

Measured Stratigraphic Sections of the Chinle Formation

These sections form part of the basis for the cross section published as Figure 1 in Demko, T. M., Dubiel, R. F., and Parrish, J. T., "Plant taphonomy in incised valleys: Implications for interpreting paleoclimate from fossil plants" in *Geology*. The location of the published cross section and that of an additional cross section provided here is shown in Figure 1; Figure 2 is the additional cross section. Precise locations of the measured sections may be obtained from the senior author.

The format is as follows: location name, locality number, total thickness measured, and a narrative of the section in stratigraphic order. An asterisk by the locality number indicates that a graphical column can be obtained from the authors. Unit is named at the top of the section if the entire section is in that unit; otherwise, the unit names are indicated at the boundaries. Stratigraphy is after Demko (1995) and Dubiel et al. (1995).

Some aspects of the stratigraphy are under reconsideration, but possible redefinitions will not affect the conclusions of the paper. Parts of the Monitor Butte Member in Petrified Forest National Park have been informally referred to as lower Petrified Forest Member.

Figure Captions

Figure 1. Locations of cross sections. A-A' is in Figure 2 of this repository. B-B' is Figure 1 in the published paper in *Geology*. Both sections run west to east (left to right). PD = Painted Desert paleovalley, E = Eagle paleovalley, VC = Vermillion Cliffs paleovalley.

Figure 2. Partially schematic cross section of the Painted Desert paleovalley, based on sections from Stewart et al. (1972), Demko (1995, included here), and R. F. Dubiel (unpublished).

References

- Demko, T. M., 1995, Taphonomy of Fossil Plants in the Upper Triassic Chinle Formation [PhD thesis]: Tuscon, University of Arizona, 259 p.
- Dubiel, R. F., Demko, T. M., Hasiotis, S. T., Riggs, N. R., May, C. L., Ash, S. R., and Litwin, R. J., 1995, Triassic paleoecosystem reconstruction via fossil, ichnofossil, isotopic, and sedimentologic evidence integrated into a complete measured section of the Chinle Formation, Petrified Forest National Park, AZ: Geological Society of America, Abstracts with Programs, v. 27, no. 4, p. 9.
- Stewart, J. F., Poole, F. G., and Wilson, R. F., 1972, Stratigraphy and origin of the Triassic Chinle Formation and related strata in the Colorado Plateau region: U. S. Geological Survey Professional Paper 690, 336 p.

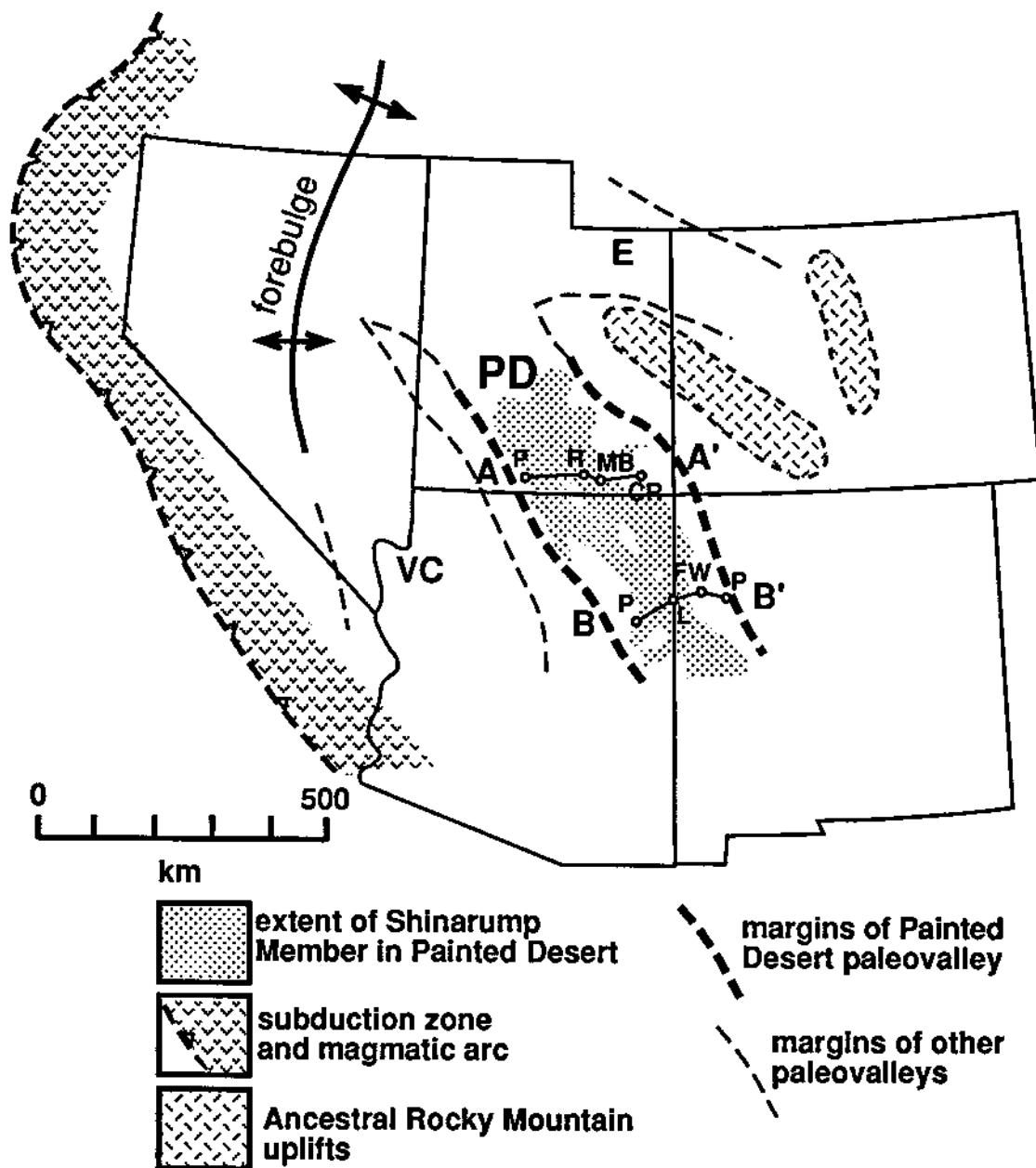


Figure 1

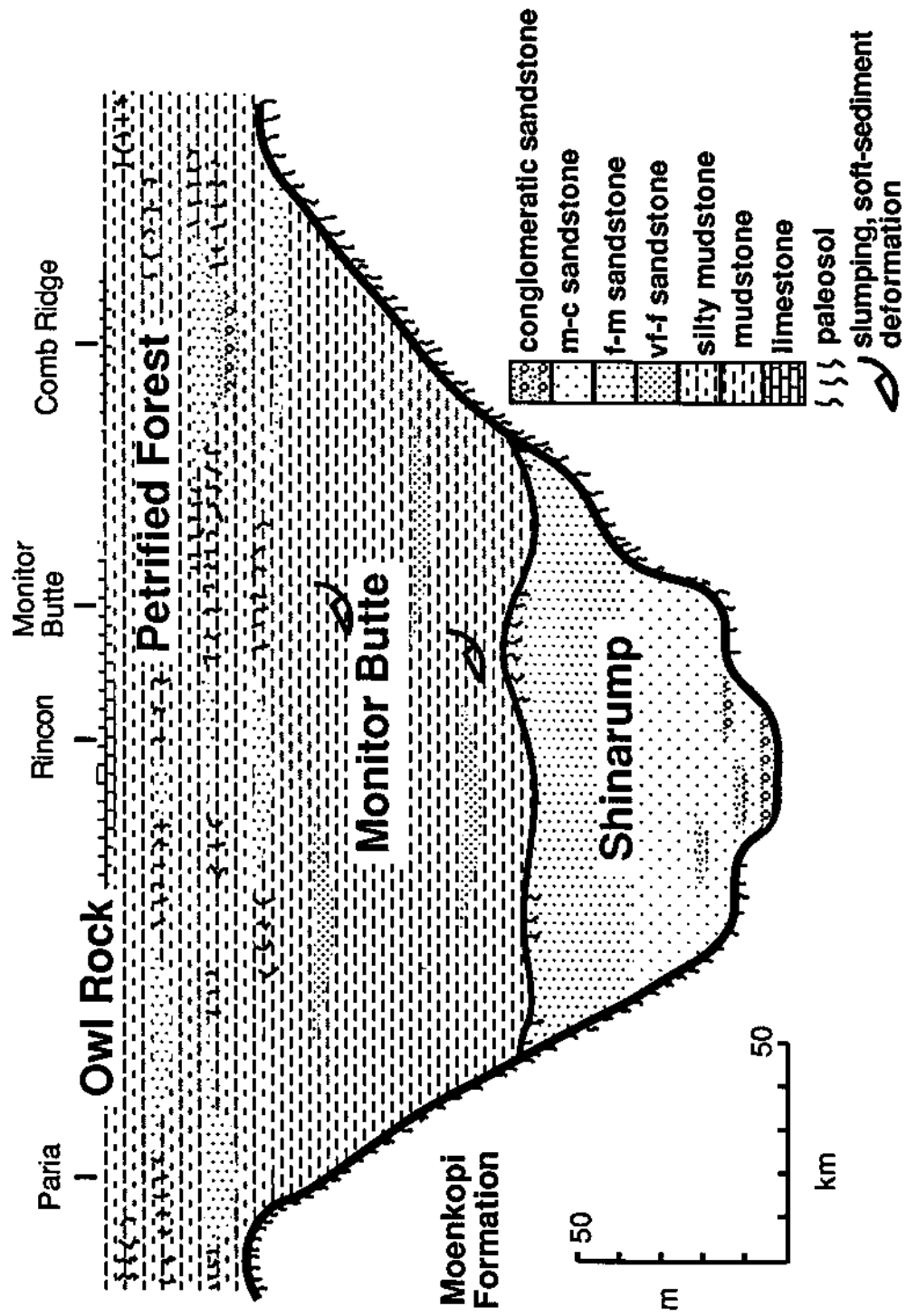


Figure 2

Newspaper Rock, Petrified Forest National Park

324942*

10.5 m

Monitor Butte Member, Newspaper Rock sandstone

- | | |
|--------|--|
| 0.7 m | sandstone, very fine, yellowish gray to grayish orange pink, small-scale trough cross beds, ripple cross lamination
<i>sharp contact</i> |
| 4.2 m | sandstone, very fine-fine, yellowish gray to grayish orange pink, ripple cross lamination, small-scale trough cross beds in basal scours, basal lag of coalified logs; fines upward to very fine
<i>sharp, erosional contact, 0.5-0.75 m relief</i> |
| 0.6 m | mudstone, yellowish gray, massive, gley
<i>gradational contact</i> |
| >2.0 m | mudstone, pale purple to grayish purple, massive, gley, lower purple paleosol
<i>base of section</i> |

