DIGITAL MAPPING TECHNIQUES 2017

The following was presented at DMT’17 (May 21-24, 2017 - Minnesota Geological Survey, Minneapolis, MN)

The contents of this document are provisional

See Presentations and Proceedings from the DMT Meetings (1997-2017)

http://ngmdb.usgs.gov/info/dmt/
Managing the Digital Geologic Publication Lifecycle with Digital Commons:
A partnership between the Maine Geological Survey and the Maine State Library.

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The Maine Geological Survey (MGS) has used part of a USGS National Geological and Geophysical Data Preservation (NGGDPP) grant this year to partner with the Maine State Library on a unique project. The library is using a relatively new, cloud-based tool called Digital Commons to host and manage state agency digital documents (http://digitalmaine.com/). MGS has loaded all of our digitally available maps and reports (~2600 items) in the last few months. The tool offers perma-links for our maps and reports, management and maintenance of the PDF files themselves, simple and advanced search capabilities, elimination of storage costs, integration with ArcGIS Online and Server, and it removes the need for MGS to build and maintain custom front-ends on our web site for document management. This has been a very rewarding project for both MGS and the Maine State Library. We see many other uses for it in the future including archiving and geotagging digital photos and scanned photo slide collections. We also may use it to archive historical spatial datasets. Digital Commons is available to any teaching, research, library or government organization.
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The current – changing – state of geologic publications

- Over 2600 digital maps and reports on state web site that has moved twice in last decade
- Database for managing publications metadata
- Web site and simple table based search tools used for public access to publications
- No public access to superseded maps and reports
- Some older items no longer available in print, only scanned PDFs
- Not selling paper copies of some new maps and reports, only available as PDFs
State Library Role

• Since 1893 the Maine State Library has been the legal recipient and custodian of state documents.

• MSL’s mission is to promote public access, provide government transparency and protect Maine’s history.

• Maine Public Records Law (MRSA 1 §501-A) – requires agencies to send copies of all their reports/publications/research to the Maine State Library.
  • requirement ensures that these publications will always be available as public documents
  • agencies frequently come to MSL to retrieve documents that have been lost over time
StateDocs Collection at State Library

Items produced by state agencies:

- Publications
- Research
- Reports
- Marketing materials

Historical materials dating back to the formation of the state
StateDocs Digital Archive

Permanent online storage for same items as physical collection.

Launched in 2013 on Digital Commons from bepress.

Includes over 62,000 digital files

- Publications (books, reports)
- Photos
- Maps
- Research
- Marketing materials
- Audio/video files

www.DigitalMaine.com
StateDocs Digital Archive Key Features

Permanence

- Content can be moved but links won’t change
- Files are updated periodically to use the latest PDF standards and to protect from bit rot
- Cloud storage with file backups every four hours by Iron Mountain data security

Reporting

- Authors and agencies can get updates on download activity for items in collection
- Usage statistics from server logs are more accurate than Google Analytics
Integration

• Can be integrated with agency web sites or other online repositories like university libraries, GeoRef, NGMDB

Search optimization

• Files are meta tagged and searchable by author, date, title, keyword, agency, and abstract.
• Items in our collection rank well in Google searches
• Part of a larger academic repository (DPLA) that is used by institutions around the world
StateDocs Digital Archive Key Features

File management

• OCR run for all files
• Unlimited file storage
• Bulk uploads and updates of files and metadata
• No more local files

Customization

• Standard metadata field names can be edited
• New metadata fields can be added
• Custom domains can be incorporated
StateDocs Digital Archive Key Features

Decentralized administration
  • Collection specific agency administrators
  • Can allow agency staff to make submissions

Audience engagement tools
  • Can subscribe for notifications
  • Option for moderated comments on items
Demonstration

http://digitalmaine.com/geological_survey/
All links on MGS web site point to entry in Digital Maine
Ex: http://digitalmaine.com/mgs_maps/983/
Some maps have related reports that can be linked to directly.
Report related to previous map 98-15
Custom fields can be added with custom domains for classifying publications.

If item is available for purchase in paper format from MGS, this link will take users to MGS Order Form. Could be integrated with a web shop.
Publication lineage can be followed with supersede links.
Publication lineage can be followed with supersede links – backwards or forwards.
Embedded interactive web map for spatial context and nearby spatial searches.
Simple search – in this case searches just the Maps collection for any occurrence of search terms.

Simple searches also search the full text of the publication, not just the metadata fields.
Simple search – in this case searches all the MGS collections for any occurrence of search terms.
Advanced searches allow limiting the field(s) searched and date ranges.
Demonstration - Analytics

Analytics by geographic distribution
Zooming in on the map increases the spatial resolution.
Clicking on the map icon shows exactly what was downloaded.
Downloads provided by server for indication of precisely who is using the maps.
Referring sites – shows how a particular collection was accessed
Total PDF download activity

Can generate Excel reports with hits for all maps in collection for further analysis
Demonstration - Analytics

Shows how many metadata pages were accessed - whether or not the PDF was downloaded.
Demonstration - Analytics

List of all publications and download activity

<table>
<thead>
<tr>
<th>Title</th>
<th>Downloads</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bedrock geologic map of Maine</td>
<td>79</td>
</tr>
<tr>
<td>Simplified bedrock geologic map of Maine</td>
<td>41</td>
</tr>
<tr>
<td>Simplified surficial geologic map of Maine</td>
<td>22</td>
</tr>
<tr>
<td>Surficial geologic map of Maine</td>
<td>20</td>
</tr>
<tr>
<td>Bedrock geology of the Bowdoinham quadrangle, Maine</td>
<td>14</td>
</tr>
<tr>
<td>Bedrock geology of the Bangor quadrangle, Maine</td>
<td>14</td>
</tr>
<tr>
<td>Bedrock geology of the Kittery 1:100,000 quadrangle, Maine and New Hampshire</td>
<td>11</td>
</tr>
<tr>
<td>Bedrock geology of the Portland 1:100,000 quadrangle, Maine and New Hampshire</td>
<td>10</td>
</tr>
<tr>
<td>Earthquakes in Maine</td>
<td>9</td>
</tr>
<tr>
<td>Significant sand and gravel aquifers in the Brownfield quadrangle, Maine</td>
<td>9</td>
</tr>
</tbody>
</table>

Showing 1 to 10 of 2,036 entries
Most popular works are automatically flagged on metadata page.
What is Next?

Additional features

- Saved searches
- RSS feeds
- JavaScript plug-in for embedded search capability

Future Uses

- Unpublished/Progress maps collection
- Digital photos w/ geotag
- Scanned photo slide collections
- Storing historical spatial datasets
Summary

• Partnership with Maine State Library has been excellent for MGS. They are the document management and preservation experts.

• Efficiencies in file management, storage, backup, programming. Economies of scale for state agencies.

• Cloud-based tools are available for document management that offer longevity, better search functionality, integration with other products for more exposure.

• A better understanding of who is using our products with precise analytics leads to program justification