The Ogallala Data Directory: A tool for Ogallala Aquifer Region researchers and decision-makers

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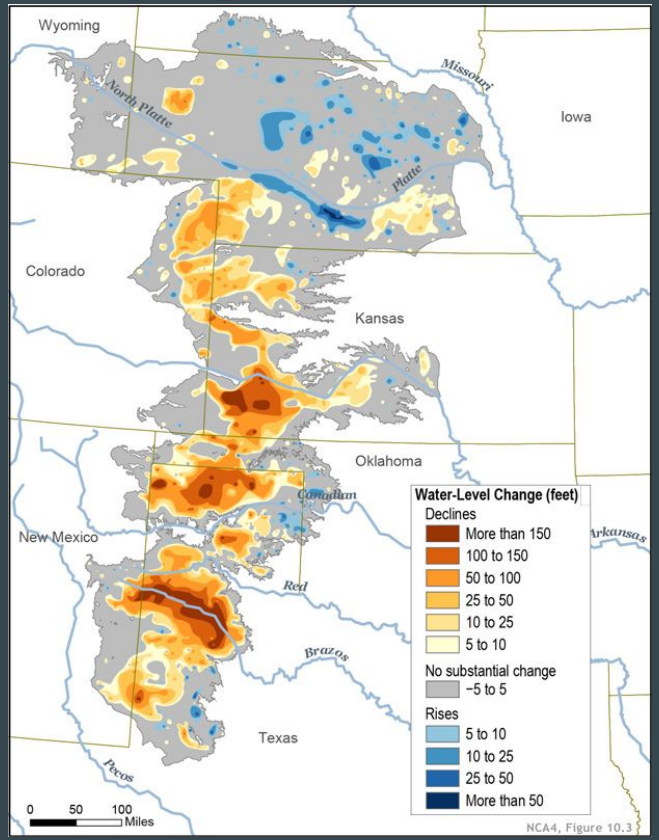
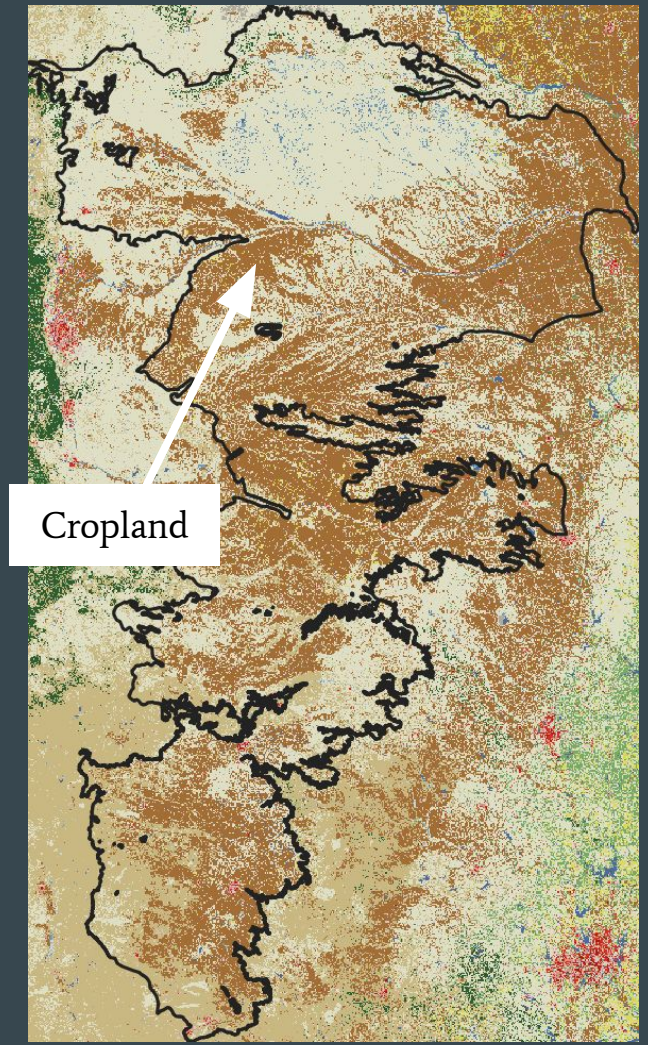
Background: The Ogallala Aquifer

