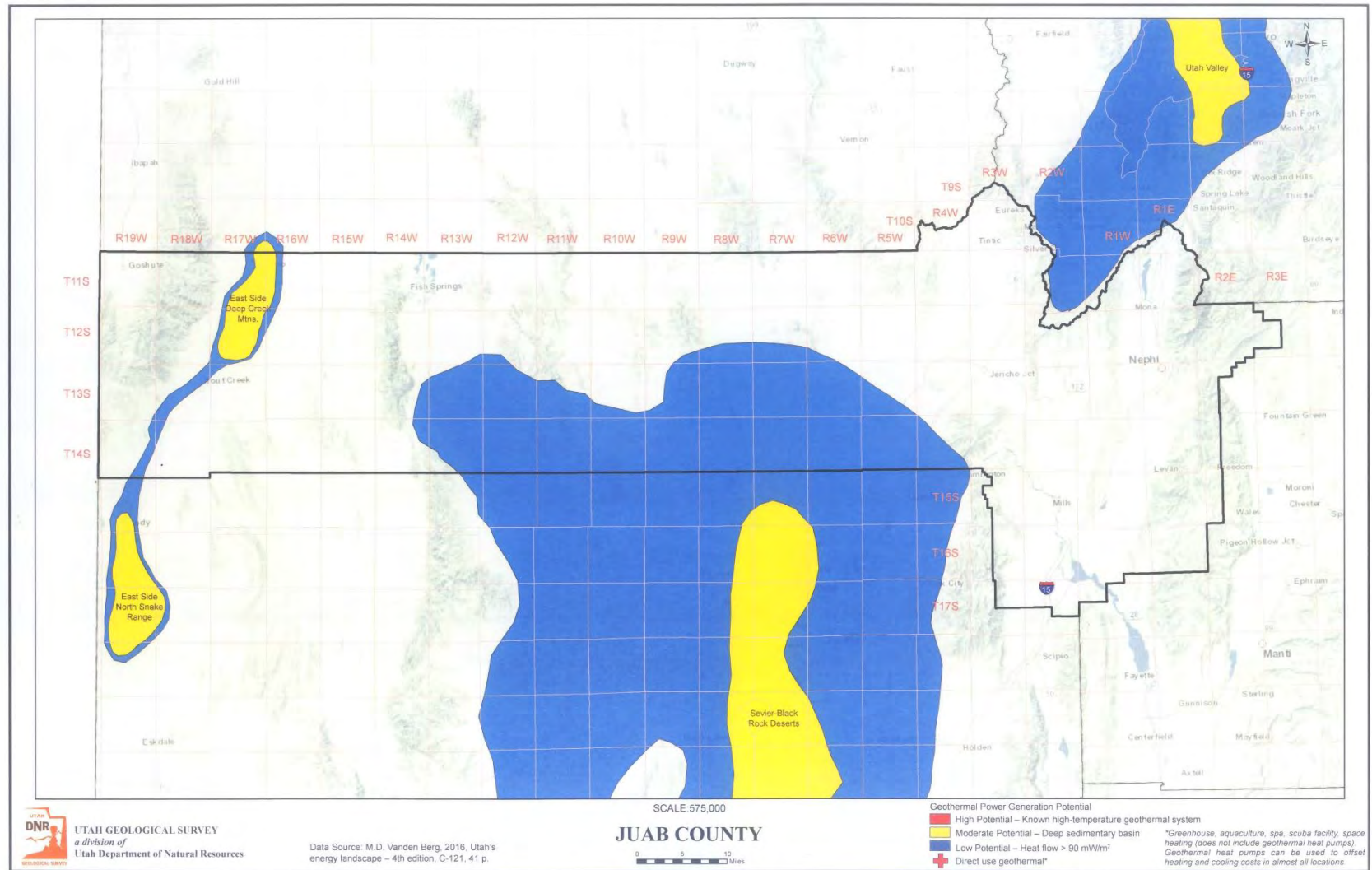
- Long, J.N., T.J. Dean, S.D. Roberts. 2004. Linkages between silviculture and ecology: examination of several important conceptual models. *Forest Ecology and Management* 200:249-261.
- Long, J.N. and K.E. Mock. 2013. Changing perspectives on regeneration ecology and genetic diversity in western quaking aspen: implications for silviculture. *Canadian Journal of Forest Research* 47:2011-2021.
- Martin, R.E. and Sapsis, D.B. 1991. Fires as agents of biodiversity: pyrodiversity promotes biodiversity. IN *Proc. Sympo. On biodiversity of northwestern California*. J. LeBlanc, ed.. Oct. 28-30, 1991. Santa Rosa, CA, pp. 150-157.
- Miller, R.F., Chambers, J.C. and Pellant, M. 2014. A field guide for selecting the most appropriate treatment in sagebrush and pinon-juniper ecosystems in the Great Basin: evaluating resilience to disturbance and resistance to invasive annual grasses, and predicting vegetation responses. Gen. Tech. Rep. RMRS-GTR-322-rev. USDA Forest Service, Rocky Mountain Research Station 68p.
- North, M.P., Stephens, S.L., Collins, B.M., Agee, J.K., Aplet, G., Franklin, J.F. and Fule, P.Z. 2015. Reform forest fire management. *Science* 349 (6254):1280-1281.
- Perera, A.H. and Buse, I.J. 2004. Emulating nature disturbance in forest management: an overview. Chapter 1 IN: Perera, A.H., Buse, I.J. and Weber, M.G. (eds.). *Emulating Natural Forest Landscape Disturbances: Concepts and Applications*. Columbia University Press, N.Y. pp. 3-7.
- Rebain, S.A.comp. 2010 (revised March 23, 2015). The Fire and Fuels Extension to the Forest Vegetation Simulator: Updated Model Documentation. Internal Rep. Fort Collins, CO: U.S.Department of Agriculture, Forest Service, Forest Management Service Center. 403p.
- Reynolds, R.T., Sanchez Meador, A.J., Youtz, J.A., Nicolet, T., Matonia, M.S., Jackson, P.L., DeLorenzo, D.G. and Graves, A.D. 2013. Restoring composition and structure in Southwestern frequent-fire forests: a science-based framework for improving ecosystem resiliency. USDA Forest Service. Rocky Mountain Research Station General Technical Report RMRS-GTR-310, 76p.
- Roccaforte, J.P., Fule, P.Z. and Covington, W.W. 2008. Landscape-scale changes in canopy fuels and potential fire behavior following ponderosa pine restoration treatments. *International Journal of Wildland Fire* 17(2):293-303.
- Schmid, J.M. and R.H. Frye, R.H. 1976. Stand Ratings for spruce beetles. USDA Forest Service Rocky Mountain Research Station. Research Note RM-309
- Shaw, J.D., Steed, B.E and DeBlander, L.T. 2005. Forest Inventory and Analysis (FIA) annual inventory answers the question: What is happening to pinyon-juniper woodlands? *Journal of Forestry* 103(6): 280-285.
- Shepperd, W.D., Smith, F.W. and Pelz, K.A. 2015. Group clearfell harvest can promote regeneration of aspen forests affected by sudden aspen decline in Western Colorado. *Forest Science* 61. [dx.doi.org/10.5849/forsci.14-101](https://doi.org/10.5849/forsci.14-101).

