THE NGMDB PROJECT: TOWARD A NATIONAL GEOLOGIC MAP DATABASE

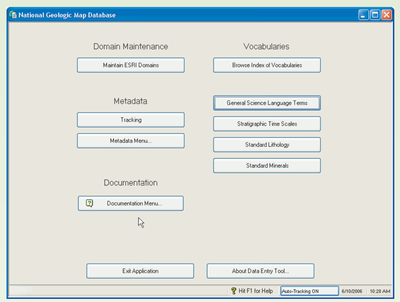
USGS science for a changing world

AASG Association of American State Geologists

THE NGMDB DATA-ENTRY TOOL

Today, each geologic map is a discrete and somewhat unique product. The NGMDB's reference standards will promote integration by making it easier to correlate local terminologies and data structures.

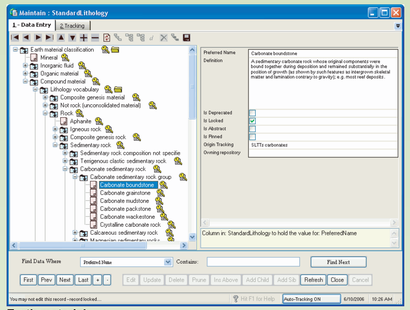
To help integrate databases from many agencies, we are developing a Data-entry Tool based on the NGMDB Reference Standards (e.g., controlled vocabularies, data model). This tool will output to a standard ESRI Geodatabase, promoting a common format for our users.



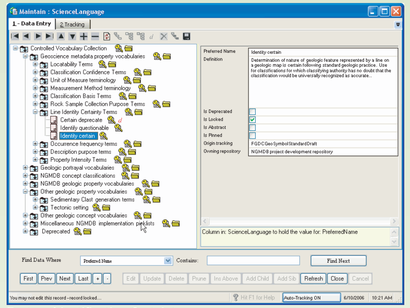
The architecture beneath our Data-entry Tool is based quite strictly on the NADM-C1 data model, and has been designed to support the needs of an enterprise system such as the NGMDB. As currently configured it may, therefore, be too complex for the typical project.

Based in part on comments recently received, we will soon be offering subsets of the Data-entry Tool, for functions such as building a standard science vocabulary for your mapping project. We also are designing this capability to operate within ArcGIS, allowing you to directly select and attribute geologic features.

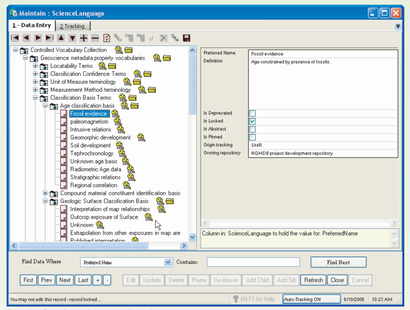
Examples of science vocabularies that we'll be including are:
- Sample collection purpose
- Earth materials
- Geologic surface classification
- Locatability terms
- Line identity certainty
- Classification confidence
- Unit of measure
- Measurement method
- Age classification basis
- Geologic time scale



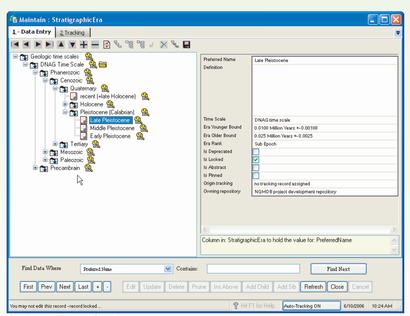
Earth material



Feature Identification Certainty



Basis for Age Determination



Geologic Time Scale

For information on this aspect of the project, contact:

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This is a collaborative project managed by the AASG and the USGS.

DATABASE INTEROPERABILITY

To help integrate databases from many agencies, we are participating in the Datamodel and Encoding Working Group sponsored by the IUGS Commission for the Management and Application of Geoscience Information ("CGI"). This Working Group is developing a GML-based encoding of the NADM-C1 data model and XMML. Known as GeoSciML, this encoding is intended to serve as a standard interchange format for geoscience maps and data.

Benefits of using GeoSciML:
- it will permit many disparate database systems to exchange and use data
- it will reduce duplication of effort caused by recreating a data set that someone else already has
- it will place information into a standard format
- it can include definitions of your science terms.