- The original inhabitants and stewards of the region are the Sioux, Cheyenne, Arapaho, Ponca, Pawnee, and Kiowa tribes
- Water in the aquifer was originally deposited between 2-6 million years ago
- Aquifer recharge has always occurred faster in the north than in the south
- Northern reaches benefit from higher precipitation/lower evaporation



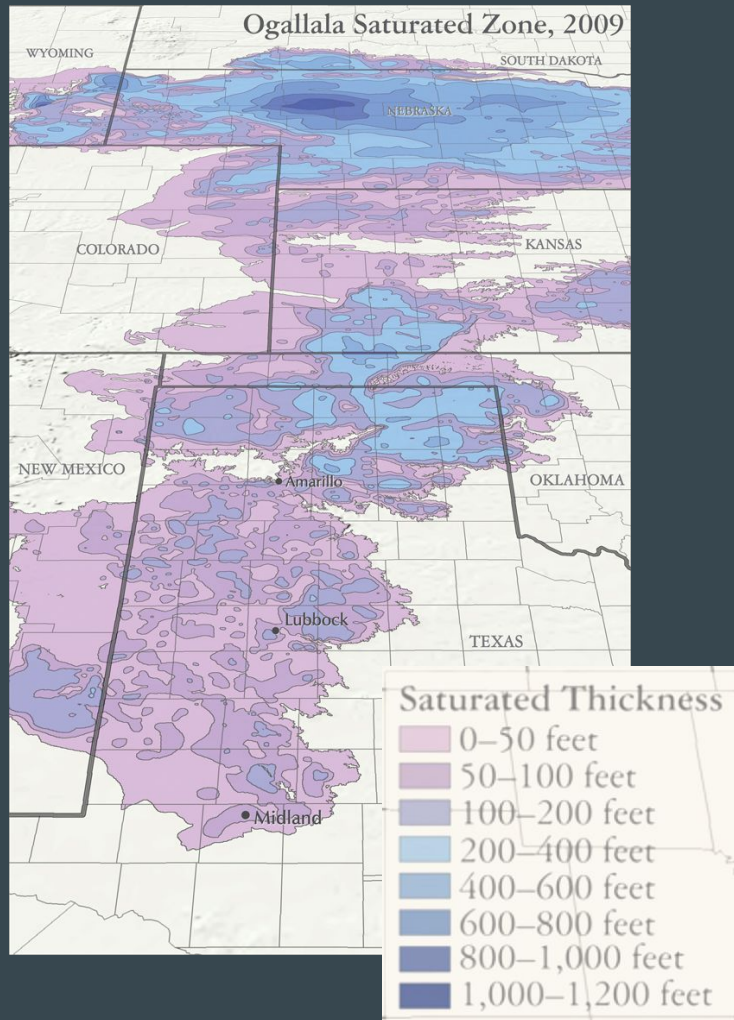
Background: Ogallala Aquifer Region

- Large-scale water extraction began in late 1940s
- In addition to agriculture, the Ogallala Aquifer provides water to over 2.3 million people
- Row crops (especially irrigated) have replaced grassland as the dominant land cover