East Newspaper Rock Mesa, Petrified Forest National Park

324943

11.9 m

Monitor Butte Member, Newspaper Rock sandstone

- 2.25 m sandstone, very fine-medium, yellowish gray, large-scale trough cross beds (0.5 m), capped by small-scale trough cross beds (0.25 m), mud chip conglomerate at base of small-scale trough cross bed sets; large-scale trough cross beds fine-medium, small-scale trough cross beds very fine-fine
sharp contact
- 0.5 m sandstone, very fine-fine, yellowish gray, ripple cross lamination, small-scale trough cross beds, parallel lamination
sharp contact
- 0.5 m sandstone, very fine-fine, yellowish gray, ripple cross lamination (0.4 m), overlain by small-scale trough cross beds and parallel lamination
sharp contact
- 2.0 m sandstone, very fine-medium, yellowish gray, interbedded small-scale trough cross bed sets (very fine-fine) and large-scale trough cross bed sets (fine-medium), sets 0.2-0.3 m, climbing ripple cross lamination
sharp contact
- 0.4 m sandstone, fine-medium, yellowish gray, small-scale trough cross beds, ripple cross lamination
sharp contact
- 1.5 m sandstone, fine-medium, yellowish gray, small- and large-scale trough cross bed sets 0.2-0.5 m, scour and fill 0.5 m, some sets have basal mud chip conglomerate
sharp contact
- 1.0 m sandstone, fine-medium, yellowish gray, medium-scale trough cross bed sets (0.2-0.5 m), well cemented
sharp contact
- 2.1 m sandstone, fine-medium, yellowish gray, fines upward, large-scale trough bed sets, poorly preserved plant material on bedding planes
sharp contact
- 0.25 m conglomerate, light olive gray, pebble-sized mud chip clasts
base of Newspaper Rock sandstone; sharp, erosional contact
- 0.4 m mudstone, light olive gray, massive, gley
gradational contact

Sections measured by T. M. Demko, 1995, Taphonomy of fossil plants in the Upper Triassic Chinle Formation, Ph.D. thesis, University of Arizona.

East Newspaper Rock Mesa (continued)

>1.0 m mudstone, very dusky purple, massive, lower purple paleosols
 base of section

Lone Tepee, Petrified Forest National Park

324945

9.3 m

Monitor Butte Member

- 2.0 m mudstone, grayish purple with light greenish gray gley spots, massive, upper purple paleosol
gradational contact
- 0.9 m mudstone, grayish red with light greenish gray gley spots, massive, smectitic, Fe concretions (0.2-0.3 cm), slickensides
gradational contact
- 0.8 m muddy siltstone, light olive gray and grayish red mottled, slickensides, massive
gradational contact
- 0.5 m silty sandstone, very fine, light olive gray and grayish red mottled, massive
sharp contact
- 0.4 m muddy siltstone, light olive gray and grayish red mottled, slickensides, massive
sharp contact
- 0-2.02 m sandstone, very fine-fine, mudcracks, crayfish burrows (5-13 cm diameter), back-filled meniscate burrows (0.8 cm diameter), simple vertical burrows (bee type; 0.5 cm diameter), small branching burrows (0.1 cm diameter), ripples, load structures, pinches out laterally:
 0.45 m ripple cross lamination, small channels (0.2-0.3 m deep, 1.5 m wide), basal mud chip conglomerate, parallel lamination
 0.4 m ripple cross lamination
 0.12 m parallel lamination
 0.3 m ripple cross lamination, mud chip conglomerate
 0.23 m ripple cross lamination, pebble-sized mud chip conglomerate
 0.4 m ripple cross lamination
 0.12 m ripple cross lamination
sharp, erosional contact
- >2.0 m mudstone, medium bluish gray to light bluish gray and light olive gray to yellowish gray mottled, massive, slickensides, lower purple paleosol
base of section

Far Tepees, Petrified Forest National Park

324946*

6.3 m

Monitor Butte Member

- >2.0 m silty mudstone, pale purple and yellowish gray mottled, massive, upper purple paleosol
sharp contact
- 1.55 m mudstone, grayish red with very light gray gley spots, flaky fracture, massive,
slickensides, *Scoyenia*, upper red paleosol
sharp contact
- 0.75 m silty mudstone, grayish purple to very dusky purple and gray mottled, massive
sharp contact
- 0.5 m mudstone, grayish red, massive, slickensides
gradational contact
- >2.0 m mudstone, grayish blue, massive, lower purple paleosol
base of section

Candy-Striped Tepees, Petrified Forest National Park

324947*

18.5 m

Monitor Butte Member

>2.0 m	silty mudstone, grayish purple with yellowish gray mottles, massive, slickensides, upper purple paleosol <i>sharp contact</i>
1.0 m	mudstone, grayish red, massive, slickensides, <i>Scoyenia</i> , roots, upper red paleosol <i>sharp contact</i>
0.5 m	mudstone, grayish red, massive <i>gradational contact</i>
0.7 m	sandstone, very fine, light olive gray, ripple cross lamination <i>sharp contact</i>
0.3 m	interbedded mudstone and sandstone, very fine, pale red to grayish red, laminated <i>gradational contact</i>
0.7 m	siltstone, light olive gray, laminated <i>sharp contact</i>
0.25 m	interbedded mudstone and sandstone, very fine, pale red to grayish red, laminated <i>gradational contact</i>
0.4 m	siltstone, light olive gray, laminated <i>sharp contact</i>
0.2 m	interbedded mudstone and sandstone, very fine, pale red to grayish red, laminated <i>gradational contact</i>
0.5 m	siltstone, light olive gray, laminated <i>sharp contact</i>
0.2 m	mudstone, pale red to grayish red, massive, flaky fracture <i>gradational contact</i>
0.8 m	siltstone, light olive gray, laminated <i>sharp contact</i>
0.2 m	mudstone, pale red to grayish red, massive, flaky fracture <i>gradational contact</i>
0.75 m	siltstone, light olive gray, laminated <i>sharp contact</i>
0.4 m	mudstone, pale red to grayish red, massive, flaky fracture <i>gradational contact</i>

Sections measured by T. M. Demko, 1995, Taphonomy of fossil plants in the Upper Triassic Chinle Formation, Ph.D. thesis, University of Arizona.

Candy-Striped Tepees (continued)

0.5 m	siltstone, light olive gray, laminated <i>sharp contact</i>
0.3 m	mudstone, pale red to grayish red, massive, flaky fracture <i>gradational contact</i>
0.6 m	siltstone, light olive gray, laminated <i>sharp contact</i>
0.2 m	mudstone, pale red to grayish red, massive, flaky fracture <i>gradational contact</i>
0.6 m	siltstone, light olive gray, laminated <i>sharp contact</i>
0.2 m	mudstone, pale red to grayish red, massive, flaky fracture <i>gradational contact</i>
2.2 m	muddy siltstone, light olive gray, plant debris <i>sharp contact</i>
4.0 m	interbedded mudstone and siltstone, light gray to medium light gray, laminated, abundant coalified logs, carbonized roots, plant material <i>sharp, erosional contact</i>
>1.0 m	mudstone, grayish blue with light gray mottles, massive, <i>Scoyenia</i> , lower purple paleosol <i>base of section</i>

Newspaper Rock Mesa, Petrified Forest National Park

812931

9.45 m

Monitor Butte Member, Newspaper Rock sandstone

- | | |
|--------|---|
| 4.7 m | sandstone, very fine-fine, pale yellow, ripple cross lamination, micaceous along bedding planes
<i>sharp contact</i> |
| 1.45 m | sandstone, very fine-fine, pale yellow, parallel and ripple cross lamination
<i>sharp contact</i> |
| 0.5 m | sandstone, very fine-fine, pale yellow, parallel and ripple cross lamination
<i>sharp contact</i> |
| 0.1 m | granule conglomerate, very fine-fine matrix, matrix-supported
<i>sharp contact</i> |
| 0.7 m | sandstone, very fine-fine, parallel and ripple cross lamination, micaceous along bedding planes
<i>sharp contact</i> |
| 0.8 m | sandstone, very fine-fine, parallel and ripple cross lamination, micaceous along bedding planes
<i>gradational contact</i> |
| 1.2 m | sandstone, very fine-fine, parallel and ripple cross lamination, micaceous along bedding planes
<i>sharp contact</i> |
| 0.8 m | silty sandstone, very fine-fine, light gray, micaceous, comminuted plant debris, soft-sediment deformation structures in top 0.4 m
<i>gradational contact</i> |
| 0.2 m | conglomerate, grayish blue to yellowish gray, mud chip clasts
<i>base of Newspaper Rock Sandstone; sharp, erosional contact</i> |
| 0.8 m | mudstone, light brownish gray, massive, slickensides
<i>sharp contact</i> |
| 0.8 m | muddy siltstone, dark reddish gray with light greenish gray gley spots, Fe nodules
<i>gradational contact</i> |
| 0.5 m | siltstone, grayish red, massive
<i>gradational contact</i> |
| 0.7 m | mudstone, moderate red, massive, slickensides, grades upward to silty mudstone, reddish gray with light greenish gray gley spots, massive
<i>sharp contact</i> |

Sections measured by T. M. Demko, 1995, Taphonomy of fossil plants in the Upper Triassic Chinle Formation, Ph.D. thesis, University of Arizona.

Newspaper Rock Mesa (continued)

1.0 m silty sandstone, fine-medium, micaceous, mud chips, moderate red and light greenish gray
mottled, fines upward to sandy siltstone
base of section

Tepees stacked splays, Petrified Forest National Park

813931

16 m

Monitor Butte Member

- | | |
|--------|--|
| 2.2 m | one, grayish purple and light gray mottled, massive, smectitic, upper purple paleosol
<i>gradational contact</i> |
| 3.6 m | mudstone, weak red with white gley spots, massive, rootlets, patchy silty layers (0.5 m),
large cylindrical burrows (4-5 cm long), <i>Scoyenia</i> , upper red paleosol
<i>sharp contact</i> |
| 0.1 m | silty sandstone, very fine, light gray, ripple cross lamination, parallel lamination
<i>sharp contact</i> |
| 0.1 m | silty mudstone, weak red, massive, hackly fracture
<i>sharp contact</i> |
| 1.0 m | silty sandstone, very fine, gray, laminated, fines upward to siltstone
<i>sharp contact</i> |
| 0.3 m | silty sandstone, fine, light gray, climbing ripple cross lamination, small-scale trough cross
bed sets, vertical burrows (1 cm diameter)
<i>sharp contact</i> |
| 0.18 m | silty mudstone, greenish gray, laminated, slickensides, plant macrodetritus
<i>gradational contact</i> |
| 0.2 m | silty sandstone, fine, light gray, climbing ripple cross lamination, small-scale trough cross
bed sets
<i>sharp contact</i> |
| 0.3 m | silty mudstone, greenish gray, laminated, slickensides, plant macrodetritus
<i>gradational contact</i> |
| 0.5 m | silty sandstone, fine, light gray, climbing ripple cross lamination, small-scale trough cross
bed sets
<i>sharp contact</i> |
| 0.2 m | silty mudstone, greenish gray, laminated, slickensides, plant macrodetritus
<i>gradational contact</i> |
| 0.6 m | silty sandstone, fine, light gray, climbing ripple cross lamination, small-scale trough cross
bed sets
<i>sharp contact</i> |
| 0.18 m | silty mudstone, greenish gray, laminated, slickensides, plant macrodetritus
<i>gradational contact</i> |

Sections measured by T. M. Demko, 1995, Taphonomy of fossil plants in the Upper Triassic Chinle Formation, Ph.D. thesis, University of Arizona.