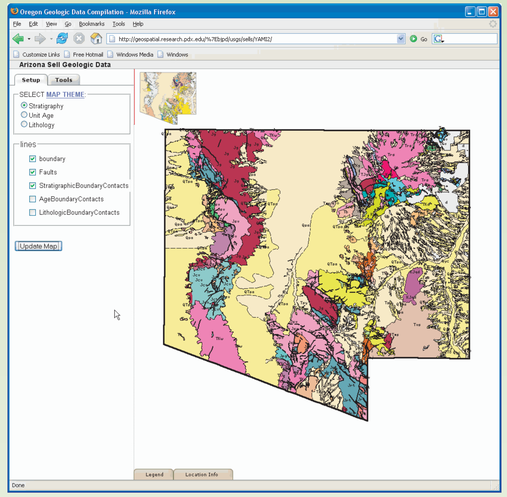
Problems:
- it won't work without standards and well-documented maps/databases
- organizing the rich information found in Professional Papers, Bulletins, I-maps, etc. in a database format is difficult.

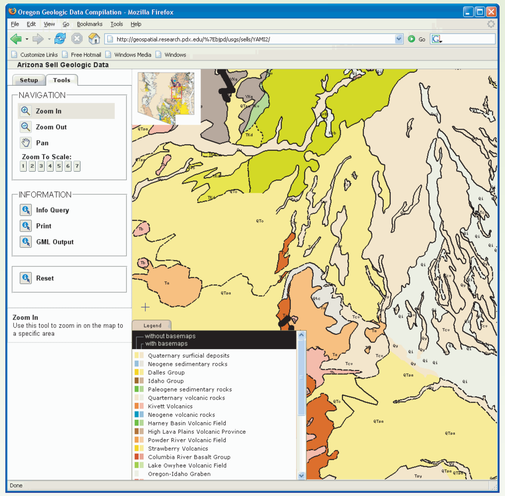
The GeoSciML Testbed:

The Working Group is conducting a testbed to evaluate the utility of GeoSciML. The test involves WMS and WFS servers that can provide responses to user queries including selection and symbolization of map features, and generation of GeoSciML code for the selected features.

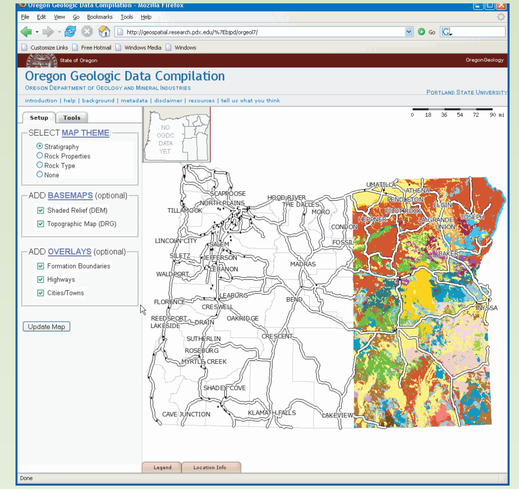
In cooperation with Portland State University (PSU), the Arizona Geological Survey (AZGS), and the Oregon Department of Geology and Mineral Industries (DOGAMI), the NGMDB project is participating in this testbed. Using map data from the AZGS and DOGAMI, MapServer and PostGIS technology, and an interface being designed by PSU, some preliminary examples of our testbed are shown here.

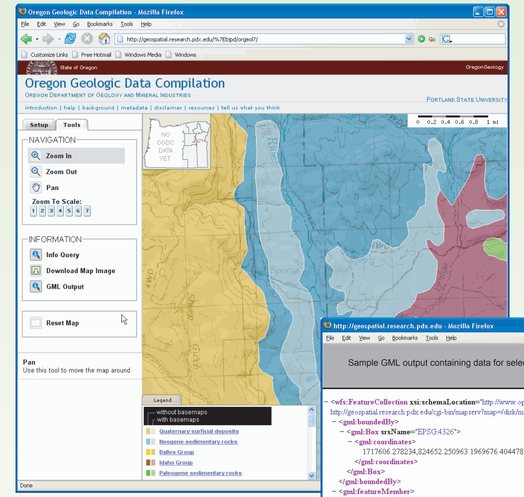
Arizona

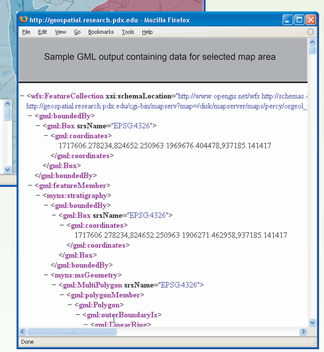




Oregon







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