



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

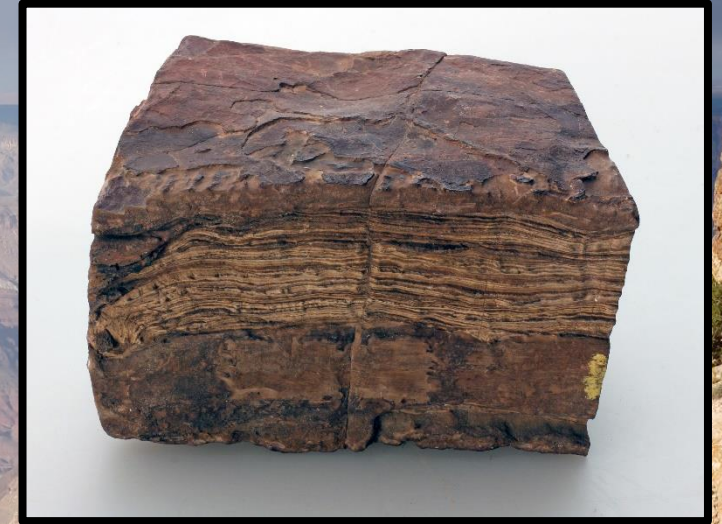
Diana Boudreau, Ronnie Colvin, Earle Spamer





# Paleontological Resources

- 32% of Earth's geologic history exposed
- 1 billion years of fossil life
- Fundamental resource

