Retrieval of Precipitation Data

Precipitation data are recorded and catalogued by the National Climatic Data Center (NCDC), a division of the National Oceanic and Atmospheric Administration (NOAA).

The process for retrieving the data is as follows:

Go to the following website:

http://www.ncdc.noaa.gov/cdo-web/

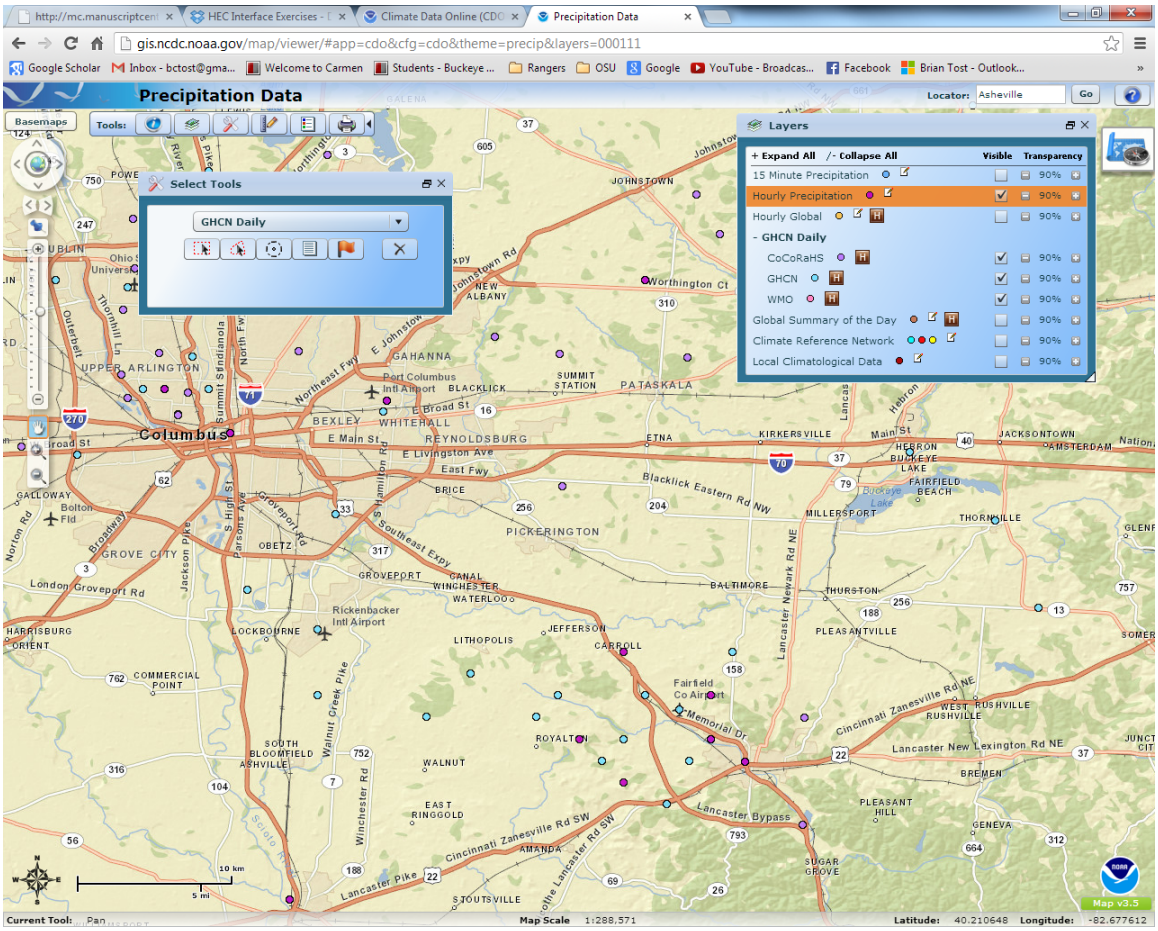
On the opening page, select the appropriate search engine. If you know your location's station name or zip code, select "Data Search". The user may also select to search by map.

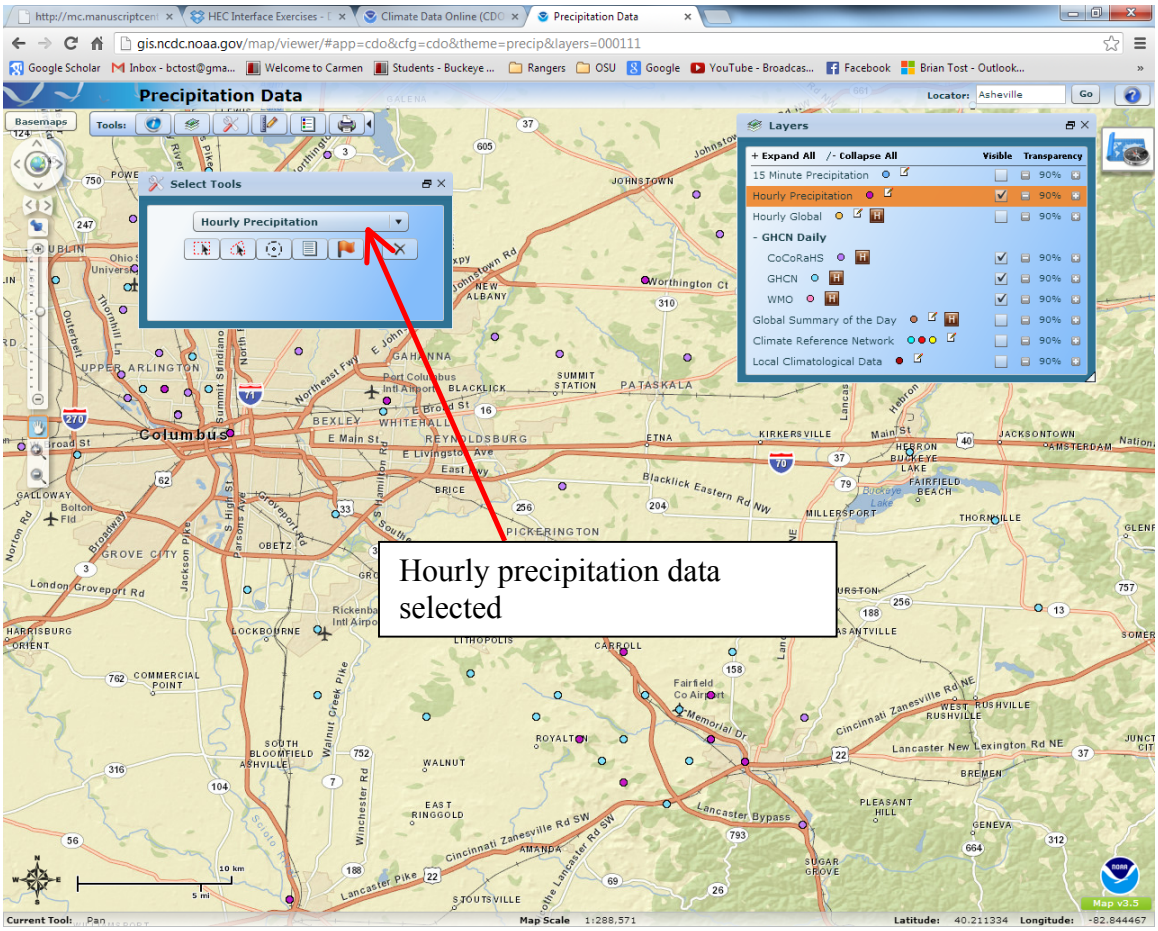
If using the "Data Search" option, enter the data related to the location (zip code, station name), the type of data that the user desires (e.g. hourly precipitation, annual summary, etc.). Then select "Search".

If using the "Map Search" option, select "Go to Map Application". On the following page, select "Precipitation". A world map showing data collection stations will be displayed. Zoom to your location using the mouse wheel.

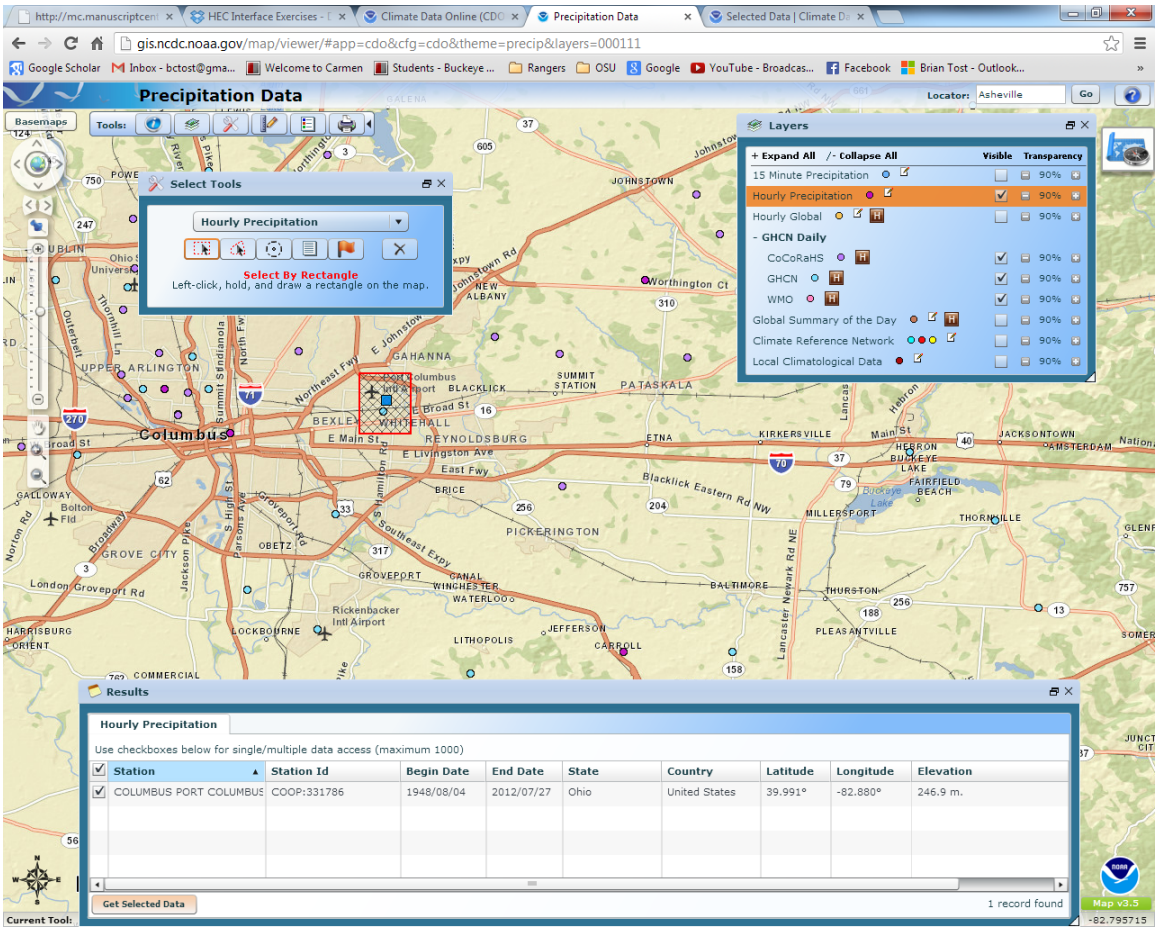
There will be a pop-up window with "Select Tools" in the header, select the dashed line box and draw a box around the point of interest on the map by clicking and dragging.

NOTE: In order to select hourly precipitation data, the "Hourly Precipitation" layer must be selected on the layers pop-up window. Selecting this layer permits selection of hourly data by way of a drop-down menu in the "Select Tools" window.


http://mc.manuscriptcent
HEC Interface Exercises - D
Climate Data Online (CDO
Precipitation Data
gis.ncdc.noaa.gov/map/viewer/#app=cdo&cfg=cdo&theme=precip&layers=000111
Google Scholar
Inbox - bctost@gma...
Welcome to Carmen
Students - Buckeye ...
Rangers
OSU
Google
YouTube - Broadcas...
Facebook
Brian Tost - Outlook...
Precipitation Data
Locator: Asheville
Go
Basemaps
Tools:
Select Tools
GHCN Daily
Layers
+ Expand All
/- Collapse All
Visible
Transparency
15 Minute Precipitation
Hourly Precipitation
Hourly Global
- GHCN Daily
CoCoRaHS
GHCN
WMO
Global Summary of the Day
Climate Reference Network
Local Climatological Data
90%
Columbus
Current Tool: Pan
Map Scale 1:288,571
Latitude: 40.210648
Longitude: -82.677612
Map v3.5


Precipitation Data
gis.ncdc.noaa.gov/map/viewer/#app=cdo&cfg=cdo&theme=precip&layers=000111
Select Tools
Hourly Precipitation
Layers
+ Expand All
/- Collapse All
Visible
Transparency
15 Minute Precipitation
Hourly Precipitation
Hourly Global
- GHCN Daily
CoCoRaHS
GHCN
WMO
Global Summary of the Day
Climate Reference Network
Local Climatological Data
Hourly precipitation data selected

When the user has completed drawing the box around your station of interest, release the left mouse button and a second pop-up window will appear with "Results" in the header. Select the station of interest. For this example, Port Columbus Airport will be used as the data source.

