



# Databasing workflows for paleontology

UCMP Loc IP4397	Field No.
Other Loc No. USGS Mesozoic 2280	
Early Cretaceous	California Tehama Co.
Collector & Date	
Accn: 5051	

Erica Clites

University of California Museum of Paleontology



# What makes paleontology collections different?

1) Significance derived almost exclusively from their age.

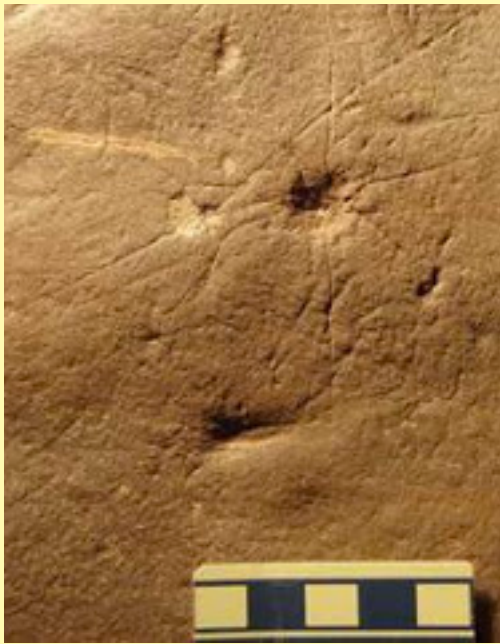


Photo: Jim Gehling



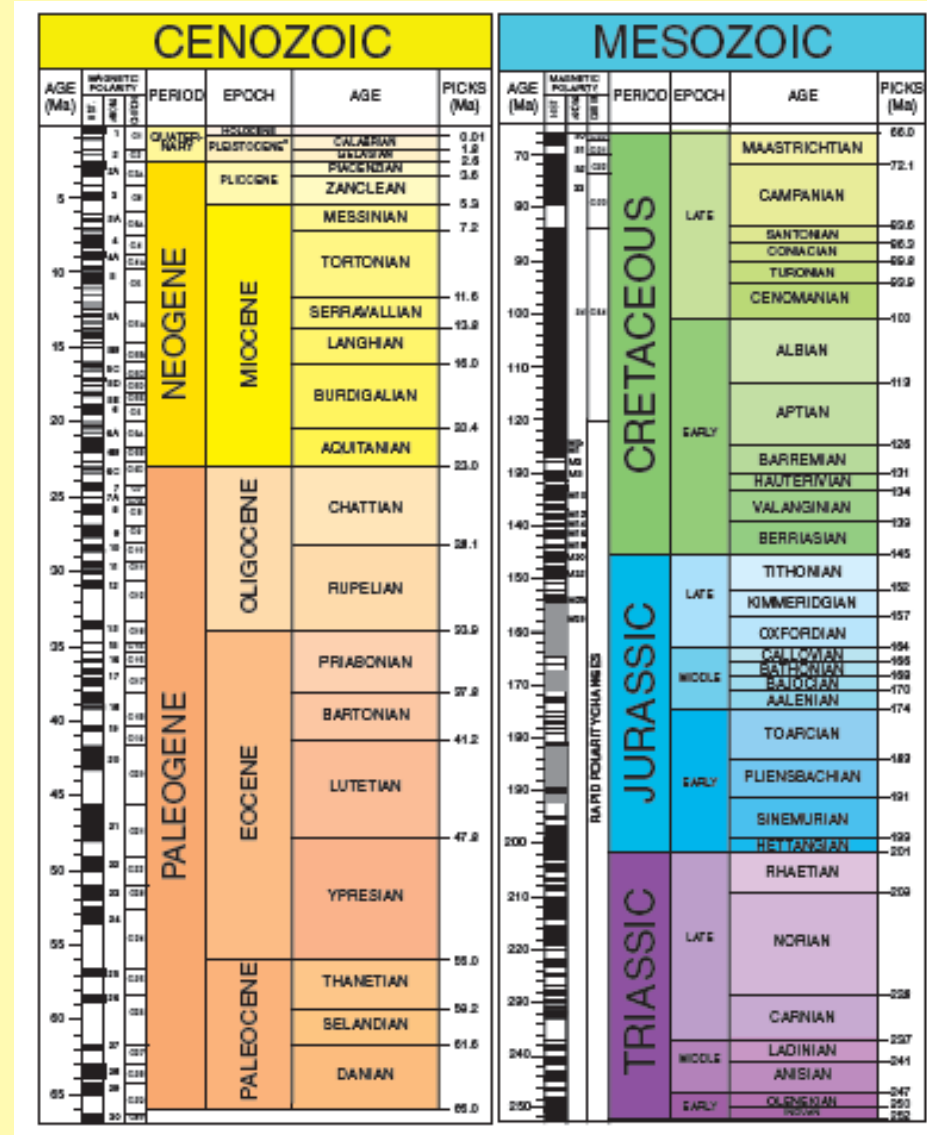
Photo: UCMP



Photo: UCMP

# How does this affect databasing?

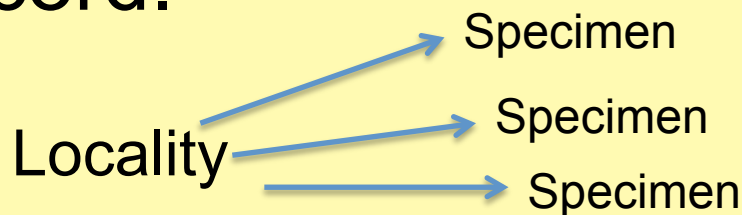
- At UCMP specimens are housed based on their age, not taxonomy.
- Need to know age of locality before fossils can be rehoused.



# What makes paleontology collections different?

2) Catalog “locality” first, then specimens.

- Locality number signifies set of geographic and geologic data associated with many specimens.
- Designate distinct geologic layer in a geographically distinct outcrop as a “locality.”
- No taxonomic data associated with locality record.

