

Documenting the Smithsonian Fossil Collection



Smithsonian Institution

NATIONAL
MUSEUM *of*
**NATURAL
HISTORY**

Presented by Jessica Nakano
Assistant Registrar- Paleobiology

The Geological Society of America CONNECTS 2022

Responsibility of a Registrar

Compile a complete
and detailed record
of the materials'
chain of custody
from field to
museum.

Mitigating Risk through Collaborative Documentation

Standard Workflow

1. Acquisition Proposal
 - a. Curatorial Approval
 - b. Collections Management Review
 - c. Paleo Registrar notified
2. Preliminary legal and ethical review
 - a. Collecting Event (date, site, names, institutions, funding, etc.)
 - b. Permits or Permission to Collect
 - c. Restrictions and/or terms of collecting
 - d. Chain of Custody
 - e. International or domestic regulations
 - f. Ask questions to clarify
3. Logistical planning for physical receipt
4. Finalize Acquisition and Accession Paperwork

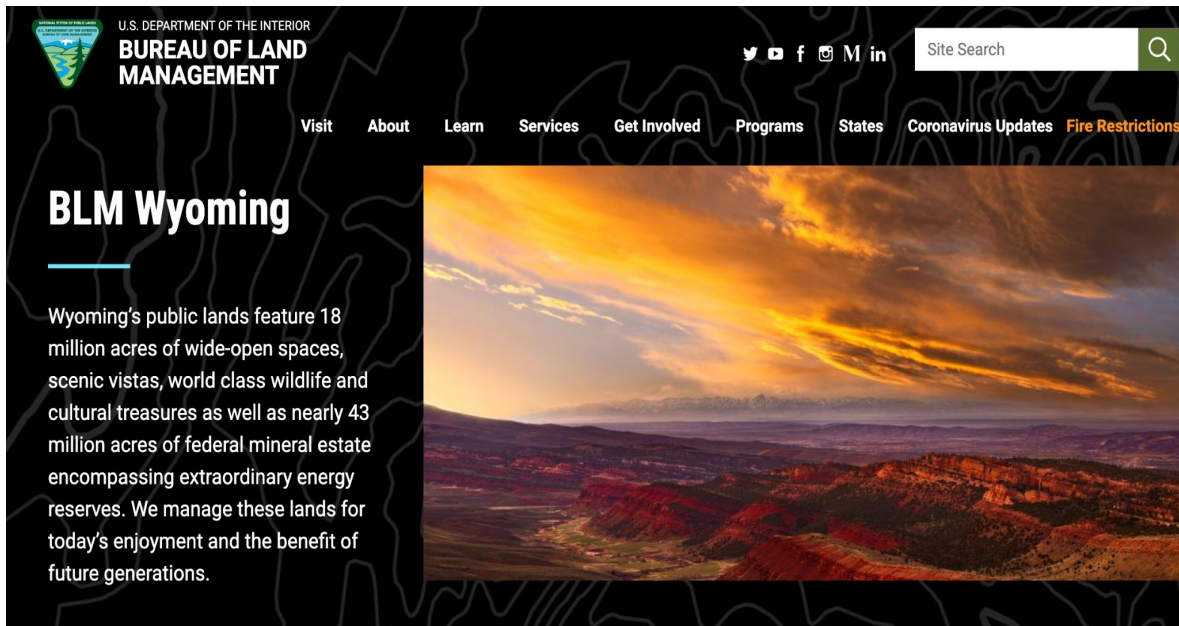
NMNH Acquisition Scenarios

1. Field Collections
2. Donation from Private Individuals
3. Fossils and Digital Assets

Field Collections

- Determination of Property/Land Management
 - Federal, State, and/or Local Property
 - Private Property
 - Disputed Property
 - Tribal Lands
- Permit or Permission to Collect
 - Name and Institution that holds the permit?
- Restrictions and Terms of Collection
- Status of Collectors
 - Internal - SI NMNH staff field collecting trips or multiple joint projects
 - External - Donation of Retiring Researchers

Collecting Fossil Plants from BLM Wyoming



<https://www.blm.gov/wyoming>

Decades of Field Collections and Research

- Affiliation to NMNH, USGS or other institutions
- Agreed Repository

Paleontological Resources Use Permit

- Reasonable amount of casual collecting of invertebrate and plant paleontological resources