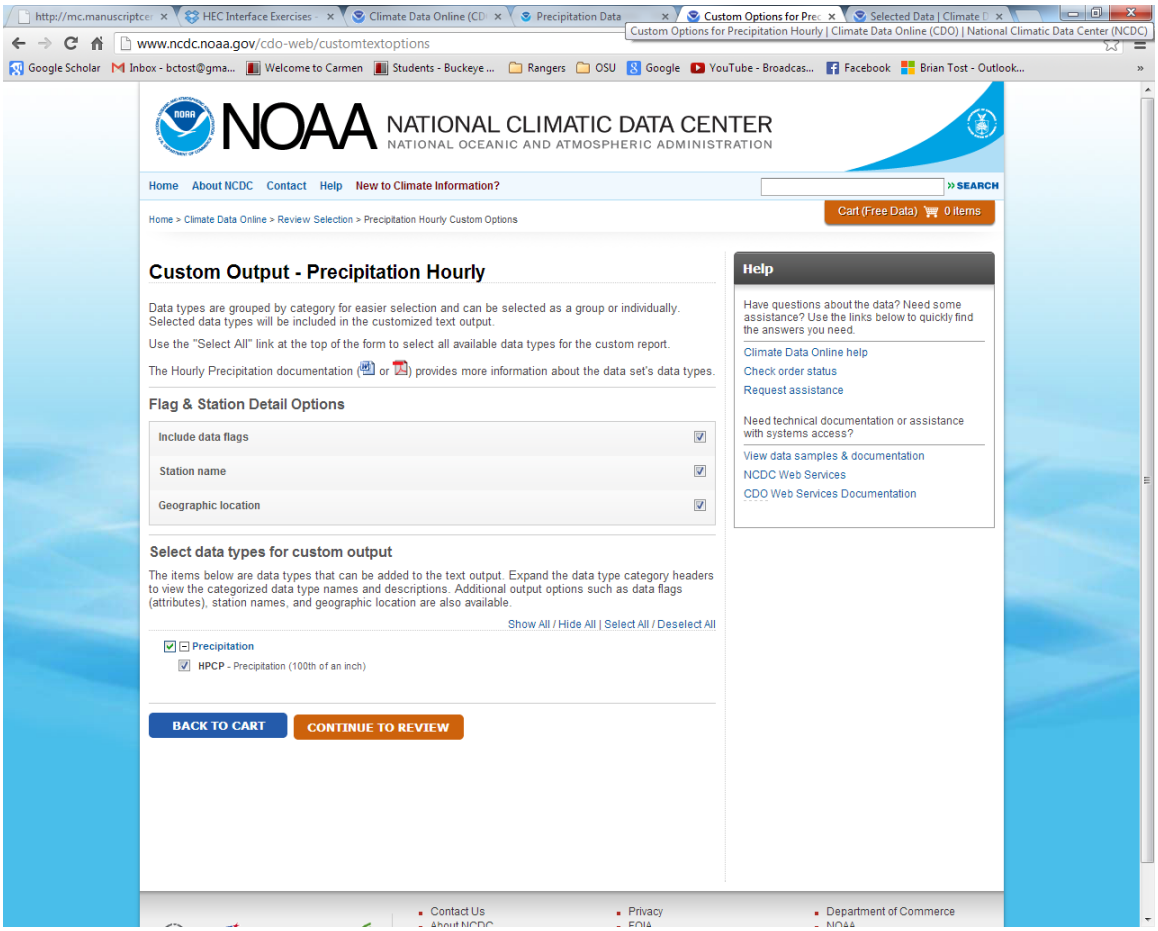


Select the box corresponding to your station of interest and click "Get Selected Data". A new tab will open that reads "View/Edit your cart"

In the "Additional Options" field on the far right of the window, select the output date range and the output format. For this example, the date range of the data will be from January 1, 2012 to July 27, 2012 and "Hourly Precipitation Text" will be selected as the output format. Text output is selected because it separates necessary text from the data when the data file is compiled.

Selecting this option will separate text in data fields from numerical values. Once selections have been made, select "Continue".

In the next window, options related to the data included in the user's data request need to be specified. There are three boxes beneath the Flag and Station Detail options.

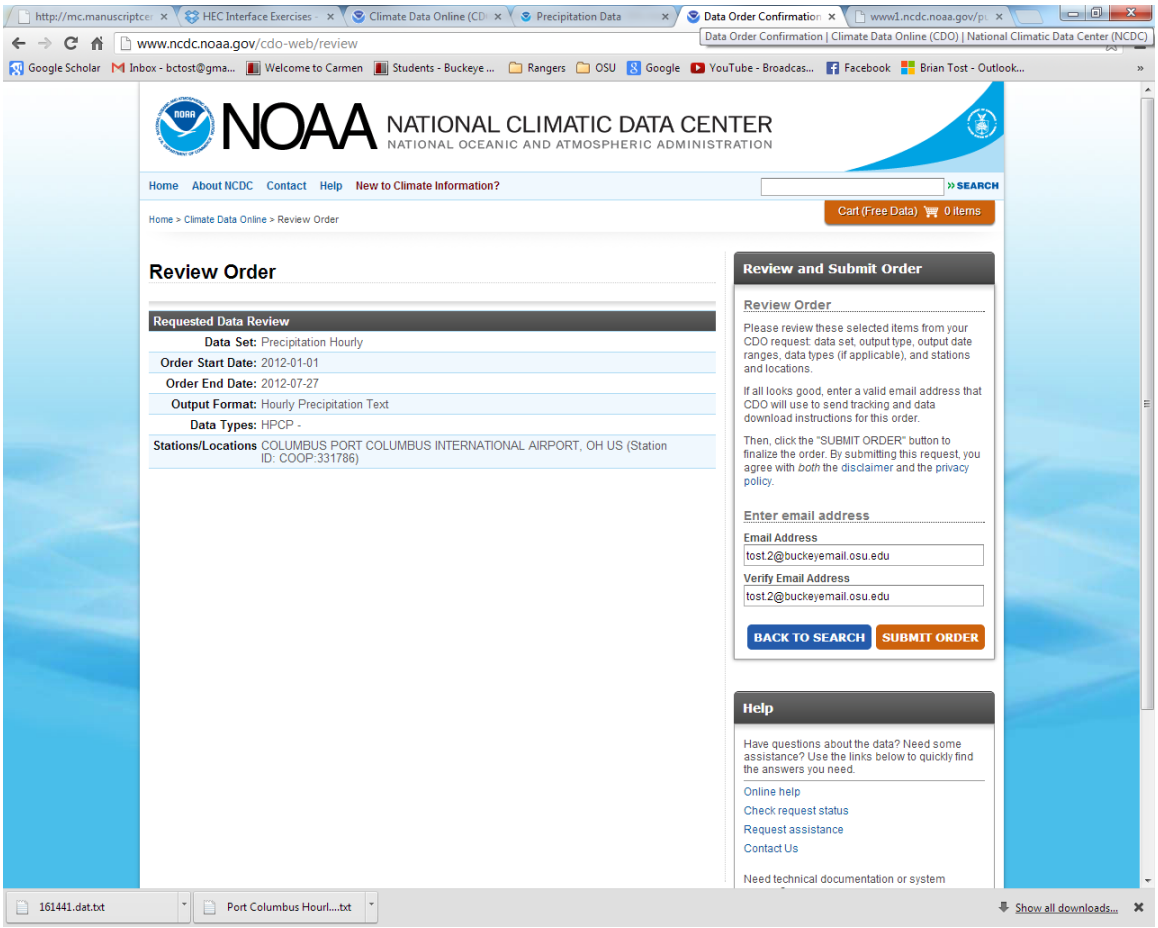


Select the Flag and Station Detail Options of the user's choice. For this example, all three options will be selected.

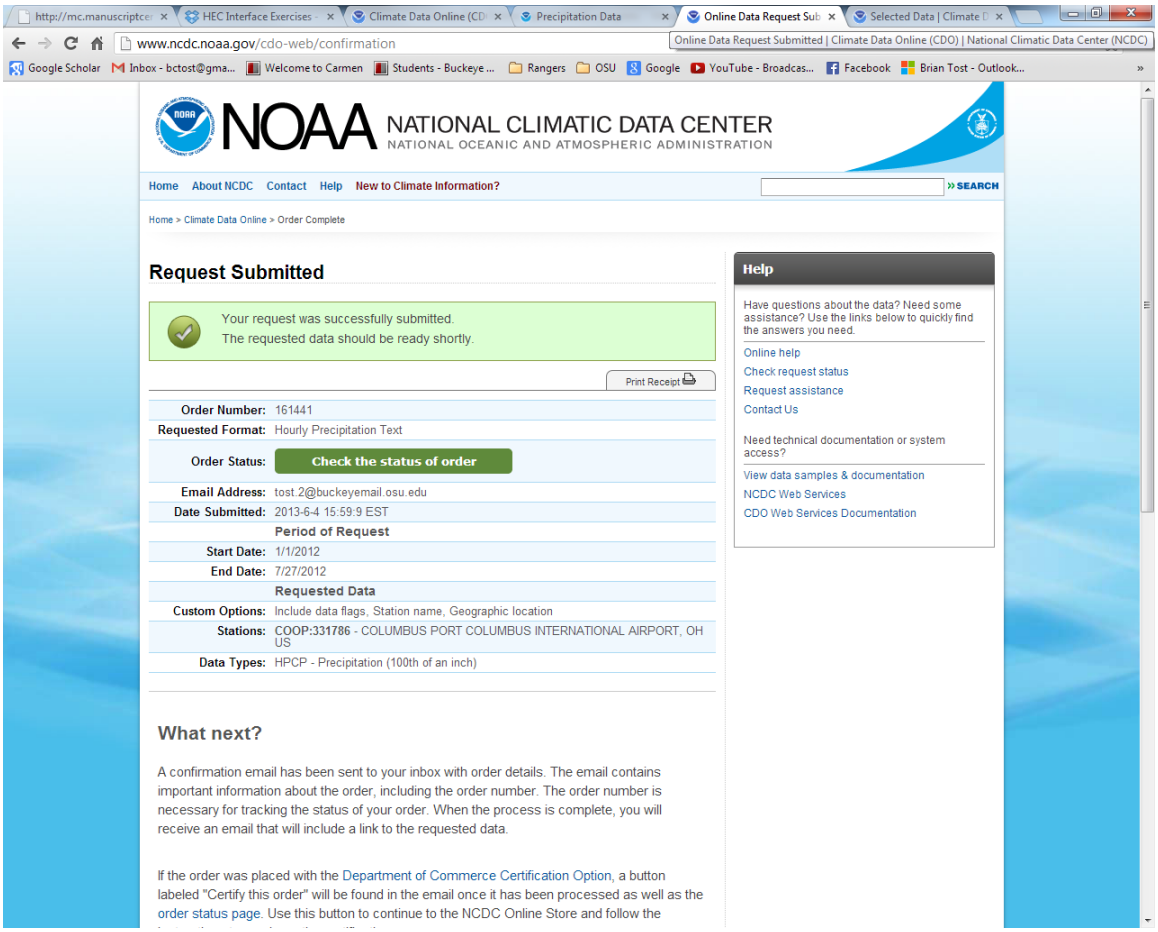
Beneath the Detail Options window, the data type must be selected. In this example, only hourly precipitation (HPCP) is available.

When all options have been selected, select "Continue to Review".

Another window will open that asks you to review your order. If everything is correct, the user enters their e-mail address and selects "Submit Order"



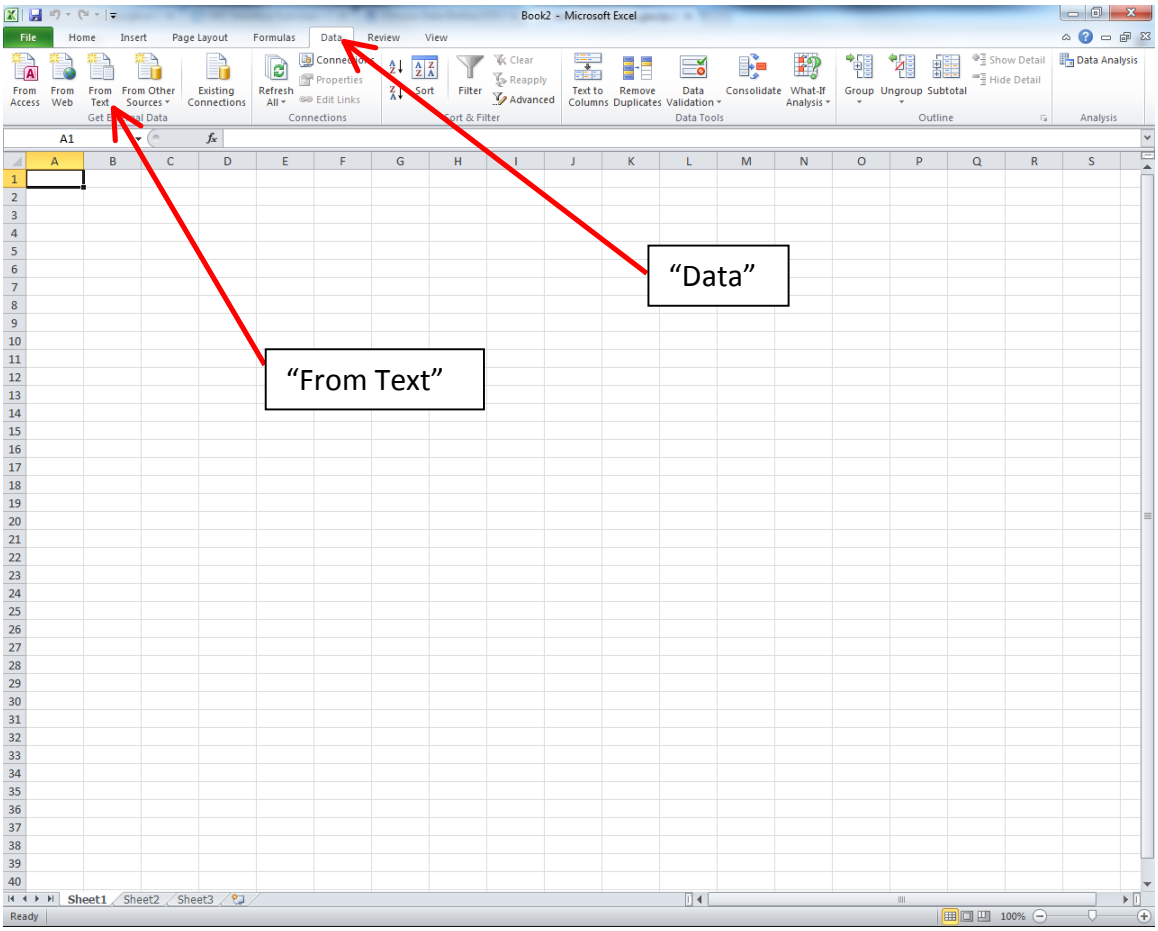
The final window opens to show that the request has been submitted.



The selected data will be received in a link sent to the provided e-mail address. For this example, the link opens a data file summarizing the hourly precipitation data recorded at Port Columbus Airport between January 1, 2012 and July 27, 2012.

To import the data into a spreadsheet, such as Excel, right-click on the opened data file and select "Save as". Save the data as a text document (.txt file format).

Open a spreadsheet and go to the "Data" tab. Select "From Text" as the data source.