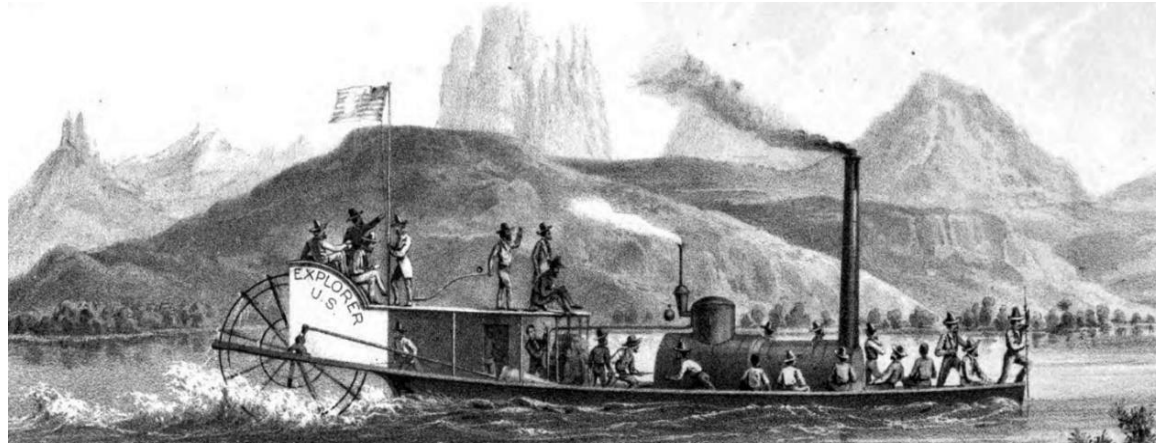




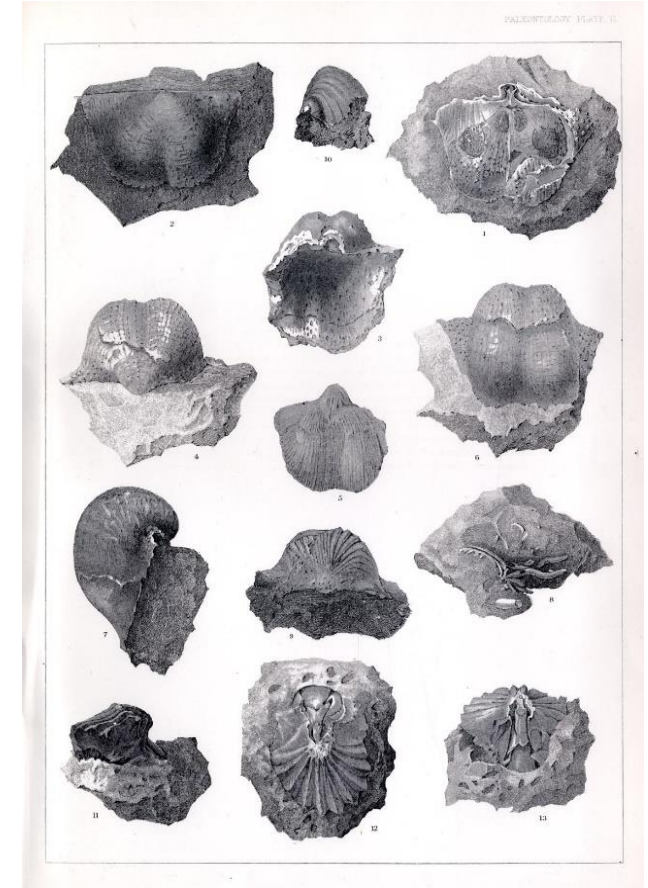
# John Strong Newberry



*Dr. John Strong Newberry*  
1822-1892



“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



Newberry, 1861, Plate 2



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.





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.