Fossils Collected from Federally Managed Lands

Paleontological Resources Preservation Act (PRPA) 2009

- PRPA Regulations effective as of 01 Sep 2022

Repository Agreements with Federal Land Managers

Expectations of being a Repository

DEPARTMENT OF THE INTERIOR

National Park Service

36 CFR Part 2

Office of the Secretary of the Interior

43 CFR Part 49

Bureau of Land Management

43 CFR Part 8360

Fish and Wildlife Service

50 CFR Part 27

[Docket NPS–2016–0003; FWS–93261, FXRS12630900000, FF09R81000, 167; BOR–RR83530000, 190R5065C6, RX.59389832, 1009676; BLM–19X.LLW0240000.L100000, PC0000.LXSIPALE0000; NPS–GPO Deposit Account 4311H2]

RIN 1093–AA25

Paleontological Resources Preservation

AGENCY: Bureau of Land Management, Bureau of Reclamation, National Park Service, U.S. Fish and Wildlife Service; Interior.

ACTION: Final rule.

SUMMARY: The U.S. Department of the Interior (DOI or Department) is promulgating this regulation under the Paleontological Resources Preservation Act. This regulation provides for the management, preservation, and protection of paleontological resources on lands administered by the Bureau of Land Management, the Bureau of Reclamation, the National Park Service, and the U.S. Fish and Wildlife Service, and ensures that these federally owned resources are available for present and future generations to enjoy as part of America's national heritage. The regulation addresses the management, collection, and curation of paleontological resources from Federal lands using scientific principles and expertise, including collection in accordance with permits; curation in an approved repository; and maintenance of confidentiality of specific locality data. The regulation details the processes related to the civil and criminal penalties for illegal collecting, damaging, otherwise altering or defacing, or selling paleontological resources.

DATES: This regulation is effective September 1, 2022. Submit comments on the information collection requirements of this final regulation on or before September 1, 2022.

ADDRESSES: The comments received on the proposed rule are available on <http://www.regulations.gov> in Docket ID: NPS–2016–0003. Written comments and recommendations for the proposed information collection should be sent within 30 days of publication of this rule to www.reginfo.gov/public/do/PRAMain. Find this particular information collection by selecting “Currently under 30-day Review—Open for Public Comments” or by using the search function. Please provide a copy of your comments to the Departmental Information Collection Clearance Officer, Office of the Secretary/Office of the Chief Information Officer, 1849 C Street NW, Washington, DC 20240. Please reference OMB Control Number 1093–0008 in the subject line of your comments.

FOR FURTHER INFORMATION CONTACT: Julia F. Brunner, Geologic Resources Division, National Park Service, by telephone: (303) 969–2012 or email: julia_f_brunner@nps.gov. Persons who use a telecommunications device for deaf (TDD) may call the Federal Relay Service (FRS) at 1–800–877–8339 to contact the above individual during normal business hours. FRS is available 24 hours a day, 7 days a week, to leave a message or question with the above individual. You will receive a reply during normal business hours.

SUPPLEMENTARY INFORMATION:

Background

The Bureau of Land Management (BLM), Bureau of Reclamation (Reclamation), U.S. Fish and Wildlife Service (FWS), and National Park Service (NPS) have long managed, protected, and preserved fossils under various legal authorities as a nonrenewable resource with scientific and educational value. For example, all four bureaus have required a permit for fossil collection (the exception is BLM, which has allowed collection of common plant and invertebrate fossils in certain areas without a permit); required fossils collected under permit to be curated in accordance with DOI museum management standards; protected fossils from theft and vandalism; and closed areas to fossil collection as appropriate for protection or other management reasons.

However, the laws and regulations under which the bureaus have managed, protected, and curated fossils have not always been clearly understood or uniformly implemented (see, e.g., Congressional Research Service Report for Congress, *Fossils on Federal Lands: Current Federal Laws and Regulations* (1998)). To address this concern, the

Senate Interior Appropriations Subcommittee in 1999 requested that DOI, the U.S. Department of Agriculture (USDA) Forest Service (FS), and the Smithsonian Institution prepare a report on fossil resource management on Federal lands (see Sen. Rep. 105–227, at 60 (1998)). The request directed these entities to analyze (1) the need for a unified Federal policy for the collection, storage, and preservation of fossils; (2) the need for standards that would maximize the availability of fossils for scientific study; and (3) the effectiveness of current methods for storing and preserving fossils collected from Federal lands. During the course of preparing the report, the agencies held a public meeting to gather public input. The DOI published its report to Congress, “Assessment of Fossil Management of Federal and Indian Lands,” in May 2000.

