

PALS Partner Profile: Minnesota Water Research Digital Library

In May 2018 PALS and the Minnesota Water Research Digital Library (MnWRL) launched their online digital repository now available at <https://wrl.mnpals.net/>. This site is PALS' first State Agency and PALS hopes that this project and profile can help show how this can be a success for other Minnesota State agencies.

Our first official meeting to discuss this project was in May of 2017. Our team has consisted of a total of 3 FTE, only 1 who was full time on the solution. We worked with Steve Roos and Bob Patton, shown below. They are standing next to a projection of the homepage of the previous custom developed system.



Meeting unique needs

Before working with us, MnWRL used a custom developed system for their digital library. It worked well but the interface became outdated and everything needed an overhaul. This could be costly and they wanted to explore other options so they came to us as part of that exploration. Our proposed solution was cost-effective and could meet their unique needs.

“Although our original site functioned as designed we recognized the need for a better user interface experience and more advanced search options. Since the original MnWRL site was custom built the cost to redesign the user interface and add any additional search options was prohibitive. PALS offered us a cost effective approach to modernizing the user experience for MnWRL as well as the ability to make future changes and additions seamlessly at reasonable cost. Islandora not only provided a new user interface that is visually stimulating, it also allowed us to develop quick one-click access points to topical

areas within the library. We also wanted to provide citations in different formats as an additional benefit to researchers using MnWR,” Steve Roos, Minnesota Water Research Digital Library.

Their needs were:

- To have a user-friendly central repository for Minnesota water research related material
- A clean, modern, mobile user interface
- An interface that did not rely only on searching but provided additional quick first access points to material
- Ability to support citations and links to documents not within the repository

Our solution: Islandora open source digital repository

The solution we provided them with is the Islandora open source digital repository. You can learn more about Islandora here: <https://www.mnpals.org/services/islandora/digital-asset-management-resources/>.

Our solution fit well with their needs because it is based on robust digital asset management software called Fedora that supports the organization and preservation of digital objects. Drupal is the user interface and can be customized and extended to meet a wide variety of unique needs. This includes the ability to automatically generate citations based on metadata provided when an object is loaded. It is also possible to easily find if the resource is available in Google Scholar, and one can include links in the metadata to outside resources if the original document is not available.

“Islandora is a flexible, yet robust, suite of software tools that provided us the ability to collect and manage the objects in our collection as a secure archive, search through the collection and refine the results using an extensive set of metadata-based tools, and deliver a modern, intuitive user experience.

The project

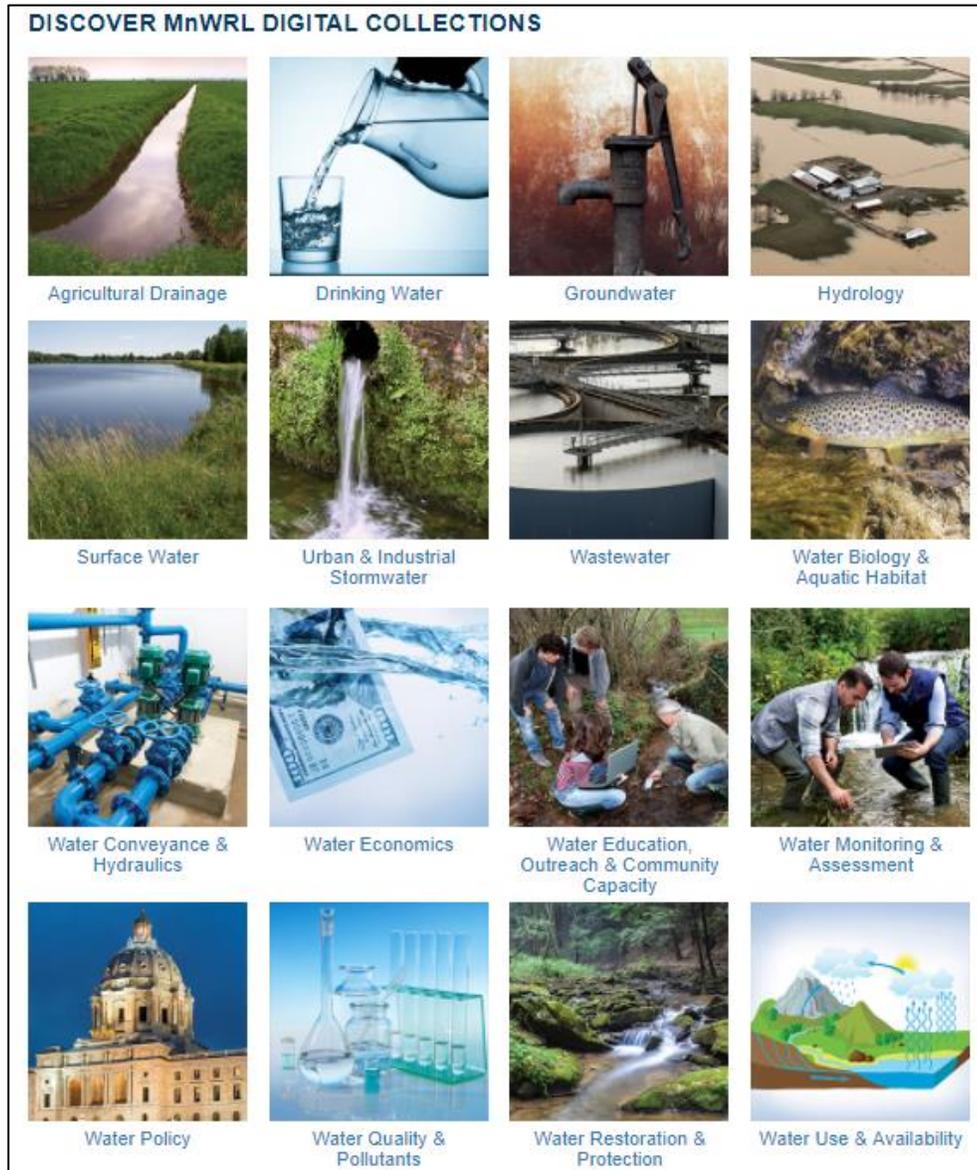
We started the project with an in person meeting in May 2017. This is something we try to do with each project. Meeting everyone in person allows us to start getting on the same page and know who we are working with. It also gives us time to discuss key topics and answer questions that empower the success of the project. One of the goals of these meetings is to define the goals and scope of the project, and talk about the overall structure of the repository. It can be easy to move forward without discussing the scope or bigger picture. This can lead to confusion and lack of clarity on purpose, and slow down the project even as other parts move forward.