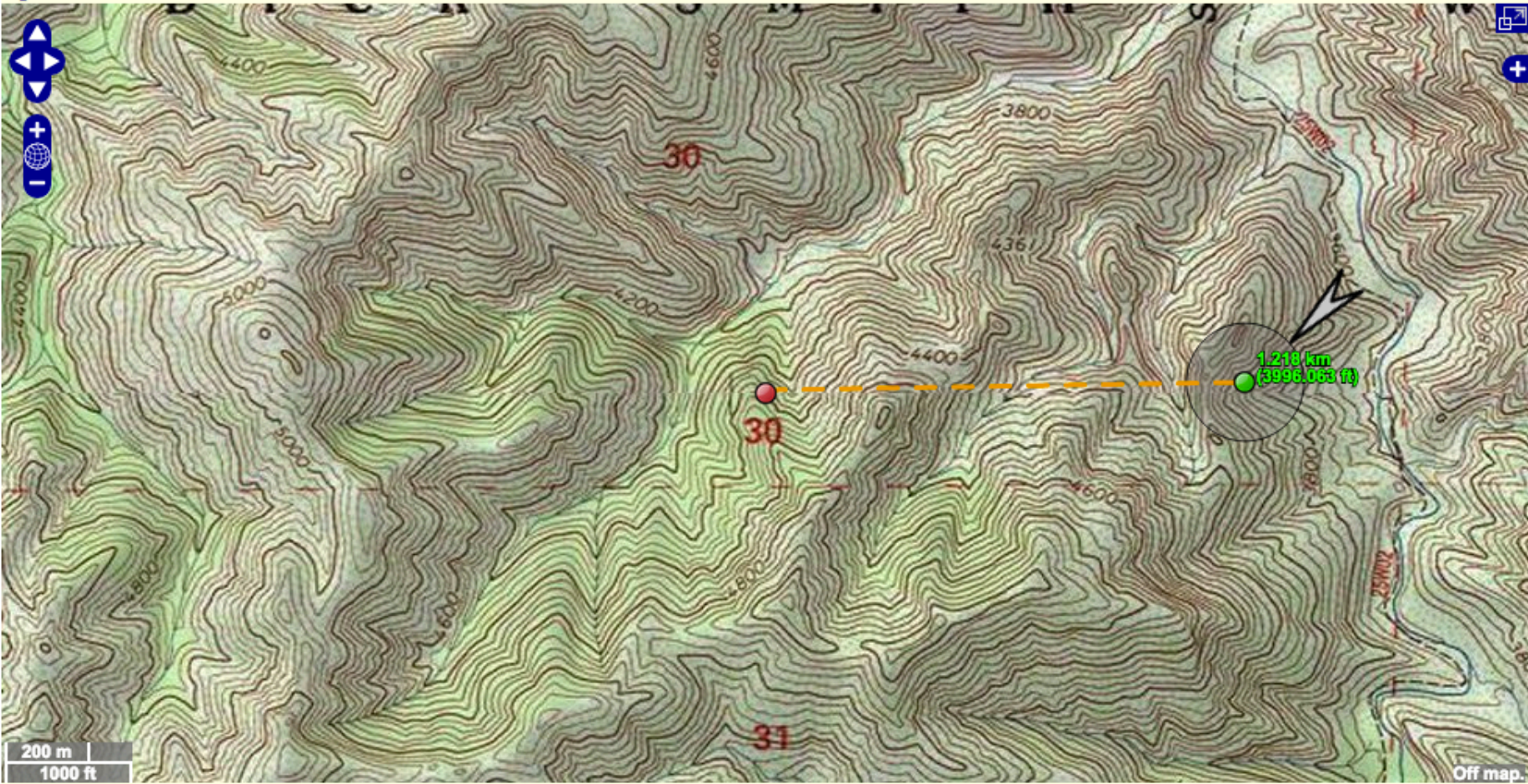


Locality description: 4000' E. and 100' N. of 34° 45' 00" and 119° 35' 00"

- 1) Enter locality description in UCMF database
- 2) Convert to decimal latitude and longitude
- 3) Use GeoLocate to calculate offset and adjust uncertainty

**GEOLocate Web Application** ?

1 possible location found.