Book2 - Microsoft Excel
File
Home
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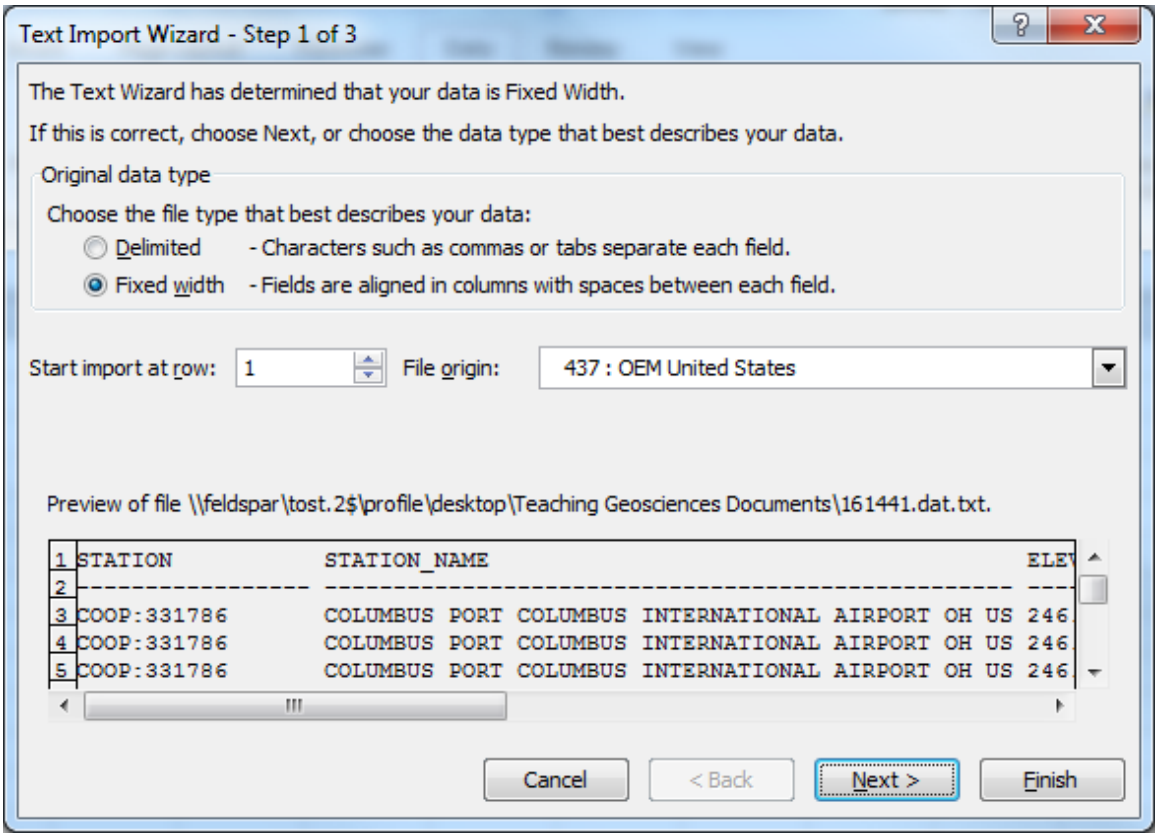
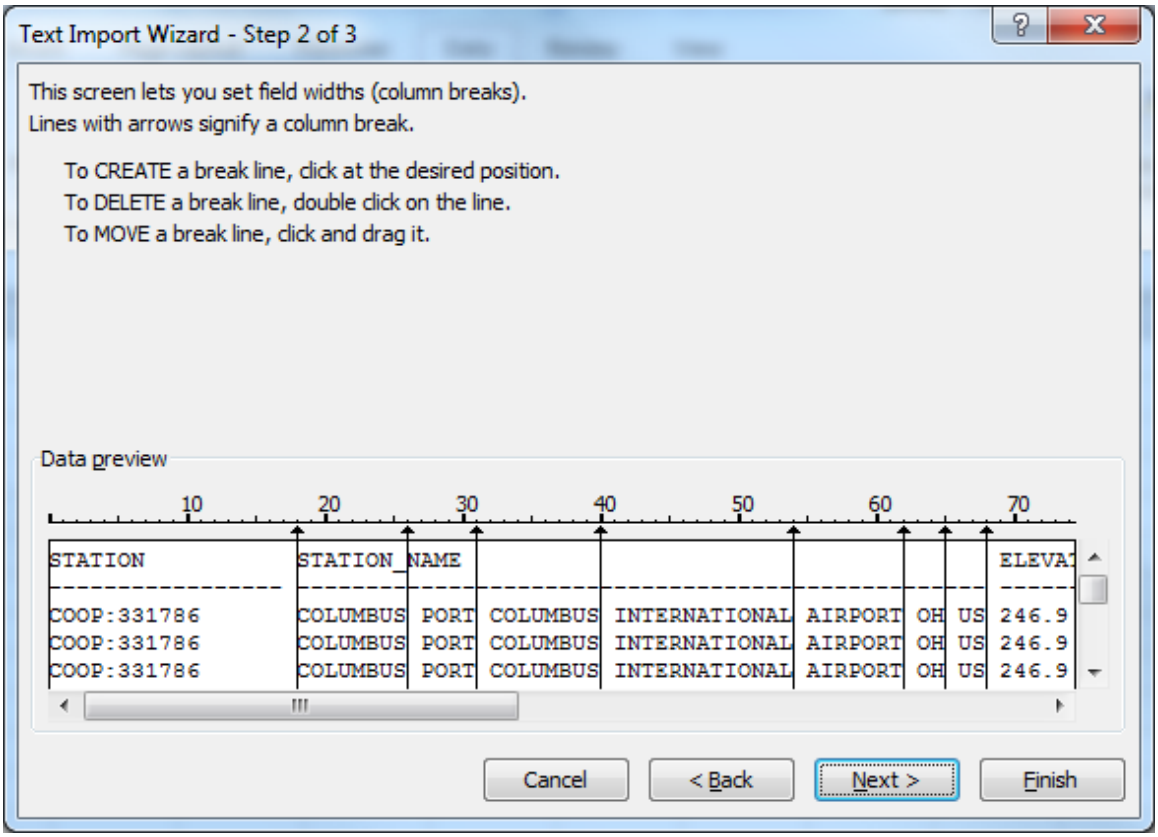
Page Layout
Formulas
Data
Review
View
From Access
From Web
From Text
From Other Sources
Existing Connections
Refresh All
Connections
Properties
Edit Links
Sort
Filter
Clear
Reapply
Advanced
Text to Columns
Remove Duplicates
Data Validation
Consolidate
What-If Analysis
Group
Ungroup
Subtotal
Show Detail
Hide Detail
Data Analysis
Data Tools
Outline
Analysis
A1
Sheet1
Sheet2
Sheet3
Ready
100%
"Data"
"From Text"

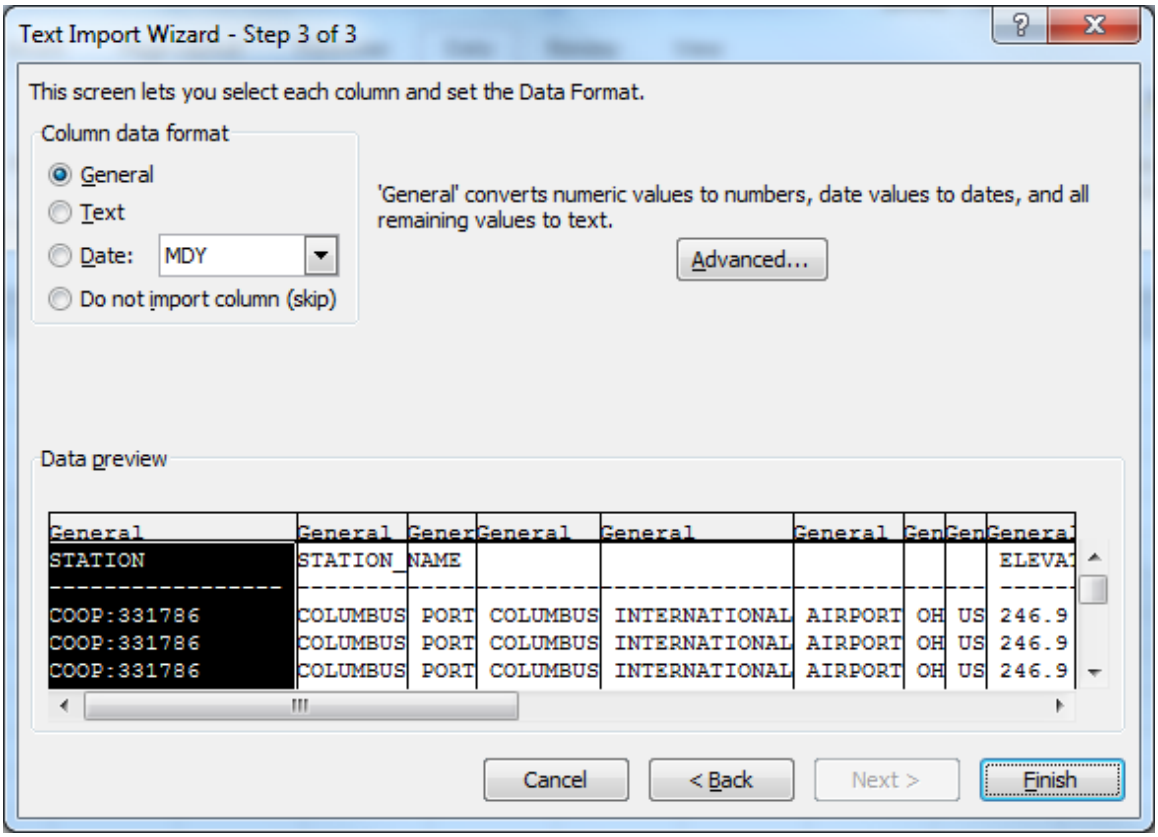
Select the text file that contains the saved data. Keep "Fixed Width" as the file type. Click "Next".



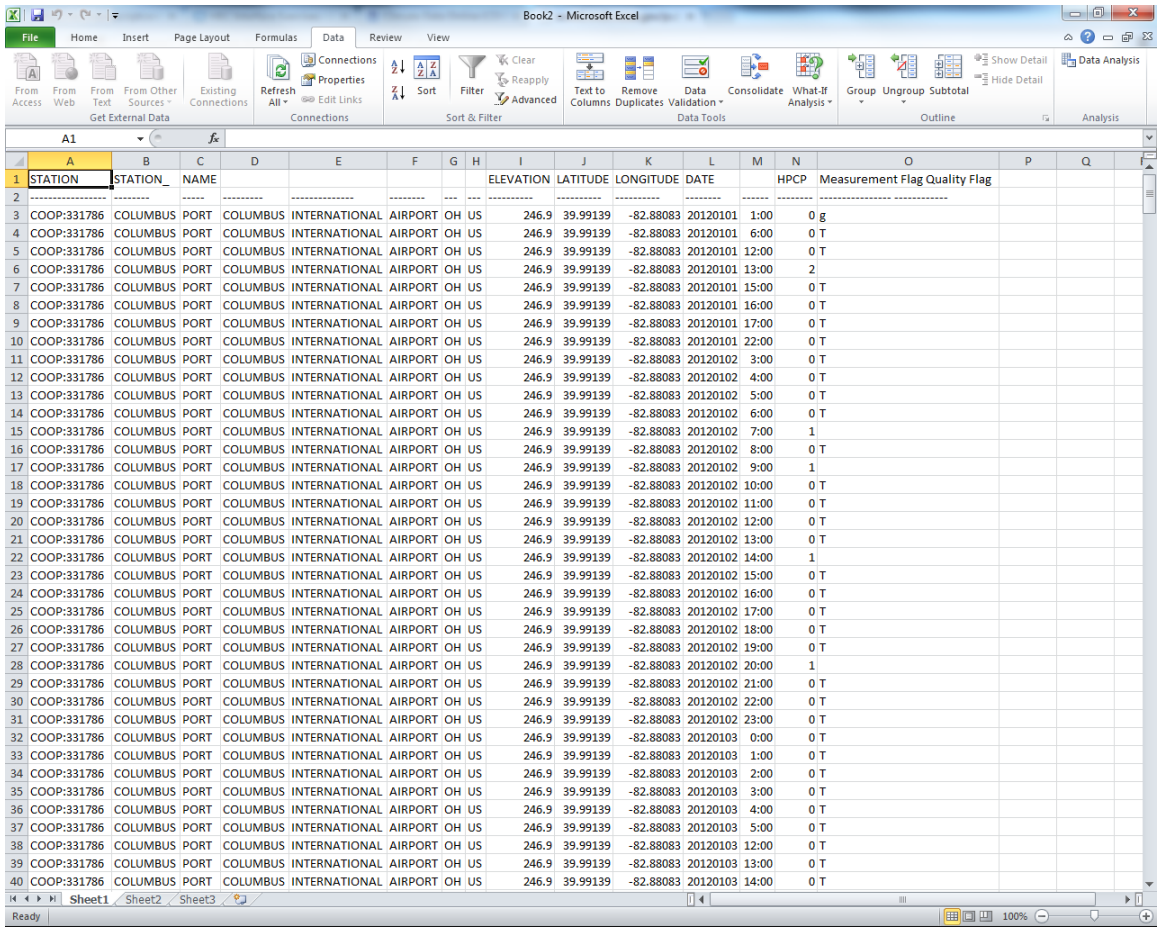
Select the appropriate column breaks for the data.



Change the Column Data format, if necessary.



When all selections are complete, select "Finish". Select the location for data import and select "OK". The data will be imported into the spreadsheet. Save the spreadsheet and the process is complete.