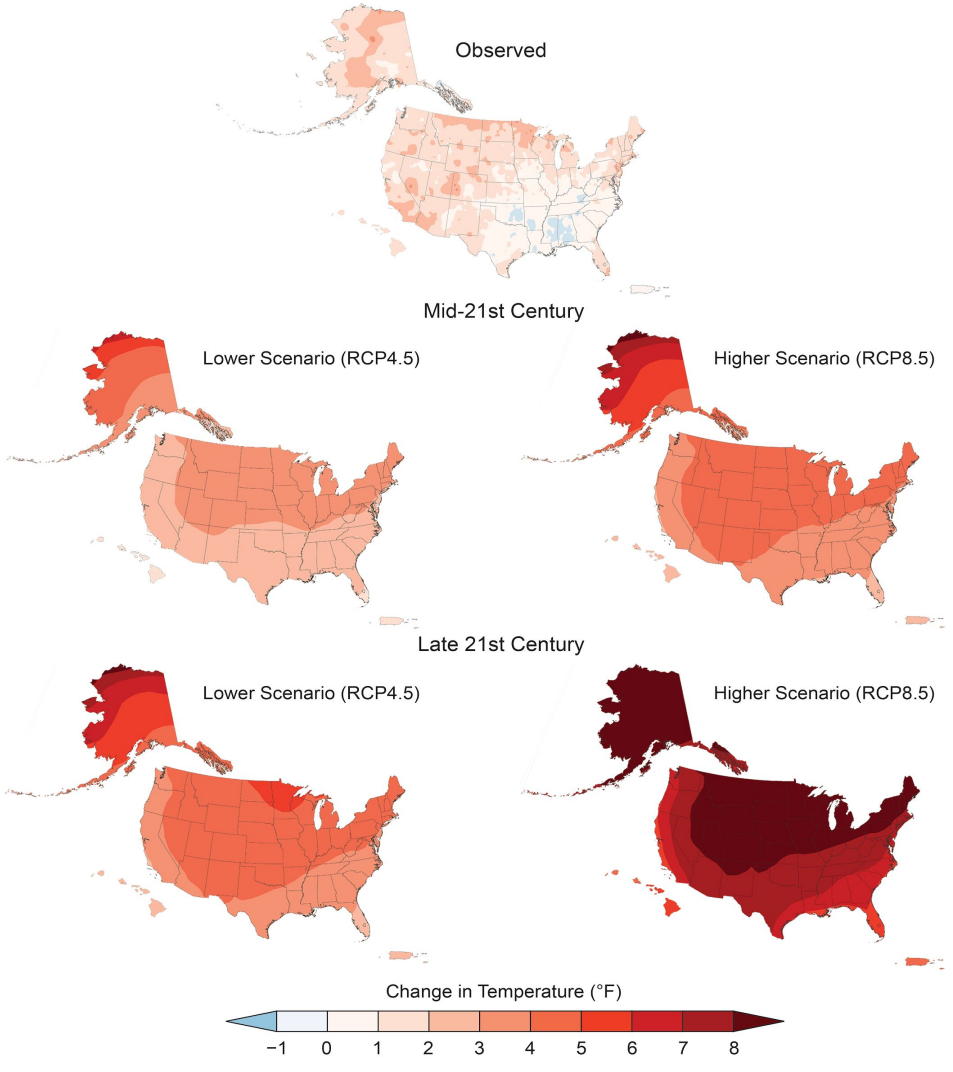
Background: The Ogallala Aquifer

- The rate of aquifer depletion exceeds the rate of recharge in most areas (6000y to recharge once empty)
- Withdrawing water is becoming unfeasible in heavily depleted areas
- Aquifer regulations differ across jurisdictional boundaries
- An abundance of data are available to assist in management decisions and understanding of the aquifer



Background: The Ogallala Aquifer and Climate Change

- Temperatures expected to increase
- Summers expected to become **hotter** and **drier**
- Evaporation expected to increase
- Seasonality of precipitation and storm intensity expected to change



Ogallala Aquifer region water management challenges

1) Depletion rate exceeds recharge rate and is spatially heterogeneous; water demands and water loss are generally expected to increase

2) Data needed to support long term longevity of ecosystems and economic systems can be difficult to efficiently locate and access

3) Depth and breadth of available data are unclear due to disparate nature of datasets

4) Disparate datasets also make it difficult to identify gaps in current knowledge

Objective

1. Increase discoverability and accessibility of Ogallala region datasets, including those from tribal, federal, non-profit, and private sources to those working in and around the region.

2. Facilitate the exchange of datasets and ideas by uniting dataset information in a single space.

Approach

- Worked with website developer and coordinator for the USDA Ogallala Water Coordinated Agricultural Project to build the ODD on pre-existing CAP Database

- Located datasets on state, university, and NGO websites (primarily) and hand-entered metadata information

- Also searched data.gov to add metadata via data.gov's API

- Developed a visualization using state water well records to add as an overlay to the mapping function

Ogallala Data Directory: Current Features

Adding and Managing Metadata Records:

Anyone with an account can add metadata records and manage records they've already added

Record Search:

Allows users to run a search of the data using text strings

Map:

