



U.S. Department of the Interior
Bureau of Land Management

Your Public Lands

Greg Liggett BLM Paleontologist

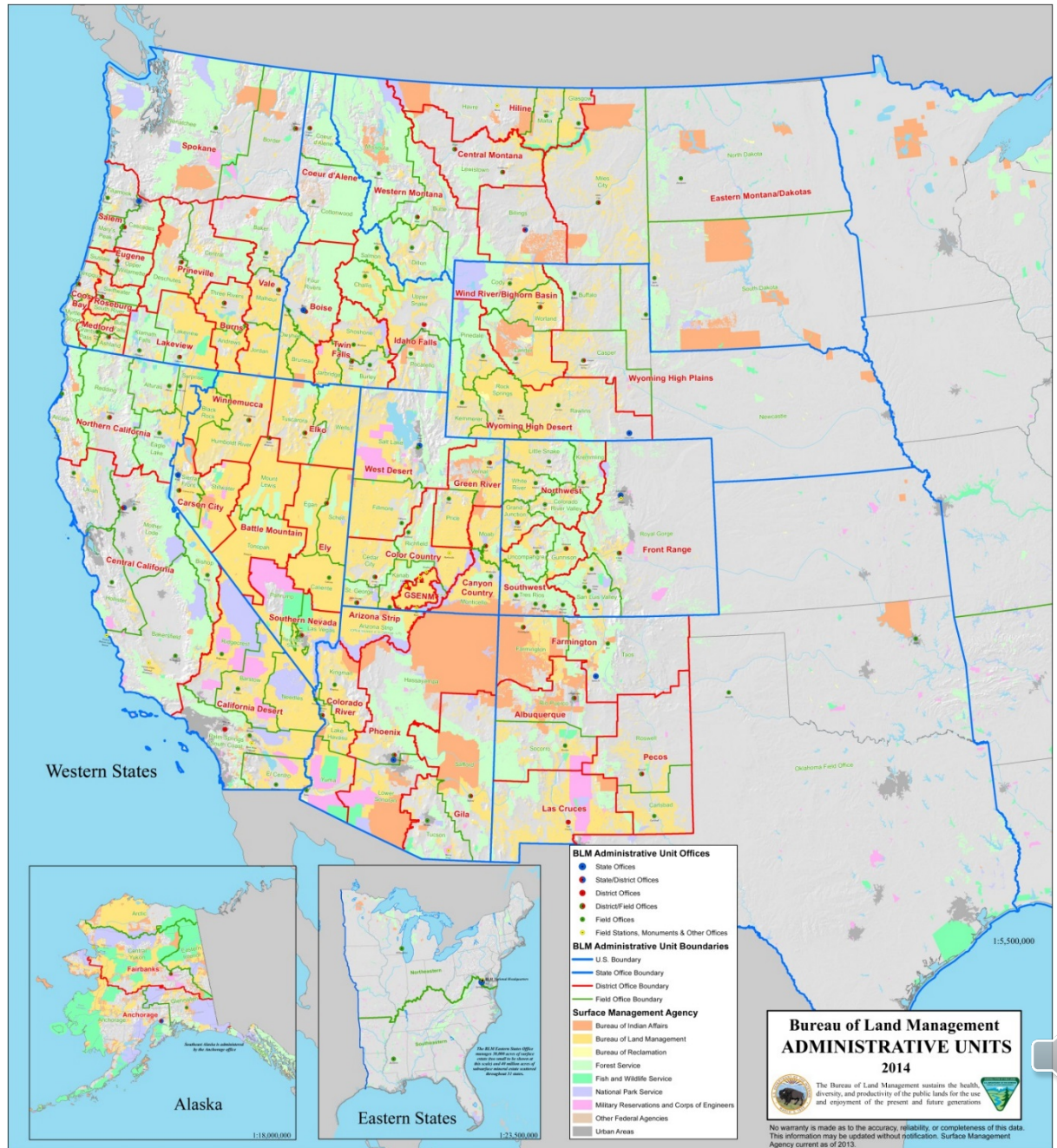






270 Million Surface
Acres

700 Million
Subsurface Acres





BLM Contacts

Contact	States
Greg Liggett gliggett@blm.gov	Montana, North Dakota, South Dakota
Brent Breithaupt bbreitha@blm.gov	Alaska, Wyoming, Nebraska, and Idaho
Greg McDonald hmcdonald@blm.gov	Colorado, Utah, Nevada, Oregon, and Washington
Phil Gensler pgensler@blm.gov	New Mexico, Arizona, California





