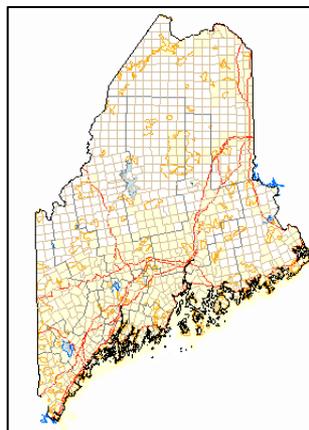


Geologic Site of the Month
February, 2014

Online Map Resources for Maine

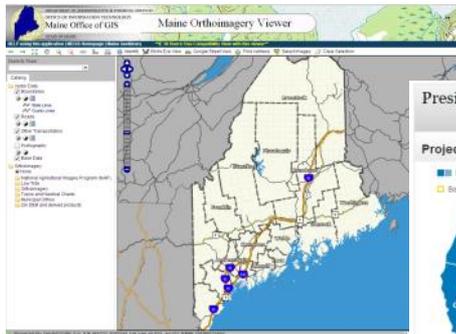


Text by
Christian Halsted
Maine Geological Survey



Introduction

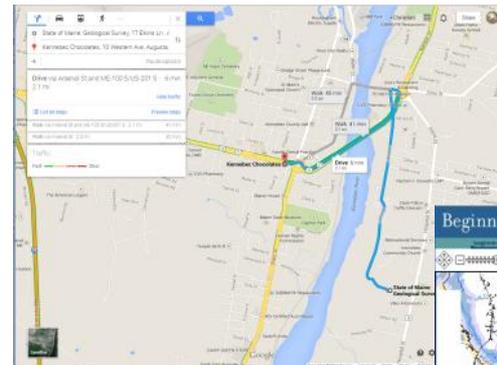
Digital maps are everywhere these days. With the internet invading all corners of daily life, the use of digital online maps has grown remarkably in recent years. We use maps on our smartphones and in our cars to get us where we are going. Online maps analyze our elections, protect us during natural disasters and show us where not to build to conserve rare habitats, plants and animals. These online maps and the data behind them allow us to share gobs of complex information quickly and succinctly. They turn data into pictures which, as we know, are worth at least a thousand words.



Maine Office of GIS



CNN



Google Maps



Maine Beginning with Habitat

Figure 1. Online map examples



Outline

Every year more spatial data is being made available online in map viewers and as spatial datasets. Data related to the geography and geology of Maine is available from a number of different sources and in a number of different formats. It is no longer necessary to be a mapping professional with expensive geographic information system software in order to view this data and learn about our state.

We'll quickly highlight some of the current and emerging data sources and tools available to anyone with an interest in technology, maps and the natural environment.

- USGS Topographic Maps from topoView
- Maine Office of Geographic Information Systems (MEGIS) Online Map Viewers
- MEGIS Data in Google Earth
- Maine Geological Survey embedded web maps
- Maine Geological Survey digital geology data
- Mobile applications



topoView

The new [topoView](#) online map from USGS displays the extent of all topographic maps produced at all scales from 1880 to present. The maps can be viewed and downloaded in geoPDF format by clicking on the desired location.