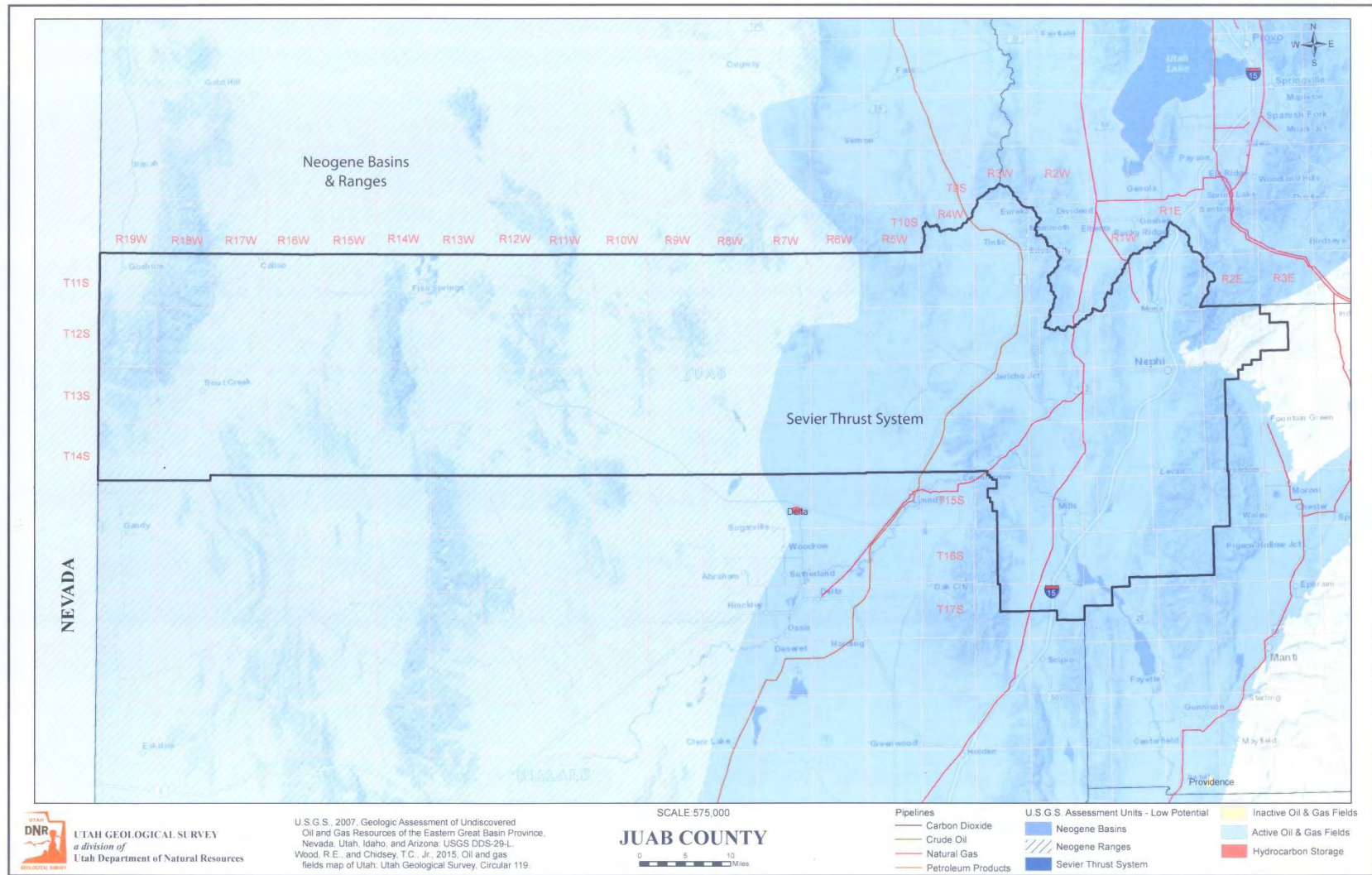
- Stephens, S.L., Moghaddas, J.J., Edminster, C., Fiedler, C.E., Haase, S., Harrington, M., Keeley, J.E., Knapp, E.E., McIver, J.D., Metlen, K., Skinner, C.N., and Youngblood, A. 2009. Fire treatment effects on vegetation structure, fuels, and potential fire severity in western U.S. forests. *Ecological Applications* 19(2):305-320. <http://dx.doi.org/10.1890/07-1755.1>
- Swetnam, T.W. and Baisan, C.H. 1996. Historical fire regime patterns in the southwestern United States since AD 1700. Pp.11-32 in C.D. Allen (ed.). 2nd La Mesa Fire Symposium; Los Alamos, NM. General Technical Report RM-GTR-286. USDA Forest Service, Rocky Mountain Experiment Station, 216pp.
- Swetnam, T.W. and Lynch, A.M. 1993. Multicentury, regional-scale patterns of western spruce budworm outbreaks. *Ecological Monographs* 63(4): 399-424.
- Temperli, C., Hart, S.J., Veblen, T.T., Kulakowski, D., Hicks, J.J. and Andrus, J. 2014. Are density reduction treatments effective at managing for resistance or resilience to spruce beetle disturbance in the southern Rocky Mountains? *Forest Ecology and Management* 334:53-63.
- USDA Forest Service. 2015. Wildland fire management futures: insights from a foresight panel. Northern Research Station. General Technical Report NRS-152, xxpgs.
- Van Buren, R., Cooper, J.G., Shultz, L.M. and Harper, K.T. 2011. Woody plants of Utah. Utah State University Press, Logan, Utah. 512pg.
- Wadleigh, L.L., Parker, C. and Smith, B. 1998. A fire frequency and comparative fuel load analysis in Gambel oak of northern Utah. In *Fire in Ecosystem Management: Shifting the Paradigm from Suppression to Prescription*. Eds. T.L. Pruden and L.A. Brennan. Tall Timbers Fire Ecology Conference Proc. No. 20. Tall Timbers Research Station, Tallahassee, FL. pp.267-272.
- Windmuller-Campione, M.A. and J.N. Long. 2015. If long-term resistance to a spruce beetle epidemic is futile, can silvicultural treatments increase resilience in spruce-fir forests in the Central Rocky Mountains? *Forests* 6:1157-1178; doi:10.3390/f6041157
- Woudenberg, S.W., Conkling, B.L., O'Connell, B.M., LaPoint, E.B., Turner, J.A. and Waddell, K.L. 2010. The Forest Inventory and Analysis Database: Database description and user's manual version 4.0 for Phase 2. Gen. Tech. Rep. RMRS-GTR- 245. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 336 p.
- Youngblood, A.P. and Mauk, R.L. 1985. Coniferous forest habitat types of central and southern Utah. General Technical Report INT-187. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station.

