

# The USGS Data Management Website

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**September 11, 2013**

# Talk Overview

- Why a website?
- Coming attractions
- Questions



<http://www.usgs.gov/datamanagement/>

(DM = Data Management)

# Why a Website?

- Many groups focusing on DM but knowledge about their existence or activities was limited
- Some information available related to DM on different websites, on intranet pages, or not online at all
- Not enough DM expertise across Survey
- → Need for easy access in one location



# Why a Website?

- **Need for something to compliment and support the Survey Manual handbook**
  - The handbook tells researchers “what” needs to be done
  - The Website provides non-prescriptive guidance on “how” Survey Manual policies can be implemented, where to find help, and who to contact
  - Linkages to Manual throughout website
- **There are new and existing policies on DM, and a website is a way to disseminate information and educate**

# Website Development

- **Small team convened**
  - Heather Henkel, Viv Hutchison, Michelle Chang, Trent Faust, Lisa Zolly
- **Each upper-level navigation item matches a Lifecycle element (e.g., “Plan”)**
  - Supported by sub-topics (e.g., “DM Planning”, “Organize Files and Data”, “Data Standards”, etc.)
- **Pages organized in a consistent manner including: Description, Best Practices, Examples, Key Points, Tools, Recommended Reading, Handouts**
- **CDI-funded, reviewed by Community**

Home
Overview of Data Management
<b>Plan</b>
DM Plans
Organize Files / Data
Data Standards
Data & File Formats
Data Templates
Stewardship
Acquire
Preserve
Publish/Share
Describe / Metadata
Manage Quality
Back Up & Secure
Training & Resources
References
Policy References

# Tell me more!

- **Website contains additional information**
  - Training and resources
  - Policy
  - Associated projects
  - Contacts
- **Note: “Process” and “Analyze” not covered at this time**
  - Much more specialized activity and what the researcher may need least help in



CC image by cybrarian77 on Flickr

## USGS Data Management

- Home
- Overview of Data Management
- Plan
- Acquire
- Preserve
- Publish/Share
- Describe / Metadata
- Manage Quality
- Back Up & Secure
- Training & Resources
- References
- Policy References
- Partners & Projects
- Contacts

## Supporting and Enabling USGS Data Management

### How do I...

#### [...Get Started?](#)

Why should you manage your data? What's the value of data management? Learn the basics in an Overview of Data Management.

#### [...Create a Data Management Plan?](#)

Learn how to create a data management plan and why it can help you.

#### [...Evaluate my Data Acquisition Options?](#)

Understand your choices before you make them.

#### [...Organize my Data?](#)

Use USGS guidelines to organize your data to benefit yourself and others.

#### [...Create Metadata?](#)

All published datasets require metadata. Learn how to create it and how it helps you.

#### [...Back Up my Data?](#)

Better safe than sorry. Avoid disaster with regular backups.

#### [...Preserve my Data?](#)

Find out more about archiving, disposition, persistent Digital Object Identifiers (DOIs), and repositories.

#### [...Dispose of Old Data?](#)

Federal regulations govern the disposition of data. Learn how this affects you.

#### [...Publish my Data?](#)

Find out how to make your data available and visible, and about restrictions on data publishing.

USGS Science Strategy Report ("[Facing Tomorrow's Challenges – U. S. Geological Survey Science in the Decade 2007–2017](#)", USGS Circular 1309) names data integration as one of the prerequisites for achieving its organizational goals.

"Challenging scientific questions require the analysis and integration of information and data across scientific disciplines. Data integration within the USGS is a prerequisite for joining international efforts to develop worldwide science collaboration and computing platform[s] that can address future challenges."

Applying best practices to managing scientific data lays the necessary foundation for data integration. The purpose of this Web site is to support and enable USGS scientists in data management.

You can learn about data management techniques and best practices, download sample documents, and find references to authoritative sources by navigating various stages of the [USGS Data Lifecycle](#).

*If the data you need still exists;  
If you found the data you need;  
If you understand the data you found;  
If you trust the data you understand;  
If you can use the data you trust;  
Someone did a good job of data management.  
Rex Sanders - USGS-Santa Cruz*

Data not organized?



You can make it better.



Good planning leads to good data organization. It may not be as simple as pushing a button, but it pays dividends from the start.

## Highlights

[Highlights Archive](#)

### [Open Data Policy – Managing Information as an Asset \[PDF\]](#)

Important memorandum from the Office of Management and Budget (OMB) was released on May 9, 2013. Arriving months after the [OSTP Memo \[PDF\]](#), the OMB memo defines 'open data' as "...publicly available data structured in a way that enables the data to be fully discoverable and usable by end users." The policy requires information to be created to support "downstream information processing and dissemination activities". Other requirements involve building

### [Coming Soon! The Geologic Collections Management System \(GCMS\)\[PDF\]](#)

The GCMS is a Master Catalog and Collections Management Plan for USGS Geologic Samples and Sample Collections. The Geologic Materials Repository Working Group led by the National Geological and Geophysical Data Preservation Program (NGGDPP) has examined ways in which USGS collections could be coordinated, cataloged, and made available to researchers. Criteria have been developed for evaluating current collections and to establish an operating plan and set of

