

Final Report

**“Don’t Duck Metadata” Outreach Project
Metadata Outreach to Watershed, Conservation, and Underserved Organizations**

**Submitted
by**

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Summary

Over the past four years, the Commonwealth of Pennsylvania has invested millions of dollars through various conservation based funding programs. Programs such as the Pennsylvania Department of Environmental Protection's Growing Greener initiative (www.growinggreener.org), which alone is responsible for more than 1\$127 million in watershed and conservation related grants since 1999, as well as the Pennsylvania Department of Conservation and Natural Resources Greenways (<http://www.dcnr.state.pa.us/brc/greenways/index.htm>) and Rivers Conservation programs (<http://www.dcnr.state.pa.us/brc/rivers/riversconservation/index.htm>), have benefited many local communities through the restoration of streams and watersheds, the development of trails and wetlands, and assessments of land use/conserved lands/water quality, and biodiversity studies. These three programs combined are the largest grant making entities in the Commonwealth and are responsible for the administration of thousands of small (\$20-\$40K) and several hundred larger (\$100-\$300K) grants and thousands of unique, highly detailed, data sets (data from these projects various from water quality to ortho imagery to critical infrastructure data such as roads, bridges, and buildings--such as schools and hospitals, as well as land use, and parcels). These projects cover a wide variety of geographic extents—from an indepth study of an entire river basin, to a township based watershed assessment. However, most of this vitally important data remains undocumented and inaccessible, due to a lack of resources, planning, training and awareness among both the funders and grantees.

This project, which was funded through the Federal Geographic Data Committee's Don't Duck Metadata Outreach program, has achieved a high degree of success. The focus of the project—underserved groups such as watershed, conservation, K-12, and other non-profit organizations, has allowed for the expansion of the data available through the state clearinghouse, Pennsylvania Spatial Data Access, and provided needed training to groups normally unable to attend training sessions.

The data and metadata now available through the site includes rivers conservation plans, watershed assessments, heritage inventories, and even additional statewide data (see metadata/data list for full list). The partner organizations worked with PASDA to identify grantees, projects, and data, and to develop guidelines and training materials, schedule training sessions, and provide feedback from the trainees.

PASDA, which currently provides metadata training for state agencies and local governments, will provide support for the project through its role as the Commonwealth clearinghouse. PASDA maintains a database of approximately 36,000 metadata records and 32,000 data sets from Federal, state, local, and regional governments. PASDA metadata is indexed and searched using Isite software and is created in XML format. PASDA provides access to metadata and data via the PASDA website as well as through unique applications including a data reprojection/clipping engine (which also reformats metadata on the fly), the Pennsylvania Atlas (an ArcIMS web GIS application), through services on the Geography Network, and through a new metadata service called PennCat. PennCat is being developed to harvest metadata from the servers of local data developers in an effort to provide access to the most up to date data and metadata.

Metadata Training

Approximately 10 metadata training sessions were held on behalf of this project. These sessions were held for the Department of Conservation and Natural Resources, the Allegheny County region, PA state agencies, and the Rivers Conservation and Growing Greener grantees. Due to the availability of large computer lab facilities, the smaller sessions anticipated initially were combined into 10 larger sessions. The sessions were full day hands on seminar which covered background on the metadata standard and many hands on metadata development exercises. All participants received a “Metadatapalooza” CD/DVD with all the exercises and background material as well as lessons/exercises to follow. Over 100 individuals participated in these sessions.

Specialized Assistance

The project provided specialized assistance to several major partners.

We worked closely with the Western Pennsylvania Conservancy to assist them with the development of metadata and to host both metadata and data for over 130 data sets. This assistance allowed them to complete a project that was funded by the FGDC. In addition, the project provided extensive assistance to the Rivers Conservation and Growing Greener programs. These programs fund many GIS data related projects through watershed groups in the state. These groups have limited experience with GIS and less experience with metadata. The project was able to provide support for metadata development—either through their participation in one of the training sessions (see above) or through the development of documentation for data provided to the clearinghouse. The project also developed a guidelines for grantees <http://www.pasda.psu.edu/wcgg/> and a tutorial entitled Map Your Watershed <http://www.pasda.psu.edu/tutorials/watershed/>.

