



# The Digital Roundabout: Data Flow from Field Project to Archive to New Project

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# Functional issues even in a digital world

## Space-Access-Awareness

- Archival space
- Accessible collections
- Unaware of resource
- Limited FTE's
- Volunteer persistence

## Security-safety-control

- Specimens
- Users
- Documentation

HOME ▾ Non-Vertebrate Paleontology Laboratory NEW MAP Ann ▾

University of Texas Tower, 2401 X Q

Directions

A University of Texas

B University of Texas-

[Add destination](#)

[Show options](#)

GET DIRECTIONS

ADD AS LAYER

CLEAR

9.86 miles · 14 minutes

[Zoom to full route](#)

A 1. Start at Austin, Texas

↑ 2. Go north on Congress Ave toward W 6th St / E 6th St 0.1 mi.

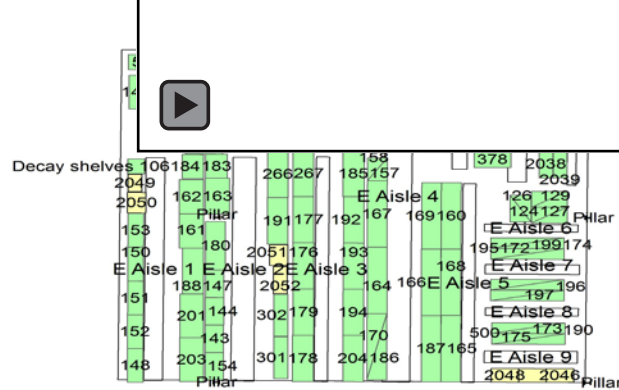
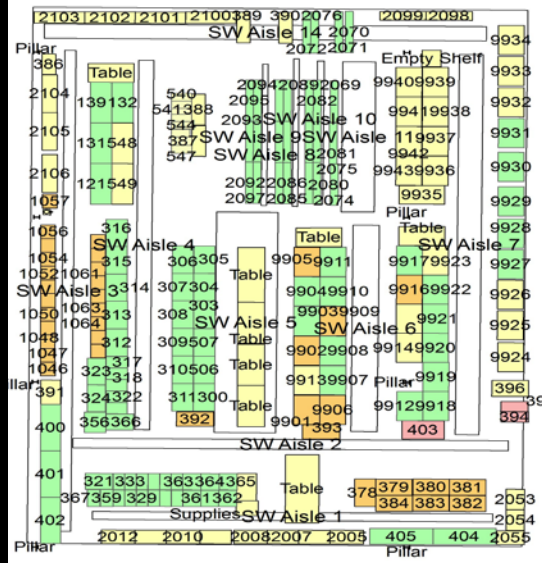
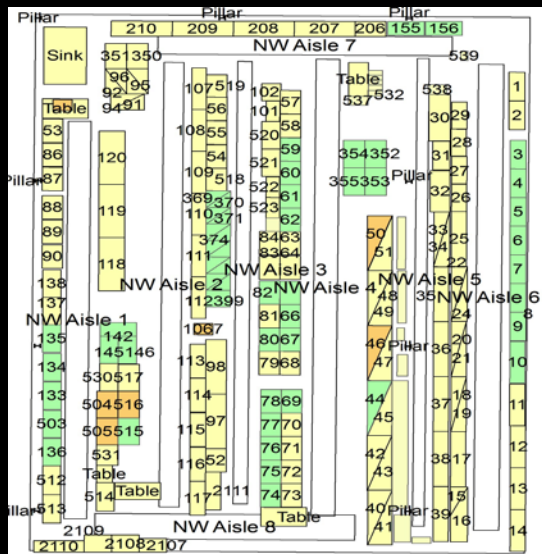
↘ 3. Turn right on E 7th St 0.54 mi. 2 minutes

↙ 4. Turn left on I-35 N (N Interstate 35) 0.13 mi.

Y 5. Take ramp on the left and go on I-35 N / US-290 E 0.74 mi. 1 minute

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POWERED BY esri



# Data capture – direct entry

Specify 6.6.00

File Edit Data System Tabs Help

Welcome Data Trees Reports Interactions Statistics Query Symbiota Workbench SGR Plugins Lifemapper Attachments

loriolia

**Create/Update**

- Acc Accession
- Per Permit
- Loa Loan
- Loa Loan w/o Preps
- Gft Gift
- EI Exchange In
- EO Exchange Out
- Bor Borrow
- IR Information Request
- RA Repository Agreement
- Loa Return Loan
- Print Invoice

**Information Request**

**Record Sets**

- CO ArcGIS8-2012
- CO ArcOnlineEcage
- CO BIBE-UT-Cooper
- Bor Borrow0001
- CO BROMIDE2014
- CO Howells

**Accession**

Accession number: 2015-004      Collection: NPL-McCall      Status: Complete

Type: Gift      Division: Non-vertebrate Paleontology Lab

Date accessioned: 03/23/2015      Date received: 03/23/2015      Verbatim date:

Remarks: Ediacaran slabs going to be appraised. Jacobs Creek Quarry material, Field Number MCCA-NPL-2015FEB14. *i*

**Accession Agents**

Agent: McCall, Linda *i*      Role: Donor

Remarks: *i*

1 of 3      Grid

**Accession Authorizations**

Permit: 0 *i*

Remarks: None needed, North Carolina Fossil Club arranged a collecting trip to the privately- held quarry. *i*

1 of 1

**Attachments**

*A* 0

Created by: Thompson, Angella      Created date: 03/23/2015

Modified by: Thompson, Angella      Modified date: 03/23/2015

# Data capture

Working with Specify 6 / NPL Protocol and Procedures  
**Field Notebook Form**  
Created by Angella C Thompson, last modified on Nov 04, 2014

Scans of field notebooks are saved in Specify as attachments, and the general data is filled out in the Field Notebook form.

**Field Notebook**

Name: Sprinkle 1976 Bromide Start Date: 07/13/1976 End Date: 08/19/1976 Owner: Sprinkle, James *i*

Location: Bromide Formation, Oklahoma

Description: Notes and drawings from 1976 field work in the Bromide. 56 pages, handwritten, spiral bound notebook. *i*

**Page Sets**

Start Date: 07/13/1976 End Date: 08/19/1976 Order Number:

Description:  *i*

*FnS* 0 Method:

**Pages**

Page Number: 001 Scan Date: 02/11/2014

Description: Page 1 *i*

**Collection Objects** *i*

Catalog number	Alt Catalog Number	Collection name	Project number
TX000001113.016		NPL collections	
TX000001113.023		NPL collections	
TX000001113.028		NPL collections	

*FnP* 1

Created By Agent: Brenskelle, Laura Timestamp Created: 05/05/2014

Modified By Agent: Brenskelle, Laura Timestamp Modified: 05/05/2014

1 of 56

Grid

**Attachments**

*FN* 1

# Data capture

**Collection Object**

Catalog number:  Accession number:  Collection:

Container:  Other catalog numbers:

Specimen remarks:

Collecting info:

Field Notebook Page:  Jurisdiction:

Cataloger:  Date cataloged:

Data entry issues:

Double click on any field caption to review usage and definition notes

**Collection Object Attributes**

Collection type:  Biology:

**Determinations**

Taxon:  Type:

Preferred taxon:

Current Determination

Determ. Remark...

**Determination Citations**

**Paleo Context**


**Inventory and Preparations**

**Collection Object Citations**

**Conservation Data**

**Attachments**

**Collection Object Attachments**

  
NPL\_64403\_a2.jpg



  
NPL\_64403\_a3.jpg

Image Storage: 

**Container**

Name:  Type:

Parent:

COLOBJ:  CONTNR\_COLOBJ

Description:

**COLOBJ\_IN\_CONTR**

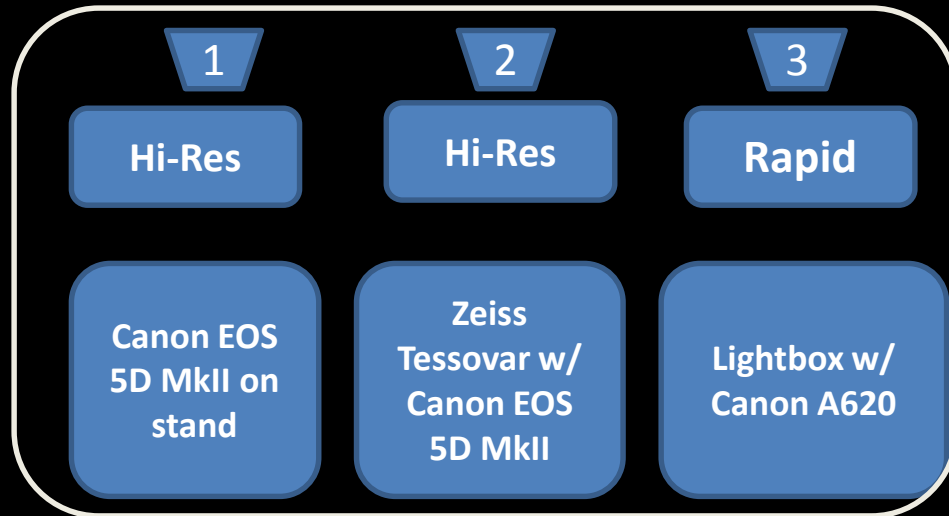
Close

# Data capture - OCR

- Catalog BEG Book 5 (30001-34000) - 198 pages.
- “I started working on this one and it should be doable. I am noting where there are hand-drawn images so that you can figure out what to do with that information at some future point.”

# Data capture - media

## Specimens to camera



STORAGE



Notice how the "cheek" is recessed here as opposed to the opposite side.

