

ALASKA DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS FY12 Project Description

DIGITAL GEOLOGIC DATABASE PROJECT

In 2000, the Alaska Division of Geological & Geophysical Surveys (DGGS) saw an urgent need to develop a geologic database system to provide the architecture for consistent data input and organization. That database system now includes data identification and retrieval functions that guide and encourage users to access geologic data online. This project was initiated as part of the federally funded Minerals Data and Information Rescue in Alaska (MDIRA) program; ongoing data input, use, and maintenance of the database system are now an integral part of DGGS's operations supported by State General Funds.

DGGS's digital geologic database (Geologic & Earth Resources Information Library of Alaska [GERILA]) has three primary objectives: (1) Maintain this spatially referenced geologic database system in a centralized data and information architecture with access to new DGGS geologic data; (2) create a functional, map-based, on-line system that allows the public to find and identify the type and geographic locations of geologic data available from DGGS and then retrieve and view or download the selected data along with national-standard metadata (<http://www.dggs.alaska.gov/pubs/>); and (3) integrate DGGS data with data from other, related geoscience agencies through the multi-agency web portal, <http://akgeology.info>.

During the first 11 years, the project work group established a secure and stable enterprise database structure, started loading data into the database, and created multiple Web-based user interfaces. As a result, the public can access Alaska-related reports and maps published by DGGS, the U.S. Geological Survey, the U.S. Bureau of Mines, and the University of Alaska Fairbanks Mineral Industry Research Laboratory through a search interface that replaces the MDIRA Interagency Bibliography. Also easily accessible are DGGS project digital GIS data through a search page on the DGGS website (<http://www.dggs.alaska.gov/pubs/>), and DGGS geochemical data through a specialized search engine (<http://www.dggs.alaska.gov/webgeochem/>). Over the past few years, DGGS has become the leading Alaska geology-related database agency and a trusted online repository geologic publications and data.

During 2011, the project team continued progress on various projects requiring database and application support: National Geological & Geophysical Data Preservation Program (NGGDPP, <http://datapreservation.usgs.gov>) (p. 74), Geologic Map Index of Alaska (p. 76), Alaska Paleontology Database (p. 78), Alaska Geologic Data Index (formerly AKMIDI) (p. 77), ongoing additions of Alaska-related U.S. Bureau of Mines and U.S. Geological Survey publications, and maintenance of existing applications. These applications will also be available through the multi-agency web portal <http://akgeology.info>, which is now maintained by DGGS. Over the coming years, DGGS will continue to expand its repository of geologic data and strive to meet public demand for technologically advanced, easy-to-use, online data delivery systems.



ALASKA DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS FY12 Project Description

FIELD MAPPING TECHNOLOGY PROJECT

The Alaska Division of Geological & Geophysical Surveys (DGGs) collects, analyzes, and publishes geological and geophysical information toward its mandate to inventory and manage Alaska's natural resources and evaluate geologic hazards. DGGs creates a large amount of new data each year and synthesizes the data into multiple reports and maps for publication. On average, DGGs conducts seven field projects per year, each with teams of five geologists in the field for three weeks, or 735 person-days in the field. Each geologist records detailed observations at an average of 25 locations per day in a notebook or on a paper map, which amounts to more than 18,000 multi-part parcels of data per year that must be hand recorded and then translated and parsed into digital media for analysis and eventual publication.

DGGs is committed to the timely release of data to the public and prompt fulfillment of obligations to funding sources. In 2005, DGGs began investigating the potential of using digital field mapping to streamline data collection and processing. Digital mapping is defined as using a computer or personal digital assistant (PDA) to display and record information that has traditionally been recorded on paper, whether on note cards, in a notebook, or on a map. Computer technology and software are now becoming portable and powerful enough to take on some of the burden of the more mundane tasks a geologist must perform in the field, such as obtaining precise locations, plotting structural data, and color coding different physical characteristics of a rock. Additionally, computers can now perform some tasks that were formerly difficult to accomplish in the field, for example, recording text or voice digitally and annotating photographs on the spot. DGGs believes that the greatest benefit of digital mapping will be a decrease in the amount of time necessary for data entry, thereby potentially increasing the amount and quality of information that can be recorded during a field day.

