A Grand History of Interpreting Paleontological Resources at Grand Canyon National Park

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Paleontological Resources

- 32% of Earth’s geologic history exposed
- 1 billion years of fossil life
- Fundamental resource
“In the absence of [suitable] fossils it is impossible to determine the precise geological age of any of the strata composing the . . . section below the limestone which forms the summit of the cliffs.” – J. Newberry, 1857
Grand Canyon National Park’s purpose is to preserve and protect Grand Canyon’s unique geologic, paleontologic, and other natural and cultural features for the benefit and enjoyment of the visiting public.
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Charles Gilmore (1902-1928)
Hermit Tracksite Exhibit (1924)
Fossil Fern Exhibit (1937)
Fossil Fern Exhibit
Fossil Fern Exhibit (2008)
2019 Paleontology Interpretation

• Fossil Fern Exhibit
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• Ranger Programs
• Curriculum Based
• Distance Learning
• Classroom Ranger Visits
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• National Fossil Day Event
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TETRAPOD TRACKWAY
Grand Canyon National Park

**Common Name:** Tetrapod Trackway  
**Scientific Name:** Ichthyostega sphaerodactylum  
**Eologic Age:** 280 million years ago (Permian)  
**Geologic Formation:** Coconino Sandstone

**Interactive 3D model**  
Both the small front manus and big back talus footprints are preserved.

Using the shape and position of tracks, paleontologists reconstructed the trackmaker to be a diadectomorph, or an advanced amphibian closely related to early reptiles. They had a large, stocky body and walked low to the ground on four, short legs with five-digit clawless feet.

BURROWS
Grand Canyon National Park

**Common Name:** Burrows  
**Scientific Name:** Scouria gracilis  
**Eologic Age:** 285 million years ago (Permian)  
**Geologic Formation:** Huerfano Formation

**Interactive 3D model**  
This trace fossil formed as an animal plowed through sediment to feed.

Trace fossils, like these burrows, help scientists better understand how organisms behaved and moved within their environment. Insects that made Scouria traces burrowed horizontally and vertically in soft river banks and swampy muds to feed and seek shelter.

**Fossils are non-renewable natural resources protected by federal law. Please don’t take or vandalize these precious resources.**
2019 Paleontology Interpretation
Future Plans

- Monitoring
- More Surveys
- Encouraging Youth – Future Fossil Stewards
- Dedicated NPS Staff
Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it’s the only thing that ever has.

- Margaret Mead
Special Thanks

Grand Canyon National Park
Geological Society of America
Grand Canyon Conservancy
Conservation Legacy
Environmental Stewards
Americorps
American Conservation Experience