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.**





# Charles Gilmore (1902-1928)

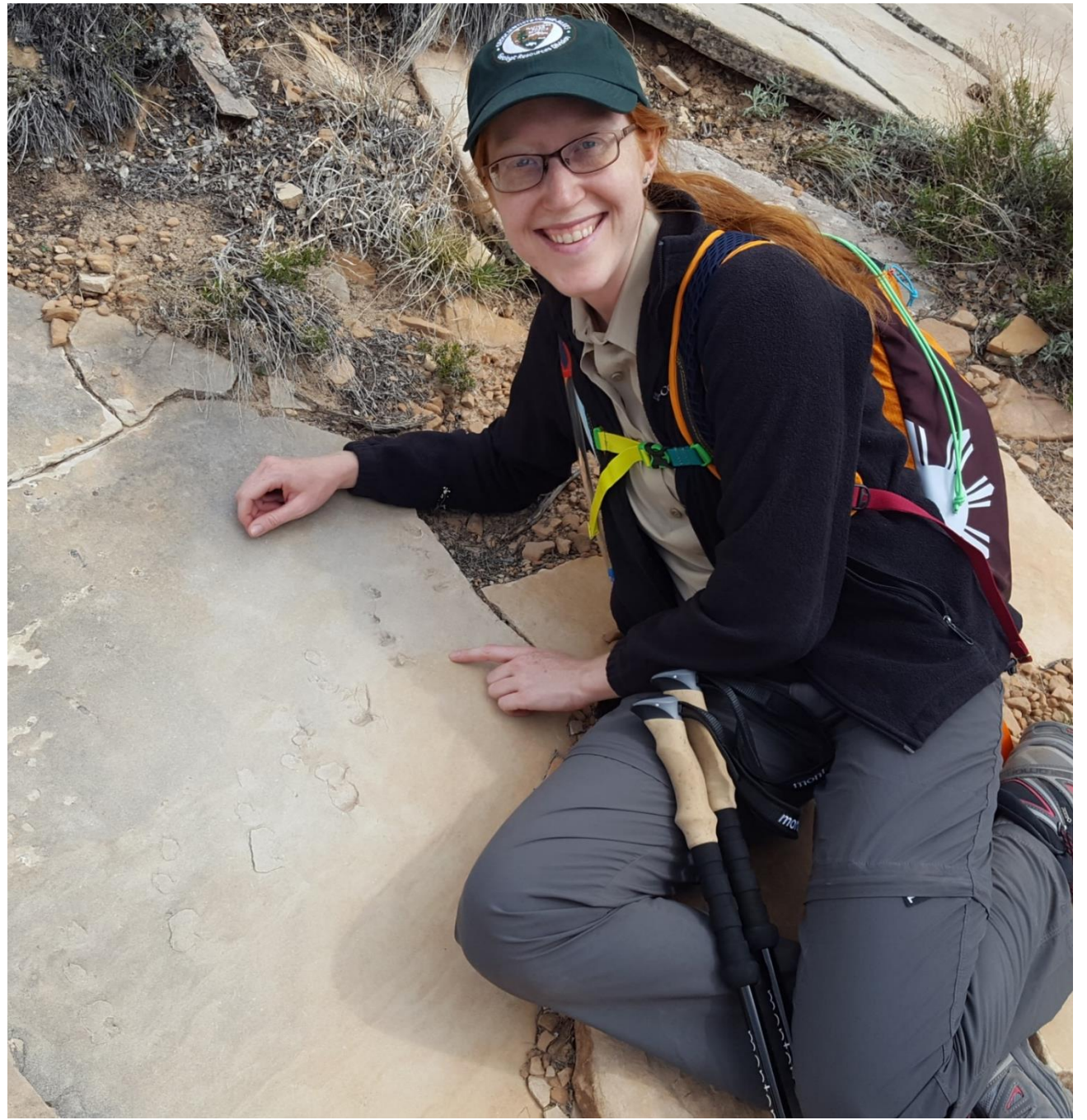




# Hermit Tracksite Exhibit (1924)













# Fossil Fern Exhibit (1937)





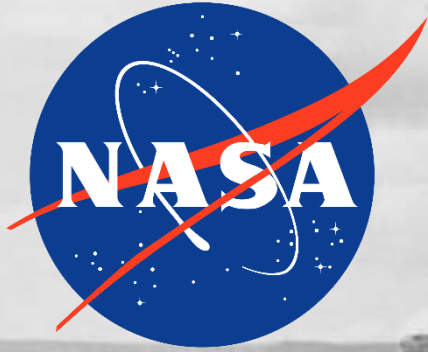
# Fossil Fern Exhibit



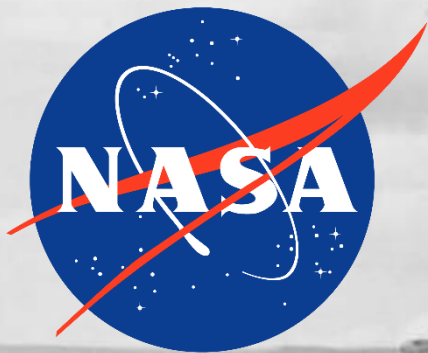












**Neil Armstrong**

**Dick Gordon**

**Donn Eisele**

**Dale Jackson**



# Fossil Fern Exhibit (2008)





# 2019 Paleontology Interpretation

- Fossil Fern Exhibit





# 2019 Paleontology Interpretation

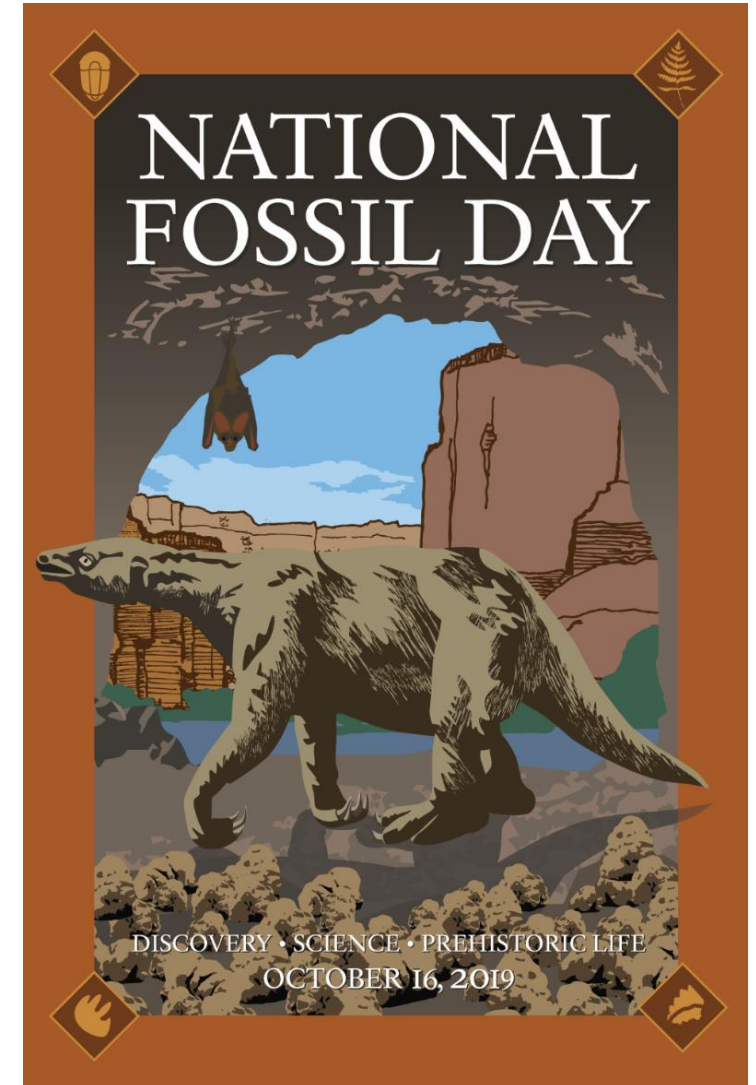
- Ranger Programs
- Curriculum Based
- Distance Learning
- Classroom Ranger Visits