200 m  
1000 ft

Workbench **1 possible location found**

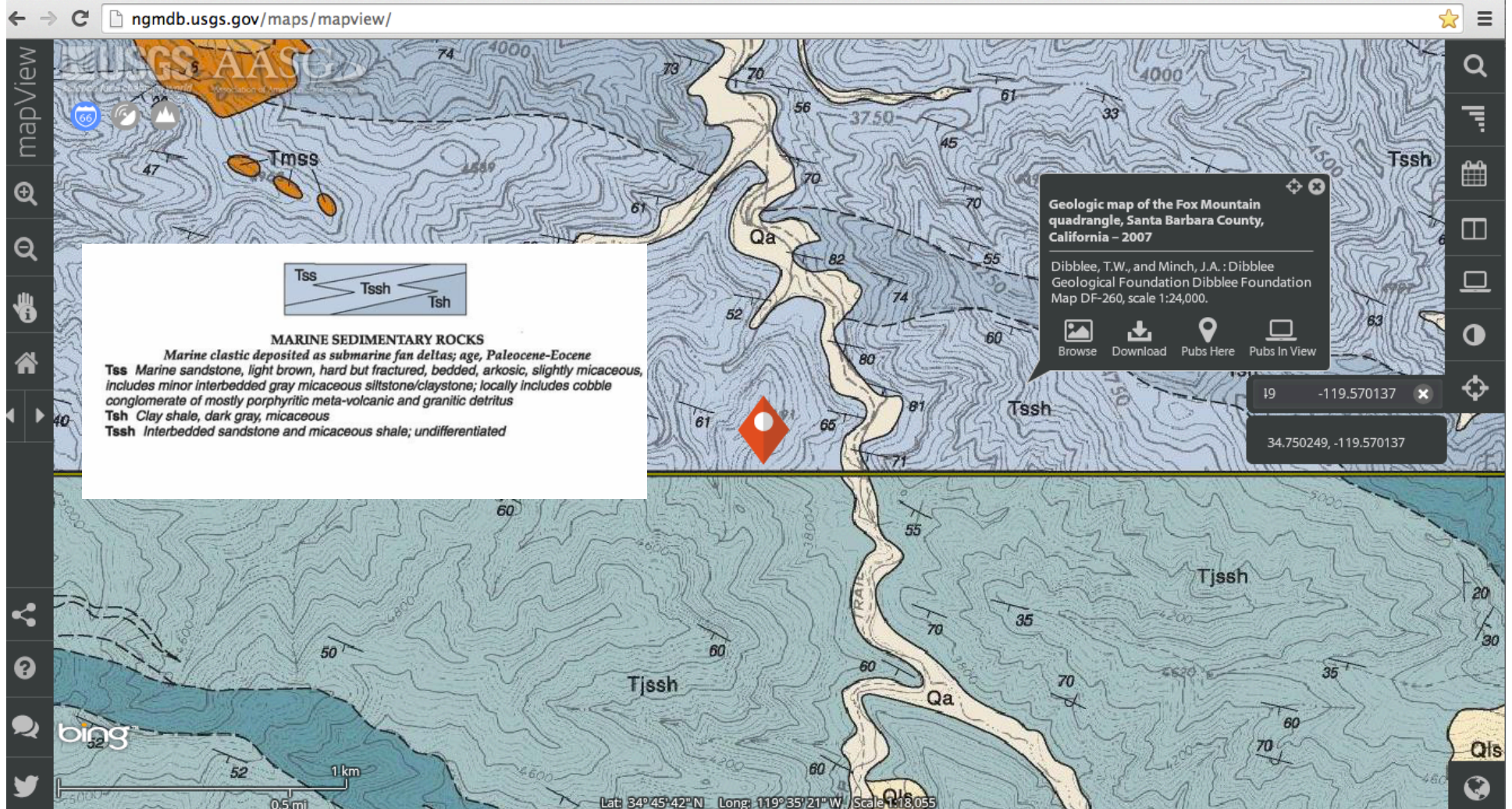
Georeference  Options  Draw polygon  Place marker  Measure

Locality String: 34.75, -119.583333

Country: UNITED STATES OF AMERICA  latitude: 34.750249  longitude: -119.570137  uncertainty: 148 m  error polygon

State: CA 34.750249 -119.570137 148 Unavailable

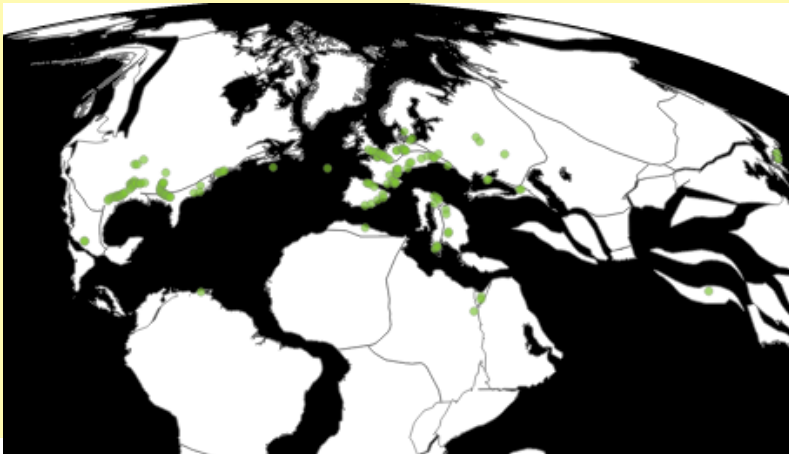
- 5) Update locality database record with these coordinates.
- 6) View updated coordinates on digital geologic map.
- 7) Assign probable geologic age based on map and update database record, including a note to explain how the age was assigned.
- 8) Rehouse fossils in the appropriate cabinet based on their age.