Shows an area of interest outline for applicable datasets, and centroid of dataset for datasets with a centroid available (or capable of being calculated)

http://ogallalawater.colostate.edu/OWCAP/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Welcome to the Ogallala Data Directory
Add MetaData
Use this Ogallala Data Directory (ODD) to discover natural resource and agriculture-related data for the Ogallala aquifer region. ODD exists to serve as a go-to resource for land managers, researchers, and others working in or studying the Ogallala aquifer region. Browse metadata records or search for specific topics, regions, or data authors using the directory's search capability.
Help keep the Ogallala Data Directory up to date!
ogallalawater.colostate.edu/OWCAP/Datasets

Datasets

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+ Add Dataset

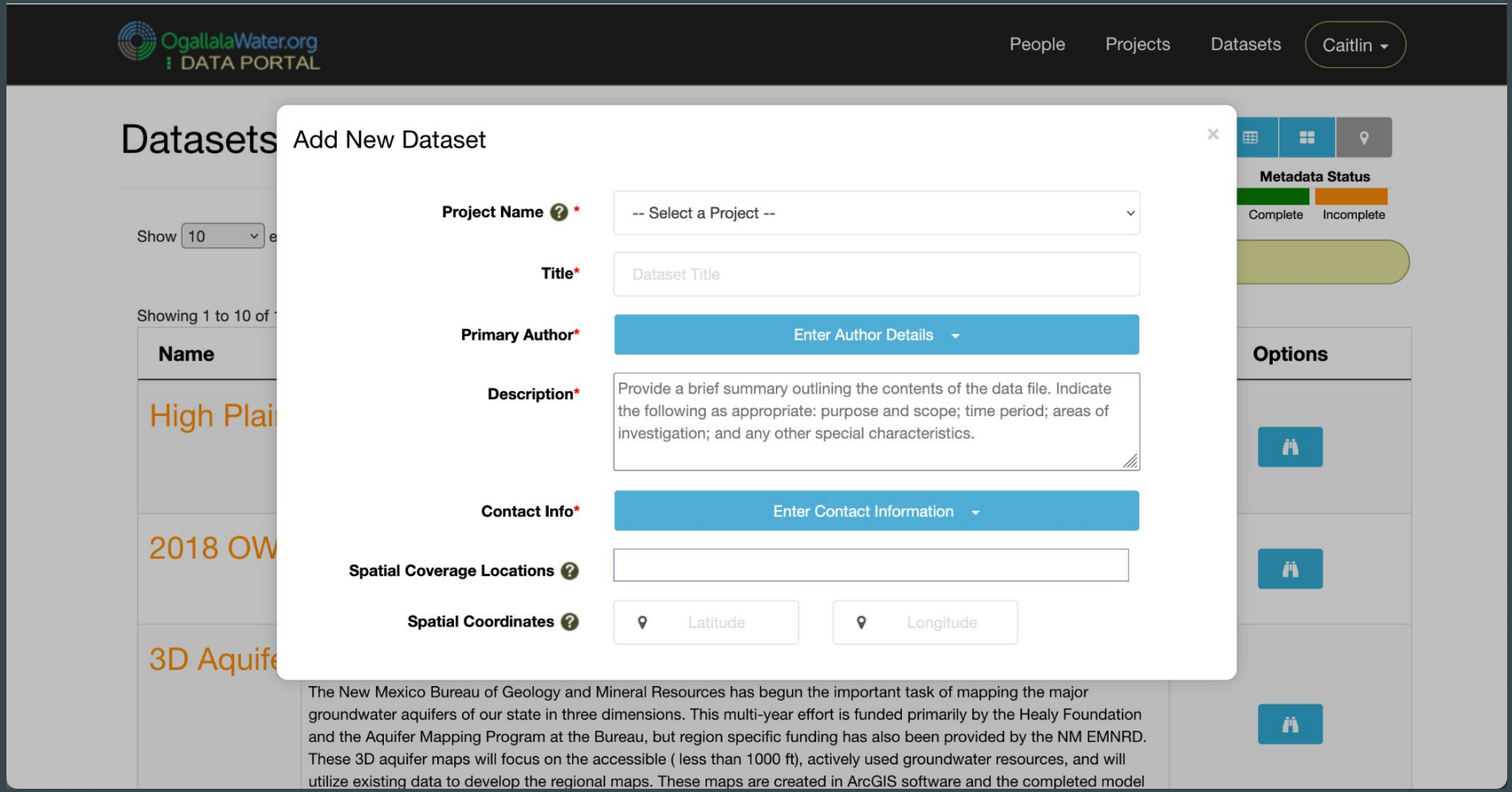
Metadata Status
Complete Incomplete