RAPTOR

- Recreation And Permit Tracking Online Reporting





RAPTOR

- Is in development right now, and is planned to be the system for BLM authorization application, authorization processing, and authorization reporting
- Will be used by BLM nation-wide
- Will facilitate the creation of a national data set of paleontology localities in GIS form





RAPTOR

- Researchers will go online to apply for permits
- Researchers will submit reports online
- Researchers will put locality data into a digital format to submit to RAPTOR





RAPTOR

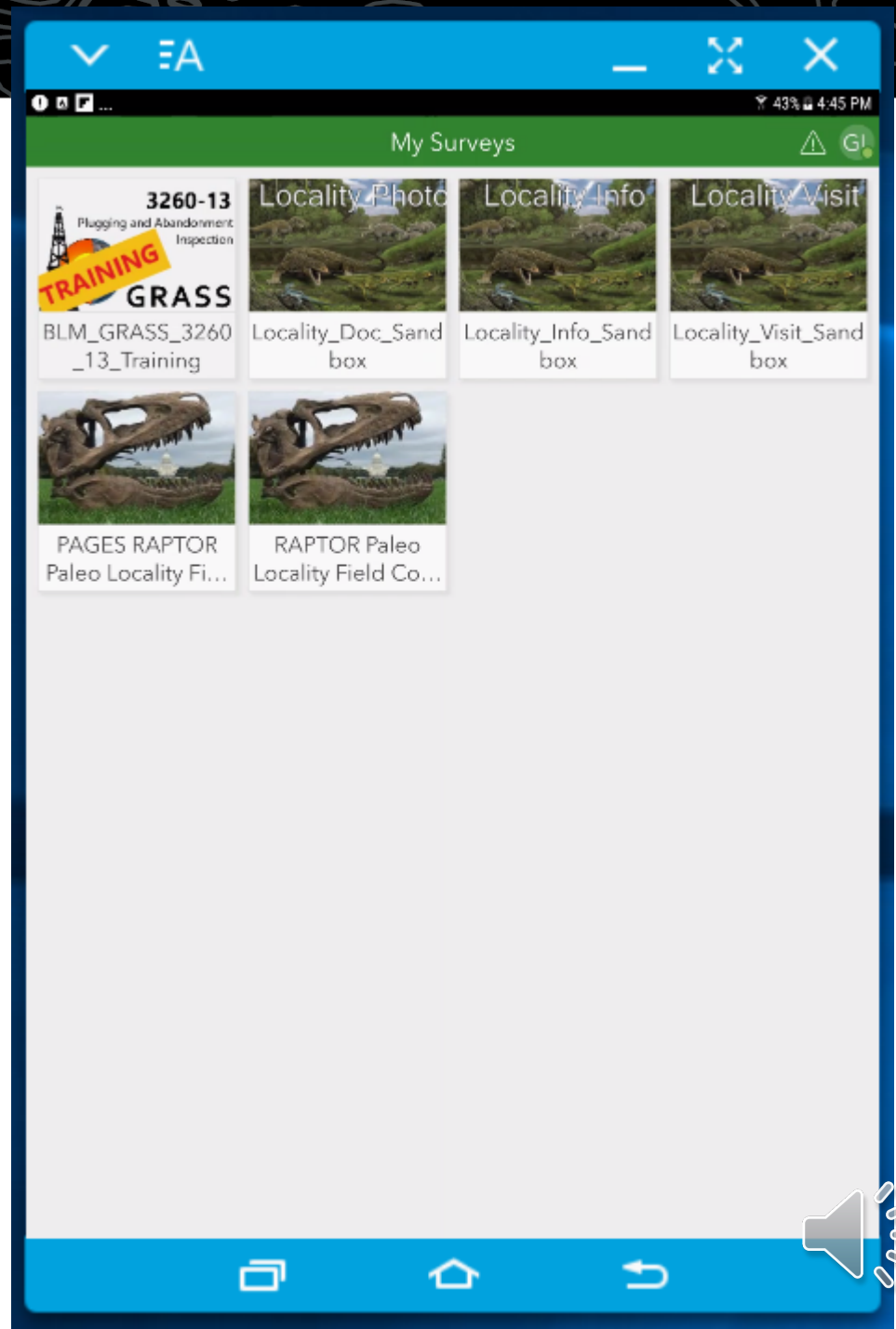
- We will provide some tools to assist in getting the data into the proper format
- Right now we anticipate having
 - A Survey123 project
 - An Access database
 - An excel spreadsheet format