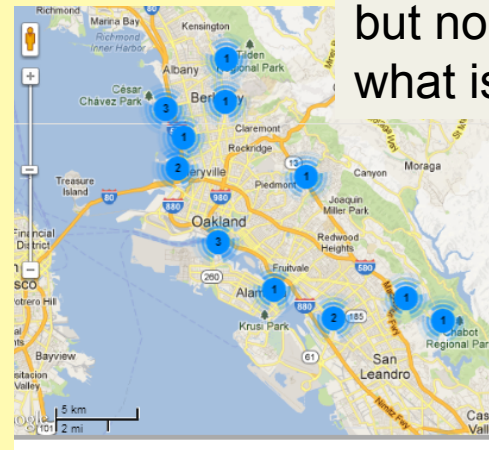
# What makes paleontology collections different?

## 3) Specific locality information not served online

March 2009:  
Public Law 111-011, Title VI, Subtitle D, aka Paleontological Resources Preservation Act (PRPA, the Act, 16 U.S.C..)



Demospongia  
Map from PBDB Navigator



Data need to be fuzzed but no standards yet for what is “safe”

Auto-aggregated  
Data clusters  
Berkeleymapper

...or isn't what you think  
because the earth moves

Slide courtesy: P. Holroyd

# Before Rehousing





# After Rehousing



# Digitization

- LED light box
- Digital camera with macro lens



# CalPhotos

CalPhotos Photo Database

Number of matches: 45

Query: SELECT \* FROM img WHERE ready=1 and collectn = "UCMP\_MP\_Inverts" ORDER BY taxon

Click on the thumbnail to see an enlargement



ID: 0000 0000 0413 2493 [\[detail\]](#)  
© 2013 USGS Menlo Park Invertebrates



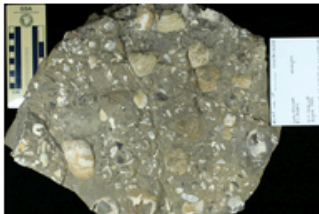
ID: 0000 0000 0413 2540 [\[detail\]](#)  
© 2013 USGS Menlo Park Invertebrates



ID: 0000 0000 0413 2299 [\[detail\]](#)  
© 2013 USGS Menlo Park Invertebrates



ID: 0000 0000 0413 2305 [\[detail\]](#)  
© 2013 USGS Menlo Park Invertebrates



ID: 0000 0000 0413 2492 [\[detail\]](#)  
© 2013 USGS Menlo Park Invertebrates



ID: 0000 0000 0413 2494 [\[detail\]](#)  
© 2013 USGS Menlo Park Invertebrates



ID: 0000 0000 0413 2495 [\[detail\]](#)  
© 2013 USGS Menlo Park Invertebrates



ID: 0000 0000 0413 2496 [\[detail\]](#)  
© 2013 USGS Menlo Park Invertebrates



ID: 0000 0000 0413 2498 [\[detail\]](#)  
© 2013 USGS Menlo Park Invertebrates



ID: 0000 0000 0413 3259 [\[detail\]](#)  
© 2013 USGS Menlo Park Invertebrates



ID: 0000 0000 0413 3260 [\[detail\]](#)  
© 2013 USGS Menlo Park Invertebrates



ID: 0000 0000 0413 2516 [\[detail\]](#)  
© 2013 USGS Menlo Park Invertebrates

# UCMP Database

← → ↻ [ucmpdb.berkeley.edu/cgi/ucmp\\_query2](http://ucmpdb.berkeley.edu/cgi/ucmp_query2) 🔍 ☆ ☰

**UC Museum of Paleontology Localities** [admin]

Number of matches: 2203

- [Download your results](#) (tab-delimited text file with .xls file extension, 2203 lines, file size = 219.4 K)
- [Map localities with lat/longs](#)

Query: SELECT FROM ucmp\_loc2 WHERE ucmp\_coll like "%I%" and loc\_num > "1640" and loc\_prefix = "IP" ORDER BY loc\_prefix,cast(loc\_num as unsigned integer),loc\_suffix