Show 10 entries

Previous 1 2 3 4 5 ... 19 Next

Showing 1 to 10 of 189 entries

Name	Options
High Plains Aquifer System Groundwater Availability Model (GAM) In July 2012, the Texas Water Development Board (TWDB) contracted with INTERA, Inc. to develop a groundwater availability model (GAM) for the High Plains Aquifer System (Ogallala Aquifer, Dockum Aquifer, Edwards-Trinity (High Plains) Aquifer, and Rita Blanca Aquifer). The project was completed and delivered in 2015.	
2018 OWCAP Annual Meeting Team Photo This team photo was taken at the 2018 OWCAP Annual Meeting in Santa Fe, NM. .pptx 13,61 'MB'	
3D Aquifer Maps for New Mexico The New Mexico Bureau of Geology and Mineral Resources has begun the important task of mapping the major groundwater aquifers of our state in three dimensions. This multi-year effort is funded primarily by the Healy Foundation and the Aquifer Mapping Program at the Bureau, but region specific funding has also been provided by the NM EMNRD. These 3D aquifer maps will focus on the accessible (less than 1000 ft), actively used groundwater resources, and will utilize existing data to develop the regional maps. These maps are created in ArcGIS software and the completed model	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Datasets
Add New Dataset
Project Name *
-- Select a Project --
Title*
Dataset Title
Primary Author*
Enter Author Details
Description*
Provide a brief summary outlining the contents of the data file. Indicate the following as appropriate: purpose and scope; time period; areas of investigation; and any other special characteristics.
Contact Info*
Enter Contact Information
Spatial Coverage Locations
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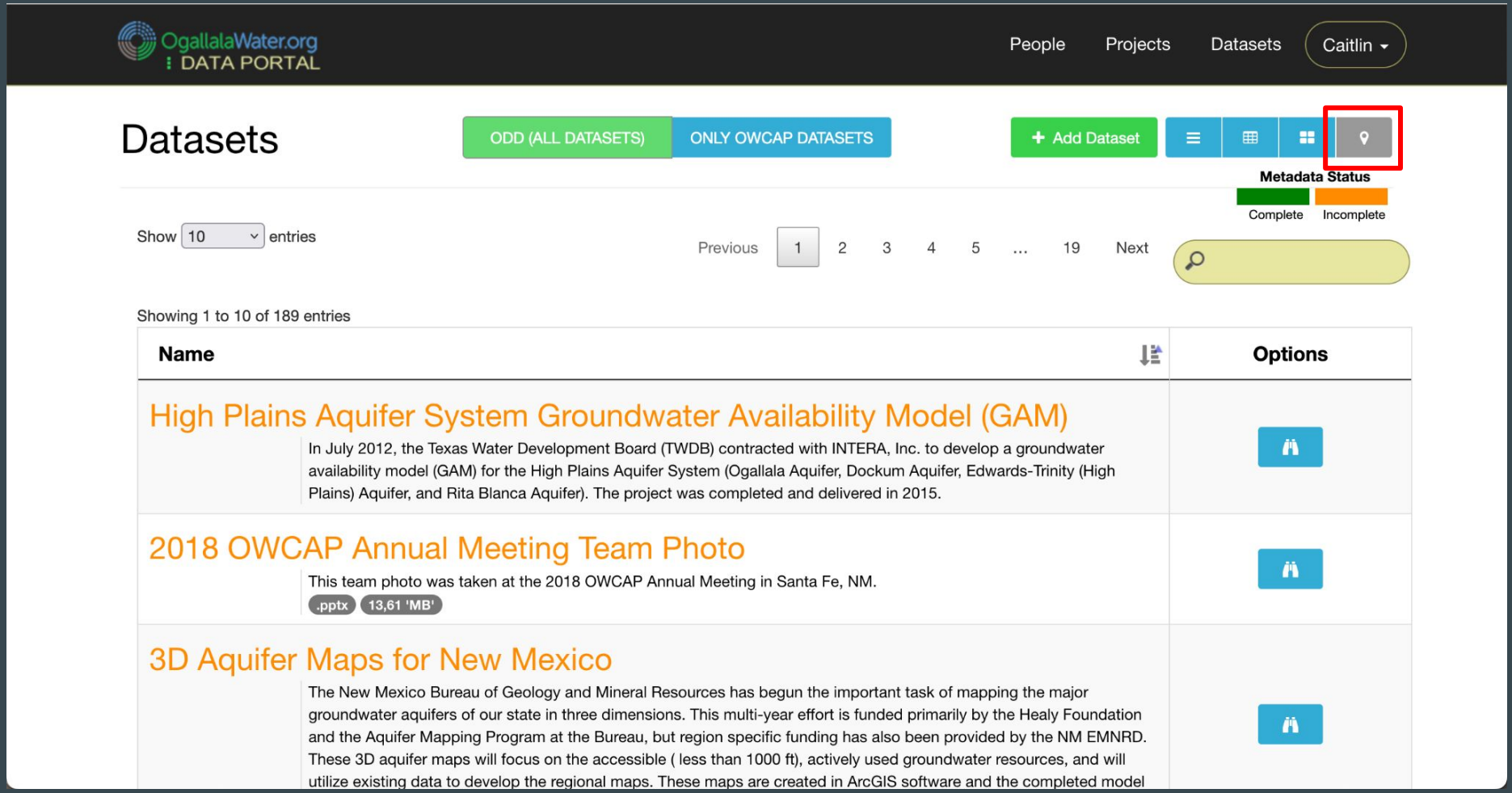
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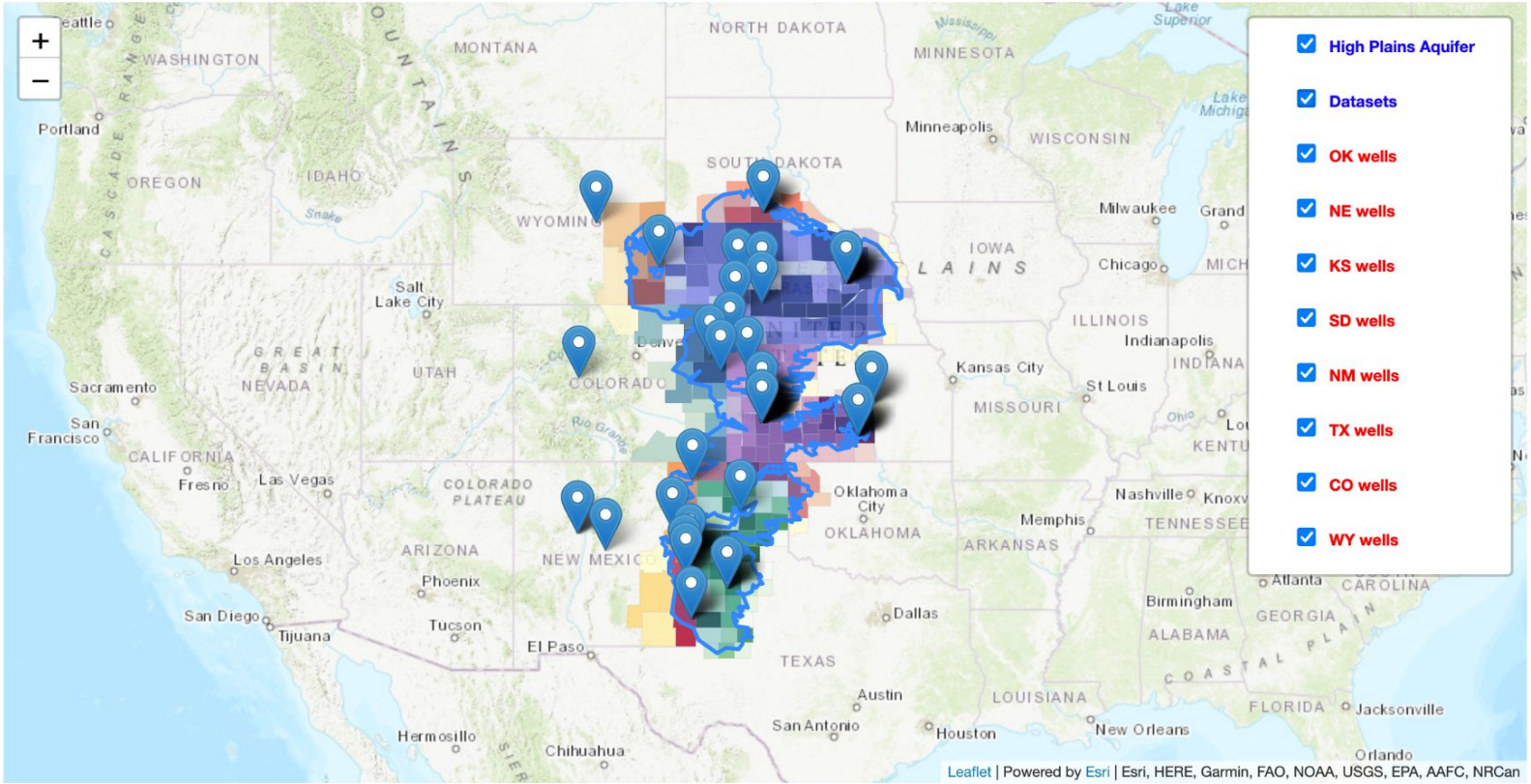