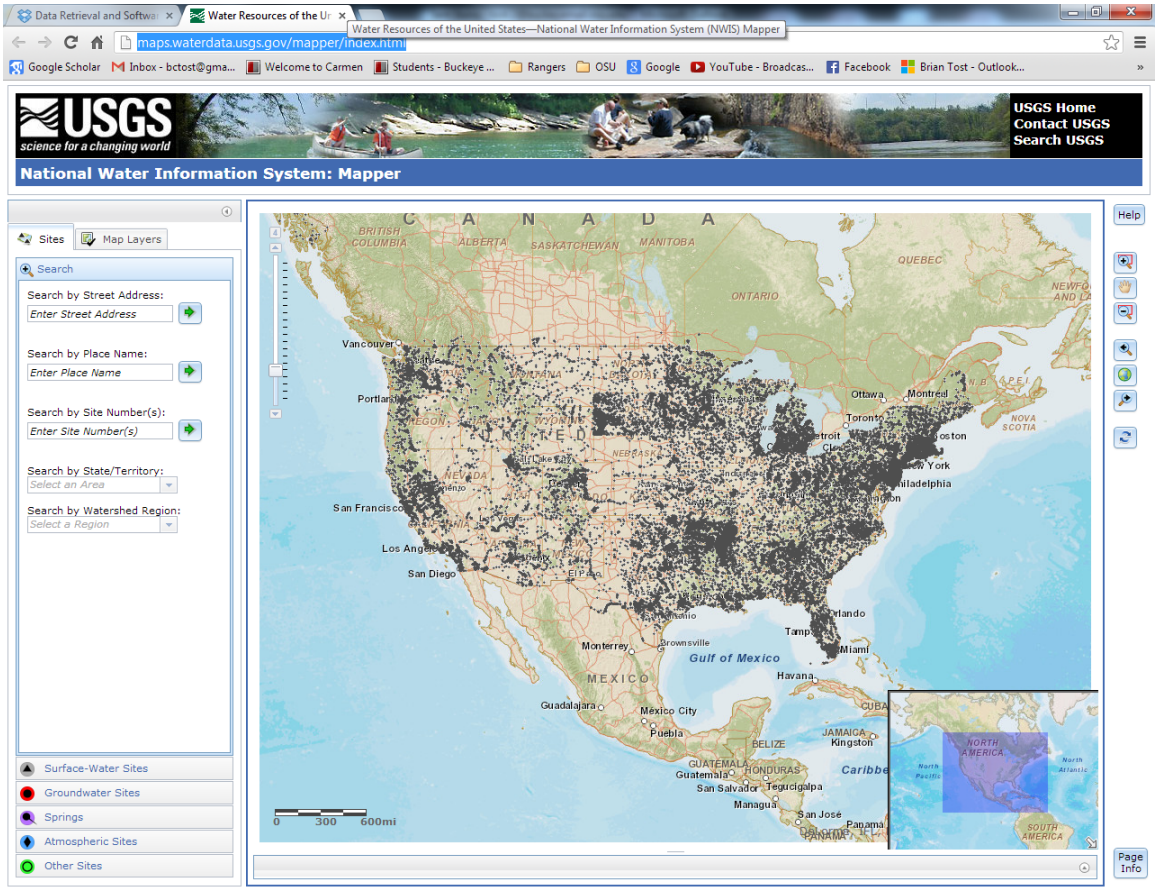
STATION	STATION_	NAME						ELEVATION	LATITUDE	LONGITUDE	DATE		HPCP	Measurement Flag	Quality Flag
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
COOP:331786	COLUMBUS	PORT	COLUMBUS	INTERNATIONAL	AIRPORT	OH	US	246.9	39.99139	-82.88083	20120101	1:00	0	g	
COOP:331786	COLUMBUS	PORT	COLUMBUS	INTERNATIONAL	AIRPORT	OH	US	246.9	39.99139	-82.88083	20120101	6:00	0	T	
COOP:331786	COLUMBUS	PORT	COLUMBUS	INTERNATIONAL	AIRPORT	OH	US	246.9	39.99139	-82.88083	20120101	12:00	0	T	
COOP:331786	COLUMBUS	PORT	COLUMBUS	INTERNATIONAL	AIRPORT	OH	US	246.9	39.99139	-82.88083	20120101	13:00	2		
COOP:331786	COLUMBUS	PORT	COLUMBUS	INTERNATIONAL	AIRPORT	OH	US	246.9	39.99139	-82.88083	20120101	15:00	0	T	
COOP:331786	COLUMBUS	PORT	COLUMBUS	INTERNATIONAL	AIRPORT	OH	US	246.9	39.99139	-82.88083	20120101	16:00	0	T	
COOP:331786	COLUMBUS	PORT	COLUMBUS	INTERNATIONAL	AIRPORT	OH	US	246.9	39.99139	-82.88083	20120101	17:00	0	T	
COOP:331786	COLUMBUS	PORT	COLUMBUS	INTERNATIONAL	AIRPORT	OH	US	246.9	39.99139	-82.88083	20120101	22:00	0	T	
COOP:331786	COLUMBUS	PORT	COLUMBUS	INTERNATIONAL	AIRPORT	OH	US	246.9	39.99139	-82.88083	20120102	3:00	0	T	
COOP:331786	COLUMBUS	PORT	COLUMBUS	INTERNATIONAL	AIRPORT	OH	US	246.9	39.99139	-82.88083	20120102	4:00	0	T	
COOP:331786	COLUMBUS	PORT	COLUMBUS	INTERNATIONAL	AIRPORT	OH	US	246.9	39.99139	-82.88083	20120102	5:00	0	T	
COOP:331786	COLUMBUS	PORT	COLUMBUS	INTERNATIONAL	AIRPORT	OH	US	246.9	39.99139	-82.88083	20120102	6:00	0	T	
COOP:331786	COLUMBUS	PORT	COLUMBUS	INTERNATIONAL	AIRPORT	OH	US	246.9	39.99139	-82.88083	20120102	7:00	1		
COOP:331786	COLUMBUS	PORT	COLUMBUS	INTERNATIONAL	AIRPORT	OH	US	246.9	39.99139	-82.88083	20120102	8:00	0	T	
COOP:331786	COLUMBUS	PORT	COLUMBUS	INTERNATIONAL	AIRPORT	OH	US	246.9	39.99139	-82.88083	20120102	9:00	1		
COOP:331786	COLUMBUS	PORT	COLUMBUS	INTERNATIONAL	AIRPORT	OH	US	246.9	39.99139	-82.88083	20120102	10:00	0	T	
COOP:331786	COLUMBUS	PORT	COLUMBUS	INTERNATIONAL	AIRPORT	OH	US	246.9	39.99139	-82.88083	20120102	11:00	0	T	
COOP:331786	COLUMBUS	PORT	COLUMBUS	INTERNATIONAL	AIRPORT	OH	US	246.9	39.99139	-82.88083	20120102	12:00	0	T	
COOP:331786	COLUMBUS	PORT	COLUMBUS	INTERNATIONAL	AIRPORT	OH	US	246.9	39.99139	-82.88083	20120102	13:00	0	T	
COOP:331786	COLUMBUS	PORT	COLUMBUS	INTERNATIONAL	AIRPORT	OH	US	246.9	39.99139	-82.88083	20120102	14:00	1		
COOP:331786	COLUMBUS	PORT	COLUMBUS	INTERNATIONAL	AIRPORT	OH	US	246.9	39.99139	-82.88083	20120102	15:00	0	T	
COOP:331786	COLUMBUS	PORT	COLUMBUS	INTERNATIONAL	AIRPORT	OH	US	246.9	39.99139	-82.88083	20120102	16:00	0	T	
COOP:331786	COLUMBUS	PORT	COLUMBUS	INTERNATIONAL	AIRPORT	OH	US	246.9	39.99139	-82.88083	20120102	17:00	0	T	
COOP:331786	COLUMBUS	PORT	COLUMBUS	INTERNATIONAL	AIRPORT	OH	US	246.9	39.99139	-82.88083	20120102	18:00	0	T	
COOP:331786	COLUMBUS	PORT	COLUMBUS	INTERNATIONAL	AIRPORT	OH	US	246.9	39.99139	-82.88083	20120102	19:00	0	T	
COOP:331786	COLUMBUS	PORT	COLUMBUS	INTERNATIONAL	AIRPORT	OH	US	246.9	39.99139	-82.88083	20120102	20:00	1		
COOP:331786	COLUMBUS	PORT	COLUMBUS	INTERNATIONAL	AIRPORT	OH	US	246.9	39.99139	-82.88083	20120102	21:00	0	T	
COOP:331786	COLUMBUS	PORT	COLUMBUS	INTERNATIONAL	AIRPORT	OH	US	246.9	39.99139	-82.88083	20120102	22:00	0	T	
COOP:331786	COLUMBUS	PORT	COLUMBUS	INTERNATIONAL	AIRPORT	OH	US	246.9	39.99139	-82.88083	20120102	23:00	0	T	
COOP:331786	COLUMBUS	PORT	COLUMBUS	INTERNATIONAL	AIRPORT	OH	US	246.9	39.99139	-82.88083	20120103	0:00	0	T	
COOP:331786	COLUMBUS	PORT	COLUMBUS	INTERNATIONAL	AIRPORT	OH	US	246.9	39.99139	-82.88083	20120103	1:00	0	T	
COOP:331786	COLUMBUS	PORT	COLUMBUS	INTERNATIONAL	AIRPORT	OH	US	246.9	39.99139	-82.88083	20120103	2:00	0	T	
COOP:331786	COLUMBUS	PORT	COLUMBUS	INTERNATIONAL	AIRPORT	OH	US	246.9	39.99139	-82.88083	20120103	3:00	0	T	
COOP:331786	COLUMBUS	PORT	COLUMBUS	INTERNATIONAL	AIRPORT	OH	US	246.9	39.99139	-82.88083	20120103	4:00	0	T	
COOP:331786	COLUMBUS	PORT	COLUMBUS	INTERNATIONAL	AIRPORT	OH	US	246.9	39.99139	-82.88083	20120103	5:00	0	T	
COOP:331786	COLUMBUS	PORT	COLUMBUS	INTERNATIONAL	AIRPORT	OH	US	246.9	39.99139	-82.88083	20120103	12:00	0	T	
COOP:331786	COLUMBUS	PORT	COLUMBUS	INTERNATIONAL	AIRPORT	OH	US	246.9	39.99139	-82.88083	20120103	13:00	0	T	
COOP:331786	COLUMBUS	PORT	COLUMBUS	INTERNATIONAL	AIRPORT	OH	US	246.9	39.99139	-82.88083	20120103	14:00	0	T	

Retrieval of Surface Water Discharge Data

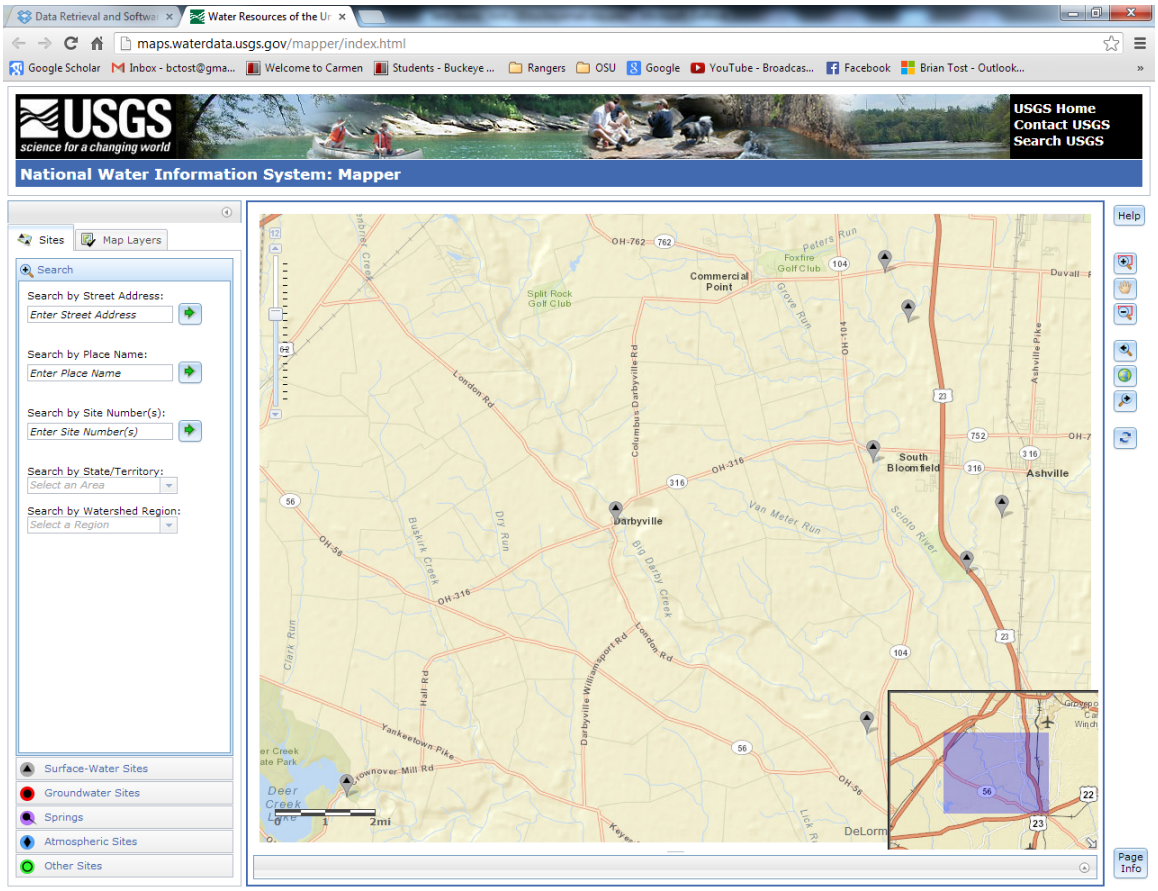
Surface water discharge data are available from the United States Geological Survey (USGS) from the following link:

http://maps.waterdata.usgs.gov/mapper/index.html

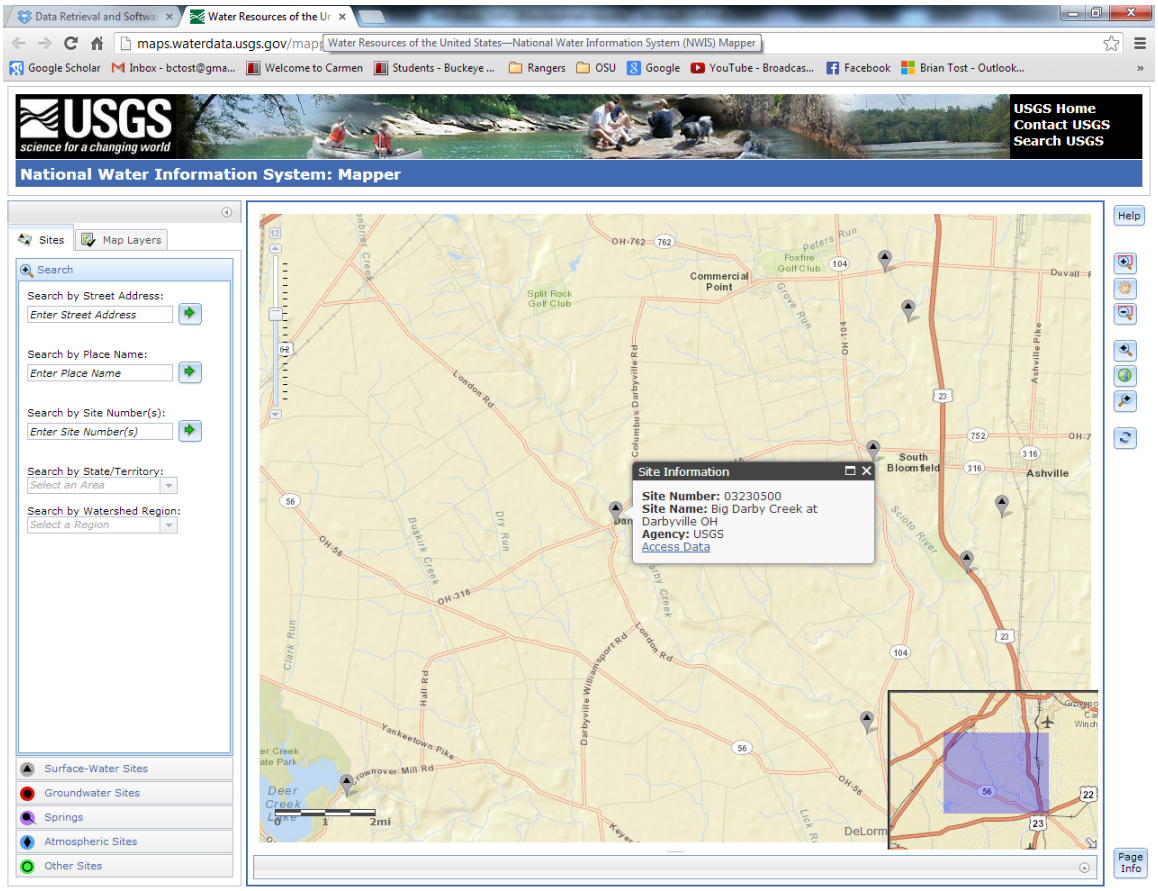
To retrieve data specific to a certain area, click on the link. A window opens that displays a map of the US showing the surface water discharge measuring stations.