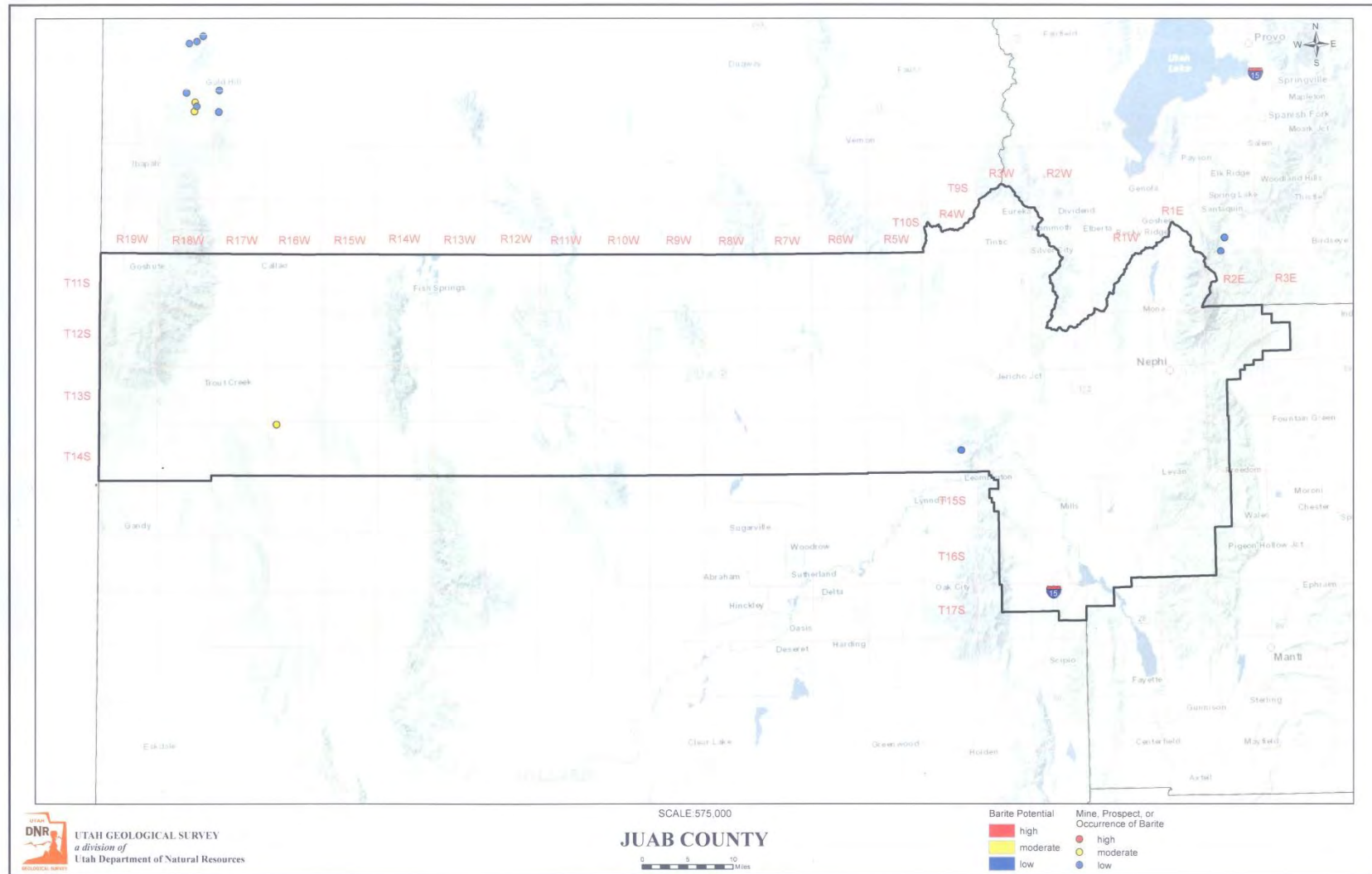
Appendix A

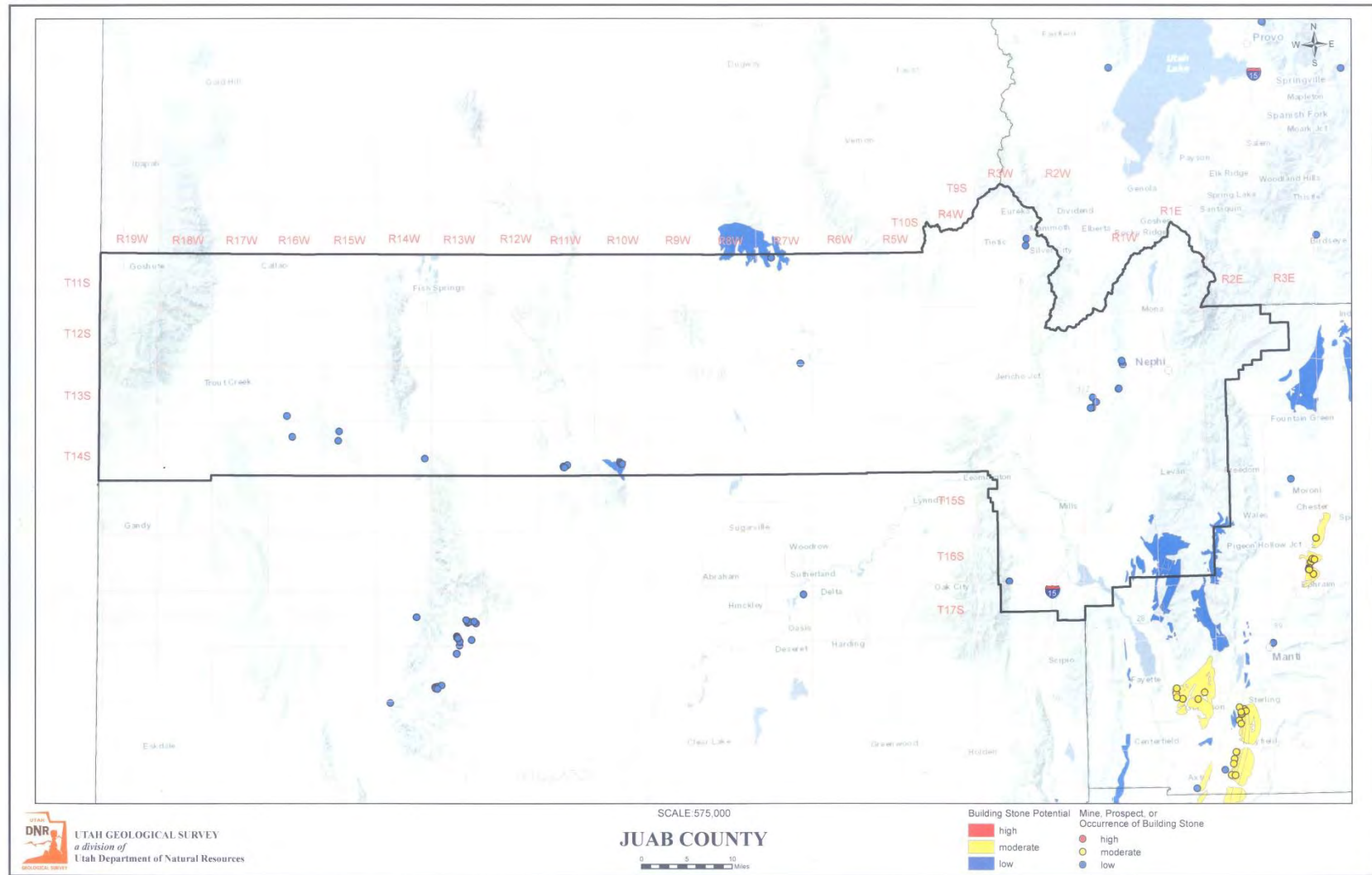
Mineral Potential Maps

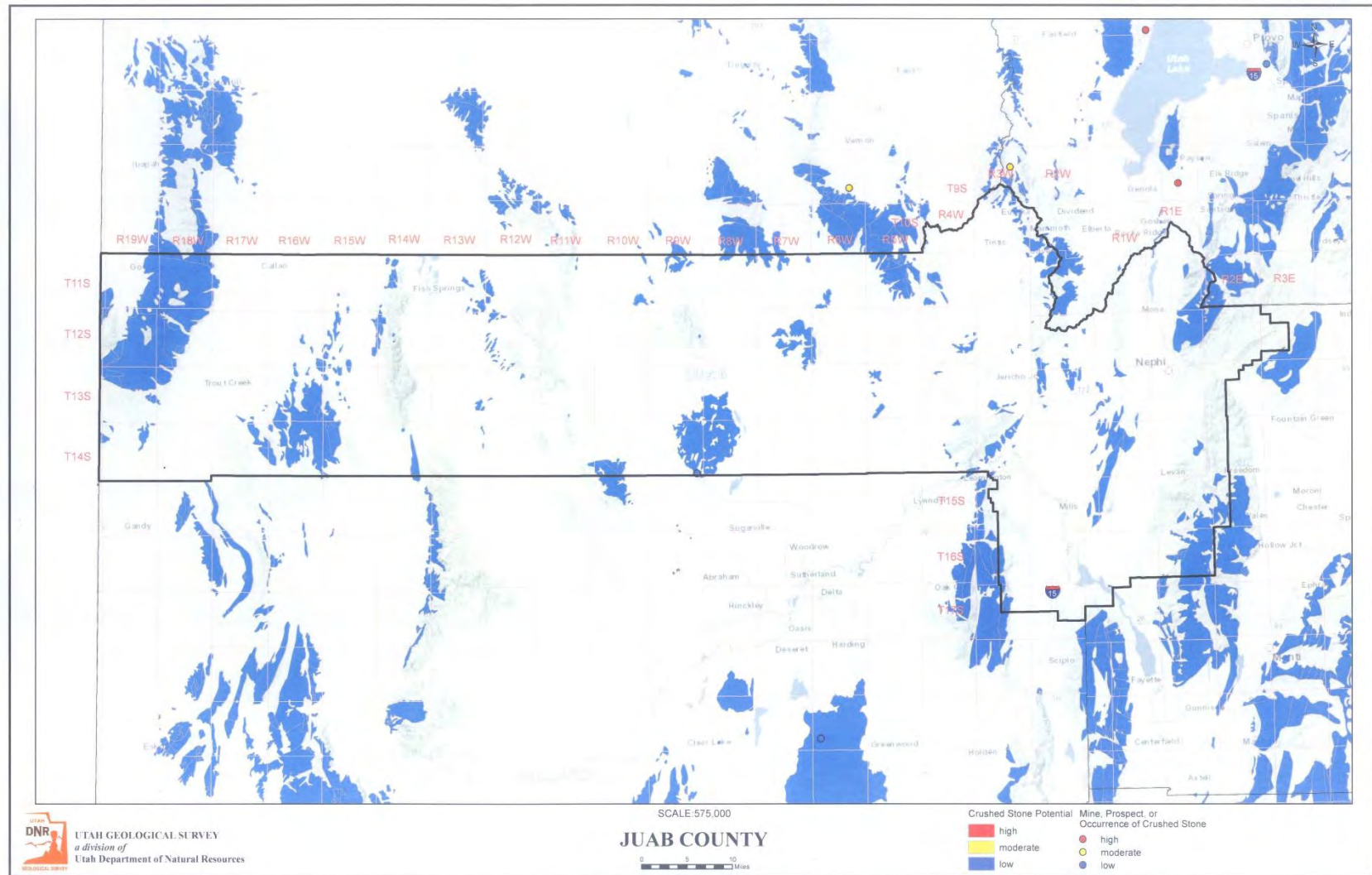


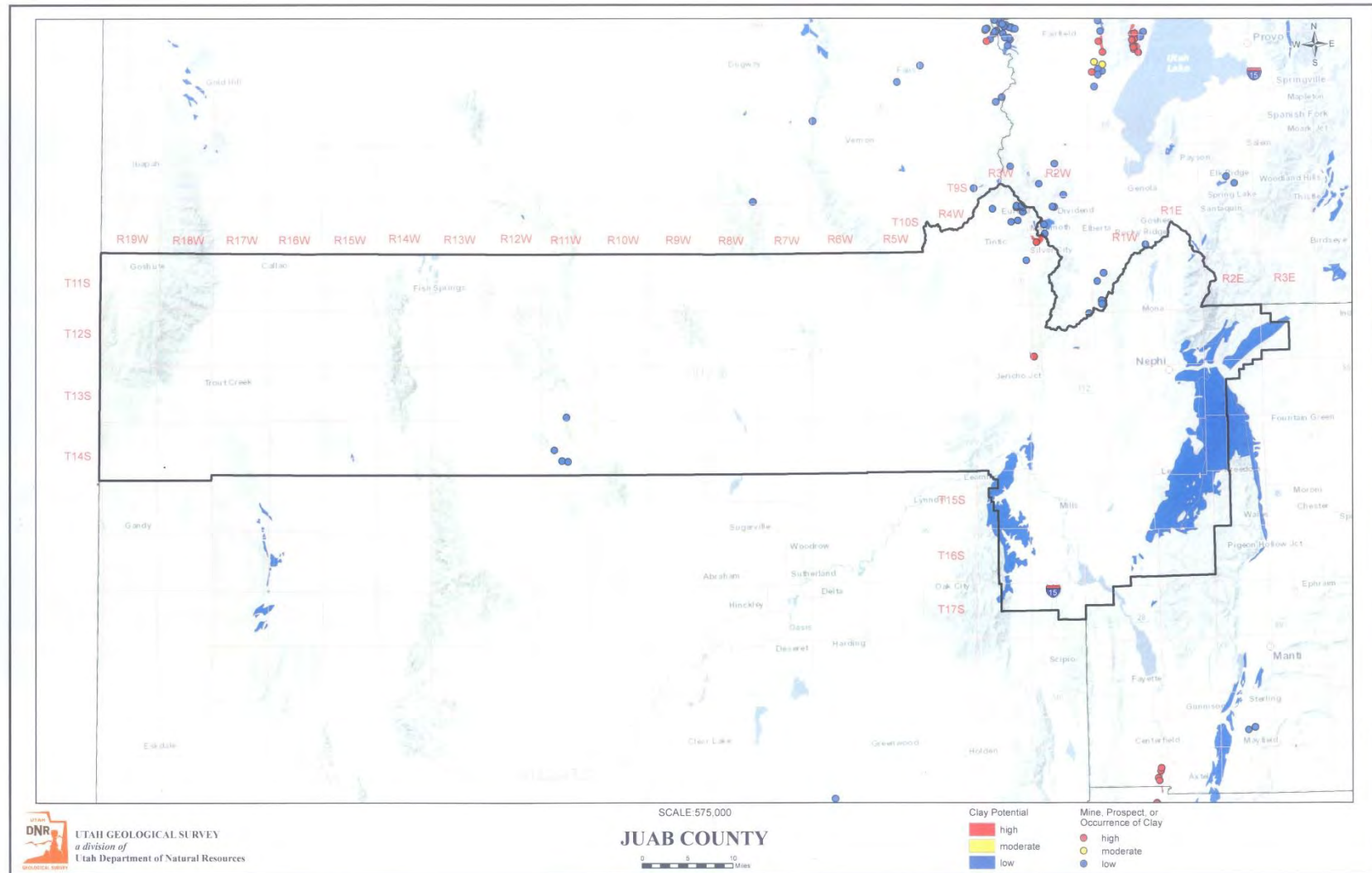


