

DIGITAL MAPPING TECHNIQUES 2016

The following was presented at DMT'16
(May 22-25, 2016 - Florida Geological Survey,
Tallahassee, FL)

The contents of this document are provisional

See Presentations and Proceedings
from the DMT Meetings (1997-2016)

<http://ngmdb.usgs.gov/info/dmt/>

A Potpourri of GIS Activities at the Delaware Geological Survey

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DIGITAL DATA COLLECTION IN THE FIELD

The Delaware Geological Survey (DGS) installed the ESRI Collector App (ESRI, 2016a) on an Apple iPad Air 2 (Apple, 2016) to enable our geologists to create and update digital geologic information out in the field. Customized map layers were added to the map for navigation purposes, and these layers were available while the device was connected online with cellular service as well as when the device had no service. The Collector App gives a user the ability to continue to work offline, and when reconnected online, the offline edits are synched with the working dataset.

DGS geologists wanted to have a date and time stamp attribute field automatically populate when collecting a data point. Editor tracking attribute fields (Creation Date, Creator, Edit Date, Editor) were added to a geodatabase feature class file in ArcGIS Desktop software (ESRI, 2016b). A Global ID attribute field was also added since this is what the dataset reads to retrieve date and time from the mobile device. It turned out that this method of adding editor tracking fields does not work in the Collector App. Instead, a user can publish a point file and view the details page of the dataset in ArcGIS Online (ESRI, 2016c). On this page is where the user can click a check box to enable track editing. Once the check box is enabled, the editor tracking fields and global ID field are automatically added to the dataset. These fields were able to auto-populate during an edit session on a device in the field.

METADATA CREATION AND EDITING

DGS creates metadata for all published digital datasets. ESRI ArcCatalog (ESRI, 2016b) is the main tool used to edit metadata, but source code editing software is also used to modify some fields that are not editable in ArcCatalog (geoprocessing history, local network location where the file is stored). A desktop add-in file called Clear Geoprocessing History (Rogers, 2016) was downloaded and a button was added to the metadata toolbar in ArcCatalog. When this button is clicked, the geoprocessing history is automatically deleted from the selected metadata file.

LARGE FORMAT PRINTING

DGS had an eight year old Océ TCS 500 large format printer (Canon, 2016). Due to its age DGS began searching for a replacement printer. Canon suggested the Océ Color Wave 500, but the price was above our budget. The Color Wave 300 was another option but still higher in cost, and that model was discontinued in 2016. This discontinued model drove the Color Wave 500 price down, but still was out of our price range.

DGS then considered the Canon iPF785 (Canon, 2016), but this unit did not include a post script driver and only holds 1 roll of paper. Finally we looked at HP T1530 & T2530 models (Hewlett-Packard, 2016). The main difference between these units is that the T2530 includes a built-in large format scanner. Both units met the criteria of having a post script driver, holding two rolls of paper simultaneously, and prices within our budget. DGS purchased the T2530 in March 2016, and within two months was satisfied with the unit's performance. Print jobs are much faster, print quality is good, and the scanner has already been very useful and time-saving for the map editing process.

DIGITAL DATA DISTRIBUTION

For several years DGS has made its digital data available for download on our website as shapefiles with associated layer files (DGS, 2016). The state of Delaware has an enterprise GIS called FirstMap (FirstMap, 2016a) that has been active since fall 2014. DGS worked with the FirstMap team to include DGS data in their ArcGIS rest services. We also contributed web mapping applications to the map gallery (FirstMap, 2016b). One is an ESRI Story Map called Explore Delaware Geology (FirstMap, 2016c) which gives a tour of interesting geologic features and facts in Delaware. Another is a web map viewer (FirstMap, 2016d) of all DGS data in FirstMap.