RAPTOR

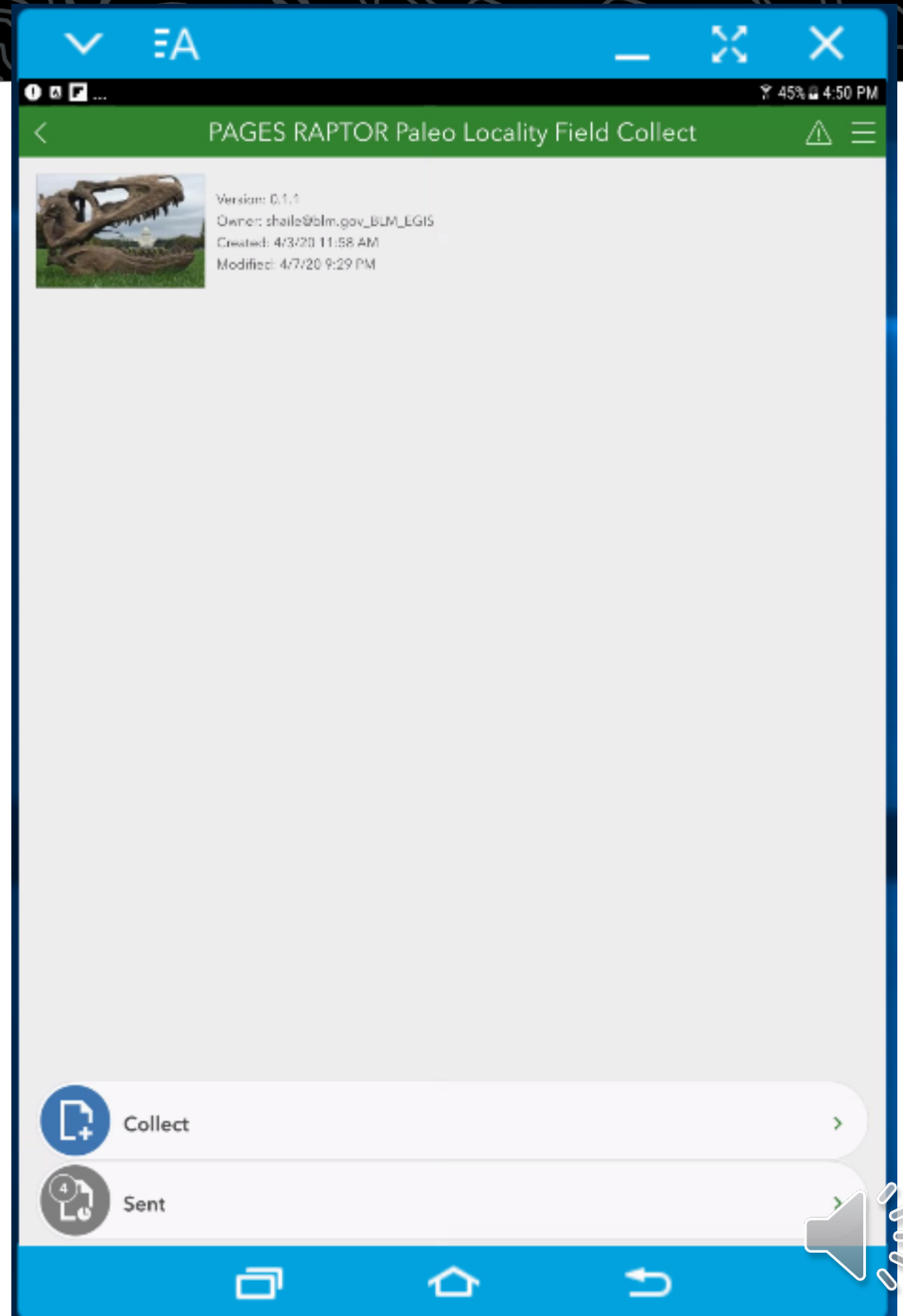
- Survey123 requires that you have access to ArcGIS Online (AGOL)
- BLM would provide an empty fGDB with all the fields and domain values included
- Survey123 file can be downloaded to a mobile device to collect data offline in the field