Tepees stacked splays (continued)

0.9 m	silty sandstone, very fine, light gray, climbing ripple cross lamination, small-scale trough cross bed sets <i>sharp contact</i>
0.39 m	silty mudstone, greenish gray, laminated, slickensides, plant macrodetritus <i>gradational contact</i>
0.6 m	silty sandstone, very fine, light gray, climbing ripple cross lamination, small-scale trough cross bed sets <i>sharp contact</i>
0.3 m	silty mudstone, greenish gray, laminated, slickensides, plant macrodetritus <i>gradational contact</i>
0.4 m	silty sandstone, very fine, light gray, climbing ripple cross lamination, small-scale trough cross bed sets <i>sharp contact</i>
0.27 m	silty mudstone, greenish gray, laminated, slickensides, plant macrodetritus <i>gradational contact</i>
0.37 m	silty sandstone, very fine, light gray, climbing ripple cross lamination, small-scale trough cross bed sets <i>sharp contact</i>
0.3 m	silty mudstone, greenish gray, laminated, slickensides, plant macrodetritus <i>gradational contact</i>
0.54 m	silty sandstone, very fine, light gray, climbing ripple cross lamination, small-scale trough cross bed sets <i>sharp contact</i>
0.4 m	silty mudstone, greenish gray, laminated, slickensides, plant macrodetritus <i>gradational contact</i>
0.6 m	silty sandstone, very fine, light gray, climbing ripple cross lamination, small-scale trough cross bed sets <i>sharp contact</i>
0.15 m	silty mudstone, greenish gray, laminated, slickensides, plant macrodetritus <i>gradational contact</i>
1.13 m	silty sandstone, very fine, light gray, climbing ripple cross lamination, small-scale trough cross bed sets <i>sharp contact</i>
0.25 m	silty mudstone, greenish gray, laminated, slickensides, plant macrodetritus <i>base of section</i>

Sections measured by T. M. Demko, 1995, Taphonomy of fossil plants in the Upper Triassic Chinle Formation, Ph.D. thesis, University of Arizona.

South Blue Mesa, levee deposit, Petrified Forest National Park

628941*

31.6 m

Petrified Forest Member

- 2.5 m interbedded sandstone, medium, and conglomeratic sandstone, chert, mud chip and carbonate nodule clasts (2-10 cm diameter), medium coarse matrix, conglomerate beds (0.5 m), sandstone beds (1.0 m), small- to large-scale trough cross bed sets
base of Flattops sandstone 1?; sharp, erosional contact
- 1.5 m mudstone, light gray and purplish gray mottled, carbonate nodules (3-5 cm diameter), poorly preserved silicified roots
gradational contact
- 0.4 m mudstone, light gray, massive slickensides
gradational contact
- 1.0 m mudstone, dark brownish red, massive, muklara, carbonate nodules (2-7 cm diameter)
gradational contact
- 1.7 m mudstone, dark purplish red and light gray mottled, massive, light gray haloes around roots
gradational contact
- 1.3 m mudstone, light gray and grayish red mottled, massive, fine mica flakes (tuff?)
gradational contact
- 2.7 m silty sandstone, very fine-fine, light gray with purple mottles, grades upward to silty mudstone, light purplish red, poorly preserved silicified roots
gradational contact
- 4.7 m interbedded sandstone and conglomerate, fine-medium, light gray, chert and volcanic clasts (2-7 cm diameter), medium-scale trough cross bed sets
top of Sonsela sandstone; gradational contact
- 0.4 m conglomerate, medium-coarse sandstone matrix, chert, mud chip and volcanic clasts (3-7 cm diameter)
sharp, erosional contact
- 1.8 m mudstone, dark brownish red with light gray mottles, hackly fracture, grades upward to reddish gray mudstone
gradational contact
- 1.2 m silty mudstone, light reddish brown with light gray mottles along roots, massive, hackly fracture, grades upward to mudstone
gradational contact

Sections measured by T. M. Demko, 1995, Taphonomy of fossil plants in the Upper Triassic Chinle Formation, Ph.D. thesis, University of Arizona.

South Blue Mesa, levee deposit (continued)

- 1.13 m silty sandstone, very fine, light gray, climbing ripple cross lamination, small-scale trough cross bed sets
sharp contact
- 0.25 m silty mudstone, greenish gray, laminated, slickensides, plant macrodetritus
base of section

South Blue Mesa, channel deposit

628942*

34.2 m

Petrified Forest Member

- 3.0 m sandstone, fine, well cemented, mud chip conglomerate interbeds, medium-scale trough cross bed sets
Flattops sandstone 1?; sharp contact
- 0.3-0.5 m conglomerate, carbonate nodules (0.2-6 cm diameter), unionid clams convex upward, single valves
sharp, erosional contact
- 3.7 m mudstone, light olive gray with grayish purple mottles, massive, slickensides
gradational contact
- 2.5 m mudstone, dark reddish brown with light olive gray mottles, flaky fracture, rootlets and root haloes
gradational contact
- 1.4 m mudstone, light olive gray, laminated, laterally equivalent to small channel sandstone, fine, medium-scale trough cross bed sets and parallel lamination, tuffaceous
gradational contact
- 2.6 m mudstone, brownish red with light gray mottles, carbonate nodules (3-5 cm diameter) in lower 2 m, light gray root haloes, mukcara, rootlets
gradational contact
- 1.4 m mudstone, light gray and reddish purple mottled, massive, blocky fracture
gradational contact
- 1.7 m silty mudstone, light gray, micaceous, massive, grades up to mudstone
sharp contact
- 0.7-1.5 m sandstone, fine, tannish gray, medium-scale trough and tabular cross bed sets, biotite flakes, backfilled chambers and burrows (insect burrow bed)
sharp contact
- 9.0 m sandstone with interbedded conglomeratic sandstone and conglomerate, medium-coarse, chert grains, muscovite and biotite flakes, chert and volcanic clasts (1-8 cm diameter), matrix- and clast-supported conglomerate layers (1-2 m), sandstone layers (1-4 m), conglomeratic sandstone layers (0.5-1.0 m), basal mud chip conglomerate, large-scale trough cross bed sets, overturned cross beds, large petrified logs
top of Sonsela sandstone; sharp, erosional contact

Sections measured by T. M. Demko, 1995, Taphonomy of fossil plants in the Upper Triassic Chinle Formation, Ph.D. thesis, University of Arizona.

South Blue Mesa, channel deposit (continued)

0.8 m	mudstone, dark grayish red with light gray mottles, massive, slickensides <i>gradational contact</i>
0.8 m	sandy siltstone, light grayish red with gray mottles, micaceous, disrupted lamination <i>gradational contact</i>
1.0 m	silty sandstone, fine, light grayish red with light gray mottles, muscovite and biotite flakes, laminated <i>gradational contact</i>
2.0 m	sandstone, medium-coarse, light gray, medium- to large-scale trough cross bed sets, micaceous, tuffaceous <i>sharp, erosional contact</i>
0.3 m	mudstone, light gray, massive, slickensides <i>gradational contact</i>
0.9 m	mudstone, dark grayish purple with light gray mottles, light gray haloes around roots, slickensides <i>gradational contact</i>
1.0 m	mudstone, light olive gray with purple mottles, massive, slickensides <i>gradational contact</i>
1.5 m	silty mudstone, dark grayish purple with large olive gray mottles, massive, hackly fracture <i>gradational contact</i>
1.5 m	silty mudstone, dark purplish red with gray mottles, shaley bedding, grades upward into silty mudstone, gray with purple mottles, massive <i>gradational contact</i>
0.3 m	silty mudstone, light gray with pale purple mottles, fine muscovite and biotite flakes (tuff?) <i>sharp contact</i>
0.4 m	silty sandstone, very fine-fine, reddish brown and gray mottled, laminated, muscovite and biotite flakes (tuff?) <i>sharp contact</i>
1.9 m	sandstone, medium, light gray, biotite flakes, medium- to large-scale trough cross bed sets, tuffaceous <i>base of section</i>

Sections measured by T. M. Demko, 1995, Taphonomy of fossil plants in the Upper Triassic Chinle Formation, Ph.D. thesis, University of Arizona.

South Blue Mesa, abandoned channel, Petrified Forest National Park

628943*

24.6 m

Petrified Forest Member

- | | |
|------------|---|
| 1.5 m | sandstone, fine-medium, light gray, micaceous, medium- large-scale trough cross bed sets
<i>Flattops sandstone 1?; sharp contact</i> |
| 0.1-0.2 m | conglomerate, coarse matrix, dark reddish brown, chert granules and carbonate nodule
clasts (0.1-0.2 cm diameter), small-scale trough cross bed sets
<i>sharp, erosional contact</i> |
| 1.0 m | mudstone, dark grayish purple with light gray mottles, massive
<i>gradational contact</i> |
| 1.5 m | mudstone, reddish brown and light gray mottled, grades upward to red mudstone
<i>sharp contact</i> |
| 3.2 m | mudstone, light reddish brown and light gray mottled, grades upward to red mudstone
<i>sharp contact</i> |
| 0.1-0.15 m | sandstone, fine, light gray, red mudstone interbeds
<i>sharp contact</i> |
| 1.8 m | mudstone, brownish red and light gray mottled, massive, slickensides
<i>sharp contact</i> |
| 0.3-0.4 m | sandstone, very fine-fine, light gray, well cemented, small-scale trough cross bed sets,
abundant backfilled chambers and burrows (insect burrow bed)
<i>sharp contact</i> |
| 1.9 m | mudstone, dark brownish red, massive, carbonate nodules (4-5 cm diameter), muklara
<i>gradational contact</i> |
| 2.6 m | mudstone, dark reddish purple with light gray mottles, massive, slickensides, laterally
equivalent to mudstone, dark reddish brown, muklara, carbonate nodules (3-5 cm
diameter)
<i>gradational contact</i> |
| 1.8 m | mudstone, olive gray, massive, blocky fracture
<i>gradational contact</i> |
| 3.0 m | mudstone, black to dark gray, carbonaceous, abundant coalified plant remains
<i>sharp contact, interfingering with</i> |
| 5.5 m | sandstone, medium, light gray, sparse chert pebble conglomerate layers, medium-scale
trough cross bed sets, overturned cross beds, fines upward to fine sandstone with tabular
cross beds
<i>top of Sonsela sandstone; base of section</i> |

Sections measured by T. M. Demko, 1995, Taphonomy of fossil plants in the Upper Triassic Chinle Formation, Ph.D. thesis, University of Arizona.