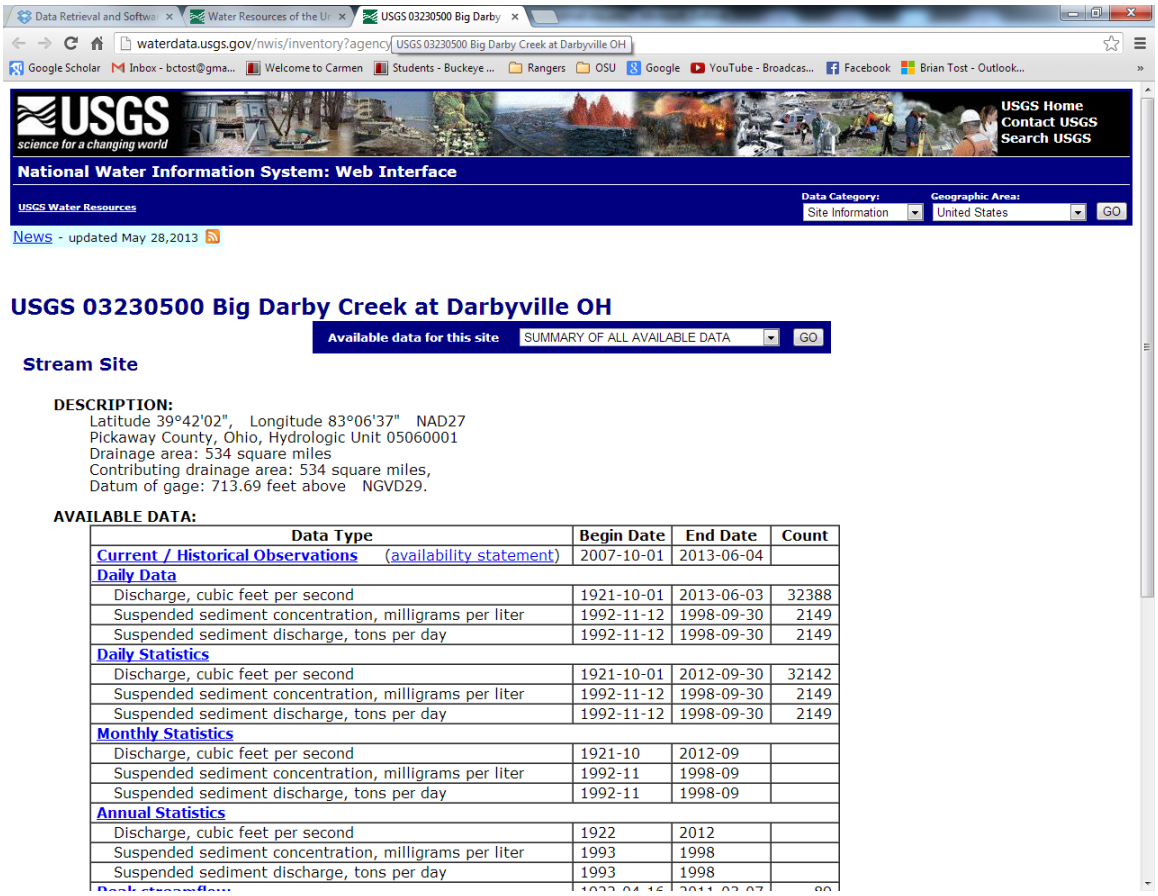
The user may select their station-of-interest by street address, name, site number, or by zooming in on a station by using the mouse wheel. For this example, the discharge measuring station at Darbyville will be selected.



Left-click on the station. Information on the site will appear next to the icon showing the location of the station. Left-click on "Access Data".



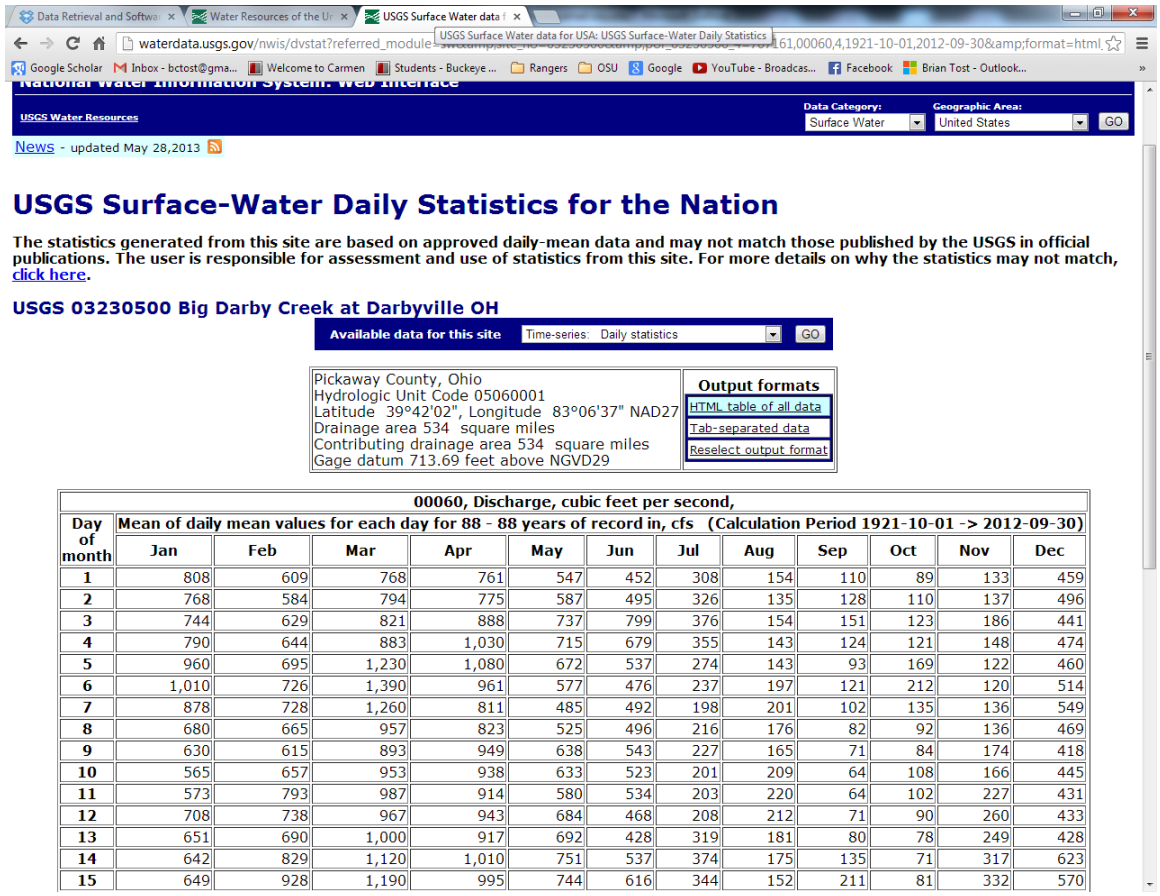
A new tab will open in the internet browser showing data related to the station. Select the data-of-interest to the user. In this example, "Discharge, cubic feet per second" under the heading of "Daily Statistics" will be selected.



Another tab in the internet browser will open, showing discharge parameters. Select the user's desired parameters. For this example, "Discharge, cubic feet per second" will be selected.

Select the appropriate options for displaying data. In this example, the fields will be left blank so that the mean data from all time periods will be displayed. Click "Submit".

The next window will display the selected data. In this example, the daily discharge measured at the Darbyville station is displayed.



USGS Water Resources

Data Category: Surface Water | Geographic Area: United States | GO

News - updated May 28,2013

USGS Surface-Water Daily Statistics for the Nation

The statistics generated from this site are based on approved daily-mean data and may not match those published by the USGS in official publications. The user is responsible for assessment and use of statistics from this site. For more details on why the statistics may not match, click here.

USGS 03230500 Big Darby Creek at Darbyville OH

Available data for this site | Time-series: Daily statistics | GO

Pickaway County, Ohio
Hydrologic Unit Code 05060001
Latitude 39°42'02", Longitude 83°06'37" NAD27
Drainage area 534 square miles
Contributing drainage area 534 square miles
Gage datum 713.69 feet above NGVD29

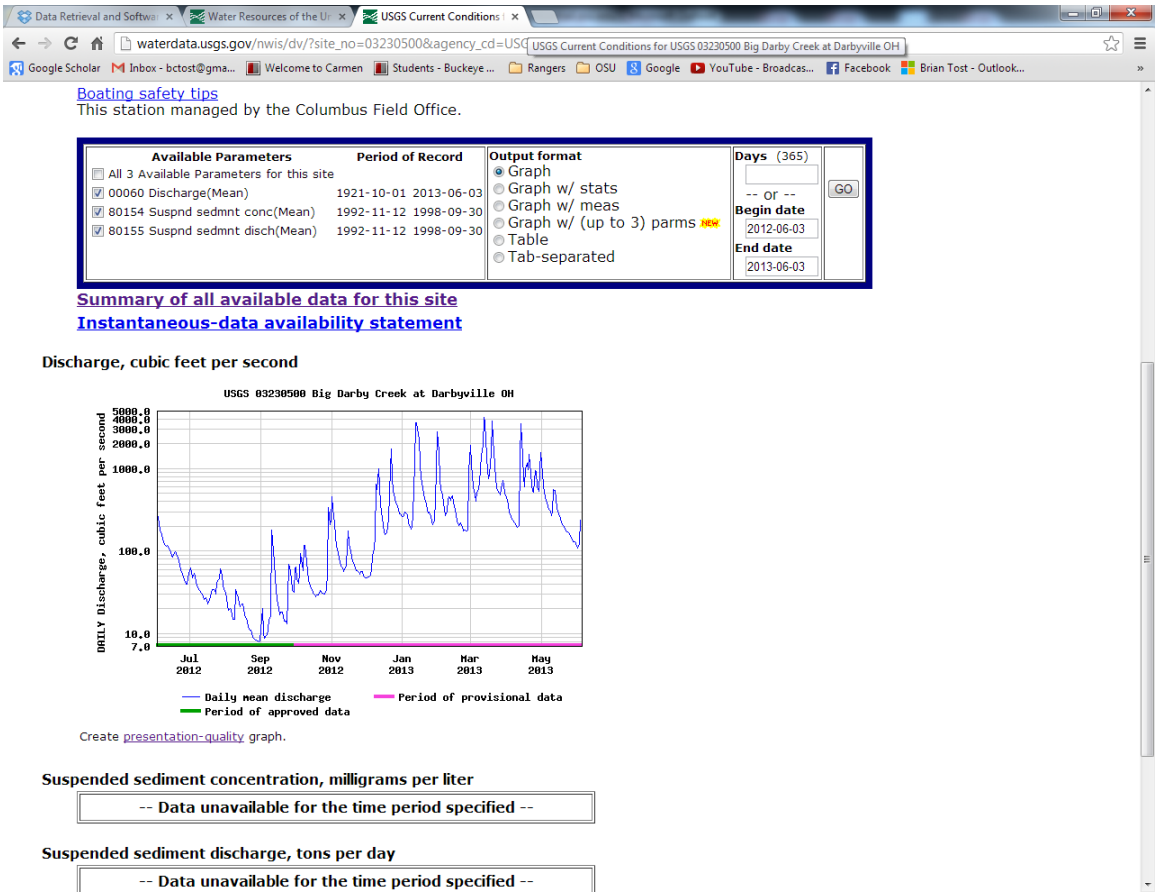
Output formats
HTML table of all data
Tab-separated data
Reselect output format

00060, Discharge, cubic feet per second,

Mean of daily mean values for each day for 88 - 88 years of record in, cfs (Calculation Period 1921-10-01 -> 2012-09-30)

Day of month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	808	609	768	761	547	452	308	154	110	89	133	459
2	768	584	794	775	587	495	326	135	128	110	137	496
3	744	629	821	888	737	799	376	154	151	123	186	441
4	790	644	883	1,030	715	679	355	143	124	121	148	474
5	960	695	1,230	1,080	672	537	274	143	93	169	122	460
6	1,010	726	1,390	961	577	476	237	197	121	212	120	514
7	878	728	1,260	811	485	492	198	201	102	135	136	549
8	680	665	957	823	525	496	216	176	82	92	136	469
9	630	615	893	949	638	543	227	165	71	84	174	418
10	565	657	953	938	633	523	201	209	64	108	166	445
11	573	793	987	914	580	534	203	220	64	102	227	431
12	708	738	967	943	684	468	208	212	71	90	260	433
13	651	690	1,000	917	692	428	319	181	80	78	249	428
14	642	829	1,120	1,010	751	537	374	175	135	71	317	623
15	649	928	1,190	995	744	616	344	152	211	81	332	570

Other data in connection with time-series data are also available via the drop-down menu. For example, a hydrograph may be generated by selecting "Daily Data"