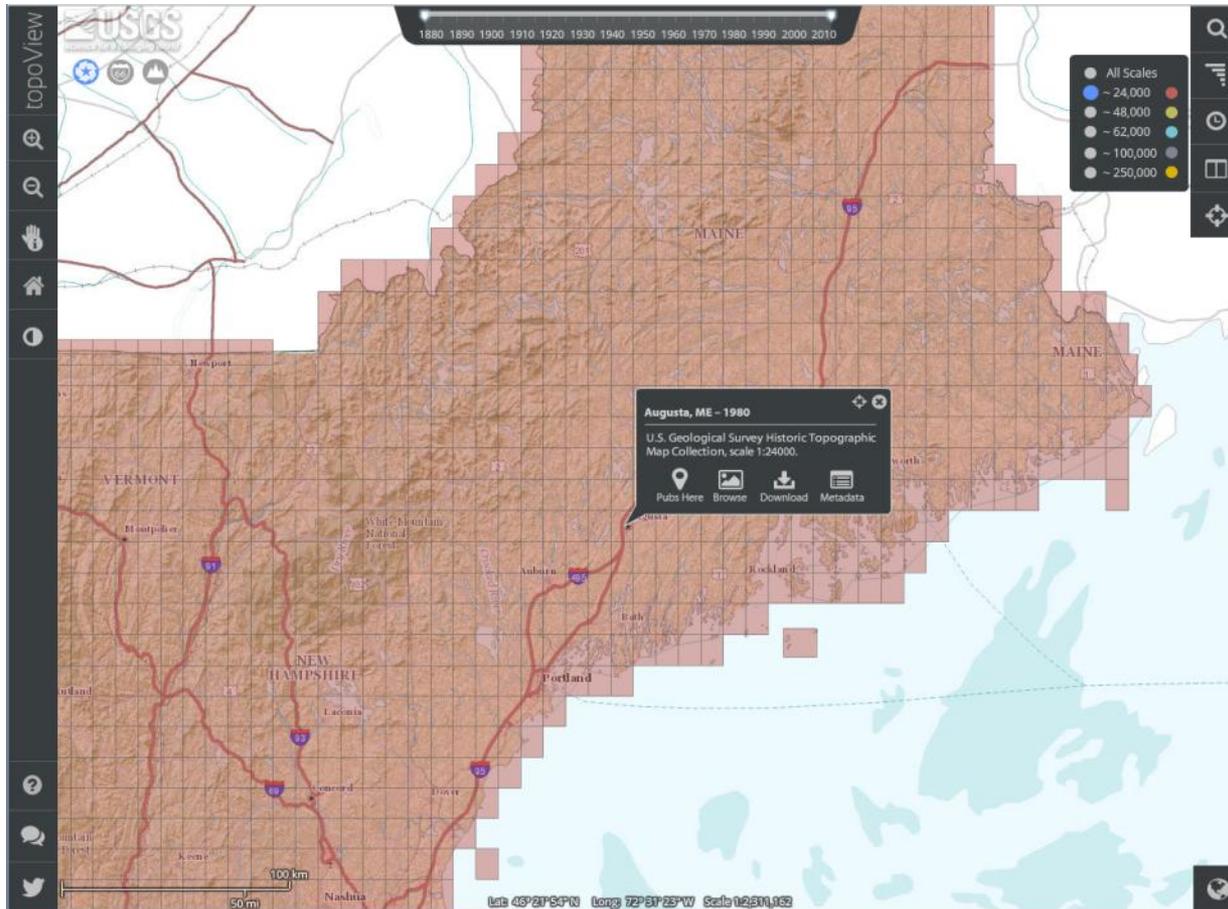


Figure 2. The 1:24,000 quadrangles available from USGS topoView.



topoView Search

Clicking on the map and selecting 'Pubs Here' will load a web page with all the topographic quadrangles in that area by scale and year. The quadrangles can be viewed online by clicking on the 'Browse' icon or downloaded by clicking on the 'GeoPDF' icon

USGS science for a changing world AASG Association of American State Geologists USGS HOME CONTACT USGS SEARCH USGS

Home Catalog Lexicon New Mapping Standards Comments

National Geologic Map Database

Topoview - A Gateway to the Historical Topographic Map Collection

Search Return List of records in view extent

Map Name	Primary State	Scale	Date on Map	Imprint Year	Browse	GeoPDF	Metadata
Augusta	ME	24000	1980	1980			
Augusta	ME	24000	1980	1992			
Augusta	ME	62500	1892	1925			
Augusta	ME	62500	1892	1920			
Augusta	ME	62500	1892	1912			
Augusta	ME	62500	1892	1906			
Augusta	ME	62500	1892	1942			
Augusta	ME	62500	1892				
Augusta	ME	62500	1892	1936			
Augusta	ME	62500	1892	1899			
Augusta	ME	62500	1941	1956			
Augusta	ME	62500	1943	1948			
Augusta	ME	62500	1943				
Augusta	ME	62500	1943				
Augusta	ME	62500	1956	1969			
Augusta	ME	62500	1956	1964			
Augusta	ME	62500	1956	1969			
Augusta	ME	62500	1956	1958			
Augusta	ME	100000	1984	1984			
Bangor	ME	250000	1948	1948			

