

How to Find USGS Water Quality Data in NWIS or NAWQA

Sandy Williamson,
USGS NAWQA Data Team Leader
NWQMC, Atlantic City, 21 May 2008

Outline - making it easier to find the right WQ data in USGS

- Compare NWIS and NAWQA DB's
- How to find NWIS data with Data Explorer
- How to find NAWQA data
- The Links and the Future

Data Comparison

NWIS

- All USGS water quality and flow data
- Many more samples at many more sites.
- Only USGS source in non-NAWQA areas
- Only WQ samples, flow and water and sed/tissue chem.

NAWQA

- Primarily NAWQA data at only NAWQA sites
- Many more constituents per sample
- More consistent in time & space makes for better comparisons
- Bio: Habitat and Community-fish, Algae, Invertebrates

Data Numbers Comparison

Ground Water	NAWQA	NWIS
Sites	7,818	1,311,365
Samples	54,785	1,126,667
Results	2,261,790	20,392,932
Results/Sample	41	18

Ground Water	NAWQA	NWIS
Sites	4,274	140,424
Samples	57,257	3,369,123
Results	8,857,323	62,112,369
Results/Sample	155	18

Water Data Explorer

Select sites which meet all of the following criteria:

Site type

Stream/River

State/Territory -- select one or more ([help selecting multiple items](#)) OR Hydrologic Region -- select one or more ([help selecting multiple items](#))

Tennessee
Texas
Utah
Vermont
Virginia
Washington

Alaska Region
Arkansas-White-Red Region
California Region
Caribbean Region

Parameter groupings -- cont.

Peak Flow (years)

USGS Water sites that have data that match your search criteria - 367 sites

Site type = Stream/River

State = Washington

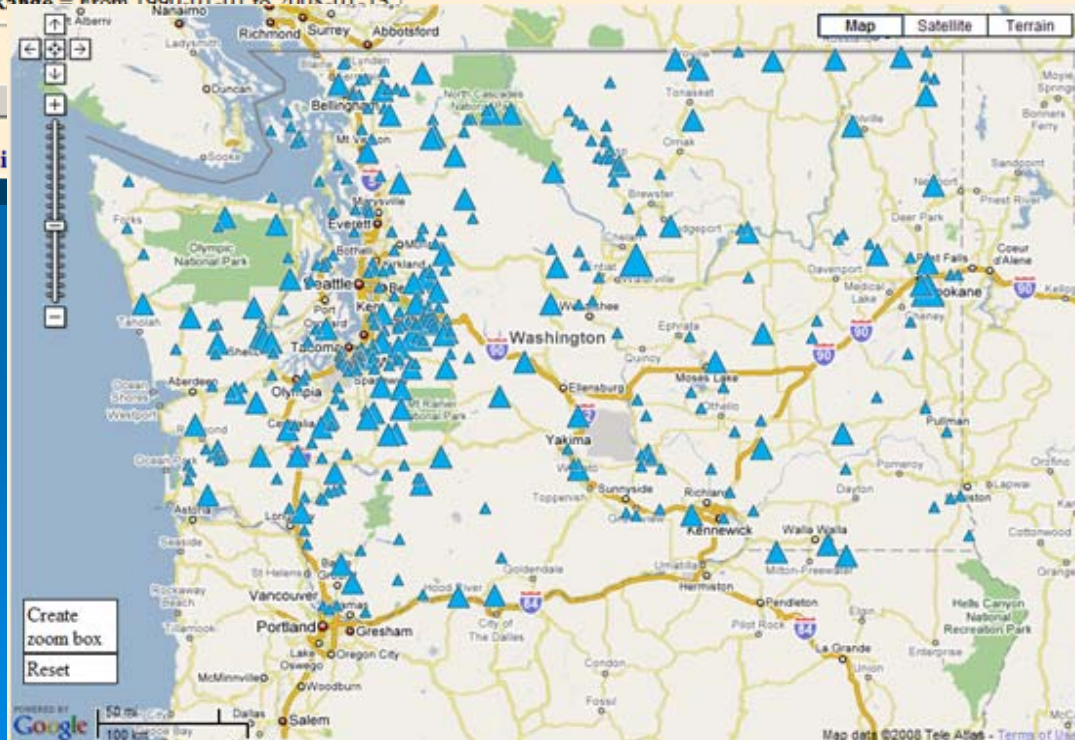
Parameter Grouping = Peak Flow (years)

Date Range = From 1990-01-01 to 2008-01-15

[Back to Search](#)

[Data for individual sites](#)

[all results](#)



Water Data Explorer for NWIS



USGS H
Contact
Search

USGS Water Data Explorer

News: For Internal USGS Access Only (at this time)

Retrievals may take a few seconds to a few minutes.