In 2011, DGGs field tested Windows tablet computers and third-party field mapping software with mixed results. Staff successfully located interesting geologic features on the ground by viewing imagery on a tablet, while riding in a helicopter. Other applications on the same device, such as taking field notes in bright sunlight, were unsuccessful. Most DGGs geologists need lightweight, fully ruggedized, field-ready tablet computers with screens readable in bright light—however, no such equipment is available. DGGs continues to actively monitor technological advances in this area for likely prospects.

To facilitate discussion in the geologic community regarding digital field mapping technology, DGGs implemented a three-prong plan. In 2009, DGGs created a digital geologic mapping Wikipedia page (http://en.wikipedia.org/wiki/Digital_geologic_mapping). The web page was accepted into WikiProject Geology—an attempt to create a standardized, informative, comprehensive, and easy-to-use geology resource. In 2010, DGGs created a mailing list (http://list.state.ak.us/soalists/geomapping_jl.htm) that currently has more than 60 members in the U.S. and abroad. DGGs also surveyed the geologic community regarding their interest in digital geologic mapping and the current technology being used. With the help of the American Geological Institute, the e-mail survey went out to more than 1,250 organizations (university geology departments, state and national geological surveys, and the private sector) with a ~13 percent response rate. Final results of the survey are posted (http://ngmdb.usgs.gov/Info/dmt/docs/DMT11_Athey.pdf) and DGGs has submitted a paper to U.S. Geological Survey for publication.



The image is a screenshot of a Wikipedia article titled "Digital geologic mapping". The page layout includes a top navigation bar with "Log in / create account", a search box, and tabs for "Article", "Discussion", "Read", "Edit", and "View history". The article title "Digital geologic mapping" is prominently displayed, followed by the text "From Wikipedia, the free encyclopedia". The main body of the article begins with a definition: "Digital geologic mapping is the process by which geologic features are observed, analyzed, and recorded in the field and displayed in real-time on a computer or personal digital assistant (PDA). The primary function of this emerging technology is to produce spatially referenced geologic maps that can be utilized and updated while conducting field work." Below this text is a "Contents" section with a "[show]" link. Further down, there is a section titled "Traditional geologic mapping" with an "[edit]" link. The left sidebar contains the Wikipedia logo, navigation links like "Main page", "Contents", "Featured content", "Current events", "Random article", "Donate to Wikipedia", and "Interaction" links such as "Help", "About Wikipedia", "Community portal", "Recent changes", and "Contact Wikipedia".

ALASKA DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS FY12 Project Description

WEBSITE DEVELOPMENT/ONLINE DIGITAL DATA DISTRIBUTION

The Division of Geological & Geophysical Surveys (DGGs) posted its first website in the late 1990s—a humble “starter site” comprising a few static HTML pages. Since that time, the site has been transformed into an informative, useful, well used, database-driven site that is now the division’s primary means to announce and distribute the geological and geophysical publications and information it produces.

The cumulative result of a series of multi-year projects, the current website (<http://www.dggs.alaska.gov>) provides access to users to search and view or download online DGGs publications; additionally, the site posts publications produced by other geoscience agencies, including the U.S. Geological Survey, UAF Mineral Industry Research Lab, and U.S. Bureau of Mines.

DGGs’s site also provides easy access to its geophysical data, geochemical data, information about its Geologic Materials Center, an online Guide to Geologic Hazards in Alaska, descriptions of the division’s projects and special studies, accomplishments from previous years, and other topics of interest.



Users can view (and download at no charge) approximately 7,000 text reports, 9,000 oversized sheets, and more than 200 digital geospatial datasets.

In 2010 the Governor’s Office updated the statewide “look and feel” for State of Alaska public web pages. In adopting the new State standards, DNR has implemented additional “look and feel” and navigation specifications that facilitate access to the information and services provided by the DNR divisions. The new standards have provided DGGs with an exciting opportunity to add fresh content to our site, to optimize site performance, and to better integrate the website with data stored in our geologic database.