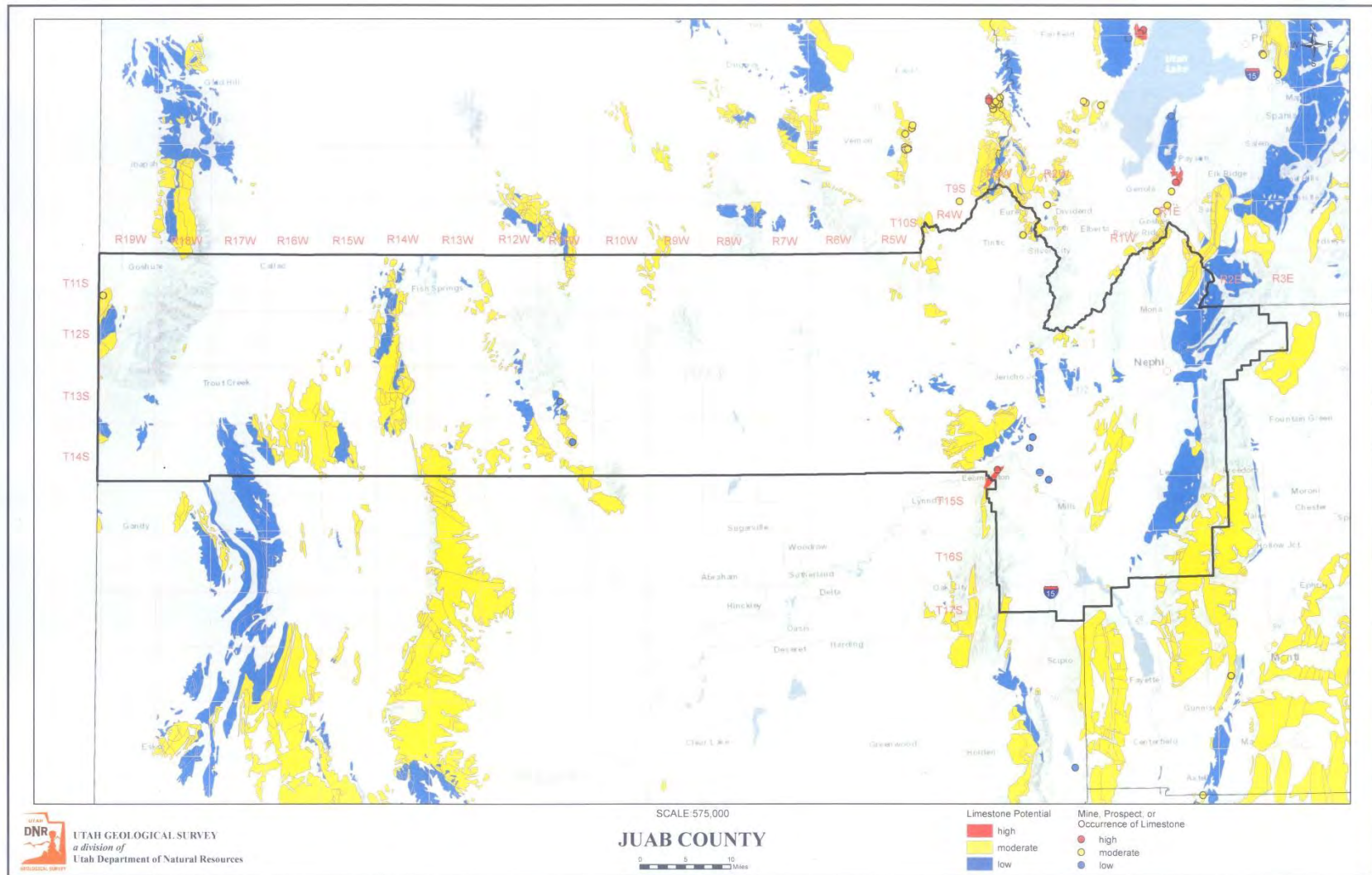


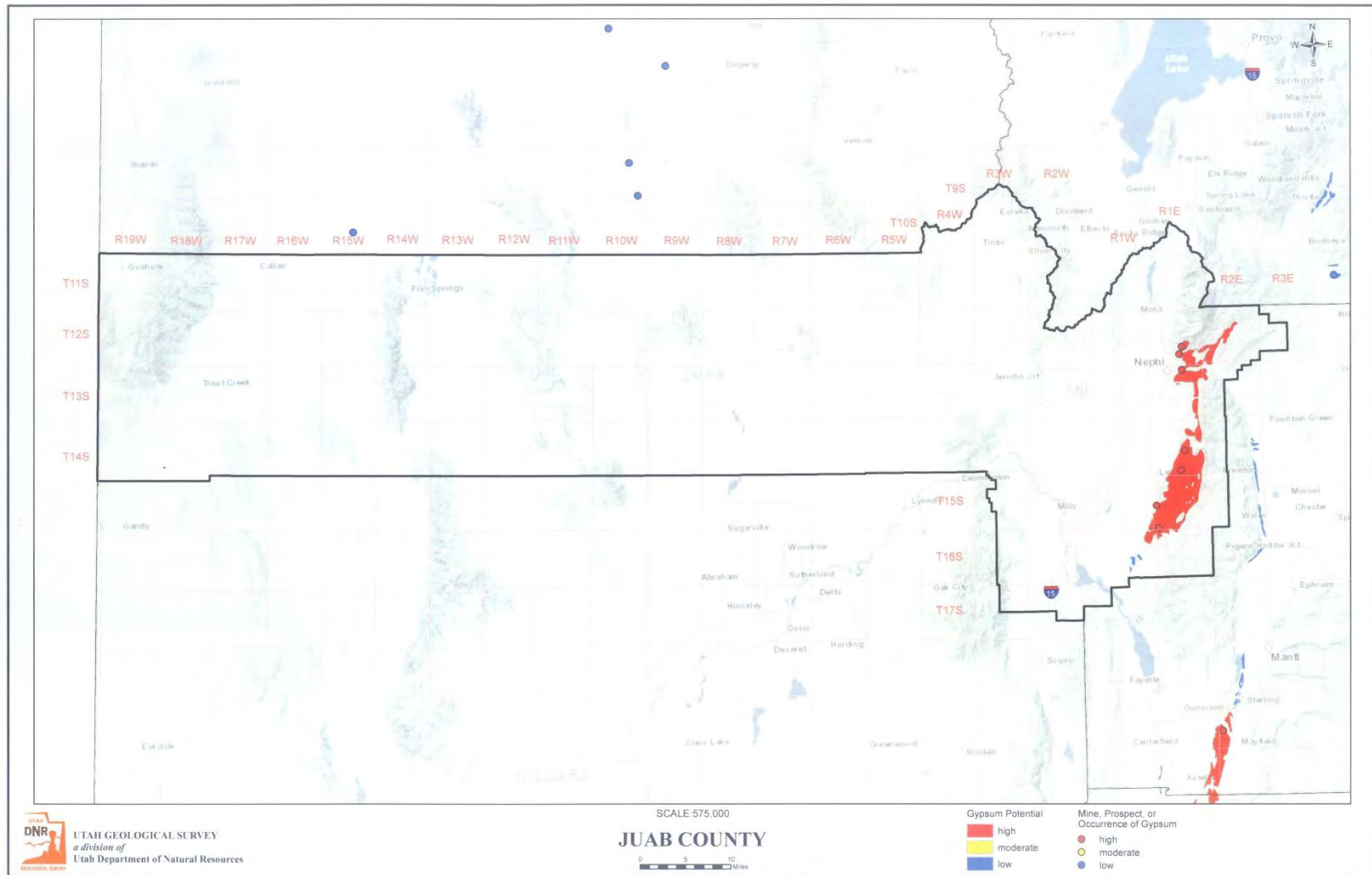


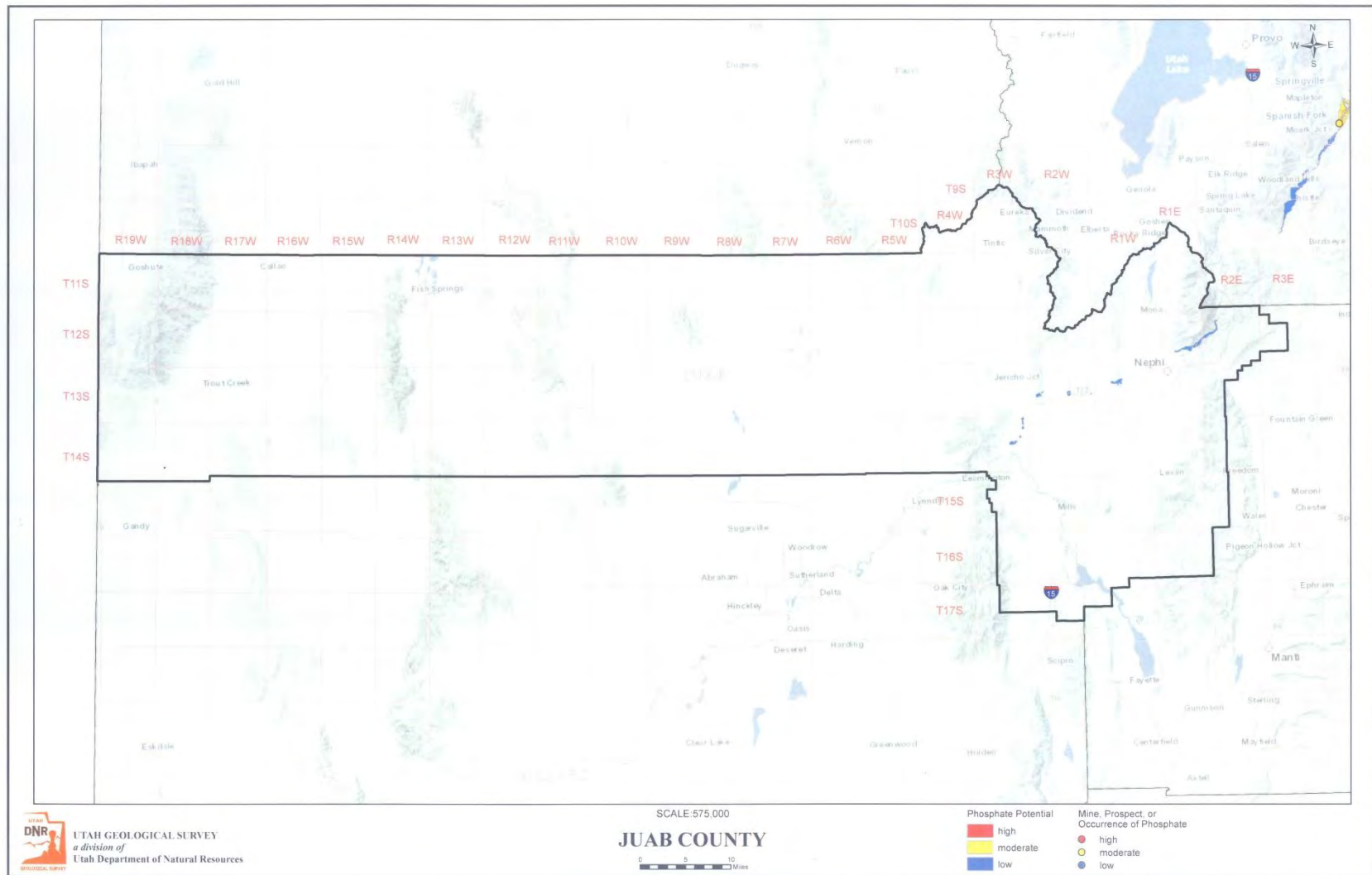


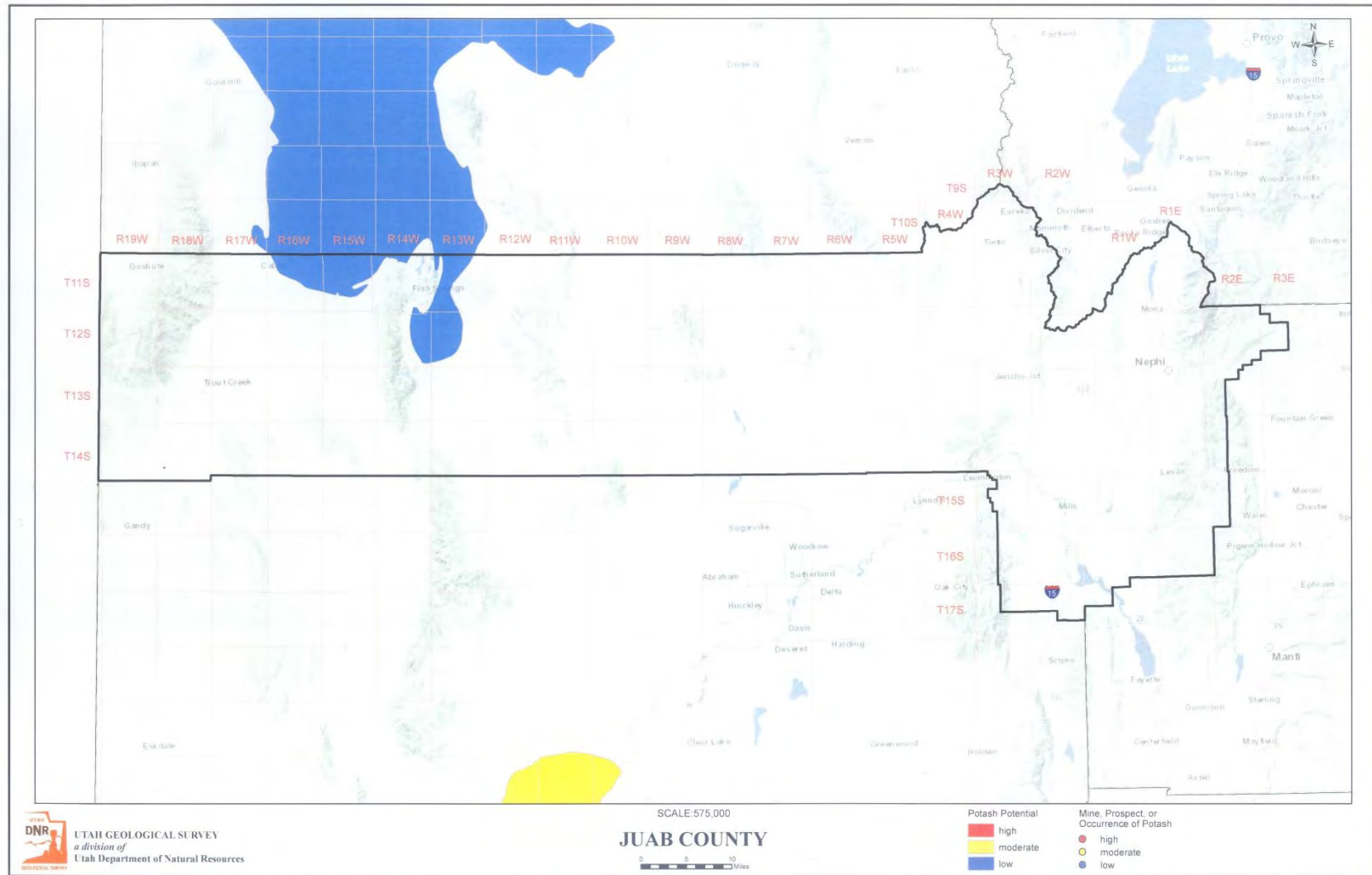