Showing 1 to 20 of 25 entries
 First Previous 2 Next Last

Find Us:

ACCESSIBILITY FOIA PRIVACY POLICIES AND NOTICES

U.S. Department of the Interior | U.S. Geological Survey
 Supported by the National Cooperative Geologic Mapping Program
 URL: http://ngmdb.usgs.gov/ht-bin/HT_grid.pl
[Basic Contact Information: Personnel](#)

USA.gov TAKE PRIDE IN AMERICA

Figure 3. All quadrangles for the Augusta area from USGS topoView.



MEGIS Online Maps

The [MEGIS Online Maps and Services](#) web site provides links to online map viewers that share data maintained by state agencies for general purposes, like viewing statewide orthoimagery and specific regulatory or advisory projects like parcel maps or zoning maps.

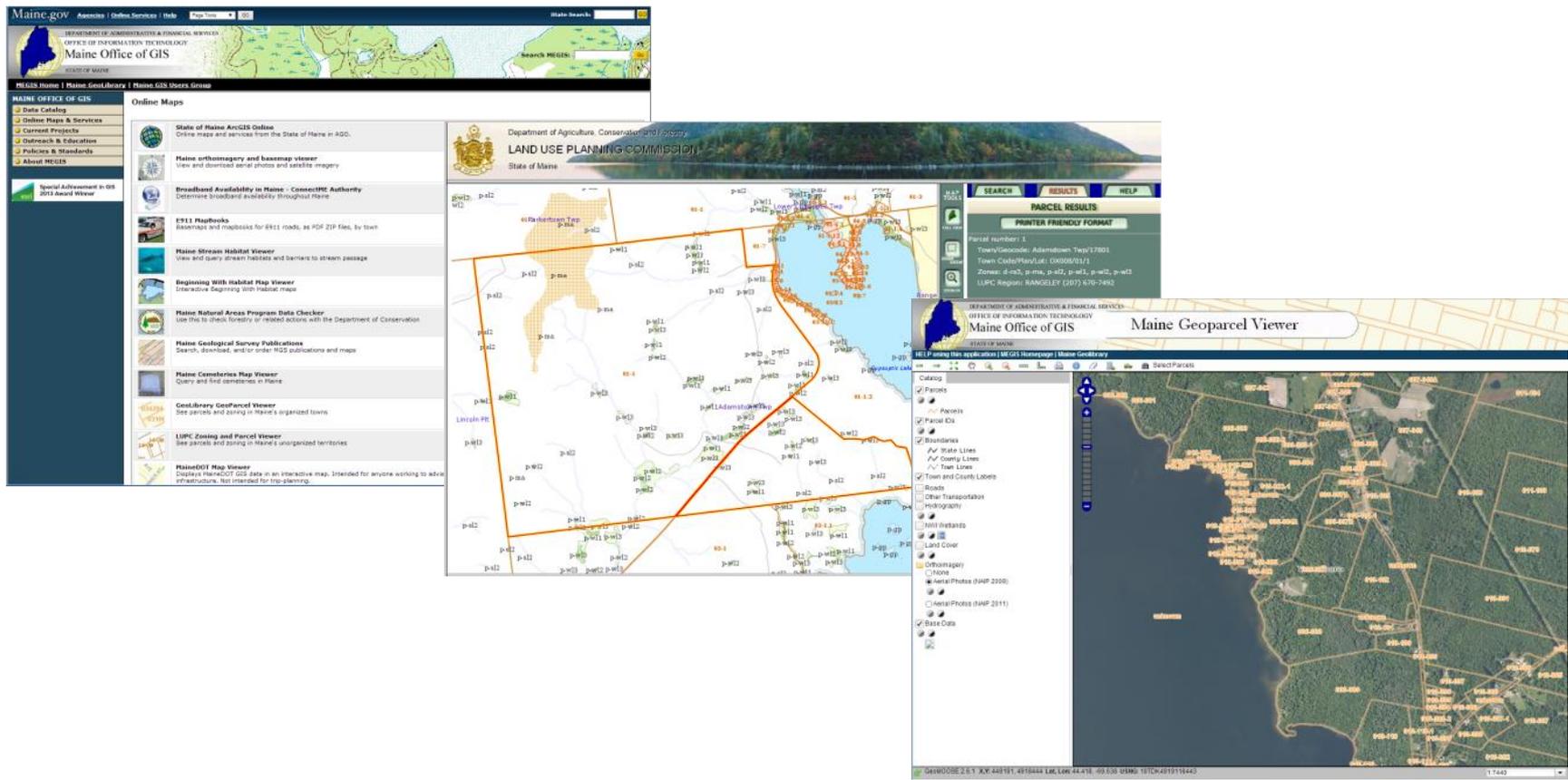


Figure 4. MEGIS Online maps listing, LUPC Zoning and Parcel Viewer and Geoparcels Viewer.



MEGIS Digital Data

The [MEGIS Data Catalog](#) provides a topical listing of all the data layers that are available from state government agencies for public use. Each layer can be downloaded as a shapefile or web mapping service and used in GIS software to make custom maps. However, if you don't have GIS, many of the layers can also be displayed in Google Earth which is free for download. This allows for a quick, low-cost means of viewing the data layer(s) you are interested in.

The screenshot shows the MEGIS Data Catalog website. At the top, there is a navigation bar with 'Maine.gov' and 'Agencies | Online Services | Help'. Below this is the 'Maine Office of GIS' header with a map of Maine. A search bar is visible on the right. The main content area is titled 'Maine Office of GIS Data Catalog' and includes a description of the catalog's purpose and a list of download options: Metadata, Tiles, MEGIS viewer, Shapefile, Raster, WMS LYR, Google Earth, External site, Date index, and World Files. The data layers are organized into two main categories: 'Administrative and political boundaries' and 'Biologic and ecologic / Environment and conservation'. Each category contains a table of data layers with download icons.