PETROGRAPHIC DATABASE

Thin section data has been inventoried in a database for the Piedmont region of Delaware. DGS is creating an ArcGIS Online map to make this data available to the public. When a location point is clicked on the map, a pop-up window displays the attributes for that point and one to two photographs of the thin section slide. There are seventy nine attribute columns in the table, and most locations have a small percentage of these fields that are populated. DGS is working with the California Geological Survey on a Python script that would configure the pop-up window to display only populated attribute fields for each location rather than display nearly eighty empty cells.

REFERENCES

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Delaware Geological Survey

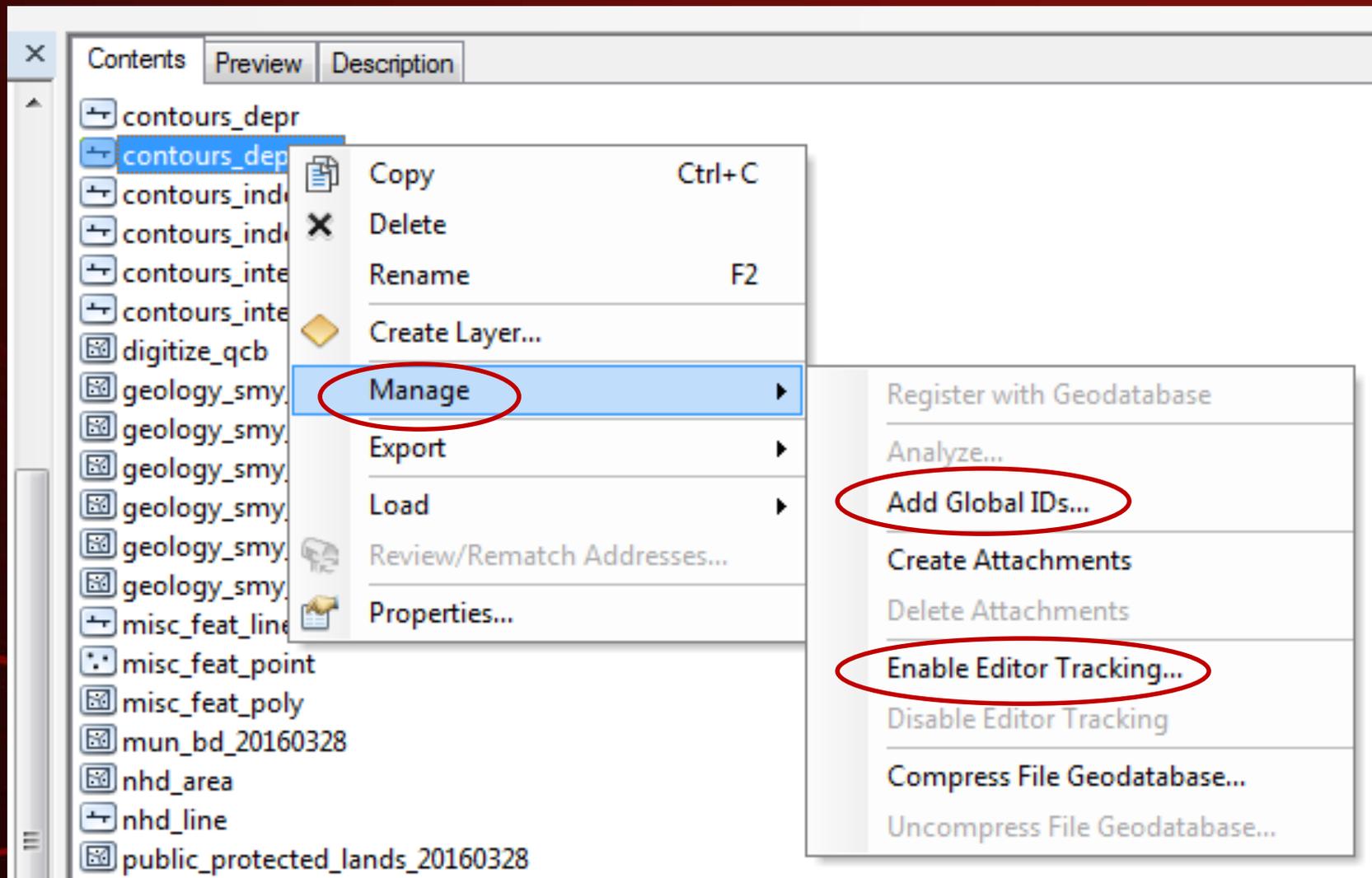
University of Delaware

Newark, Delaware



ESRI Collector App

- Time stamp, creator/last editor



datapts_dmt



dmt demo

Feature Layer (Hosted) by lillian@udel.edu

Source: Feature Service