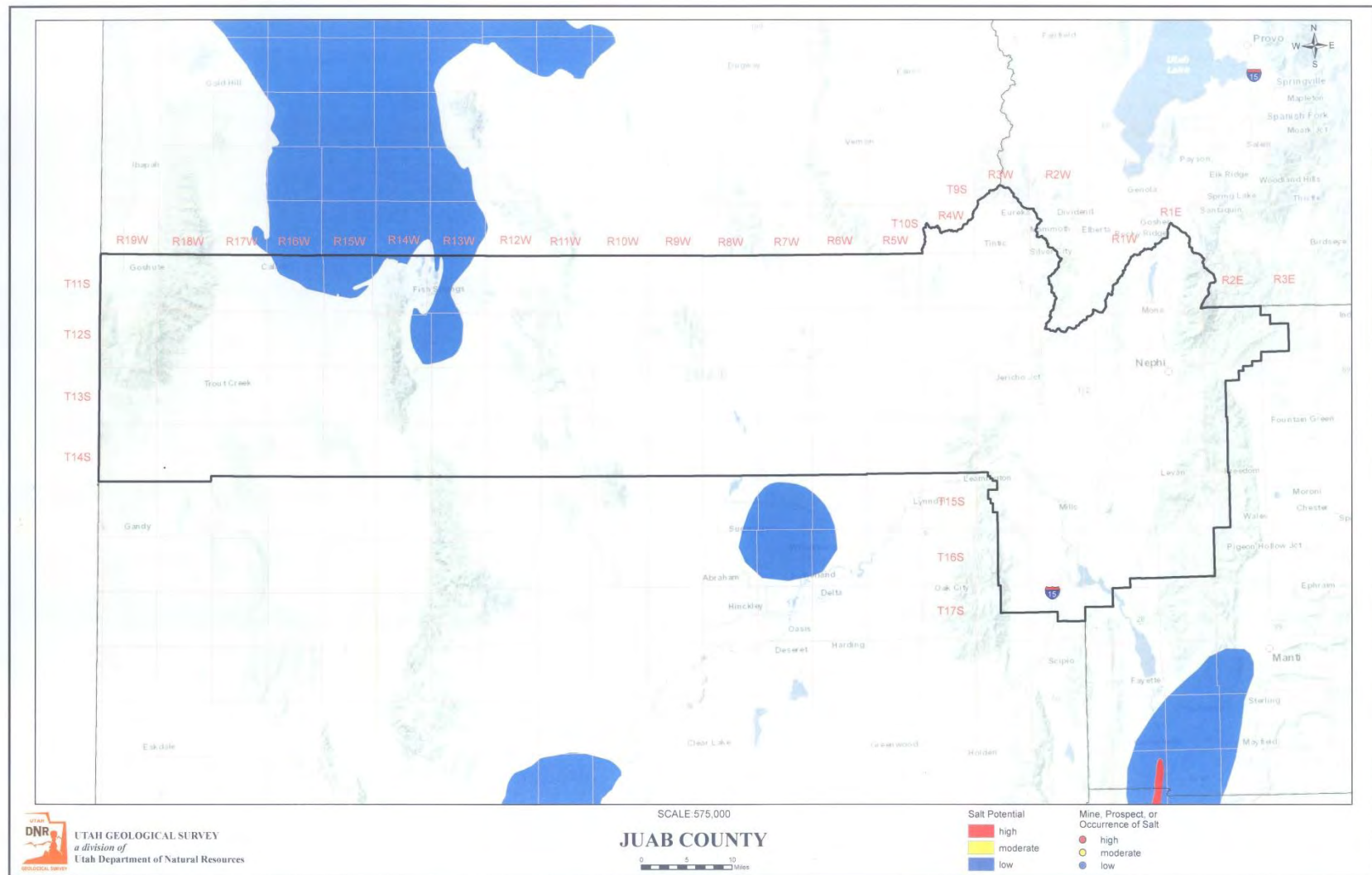


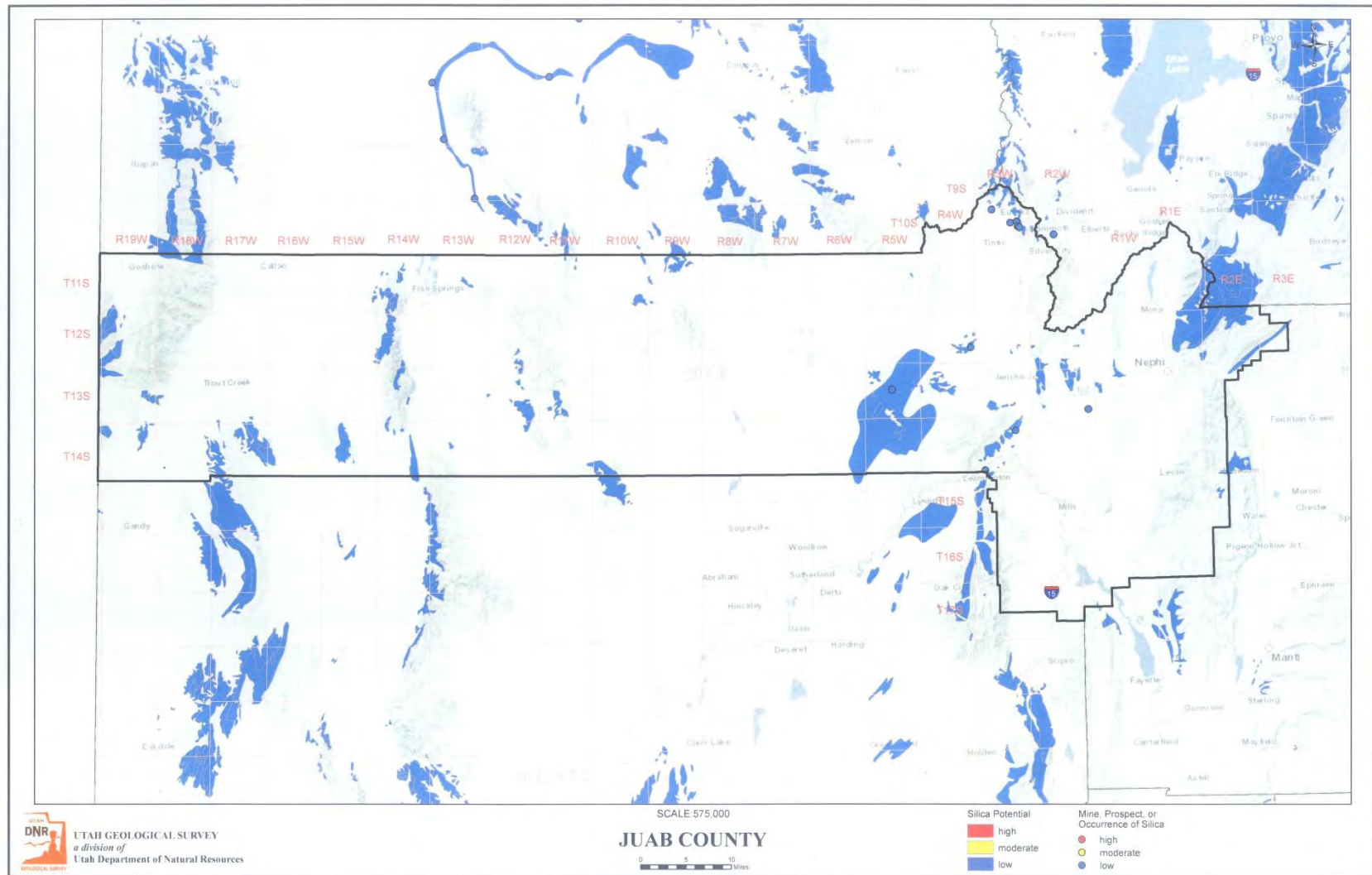


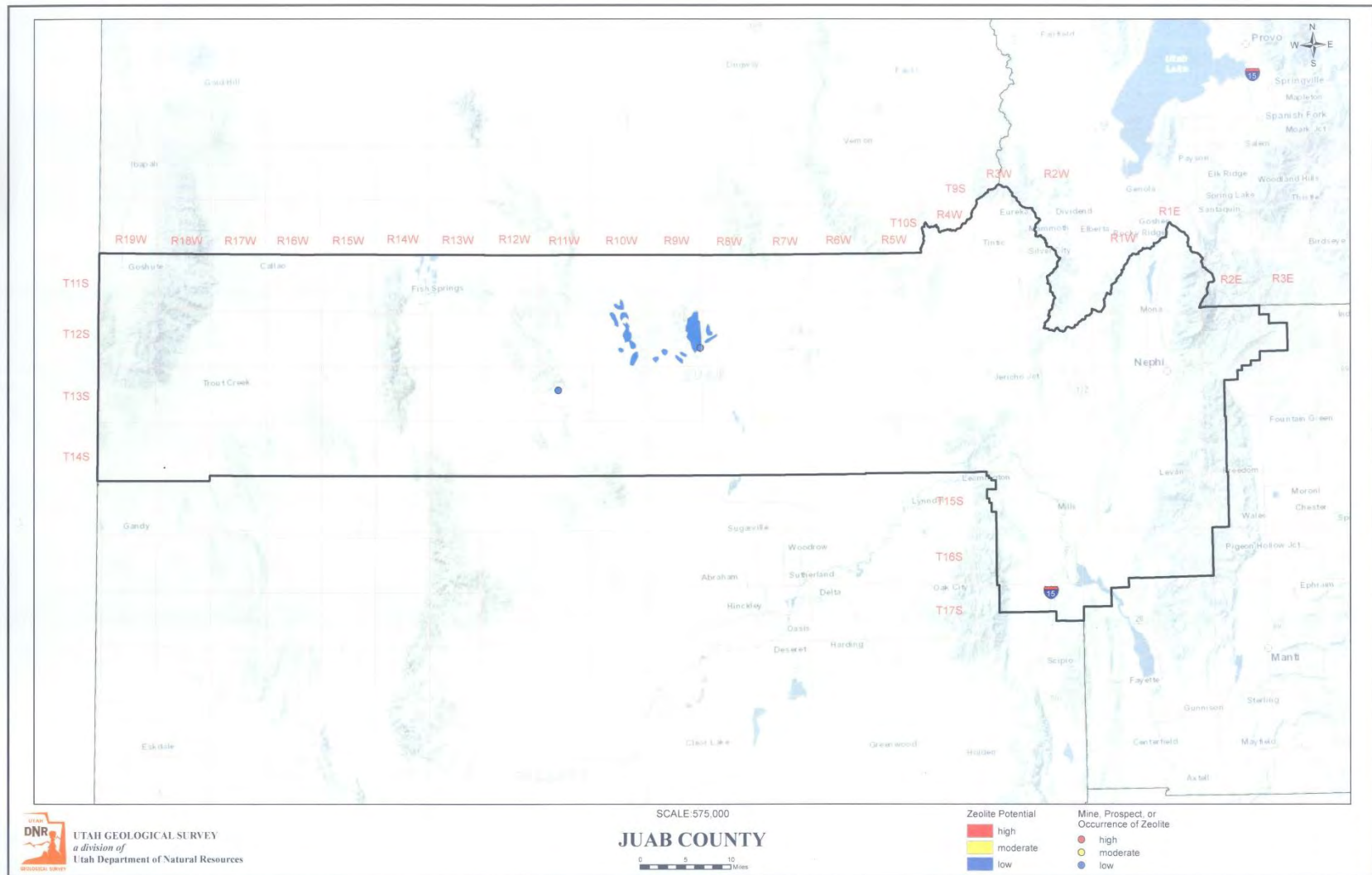








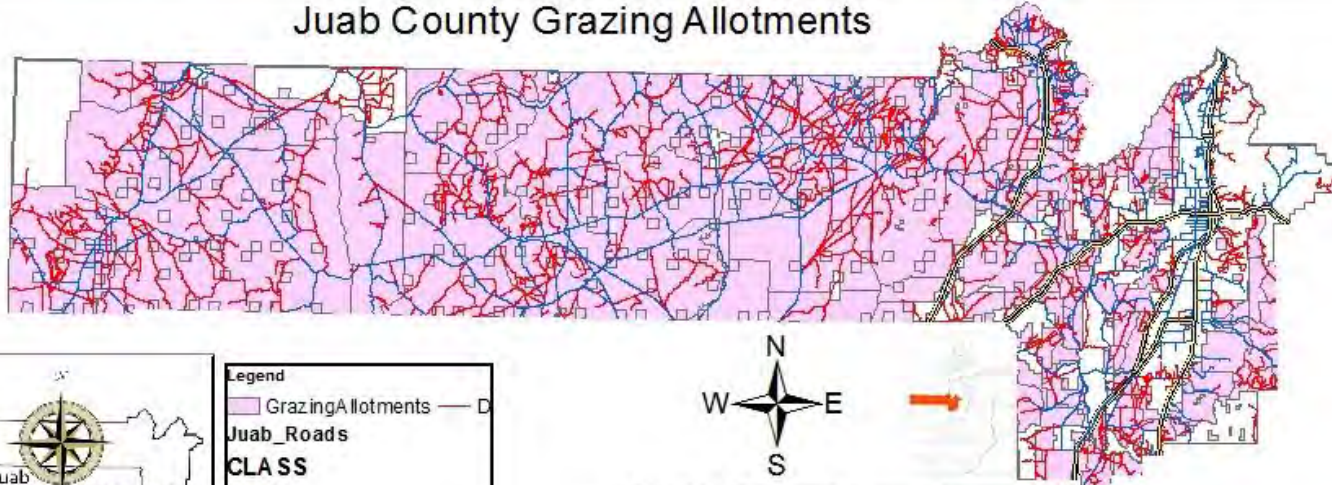