Wild Horse Draw, Petrified Forest National Park

629941*

110 m

Petrified Forest Member

- | | |
|-------|---|
| 8.5 m | sandstone, fine-medium, light gray to reddish gray, weathers tan to brown, large-scale trough cross bed sets (0.5-1.0 m), parallel and ripple cross lamination, scour and fill, lateral accretion surfaces, mud chip and carbonate nodule conglomerate at base (0.4 m)
<i>base of Painted Desert sandstone; sharp, erosional contact</i> |
| 6.0 m | mudstone, brownish red with light gray gley spots, carbonate nodules (3-5 cm diameter), massive, slickensides
<i>sharp contact</i> |
| 3.0 m | muddy sandstone, coarse, reddish brown, mud chip and carbonate nodule clasts
<i>sharp contact</i> |
| 0.7 m | silty mudstone and siltstone, brownish red with light gray gley spots, carbonate nodules (0.2-0.3 cm diameter), massive
<i>gradational contact</i> |
| 3.4 m | mudstone, dark red, carbonate nodules (0.2-0.3 cm diameter), massive, slickensides
<i>gradational contact</i> |
| 1.5 m | siltstone, grayish red with light gray gley spots, carbonate nodules (0.2-0.3 cm diameter)
<i>gradational contact</i> |
| 4.0 m | sandstone, fine, reddish gray, weathers grayish brown, medium-scale trough cross bed sets, ripple cross lamination
<i>gradational contact</i> |
| 0.3 m | conglomerate, carbonate nodule and mud chip clasts, red to reddish gray, red mud chip granule matrix
<i>sharp, erosional contact</i> |
| 5.4 m | mudstone, dark grayish red, light gray gley spots, large <i>Scoyenia</i> , carbonate nodules (0.2-0.3 cm diameter), massive
<i>gradational contact</i> |
| 0.5 m | mudstone, brownish red, <i>Scoyenia</i> , carbonate nodules (0.3-0.5 cm diameter), massive
<i>gradational contact</i> |
| 3.0 m | mudstone, dark red with light gray gley spots, gley haloes around rootlets, <i>Scoyenia</i> , massive, slickensides
<i>gradational contact</i> |
| 1.0 m | mudstone, brownish red with light gray gley spots, <i>Scoyenia</i> , massive, slickensides
<i>gradational contact</i> |

Sections measured by T. M. Demko, 1995, Taphonomy of fossil plants in the Upper Triassic Chinle Formation, Ph.D. thesis, University of Arizona.

Wild Horse Draw (continued)

- 7.5 m mudstone, dark brownish red with light gray gley spots, carbonate nodules (0.2-0.3 cm diameter), massive, slickensides
gradational contact
- 2.6 m mudstone, dark brownish red, muklara, carbonate nodules (2-10 cm diameter), massive, slickensides
gradational contact
- 1.0 m mudstone, dark brownish red with light red mottles and light gray gley spots, roots, massive
gradational contact
- 1.7 m mudstone, dark purplish red with light gray gley spots, massive, slickensides
gradational contact
- 1.0 m mudstone, olive gray, massive
gradational contact
- 0.8 m mudstone with silty laminations, medium to light gray, carbonized roots
sharp contact
- 6.0 m sandstone, fine, light grayish red, weather tan and dark brown, well cemented, large- and medium-scale trough cross bed sets, lateral accretion surfaces, interbedded carbonate nodule conglomerate lenses
sharp contact
- 0-0.5 m conglomerate, carbonate nodule clasts (0.2-1.5 cm diameter)
sharp contact
- 2.0 m muddy sandstone, coarse, grayish red, mud chip clasts
sharp contact
- 2.5 m sandstone, fine light reddish gray, weathers dark reddish brown, large-scale trough and tabular cross bed sets, horizontal burrows, pinches out to east
sharp contact
- 0.3 m conglomerate, carbonate nodule and chert granule (clasts 1-2 cm diameter), dark reddish brown
sharp contact
- 1.6 m mudstone, dark reddish brown, muklara, carbonate nodules (0.2-0.3 cm diameter), massive
gradational contact
- 4.5 m mudstone, brownish red with light gray mottles, carbonate nodules (2-7 cm diameter), massive
gradational contact

Sections measured by T. M. Demko, 1995, Taphonomy of fossil plants in the Upper Triassic Chinle Formation, Ph.D. thesis, University of Arizona.

Wild Horse Draw (continued)

- 2.5 m mudstone, dark brownish red, massive
sharp contact
- 1.0-2.5 m interbedded sandstone and conglomerate, light gray and grayish brown, mud chip, unionid bivalve, and carbonate nodule clasts, medium-scale trough cross bed sets, low-angle inclined bedding, scour and fill, pinches out to east
top of Sonsela sandstone; sharp, erosional contact
- 3.3 m silty mudstone, brownish red with light gray mottles, discontinuous carbonate layers (3-5 cm), micaceous
gradational contact
- 2.8 m mudstone, dark reddish purple with light gray mottles, carbonate nodules (3-5 cm diameter), grades upward to dark brownish red
gradational contact
- 2.0 m silty mudstone, light gray, laminated, very fine mica, rootlets
gradational contact
- 3.0 m interbedded silty sandstone, very fine, and sandstone, fine-medium, light gray silty beds (7-10 cm), sandstone beds 0.4 m thick, gently dipping cross lamination
gradational contact
- 0.6 m mudstone, light gray, laminated
sharp contact
- 2.3 m sandstone, medium, light gray, biotite and muscovite flakes, comminuted plant debris, parallel and gently dipping lamination
gradational contact
- 3.0 m interbedded conglomerate and conglomeratic sandstone, fine-medium, light brown to dark reddish brown, chert granule matrix, carbonate nodules, unionid bivalves, bones, petrified wood, medium- and large-scale trough cross bed sets, ripple cross lamination
sharp contact
- 3.0 m sandstone, medium-coarse, light tannish brown, interbedded mud chip conglomerate with clasts to cobble size, medium- and large-scale trough cross bed sets
gradational contact
- 0.7-1.5 m conglomerate, coarse matrix, grayish brown to dark brown, carbonate nodule and chert clasts to 8 cm diameter, unionid bivalves, medium-scale trough cross bed sets
base of Sonsela sandstone, top of Monitor Butte Member; sharp, erosional contact
- 4.2 m mudstone, dark brownish red with light gray mottles, carbonate nodules (0.2-0.3 cm diameter), slickensides
gradational contact

Sections measured by T. M. Demko, 1995, Taphonomy of fossil plants in the Upper Triassic Chinle Formation, Ph.D. thesis, University of Arizona.

Wild Horse Draw (continued)

- | | |
|-------|--|
| 1.0 m | mudstone, dark grayish purple with light gray gley spots, carbonate nodules (0.2-0.3 cm diameter), massive
<i>gradational contact</i> |
| 2.4 m | mudstone, dark purplish red with light gray gley mottles, carbonate nodules (3-5 cm diameter), massive
<i>gradational contact</i> |
| 1.0 m | mudstone, dark purplish brown with light gray mottles, pelloidal fabric, massive, slickensides
<i>gradational contact</i> |
| 1.5 m | mudstone, dark reddish purple with light purple mottles, massive
<i>base of section</i> |

North of Old Route 181, Petrified Forest National Park

626941*

54 m

Petrified Forest Member

- top of Flattops sandstone #1*
- 9.0 m sandstone, medium-coarse, tannish gray, medium- to large-scale trough cross bed sets
sharp contact
- 2.3 m interbedded sandstone, medium-coarse, brownish gray, and conglomeratic sandstone, chert pebbles, carbonate nodules, mudstone and sandstone rip-up clasts, large-scale trough cross bed sets
sharp contact
- 0.7 m sandstone, medium-coarse, light brownish gray, medium-scale trough cross bed sets, comminuted plant debris on bedding planes
sharp contact
- 0-0.3 m conglomerate, carbonate nodules (to 2 cm diameter), coarse sand matrix
sharp, erosional contact
- 2.0 m sandstone, fine-medium, brown, conglomerate lenses with mud chips, large cobbles, carbonate nodules (0.5 cm diameter)
base of Flattops sandstone #1; sharp, erosional contact
- 2.5 m silty mudstone, brownish red, carbonate nodules (0.5 cm diameter), slickensides
gradational contact
- 1.9 m mudstone, olive gray, reddish mudstone interbeds, carbonate nodules (3-5 cm diameter), Fe-replaced roots
gradational contact
- 0.9 m mudstone, dark brownish red, dark gray gley spots, hackly fracture, carbonate nodules (0.5 cm diameter), slickensides
gradational contact
- 2.2 m mudstone, brownish red, carbonate nodules (0.5 cm diameter)
gradational contact
- 2.0 m mudstone, brownish red and gray mottled, smectitic, massive, carbonate nodules (3-5 cm diameter), muklara, grades upward from gray to reddish gray
gradational contact
- 0.5 m shaley mudstone, grayish to reddish brown
top of Rainbow sandstone; sharp contact

Sections measured by T. M. Demko, 1995, Taphonomy of fossil plants in the Upper Triassic Chinle Formation, Ph.D. thesis, University of Arizona.

