

# The Fundamentals of Paleontological Resources Management BLM 8200-01

## Managers' Overview

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WO-240

# Objectives

- Define what are paleontological resources and give examples.
- Explain the importance of paleontological resources and give examples of paleontological laws, regulations, and policies
- Differentiate key policies regarding paleontological resources
- Describe key roles for staff and management responsibilities

# The World's Fascination

- Fossils, especially dinosaurs, have captured people's fascination
- Public lands are the home to some of the world's famous dinosaurs:

*Allosaurus* – Jurassic: UT, WY, MT, CO, SD, NM

*Stegosaurus* – Jurassic: CO, UT, WY

*Pentaceratops* – Cretaceous: NM

*Tyrannosaurus rex* – Cretaceous: MT, SD, CO, UT, WY,  
NM, Canada

# What we will cover

- Definition of paleontological resources
- Types of paleontological resources and look at examples
- Explain the importance of paleontological resources

# What we will cover

- Overview of the Authorities used to manage and protect paleontological resources
- Review key policies about managing paleontological resources, including petrified wood, collecting, permits, and museum collections
- Review key roles, responsibilities and management tools

# What are paleontological resources?



# What are paleontological resources?

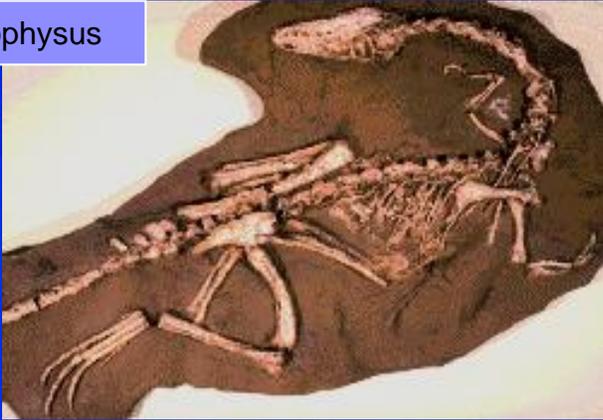
- Paleontological resources are fossils.
- Fossils are
  - Evidence of past life on Earth.
  - Any remains, trace or imprint of a plant or animal that has been preserved by natural processes, i.e., fossilization.
  - Usually older than the Holocene Epoch (or >10,000 years ago).

Who can name or give me examples of fossil organisms?



# What are paleontological resources? Vertebrate Organisms

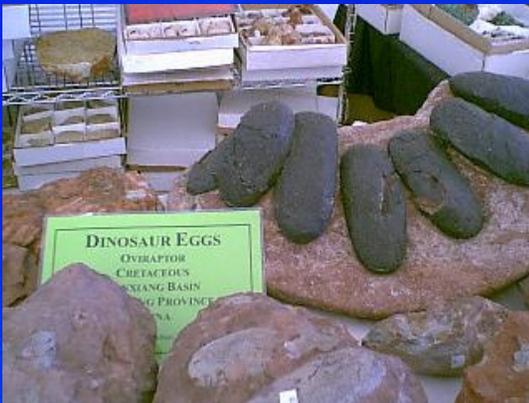
Coelophysis



Shark's teeth



Champsosaurus



Dinosaur Eggs



Tyrannosaurus rex

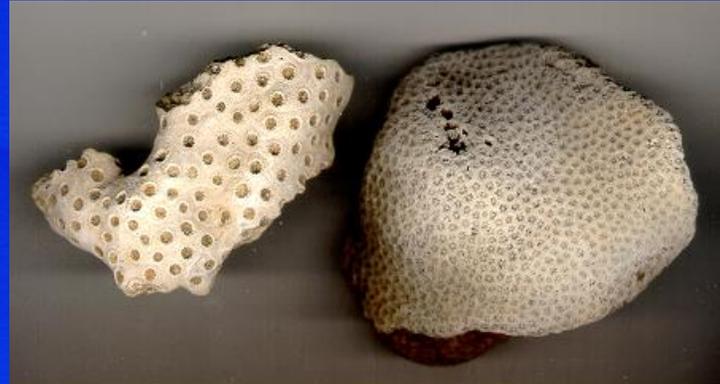


Ichthyosaur

# What are paleontological resources? Invertebrate organisms



Trilobite



Bryozoan and Fossil sponge



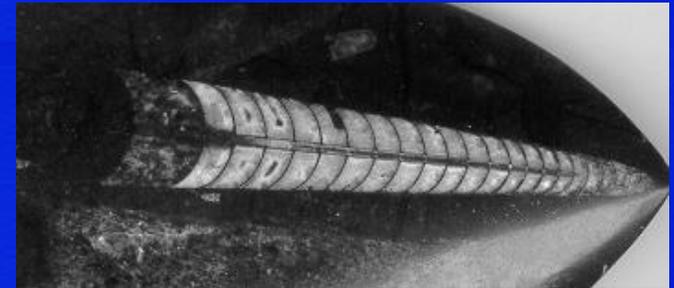
Echinoderm



Bivalve (Mollusk)