The project also provided guidance and information on standards to the Pennsylvania Organization for Watersheds and Rivers for their effort to establish a statewide water quality data network.

Other organizations that worked directly with the project team on metadata and data development included the Heritage Conservancy, Natural Lands Trust, Northfork Watershed Association, Wissahickon Middle School, Stream Restoration Inc, the Pennsylvania Environmental Council, and many others.

Metadata templates were created for a number of organizations during this project including the Western PA Conservancy and the Department of Conservation and Natural Resources. Online metadata entry forms were made available through the PASDA metadata resources section.

Several presentations were given for the project. The most significant being a presentation to the PA County Conservation District annual meeting.

Metadata Developed for Project

Alliance for Aquatic Resource Monitoring (ALLARM)

Pennsylvania water quality database

Department of Conservation and Natural Resources Rivers Conservation Plan and Growing Greener Program

Delaware River Basin Commission

15 metadata/data files for DRBC.

PA DEP Groundwater and Drinking Water

Ambient and Fixed Station Network (FSN) Groundwater Monitoring Point Data

PA GAP Project

Pennsylvania Stewardship Areas

Heritage Conservancy Data from River Conservation Plans

Lower Delaware, Nesh., RBA, Maiden Creek, Kiski-Conemaugh, Sewickley Creek, Tookany Creek

Penn State Dept. of Meteorology Impervious Surface Grid Data

Fractional Vegetation Cover for Northeast Pennsylvania and Impervious Surface data for Pennsylvania

PA Fish and Boat Commission

Fish Species Occurrence Database, Historical listing (1975-1995) and Pennsylvania fish species

Spring Creek/Clearwater Conservancy Watershed Data

Wetlands, Roads, PCB, Toxic Releases and Watershed Boundaries.

Susquehanna River Basin Commission

- Cities in the New York portion of the Chemung Subbasin of the Susquehanna River watershed.
- Cities in New York
- Cities in the New York portion of the Upper Susquehanna Subbasin of the Susquehanna River Watershed

- County boundary polygons for New York
- County boundary polygons for Pennsylvania

- Roads in the New York portion of the Chemung Subbasin of the Susquehanna River watershed.

- Roads contained in the Pennsylvania portion of the Chemung Subbasin.
 - Roads contained in the Juniata River Subbasin in Pennsylvania
 - Roads contained in the Pennsylvania portion of the Lower Susquehanna Subbasin.
 - Roads contained in the Middle Susquehanna River Subbasin of Pennsylvania.
 - Roads contained in the Pennsylvania portion of the Upper Susquehanna River Subbasin.
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- Streams delineated at 1:100,000 scale for the New York portion of the Chemung Subbasin of the Susquehanna River watershed.
 - Stream line coverage of the Chemung Subbasin in Pennsylvania of the Susquehanna River Basin.
 - Stream line coverage of the Juniata Subbasin of the Susquehanna River Basin.
 - Stream line coverage in the Lower Susquehanna Subbasin in Maryland of the Susquehanna River Basin.
 - Stream line coverage of the Lower Susquehanna Subbasin in Pennsylvania of the Susquehanna River Basin.
 - Stream line coverage for the Middle Susquehanna Subbasin of the Susquehanna River Basin.
 - Streams delineated at 1:100,000 scale for the Susquehanna River Basin.
 - Streams delineated at 1:100,000 scale for the New York portion of the Upper Susquehanna Subbasin of the Susquehanna River watershed.
 - Stream line coverage of the Upper Susquehanna Subbasin in Pennsylvania of the Susquehanna River Basin.
 - Streams in the West Branch Susquehanna Subbasin of the Susquehanna River Basin.
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- Towns in the New York portion of the Chemung Subbasin of the Susquehanna River watershed.
 - Towns in the New York portion of the Upper Susquehanna Subbasin of the Susquehanna River Watershed
 - Villages in the New York portion of the Chemung Subbasin of the Susquehanna River watershed
 - Villages in New York
 - Villages in the New York portion of the Upper Susquehanna Subbasin of the Susquehanna River Watershed
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- Waterbodies delineated at 1:100,000 scale for the New York portion of the Chemung Subbasin of the Susquehanna River watershed.
 - Waterbodies delineated at 1:100,000 scale for the New York portion of the Upper Susquehanna Subbasin of the Susquehanna River watershed.
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- Watershed boundary for the Chemung Subbasin of the Susquehanna River watershed.
 - Watershed boundary for the Pennsylvania portion of the Chemung Subbasin of the Susquehanna River watershed.
 - Watersheds delineated at 1:24,000 for the Pennsylvania portion of the Chemung Subbasin of the Susquehanna River watershed.