ALASKA DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

FY12 Project Description

PUBLICATIONS AND OUTREACH PROJECT

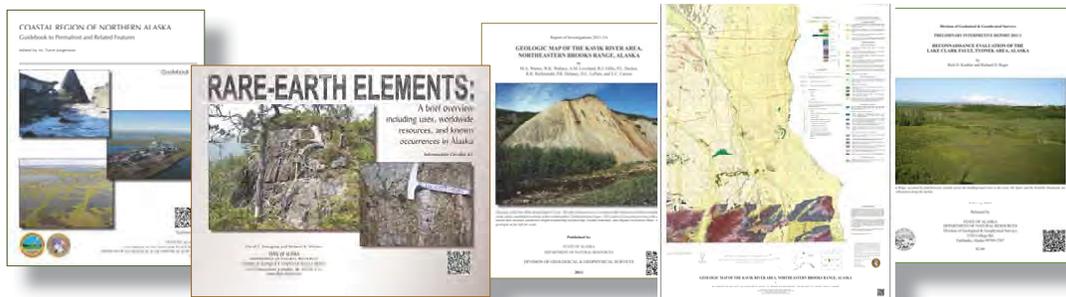
The Publications and Outreach Project publishes and distributes geologic data that has been collected, analyzed, and assembled by geologists in DGGGS's Minerals, Energy, Engineering Geology, and Volcanology sections and Geologic Materials Center (GMC). Some of the functions carried out under this project are:

- Design, digitally assemble, edit, and oversee final production of technical and educational geologic maps, reports, and informational publications in printed and digital formats.
- Prepare an annual report, with articles written by division staff, describing DGGGS projects and activities, announcing new products, and relating plans for future projects.
- Publish newsletters to summarize DGGGS's progress and announce new publications.
- Prepare displays and represent the division at geologic conferences and meetings by providing staff and assembling and transporting the display booth (seen at right).
- Staff full-time geologic information center in Fairbanks, providing data about Alaska's geologic resources and hazards through DGGGS's publications, geoscience specialists, and other resources. Sell and distribute printed and online geologic reports, maps, and digital data.
- Assist staff in writing, then review and ensure completeness and accuracy of metadata for each digital project and file in its appropriate online repository.
- Manage DGGGS's reference library so that reports, maps, and other data are available and publications are on hand that geologists need to prepare geologic products.
- Maintain as complete a collection as possible of Alaska-related geoscience publications produced by the U.S. Geological Survey, the former U.S. Bureau of Mines, and the U.S. Bureau of Land Management; collect and maintain other Alaska-related publications as needed.



Publications produced and distributed by this group record and preserve geologic data such as definitive statistics for Alaska's mineral industry; detailed (1:63,360-scale) bedrock, surficial, and engineering-geologic maps for specific areas in the state; sources of Alaska's geologic information; annual information about DGGGS's programs and accomplishments; airborne geophysical data for areas with promising mineralization; and educational brochures and pamphlets explaining Alaska's geology or natural-science features. Some of the most recent DGGGS publications include: ♦ LiDAR data for Alaska infrastructure corridors; ♦ geophysical surveys for the Ladue and Iditarod areas; ♦ guidebook of the coastal region of northern Alaska; ♦ geologic hazards assessment along proposed in-state gas pipeline route; ♦ a paleoseismic study along the central Denali fault, Chistochina Glacier area; ♦ a top Mesozoic unconformity depth map of Cook Inlet basin; ♦ geologic map of the Kavik River area, northeastern Brooks Range; ♦ a new information circular about rare-earth elements; ♦ a reconnaissance evaluation of the Lake Clark fault in the Tyonek area; ♦ a surficial geologic map of the Eagle A-1 Quadrangle; ♦ a report on Alaska's Mineral Industry 2010; and ♦ 22 new Geologic Materials Center reports describing analyses of materials housed at the GMC.

Publications are available in paper format (plotted as needed and sold for the cost of printing) and as digital PDF documents and scanned, compressed maps on the DGGGS website (available for download at no charge). An increasing number of GIS digital datasets are available on the DGGGS website, along with the maps and other images that DGGGS has produced with those datasets. Having the geospatial data available allows our users to download the data and use it as they need. The geological and geophysical data and reports published by DGGGS encourage wise management and exploration of Alaska's natural resources and mitigation of risks from the state's geologic hazards.



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ALASKA DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS FY12 Project Description

NATIONAL GEOLOGICAL & GEOPHYSICAL DATA PRESERVATION PROGRAM

The Alaska Division of Geological & Geophysical Surveys (DGGs) is charged by statute (AS 41.08) with collecting, archiving, managing, and disseminating geological and geophysical data that describes and inventories the subsurface energy resources, mineral resources, and geologic hazards of the state. During the past 10 years, through the federally funded Minerals Data and Information Rescue in Alaska (MDIRA) program, DGGs cataloged and greatly improved the condition of its archive of geological and geophysical data, upgraded its system for data management system, and began disseminating this data through the internet.

