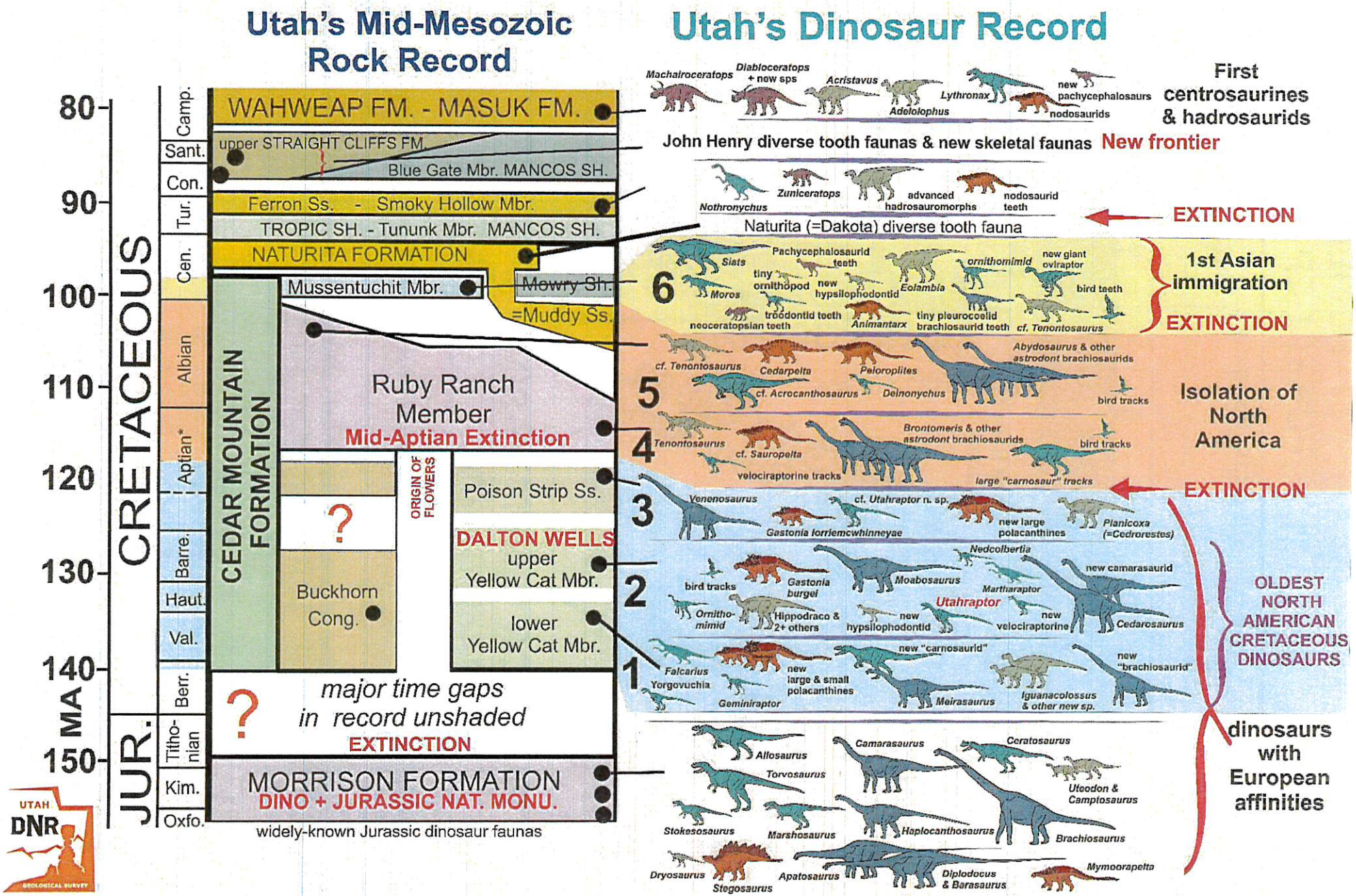
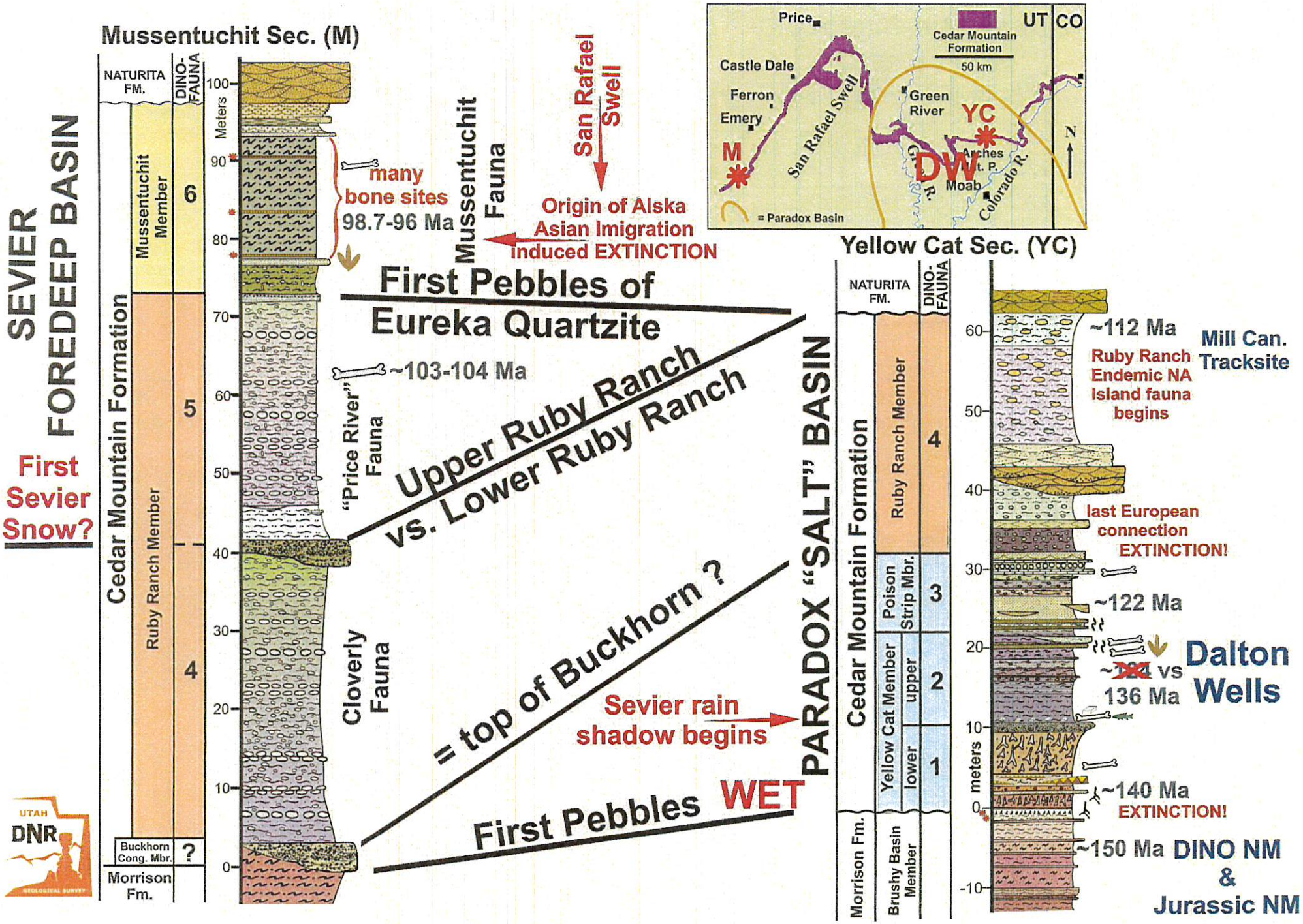

Utah's Mid-Mesozoic Rock Record
Utah's Dinosaur Record
80
90
100
110
120
130
140
150
MA
CRETACEOUS
JUR.
Camp.
Sant.
Con.
Tur.
Cen.
Albian
Aptian*
Barre.
Haut.
Val.
Berr.
Titho-nian
Kim.
Oxfo.
WAHWEAP FM. - MASUK FM.
upper STRAIGHT CLIFFS FM.
Blue Gate Mbr. MANCOS SH.
Ferron Ss. - Smoky Hollow Mbr.
TROPIC SH. - Tununk Mbr. MANCOS SH.
NATURITA FORMATION
Mussentuchit Mbr.
Mowry Sh.
=Muddy Ss.
CEDAR MOUNTAIN FORMATION
Ruby Ranch Member
Mid-Aptian Extinction
?