This USGS Water Data Explorer searches a cached (October 2007) summary of the National [NWISW](#) data inventory [1.5 M sites], including streamflow, water levels, and water quality samples. Searches are provided in a table with links to individual site data, and can also be viewed on Google maps and KML file for software such as Google Earth.

Select sites which meet all of the following criteria (You must select a site type, state OR hydrologic region, and parameter grouping):

Site type

Select a site type

☒ **State/Territory** -- select one or more ([help selecting multiple items](#)) OR ☐ **Hydrologic Region** -- select one or more ([help selecting multiple items](#))

Alabama
Alaska
Arizona
Arkansas
California

Alaska Region
Arkansas-White-Red Region
California Region
Caribbean Region
Great Basin Region

Parameter groupings -- (cont.) = Continuous recording data expressed as daily means.

☒ **Period of record** -- select sites where the period of data record overlaps with the period entered below. (**Note:** Sites can sometimes meet this criterion without actually having observations **during** the date range entered because we are searching a summarized data set.)

Must have some data after [mm/dd/yyyy]: AND

Must have some data before [mm/dd/yyyy]:

OR ☐ **Minimum number** of samples OR years of peak flow or continuous data

USGS Water Data Discovery Tool

Retrievals may take a few seconds to a few minutes.

NOTE: You must select a site type, state OR hydrologic region, and parameter groupings

Select sites which meet all of the following criteria:

☒ Site type

Select a site type

☒ ☒ **State/Territory** -- select one or more ([help selecting multiple items](#)) OR ☐ ☐ **Hydrologic Region** -- select one or more ([help selecting multiple items](#))

Alabama
Alaska
Arizona
Arkansas
California

Alaska Region
Arkansas-White-Red Region
California Region
Caribbean Region
Great Basin Region

☒ **Parameter groupings** -- cont. - Continuous recording data expressed as daily means, maximums or minimums.

☒ ☒ **Period of record** -- select sites where the period of data record overlaps with the period entered below. (**Note:** Sites can sometimes meet this criterion without actually having observations *during* the date range entered because we are searching a summarized data set.)

Must have some data after [mm/dd/yyyy]: 01/01/1990 AND

Must have some data before [mm/dd/yyyy]: 10/23/2007

OR ☐ ☐ **Minimum number** of samples OR years of peak flow or continuous data

☒ **Site Name** -- enter full or partial stream/site name (*optional* -- leave blank to not use, option not available is searching for Ground Water & Spring sites)

☐ match from the start ☒ match any part

☒ **Well depth** -- enter values in one or both fields (*optional* -- leave blank to not use, only applies to Ground Water sites, option not available is searching for Stream/River sites)

Well depth: Not all ground-water sites have information on well depth. Such sites will not be retrieved using this search criteria.

Greater than and less than feet below land surface.

Search

Note: Data summary refreshed - April 2007

Data Discovery Tool opening screen

Existing NWIS search capability reconfigured to be one screen selection for simplicity

Users iterate between this query page and the results, Zooming in OR out to get a reasonable number of sites

USGS Water sites that have data that match your search criteria - 352 sites

Site type = Stream/River
State = Washington
Parameter Grouping = Nutrients
Count = 100

Result of Query – Summary with Map Buttons

Maps – Google - Earth

[Back to Search](#)[Export to Tab-Delimited text file](#)[USGS Google Maps](#)[Export/Open in KML Viewer](#)

Data for individual sites can be obtained by selecting the site number below (*the first 15 and last 15 results*) - [Show all results](#)

Agency	Site Number	Site Name	Begin Date	End Date	Param. Grouping	Count
USGS	12009500	BEAR BRANCH NEAR NASELLE, WA	1907-08-09	1977-09-27	Nutrients	200
USGS	12010000	NASELLE RIVER NEAR NASELLE, WA	1973-01-08	1980-04-22	Nutrients	451
USGS	12011103	NORTH NEMAH RIVER NEAR NEMAH, WA	1972-10-03	1977-09-27	Nutrients	340
USGS	12011500	WILLAPA RIVER AT LEBAM, WA	1977-10-04	1980-06-23	Nutrients	199
USGS	12013500	WILLAPA RIVER NEAR WILLAPA, WA	1965-10-13	1986-08-28	Nutrients	728
USGS	12014500	SOUTH FORK WILLAPA RIVER NEAR RAYMOND, WA	1972-10-03	1973-09-24	Nutrients	145
USGS	12016900	NORTH RIVER AT AMERICAN MILL ROAD NEAR RAYMOND, WA	1972-10-03	1977-09-26	Nutrients	412

