

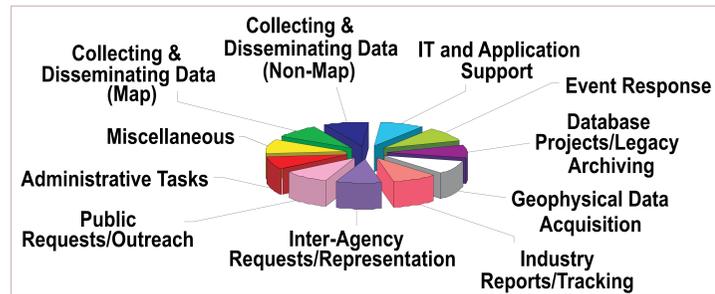
The following was presented at DMT'09
(May 10-13, 2009).

The contents are provisional and will be
superseded by a paper in the
DMT'09 Proceedings.

See also earlier Proceedings (1997-2008)
<http://ngmdb.usgs.gov/info/dmt/>

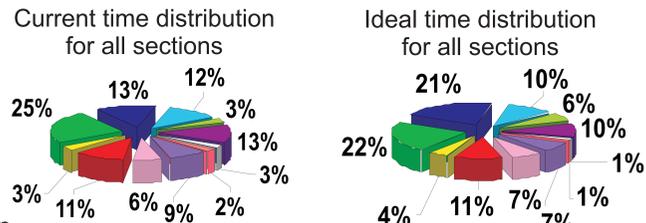
Shepherding Geologic Data from the Outcrop to Publication (and Beyond?)

In order to better understand our current workload, every employee except upper management, administrative support, and interns estimated their time spent per category below. A ~10% redistribution of time resources is possible in two DGGs sections. Most tasks assigned to sections are critical to the Survey's mission and cannot be tabled in favor of moving data through the outcrop-to-publication process.



Jennifer E. Athey and DGGs staff
Alaska Division of Geological & Geophysical Surveys (DGGs)

How can we increase output of geologic map publications?



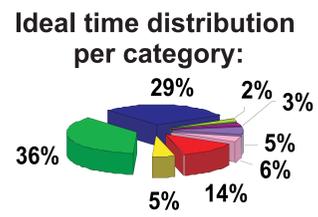
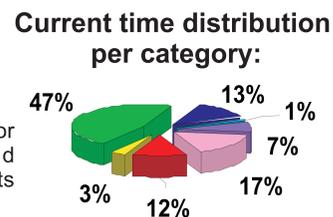
Each DGGs section analyzed its workflow for bottlenecks and inefficiencies (shown in purple below), and solutions (in boxes) were discussed in committee. Currently geologists complete most of this process themselves, including logistics, GIS, and cartography. Internal applications are created to automate iterative processes (Papp, 2005; Papp and others, 2007). The enterprise Oracle database is ready to populate except with spatial objects (Freeman, 2001a, 2001b; Freeman and others, 2002; Freeman and Sturmann, 2004). The Volcanology section maintains a separate database and set of data-management procedures for the Alaska Volcano Observatory.



DGGs sections

Engineering Geology

Study of geologic data for engineering purposes and hazard mitigation; conducts surficial-geologic mapping

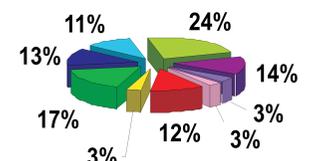
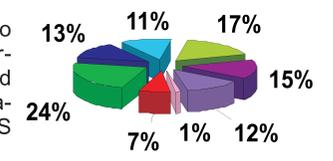


With the end of obligations to an education outreach program, the Engineering Geology section plans to increase its overall collection and dissemination of geologic data.

How important is education outreach to the mission of geologic surveys?

Volcanology

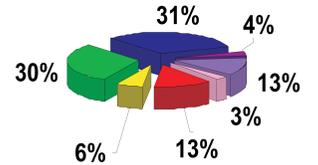
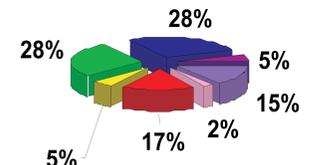
Part of the Alaska Volcano Observatory (AVO) consortium; volcano mapping and study; provides critical database, web, logistics, and GIS support for AVO



Volcanology section plans to increase its time spent on event response.

Energy Resources

Generates new geologic mapping and topical reports on Alaska's frontier areas that may host oil, gas, or coal, or geothermal resources

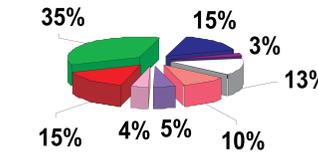
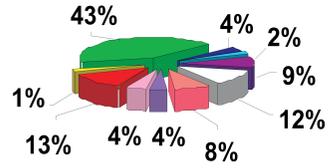


Energy Resources section favors publishing non-map data because they are what their users want. Non-map data arguably help define the framework geology better and faster than "postage stamp" discontinuous map coverage in frontier territory.

What is the best way to conduct time-critical geologic mapping over essentially "virgin" ground?