ORIGIN OF FLOWERS
Poison Strip Ss.
DALTON WELLS
upper Yellow Cat Mbr.
lower Yellow Cat Mbr.
Buckhorn Cong.
?
major time gaps in record unshaded
EXTINCTION
MORRISON FORMATION
DINO + JURASSIC NAT. MONU.
widely-known Jurassic dinosaur faunas
Machairoceratops
Diabloceratops + new sps
Acristavus
Lythronax
Adelolophus
new pachycephalosaurs
nodosaurids
First centrosaurines & hadrosaurids
John Henry diverse tooth faunas & new skeletal faunas
New frontier
Nothronychus
Zuniceratops
advanced hadrosauromorphs
nodosaurid teeth
EXTINCTION
Naturita (=Dakota) diverse tooth fauna
6
Siats
Pachycephalosaurid teeth
ornithomimid
new giant oviraptor
tiny ornithopod
new hypsilophodontid
Eolambia
bird teeth
Moros
troodontid teeth
neoceratopsian teeth
Animantarx
tiny pleurocoelid brachiosaurid teeth
cf. Tenontosaurus
1st Asian immigration
EXTINCTION
5
cf. Tenontosaurus
Cedarpelta
Peloroplites
Abydosaurus & other astrodont brachiosaurids
cf. Acrocanthosaurus
Deinonychus
bird tracks
Isolation of North America
4
Tenontosaurus
cf. Sauropelta
Brontomeris & other astrodont brachiosaurids
bird tracks
velociraptorine tracks
large "carnosaur" tracks
EXTINCTION
3
Venenosaurus
cf. Utahraptor n. sp.
Gastonia lorriemcwhinneyae
new large polacanthines
Planicoxa (=Cedrorestes)
2
Nedcolbertia
bird tracks
Gastonia burgei
Moabosaurus
Martharaptor
new camarasaurid
Utahraptor
Ornitho-mimid
Hippodraco & 2+ others
new hypsilophodontid
new velociraptorine
Cedarosaurus
OLDEST NORTH AMERICAN CRETACEOUS DINOSAURS
1
new "carnosaurid"
Falcarius
Yorgovuchia
new large & small polacanthines
Geminiraptor
Meirasaurus
Iguanacolossus & other new sp.
new "brachiosaurid"
Allosaurus
Torvosaurus
Camarasaurus
Ceratosaurus
Uteodon & Camptosaurus
Stokesosaurus
Marshosaurus
Haplocanthosaurus
Brachiosaurus
Dryosaurus
Stegosaurus
Apatosaurus
Diplodocus & Barasaurus
Mymoorapelta
dinosaurs with European affinities
UTAH DNR GEOLOGICAL SURVEY


SEVIER FOREDEEP BASIN
First Sevier Snow?
Mussentuchit Sec. (M)
NATURITA FM.
DINO-FAUNA
Meters
Mussentuchit Member
6
Cedar Mountain Formation
Ruby Ranch Member
5
4
Buckhorn Cong. Mbr.
?
Morrison Fm.
many bone sites
98.7-96 Ma
Mussentuchit Fauna
San Rafael Swell
Origin of Alska Asian Imigration induced EXTINCTION
First Pebbles of Eureka Quartzite
~103-104 Ma
"Price River" Fauna
Upper Ruby Ranch vs. Lower Ruby Ranch
Cloverly Fauna
= top of Buckhorn ?
Sevier rain shadow begins
First Pebbles WET
PARADOX "SALT" BASIN
Price
Castle Dale
Ferron
Emery
San Rafael Swell
Green River
Cedar Mountain Formation
50 km
UT
CO
M
YC
DW
Arches Nt. P.
Moab
Colorado R.
= Paradox Basin
N
Yellow Cat Sec. (YC)
NATURITA FM.
DINO-FAUNA
Cedar Mountain Formation
Ruby Ranch Member
4
Poison Strip Mbr.
3
Yellow Cat Member
upper
2
lower
1
Morrison Fm.
Brushy Basin Member
meters
~112 Ma
Ruby Ranch Endemic NA Island fauna begins
Mill Can. Tracksite
last European connection EXTINCTION!
~122 Ma
~124 vs 136 Ma
Dalton Wells
~140 Ma EXTINCTION!
~150 Ma
DINO NM & Jurassic NM
UTAH DNR GEOLOGICAL SURVEY