Data Layer	Download	Data Layer	Download
County Boundaries (CNTY24) (1/28/2014)	[Download]	School Municipal Units (EDMSU) (1/11/2012)	[Download]
School Alternative Organizational Structure (EDAOS) (1/11/2012)	[Download]	School Regional Units (EDRSU) (1/11/2012)	[Download]
Schools - Community Districts (EDCSD) (1/11/2012)	[Download]	School Unions (EDUNION) (1/11/2012)	[Download]
School Districts - Unorganized Territory (EDEUT) (1/11/2012)	[Download]	Town Boundaries (METWP24) and Geocodes Tables (1/28/2014)	[Download]
Schools - Indian Education (EDMIE) (1/11/2012)	[Download]		

Data Layer	Download	Data Layer	Download
Archived shellfish harvest (ARCHIVE_BACT1) (10/29/2013)	[Download]	Molluscan shellfish areas (10/12/2010)	[Download]
Archived shellfish harvest (ARCHIVE_BIOTOXIN) (10/29/2013)	[Download]	Mussell seed conservation areas (1/1/1995)	[Download]
Atlantic salmon habitat (ASHAB3) (1/25/2013)	[Download]	Piping Plover / Least Tern essential habitat (BHPVTRN) (1/11/2011)	[Download]
Biophysical regions (BIOPHY) (1/1/1999)	[Download]	Public drinking water buffers (WELLSBUF) (12/10/2013)	[Download]

Figure 5. MEGIS Data Catalog.



MEGIS Digital Data in Google Earth

Clicking on the blue Google Earth icon next to a layer in the MEGIS Data Catalog will open the layer in Google Earth if it is installed on your computer. Multiple layers can be loaded this way which can then be used in simple analysis and measurement in Google Earth. This is a great, low-cost method for doing simple spatial analysis like checking the proximity to features.