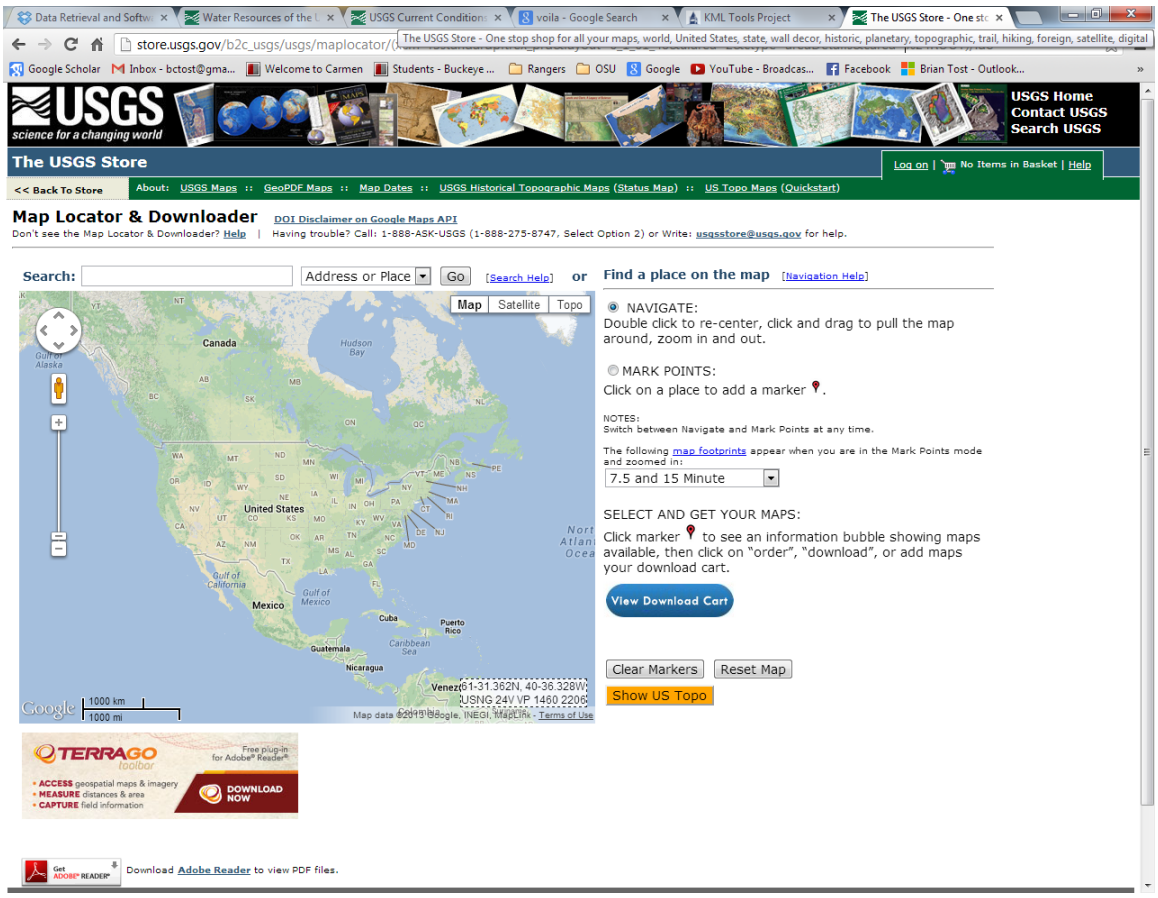


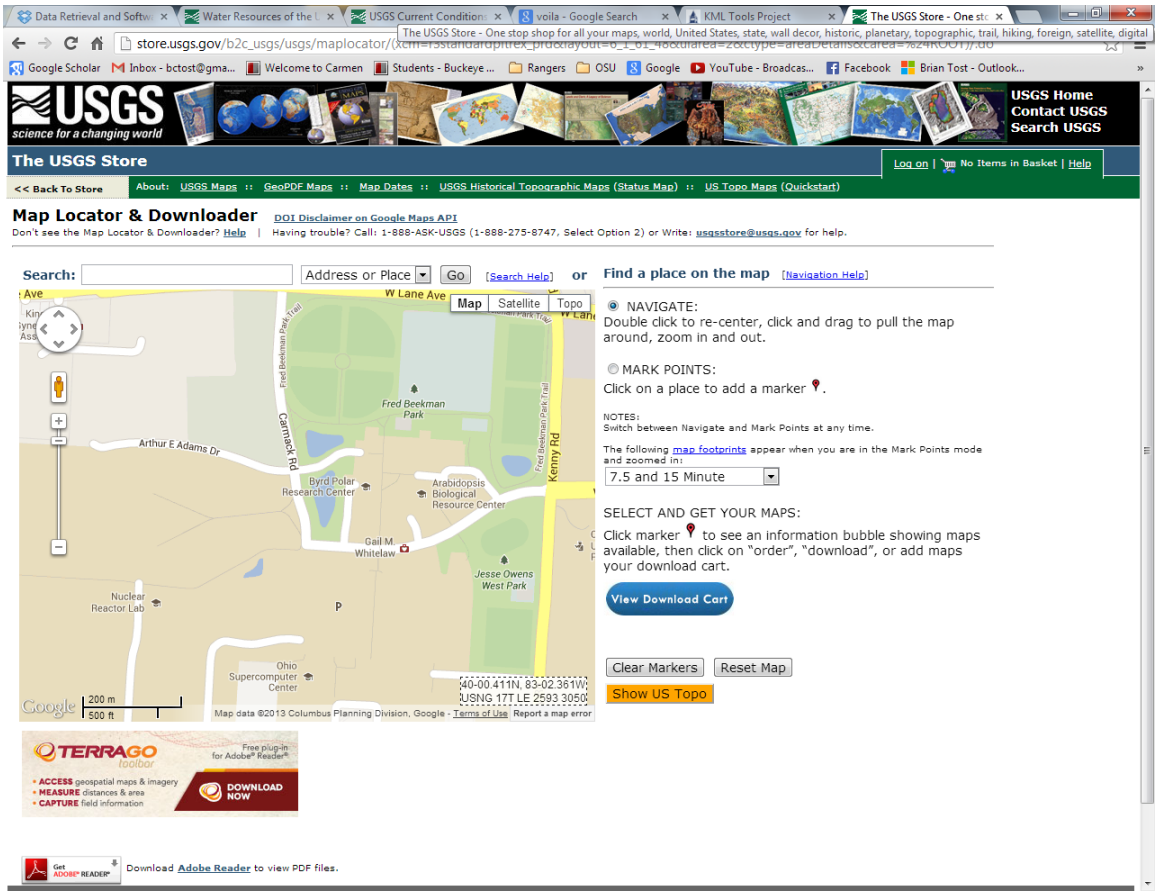
Accessing Topographic Maps

7.5 Minute Quadrangle topographic maps from the USGS are available at no cost from the following link:

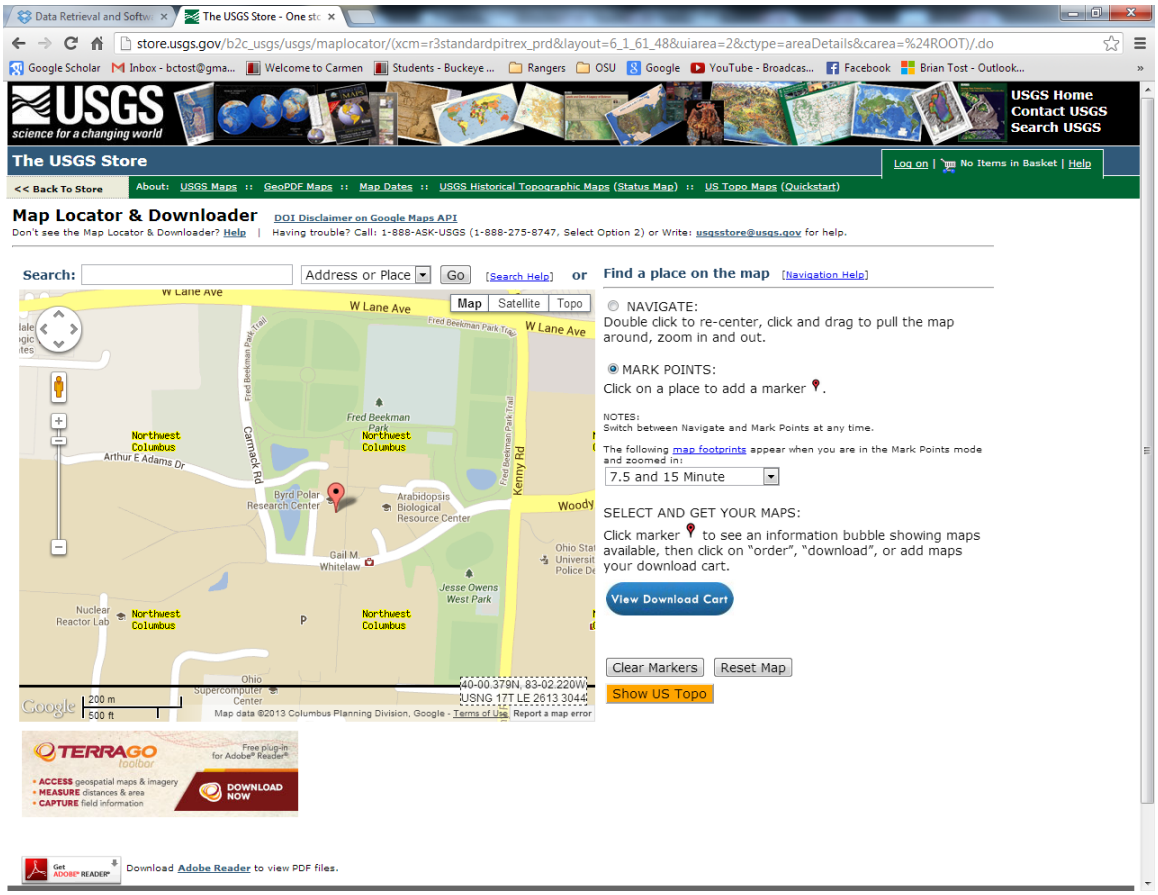
http://store.usgs.gov/b2c_usgs/usgs/maplocator/(xcm=r3standardpitrex_prd&layout=6_1_61_48&uiarea=2&ctype=areaDetails&carea=%24ROOT)/.do

To order a topographic map for a particular area, click on the link. A window opens showing a map of the US. Using the mouse wheel, zoom in on the area of interest. In this example, a topographic map containing the location of the BPRC will be downloaded.



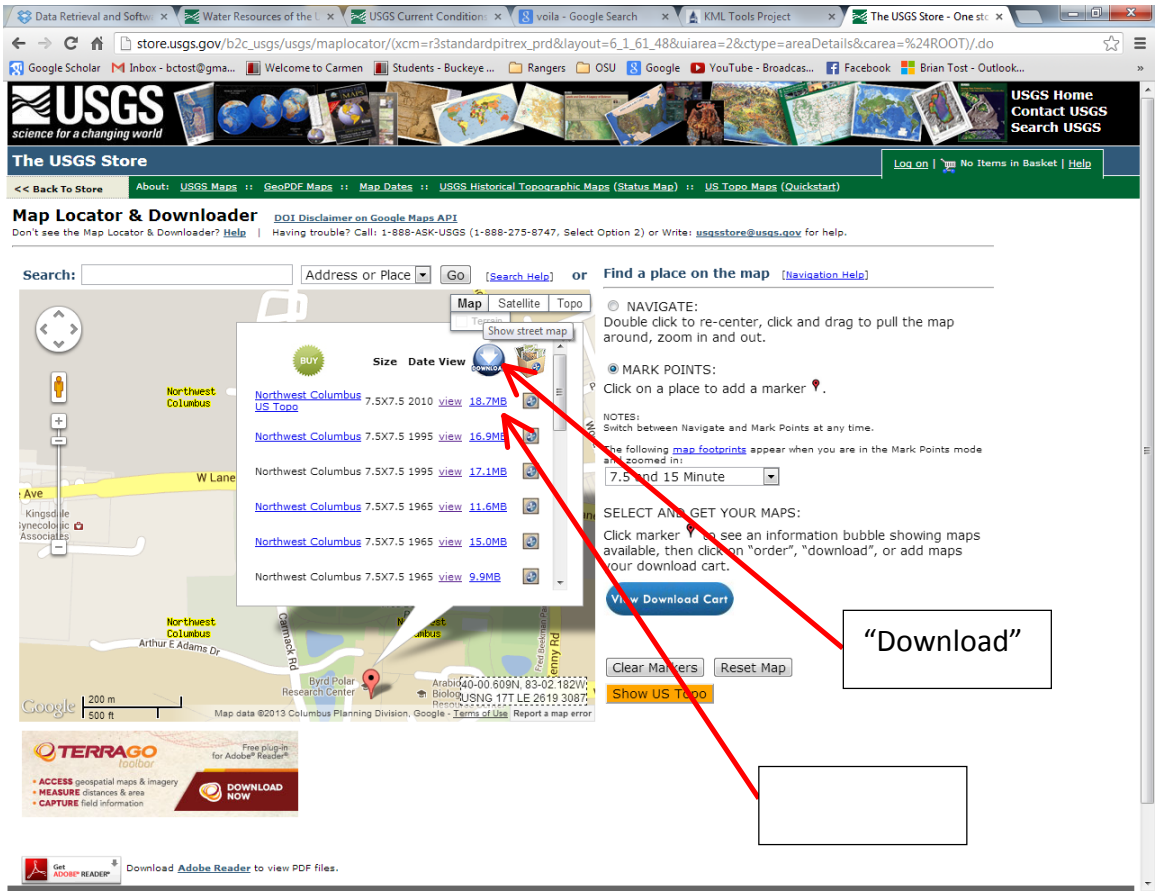


On the far right of the window, a button titled "Mark Points" is un-checked. Once the user has located their area of interest, check the "Mark Points" button. Click on the area of interest on the map. A red marker will appear showing the location of interest.



Left-click on the red marker to display the topographic maps that are available for that area. For this example, the most recent topographic map (2010) will be selected.

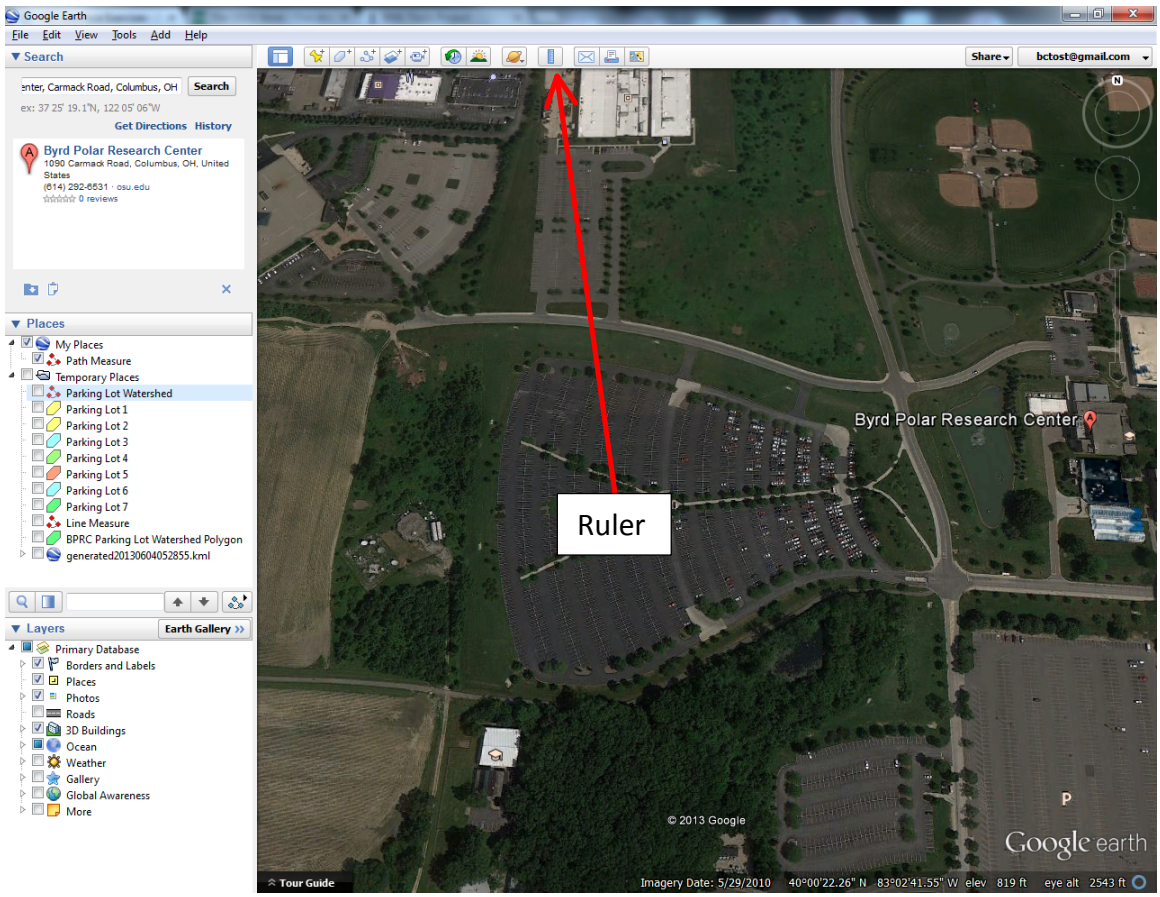
A column titled "Download" shows the memory size of each topographic map available for the location of interest. Each entry in this column is also a link to the map of interest. Select the map by selecting the memory size.