North of Old Route 181 (continued)

- 1.9 m sandstone, fine-medium, smectitic, biotite and muscovite flakes (tuff?), medium-scale trough cross bed sets, top contains discontinuous carbonate nodule conglomerate (0-0.6 m)
sharp contact
- 1.2 m mudstone, reddish brown and light gray mottled, slickensides
gradational contact
- 1.7 m mudstone, brownish red, brownish gray gley spots, massive, bottom 1 m contain carbonate nodules (0.5 cm diameter at base, 1-2 cm diameter at top), nodules fill pedogenic cracks
gradational contact
- 0.8 m mudstone, brownish red, light gray gley spots, massive, hackly fracture
gradational contact
- 2.8 m sandstone, fine-medium, medium-coarse biotite and muscovite flakes, medium- to large-scale trough cross bed sets, carbonate nodule lag at base, fines upward to light gray siltstone
sharp contact
- 0.8 m mudstone, reddish purple, abundant carbonate nodules (0.5 cm diameter)
gradational contact
- 1.0 m mudstone, dark reddish purple, massive *Scoyenia*, carbonate nodules (1-2 cm diameter), vertical burrows (1-2 cm diameter), rootlets with gley haloes, slickensides
gradational contact
- 0.7 m mudstone, gray, massive, slickensides
gradational contact
- 0.9 m mudstone, reddish brown, light gray gley spots rootlets with light gray gley haloes

previous 3.4 m laterally equivalent to:

- 0.3 m mudstone, light gray, massive
gradational contact
- 0.3 m mudstone, dark grayish purple, light gray gley spots, massive, slickensides
gradational contact
- 2.8 m mudstone, light olive gray and light reddish brown mottled, massive, dark reddish brown mottles around rootlets, grades upward into purplish gray and gray mottled mudstone

sharp contact

North of Old Route 181 (continued)

- 0.7 m interbedded sandstone and conglomerate, medium-coarse, mud chip clasts (to 7 cm across), chert clasts, petrified wood (0.5-1 cm diameter), top is bioturbated by roots
sharp, erosional contact
- 1.0 m mudstone, reddish brown and light olive gray mottled, massive, hackly fracture, slickensides, siltier toward top
gradational contact
- 3.6 m mudstone with silty interbeds (5-10 cm) in upper 1.5 m, rootlets with reddish brown haloes
gradational contact
- 0.75 m silty sandstone, very fine-fine, reddish brown and medium gray mottled, micaceous (fine), massive but with some patchy bedding (pedoturbated)
gradational contact
- 0.6 m sandy siltstone, very fine, medium to light gray, laminated, biotite and muscovite flakes, flat mud chips (0.5 cm across), rootlets with reddish brown haloes
gradational contact
- 3.5 m interbedded sandstone and conglomerate, medium-coarse, light gray, chert, volcanic rock and mud chip clasts (5-15 cm diameter), coarsens upward, large petrified logs
sharp, erosional contact
- 5.0 m mudstone, purplish gray and purple mottled, light olive gray gley mottles, rootlets, Fe nodules (0.5 cm diameter), slickensides
sharp contact
- 2.3 m sandstone, fine-medium, micaceous (tuff?), small- to large-scale trough cross bed sets, poorly preserved silicified roots
base of Rainbow sandstone, top of Monitor Butte Member; sharp contact
- 0.5 m mudstone, brownish red, massive, hackly fracture
base of section

Rainbow Forest, Petrified Forest National Park

626942*

20 m

Rainbow sandstone

- 2.0 m conglomeratic sandstone, medium-coarse, chert pebble clasts, large-scale trough cross bed sets, large petrified logs
sharp contact
- 3.5 m silty sandstone, very fine-fine, light gray and purple mottled, medium- and large-scale trough cross bed sets
sharp contact
- 3.4 m conglomeratic sandstone, coarse, light gray, chert and volcanic clasts (to 10 cm diameter), tuffaceous, large petrified logs
sharp contact
- 0.25 m conglomeratic sandstone, coarse-granule, dark greenish brown, angular granule-sized chert grains, pebble-sized red chert and quartz clasts
sharp contact
- 2.2 m silty sandstone, fine micaceous, grades upward into sandstone, medium, micaceous (tuff?), large-scale trough cross bed sets
sharp contact
- 4.0 m plant-bearing unit:
0.4 m carbonaceous mudstone with plant fragments
0.2 m sandstone, fine, laminations of carbonaceous mudstone and plant debris
0.4 m siltstone, abundant plant fragments
0.2 m sandstone, fine, laminations of carbonaceous mudstone and plant debris
0.4 m sandstone, fine, interbedded with carbonaceous mudstone
1.4 m sandstone, fine-medium, brown, muscovite flakes, laminations, small-scale trough cross bed sets
gradational , interfingering contact
- 2.5 m mudstone, brownish red to reddish purple mottled, massive, rootlets, slickensides
sharp contact
- 1.5 m sandstone, medium, reddish gray, micaceous (tuff?), medium- to large-scale trough cross bed sets
base of section

Sections measured by T. M. Demko, 1995, Taphonomy of fossil plants in the Upper Triassic Chinle Formation, Ph.D. thesis, University of Arizona.

Long Logs, Petrified Forest National Park

719941*

24.5 m

Rainbow sandstone

- | | |
|------------|--|
| 5.5 m | mudstone, light purplish gray, massive, slickensides, carbonate nodules (2-5 cm diameter)
<i>gradational contact</i> |
| 0.4 m | mudstone, brownish red with light gray mottles, massive, carbonate nodules (0.5-2 cm diameter), rootlets
<i>gradational contact</i> |
| 1.5 m | mudstone, dark brownish red, massive, slickensides, carbonate nodules (0.5-2 cm diameter)
<i>gradational contact</i> |
| 1.5 m | mudstone, dark grayish purple with light gray mottles, massive
<i>sharp contact</i> |
| 2.6 m | sandstone, fine-medium, light gray to light purplish gray, tuffaceous, laminated, low-angle cross stratification
<i>sharp contact</i> |
| 0.15-0.5 m | conglomerate, carbonate nodules (2-10 cm diameter), abundant bone fragments
<i>sharp contact</i> |
| 1.4 m | mudstone, brownish red with light gray mottles, massive, carbonate nodules (2-10 cm diameter), coalesced
<i>sharp contact</i> |
| 1.2 m | silty mudstone, brownish red with light gray mottles, carbonate nodules (2-3 cm diameter), carbonate layer in upper part (3-4 cm)
<i>sharp contact</i> |
| 2.0 m | sandstone, medium, tuffaceous, medium- to large-scale trough cross bed sets
<i>sharp, erosional contact (2 m relief)</i> |
| 5.0 m | mudstone, grayish purple with light gray mottles, massive, grades upward to dark grayish red with light gray mottles, root haloes
<i>gradational contact</i> |
| >1.5 m | sandstone, medium-coarse, grayish purple mudstone interbeds (0.1-0.2 m), small- to medium-scale trough cross bed sets, low-angle cross stratification, large silicified logs
<i>base of section</i> |

Sections measured by T. M. Demko, 1995, Taphonomy of fossil plants in the Upper Triassic Chinle Formation, Ph.D. thesis, University of Arizona.

Wild Coyote Mesa, Petrified Forest National Park

719942*

31 m

Petrified Forest Member

- >4.8 m conglomeratic sandstone, medium-coarse, light gray to tannish brown, carbonate nodule, mud chip, and chert clasts (to 5 cm diameter), medium- to large-scale trough cross bed sets, lateral accretion surfaces, fines upward
sharp contact
- 0.3 m conglomerate, carbonate nodule and mud chip clasts (to 8 cm diameter)
base of Flattops sandstone; sharp, erosional contact
- 2.3 m mudstone, dark reddish gray with light gray mottles, carbonate nodules (2-3 cm diameter) in upper 0.2 m
gradational contact
- 1.0 m sandstone, fine, light gray to purplish gray, basal carbonate nodule conglomerate (0.1 m)
sharp contact
- 1.8 m mudstone, dark reddish purple with light gray mottles, massive, carbonate nodules (2-3 cm diameter)
gradational contact
- 2.0 m interbedded silty sandstone and silty mudstone, fine, reddish brown, laminated, micaceous (tuff?), tuffaceous sandstone interbeds, ripple cross laminated, fines upward to mudstone
gradational contact
- 1.8 m sandstone, fine, light gray to light purplish gray, basal granule and mud chip conglomerate, grades laterally into siltstone, light reddish brown
sharp contact
- 1.4 m mudstone, dark grayish purple with light gray mottles, massive, carbonate nodules (2-3 cm diameter), discontinuous coalesced carbonate nodule layers at base (2-5 cm), root haloes
gradational contact (locally sharp)
- 2.1 m silty mudstone, light purplish gray and light gray mottled
gradational contact
- 2.0 m silty mudstone, light purplish gray and light gray mottled, grades upward to dark brownish red, carbonate nodules (0.2-0.5 cm diameter), slickensides
top of Rainbow sandstone; sharp contact
- 1.3 m sandstone, medium, light gray to light purplish gray, large-scale trough cross bed sets
sharp contact

Sections measured by T. M. Demko, 1995, Taphonomy of fossil plants in the Upper Triassic Chinle Formation, Ph.D. thesis, University of Arizona.

Wild Coyote Mesa (continued)

6.2 m	sandstone, fine-medium, light gray, conglomeratic interbeds, chert, quartz, volcanic rock clasts, tuffaceous, large-scale trough cross bed sets, large silicified logs at base <i>base of Rainbow sandstone, top of Monitor Butte Member; sharp, erosional contact</i>
0.6 m	mudstone, dark grayish purple, massive <i>sharp contact</i>
1.5 m	mudstone, light gray and light purplish gray mottled, flinty <i>gradational contact</i>
1.0 m	mudstone, dark grayish purple, massive <i>gradational contact</i>
>1.0 m	mudstone, light gray, massive <i>base of section</i>

Onyx Bridge, Petrified Forest National Park

630941*

23.5 m

Petrified Forest Member

- | | |
|-------|---|
| 0.5 m | mudstone, grayish red, carbonate nodules (0.2-2 cm diameter), massive, slickensides
<i>gradational contact</i> |
| 4.6 m | mudstone, grayish red with light gray gley spots, massive, slickensides
<i>top of Black Forest bed; sharp contact</i> |
| 0.8 m | sandstone, fine-medium, light grayish red, mud chip conglomerate interbeds, tuffaceous
<i>gradational contact</i> |
| 1.0 m | silty mudstone, light grayish red with light gray gley spots
<i>gradational contact</i> |
| 1.9 m | siltstone, light grayish red with light gray gley spots, massive
<i>sharp, erosional contact</i> |
| 1.5 m | sandstone, fine, light grayish red, thin bedded, ripple cross lamination, fines upward to silty sandstone, tuffaceous
<i>sharp, erosional contact</i> |
| 2.0 m | sandstone, fine-medium, light gray with purplish gray interbeds, large-scale trough cross bed sets, lateral accretion surfaces, mud chip conglomerate interbeds, tuffaceous
<i>sharp contact</i> |
| 0.3 m | conglomerate, brownish gray weathers to dark brown, carbonate nodule clasts (2-5 cm diameter)
<i>sharp contact</i> |
| 1.7 m | sandstone, fine-medium, carbonate cement, small- and medium-scale trough cross bed sets, carbonate nodule and granule conglomerate stringer, tuffaceous
<i>sharp contact</i> |
| 1.7 m | conglomerate, purplish brown, mudstone and carbonate nodule clasts (to 6 cm diameter, 75% mudstone, 25% carbonate nodule), thins laterally to 0.2-0.5 m
<i>sharp contact</i> |
| 1.7 m | interbedded sandstone, fine, light gray, parallel and inclined lamination, tuffaceous, and mudstone, purple and gray mottled
<i>gradational contact</i> |
| 1.5 m | sandstone, fine-medium, light gray with grayish purple laminations, abundant biotite, parallel to inclined lamination, tuffaceous, large petrified logs
<i>gradational, interfingering contact</i> |

Sections measured by T. M. Demko, 1995, Taphonomy of fossil plants in the Upper Triassic Chinle Formation, Ph.D. thesis, University of Arizona.