Click on the Loc ID to see the full locality record

Loc ID	Coll	Locality Name	County	State / Province	Country	Cont	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna
<a href="#">IP1641</a>	I	P&S Branch, Menlo Park		Alaska	United States	North America	Jurassic	Late Jurassic	Naknek?			
<a href="#">IP1642</a>	I	P&S Branch, Menlo Park		Alaska	United States	North America	Jurassic	Late Jurassic	Naknek			
<a href="#">IP1643</a>	I	P&S Branch, Menlo Park	Lake County	California	United States	North America	Jurassic	Late Jurassic	Naknek			
<a href="#">IP1644</a>	I	Cold Fork of Cottonwood Creek	Tehama County	California	United States	North America	Cretaceous		Lodoga			
<a href="#">IP1645</a>	I	Paskenta - Keyserlings's Gate	Tehama County	California	United States	North America						
<a href="#">IP1646</a>	I	Wilbur Springs	Colusa County	California	United States	North America	Cretaceous					
<a href="#">IP1647</a> 🗺	I	Cooke Range	Luna County	New Mexico	United States	North America	Cretaceous		Colorado			
<a href="#">IP1648</a> 🗺	I	Cooke Range	Luna County	New Mexico	United States	North America	Cretaceous		Colorado			
<a href="#">IP1649</a> 🗺	I		Luna County	New Mexico	United States	North America	Cretaceous		Colorado			
<a href="#">IP1650</a>	I		Grant County	New Mexico	United States	North America	Cretaceous		Colorado			
<a href="#">IP1651</a> 🗺	I		Grant County	New Mexico	United States	North America	Cretaceous		Colorado			
<a href="#">IP1652</a>	I	Redrock Canyon	Grant County	New Mexico	United States	North America	Cretaceous		Colorado			

# UCMP University of California Museum of Paleontology Locality IP1655



1 of 1  
click on image to view enlargement

## Locality Name

Collection **Invertebrates**  
Accession No **5051**  
Other Nums **USGS Mesozoic D11010**  
Project **USGS Menlo Park Invertebrates**

Continent/Ocean **North America**  
Country **United States**  
State/Province **New Mexico**  
Island  
Island Group  
County **Grant County**

Era **Mesozoic**  
Period **Cretaceous**  
Epoch  
Absolute Age  
Stage  
Local Stage  
Storage Age  
Biozone  
Flora/Fauna

**CalPhotos** Photo Database

[\(view details\)](#)

**Using this photo** This photo and associated text may not be used except with express written permission from UCMP. To obtain permission for personal, academic, commercial, or other uses, or to inquire about high resolution images, prints, fees, or licensing, or if you have other questions, contact UCMP [ucmpwebmaster@berkeley.edu](mailto:ucmpwebmaster@berkeley.edu).



©2013 University of California Museum of Paleontology

0000 0000 0613 0640

# UCMP University of California Museum of Paleontology Locality IP1655



1 of 1  
click on image to view enlargement

## Locality Name

Collection **Invertebrates**  
Accession No **5051**  
Other Nums **USGS Mesozoic D11010**  
Project **USGS Menlo Park Invertebrates**

Continent/Ocean **North America**  
Country **United States**  
State/Province **New Mexico**  
Island  
Island Group  
County **Grant County**

Era **Mesozoic**  
Period **Cretaceous**  
Epoch  
Absolute Age  
Stage  
Local Stage  
Storage Age  
Biozone  
Flora/Fauna

# Acknowledgements



- UC Berkeley graduate students:  
Jenna Judge, Renske Kirchholtes,  
Camilla Souto
- UC Berkeley undergraduates:  
Marianne Brasil, Gina Hwang,  
Dianne Quiroz, Holly Seyler,  
Michelle Sparnicht, Monica  
Theibault, Olivia Tullier, Alexis  
Williams and Anne Zavala
- UCMP Volunteers: Don Pecko,  
Michael Reyes, Kathy Zoehfeld and  
Dave Strauss
- UCMP and Berkeley Natural History  
Museums staff; iDigBio
- Current and former USGS staff
- Funding provided by NSF-DBI  
1203600