DGGs is advancing its data preservation goals by participating in the federally funded National Geological & Geophysical Data Preservation Program (NGGDPP; <http://datapreservation.usgs.gov>). This U.S. Geological Survey program is committed to assisting state geological surveys with four data preservation priorities: (1) inventory geological and geophysical data collections to assess their data preservation needs, (2) create site-specific metadata for individual items in those data collections, (3) create new digital infrastructure or improve the state's existing digital infrastructure for archiving and preserving these data, and (4) rescue geologic data at risk of loss through "special needs" awards. DGGs received funding for the FY2010 phase of NGGDPP to directly address the site-specific metadata priority and the "special needs" data preservation priority.



Figure 1. Core box from coalbed methane well Kashwitna Lake #1, 848–858 feet. Box on left shows white mold and cardboard deterioration. Box on right shows same core, cleaned and re-boxed.

First, DGGs completed a Collection Inventory of published Alaska organic geochemical data and is preparing NGGDPP-compliant metadata for this high-priority dataset. Eight publications were identified, with a total of 273 organic geochemical sample analyses among them. The organic geochemistry dataset is critical for an assessment of technically recoverable petroleum resources in major source-rock systems of the Alaska North Slope, led by the USGS and scheduled for late 2011 and 2012. The data are commonly requested by researchers and private industry.

Second, Geologic Materials Center (GMC) staff attempted to salvage approximately 10,300 feet of drill core that was on the verge of total loss due to deteriorating written labels on severely damaged boxes and damage to the samples from multiple freeze/thaw cycles and moisture. Cores from Amchitka Island, Alaska, which were collected after underground nuclear tests between 1965 and 1971, were re-boxed (75 percent of the 717 boxes), barcoded, and indexed. GMC staff also successfully moved, cleaned, re-boxed, barcoded, and transferred 769 out of 818 boxes of coalbed methane core. The project only lost 49 boxes of coalbed methane core (6 percent) in cases of completely disintegrated core and core box.

The metadata records for these collections will be served out to the National Digital Catalog through DGGs's Web Feature Service (WFS) interface and an NGGDPP sitemap. The DGGs WFS is currently a beta version for its staff to import data into Geographic Information Systems (GIS) software. However, both the WFS and sitemap allow the site-specific metadata records to be harvested

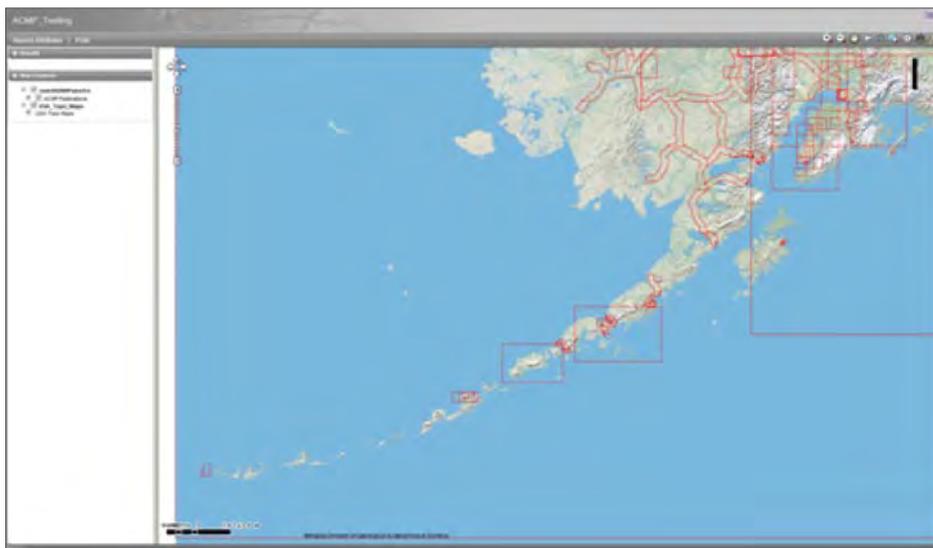
and synchronized automatically by the National Catalog system, thus freeing DGGs staff members of the manual task of uploading data to an additional database on a regular basis. These relevant energy-related datasets will be available for harvest by the National Digital Catalog by the end of 2011. Access to these collections through the National Digital Catalog will improve their accessibility to both in-state and national users.