Last Modified: May 18, 2016

0 ratings, 1 view

Facebook Twitter

- OPEN
- SHARE
- EDIT
- DELETE
- PUBLISH
- MOVE
- USAGE
- METADATA
- EXPORT

Description

Layers

datapts_dmt

Properties

Shared with	The item is not shared.	
Tags	geology	
Credits		
Size	43 KB	
Delete Protection	Disabled	
Extent	Left: -180	Right: 180
	Top: 90	Bottom: -90
Editing	Editors can add, update, and delete features.	
Export Data	Disabled	
Sync	Enabled	
Track Edits	Disabled	

Comments (0)

Metadata

- ArcCatalog won't let me edit/delete certain fields (geoprocessing history, network location of file)
 - Notepad ++
(import/export metadata from dataset)
 - Add-In file:
Clear Geoprocessing History



New large format printer (and scanner!)

- Old unit – Océ TCS 500 (8 years)
- Océ – Color Wave 300, 500
- Canon – iPF 785
- HP – DesignJet T1530, T2530



DGS Digital Data

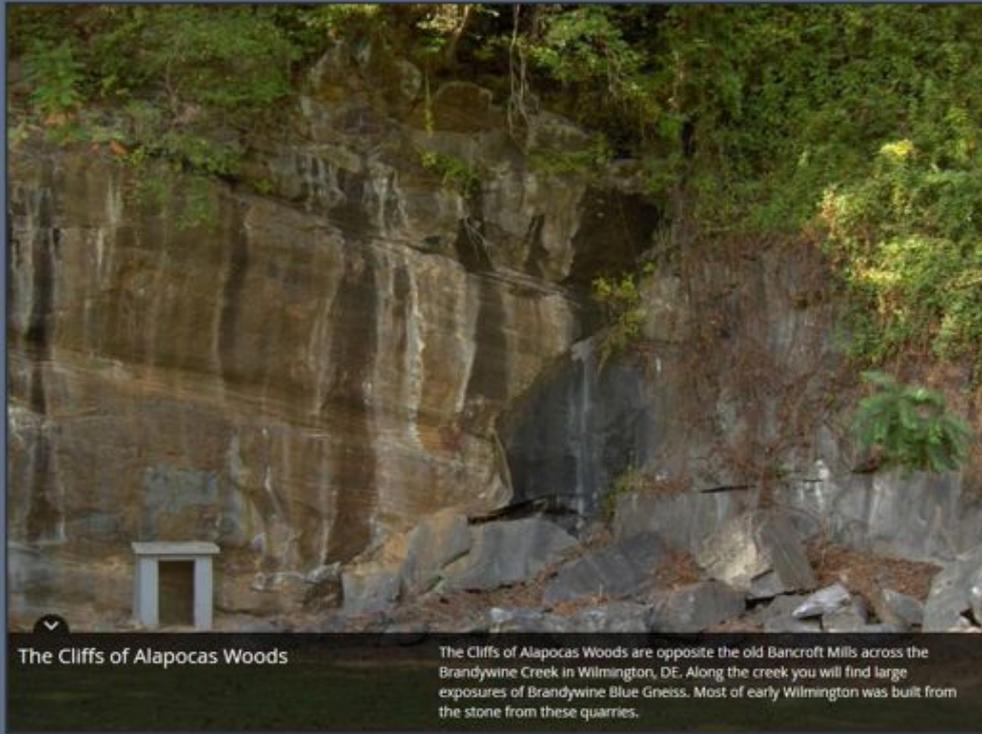
- DGS website
 - Shapefiles, rasters for download
- FirstMap
 - <http://firstmap.gis.delaware.gov/>
 - Services – ArcGIS Online
 - Map viewer
 - Story Map