**USGS Data Management**

Home [Plan > Organize Files and Data](#)

Overview of Data Management

**Plan**

- DM Plans
- Organize Files / Data**
- Data Standards
- Data & File Formats
- Data Templates
- Stewardship
- Acquire
- Preserve
- Publish/Share

```
graph LR; PLAN --> ACQUIRE; ACQUIRE --> PROCESS; PROCESS --> ANALYZE; ANALYZE --> PRESERVE; PRESERVE --> PUBLISH_SHARE[PUBLISH / SHARE]; Describe[Describe Metadata, Documentation] -.-> PLAN; Describe -.-> ACQUIRE; Describe -.-> PROCESS; Describe -.-> ANALYZE; Describe -.-> PRESERVE; Describe -.-> PUBLISH_SHARE; ManageQuality[Manage Quality] -.-> PLAN; ManageQuality -.-> ACQUIRE; ManageQuality -.-> PROCESS; ManageQuality -.-> ANALYZE; ManageQuality -.-> PRESERVE; ManageQuality -.-> PUBLISH_SHARE; BackUpSecure[Back Up & Secure] -.-> PLAN; BackUpSecure -.-> ACQUIRE; BackUpSecure -.-> PROCESS; BackUpSecure -.-> ANALYZE; BackUpSecure -.-> PRESERVE; BackUpSecure -.-> PUBLISH_SHARE;
```

**Organize Files and Data**

File organization with a logical, clear structure and labeling system enables not only others to access it easier for you to find your own data as well. These are the public's data, and we have a stewardship data. Thinking about how you will organize your files and data early on in planning may save you from and rename files later on.

**Navigation items throughout page**

**USGS Data Management**

- Home
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Plan > Organize Files and Data

**USGS Data Lifecycle Diagram**

```
graph LR; PLAN --> ACQUIRE; ACQUIRE --> PROCESS; PROCESS --> ANALYZE; ANALYZE --> PRESERVE; PRESERVE --> PUBLISH_SHARE; PUBLISH_SHARE --> END[ ];
```

Describe (Metadata, Documentation)

Manage Quality

Back Up & Secure

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**Navigation items linked for easy movement within website**

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Plan > Data Management Plans



### Data Management Plans

Planning for Data Management involves answering questions about the data: Do they already exist? How will they be obtained or collected? What is the schedule and budget for data collection? How will the data be checked and certified? What are the likely uses for the data? How will the data be stored, accessed, and protected? A good data management plan provides a strategy for how you will answer all of these questions.

#### Data Management Checklist [PDF]

This checklist is useful to ensure that you have addressed the issues that may affect your data.



Can't open this file? [Get Adobe Acrobat Reader.](#)

### Best Practices: Data Management Planning Considerations

#### What data are you collecting? Do the data already exist?

- Have you checked all possible sources for data needs?
- Other field offices?
- Other Federal, State, or local agencies?
- FGDC Metadata repository?

[see [Acquire > Methods](#) for more information on data acquisition issues]

#### Who is responsible for managing the data and the data management plan?

- May be the same person on smaller projects
- On larger projects you may have several individuals involved
- Where will the data and data management plan be stored?
- Who is responsible for updating the metadata?
- Are there any access restrictions?

[see [Describe > Metadata](#) and [Describe > Access Controls and Copyrights](#) for more information]

#### How will data be collected?

- Electronically or on paper
- In-house or by contractor

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#### What format will the data and metadata be in?

- What format will be used to collect the data?
- Are there any data standards for this data type?
- Will a different format be used to share or publish the data?
- What metadata standard will be used?
- Will you be using a standard naming format and version control?

### Key Points

- Consider if the data you want to collect already exist in other agencies, field offices, and repositories.
- Designate a person who will be responsible for the data management plan and the data.
- Establish how and when the data will be collected, the formats/standards of the data and metadata, as well as the budget for the collection.
- Decide how the data will be checked for quality and how it will be stored and backed up.
- Tools are available to help with data management planning.
- Utilize the [Data Management Checklist \[PDF\]](#) to ensure that you have addressed the issues that may affect your data.

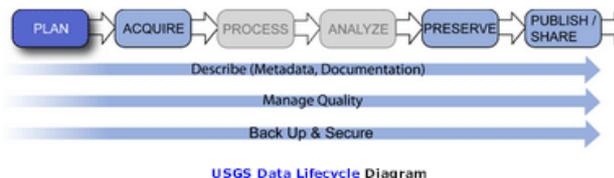
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This example Data Management Plan was generated with [DMPTool](#) (see below). It includes five

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[Plan > Data Management Plans](#)



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[Plan > Data Management Plans](#)



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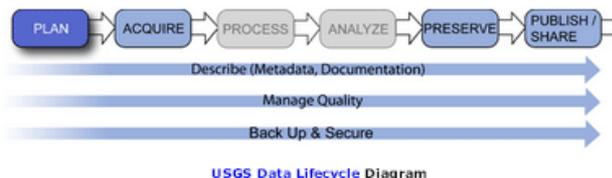
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## Tools

### DMPTool

The DMPTool is a collaboration of multiple institutions, including [DataONE](#). The DMPTool will help you:

- Create ready-to-use data management plans for specific funding agencies
- Meet funder requirements for data management plans
- Get step-by-step instructions and guidance for your data management plan as you build it

"Designed to help researchers learn about data management and **write guided Data Management Plans (DMPs)**, the DMPTool walks researchers through the steps necessary to create a generic NSF DMP or a DMP targeted to one of six NSF Directorates. You can also save, preview, and export your plans and future functionality will allow you to share DMPs with collaborators and other researchers." [Visit the DMPTool](#).