Ammonites



Cephalopod

# What are paleontological resources? Plants



Fern



Sequoia leaf



Lepidodendron bark



Palm frond



Petrified wood

# What are paleontological resources? Any trace or imprint...



Fossil bird track



Daemonelix (burrow) of  
Paleocaster (beaver)



Theropod



Borings and burrows



Apatosaurus

# Why are fossils important?



Green River Fish Fossil

## Why are paleontological resources important?



- \* Scientific Value
- \* Educational Value
- \* Recreational Value
- \* Commercial Value
- \* Aesthetic Value

# Why are paleontological resources important? To public land managers



Natural resource with  
scientific value  
(FLPMA).

- \* Scientific Value
- \* Educational Value
- \* Recreational Value
- \* Federal property
- \* Museum property
- \* Heritage assets

# How does BLM currently protect paleontological resources?



Equus

# How does BLM currently protect paleontological resources?

- **Laws**

FLPMA, NEPA, FCRPA, ARPA, 18 USC 641, property and other laws

- **Regulations**

43 CFR 8365, 43 CFR 3622

- **Policies**

BLM MS 8270 & H-8270-01, DM 411, FASAB

# How does BLM currently protect paleontological resources?

- **Planning**  
ACECs, Resource Conservation Areas, National Natural Landmarks, hobby collecting areas
- **Other**  
Congressional – National parks and monuments through legislation  
Presidential – National monuments through Executive Orders

More detail on authorities in the next session.



# What is BLM's policy for collecting fossil resources from public lands?



# What is BLM's policy for collecting fossil resources from public lands?

- **Vertebrate fossils**  
(43 U.S.C. 1732, MS-8270)
  - No casual collecting of vertebrate fossils
  - No commercial collecting
  - Permit required for scientific, educational, protective purposes
  - Fossils remain federal property
  - Must be curated in an approved repository

# What is BLM's policy for collecting fossil resources from public lands?

- **Invertebrate and plant fossils**  
(43 CFR 8365 and MS-8270)
  - No permit required for casual collecting of **common** invertebrate and plant fossils
  - May collect reasonable amounts for noncommercial purposes
  - Cannot be bartered or sold
  - Permit required for collecting scientifically significant specimens
  - Plant exception – petrified wood

## **Petrified Wood Exception**

**(43 CFR 3601, 43 CFR 3622, 43 CFR 3604)**

- Designated a mineral material by Congress in 1962 with hobby collecting provision (P.L. 87-713)
- Commercial collection under mineral material sales contract (Materials Act of 1947; 43 CFR 3601)
- Prior to P.L. 87-713, petrified wood was a locatable mineral.

More details about petrified wood in the Authorities session.



# When does BLM issue permits for collecting fossil resources?



# When does BLM issue permits for collecting fossil resources?

- Paleontological Resources Use permits are issued for the collection of all scientifically significant fossils
- For scientific, educational, protective purposes
- Permits are issued to qualified applicants, e.g., researchers, museum curators, consultants

# Types of Permits

- **Survey and limited collection**
  - survey, reconnaissance or inventory; limited surface collection of specimens; usually < 1 square meter of negligible surface disturbance
- **Excavation**
  - collection of fossils, usually vertebrates, where surface disturbance exceeds 1 square meter
- **Consulting**
  - issued for activities using broad based approach for investigations and management, such as RMPs, use authorizations covering many field offices or states

# Where do the fossils go?



# Where do the fossils go?

- Fossils collected under permit from public lands are federal property
  - Receipt for collection with paleo use permit
- Must be curated in an approved repository
  - Meets DOI DM 411 standards
  - Research collection
  - Exhibit or display
  - Can be loaned
  - May be reproduced

# What are BLM roles and responsibilities for paleontological resources?



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Washington Office Staff

Director, Deputy Director

Assistant Director, WO-200

Division Chief, WO-240

National Paleontologist

What are BLM roles and responsibilities for paleontological resources?

State Office Staff

State Director/ Deputy State Director

State Archaeologist/ Deputy Preservation Officer

Regional Paleontologist

# What are BLM roles and responsibilities for paleontological resources?

## State Office Staff (con'td)

### Regional Paleontologist

Scientific expert in paleontology for assigned states.