Mineral Resources

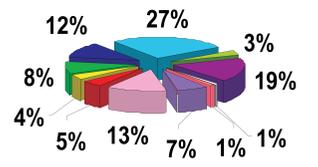
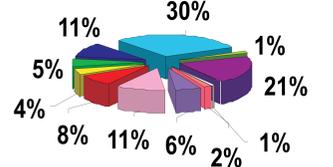
Generates new geologic mapping in prospective mineral terranes; contracts geophysical surveys; monitors the mineral industry



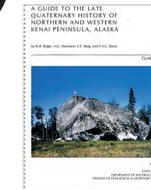
Mineral Resources section plans to scale back to one geologic mapping project per year, and spend 35%, instead of 21.5%, of time resources on a given project.

Geologic Communications

Publication sales; in-house and virtual library; editorial services; IT, GIS, application, and web support; enterprise database management



Geologic Communications section's time spent on map, non-map, and geophysical data reflects the time required for the final publications process: editing, layout, database entry, approvals, and printing.



Conclusions

- DGGs is overcommitted on time and projects. In most cases, current obligations cannot be set aside in order to finish publications.
- There are many ways to increase efficiency within the outcrop-to-publication process.
- Hiring a shared technician to manage logistics and operational tasks and a shared GIS technician/cartographer primarily to create map layouts will save geologists significant time.
- Although work is needed to streamline this process, we've come a long way since 1998, when Gail Davidson (1998) dreamt of DGGs geologists using GIS for spatial analysis.

Future Discussion Topics

- Eventually data and spatial objects will be served online by the database. Should we become a paperless organization?
- As new applications and databases come online, time is needed to maintain them, leaving less time for development. Implementing web-database functionality is time-intensive. Should DGGs have a software development group?
- DGGs would like to maintain a repository of Alaska's geologic data. How much time should we allot to compiling and inputting legacy and other agencies' data?
- Data compilation-database projects do not come with funds for maintenance of the product. How can we set up our organization to keep databases up-to-date?

Outcrop-to-Publication Committee

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Published by: Alaska Division of Geological & Geophysical Surveys, Department of Natural Resources, 2009. Digital forms of this and most other DGGs publications are available on the DGGs Web site (<http://www.dggs.dnr.state.ak.us/pubs/pubs?reqtype=citation&D=14588>). To purchase printed reports and maps, contact DGGs by phone (907-451-5020), e-mail (dggsdgs@alaska.gov), or fax (907-451-5050).

References

Athey, Jennifer, Freeman, Larry, and Woods, Ken, 2008, The transition from traditional to digital mapping: Maintaining data quality while increasing geologic mapping efficiency in Alaska: Alaska Division of Geological & Geophysical Surveys Newsletter 2008-2, 12 p., accessed at <http://www.dggs.dnr.state.ak.us/pubs/pubs?reqtype=citation&D=17921>.

Davidson, Gail, 1998, Can we get there from here? Experiences of the Alaska Division of Geological and Geophysical Surveys, in Soller, D.R., ed., Digital Mapping Techniques 1998—Workshop Proceedings: U.S. Geological Survey, Open-File Report 98-487, p. 13–15, accessed at <http://pubs.usgs.gov/of/1998-487/davidson.html>.

Freeman, Larry, 2001a, The DGGs Geologic Database: Putting Geologic Data Modeling into Practice: Alaska Division of Geological & Geophysical Surveys Newsletter 2001-3, 3 p., accessed at <http://www.dggs.dnr.state.ak.us/pubs/pubs?reqtype=citation&D=14588>.

Freeman, Larry, 2001b, A Case Study in Database Design: The Alaska Geologic Database, in Soller, D.R., ed., Digital Mapping Techniques 2001—Workshop Proceedings: U.S. Geological Survey Open-File Report 01-223, p. 31–34, accessed at <http://pubs.usgs.gov/of/2001/of01-223/freeman.html>.

Freeman, Larry, Engle, Kathryn, and Browne, Carrie, 2002, Alaska Division of Geological & Geophysical Surveys geologic database development—Logical model, in Soller, D.R., ed., Digital Mapping Techniques '02—Workshop Proceedings: U.S. Geological Survey Open-File Report 02-370, p. 157–160, accessed at <http://pubs.usgs.gov/of/2002/of02-370/freeman.html>.

Freeman, Larry, and Sturmann, Fred, 2004, Progress towards an agency-wide geologic map database at Alaska Division of Geological & Geophysical Surveys, in Soller, D.R., ed., Digital Mapping Techniques '04—Workshop Proceedings: U.S. Geological Survey Open-File Report 04-1451, p. 9–14, accessed at <http://pubs.usgs.gov/of/2004/1451/freeman/index.html>.

Papp, Ken, 2005, A summary of the past, present, and future of distributing Alaskan geologic data in digital format: Alaska GeoSurvey News: Alaska Division of Geological & Geophysical Surveys Newsletter 2005-2, 8 p., accessed at <http://www.dggs.dnr.state.ak.us/pubs/pubs?reqtype=citation&D=14595>.

Papp, Ken, Seitz, Susan, Freeman, Larry, and Browne, Carrie, 2007, The Challenges and Benefits of Distributing Digital Data: Lessons Learned, in Soller, D.R., ed., Digital Mapping Techniques 2007—Workshop Proceedings: U.S. Geological Survey, Open-File Report 07-1285, p. 107–112, accessed at <http://pubs.usgs.gov/of/2007/1285/pdf/Papp.pdf>.