After our meeting we began testing out MnWRL’s original system. We allowed enough time at this stage and this turned out to be a key success factor. This let us understand how MnWRL’s records worked and what metadata they used, and what aspects of it would be needed in their new repository.

“Probably the most important aspect of the project was the time and effort spent in getting the metadata right. Metadata is the foundation of a library’s organization, it provides the ability to catalog and search through the collection in ways that are useful for managing the collection and delivering functionality to our users,” Steve Roos, Minnesota Water Research Digital Library.

Importance of and impact of metadata

An example of the importance of and visual impact of metadata is one of the first things you see on the homepage. There are sixteen icons that give you quick access to all of the material related to the topic listed underneath the image.



This is only possible because in the previous system, documents were tagged with one (or more) sixteen “main topics” that best described that document. To get a bit technical, each of the icons on the homepage is actually a saved search that pulls all objects with that term in the metadata. For example, this is a visual of what occurs after clicking on “Groundwater.”

Refine Your Results

Main Topic

- [Groundwater\(438\)](#) +-
- [Water Quality & Pollutants\(162\)](#) +-
- [Surface Water\(155\)](#) +-
- [Water Conveyance & Hydraulics\(141\)](#) +-
- [Water Use & Availability\(132\)](#) +-
- [Hydrology\(77\)](#) +-
- [Water Education, Outreach & Community Capacity\(64\)](#) +-
- [Water Policy\(60\)](#) +-
- [Drinking Water\(58\)](#) +-
- [Water Restoration & Protection\(57\)](#) +-

Show more

Keywords

- [ground water\(167\)](#) +-
- [ground-water\(167\)](#) +-
- [groundwater\(167\)](#) +-
- [groundwaters\(167\)](#) +-
- [Groundwater\(86\)](#) +-
- [surface water\(54\)](#) +-
- [surface waters\(54\)](#) +-
- [surface-water\(54\)](#) +-
- [surface-waters\(54\)](#) +-
- [surfacewater\(54\)](#) +-

Show more

Date

- [2009\(26\)](#) +-
- [2013\(24\)](#) +-
- [2012\(23\)](#) +-
- [2010\(19\)](#) +-
- [2007\(18\)](#) +-
- [2011\(17\)](#) +-
- [1998\(16\)](#) +-
- [2005\(14\)](#) +-

Search results

(1 - 20 of 438)

1 2 3 4 5 ... next last



Document Title	DRAFT Strategic Plan For The Minnesota Department of Natural Resources Groundwater Management Program
Date	2013-10
Main Topic	Groundwater
Author	Minnesota Department of Natural Resources
Keywords	Groundwater management
Creator of record	SteveRoos
Date Record Loaded	2017-07-31T20:06:15.218Z



Document Title	Potential Groundwater Recharge for the State of Minnesota Using the Soil-Water-Balance Model, 1996-2010
Date	2015
Main Topic	Groundwater
Author	Smith, Erik A., Westernbroek, Stephen M.
Keywords	Groundwater, ,
Creator of record	SteveRoos
Date Record Loaded	2017-08-08T13:26:24.421Z



Document Title	Preliminary Evaluation of Ground-Water Contamination by Coal-Tar Derivatives, St. Louis Park Area, Minnesota
Date	1984
Main Topic	Groundwater,
Author	Hult, Marc F., Schoenberg, Michael E.
Keywords	Groundwater, , ,
Creator of record	SteveRoos

Another visual impact of metadata are facets, which appear to the left. These allow one to easily narrow the search down. In addition one can see the search results list and easily navigate to a single object, or use hyperlinked metadata to find other objects with similar keywords. Clicking on “groundwater management” in the first object results in the other objects with that keyword. In this case, just 2.