- 8-digit Hydrologic Unit Codes for the Chemung Subbasin of the Susquehanna River watershed.
- Watershed boundary for the Lower Susquehanna Subbasin of the Susquehanna River watershed.
- Watersheds delineated at 1:24,000 for the Juniata Subbasin of the Susquehanna River watershed.
- 11-digit hydrologic unit code watersheds for the Juniata Subbasin of the Susquehanna River watershed.
- 8-digit Hydrologic Unit Codes for the Juniata Subbasin of the Susquehanna River watershed.
- Watersheds delineated at 1:24,000 for the Lower Susquehanna Subbasin of the Susquehanna River watershed.
- Watershed boundary for the Pennsylvania portion of the Lower Susquehanna Subbasin of the Susquehanna River watershed.
- 8-digit Hydrologic Unit Codes for the Lower Susquehanna Subbasin of the Susquehanna River watershed.
- Watershed boundary of the Middle Susquehanna Subbasin of the Susquehanna River watershed.
- Watersheds delineated at 1:24,000 scale for the Middle Susquehanna Subbasin of the Susquehanna River watershed.
- 11-digit hydrologic unit code watersheds for the Middle Susquehanna Subbasin of the Susquehanna River watershed.
- 8-digit Hydrologic Unit Codes for the Middle Susquehanna Subbasin of the Susquehanna River watershed.
- Watershed boundary polygon coverage for the Susquehanna River.
- Watershed of the Susquehanna River.
- Watershed boundary for the Pennsylvania portion of the Upper Susquehanna Subbasin of the Susquehanna River watershed.
- Watersheds delineated at 1:24,000 scale for the Pennsylvania portion of the Upper Susquehanna Subbasin of the Susquehanna River watershed.
- 8-digit Hydrologic Unit Codes for the Upper Susquehanna Subbasin of the Susquehanna River watershed.
- Watershed boundary for the West Branch Susquehanna Subbasin of the Susquehanna River watershed.
- Watersheds delineated at 1:24,000 scale for the West Branch Susquehanna Subbasin of the Susquehanna River watershed.
- 11-digit hydrologic unit code watersheds for the West Branch Susquehanna of the Susquehanna River watershed.
- 8-digit Hydrologic Unit Codes for the west Branch Susquehanna Subbasin of the Susquehanna River watershed.
- 8-digit Hydrologic Unit Codes polygon coverage for the Susquehanna River Basin

Pennsylvania Watersheds

Pennsylvania - 104 State Water Plan watersheds.

Western Pennsylvania Conservancy

130 data sets from the Western PA Conservancy including easements, roads, historic projects, and properties.

Conclusion and Future Needs

The need for continuing support for watershed and conservation organization continues. PASDA will continue to work with these disadvantaged groups and encourage their development of metadata through developing enhanced online tutorials and metadata entry capabilities.

As the effort continues, the data infrastructure and inventory of the state will grow, redundant data related efforts will decrease, and metadata awareness will increase. The true success of this project was the development of metadata requirements for the grantees, the extensive data and metadata made available to the GIS users in the Commonwealth, and enhanced resources for all users.