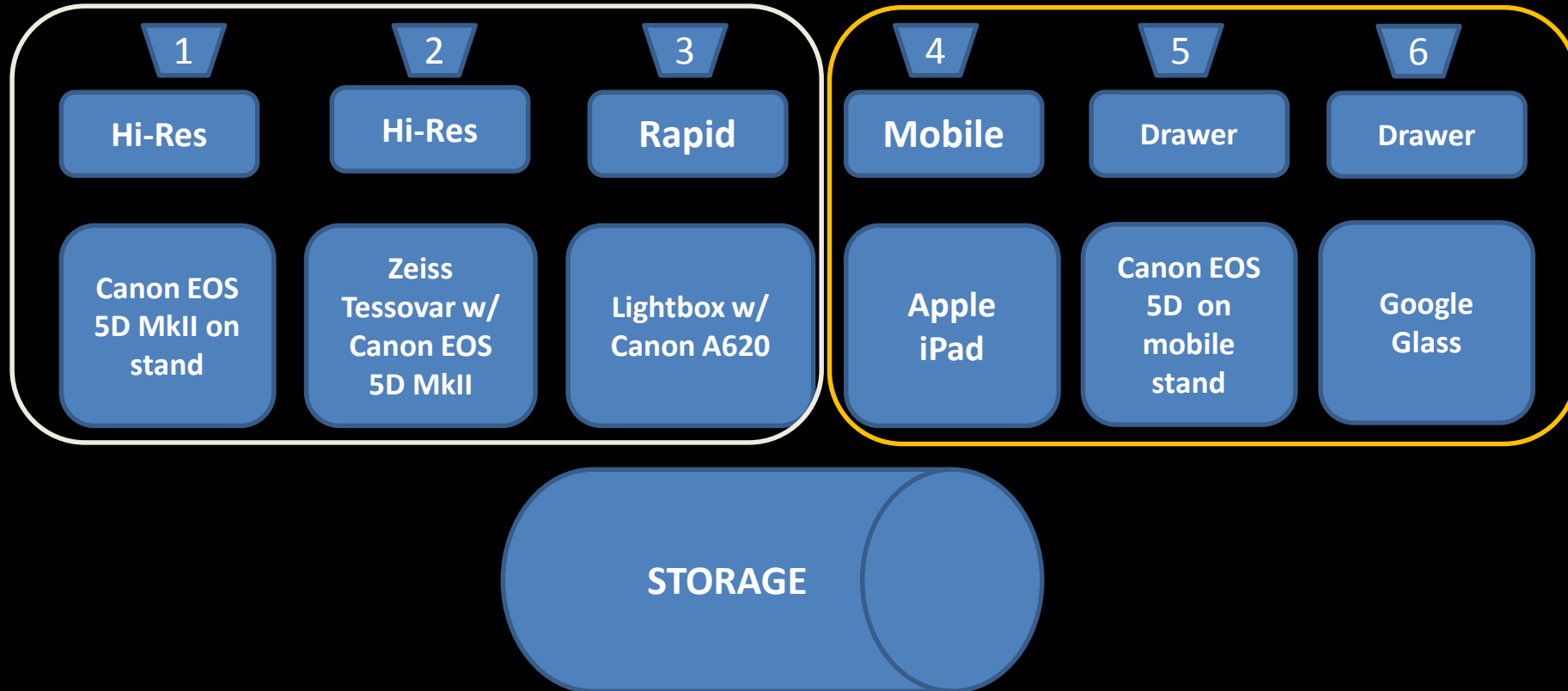




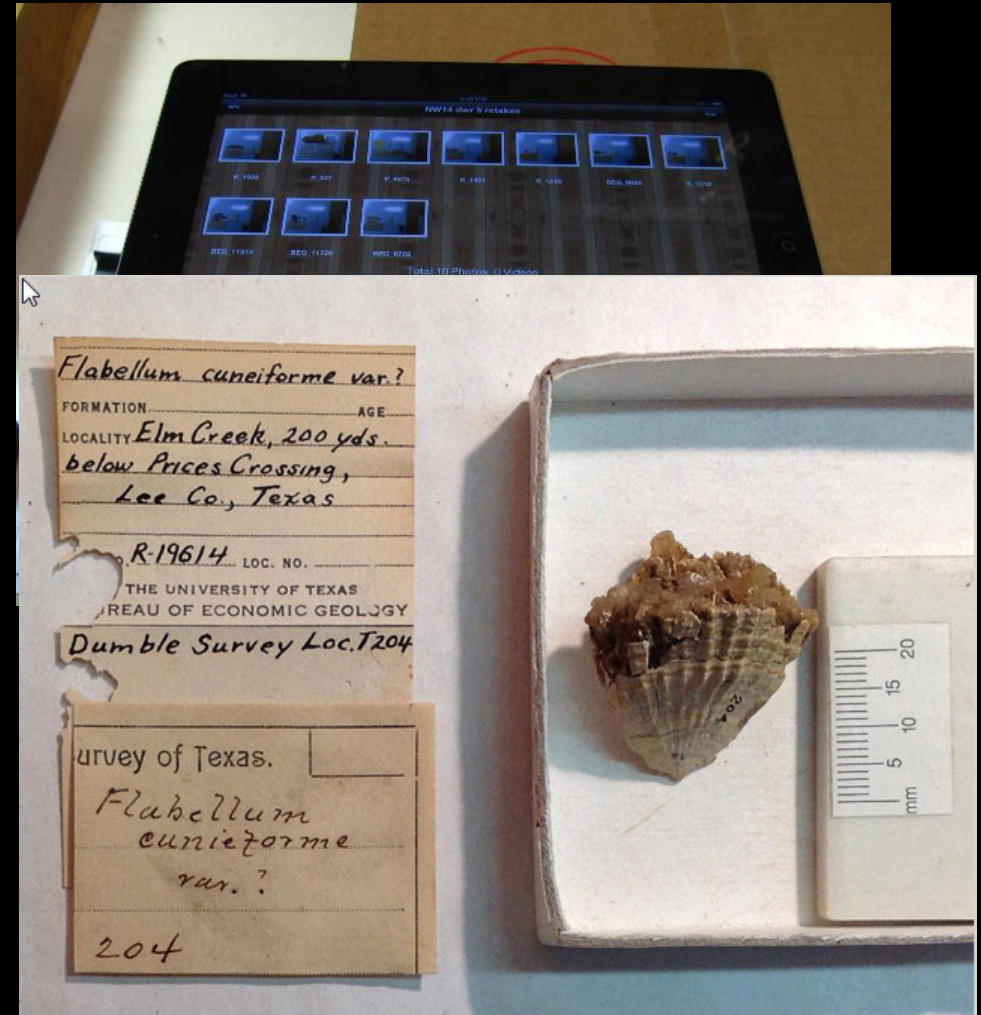
# Data capture-media

Specimens to camera

Camera to specimens



# Data capture - media



# Data capture-images

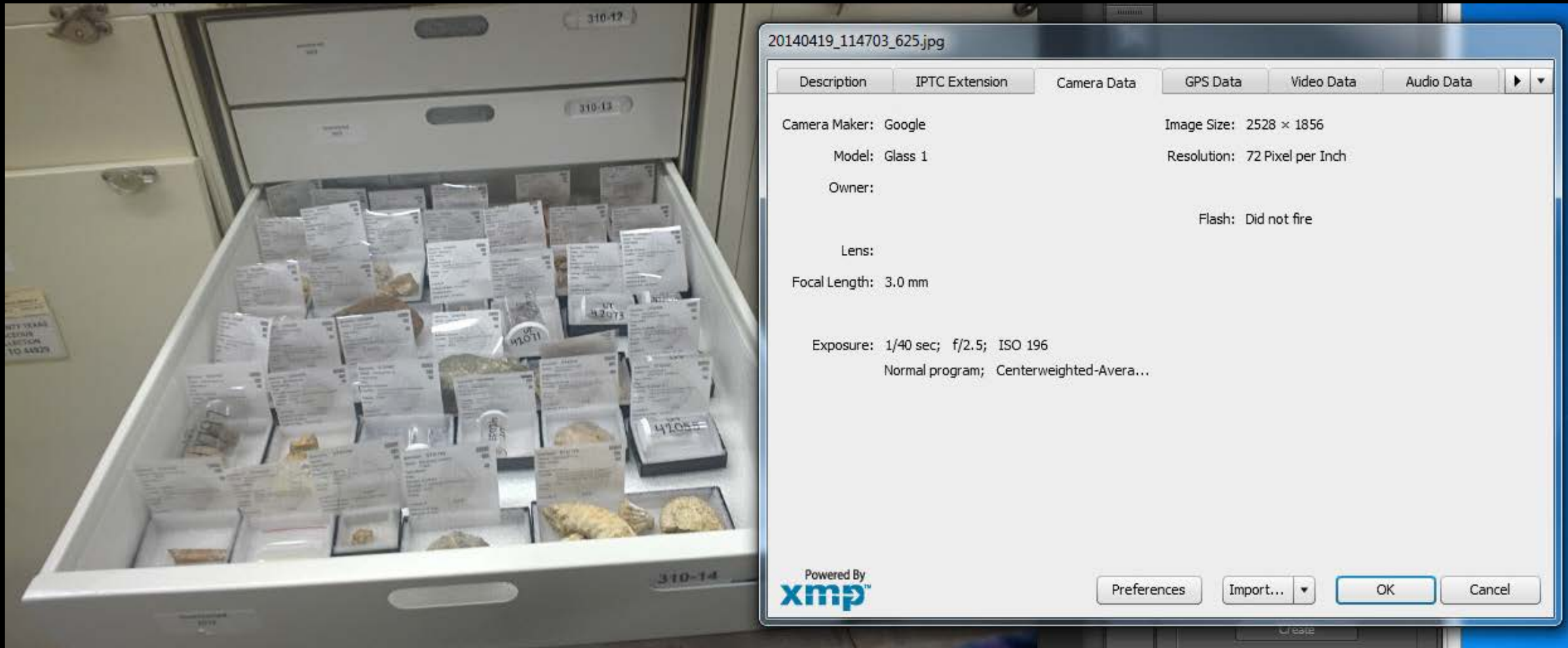
## Entomological collections

- Thousands of same sized specimens
- Drawers have similar taxonomies
- Standard pinning
- Standard labeling
- Standard drawers
- Specimen often covers label