ALASKA DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS FY12 Project Description

GEOGRAPHIC INFORMATION SYSTEM (GIS) PROJECTS

The GIS projects underway at the Division of Geological & Geophysical Surveys (DGGS) are designed to take advantage of recent advancements in geospatial tools, and to present DGGS's geospatial data in multiple ways, making it more accessible and easier for users to view, acquire, and use.



Web Map Applications

DGGS is beginning to design Web map applications for internal and public use. A Web map is an Internet-based, interactive map application that allows the user to display and query the layers on the map. A Web map contains one or more ArcGIS for Server® map services. DGGS is currently designing the geodatabases required to populate the services that will be used to create the Web map.

USGS National Cooperative Geologic Mapping Program (NCGMP) Geodatabase

The division is in the testing phase of instituting a division-wide, stan-

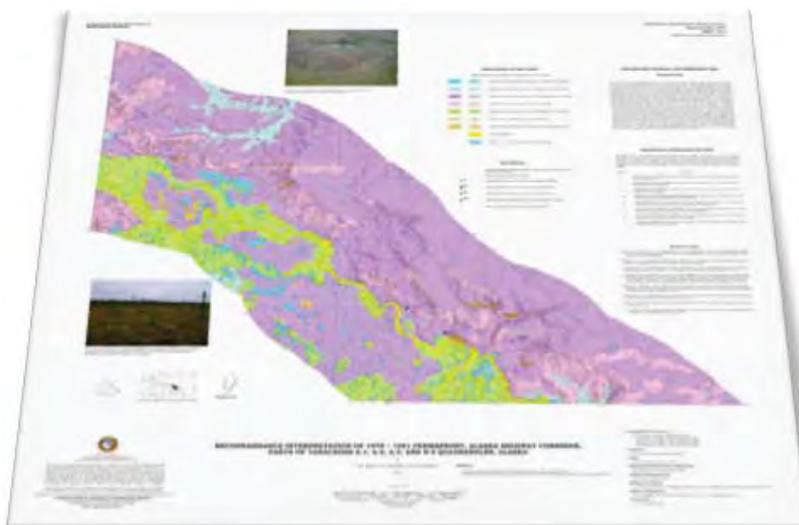
standardized geodatabase model based on the U.S. Geological Survey (USGS) NCGMP (<http://ncgmp.usgs.gov/>) format. The NCGMP is a proposed standard for digital publication of geologic maps that are funded by the USGS under the program. Instituting a division-wide geodatabase has several benefits, including standardizing the data's content, attributes, naming conventions, and other pertinent information required for archiving and dissemination. A standardized geodatabase will be instrumental in creating future Web map applications.

DGGS Geologic Mapping Template

DGGS is finalizing a geologic mapping template for use by the division's geologic staff. The benefit of instituting a division-wide template is to standardize the design layouts while streamlining the process used to create geologic maps.

Historical U.S. Geological Survey Topographic Map Inventory and Archive

DGGS is inventorying and archiving its collection of historical USGS topographic maps. A database is being created based on the publication dates of the maps. Map sheets will be scanned and georeferenced for use in a GIS; the georeferenced maps will be used to create a seamless mosaic dataset for internal and public use. A retired DGGS employee currently volunteers time as the project manager for creating and populating the inventory database.