RAPTOR

- You open the survey, then select “Collect”





RAPTOR

- If your device is GPS enabled, it will snap to your location.
- Good for collecting the data right in the field
- Required fields are marked with red star and explanation text for the fields

The screenshot shows the 'BLM Paleo Locality Field Collect' form on a mobile device. The form includes the following fields and sections:

- General Locality Info:** A text block explaining that GPS location is automatically captured if enabled, or a map can be used for manual entry.
- Locality XY Location:** A dropdown menu (redacted) and a map showing a location on Rimrock Rd.
- Locality Name:** A text input field with the prompt 'Your name for this locality.'
- Date of Discovery:** A date picker set to 'Tuesday, April 14, 2020'.
- Your Locality Field Number:** A text input field.
- Other Locality Number:** A text input field with the prompt 'Any number known to be associated with the locality, ex: museum locality number.'
- Locality Found By:** A text input field.
- Locality Recorded By:** A dropdown menu with the value 'gliggett_BLM'.
- Evidence of Theft?:** A text input field.

The bottom of the screen shows a navigation bar with icons for home, back, and a '1 of 4' indicator.



RAPTOR

- Many fields have domain values to select from, like formation names and geologic time names. Users can begin typing to narrow the list then select with the radio button.

The screenshot shows the 'BLM Paleo Locality Field Collect' form on a mobile device. The form is titled 'Geologic Info' and contains several fields:

- Geologic Unit or Formation ***: A search field with the text 'mt - hel' and a dropdown list showing 'MT - Hell Creek' with a radio button.
- Earliest Geologic Time**: A search field with the text 'mae' and a dropdown list showing 'Maastrichtian, Upper Cretaceous; Cretaceous; Mesozoic' with a radio button.
- Latest Geologic Time**: A dropdown menu.
- Stratigraphic Position Description**: A text input field with the instruction 'Indicate relation to marker bed or sub-unit not listed in the Geologic Formation.'
- Site Lithology ***: A dropdown menu.
- Depositional Environment**: A dropdown menu.

The bottom of the screen shows a navigation bar with a back arrow, a home icon, and a refresh icon. A speaker icon is visible in the bottom right corner.



RAPTOR

- All locality data is entered over four pages of questions logically organized

BLM Paleo Locality Field Collect

Fossil Types Observed

Plant Fossils? * YES NO

Plant Fossil Traces? * YES NO

Vertebrate Fossils? * YES NO

Vertebrate Microfossils? * YES NO

Vertebrate Fossil Traces? * YES NO

Invertebrate Fossils? * YES NO

Invertebrate Fossil Traces? * YES NO

Nonvertebrate Micro Fossils? * YES NO

3 of 4





RAPTOR

- User enters details of the fossil either collected or observed at the site, include taxonomic details
- Higher level taxa are included for field IDs
- Multiple taxa can be added to the locality record
- Checking the checkmark finishes the form. If you are offline it will save in device until it can be uploaded

The screenshot shows the 'Specimen Data Entry' screen in the RAPTOR mobile application. The interface is designed for field data collection and includes the following elements:

- Header:** 'BLM Paleo Locality Field Collect' with navigation icons.
- Section Header:** 'Specimen Data Entry' with a brief instruction: 'Enter taxon of the observed or collected specimen below. Included here is an extensive list of taxon names, but obviously not comprehensive. You can start typing the taxon you are looking for to filter the display of available choices. Many higher level taxa are also included, so if you are uncertain you can enter the Family or higher taxa. In order to limit the pick list of values, there are no species names included here, the lowest level is Genus.'
- Form Fields:**
 - Taxon Name:** A dropdown menu with 'Quetzalcoatlus' selected.
 - Taxon Identification Qualifier:** A text input field containing 'sp.'.
 - Action Performed in the Field:** Radio buttons for 'Observed' and 'Collected', with 'Collected' selected.
 - Person Identifying or Collecting:** A text input field containing 'gliggett_BLM'.
 - Specimen in Situ?:** A range slider between 'YES' and 'NO', currently positioned towards 'YES'.
 - Specimen Comments:** A text input field containing 'Most amazing specimen ever!'.
- Footer:** A list of 1 specimen, with a trash icon, '1 of 1', and a plus sign to add more.



RAPTOR

- Using this tool users will have recorded all their locality data required for reporting when they leave the field!
- We are excited about this system and look forward to its launch