“Groundwater management” (x) >

Refine Your Results

Main Topic

- [Groundwater\(2\)](#) +-

Keywords

- [Groundwater management\(2\)](#) +-

Decade

- [2010-2019\(2\)](#) +-

Item Physical Format

- [Documents \(other\)\(2\)](#) +-

Clean Water Fund

- [No\(2\)](#) +-

Sort

- Title
- Date Published
- Creator of record
- Date Record Loaded

ADVANCED SEARCH

FIELD

Title

SEARCH TERMS

*Groundwater

Search

Search results

(1 - 2 of 2)



Document Title	DRAFT Strategic Plan For The Minnesota Department of Natural Resources Groundwater Management Program
Date	2013-10
Main Topic	Groundwater
Author	Minnesota Department of Natural Resources
Keywords	Groundwater management
Creator of record	SteveRoos
Date Record Loaded	2017-07-31T20:06:15.218Z



Document Title	Groundwater Management: Capacity Assessment At The Local Level: A Survey Of Minnesota Association Of Soil And Water Conservation Districts
Date	2015-12-04
Main Topic	Groundwater, Water Education, Outreach & Community Capacity, Water Monitoring & Assessment
Author	Pradhananga, Amit, Davenport, Mae A., Perry, Vanessa
Keywords	Groundwater management
Creator of record	SteveRoos
Date Record Loaded	2017-07-31T20:00:58.774Z

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This can help a general user discover additional material on the same topic easily. A lot of this was possible and easier to implement because we allowed enough time for exploring the metadata earlier on, as well as to review it as we got closer to completing the project.

In addition to these access points, the metadata allows us to provide even more on the home page. This consists of the **Browse By** and **Advanced Search** features and the **Publication Series**. There is also a **Recently Added** feature that gives one quick access to the five most recent objects that were loaded. Drupal allows us to be creative in terms of the layout and lets us meet their specific design needs.

Testing, migration, and communication

Through this early stage we kept up constant and clear communication. It was especially important to be clear on how the data worked in the original system and how that might translate to our Islandora solution. So this required a lot of testing and continued communication. Even when we were satisfied that everything looked good to migrate, it didn't happen at once. We started with small tests of the migration (done through scripts, not the front end interface) to make sure everything worked. It's important to allow enough time early in any project for this period. The more one discovers at this stage, the less work it will be down the road.

An opportunity in system failure

At one point during the project the original system stopped working. At the time MnWRL needed to be loading objects into their system but this wasn't possible. Luckily we were far enough along that they could start loading in the new repository. The data entry forms for doing so were not quite finished – though they are never final, they can always be changed – but we decided that they could go ahead and load material. Though the forms were not considered ready at the time they did work and it actually gave us a good chance to test them. Some changes were made to the form based on this and we got them ready. This gave everyone a good trial run of the system. It showed us what worked and what didn't. It would be a good idea to work something like this into every project. A trial run of sorts, where you use the system as if it were live and in production. Doing so can point out what works and what doesn't a lot quickly and can help discover needed innovations. It allows one to see the failures without the pressure of the site being live.

After this we continued making necessary changes and worked through the last of the migration of objects from the old system to our solution. Concurrently we worked on the user interface. This became easier as more objects got loaded and we could see the visual impact of the metadata and requested features more easily.

Going live

As we got closer to our go live date, we held another in person meeting to go through the entire website and potential issues. This allowed us all to get on the same page again and make sure we had not missed anything. Even with the best of communication things can be missed. We made some updates after this meeting and then felt things were ready to go public.

“So far we've had nothing but positive feedback from both reviewers and users of the new site. While it's still too early to judge long-term impact on use of the library, in the short-term site visits have

increased significantly over the same time period last year,” Steve Roos, Minnesota Water Research Digital Library.

Keys to success

We felt that the important aspects that led to the successful launch of the site include:

- Enough time for planning and testing
- Defined scope and goals of the project early on
- Lines of communication clear and straightforward
- Continued check-ins and communication

“Regardless of the quality and capability of the software package embodied in Islandora the real key to success in a project is the dedication of the team we got to work with. The staff at PALS provided the skills, attention, and flexibility necessary to complete this complex project on time,” Steve Roos, Minnesota Water Research Digital Library.

We hope that our experiences with MnWRL help to show the value of a digital repository, and that our solution is one that fits your needs.