## Invertebrate paleontology collections

- Variable sized specimens and trays
- Variable taxonomies
- Non-standard labels
- Variable sized drawers
- Specimen often obscures label
- Specimens maybe in vials or other enclosures

# Data capture - media



# Data capture - images



# Data capture



## RESULTS:

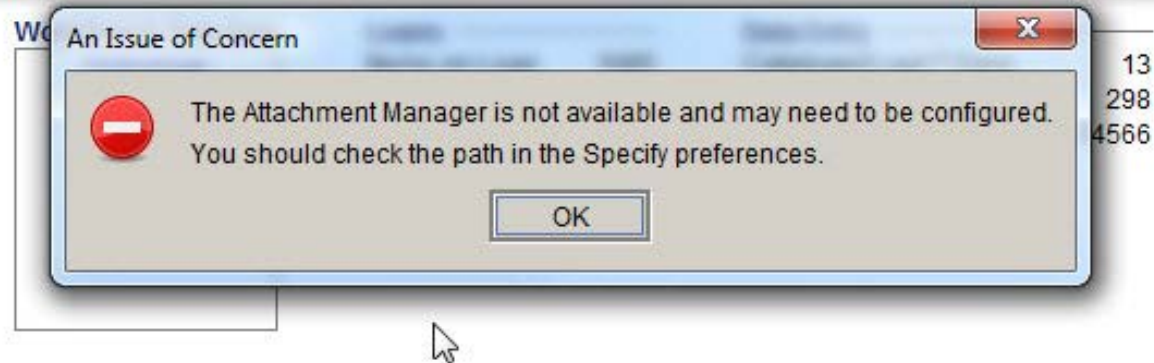
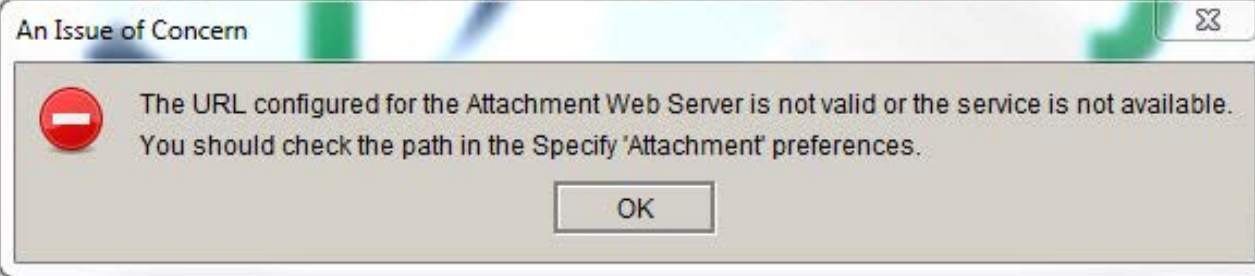
Both the iPhone and Google Glass have moderate resolution to record object data (i.e. the fossils are recognizable).

The iPhone outperforms Google Glass in text resolution, but Glass only takes about 75% of the time.

USE that data for it can provide useful information

Not shown: cabinet of extra undergrads

# Data access

The logo for 'Specify' features the word 'Specify' in a large, green, sans-serif font. A blue arc curves over the top of the 'S' and 'p'. The background is a light gray world map.

# Data capture

- Step 0 – design template
- Step 1 – collect raw data
- Step 2 – use MS Access to run translation tables for taxonomy and geologic formations
- Step 3 - import into Refine and clean up data, add necessary columns, separate unique collecting events and add field numbers
- Step 4 – check workbench mapping needs to before import the final spreadsheet
- Step 5 – Data imported into workbench and to Specify.



# Data capture- Step 0-1

C	D	F	W	X	Y	Z	AA	
Remarks	Taxon	Verbatim locality	Number of pieces	Building	Room	Asile	Cabinet	Drawer #
	Oda (Starfish)	Toland's Farm, Denton Co., Texas	1	NPL 122	Curation			246
	Oda (Brittle Star)	West of Roanoke, Denton Co., Texas	1	NPL 122	Curation			246
	Linuparus	S. of Haslet, Tarrant Co., Texas	1	NPL 122	Curation			246
	Linuparus	N. of Carrollton, Denton Co., Texas	1	NPL 122	Curation			246
	Cenomanocarcinus	N. of Carrollton, Denton Co., Texas	1	NPL 122	Curation			246
	Cenomanocarcinus	N. of Carrollton, Denton Co., Texas	1	NPL 122	Curation			246
	Enoplocytha	Toland's Farm, Denton Co., Texas	5	NPL 122	Curation			246
	Oda (Complete crab)	S. of Haslet, Tarrant Co., Texas	1	NPL 122	Curation			246
	Homarus	S. of Haslet, Tarrant Co., Texas	1	NPL 122	Curation			246
	Cenomanocarcinus	N. of Carrollton, Denton Co., Texas	1	NPL 122	Curation			246
	Oda	S. of Haslet, Tarrant Co., Texas	1	NPL 122	Curation			246
	Oda	Carrollton, Denton Co., Texas	1	NPL 122	Curation			246
	Oda	S. of Haslet, Tarrant Co., Texas	2	NPL 122	Curation			246
	Oda	Carrollton, Denton Co., Texas	1	NPL 122	Curation			246
	Oda	Toland's Farm, Denton Co., Texas	1	NPL 122	Curation			246
	Oda	West of Roanoke, Denton Co., Texas	2	NPL 122	Curation			246
	Oda	Carrollton, Denton Co., Texas	1	NPL 122	Curation			246
	Oda	S. of Haslet, Tarrant Co., Texas	1	NPL 122	Curation			246
	Oda	Carrollton, Denton Co., Texas	2	NPL 122	Curation			246
	Oda	Carrollton, Denton Co., Texas	1	NPL 122	Curation			246
	Metopaster	Toland's Farm, Denton Co., Texas	1	NPL 122	Curation			246

- Define critical data
- Develop templates
- Train users

# Data capture

- Translate for taxonomy and geology
- Further constrain and clean

The screenshot displays the Microsoft Access interface. On the left, the 'All Access Objects' pane shows a list of tables and queries. The 'Liath Taxa translate Query' is selected. The main window shows the query design view for this query, which is a join between the 'Translate' table and the 'NPL Taxa' table. The 'Translate' table has fields: ID, Catalog number, Exported, other numbers, Taxon, and Phylum. The 'NPL Taxa' table has fields: RecID, NewID, Taxon, Remainder, Genus Original, and Genus. A line connects the 'Taxon' field in the 'Translate' table to the 'Taxon' field in the 'NPL Taxa' table. Below the design view, a table view shows the results of the query. The table has columns: Field, Table, Update To, and Criteria. The first row shows the following data:

Field	Table	Update To	Criteria
Genus	Translate		
Subgenus	Translate		
Species	Translate		
Subspecies	Translate		
Variety	Translate		
Qualifier	Translate		

# Data quality

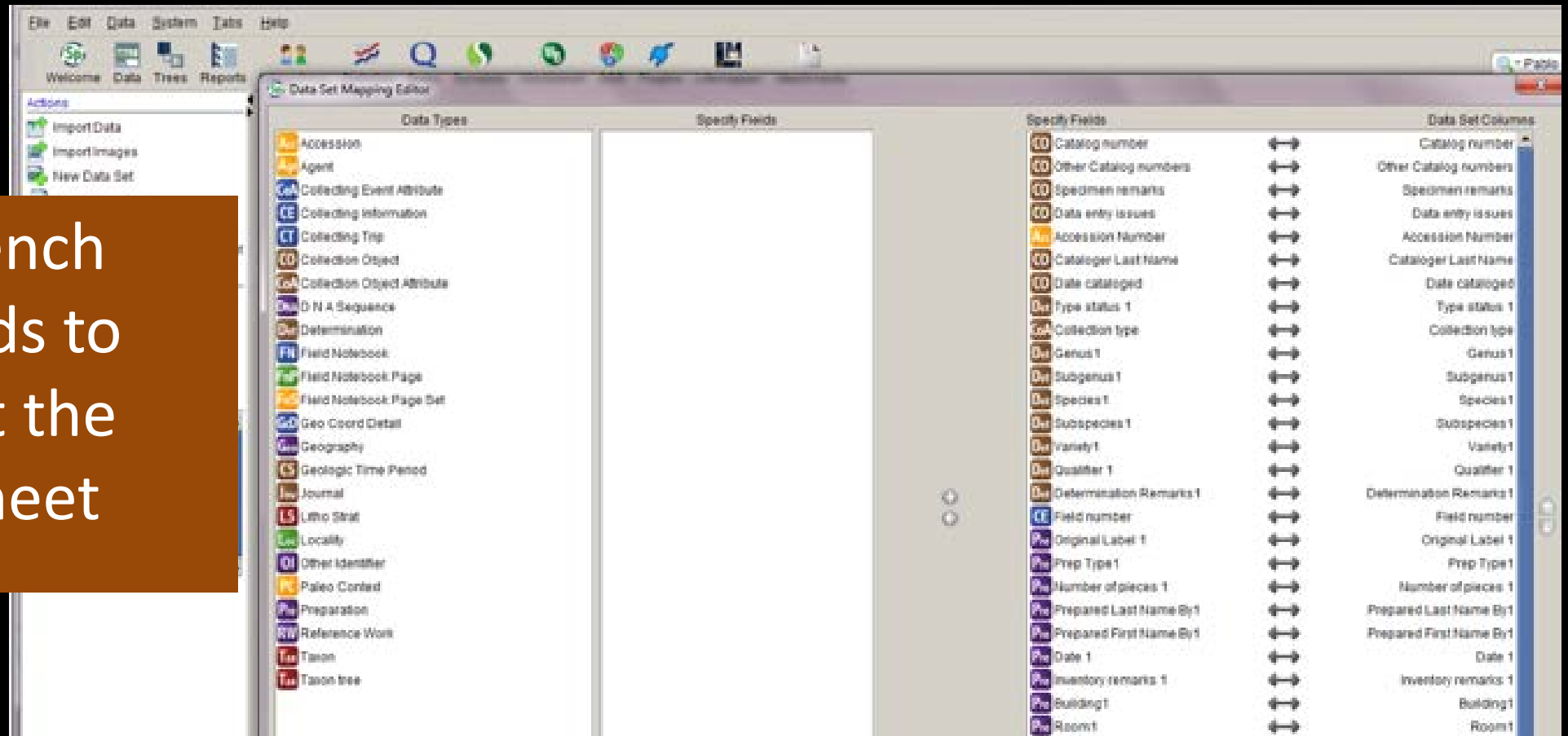
Google Refine interface showing a table of data. The table has 10 columns: Catalog number, Exported, Specimen Row, Data Entry Issue, Accession Num, Cataloger Last, Date Cataloger, Type status, Collection Type, and Phylum. The first row shows 'NPL00021804 000' in the 'Catalog number' column, 'False' in 'Exported', and '2000-002' in 'Accession Num'. The 'Phylum' column is set to 'Echinodermata'. The interface also shows '120 matching rows (245 total)' and 'Show as: rows records'.