A .zip file will automatically download onto the user's computer. Open the .zip folder and click on the map to open it.

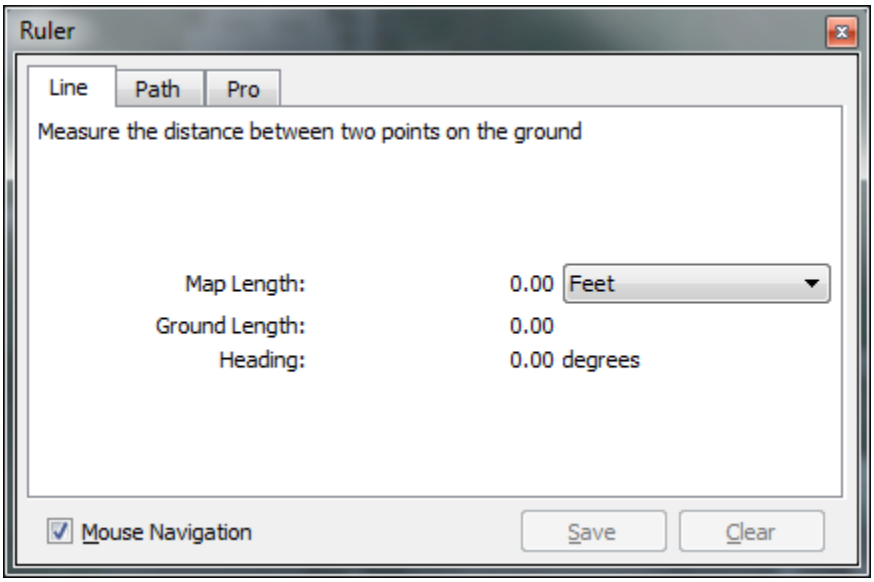
Drawing Shapes and Overlaying Topographic Maps in Google Earth

The ability to draw shapes and lines in Google Earth is fundamental for delineation of watersheds, as well as other geographic features. The process for drawing lines and shapes in Google Earth is a straight-forward process. The user selects an area that they wish to delineate. For this example, the Byrd Polar Research Center will be selected.



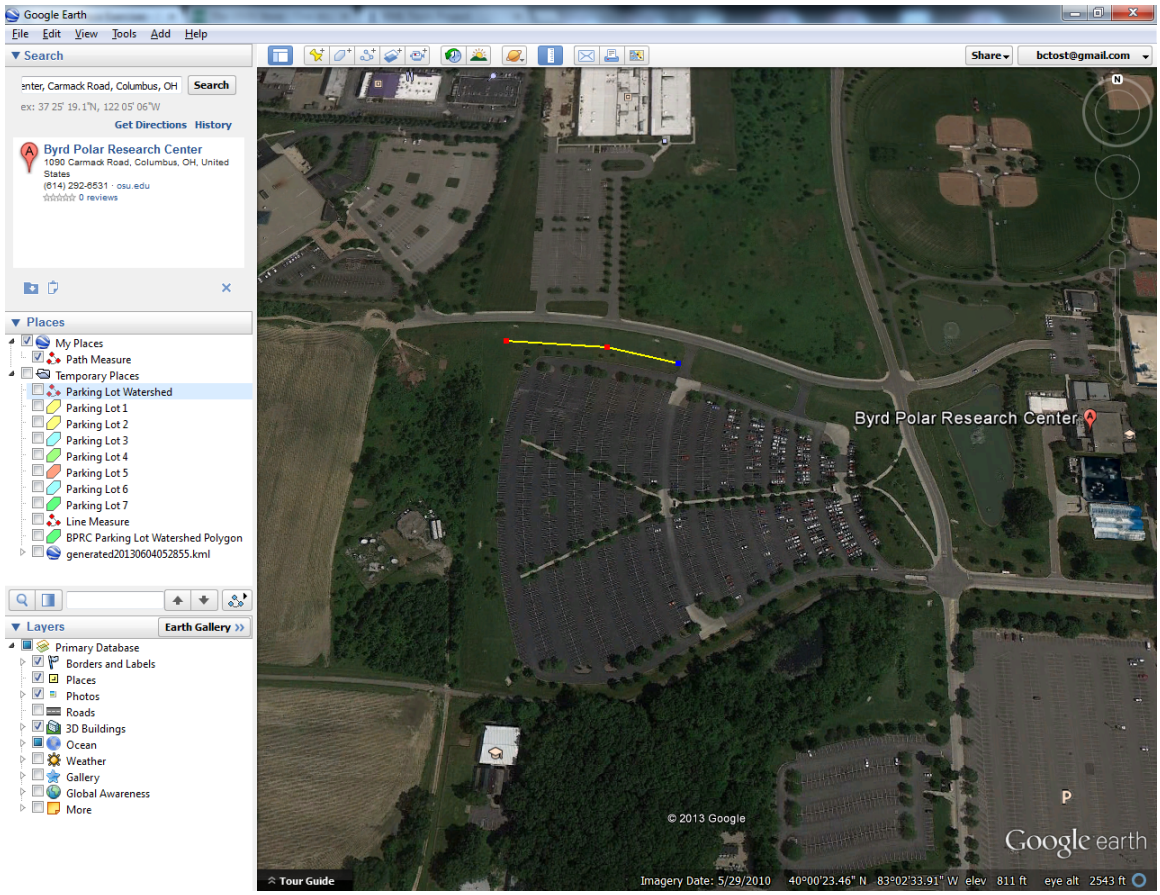
For this example, the parking lot directly to the west of BPRC will be outlined using Google Earth's "Ruler" tool.

Select the "Ruler" tool. A pop-up window will appear.

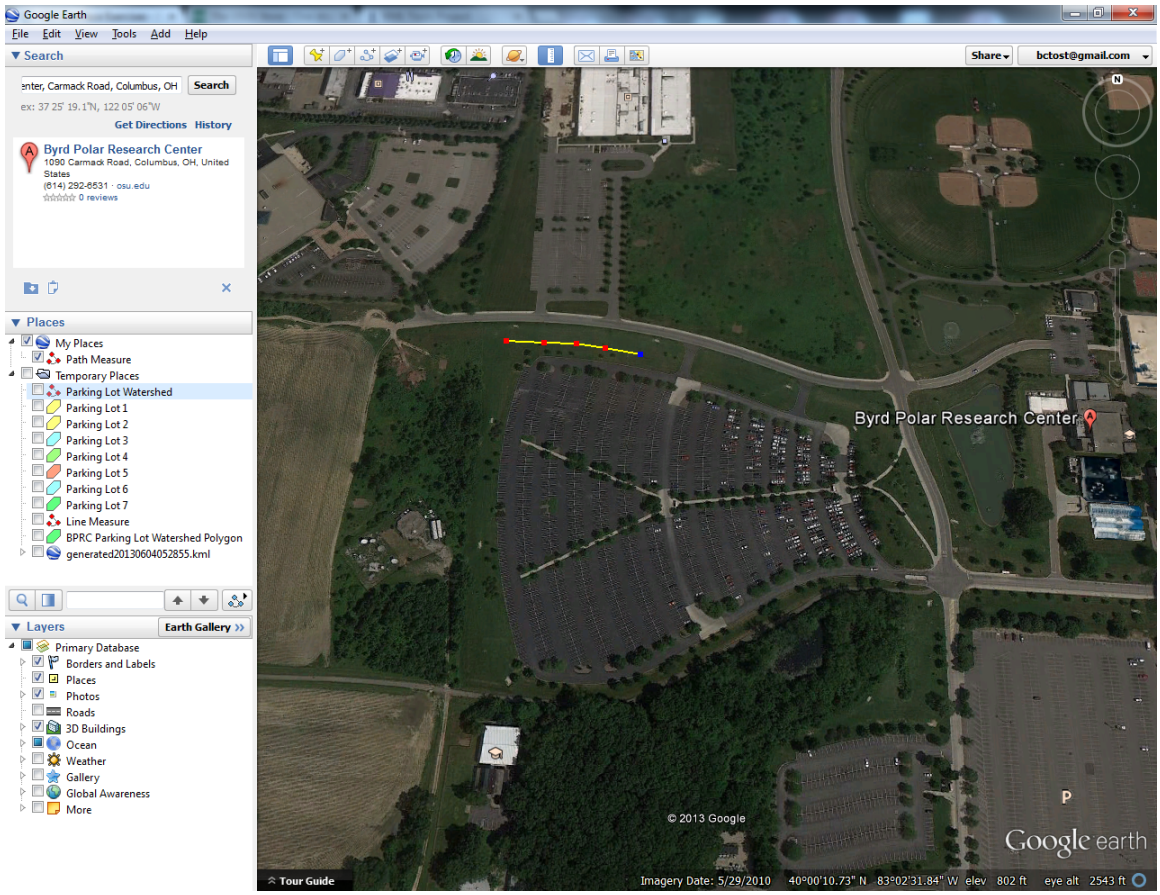


At this time, it will be necessary to determine whether the user would prefer a line or a path. Choosing "Line" will result in a line connecting two points, choosing "Path" will result in a continuous line connecting multiple points. This selection will depend on the user's goal. In this example, the goal is to outline the parking lot, which is irregularly-shaped. For this reason, path will be selected.

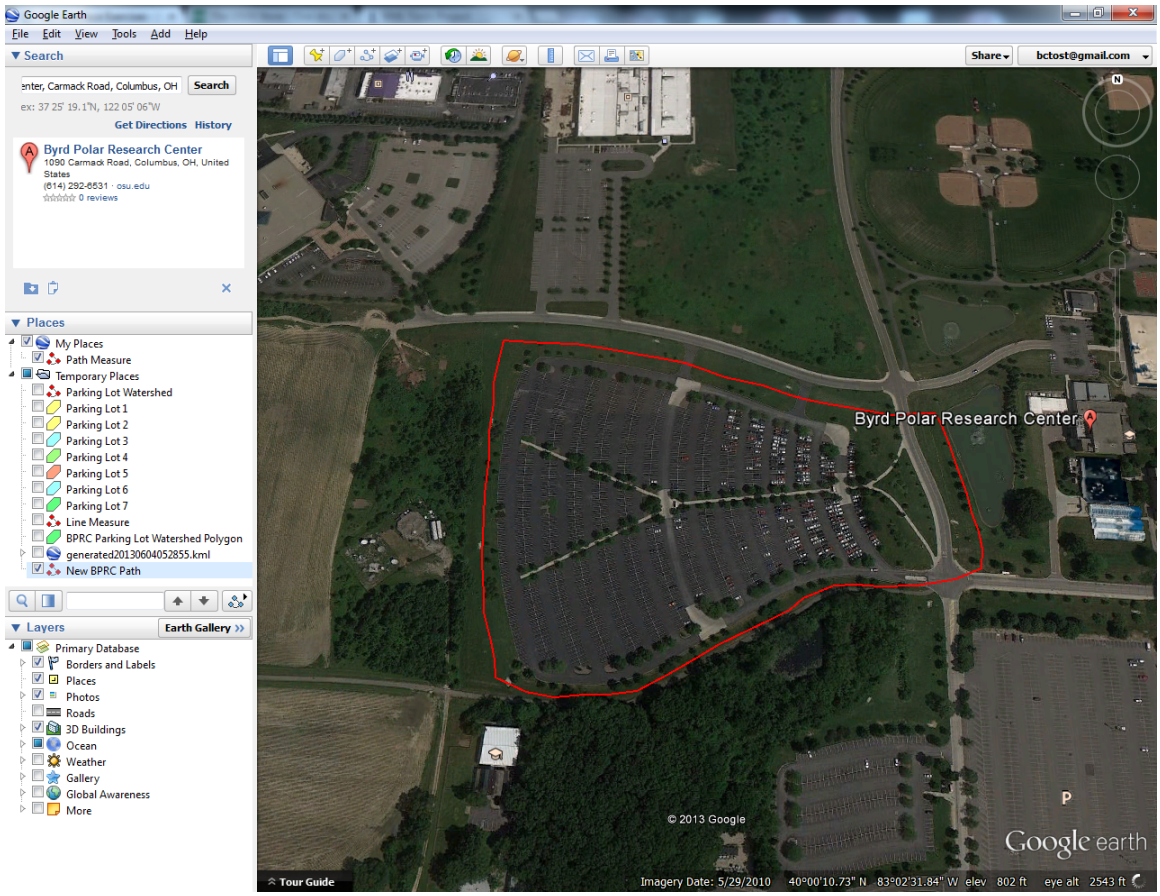
Place the cursor over the image at the point where the user would like to begin outlining the shape. The user then places points along the desired path by left-clicking. Google Earth draws line segments connecting the points.