Anyone can sign up for a free account. Click the "Get Started" button on the DMPTool homepage to begin. USGS users will select "None of the above" from the drop-down menu of institutions. See the [DMPTool Guide](#) for additional information and assistance.

### What the U. S. Geological Survey Manual Says:

The *USGS Manual* [Chapter 1100.1 - Information Product Planning](#) discusses planning for information products, which includes data products:

**"Policy:** Planning for information products begins as early as possible during the evolution of a project. A written planning document must be developed prior to production for each information product. An information product plan will ensure adequate management and budgeting for all elements of the information life cycle including planning, development, dissemination, documentation, storage, evaluation, and disposition."

**Note: Information Product:** An information product is the compilation of scientific communication or knowledge such as facts, **data**, or interpretations in any medium (e.g., print, digital, Web) or form, including textual, numerical, graphical, cartographic, or audiovisual, to be disseminated to a defined audience or customer, scientific or nonscientific, internal or external.

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- Chatfield, T., Selbach, R. February, 2011. Data Management for Data Stewards. Data Management Training Workshop. Bureau of Land Management (BLM).
- [DataONE education modules](#). Accessed June 13, 2012.
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- Partners & Projects
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Training & Resources

## Data Management Training & Resources

### PowerPoint Training Modules

Developed in conjunction with [DataONE](#) and the [Bureau of Land Management](#) (BLM), these training modules offer in-depth guidance on many of the topics covered on the Web site.

These Training Modules will be deployed to this Web site over the coming months.



### Data Management Body of Knowledge

The "DAMA guide to the Data Management Body of Knowledge" (DAMA-DMBOK) is a great resource for those involved in any aspect of data management. Produced by the Data Management Association, the DAMA-DMBOK covers topics such as data governance, data architecture, data security, data warehousing, document and content management, data quality, metadata, and professional development, among others. The "DAMA Dictionary of Data Management" contains over 2,000 entries covering various data management terms.

These files are licensed for distribution to USGS personnel only, and are available as two separate PDF files:

- DAMA guide to the Data Management Body of Knowledge (DAMA-DMBOK) (5 MB PDF)
- DAMA Dictionary of Data Management (4.2 MB PDF)

To acquire these files, please contact Heather Henkel ([hhenkel@usgs.gov](mailto:hhenkel@usgs.gov)).

### Past Training: 2011 Data Management Workshop

On September 21-23, 2011, a 3-day Data Management workshop was sponsored by Core Science Systems (CSS) to support Bureau-wide data management activities. This activity, held in Reston, VA, was part of a series of data management projects funded by CSS,

Future Data Management Training

The Core Science Analytics and

# Educational resources on website

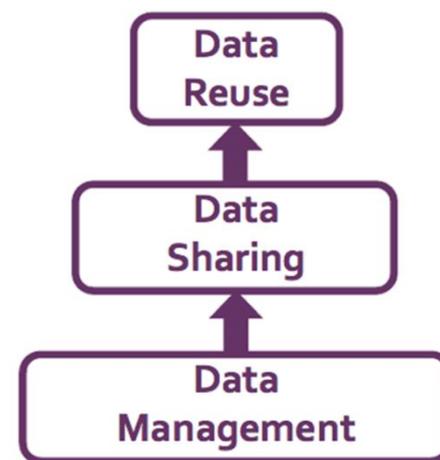
 More on this in a few slides

# Is It Working?

- **DM website used as a teaching tool**
  - Having this information presented in a logical, straightforward manner has made people's job easier
  - Frequently people did not know where to go for help, get examples, or recommendations for tools; now able to find information in one place
- **Steady increase in users since launch (Dec. 2012); believe we'll see more as overarching DM policies are implemented**
  - Contacted by others for more information (Federal Agencies, outside US)

# What's Next?

- **New content on website**
  - Handouts
- **DM Training Materials**
  - Release of DM Videos this Fall
- **Policy Documents**
  - New/updated Survey Manual chapters on data management, metadata, data release, and software release; data preservation
  - Linkages to/from DM website



# DM Website

- Can help you do your job better
- Is accessible to everyone
- Fat-free

→ What's not to like?

# Questions? Comments? Good Recipes?

- Let us know if there is new content you'd like to see or content that could be improved
- Contact Email:
  - [GS\\_Data\\_Management@usgs.gov](mailto:GS_Data_Management@usgs.gov)
- Website:  
<http://www.usgs.gov/datamanagement/>