Catalog number	Exported	Specimen Row	Data Entry Issue	Accession Num	Cataloger Last	Date Cataloger	Type status	Collection Type	Phylum
NPL00021804 000	False			2000-002				Invertebrate	Echinodermata
	False			2000-002				Invertebrate	Echinodermata
	False			2000-002				Invertebrate	Echinodermata
	False			2000-002				Invertebrate	Echinodermata
	False			2000-002				Invertebrate	Echinodermata

- Import into Refine and clean up data
- Add necessary columns
- Separate unique collecting events
- add field numbers

# Data capture

- check workbench mapping needs to before import the final spreadsheet

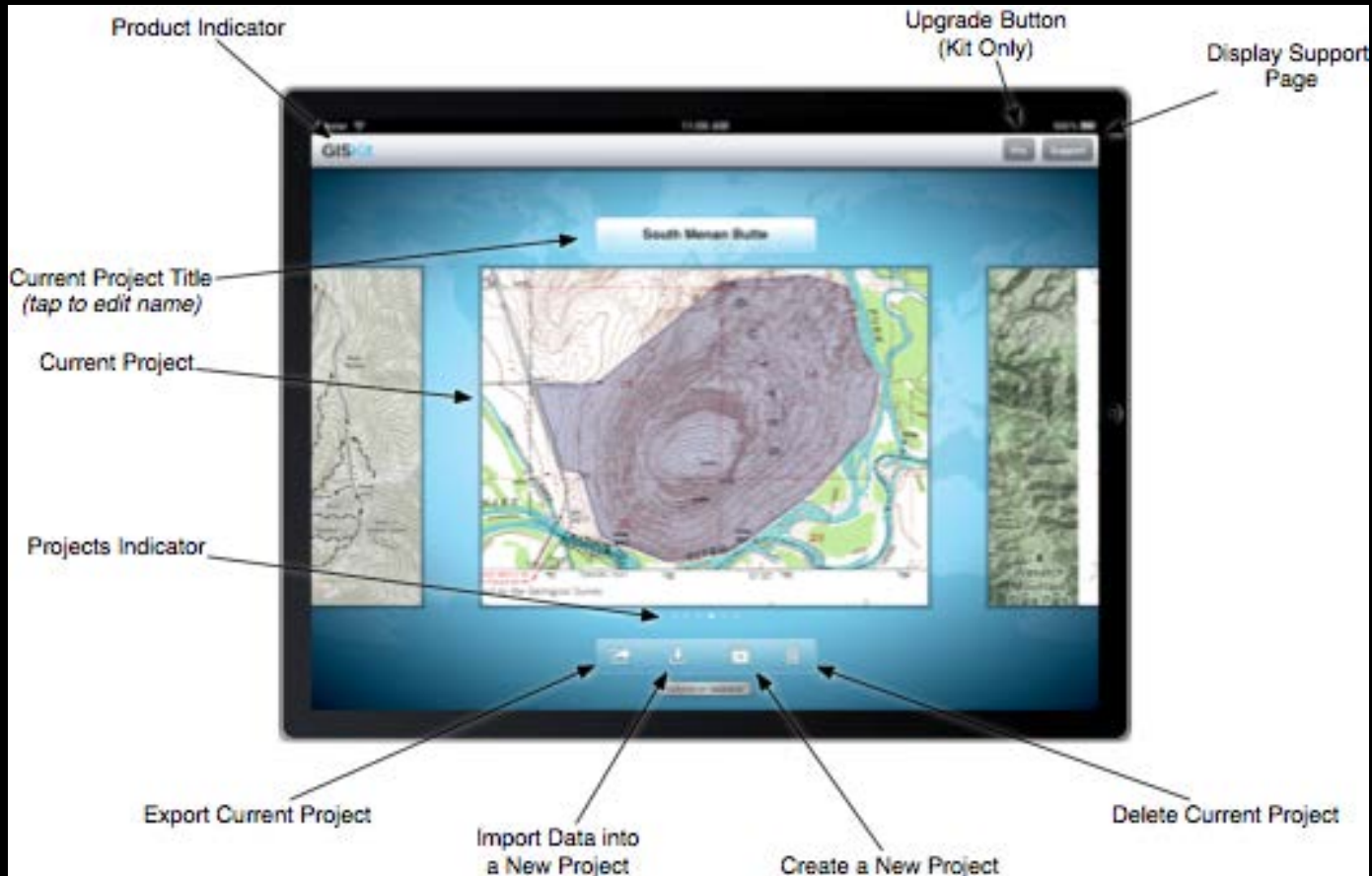


# Data capture

- Data imported into workbench and to Specify

	Catalog number	Other Cat	Specimens	Data e	Accession Number	Cataloger	Date cataloged	Type stat	Collection type	Genus 1
206	NPL00021890.000	D049			2000-002	Appleton	04/23/2015		Invertebrate	
207	NPL00021891.000	D050			2000-002	Appleton	04/23/2015		Invertebrate	
208	NPL00021520.000	C239			2000-002	Appleton	04/23/2015		Invertebrate	
209	NPL00021521.000	C240			2000-002	Appleton	04/23/2015		Invertebrate	Ethelocrinus
210	NPL00021525.000	C241			2000-002	Appleton	04/23/2015		Invertebrate	
211	NPL00021457.000	C119			2000-002	Appleton	04/23/2015		Invertebrate	Ethelocrinus
212	NPL00021475.000	C100M			2000-002	Appleton	04/23/2015		Invertebrate	Anchiocrinus
213	NPL00021820.000	C022			2000-002	Appleton	04/23/2015		Invertebrate	Schiotoocrinus
214	NPL00021542.000	C269			2000-002	Appleton	04/23/2015		Invertebrate	Graffhamicrinus
215	NPL00021543.000	C270			2000-002	Appleton	04/23/2015		Invertebrate	Graffhamicrinus
216	NPL00021592.000	C344			2000-002	Appleton	04/23/2015		Invertebrate	Paradelocrinus
217	NPL00021613.000	C397			2000-002	Appleton	04/23/2015		Invertebrate	Flaxocrinus
218	NPL00021528.000	C244			2000-002	Appleton	04/23/2015		Invertebrate	Graphiocrinus
218	NPL00021529.000	C245			2000-002	Appleton	04/23/2015		Invertebrate	Apographtocrinus
220	NPL00049121.000	C079a			2000-002	Appleton	04/23/2015		Invertebrate	Contocrinus
221	NPL00021477.000	C210			2000-002	Appleton	04/23/2015		Invertebrate	Paragasitocrinus
222	NPL00021515.000	C233			2000-002	Appleton	04/23/2015		Invertebrate	Delocrinus
223	NPL00021516.000	C234			2000-002	Appleton	04/23/2015		Invertebrate	Oibolocrinus
224	NPL00021517.000	C235			2000-002	Appleton	04/23/2015		Invertebrate	Flaxocrinus
225	NPL00021518.000	C236			2000-002	Appleton	04/23/2015		Invertebrate	Paradelocrinus
226	NPL00021519.000	C238			2000-002	Appleton	04/23/2015		Invertebrate	Oibolocrinus
227	NPL00021526.000	C242			2000-002	Appleton	04/23/2015		Invertebrate	Graffhamicrinus
228	NPL00021527.000	C243			2000-002	Appleton	04/23/2015		Invertebrate	Laodonocrinus