Onyx Bridge (continued)

- 0-2.0 m conglomerate, light gray to tannish brown, carbonate nodule and mudstone clasts, large-scale trough cross bed sets, clasts imbrication in thicker beds, massive where thin; fine, tuffaceous sandstone interbeds (0.4 m)
base of Black Forest bed; sharp, erosional contact
- 2.3 m mudstone, dark brownish red, top 0.35 light gray gley and purplish red, carbonate nodules (0.2-2 cm diameter at base, 3-8 cm diameter near top), *Scoyenia*, massive, muklara
base of section

Caveman Cave, Petrified Forest National Park

630942*

23.5 m

Petrified Forest Member

- | | |
|-----------|--|
| 2.0 m | mudstone, light grayish red with light gray mottles, massive
<i>gradational contact</i> |
| 2.1 m | mudstone, reddish brown with light gray mottles, massive
<i>top of Black Forest bed; gradational contact</i> |
| 1.0 m | interbedded mudstone and silty sandstone, reddish brown to reddish gray with light gray
root haloes, fine
<i>gradational contact</i> |
| 4.2 m | sandstone, fine-medium, light gray with grayish purple interbeds, micaceous, large-scale
trough cross bed sets, fines upward to silty sandstone, tuffaceous
<i>sharp contact</i> |
| 0-0.2 m | conglomerate, mud chip and carbonate nodule clasts, medium sandstone matrix
<i>sharp, erosional contact</i> |
| 2.3 m | mudstone, dark purplish gray, carbonate concretions (15 cm diameter), massive
<i>gradational contact</i> |
| 2.4 m | mudstone, light gray, laminated, grades upward to olive gray mudstone
<i>gradational contact</i> |
| 1.5 m | sandstone, fine, light purplish gray, large silicified logs tuffaceous
<i>sharp contact</i> |
| 3.0-5.0 m | conglomerate, carbonate nodule, tuffaceous sandstone interbeds, poorly preserved
carbonized leaf and stem debris, permineralized wood, bones, medium-scale trough cross
bed sets
<i>base of Black Forest beds; sharp, erosional contact</i> |
| 2.5 m | mudstone, light purple, laminated, carbonate nodules (2-5 cm diameter), discontinuous
carbonate layers (5 cm) at top, top 0.2 m is gray gley
<i>base of section</i> |

Sections measured by T. M. Demko, 1995, Taphonomy of fossil plants in the Upper Triassic Chinle Formation, Ph.D. thesis, University of Arizona.

Fort Wingate, USGS fossil plant locality 10061

727933*

54 m

Monitor Butte Member

- | | |
|--------|---|
| 2.0 m | mudstone, brownish yellow and dark reddish brown mottled, massive, slickensides
<i>gradational contact</i> |
| 1.1 m | mudstone, medium red, carbonate nodules (10 cm diameter)
<i>sharp contact</i> |
| 2.4 m | muddy siltstone, dark red, rootlets, massive
<i>gradational contact</i> |
| 3.4 m | interbedded siltstone and silty sandstone, very fine, light gray to moderate red, laminated and ripple cross laminated
<i>gradational contact</i> |
| 1.0 m | sandy siltstone, fine, moderate red to yellowish gray, mottled along laminations
<i>gradational contact</i> |
| 5.0 m | silty sandstone, interbedded light greenish gray and moderate red, parallel and ripple cross lamination, carbonate nodules (10 cm diameter) at 1.5-2.5 m above base, rootlets
<i>gradational contact</i> |
| 8.8 m | calcareous mudstone, gray to greenish gray, massive at base, grades upward to laminated at top; in situ stumps 2, 4.5, and 6.5 m from base; abundant carbonized plant fragments 1.5 m from top (USGS fossil plant locality 10061), silt-sized muscovite abundant near top
<i>sharp contact</i> |
| 0.15 m | calcareous mudstone, weak red, massive, slickensides
<i>sharp contact</i> |
| 1.3 m | silty mudstone and muddy siltstone, light greenish gray to light gray, shaley to laminated, parallel and ripple cross lamination, carbonate nodule horizon at base, simple horizontal and vertical burrows
<i>sharp contact</i> |
| 1.8 m | silty calcareous mudstone, moderate red with light greenish gray mottles, massive, abundant <i>Scoyenia</i> , slickensides, grades upward to moderate red mudstone, massive, hackly fracture
<i>sharp contact</i> |
| 0.55 m | muddy calcareous siltstone, moderate to dark red, massive, bioturbated by roots, grades upward to sandy siltstone
<i>sharp contact</i> |

Sections measured by T. M. Demko, 1995, Taphonomy of fossil plants in the Upper Triassic Chinle Formation, Ph.D. thesis, University of Arizona.

Fort Wingate (continued)

1.1 m	silty calcareous mudstone, reddish brown, massive <i>gradational contact</i>
0.12 m	muddy silty sandstone, light greenish gray and pale red purple mottled, carbonate nodules (3-5 cm diameter), massive <i>sharp contact</i>
1.0 m	silty mudstone, reddish brown, massive, grades upward to mudstone, carbonate nodules (0.5 cm diameter) <i>sharp contact</i>
0.4 m	silty sandstone, very fine, greenish gray, parallel and ripple cross lamination <i>sharp contact</i>
0.9 m	silty mudstone, reddish brown, carbonate nodules (0.4-0.6 cm diameter), grades upward to mudstone <i>gradational contact</i>
0.6 m	silty calcareous mudstone, grayish blue and grayish red mottled, rootlets, carbonate nodules (0.2-0.6 cm diameter), massive <i>sharp contact</i>
4.2 m	silty mudstone, dark red and light gray mottled, carbonate nodules (4 cm diameter), <i>Scoyenia</i> , massive <i>sharp contact</i>
0-0.6 m	silty sandstone, very fine-fine, light greenish gray and dark red to yellowish gray mottled, parallel and ripple cross lamination, rootlets with haloes, channel fill (50 m wide, trending 345°) <i>sharp contact</i>
0.8 m	silty mudstone, moderate red and olive yellow mottled, rootlets with haloes, massive <i>sharp contact</i>
2.3 m	mudstone, light gray to pale red purple, slightly calcareous, <i>Scoyenia</i> , carbonate nodules (2-3 cm diameter) increase in size upward, more mottled at top, slickensides, massive <i>gradational contact</i>
2.3 m	mudstone, pale red purple and pale greenish yellow spotted, <i>Scoyenia</i> , massive <i>sharp contact</i>
0.6 m	calcareous siltstone, greenish gray and grayish red purple mottled, bioturbated by roots, massive, slickensides <i>sharp contact</i>

Sections measured by T. M. Demko, 1995, Taphonomy of fossil plants in the Upper Triassic Chinle Formation, Ph.D. thesis, University of Arizona.

Fort Wingate (continued)

- 4.0 m mudstone, gray, pale red purple and light greenish gray mottled, carbonate nodules (3-6 cm diameter)
gradational contact
- 1.0 m mudstone, gray and olive yellow mottled, massive
sharp contact
- 2.0 m mudstone, moderate red and gray mottled, massive
gradational contact
- 5.3 m mudstone, gray, gypsum nodules (5-15 cm diameter) and veins (0.5 m from base)
base of Monitor Butte Member, top of Mottled strata; sharp, erosional contact
- 2.0 m calcareous siltstone, moderate red and bluish gray mottled, Fe nodules, carbonate nodules, calcite veins, blocky fracture
base of section

Blue Notch Canyon, near White Canyon, UT

79942*

30 m

9.0 m	sandstone, fine, gray to light brown, thin bedded, contorted in some places, small- to medium-scale trough and planar cross bed sets, coarsens upward to medium-coarse <i>sharp, erosional contact</i>
9.0 m	mudstone, medium to light gray, massive <i>base of Monitor Butte Member top of Shinarump Member; sharp contact</i>
3.5 m	mudstone, very light gray, flinty, hard, massive, abundant vertical, backfilled burrows <i>sharp contact</i>
1.5 m	mudstone, light gray, massive, Fe-replaced roots, Fe nodules <i>gradational contact</i>
1.0 m	silty sandstone, fine, coalified plant roots <i>sharp contact</i>
0.35 m	Fe/Mn-nodule and gypsum layer <i>sharp contact</i>
0.5 m	mudstone, medium to dark gray, massive <i>gradational contact</i>
2.5 m	mudstone, light to medium gray, massive, bioturbated by roots, plant material (<i>Equisetites</i>), charcoal clasts (2-10 cm diameter), comminuted plant debris <i>gradational contact</i>
0.7 m	mudstone, medium gray, massive, slickensides, carbonized roots, logs <i>base of Shinarump Member and Chinle Formation, top of Moenkopi Formation; sharp contact</i>
>2 m	interbedded siltstone and sandstone, dark brownish red to yellowish brown <i>base of section</i>

Sections measured by T. M. Demko, 1995, Taphonomy of fossil plants in the Upper Triassic Chinle Formation, Ph.D. thesis, University of Arizona.

Blue Notch Canyon, near White Canyon, UT

79943*

33 m

- 18.0 m sandstone, fine, gray to light brown, thin bedded, contorted in some places, small- to medium-scale trough and planar cross bed sets, coarsens upward to medium-coarse, basal carbonate nodule conglomerate, coarsening upward cycles, fine silty sandstone (1.5-3 m) near top
sharp, erosional contact
- 9.0 m mudstone, medium to light gray, grades upward to reddish brown, carbonate nodules (2-10 cm diameter)
base of Monitor Butte Member, top of Shinarump Member; sharp contact
- 1.7 m mudstone, very light gray, flinty, hard massive, abundant vertical burrows
sharp contact
- 2.7 m mudstone, light gray, massive, abundant Fe concretions, abundant carbonized logs
gradational contact
- 0.7 m paper coal, grades upward to carbonaceous mudstone
sharp contact
- 0.2 m gypsiferous mudstone
sharp contact
- 0.1 m coal
sharp contact
- 0.4 m carbonaceous mudstone, light gray to brownish gray, abundant coalified plant (*Equisetites*), Fe nodules (2-8 cm diameter), siderite-replaced plant fragments
sharp contact
- 0-1.5 m sandstone, medium-coarse, yellowish brown, massive
base of Shinarump Member and Chinle Formation, top of Moenkopi Formation; sharp contact
- >2 m interbedded siltstone and sandstone, dark brown to yellowish brown
base of section

Sections measured by T. M. Demko, 1995, Taphonomy of fossil plants in the Upper Triassic Chinle Formation, Ph.D. thesis, University of Arizona.