Provides technical direction in paleontological resources management especially for paleo use permits.

Coordinates with field office coordinators, permittees, and other agency counterparts.

# What are BLM roles and responsibilities for paleontological resources?

## Field Office Staff

### Field Office Manager

Implements BLM policies and strategies, procedures and directives, and ensures technical standards are met. Provides intra- and inter- agency coordination.

May have delegated authority from the State Office to approve paleo use permits.

Authority for addressing actions involving surface disturbing activities that may have adverse impacts on significant paleontological resources.

# What are BLM roles and responsibilities for paleontological resources?

## Field Office Staff (cont'd)

### Paleo Coordinators

Paleo program contacts coordinate with regional paleontologists in implementing policies, strategies and procedures; assist in the identification and resolution of program needs; and carry out day-to-day activities.

Deal with day to day paleo issues on the ground including planning, mitigation and other administrative duties.

Is the local contact for permittees and the State Office and Regional Paleontologist.

What are BLM roles and responsibilities for paleontological resources?

## Law Enforcement (All Levels)

Assist in the protection of paleontological resources against vandalism and theft.

# What can we as managers do to protect fossil resources?



# What can we as managers do to protect fossil resources?

## PLANNING

- Use classification and management prescriptions for paleontological resources in our land use plans.
  - We now have the Potential Fossil Yield Classification (PFYC) system (IM 2008-009)
- Designation of special management areas, such as ACECs.
- Use current technology in planning and resource protection, such as GIS, photogrammetry, and other technology support.

# What can we as managers do to protect fossil resources?

## Budget

- Provide staff support and funding for resource management and protection; benefiting subactivity

## Partnerships

- Challenge cost share, Passport in Time, other agreements, site stewardship programs, and volunteers

# What can we as managers do to protect fossil resources?

## Resource protection

- Laws and BLM Policies: implement; ensure technical standards are met (e.g. for permit issuance and resource evaluation)
- Environmental: ensure protection for surface disturbing federal actions with appropriate mitigation
- Law Enforcement: prevent vandalism or theft
- Property Accountability: museum property, heritage assets

# What we covered

- Defined what are paleontological resources
- Looked at the types of paleontological resources
- Talked about the importance of paleontological resources

# What we covered

- Looked at the Authorities used to manage and protect paleontological resources
- Reviewed key policies about managing paleontological resources, including petrified wood, collecting, permits, and museum collections
- Reviewed key roles, responsibilities and management tools

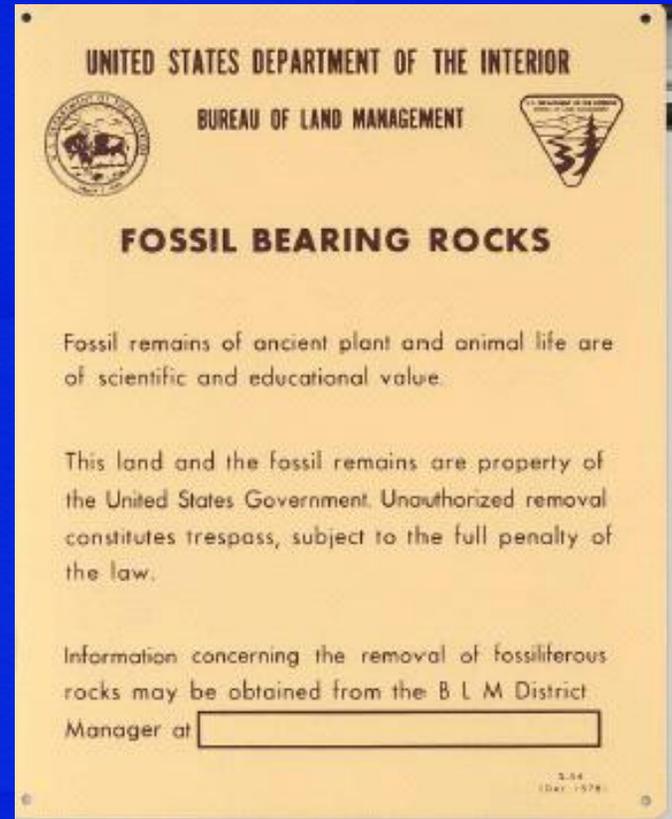
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[www.blm.gov/wo/st/en/prog/more/CRM/paleontology.html](http://www.blm.gov/wo/st/en/prog/more/CRM/paleontology.html)