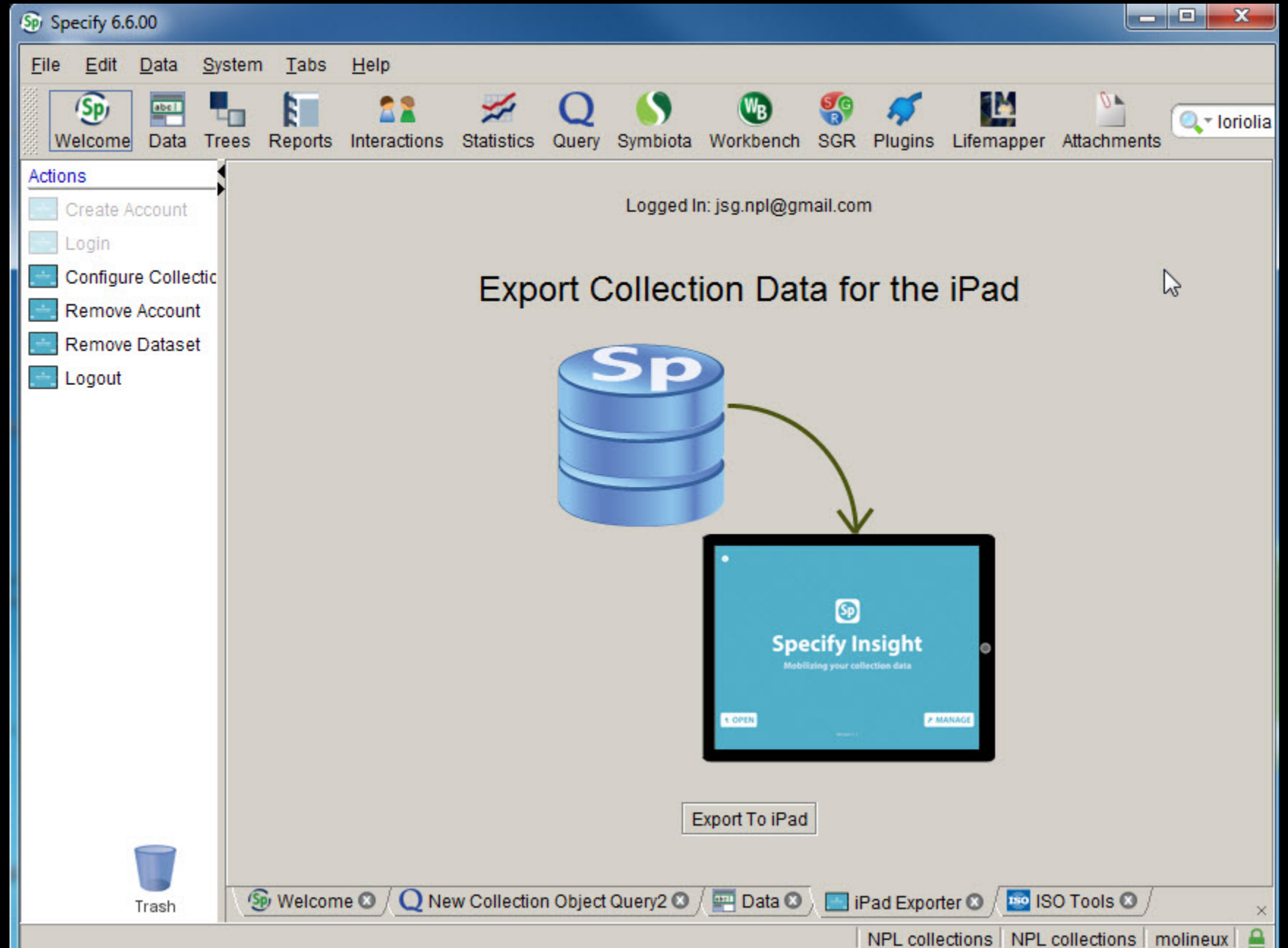
# Data capture - Field



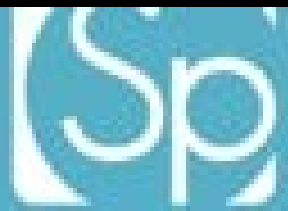
- Richer data
- More potential data reuse from existing data resources

# Data access

- Field access
- Limitations



# Data access - cloud



## Specity Insight

### Collections on your iPad

Institution	Collection	Curator	
 KU Biodiversity Institute	KU Fish Tissue Collection	William Leo Smith	>
 University of Texas at Austin	NPL collections	Ann Molineux	>





# University of Texas at Austin

## NPL collections

Curator Ann Molineux

Collection Manager Liath Appleton

Created On Feb 19, 2015



**GEOGRAPHY**



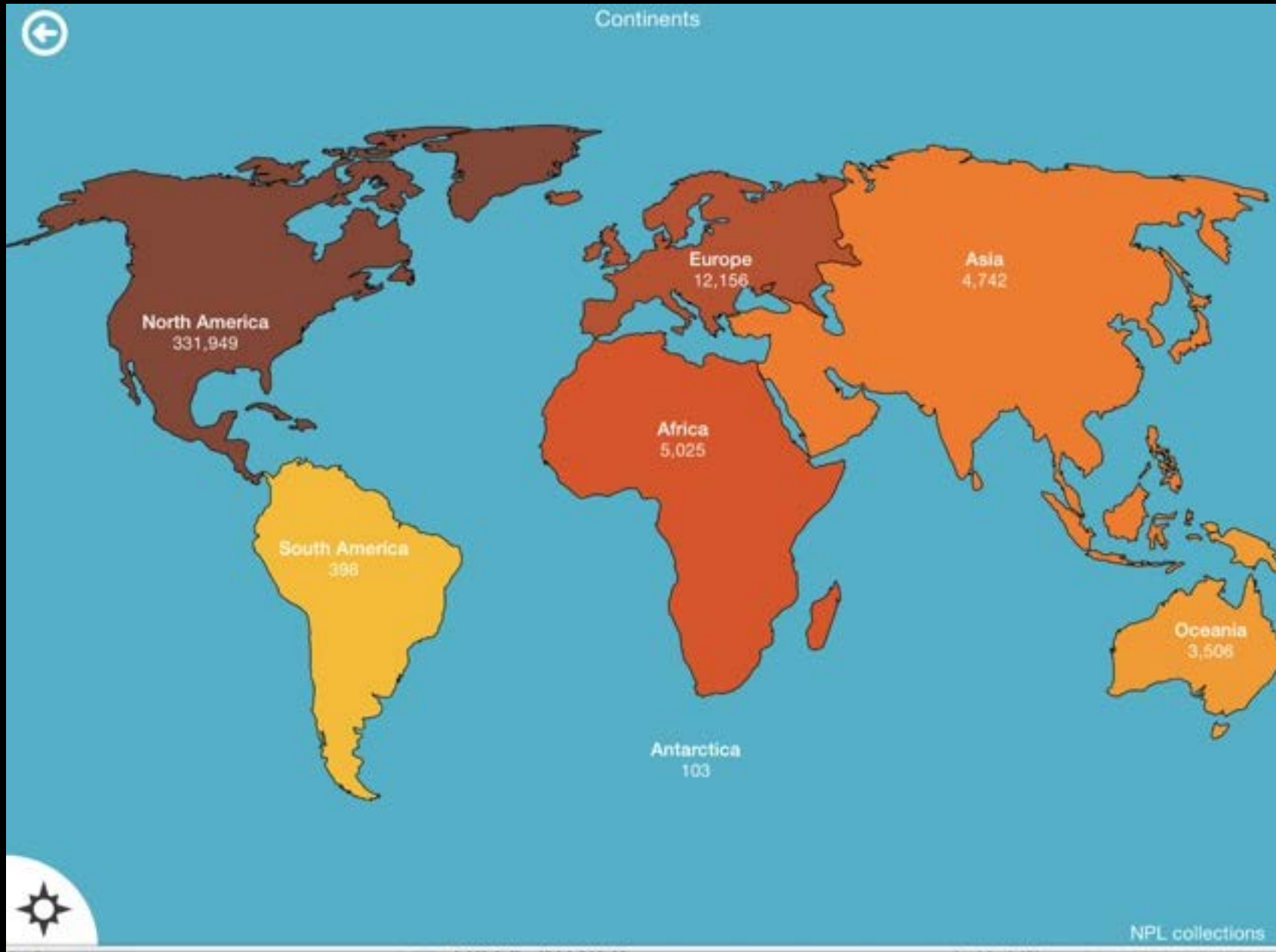
**TAXONOMY**



**STATISTICS**



**SUMMARY**



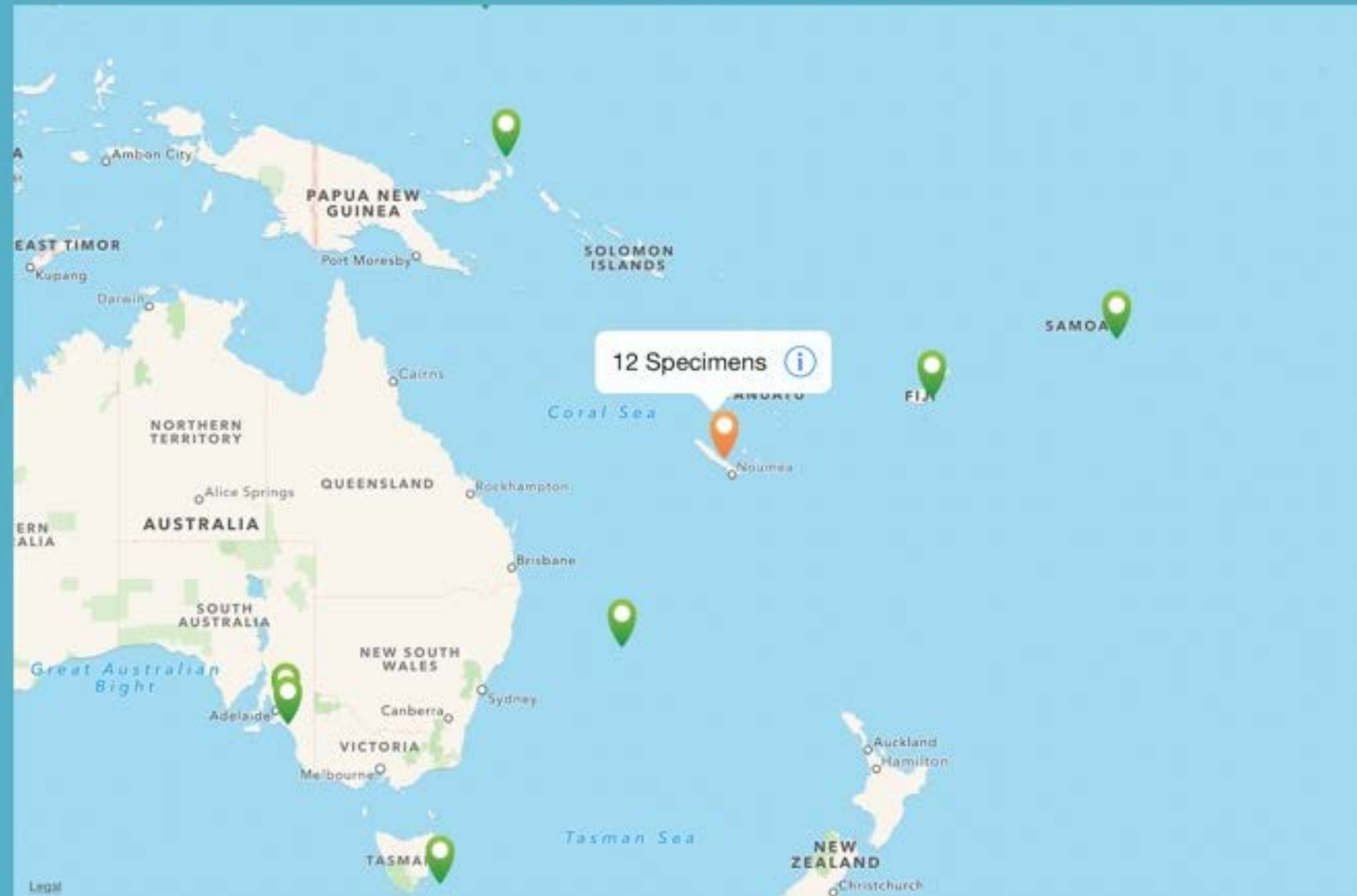
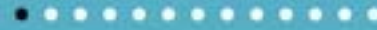