DGS Story Map

Explore Delaware Geology

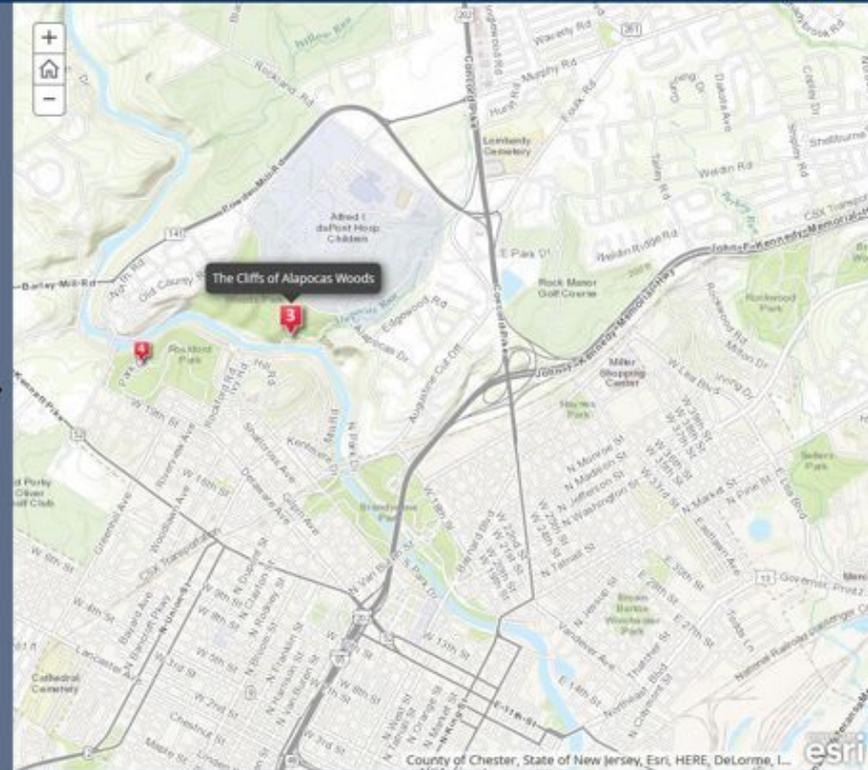
Interesting geologic areas in the First State.

Delaware Geological Survey



The Cliffs of Alapocas Woods

The Cliffs of Alapocas Woods are opposite the old Bancroft Mills across the Brandywine Creek in Wilmington, DE. Along the creek you will find large exposures of Brandywine Blue Gneiss. Most of early Wilmington was built from the stone from these quarries.



Delaware Geological Survey



Summary of Delaware's Geologic History



The Cliffs of Alapocas Woods



Rockford Park Gneiss Boulders at Rockford Park



Boulder Field at Brandywine Creek State Park



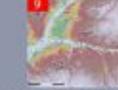
Pollack Farm



Carolina Bays



The Great Dune



Dunes along the Harbortowne River



Delaware State Fossil - Belemnite



Delaware State Mineral - Silimanite



Highest point in DE

DGS Map Viewer

Delaware Geological Survey Map Viewer

Find address or place

Operational Layers

- Surficial Geology
- Ground Water Recharge Potential
- Depth To Water (WET conditions)
- Depth To Water (NORMAL conditions)
- Depth To Water (DRY conditions)
- Water Table Elevation (WET conditions)
- Water Table Elevation (NORMAL conditions)
- Water Table Elevation (DRY conditions)
- Unconfined Aquifer Base Elevation (Sussex County)
- Unconfined Aquifer Thickness (Sussex County)
- Unconfined Aquifer Transmissivity (Sussex County)