Geological and geophysical

Data Layer	Download	Data Layer	Download
Aquifer polygons (11/06/2013)	 	Seismic lines (11/06/2013)	 
Bedrock geology units (BEDROCK) (1/1/1995)	 	Soils - county level (SSURGO)	 
Coastal Bluff Hazards (2/24/2009)	 	Soils - state level (STATSGO2)	 
Flood insurance rate maps (FIRM)	 	Surficial geology 1:24K	 
Flood insurance rate maps (FIRM) - Kennebec County 2011 digital	 	Surficial geology 1:250K (SURF) (7/1/1999)	 
Flood Zones (DFIRM) (4/6/2012)	   	Surficial materials data (11/06/2013)	 
Hurricane surge inundation - MHT (2/16/2005)	 	Watershed Boundary Dataset (WBD or HUCs)	 
Hurricane surge inundation - MT (2/16/2005)	 		

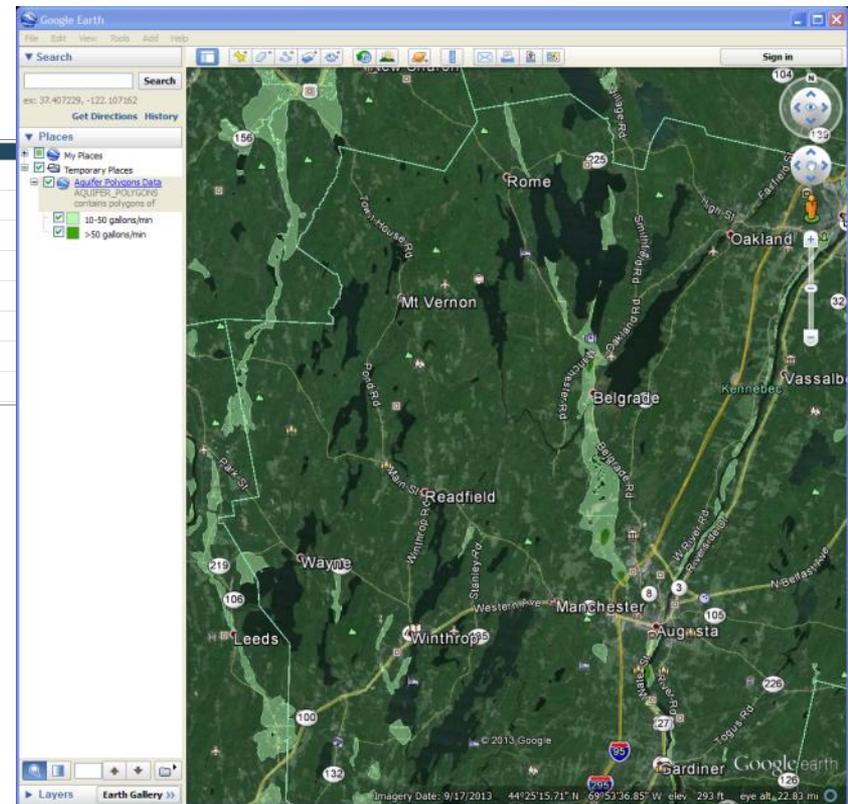


Figure 6. Aquifer polygons loaded into Google Earth.



Maine Geological Survey Online Maps

The [Maine Geological Survey](#) is starting to deliver data using online maps embedded in the web site. These maps are interactive so users can pan around, zoom in and click on features to identify them. The [Maine Field Localities map](#) shows locations where geologists have written up tours of unique geology. Clicking on a map point provides a link to the downloadable tour PDF.