Area Selected Oceania

Number of Species 467

Number of Localities 14

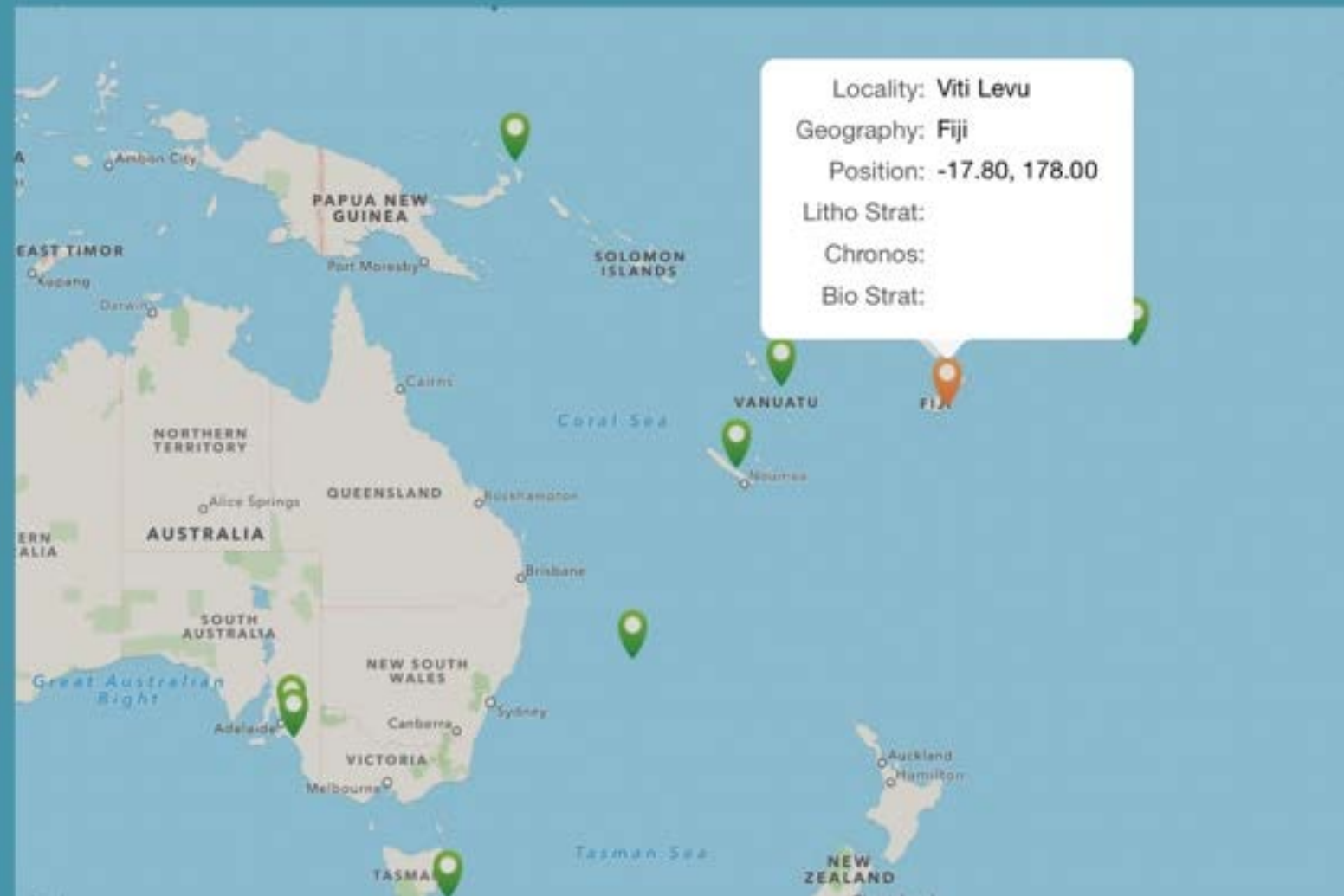
Number of Specimens 1223

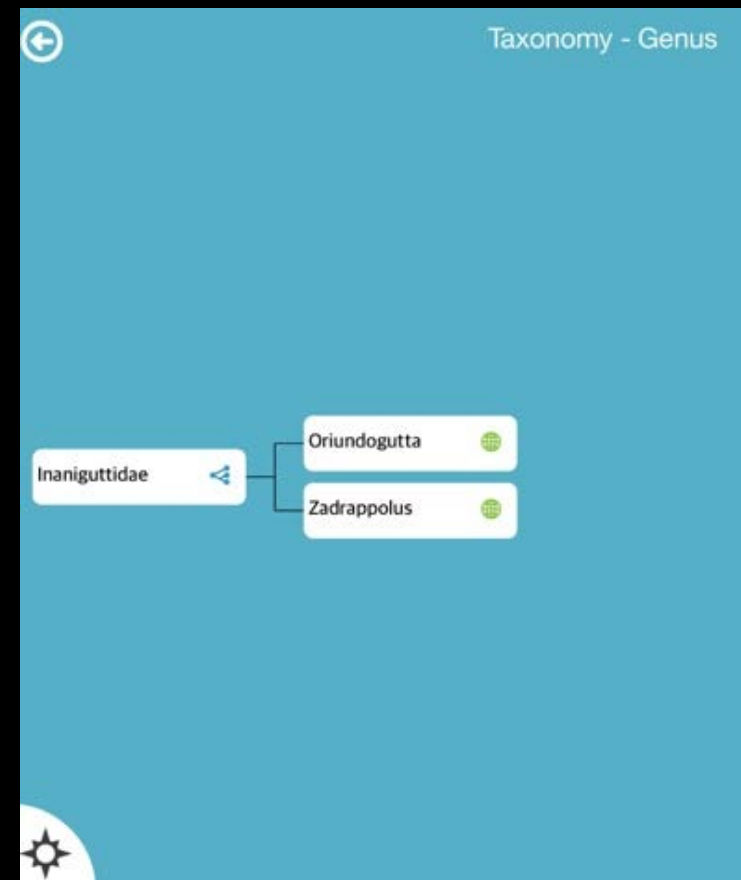
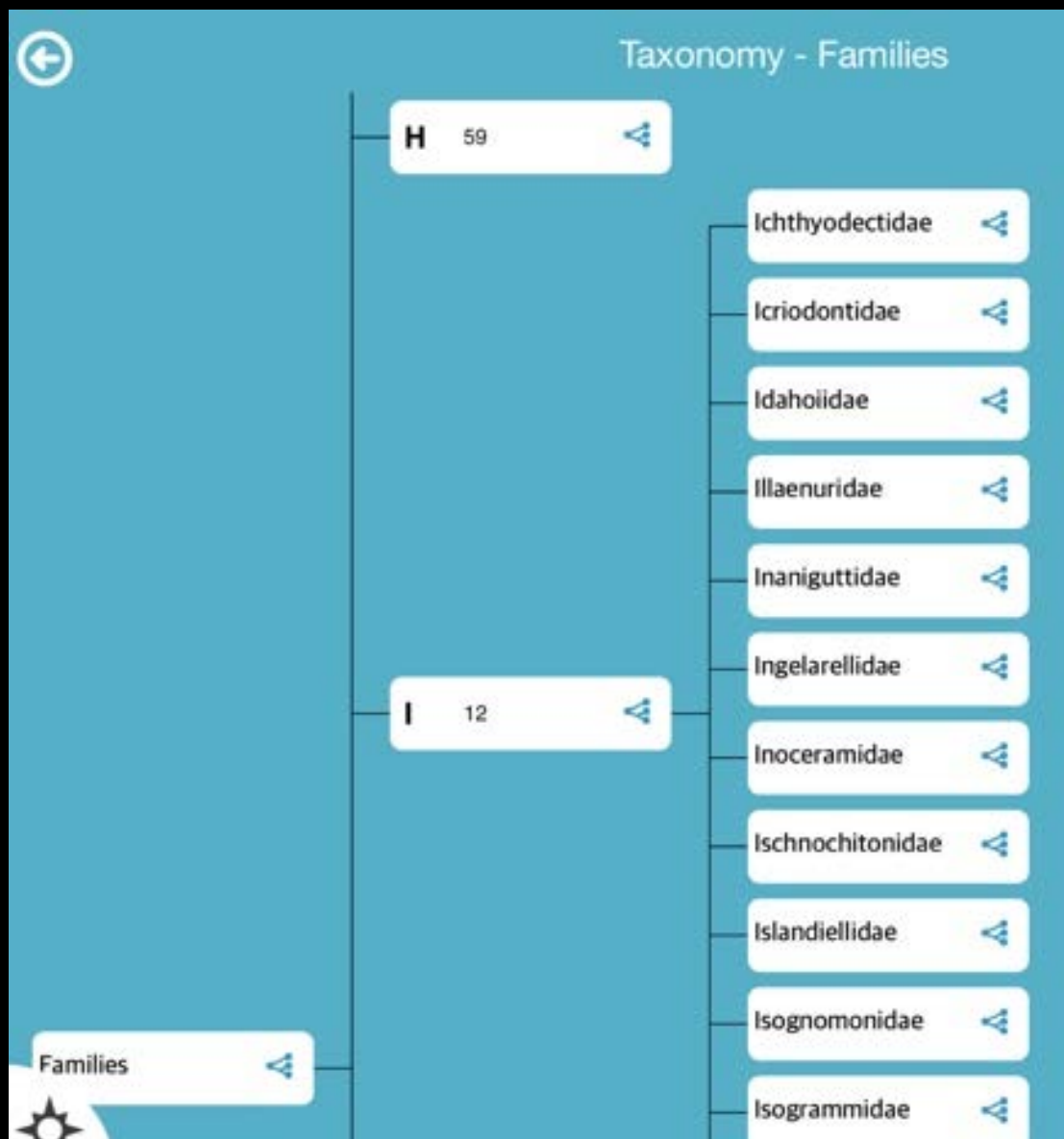
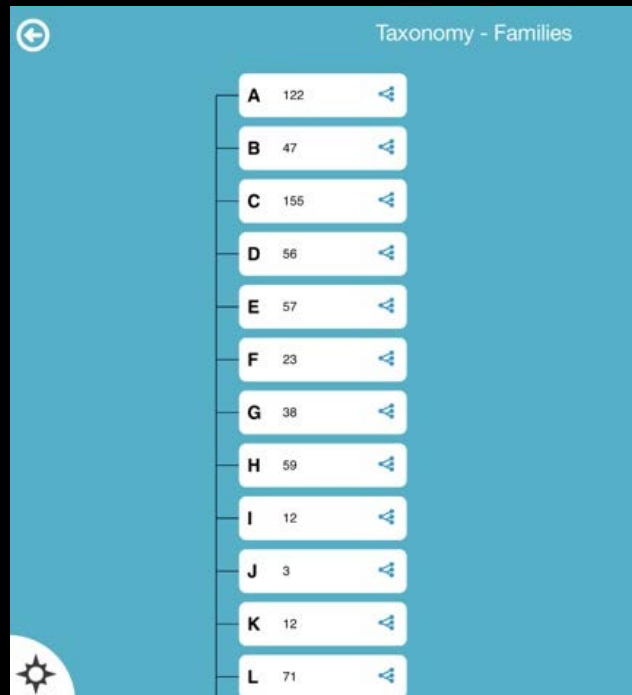