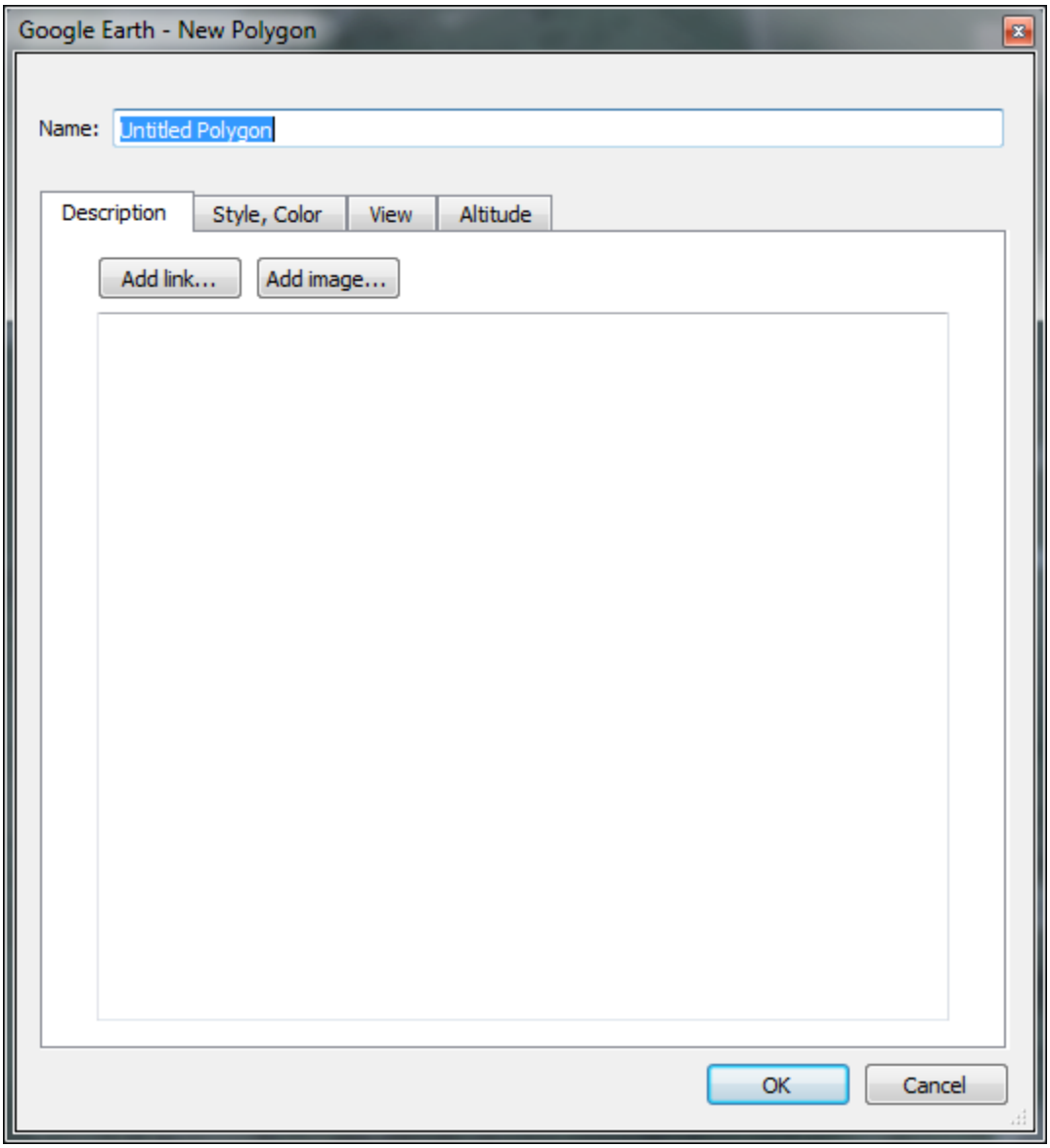
If the user believes that the accuracy of the desired shape has not been preserved, points can be moved by clicking and dragging an existing point and moving it. Points can be deleted by right-clicking.



Continue adding points until the shape is completed. When completed, be sure to save the new shape into the Google Earth browser.

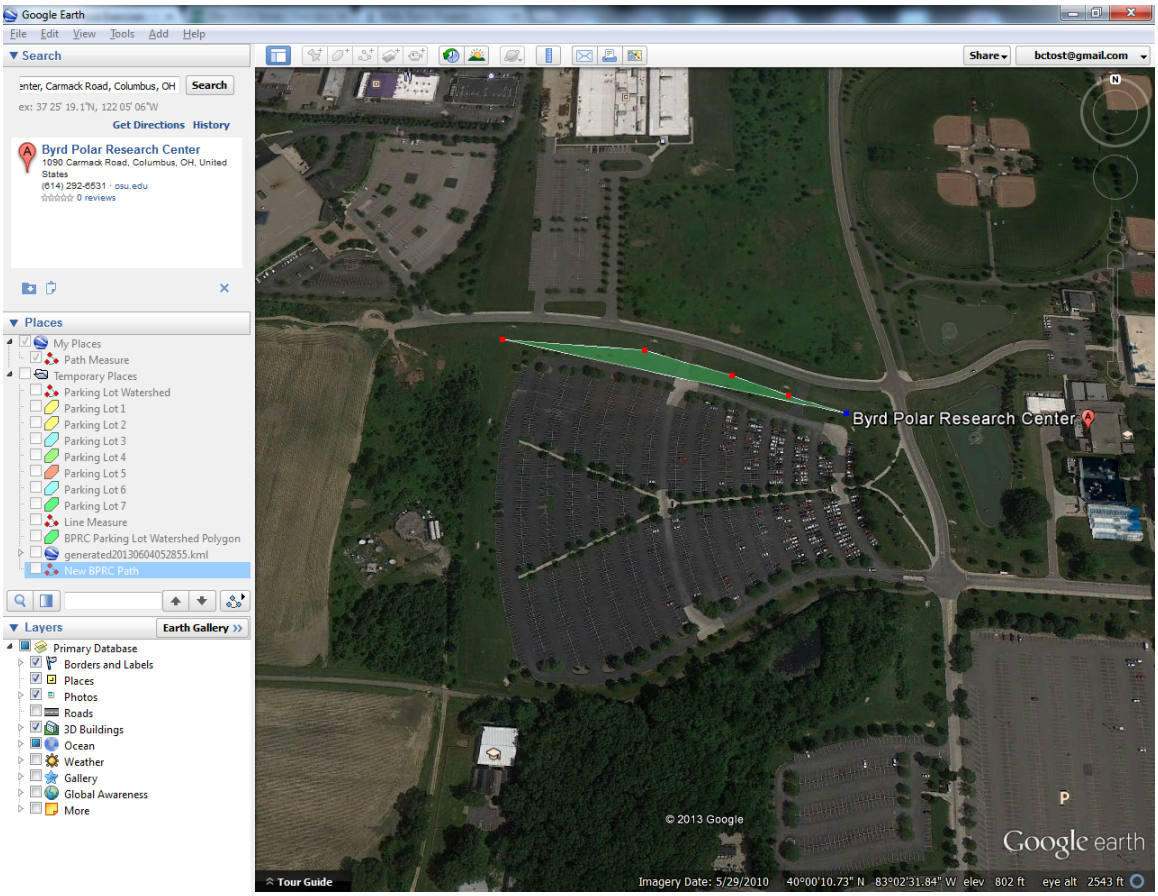


Shapes may also be drawn using the polygon tool. As in the previous example, the Byrd Polar Research Center will be used in this example. Select the polygon tool. A new pop-up window will appear.

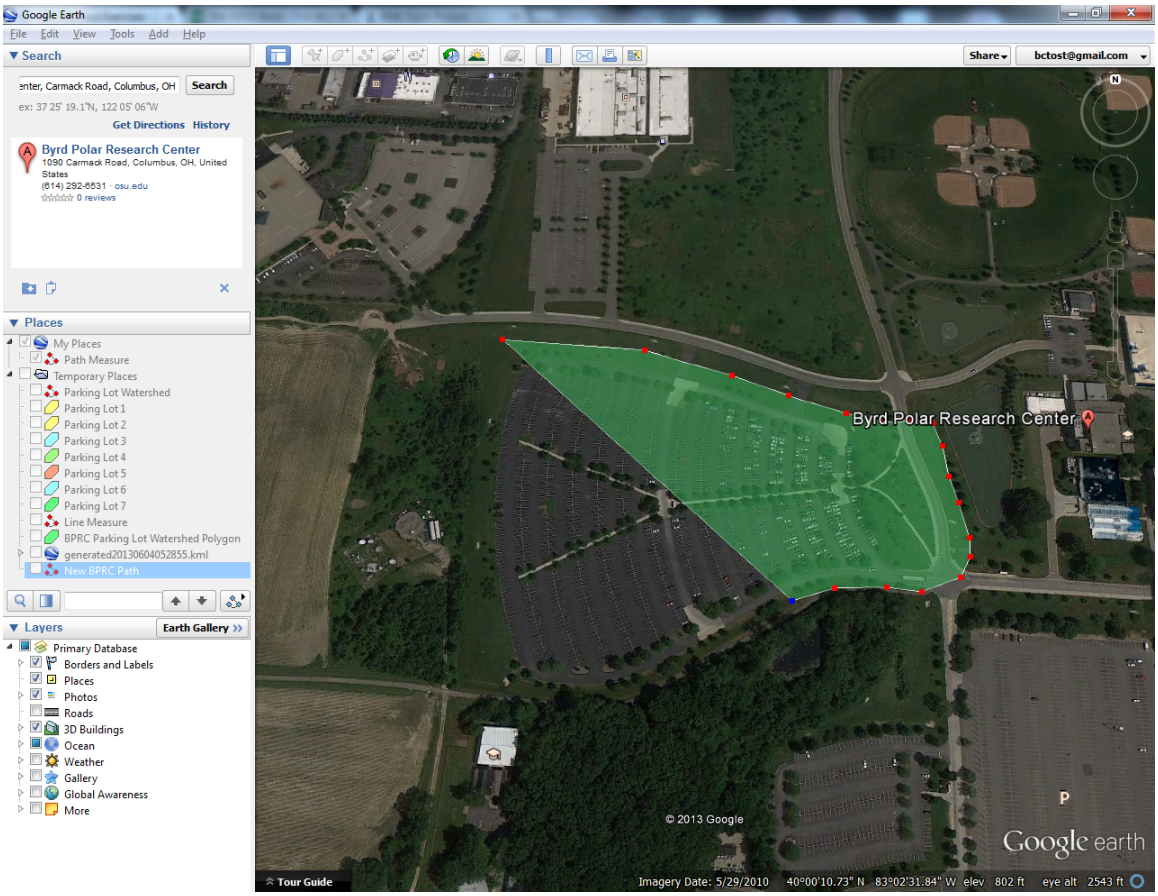


Begin making the polygon by clicking points on the image in Google Earth. The user may draw the polygon in two ways. Discrete points may be drawn on the image by left-clicking on the image or continuous points may be drawn by holding down the left mouse button and dragging points along the path. The method of using continuous points is difficult to control without practice.

In either method, the polygon is drawn as a web that forms between points as they are drawn.



Continued


Google Earth
File Edit View Tools Add Help
Search
enter, Carmack Road, Columbus, OH
Search
ex: 37 25' 19.1"N, 122 05' 06"W
Get Directions History
Byrd Polar Research Center
1090 Carmack Road, Columbus, OH, United States
(614) 292-6631 · osu.edu
0 reviews
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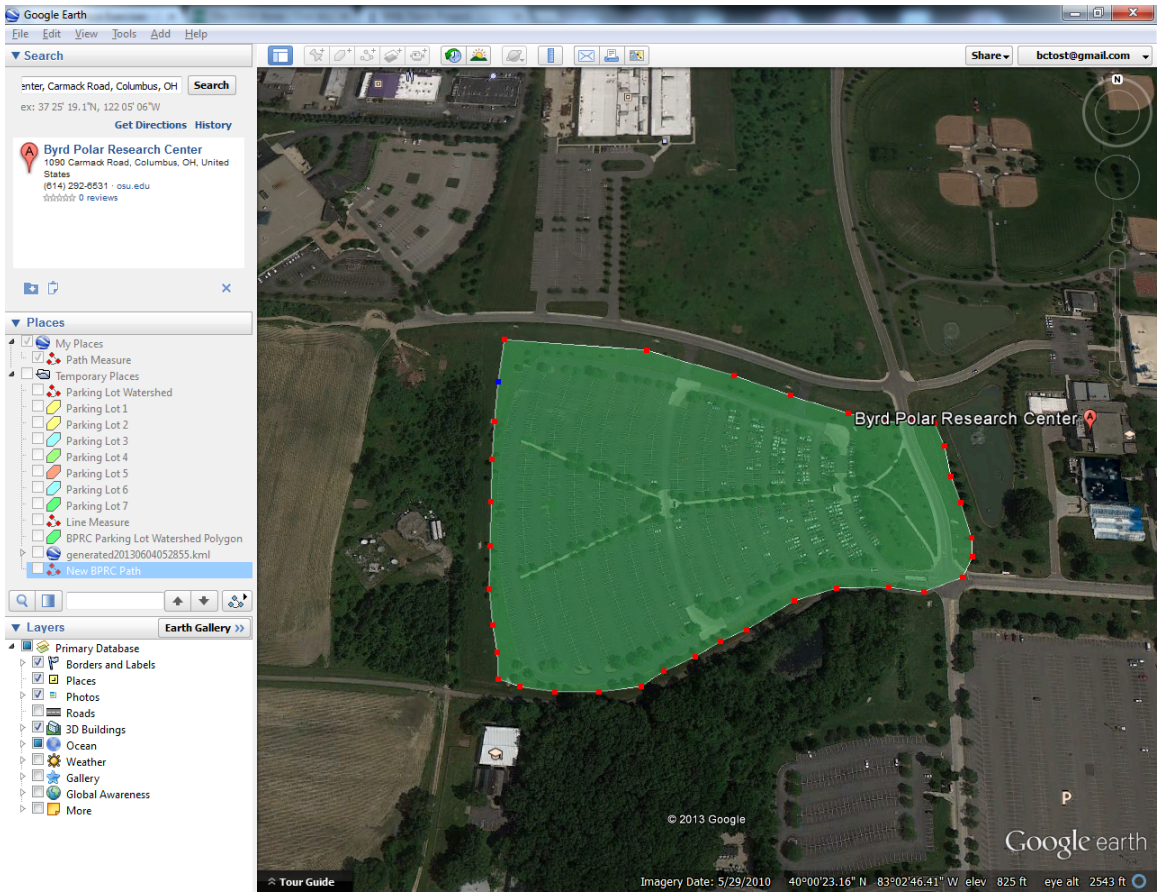
bctost@gmail.com
Places
My Places
Path Measure
Temporary Places
Parking Lot Watershed
Parking Lot 1
Parking Lot 2
Parking Lot 3
Parking Lot 4
Parking Lot 5
Parking Lot 6
Parking Lot 7
Line Measure
BPRC Parking Lot Watershed Polygon
generated20130604052855.kml
New BPRC Path
Layers
Earth Gallery
Primary Database
Borders and Labels
Places
Photos
Roads
3D Buildings
Ocean
Weather
Gallery
Global Awareness
More
Byrd Polar Research Center
© 2013 Google
Google earth
Tour Guide
Imagery Date: 5/29/2010 40°00'10.73" N 83°02'31.84" W elev 802 ft eye alt 2543 ft

The user continues adding points until the polygon is completed. Care should be taken to ensure that the number of points preserves the shape of the desired polygon.



When completed, save the polygon into the Google Earth browser.