Blue Notch Canyon, near White Canyon, UT

79944*

33 m

8.5 m	sandstone, fine, gray to light brown, thin bedded, contorted in places, small- to medium-scale trough and planar cross bed sets, coarsens upward to medium-coarse <i>sharp contact</i>
6.3 m	mudstone, light to medium gray, massive, abundant comminuted plant debris <i>base of Monitor Butte Member, top of Shinarump Member; sharp contact</i>
2.0 m	mudstone, light gray, flinty, massive, abundant burrows, carbonized logs at base, grades laterally into massive gray mudstone, soft <i>sharp contact</i>
3.0 m	mudstone, gray, massive <i>sharp contact</i>
5.0 m	sandy mudstone, light gray, thin bedded to laminated, cross laminated, abundant plants (<i>Equisetites</i>), large carbonized trunks, roots <i>sharp contact</i>
3.7 m	mudstone, medium to light gray, abundant plant fragments (<i>Equisetites</i>), disrupted lamination, roots <i>sharp contact</i>
2.0 m	mudstone, brownish red with light gray mottles, massive <i>sharp contact</i>
2.5 m	mudstone, light to medium gray, massive, flaky fracture <i>sharp contact</i>
0.3 m	silty sandstone, very fine, light brownish tan, massive <i>base of Shinarump Member and Chinle Formation, top of Moenkopi Formation; sharp contact</i>
>2 m	interbedded siltstone and sandstone, dark brownish red to yellowish red <i>base of section</i>

Sections measured by T. M. Demko, 1995, Taphonomy of fossil plants in the Upper Triassic Chinle Formation, Ph.D. thesis, University of Arizona.

Jacob's Chair, White Canyon, UT

78941

84 m

top of Moss Back Member

- 9.5 m sandstone, fine-medium, quartz cemented, brownish gray, large-scale trough cross bed sets, primary current lineation, ripple marks on bedding planes, very large-scale lateral accretion surfaces
gradational contact
- 1.8 m interbedded sandstone and conglomerate, fine-medium, dark brownish gray, carbonate nodule clasts, sandstone beds 0.3-0.4 m thick, conglomerate beds 0.5-0.6 m thick, small-scale trough cross bed sets, scour and fill
gradational contact
- 0.4-0.5 m conglomerate, dark brownish red, carbonate nodules (90%) and sandstone clasts, fine-medium sandstone matrix, large carbonized logs (0.2-0.3 m diameter) partly replace by calcite; clast supported at base, matrix supported at top
base of Moss Back Member, top of Monitor Butte Member; sharp, erosional contact
- 0-0.4 m carbonate nodule layer, coalesced (2-20 cm), light brownish gray
gradational contact
- 0.4 m mudstone, brownish red with light gray gley spots and mottles, massive, carbonate nodules (0.5-2 cm diameter)
gradational contact
- 0.5 m carbonate nodule layer, coalesced, light gray massive mudstone between nodules
gradational contact
- 1.8 m mudstone, dark grayish purple and purple mottled, abundant carbonate nodules (2-40 cm diameter), larger nodules are coalesced smaller ones, massive, slickensides
gradational contact
- 9.0 m mudstone, dark reddish purple, massive, carbonate nodules (2-8 cm diameter)
gradational contact
- 1.5 m silty mudstone, light gray, massive
gradational contact
- 4.5 m sandstone, fine, light gray, cross lamination, tuffaceous
gradational contact
- 4.5 m sandstone, fine, light gray, small- to medium-scale trough cross bed sets, ripple cross lamination, large silicified trunks at base, tuffaceous
sharp contact

Sections measured by T. M. Demko, 1995, Taphonomy of fossil plants in the Upper Triassic Chinle Formation, Ph.D. thesis, University of Arizona.

Jacob's Chair (continued)

18.0 m	sandstone, fine-medium, light gray, micaceous, medium- to large-scale trough cross bed sets, light gray silty sandstone interbeds, poorly preserved plant debris <i>sharp contact</i>
14.5 m	sandstone, fine-medium, light brown to reddish brown, thin bedded to laminated, highly deformed, ripple cross lamination, small--scale trough cross bed sets, coarsens upward to medium sandstone <i>sharp contact, slumped</i>
2.3 m	mudstone, light gray, smectitic, abundant comminuted plant debris, plant fragments <i>base of Monitor Butte Member top of Shinarump Member equivalent; sharp contact</i>
1.0 m	sandstone, medium-coarse, quartz cement, small-scale trough cross bed sets <i>top of Mottled strata; sharp, erosional contact</i>
2.7 m	mudstone, light gray and dark purplish gray mottled, massive, flaky fracture, Fe nodules (0.2-2 cm diameter) <i>gradational contact</i>
2.8 m	mudstone, light brownish yellow mottled, Fe nodules (2-5 cm diameter) <i>gradational contact</i>
1.0 m	interbedded silty mudstone and silty sandstone, very fine, reddish brown, patchy, massive <i>gradational contact</i>
3.0 m	interbedded mudstone and silty mudstone, dark purplish gray to reddish purple with light gray mottles, Fe concretions <i>gradational contact</i>
2.8 m	silty sandstone, fine, light gray to brownish yellow with light grayish purple mottles, thin bedded, small-scale trough cross bed sets <i>base of Mottled strata, top of Moenkopi Formation; sharp contact</i>
>1 m	siltstone, brownish red with light gray mottles, thin bedded <i>base of section</i>

Sections measured by T. M. Demko, 1995, Taphonomy of fossil plants in the Upper Triassic Chinle Formation, Ph.D. thesis, University of Arizona.

North Six Shooter Peak, UT

714941

47 m

>2 m	calcareous siltstone, light orangish brown, bioturbated <i>gradational contact</i>
3.6 m	marly limestone, nodular to massive, bioturbated, crayfish burrows, partially silicified <i>gradational contact</i>
3.7 m	calcareous mudstone, light brownish red, massive <i>base of Owl Rock Member, top of Petrified Forest Member; sharp contact</i>
0.5 m	marly limestone, nodular to massive, discontinuous, bioturbated <i>sharp contact</i>
4.0 m	mudstone, light purplish red, rootlets, massive <i>sharp contact</i>
0.5 m	nodular limestone, massive <i>sharp contact</i>
2.7 m	mudstone, brownish red, carbonate nodules (2-4 m diameter) <i>gradational contact</i>
4.0 m	silty mudstone, light purplish gray, carbonate nodules (2-6 cm diameter) <i>base of Petrified Forest Member, top of Moss Back Member; sharp contact</i>
3.9 m	sandstone, very fine-fine, light gray to light purplish gray, grades upward to grayish purple, small- to medium-scale trough cross bed sets, tuffaceous <i>sharp contact</i>
16.9 m	sandstone, fine-medium, grayish brown to light brown, interbedded mud chip conglomerate; basal conglomerate, mudstone, carbonate, reworked sandstone clasts and woody fragments and trunks replaced by calcite; chert; large- to very large-scale trough cross bed sets to 1.5 m thick; overturned cross beds, scour and fill, abundant woody fragments on bedding planes <i>base of Moss Back Member and Chinle Formation, top of Moenkopi Formation; sharp, erosional contact</i>
>5 m	interbedded siltstone and sandstone, dark brown to yellowish brown <i>base of section</i>

Sections measured by T. M. Demko, 1995, Taphonomy of fossil plants in the Upper Triassic Chinle Formation, Ph.D. thesis, University of Arizona.

Copper Point Camp, White Canyon, UT

710942

8.4 m

0.35 m	coal <i>sharp contact</i>
0.45 m	carbonaceous mudstone, black, abundant plant fragments <i>sharp contact</i>
0.4 m	paper coal, black <i>sharp contact</i>
0.4 m	carbonaceous mudstone, dark gray, abundant plant fragments <i>sharp contact</i>
1.8 m	interbedded carbonaceous mudstone and sandstone, fine, medium to dark gray with dark orangish brown <i>base of Shinarump Member and Chinle Formation, top of Moenkopi Formation; sharp contact</i>
>5 m	interbedded siltstone and sandstone, dark brown to yellowish brown <i>base of section</i>

Copper Point, White Canyon, UT

710941

40.9 m

0.7 m	nodular limestone, light reddish gray to light gray <i>base of Owl Rock Member, top of Petrified Forest Member; gradational contact</i>
7.0 m	mudstone, light pinkish orange to orange gray, massive <i>sharp contact</i>
0-0.3 m	sandstone, coarse, carbonate nodule and granule clasts <i>sharp contact</i>
5.5 m	mudstone, gray to light purplish gray, large carbonate concretions, calcite-replaced wood, grades upward to light pinkish orange <i>sharp contact</i>
0.7 m	paper coal <i>gradational contact</i>
0.8 m	carbonaceous mudstone, black to dark gray, abundant plant fragments, laterally equivalent to silty mudstone, light gray, smectitic, sparse comminuted plant debris <i>sharp contact</i>
0.1-0.2 m	carbonate nodule horizon, permineralized plant material, teeth, conchostracans <i>sharp contact</i>
3.7 m	mudstone, light gray, massive, smectitic <i>sharp contact</i>
1.5-2.0 m	sandstone, fine-medium, mud chip conglomerate interbeds, light tannish gray, medium bedded, small- to medium-scale trough cross bed sets <i>sharp contact</i>
15.0 m	mudstone, light reddish gray, grades up to laminated muddy siltstone, light gray <i>gradational contact</i>
3.0 m	mudstone, grayish red, massive, carbonate nodules (2-5 cm diameter) <i>base of Petrified Forest Member, top of Monitor Butte Member; sharp contact</i>
>2 m	sandstone, fine-medium, some coarse grains, contorted, soft-sediment deformation, small- to medium-scale trough and planar cross bed sets <i>base of section</i>

Sections measured by T. M. Demko, 1995, Taphonomy of fossil plants in the Upper Triassic Chinle Formation, Ph.D. thesis, University of Arizona.

Comb Ridge, UT

711941

286 m

top of Church Rock Member and Chinle Formation

- 14.5 m sandstone, fine-medium, reddish brown to yellowish gray, ripple cross lamination, mud chips (Hite bed)
sharp, erosional contact
- 23.0 m sandstone, very fine-fine, brownish red with light gray spots, parallel and ripple cross lamination
sharp contact
- 12.5 m sandstone, very fine, brownish red with light gray spots, ripple cross laminations
base of Church Rock Member, top of Owl Rock Member; sharp contact
- 0.4 m calcareous sandstone, fine, brownish red, bioturbated
sharp contact
- 4.0 m calcareous mudstone, brownish red, massive
sharp contact
- 1.7 m calcareous sandstone, fine, massive, grades upward to calcareous silty sandstone, light purplish red to purplish brown
sharp contact
- 6.0 m calcareous siltstone, reddish brown
sharp contact
- 0.4 m nodular limestone, partly silicified, massive
sharp contact
- 1.9 m calcareous siltstone, light brown to reddish brown
gradational contact
- 3.0 m calcareous sandstone, very fine, light gray to light grayish red, vertical and horizontal burrows
gradational contact
- 4.5 m calcareous siltstone, brownish red
sharp contact
- 0.4 m conglomerate, carbonate nodule/granule clasts (1-7 cm diameter), light gray to reddish gray
sharp contact
- 12.0 m calcareous silty mudstone, reddish brown, grades upward to calcareous siltstone
sharp contact

Sections measured by T. M. Demko, 1995, Taphonomy of fossil plants in the Upper Triassic Chinle Formation, Ph.D. thesis, University of Arizona.