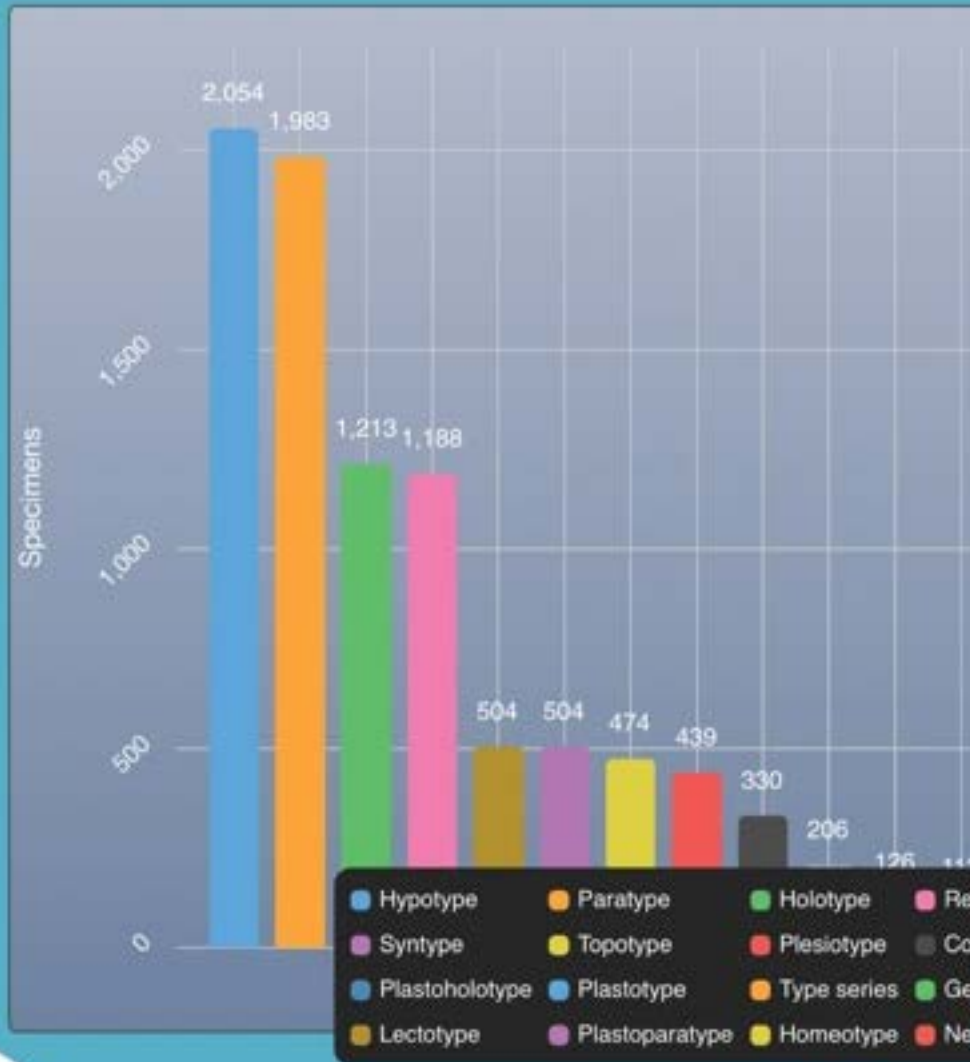
Area Selected: Oceania  
Number of Localities: 14

Number of Species: 467  
Number of Specimens: 1223

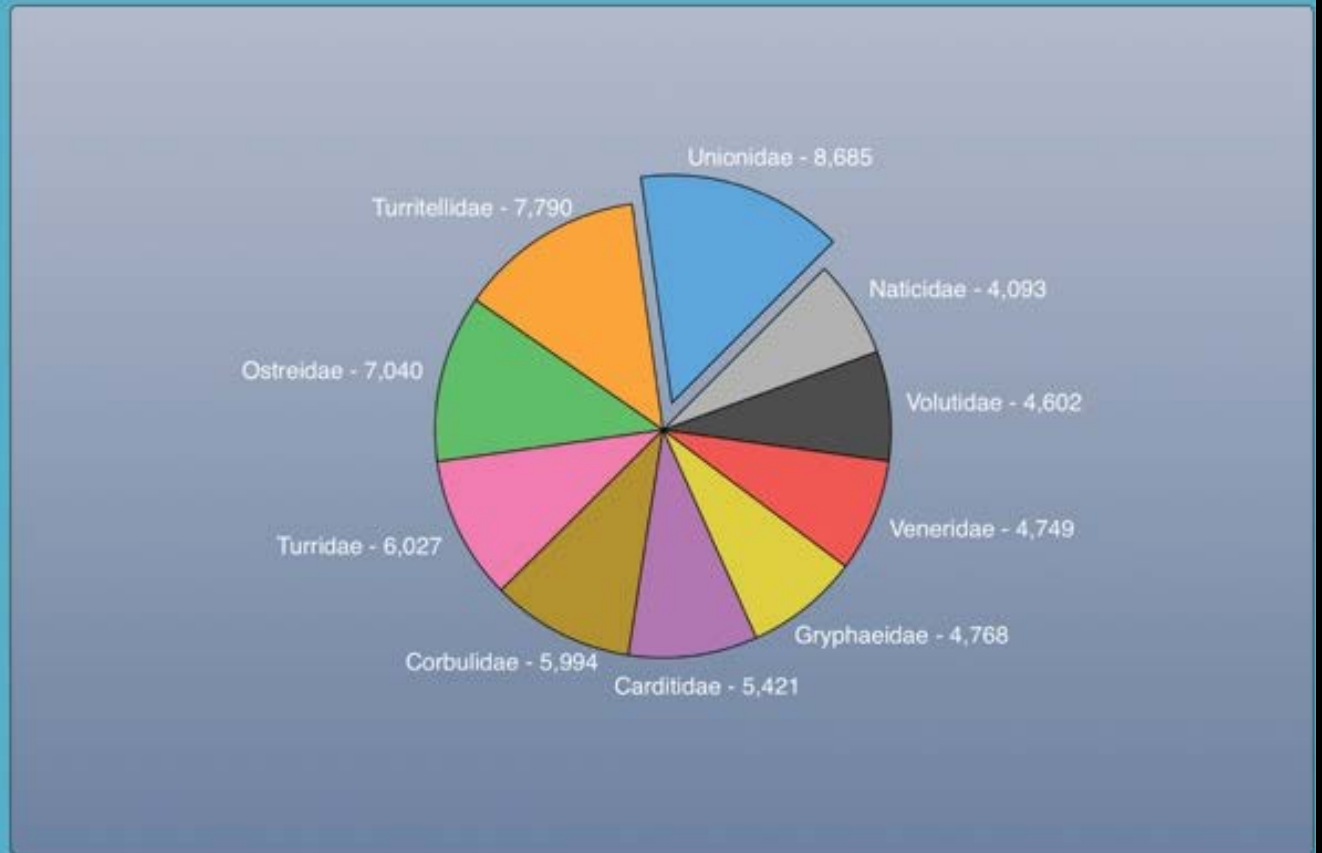




## Number of Type Specimens



## Specimens for Top 10 Represented Families



# New field project

The image is a composite of four panels illustrating a field project workflow:

- Left Panel (GIS Legend):** A legend for 'NPL - Mega Map!' showing various layers. The 'Geology\_1' layer is expanded to show lithology types: Kbu, Kdr, Kgrl, Kgru, Kgt, Kk, Kp, Kw, Qal, and Qt. Other layers include 'Cabinets', 'Boxes', '122 Rooms', '122 floor', '0122-01.dwg Group Layer', 'PRC 33 cages', 'fossbarn\_1', 'Basemap', 'Streets', 'Topographic', 'Boundaries and Place', 'Transportation', and 'Imagery' (World Imagery, Low Resolution 15, High Resolution 6, High Resolution 3).
- Top-Left Panel (Satellite Map):** A satellite view of a landscape with a red arrow pointing to a specific location. A red hatched area is labeled 'PROJECT' in yellow text.
- Center Panel (Identify Window):** A software window titled 'Identify' showing details for a selected feature.
 

