

Technical Report

**AZ Geoscience Information Network (AZGIN),
Phase II**

By M. Lee Allison and Stephen M. Richard
Principal Investigators

Project Period 07/01/2009 to 07/31/2010

March 10, 2010

TABLE OF CONTENTS

Introduction.....	3
Scope and Implementation	3
Metadata	3
Metadata produced (Results).....	3
Metadata Production.....	4

Introduction

As part of the Energy Policy Act of 2005, the U.S. Geological Survey was tasked with creating a National Geological and Geophysical Data Preservation Program (NGGDPP). This Program is intended to work principally with the nation's geological surveys to: (1) archive geologic, geophysical, and engineering data, maps, well logs, and samples; (2) provide a national catalog of such archival material; and (3) provide technical and financial assistance related to the archival material.

The Program is envisioned as a national network of cooperating geoscience materials and data repositories that are operated independently yet guided by common standards, procedures, and protocols for metadata. The holdings of all collections will be widely accessible through a single, common, and mirrored Internet-based catalog, the National Digital Catalog, thus maximizing the availability of and interconnectedness of all the collections.

Scope and Implementation

In 2009 -2010, the AZGS was provided with \$16, 620 to continue the in-house metadata catalogue started under NGGDPP 2008 program to geo-reference locations for selected datasets and keywording all items in the catalogue. The proposal called for (1) the inclusion of completion reports and production histories for Oil and Gas wells, (2) addition of newly mapped fissures completed in the past year, (3) provide a test sample of approximately 400 aerial photographs and photo indexes, and (4) complete a time-cost analysis for indexing the entire aerial collection.

Metadata

Metadata is "structured information that describes, explains, locates, or otherwise makes it easier to retrieve, use, or manage an information resource."¹ Metadata content describes the particular artifacts (digital or physical) so that they can be found, retrieved, and cited. Metadata for a map could include its date of publication, author, publisher, scale, size, media (whether it is a digital or print object, for example), geographic area covered, edition, longitude and latitude coordinates, title, type (geologic, topographic, political, etc.), and other terms. Metadata content is structured into a metadata schema, which provides a uniform template for facilitating the retrieval, management, and preservation of resources, regardless of format.

Metadata produced (Results)

Metadata for 1192 oil and gas well permits is now in the USGIN GeoPortal Catalog. The metadata has the URL's for online scans of the complete permit file, including the completion report data. The USGIN GeoPortal implements a CSW interface, and will be harvested by the National Digital Catalog. The Earth fissure dataset is updated to include fissures mapped through June of 2010. The service can be viewed quickly at

¹ NISO, *Understanding Metadata*. (Bethesda, MD: NISO Press, 2004).
<http://www.niso.org/standards/resources/UnderstandingMetadata.pdf>

<http://services.azgs.az.gov/ArcGIS/rest/services/fissures/EarthFissures/MapServer>; the WFS capabilities URL is <http://catalog.usgin.org/gsvr/ows?service=WFS&version=1.0.0&request=GetCapabilities>.

Flightlines representing approximately 13450 photographs from 134 projects were digitized. From these, 248 bounding boxes with related data were extracted to xml format. 59 photo indexes relevant to our photos will be converted to xml shortly. There are approximately 100 projects for which indexes of the flight lines were not available. For these, we located a sampling of flightlines by studying the photos to determine their location and digitized a bounding box for these. We decided that delivering metadata for each flightline is not the most useful way to present this information, that it makes more sense to have metadata for each group (collection) of photos for one flight-project with a bounding box for the project. There are 255 metadata records in the USGIN metadata catalog for air photo projects. These range from large projects with >100 photos to single flight lines focused on a single earth fissure. To access the air photo metadata or permit-file metadata, visit the USGIN catalog (<http://debug.usgin.org/geoportal>, soon to be <http://catalog.usgin.org/geoportal>) and search for "air photo". We are working with Sky Bristol at the National Digital Catalog to implement a harvest process to upload these records to the national catalog.

Metadata Production

Metadata were compiled in a personal geodatabase as the flightlines and flightline bounding boxes were constructed. A visual basic for applications script running in Microsoft Access was used to create an ISO 19139 xml file containing the metadata, which was placed in a web-accessible directory for harvest into the ESRI Geoportal we are currently using for our metadata catalog online search. Our initial efforts in Fall 2010 used the GeoNetwork OpenSource catalog, but the metadata records were incomplete and we had difficulty with the Geonetwork software and changed catalog implementations to GeoPortal.

Acknowledgments

Work on this project was completed by Stephen M. Richard, Lee Allison, Helen Ireland, and Wolfgang Grunberg.

Bibliography and links

NISO, *Understanding Metadata*. Bethesda, MD: NISO Press, 2004.

<http://www.niso.org/standards/resources/UnderstandingMetadata.pdf>

National Geological and Geophysical Data Preservation Program,

<http://datapreservation.usgs.gov>

Metadata records in NDC from Arizona Geological Survey may be browsed through the NGGDPP portal. The URL to see the Arizona Records is

<http://datapreservation.usgs.gov/catalog/item/search?searchExtent=&search=Arizona&contextName=NDC&dataOwner=Arizona+Geological+Survey&itemType=Physical%20Item>