Getting the Records Straight: Digitizing and making connections among USGS Fossil collections and associated records for broader access and discovery

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Agenda

- USGS paleontology history
- What is a USGS fossil collection
- Retrieving data from the collection
- Objectives and current work
- Beta projects
- Hurdles

Casey McKinney viewing a tray of fossils

Image Courtesy of Steve Miller
Organic Act of 1879

"And all collections of rocks, minerals, soils, and fossils, and objects of natural history, archaeology, and ethnology, made by the Coast and Interior Survey, the Geological Survey, or by any other parties for the Government of the United States, when no longer needed for investigations in progress, shall be deposited in the National Museum."
USGS Paleontology History

- 1879 – Staff paleontologists
- 1900 – Division of Paleontology within Geologic Branch established
- 1902 – Section of Paleontology
- 1907 – Section of Paleontology and Stratigraphy
- 1949 – Paleontology and Stratigraphy Branch
- 1995 – Paleontology and Stratigraphy Branch eliminated

Image Courtesy of Smithsonian Institution Archives
What is the USGS Fossil Collection?
What is the USGS Fossil Collection?

USGS and Smithsonian geologists conducting surveys and research on geological mapping, biostratigraphy, paleoecology, and paleoclimate from 1879 to 1995.

https://geomaps.wr.usgs.gov/sfbay/blocks.html
What is the USGS Fossil Collection?

- Fossils being collected and used within various scopes of USGS work
- Importance of these fossils and their associated records
- Rich scientific data
- Localities that are not accessible today

https://geomaps.wr.usgs.gov/sfbay/blocks.html
What is the USGS Fossil Collection?
What is the USGS Fossil Collection?

- Specimen Cards
- Card Catalog
- E&R Reports
- Field Notebooks
- Maps
- USGS Pubs
- Standalone Databases

Examples of associated materials
What is the USGS Fossil Collection?

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Digital files of primary data
What is the USGS Fossil Collection?

- Massive
- One of the largest in the world
- Rich in data
- Cannot be reproduced
- Largely undiscoverable

Room at NMNH with various types of USGS associated materials
How are data retrieved from the collection?
Getting data out of the collection:

- Locality Ledgers
- Formal Reports
- Field Books
Getting data out of the collection:

Researcher inquiry:

“What data do you have on USGS Locality 3676?”
Getting data out of the collection:

Researcher inquiry:

“What data do you have on USGS Locality 3676?”

USGS staff response:

“Talk to NMNH, they have the collection and records”
Getting data out of the collection:

Researcher inquiry:

“What data do you have on USGS Locality 3676?”

USGS staff

NMNH staff response:

“Let me check our records…”
Getting data out of the collection:

Researcher inquiry:

“What data do you have on USGS Locality 3676?”

USGS staff

NMNH staff response:

“Let me check our records…”

8 HOURS LATER…
The published specimen is not here. The data is not in our EMu database or historic ledgers. There are USGS Locality records and notes for the number 3676, but not related to this inquiry...
Getting data out of the collection:

Researcher inquiry:

“What data do you have on USGS Locality 3676?”

USGS staff response:

NMNH staff

“NMNH is searching the wrong locality record set! I remember making an Excel file from the original ledger back in 1993. I’ll send you a copy of that Excel file. I don’t know where the original ledger is now, but here’s a picture of me with the ledger in 1993 if it helps you find it!”

Image courtesy of Casey McKinney, USGS
How can we improve the accessibility of the collection?
Achieving our collections accessibility goals

- Apply existing best practices and institutional and community standards for specimen and archival data lifecycle management and accessibility.
- Functionality must enhance the scientific research value of the collection, which means the archive material should be inventoried and described in a standardized way.
What are the specific objectives for the USGS Fossil Collection?
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Objective 1:
EAD finding aids with standardized knowledge tags are produced for all USGS records of specimens and specimen localities (such as field books, E&Rs, and locality ledgers).
What are the specific objectives for the USGS Fossil Collection?

Objective 2:

All USGS related specimen records are associated with respective locality records through a robust digital digital repository.

http://specifyx.specifysoftware.org/
What are the specific objectives for the USGS Fossil Collection?

**Objective 3:**
All USGS locality data are georeferenced and collections data are digitally discoverable through a robust digital repository and data sharing services.

www.sciencebase.gov
Current Work

- Inventory and describe the data using best practices and standards
- Reformat data from all sources to a common standard
- Compare data to find overlapping records
- Use R-Based algorithms for data munging
- Build and populate database
- Prep data for Specify digestion and USGS IPDS
Beta Projects
Western Interior Shorelines Website

[Map and data of Western Interior Seaway Shorelines]

[Table of formations recorded with columns for state, county, and formation]

[Section on Denver Mesozoic Locality with details on facies and formation]

[USGS logo]

[Image credits: USGS]
Digital Volunteers

USGS Specimen card being transcribed through NMNH transcription service

https://transcription.si.edu/transcribe/10595/EE9nK
Challenges

- Hiring freeze/Budget uncertainties
- Massive undertaking
- Collection priorities
- Brain Drain
Thank you!

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Specify support:
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