After the report was released, a bill reflecting what is now the Paleontological Resources Preservation Act (PRPA) was introduced in the 107th Congress. PRPA was modeled after the Archaeological Resources Protection Act of 1979, as amended (16 U.S.C. 470aa–470mm), and emphasized the recommendations and guiding principles in the May 2000 report. Lawmakers reintroduced the bill in subsequent Congresses through the 111th Congress when it was included as a subtitle in the Omnibus Public Land Management Act, which became law on March 30, 2009. Legislative history demonstrates that PRPA (16 U.S.C. 470aaa–470aaa–11) was enacted to preserve paleontological resources for current and future generations because these resources are non-renewable and are an irreplaceable part of America's heritage. PRPA requires that implementation be coordinated between the Secretaries of the Interior and Agriculture (16 U.S.C. 470aaa–1).

Previous Federal Actions

The USDA and the DOI formed an interagency coordination team (ICT) in April 2009 to draft proposed regulations. Members of the ICT included paleontologists, program leads, and regulatory specialists from the USDA's Forest Service and the affected DOI bureaus: the BLM, Reclamation, NPS, and FWS. The Forest Service published a proposed regulation on May 23, 2013 (78 FR 30810) for a 60-day comment period and then published a final regulation on April 17, 2015 (80 FR 21588). DOI published a proposed regulation (RIN 1093–AA16) on December 7, 2016 (81 FR 88173), also for a 60-day comment period. The public comment period ended on

Maintaining Open Communication

Preparing for Field Season

- Ensure written communication is shared between all parties about agreement to be a repository for collections before field work and/or permit application
- Review terms of the permit or agreement with land manager

In the Field

- Asking questions and sharing details about the fieldwork and who was involved.
- Finding and collecting specimens not listed on a permit requires immediate action and supplemental permission.

Depositing Collected material

- Refresh on the terms of the permit or agreement with land manager
- Annual summary of collected material for the field season (Geological age, estimated volume and count, expected curation time, preparation, etc.)
- Repository changes with land managers



Donation from Private Individuals

- Chain of Custody for donations with an initial monetary exchange
 - Specimens purchased then donated to the collections
 - Purchase for donation proposals
 - Confirming scientific significance and research value for specimens
- Domestic and International Regulations
 - Laws definition of a fossils; especially fossils in amber
- Ethical considerations on a Global Scale
 - Need to heavily weigh how monetary association is related to these specimens.

Violent conflict in Myanmar linked to boom in fossil amber research, study claims

Among hundreds of scientific publications, almost none include Myanmar researchers

Fossils in Amber

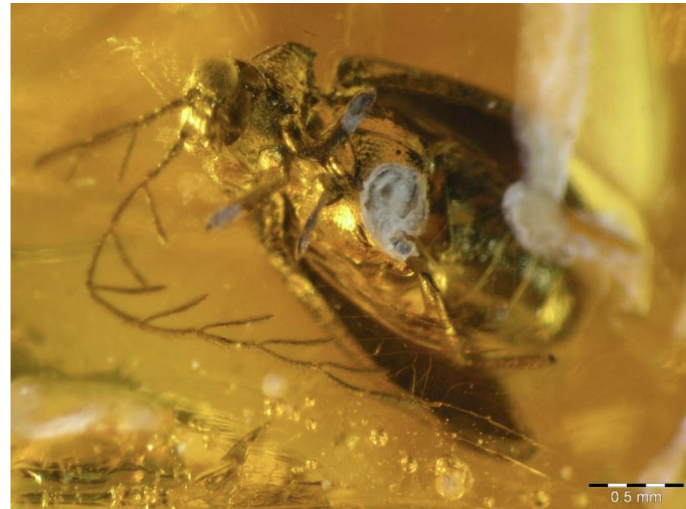
Ethical concern for amber collections heavily contemplated due to global events

- Myanmar (Burma)
- Baltic Sea Region

International Regulations for import/export

Some Paleontologists Seek Halt to Myanmar Amber Fossil Research

The substance has driven remarkable discoveries about the prehistoric world, but concerns about its sourcing are growing.



USNM PAL 506795, Amber Collection.

GUID: <http://n2t.net/ark:/65665/39c71f997-71be-43b0-a36b-29445cee9621>

Provenance Research of Purchased Specimens

Purchases of fossil by museums is rare.

Historical context of specimens purchased and offered for donation must be included in the acquisition evaluation.