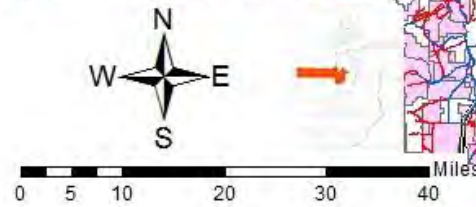
Appendix B

Other Habitat Maps

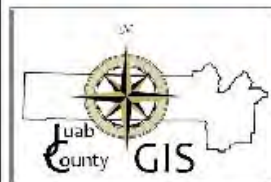
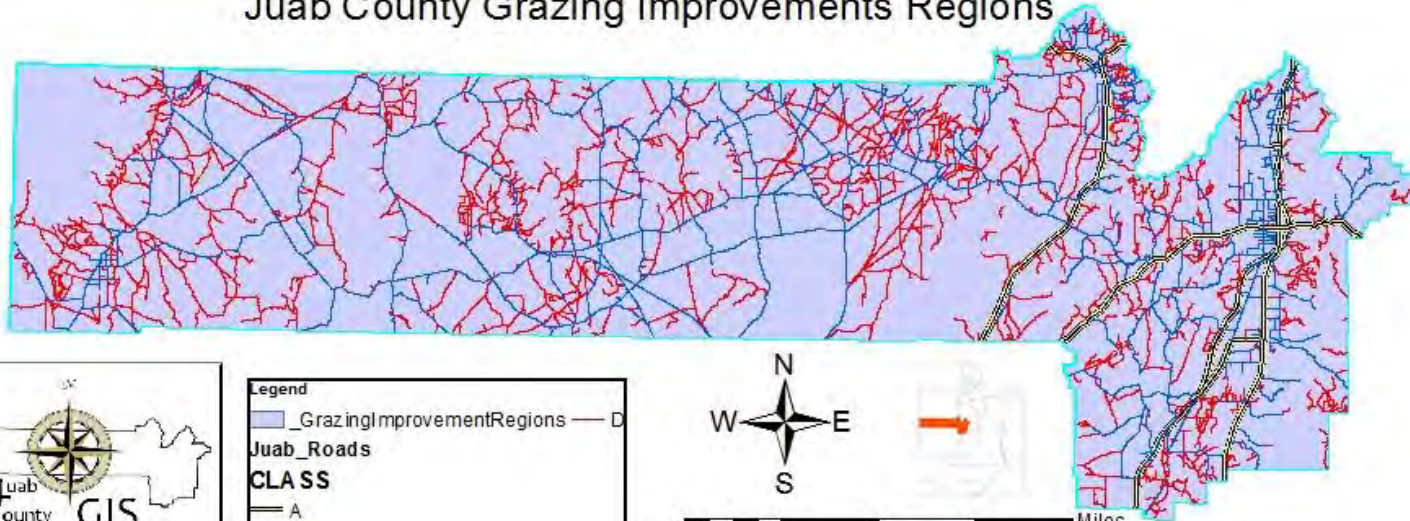
Juab County Grazing Allotments