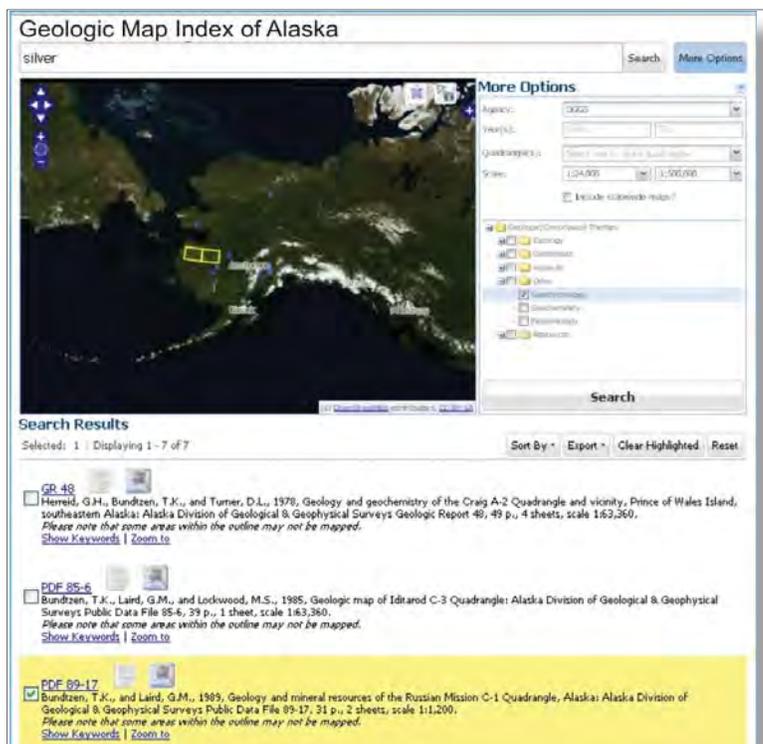


ALASKA DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS FY12 Project Description

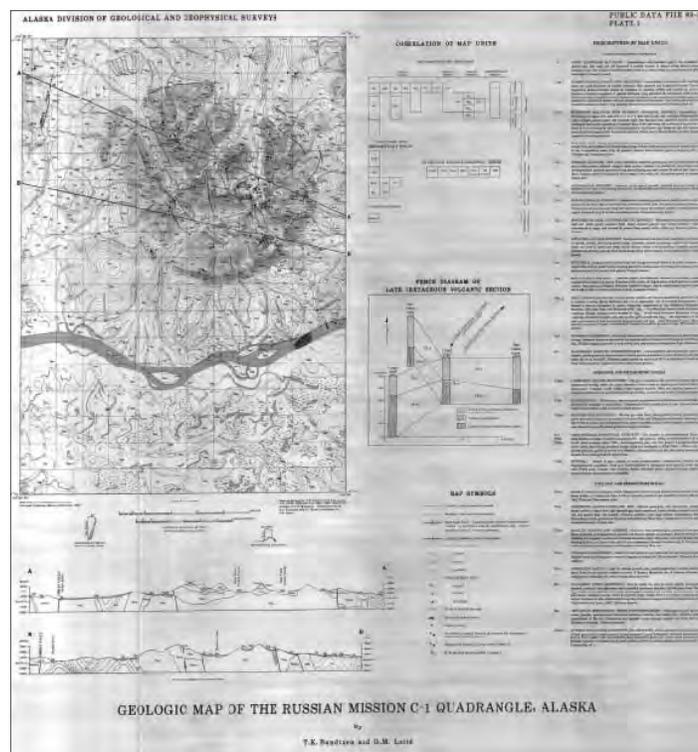
ALASKA GEOLOGICAL AND GEOPHYSICAL MAP INDEX

In 2003, in cooperation with DNR's Land Records Information Section (now Information Resource Management), DGGG released the first version of the "Geologic Map Index of Alaska" web application that will, when complete, provide the locations, outlines, and current status of Alaska geological and geophysical maps from all government agencies in a single, interactive, Internet-accessible location. No geographic index of Alaska geologic maps exists at this time. This upgraded resource will make it easier for the public and government agencies to find the maps they need to make informed resource- and land-management decisions.

DGGG is working with Geographic Information Network of Alaska (GINA) at the University of Alaska Fairbanks to upgrade the Map Index interface to a fully integrated map- and text-based search application based on real-time data served from DGGG's central Oracle database. Users will be able to: (1) retrieve subsets of map outlines by map categories (bedrock geology, surficial geology, resources—metals—lode, hazards—permafrost, etc.) or metadata (scale, publishing organization, publication date, etc.); (2) view the results in an interactive map interface and listing; and (3) highlight results by individual record or map selection. The interface will also provide links to downloadable digital reports and maps for each citation, where available. DGGG anticipates that the web application will be completed in spring 2012 with an abbreviated dataset.



The database behind the application currently contains about 300 citations and outlines for DGGG-authored geologic maps. About 900 additional U.S. Geological Survey (USGS) and DGGG geologic map outlines and associated bibliographic references have been compiled but require quality control for categorization and spatial information. The categorized database provides an effective means of searching for maps of particular interest. The USGS's National Geologic Map Database (<http://ngmdb.usgs.gov/>) is sharing its data with DGGG to streamline the process of updating the Map Index database and keep the USGS publication information current. DGGG intends to add outlines and data to the application for remaining geologic maps by DGGG, USGS, U.S. Bureau of Mines (BOM), and U.S. Bureau of Land Management (BLM), and geophysical maps by DGGG and other agencies as time and funding allow.