- Collecting locality and Geological Age
- Preparation methods
- Collector's name
- Seller's name/affiliation/location
- Previously held in other collections



Fossils and Digital Assets

- Permits and Permissions to Access Site
- Terms for Creating Digital Objects
 - Long-term management
 - Digital rights and Usage rights
- Defining Digital Objects
 - Physical vs. Digital Collections



Fossils *in situ*

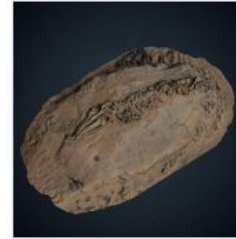
Berlin-Ichthyosaur State Park in Nevada,
United States

- Created 3D capture of entire bonebed for Ichthyosaur concentration inside Fossil House
 - Management of 3D data
- Fossils remain *in situ* and managed by Nevada state parks
 - No intent for physical removal
- Partnership of BISP, USFS, NMNH, SI DPO, NHMU

<http://parks.nv.gov/parks/berlin-ichthyosaur>

3D Models of Fossils

Cerro Baellna in Atacama Desert, Chile



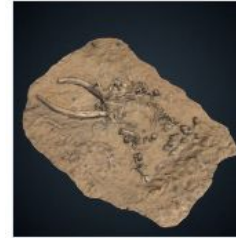
Fossil whale
excavation site
MPC 675



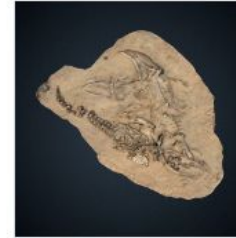
Fossil whale
excavation site
MPC 677



Fossil whale
excavation site
MPC 684



Fossil whale
excavation site
MPC 678



Fossil whale
excavation site
MPC 665-667



Fossil whale
excavation site
MPC 685

<https://3d.si.edu/collections/cerroballena>

Digital Rights

Make digital assets as accessible as possible

Where restrictions apply, use best efforts to make assets available for educational, scholarly, or personal use.

Sharing responsibility for the physical specimens and digital objects

Transparency and open communication with creators and end-users through rights documentation



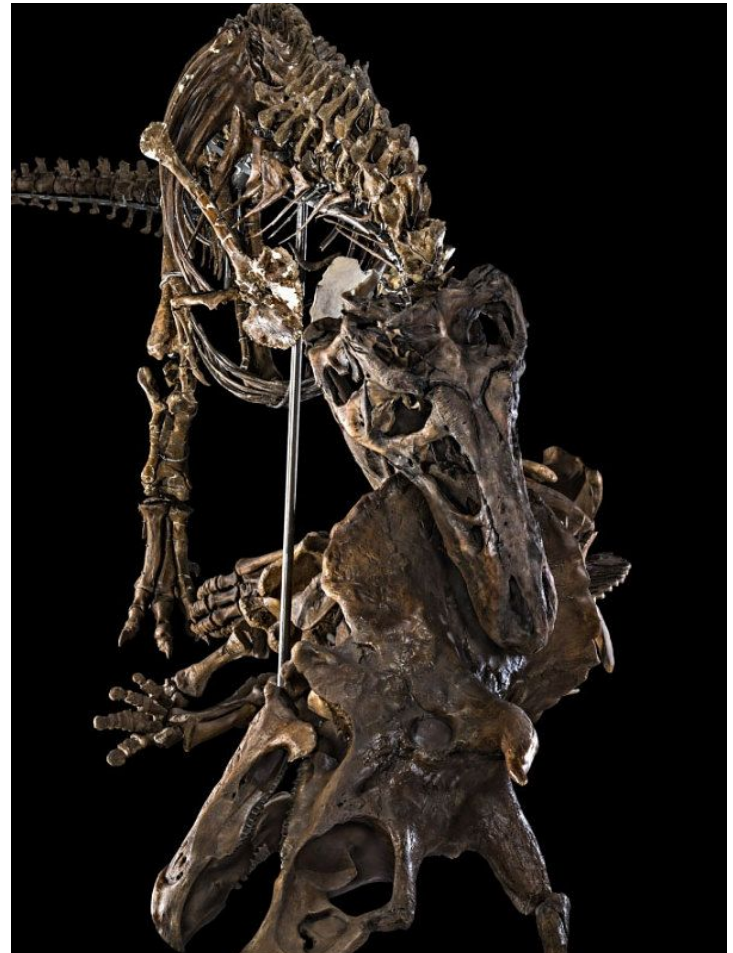
Digital Fossil Specimens

What is being created?

How to define what is being created?

- Digital Faithful Reproductions
- Born Digital Collections

How does our understanding compare to Casts, Replicas, and Reproductions?



USNM PAL 555000 and 500000 - Usage Conditions Apply



Expect the Unexpected

Registering paleontological collections is an ongoing and collaborative effort.

Remember to keep communication open between curators, researchers, fellows, and collections management staff (internally and externally).

Thank you!

nakanojk@si.edu
PaleoRegistrar@si.edu

Questions?



Smithsonian National Museum of Natural History, Henry