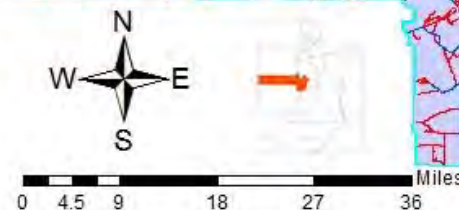
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Juab_Roads
CLASS
 — A
 — B



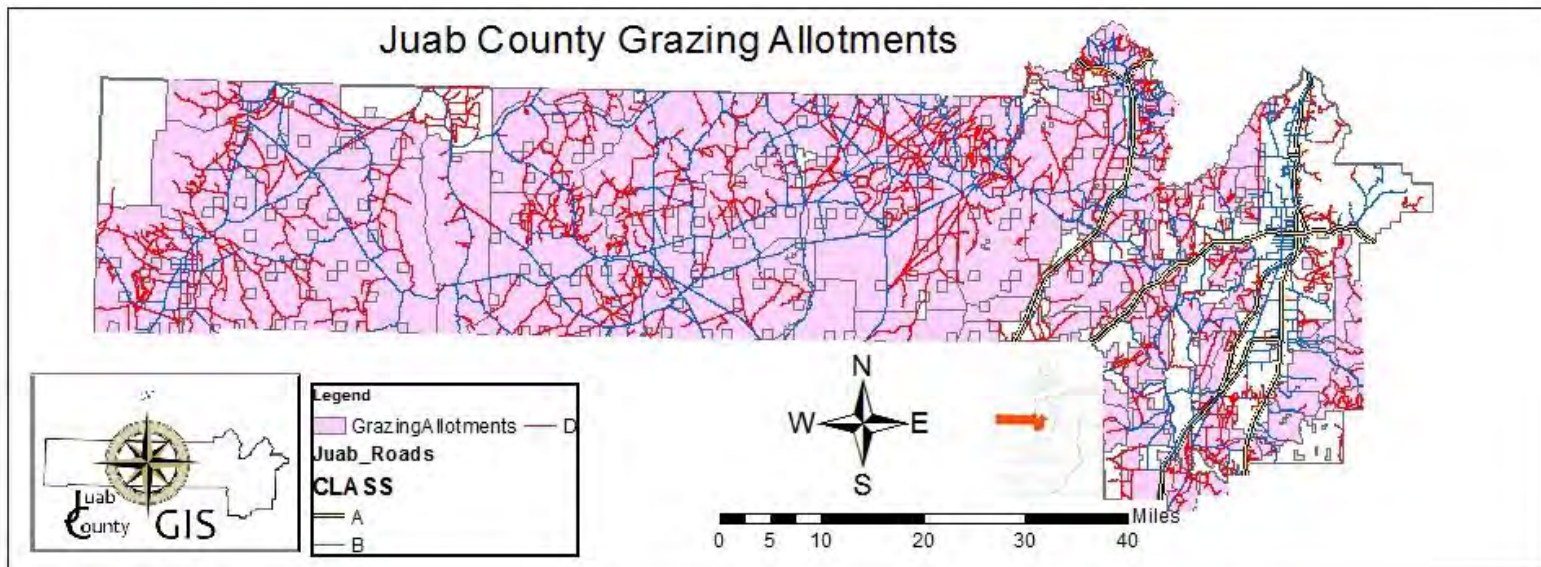
Juab County Grazing Improvements Regions



Legend
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Juab_Roads
CLASS
 — A
 — B



Juab County Grazing Allotments



Juab County Grazing Improvements Regions