Comb Ridge, UT (continued)

- 0.1 m conglomerate, coarse sandstone matrix, brownish gray to light gray, carbonate nodule clasts (1-5 cm diameter), fines upward to coarse granule sandstone, small-scale trough cross bed sets and indistinct cross beds
sharp contact
- 0.4 m marly limestone, massive, bioturbated, pale red to brownish red, gley spots (1-2 mm diameter), rootlets, vertical burrows
sharp contact
- 1.3 m calcareous silty mudstone, brownish red, grades upward to calcareous mudstone, reddish brown
gradational contact
- 0.8 m limestone, light gray to reddish brown, laminated, partly silicified
gradational contact
- 0.5 m marly limestone, light grayish red to light gray, nodular to indistinctly bedded
gradational contact
- 1.7 m calcareous silty mudstone, grayish red to brownish red
gradational contact
- 0.8 m calcareous sandstone, very fine, light gray to reddish gray, small-scale trough and ripple cross lamination, calcareous siltstone interbeds, light gray to light reddish brown
gradational contact
- 1.7 m calcareous silty sandstone, very fine, light brownish red with light gray mottles, ripple cross lamination, calcareous mudstone interbeds, light brownish red
gradational contact
- 3.5 m calcareous mudstone, brownish red, carbonate nodules (2-5 cm diameter)
gradational contact
- 1.8 m sandstone, medium-coarse, conglomerate interbeds, small-scale trough cross bed sets, carbonate nodule clasts (2-5 cm diameter), unionid bivalves
gradational contact
- 0.5 m conglomerate, carbonate nodule clasts (2-5 cm diameter), unionid bivalves
sharp contact
- 1.0 m calcareous sandstone, very fine, ripple cross and parallel lamination, shallow horizontal burrows
sharp contact
- 1.1 m silty sandstone, very fine, reddish brown, ripple cross and parallel lamination, grades upward to calcareous sandstone
gradational contact

Sections measured by T. M. Demko, 1995, Taphonomy of fossil plants in the Upper Triassic Chinle Formation, Ph.D. thesis, University of Arizona.

Comb Ridge, UT (continued)

- 2.2 m calcareous sandstone, very fine-fine, red to light reddish brown, thin bedded, ripple cross and parallel lamination
sharp contact
- 0.4 m calcareous silty sandstone, fine, light brownish red, grades upward to calcareous siltstone
gradational contact
- 0.5 m calcareous sandstone, very fine, reddish brown with light gray mottles, ripple cross lamination, bioturbated
sharp, erosional contact
- 3.2 m calcareous silty mudstone, reddish brown
gradational contact
- 1.0 m calcareous siltstone, reddish brown, carbonate nodules (2-5 cm diameter)
gradational contact
- 4.5 m calcareous mudstone, reddish brown, carbonate nodules (2-3 cm diameter)
gradational contact
- 6.0 m calcareous siltstone, reddish brown, wavy lamination
gradational contact
- 6.0 m calcareous mudstone, reddish brown
gradational contact
- 1.0 m calcareous siltstone, reddish brown
gradational contact
- 2.5 m calcareous silty mudstone, brownish red
gradational contact
- 2.7 m calcareous silty sandstone, fine, calcareous siltstone interbeds, reddish brown, small-scale trough and ripple cross lamination, fines upward to calcareous siltstone
sharp contact
- 0.6 m calcareous sandstone, very fine, light gray, ripple and parallel lamination, fines upward to calcareous mudstone, reddish brown
sharp contact
- 2.8 m calcareous sandstone, very fine, coarse granule interbeds, reddish gray with light gray spots, small-scale trough and ripple cross lamination, grades upward to interbedded calcareous mudstone and silty sandstone, light gray to reddish gray, to reddish gray to reddish purple calcareous mudstone
sharp contact

Sections measured by T. M. Demko, 1995, Taphonomy of fossil plants in the Upper Triassic Chinle Formation, Ph.D. thesis, University of Arizona.

Comb Ridge, UT (continued)

0.3 m	conglomeratic sandstone, fine-coarse, fines upward, carbonate nodule clasts (2-5 cm diameter) <i>sharp contact</i>
1.0 m	calcareous mudstone with nodular limestone, light greenish gray to brownish red, grades upward to nodular limestone <i>gradational contact</i>
22.5 m	calcareous mudstone, brownish red <i>gradational contact</i>
1.5 m	muddy siltstone, light gray, laminated <i>sharp contact</i>
2.6 m	calcareous mudstone, light brownish red <i>sharp contact</i>
0.25 m	conglomerate, light gray and light red mottled mudstone, carbonate nodule clasts (0.5-1 cm diameter), grades laterally into fine sandstone <i>sharp contact</i>
5.5 m	calcareous mudstone, brownish red, grades upward to brownish red with light gray mottles <i>gradational contact</i>
0.7 m	calcareous mudstone, brownish red and light gray mottled, carbonate nodules (2-5 cm diameter) <i>gradational contact</i>
3.6 m	calcareous mudstone, reddish brown to orange brown with light gray mottles, grades upward to brownish red <i>sharp contact</i>
0.6 m	calcareous silty sandstone, coarse transported carbonate clasts, light reddish brown to orange brown <i>sharp contact</i>
2.2 m	calcareous silty mudstone, light reddish brown to orange brown, carbonate nodules (5-10 cm diameter) <i>sharp contact</i>
0.6 m	limestone, brownish red and brownish gray, rootlets, crayfish burrows <i>sharp contact</i>
4.0 m	calcareous mudstone, light brownish red to orange red, massive <i>sharp contact</i>
0.7-1.0 m	limestone, brownish red and brownish gray mottled <i>sharp contact</i>

Sections measured by T. M. Demko, 1995, Taphonomy of fossil plants in the Upper Triassic Chinle Formation, Ph.D. thesis, University of Arizona.

Comb Ridge, UT (continued)

- 9.3 m interbedded nodular marly limestone and calcareous mudstone, light orangish gray to tan and light brown to light reddish brown, limestone (0.1-0.3 m), mudstone (0.5-1.0 m)
sharp contact
- 0.5 m limestone, brownish red and brownish gray mottled, disrupted but with some bedding, partially silicified, locally nodular
sharp contact
- 14.5 m calcareous mudstone, brownish red to orangish red with light greenish gray mottles, carbonate nodules (1-2 cm diameter) in basal 3 m
gradational contact
- 0.3 m mudstone, purplish gray, with large irregular cylindrical carbonate nodules (to 30 cm diameter), partially replaced by silica
base of Owl Rock Member, top of Petrified Forest Member; sharp contact
- 13.5 m mudstone, light brownish red and light gray mottled, light greenish gray gley spots, carbonate nodules (0.2-2 cm diameter)
sharp contact
- 1.3 m mudstone, dark brownish red, massive, slickensides, tuff
sharp contact
- 0.4-0.5 m silty sandstone, light gray to orangish tan, micaceous, tuff
gradational contact
- 2.7 m silty mudstone, brownish red, tuffaceous sandstone interbeds, light greenish gray, carbonate nodules (0.2-2 cm diameter)
gradational contact
- 1.0-1.5 m interbedded sandstone and muddy sandstone, fine, light gray with grayish purple interbeds
gradational contact
- 6.0 m sandstone, fine-medium, light gray, small- and medium-scale trough cross bed sets
sharp contact
- 5.5 m interbedded sandstone and conglomerate, fine, carbonate nodule and sandstone clasts (5-12 cm diameter), brown and reddish brown to light gray and light brownish gray, conglomerate (0.4-0.5 m), sandstone (0.5-1.2 m), basal carbonate nodule conglomerate, large silicified trunks
sharp, erosional contact
- 5.0 m mudstone, reddish purple to reddish brown, large carbonate nodules (5-30 cm diameter), grades upward to grayish purple
sharp contact

Sections measured by T. M. Demko, 1995, Taphonomy of fossil plants in the Upper Triassic Chinle Formation, Ph.D. thesis, University of Arizona.

Comb Ridge, UT (continued)

4.0 m	mudstone, purplish gray, smectitic, massive, slickensides, <i>Scoyenia</i> <i>gradational contact</i>
3.0 m	interbedded silty sandstone and siltstone, fine, tuffaceous, small and medium-scale trough cross bed sets, sandstone (0.2-0.3 m), siltstone (0.3-0.4 m), smectitic fines upward <i>sharp contact</i>
1.5 m	mudstone, light gray, smectitic, carbonate nodules (2-5 cm diameter), massive <i>sharp contact</i>
5.0 m	mudstone, light gray, smectitic, carbonate nodules (5-15 cm diameter), massive, slickensides, grades upward to purplish gray <i>sharp contact</i>
1.5 m	mudstone, dark reddish brown, smectitic, massive, slickensides <i>gradational contact</i>
6.0 m	silty mudstone, grayish purple and light gray mottled, smectitic, massive, some disrupted lamination, slickensides <i>gradational contact</i>
2.0 m	silty mudstone, light gray and purplish gray mottled, smectitic, massive <i>gradational contact</i>
7.0 m	muddy siltstone, light gray, smectitic, massive <i>gradational contact</i>
1.0 m	mudstone, light purplish gray and light gray mottled, massive <i>base of Petrified Forest Member, top of Monitor Butte equivalent; gradational contact</i>
9.0 m	mudstone, brownish red, carbonate nodules (1-10 cm diameter), massive, base is light purplish gray <i>top of Mottled strata, base of Monitor Butte equivalent; gradational contact</i>
2.5 m	interbedded sandy siltstone and siltstone, light grayish red with light gray and dark reddish brown mottles, massive, Fe concretions, crayfish burrows <i>gradational contact</i>
1.8 m	sandstone, fine, tan with purplish gray mottles, medium- and large-scale trough cross bed sets (altered Moenkopi Formation) <i>base of Chinle Formation, top of Moenkopi Formation; sharp contact</i>
>1 m	siltstone with sandstone interbeds, fine-medium, dark brown and yellowish gray <i>base of section</i>

Sections measured by T. M. Demko, 1995, Taphonomy of fossil plants in the Upper Triassic Chinle Formation, Ph.D. thesis, University of Arizona.