The project was initiated with funding from the Federal Minerals Data and Information Rescue in Alaska (MDIRA) program, administered by USGS; development of the web mapping and search application continues under that funding source. Compilation and maintenance of the underlying database is now supported by State of Alaska General Funds. The primary objective of the MDIRA program is to ensure that all available Alaska minerals-related data are preserved in a safe and readily accessible format for all potential users.

ALASKA DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS FY12 Project Description

ALASKA MINERAL INDUSTRY DATA INDEX (AKMIDI)—ALASKA GEOLOGIC DATA INDEX (AGDI)

The Alaska Mineral Industry Data Index (AKMIDI) database comprises nearly 16,000 records for mineral information owned by 18 diverse groups around the state, including Native corporations, private companies, state libraries, and land managers. The index includes information needed to find industry reports and maps, field notes, drill logs, and other data from the private sector. Much of the data is still held and controlled by private entities. Approximately 1,800 files and 4,300 maps from the Anaconda Collection of minerals exploration data are available through Alaska Resources Library and Information System (ARLIS). Support for the AKMIDI web search engine ended in 2009 and the database went offline. In the interim, the original Microsoft Access database is available for download (<http://www.dggs.alaska.gov/pubs/akmidi.jsp>).

This newer project integrates the existing AKMIDI database into DGGS's enterprise Oracle database and converts the search and data-management tools into Java server pages (JSP). Because the new application indexes not only mineral industry information, but unpublished geologic data of any type, it will be released under a new name, Alaska Geologic Data Index (AGDI). The database captures the physical location of archived physical files, contact information and rules for accessing the data, and three levels of proprietary access. At the most secure level, data owners may make their records invisible to the public and other data owners.

The application contains a map-based search tool that allows web-based public queries of the data, a data-entry interface so the AKMIDI database holdings can be expanded in the future, and administrative capabilities for routine, secure data maintenance. Digital images of maps, reports, and other data (such as the images of the Anaconda Collection) can be gathered and linked to the relational database so that the public can obtain some insight about the content of a potentially useful map, figure, or photograph without having to retrieve the physical materials from the archive. The index will be available in spring 2012 on DGGS's website (<http://www.dggs.alaska.gov>) and through a link on the MDIRA webpage (<http://www.akgeology.info>).

This project is supported through a re-appropriation of some remaining funds in the federal Minerals Data and Information Rescue in Alaska (MDIRA) program, administered by the U.S. Geological Survey. The primary objective of the program is to ensure that all available Alaska minerals data are securely archived in perpetuity and in a format readily accessible by all potential users. Information on mineral resources is important for management policy decisions in both the public and private sectors. Increased use of high-quality data should lead to better economic, legislative, and environmental decisions.

The screenshot displays the Alaska Department of Natural Resources Division of Geological & Geophysical Surveys website. The search interface includes a search bar with the term 'gold' entered. A map of Alaska shows several blue rectangular search results overlaid on the state. To the right of the map is a 'More Options' sidebar with fields for Keyword, Author (set to 'Anaconda'), Title, Project, Year(s) (1935-2010), and Location. Below the map is a 'Data Source' list with various organizations. The 'Search Results' section at the bottom shows a table with the following data:

Title / Author(s)	Year	Data Type	Places
Plate 6: Big Hurrah Prospect, Rock Chip Sample Values in PPM Gold Anaconda Minerals Company	1980	Analytical Lab Results	
Plate 8: Big Hurrah Prospect, Soil Line Sample Values in PPM Gold Anaconda Minerals Company	1980	Analytical Lab Results	
Plate 3: Big Hurrah Prospect, Trench Geology &	1980	Analytical Lab Results,	

ALASKA DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS FY12 Project Description

ALASKA PALEONTOLOGY DATABASE MIGRATION

The Alaska Paleontology Database contains detailed information on fossils and fossil localities in Alaska. The database was created by Alaska paleontologist Robert Blodgett and paleontologist/computer programmer Ning Zhang with funding from the U.S. Geological Survey's (USGS) Minerals Data and Information Rescue in Alaska (MDIRA) program. The MDIRA program was established to ensure that all available Alaska minerals data are securely archived in perpetuity and in a format readily accessible by all potential users. Information about mineral resources is important for management policy decisions in public and private sectors. Increased use of high-quality data should lead to better economic, legislative, and environmental decisions.