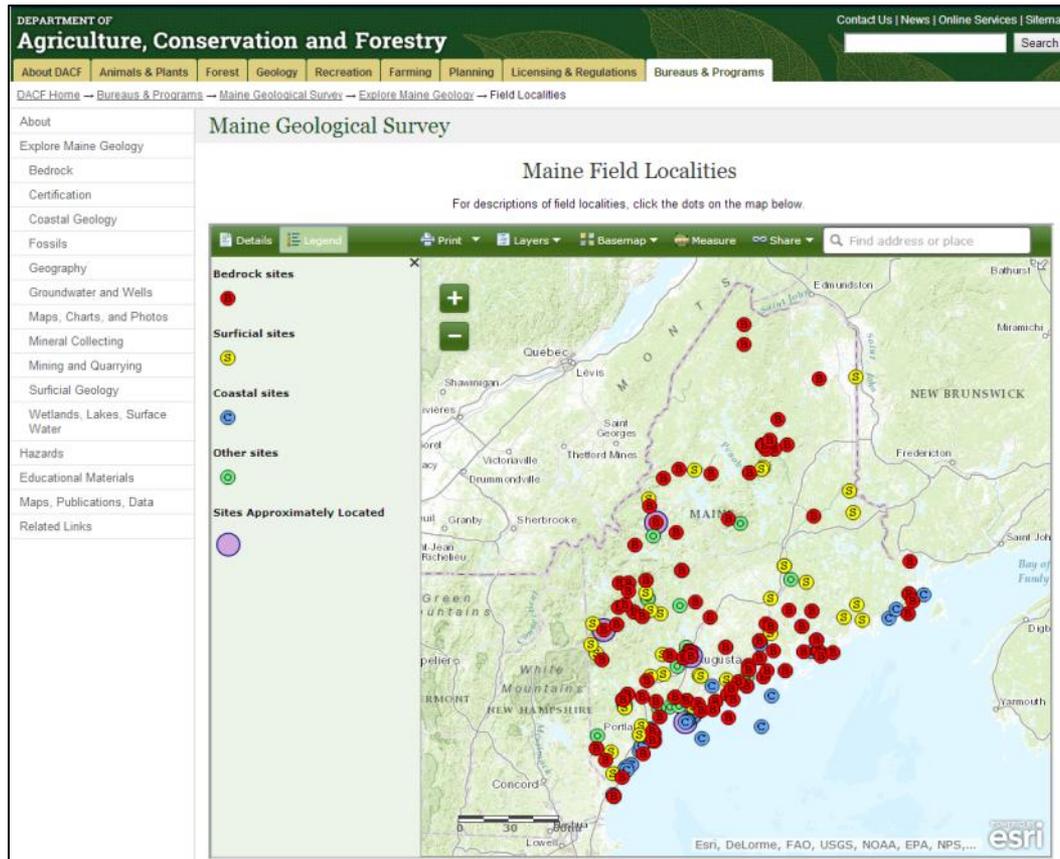


Figure 7. MGS embedded web map showing Field Localities.



Maine Geological Survey Online Data

The [Maine Geological Survey](#) also makes much of the data it produces in its mapping programs available in GIS format and read-only PDF files from the [Maps, Publications and Online Data web page](#). Over time much of this data will also be available in online mapping tools so it can be reviewed before downloading and available for use by anyone who wants to make their own online map.

The screenshot shows the website for the Maine Geological Survey, part of the Department of Agriculture, Conservation and Forestry. The header includes navigation links for 'About DACF', 'Animals & Plants', 'Forest', 'Geology', 'Recreation', 'Farming', 'Planning', 'Licensing & Regulations', and 'Bureaus & Programs'. A search bar is located in the top right corner. The main content area is titled 'Maine Geological Survey' and 'Maps, Publications and Online Data'. It features a 'Search' section with a bullet point explaining the search functionality. Below this is an 'Online' section with a bullet point listing over 2000 geologic quadrangle maps and publications available in PDF format, with a list of sub-topics including Bedrock geology, Coastal marine geology, Economic geology, Geologic hazards, Geophysics, Lake studies, Neotectonics, Surficial geology, and Water resources. The 'Digital Data' section includes a bullet point about digital geologic datasets available for download, with a list of sub-topics including Bedrock Geology, Bedrock Geology - Generalized, Coastal Bluff Hazards, Significant Sand and Gravel Aquifers, Surficial Geology, Surficial Geology - Generalized, Surficial Materials, and Water Well Database.

Figure 8. MGS Data web page.



Smartphone Map Applications

Platforms for online mapping like [Esri's ArcGIS Online](#) are making it easy to publish maps to smartphones and tablets. [Download the app](#) and search on 'Maine Geology' to view the maps from Maine Geological Survey. Savvy developers are also making custom applications to share the data on mobile devices. One great geology example is the British Geological Survey's [iGeology app](#). Many organizations are using these tools to empower their constituents in making better decisions and to also collect information from the public.



Figure 9a. Esri's ArcGIS Online app.



Figure 9b. BGS's iGeology app.