# 2019 Paleontology Interpretation

- National Fossil Day Event



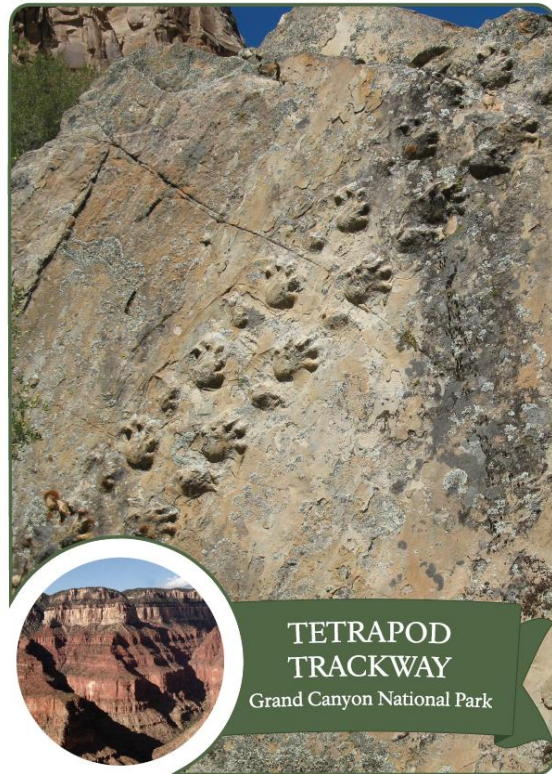


# 2019 Paleontology Interpretation

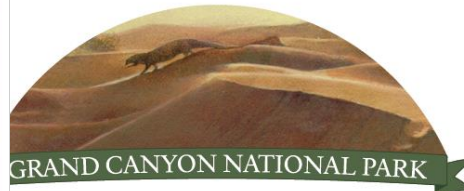




# 2019 Paleontology Interpretation



**TETRAPOD  
TRACKWAY**  
Grand Canyon National Park



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



Interactive  
3D model



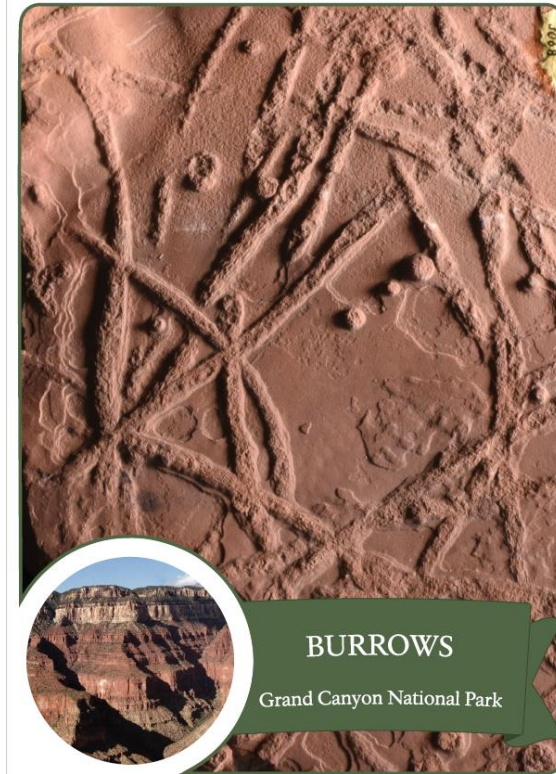
Both the small front (manus) and big back (pes) footprints are preserved.

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.



Fossils are non-renewable natural resources protected by federal law. Please don't take or vandalize these precious resources.

1 of 9



**BURROWS**

Grand Canyon National Park



Common Name: Burrows  
Scientific Name: *Scoyenia gracilis*  
Geologic Age: 285 million years ago (Permian)  
Geologic Formation: Hermit 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 *Scoyenia* 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.

8 of 9





# 2019 Paleontology Interpretation

📷 SAVE VIEW





# 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





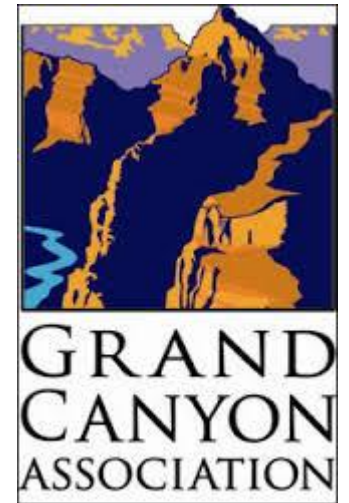


# Special Thanks

---



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



Americorps

American Conservation Experience