Information stored in the fossil database is drawn from informal, unpublished USGS 'Examine and Report' (E&R) fossil reports (fig. 1) and published literature (fig. 2), as well as released industry data. Data entry for this project is about 60 percent complete. The database's website (<http://alaskafossil.org>) receives daily traffic, primarily from Alaskans, including those from bush communities, and from worldwide locations. The database benefits the minerals community in areas with sedimentary-rock-hosted stratiform or stratabound mineral occurrences. Currently the database is hosted on a privately owned server, which is occasionally offline.

REPORT ON REFERRED FOSSILS
P & S Branch, U. S. Geological Survey
345 Middlefield Road, Menlo Park, California

Stratigraphic range: Upper Triassic	Kinds of Fossils: Marine invertebrates
General locality: Alaska	Quadrangle or area: Charley River
Referred by: Earl E. Brabb, Alaskan Geology Branch, 10/16/61	Shipment No: A-61-274
Report prepared by: N. J. Silberling, 11/17/61	Date material received: 10/61
Status of work: Complete	

Report not to be quoted or paraphrased in publication without a final recheck by the Paleontology and Stratigraphy Branch.

61Aa 1732. (USGS Mes. Loc. M256). Charley River B-5 quad; NE1 sec. 21, T. 6 N., R. 22 E.; lat 65°20'N., long 143°13.1'W.; coords (8.2, 5.7).

Pelecypod:
Monotis sp. indet.

Hydrozoan coelenterate:
Heterastridium sp.

Age: Middle or late Norian (late Late Triassic). Heterastridium, the oblate spherical objects referred to as "echinoids" on the field label, is a common associate of Monotis in Norian deposits throughout the world. These specimens are probably secondarily flattened.

61Aa 1884. (USGS Mes. Loc. M257). Charley River A-2 quad.; NE1 sec. 29, T. 4 N., R. 29 E.; lat 65°09'N., long 143°53.1'W.; coords (3.4, 10.3).

Pelecypods:
Monotis sp. indet.
Balobia aff. B. distincta Mojsisovics

Age: middle or late Norian (late Late Triassic).

N. J. Silberling
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Figure 1. Sample E & R report.

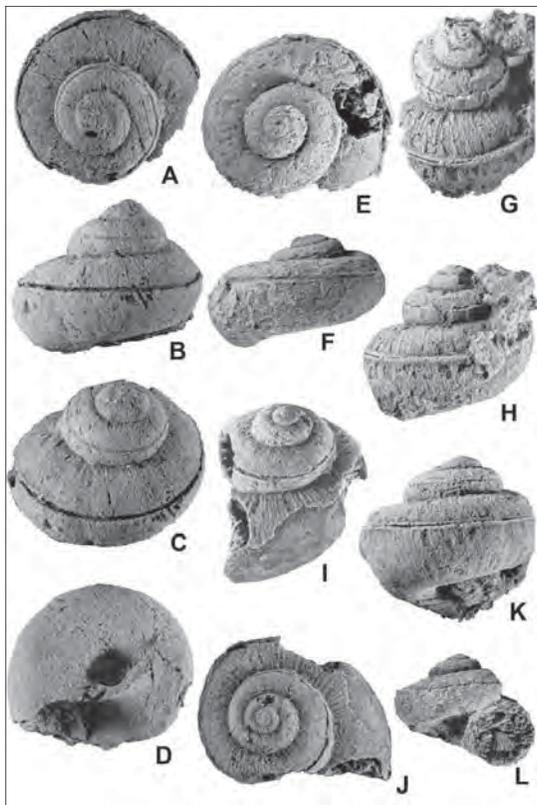


Figure 2. Photographs of fossils described in the database.

This MDIRA-funded project will migrate the fossil database to DGGs's Digital Geologic Database so the database is ensured regular maintenance, back-up, continued data expansion, and consistent public internet access. The existing Microsoft SQL Server database system and Active Server Pages (ASP)-based user interface are incompatible with DGGs's web environment. The database structure is being optimized and the data transferred to DGGs's existing enterprise Oracle database. In consultation with Robert Blodgett, existing ASP-based user interfaces (a data-entry form and a public-access, text-based search application) will be rebuilt into Java Server Pages (JSP)-based web pages. The final application will have a limited-access data-entry form, an interactive text- and map-search application, and database administrative utilities. The paleontology database for Alaska will be available on DGGs's website and through a link on the MDIRA page (<http://akgeology.info>) in summer 2012.