Challenges

- Finding and accessing records; data are collected for different purposes across different scales, and stored and published in innumerable formats and platforms

- Incomplete metadata, lack of metadata standardization

- Various data-related challenges in producing the ODD Website's map layers.

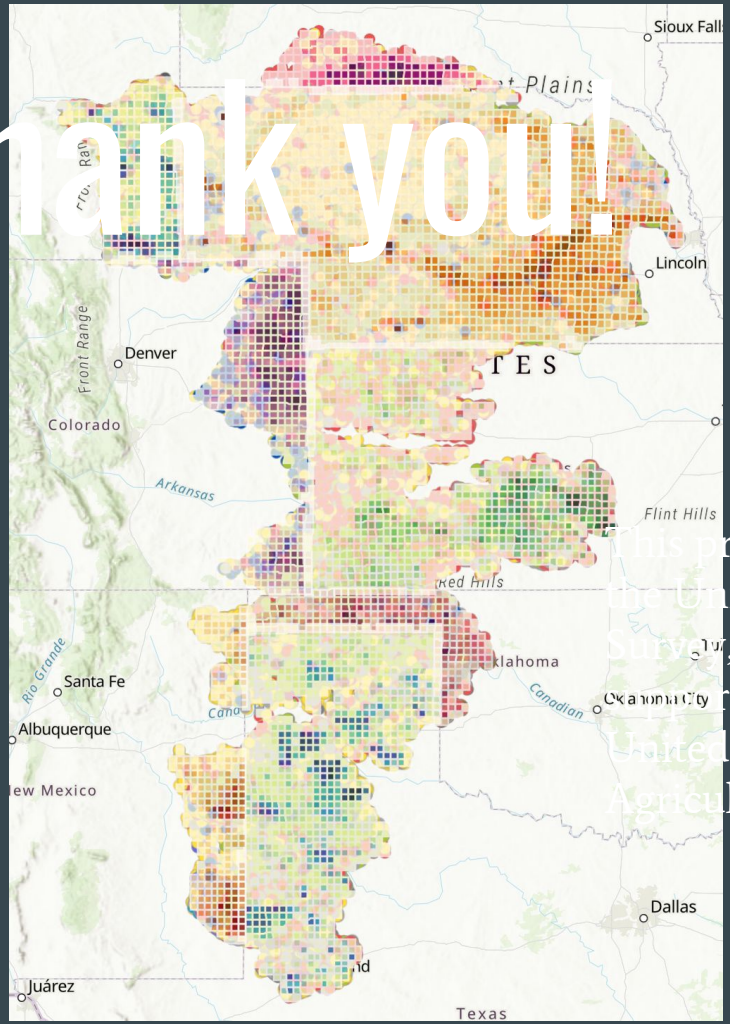
The Future of the Ogallala Data Directory

- Will be hosted on CSU's servers in perpetuity
- User submissions always open; quality checking both automated and by hand
- Continued outreach to potential users via print and presentations
- Potential to build on data directory with other projects

Thank you!

We would like to thank the members of the advisory committee, whose assistance was invaluable to creating a useful and usable website, as well as to finding datasets.

We would also like to thank those who have contributed datasets or suggested locations for finding them.



This project was funded by the United States Geological Survey, with additional support provided by the United States Department of Agriculture.