Field	Value
OBJECTID	33
Shape	Point ZM
ID	0
DATE_	8/23/2006
LITHOLOGY	Limestone
DUNHAM	Grain-Packstone
INTEGRITY	Multiple_Specimens
IN_SITU	yes
GENERAL_NA	
TAXON	salenia
PHOTO	
PIECES	Many
COLLECTOR	ANN
COMMENTS	
GROUP 1	Bivalve
GROUP 2	Gastropod
GROUP 3	Regular_Echinoid
GROUP 4	Irregular_Echinoid
GROUP 5	Foram
GROUP 6	Plants
GROUP 7	
GROUP 8	
GROUP 9	
GROUP 10	
N_GROUPS	0
FIELD_NUMB	33
Field_Num	Canyon Lake Field #33
- Top-Right Panel (Topographic Map):** A topographic map showing contour lines and a red arrow pointing to a location. A red hatched area is labeled 'PROJECT' in yellow text.
- Right Panel (Fossil Specimens):** A collection of fossil specimens in clear plastic bags, each with a handwritten label. Labels include 'maclurei', '200yds. Crasped.', 'sp.', 'Ford, Rosta', 'to Survey', 'Coral Und', 'White Marl Bluff', 'below Shipp's Ford', 'Singloys', 'Antonio River, Mariana Ck.,', 'San Antonio, Texas', 'Pleurotoma rotifera', 'White Marl Bluff', '1/2 mi. above Shipp's', 'Colorado R.', 'Dust Drop Clay, Texas', 'R 196', 'Leda opalenta', and '620'.

# New data back to archive

- New specimens into archive
- Data for project area expands



**Table of Contents**

- PRC33
  - Moisture
  - Safety
    - First Aid Kits
    - Fire Extinguishers
  - Pest Management
    - Silverfish Sightings
    - Silverfish Traps
  - Hobos Locations
  - Cages Outline
  - Building Outline
  - Drawer4
  - Drawer3
  - Drawer2
  - Drawers
  - Boxes
  - Inventory Status
    - Inventory
      - Complete
      - None
      - Partial
    - Conservation Status
      - Sickness
        - Good
        - Problems
  - fossbarn
  - PRC 33 Cages
    - < all other values >
  - Basemap
    - OpenStreetMap

**Identify**

Identify from: <Top-most layer>

Inventory Status

382

Location: 2,369,306.521 14,053,935.770 Feet

Field	Value
FID	401
Shape	Polygon
CAB_TEXT	382
CAB_NUM	382
CAGE	Southwest
Collection	
Notes	
Cab_Area	9.332092
Cab_Perim	12.665894
Cab_Width	4
Cab_Depth	2.333
Cage_Cab	Southwest 300
Inventory	Partial
Sickness	Good
Height_Cab	4.375
Volume	40.8275
Real_Area	9.332
RH	
Drawer_Hei	0
Cab_Number	0
SpecifyNum	
Specd_Cab	Cabinet 0382

Identified 1 feature



# Data access - use

- Research
- Education
- General public

Building PRC33

- ▶ E Cage
- ▼ NW Cage
  - ▶ Aisle 00 (0, 7)
  - ▶ Aisle 01 Left (
  - ▶ Aisle 01 Right
  - ▶ Aisle 02 Left (
  - ▶ Aisle 02 Right
  - ▶ Aisle 03 Left (
  - ▶ Aisle 03 Right
  - ▶ Aisle 04 Left (
  - ▶ Aisle 04 Right
  - ▶ Aisle 05 Left (
  - ▶ Aisle 05 Right
  - ▼ Aisle 06 Left (

**Edit Node**

Name:  Parent: Building PRC33, NW Cage, Aisle ( [i](#))

**Caution, Labels may not apply at all storage levels. TAGR number is a drawer number**

Label text:  TAGR #:

Remarks:  [+](#)


Definition Item:

▼ Children


Full name:

Attachments

▼ Storage Attachments [+](#) [-](#) [Grid](#) ▼



NW29 dwr 1 label view



NW29 dwr 1 overhead view

- Drawer 0003 (50)
- Drawer 0004 (51)
- Drawer 0005 (34)
- Drawer 0006 (29)

# Online browsing

NW 28: 24 images



NPL 62041

FORMATION \_\_\_\_\_ AGE Cret.  
 LOCALITY 1 1/2 mi. north of Goodland,  
 Indian Territory  
 COL. NO. \_\_\_\_\_ LOC. NO. \_\_\_\_\_  
 THE UNIVERSITY OF TEXAS BUREAU OF ECONOMIC GEOLOGY  
 GEOLOGICAL SURVEY OF TEXAS (DUMBLE SURVEY)  
 RED NO. ( ) WHITE NO. \_\_\_\_\_ GREEN NO. \_\_\_\_\_  
 J.A. Taff- No. 1, NB. I, p. 4  
 April 9, 1892  
 Labeled: Pholadomya  
 "Fredricksburg Div."

Form 2.—1889. *Fredricksburg Div.*  
 No. *1* N B. *I* P. *1* 18*92*  
Pholadomya  
 Locality *1 1/2 mi. n. of Goodland, Ind. Ter.*  
 Examine for *Fred. Div.*  
 Collector: *J. A. Taff*

<http://bit.ly/npl2014>

# Data access -awareness

- Apps
- Facebook
- Twitter
- Tumblr



The image shows a screenshot of a Twitter profile for Jerele D. Neeld (@JereleNeeld). The profile picture is a man with glasses and a white shirt. The background of the profile header is a satellite image of Earth. The profile statistics are: TWEETS 342, FOLLOWING 1,301, and FOLLOWERS 192. The bio reads: "Technical Content Services & Digital Publishing Leader with Global Experience - working @Dell. The opinions I share here are my own. I don't speak for Dell." Below the bio is a link to "jereleneeld.com" and a note "Joined August 2009". A blue button at the bottom says "Tweet to Jerele D. Neeld". To the right, there is a featured tweet from "Adopt-A-Fossil" (@adoptAFOSSIL) with a profile picture of a fossil and a bio: "Curator and collection manager of Non-vertebrate fossils at the Jackson School of Geosciences,". An "Edit profile" button is visible next to the featured tweet.

TWEETS 342 FOLLOWING 1,301 FOLLOWERS 192

**Jerele D. Neeld**  
@JereleNeeld

Technical Content Services & Digital Publishing Leader with Global Experience - working @Dell. The opinions I share here are my own. I don't speak for Dell.

[jereleneeld.com](http://jereleneeld.com)  
Joined August 2009

[Tweet to Jerele D. Neeld](#)

**Adopt-A-Fossil**  
@adoptAFOSSIL

Curator and collection manager of Non-vertebrate fossils at the Jackson School of Geosciences,

[Edit profile](#)

# Data Access



fossilroulette



Name: *Adkinsella edwardsensis* Location: Texas, USA, Edwards Formation Age: 104-108 million years ago, Cretaceous Period

## GeoTrek

[View More by This Developer](#)

By Ann Molineux

Open iTunes to buy and download apps.



[View in iTunes](#)

This app is designed for both iPhone and iPad

Free

Category: Education  
Updated: May 29, 2013  
Version: 1.1  
Size: 5.9 MB  
Language: English  
Seller: Ann Molineux  
© 2013 TNSC-NPL  
Rated 4+

Compatibility: Requires iOS 6.1 or later. Compatible with iPhone, iPad, and iPod touch. This app is optimized for iPhone 5.

### Customer Ratings

We have not received enough ratings to display an average for the current version of this application.

### Description

This trip follows part of the route taken by E.T. Dumble, R.A.F. Penrose, Jr. (later president of and great benefactor to the Geological Society of America), and R.T. Hill (first chairman of the Department of Geology at the University of Texas at Austin) as they surveyed the geology from the vantage point of the Colorado River between Austin and La

[GeoTrek Support](#)

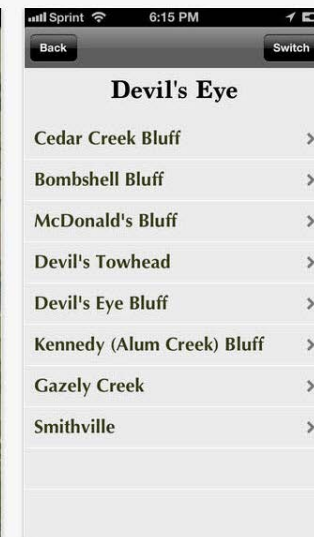
[...More](#)

### What's New in Version 1.1

Extension of application for iPad

### Screenshots

iPhone | iPad



# Data access - users

## Connect with the 21<sup>st</sup> century

4 pictures Last Updated 2014

PLESIOTYPE  
Locality: Junction of Road and Gilland Canyons, Brewster County, Texas

Collected by: King, 1931

Based on your interest in: The Brewster Formation and Hustedia

Ann's Rating:  
★★★★★  
Not Interested + My List

Because you liked *H. meekana*

The screenshot displays a digital museum interface. At the top left, there is a video player showing a fossil specimen. To its right, a red banner indicates '4 pictures' and 'Last Updated 2014'. Below this, a white box contains the specimen's name 'PLESIOTYPE', its locality 'Junction of Road and Gilland Canyons, Brewster County, Texas', and the collector 'King, 1931'. Further down, it notes 'Based on your interest in: The Brewster Formation and Hustedia' and shows a five-star rating 'Ann's Rating: ★★★★★' with a 'Not Interested' button and a '+ My List' button. Below the main information, a section titled 'Because you liked *H. meekana*' features a grid of five related fossil images, each with a scale bar and a small logo.

# Acknowledgements

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- Many of the protocols are based upon work supported by the National Science Foundation under grants:
  - DBI-1057396: *Open Access: Conservation, Digitization and interoperability of the Historic Non-vertebrate Collections of the Texas Natural Science Center.*
  - EF-1305070: *Digitization PEN: Targeted digitization to expand and enhance the Paleoniches TCN.*
  - Any opinions, findings, and conclusions or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of the National Science Foundation.