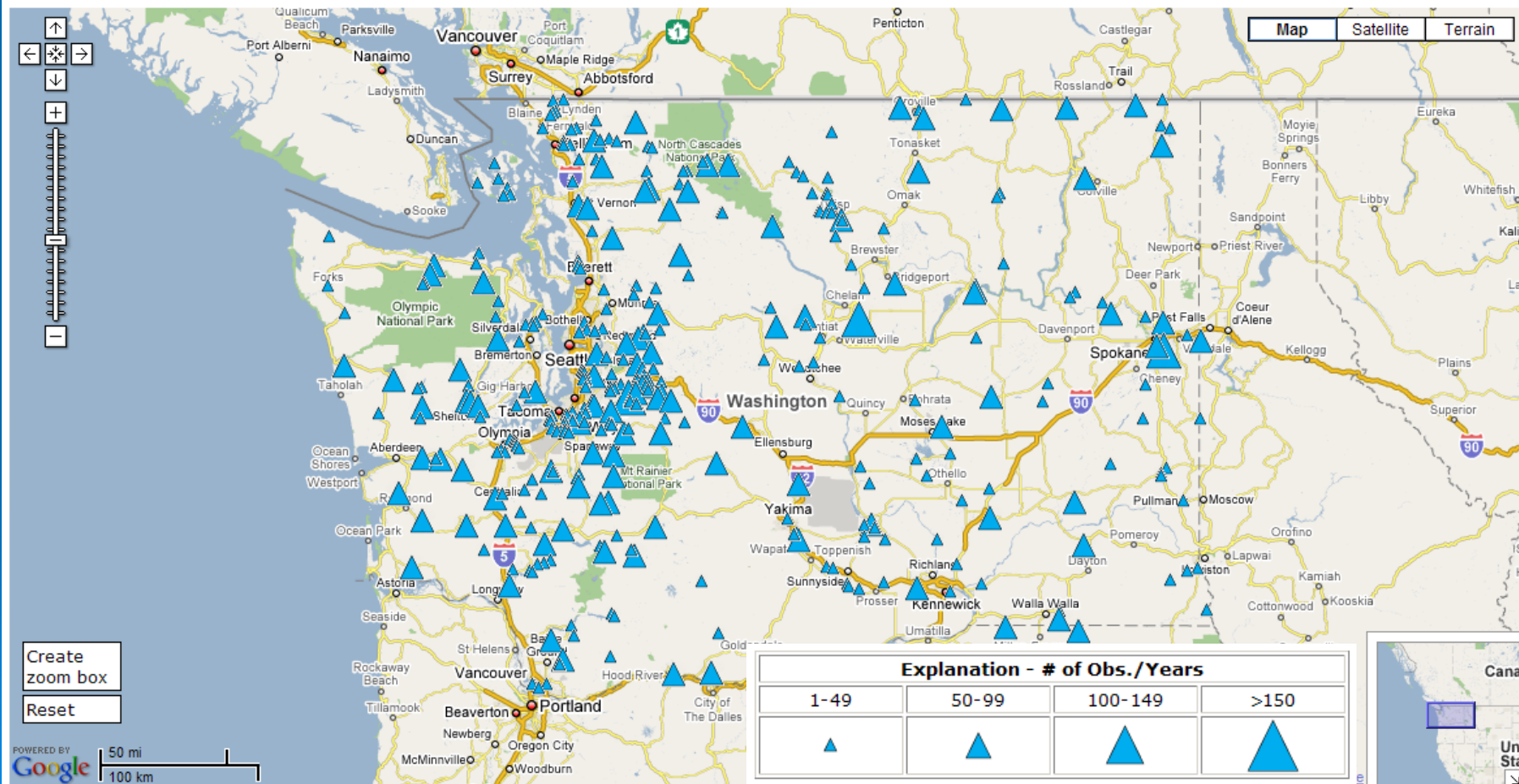
Query Results in Google Maps



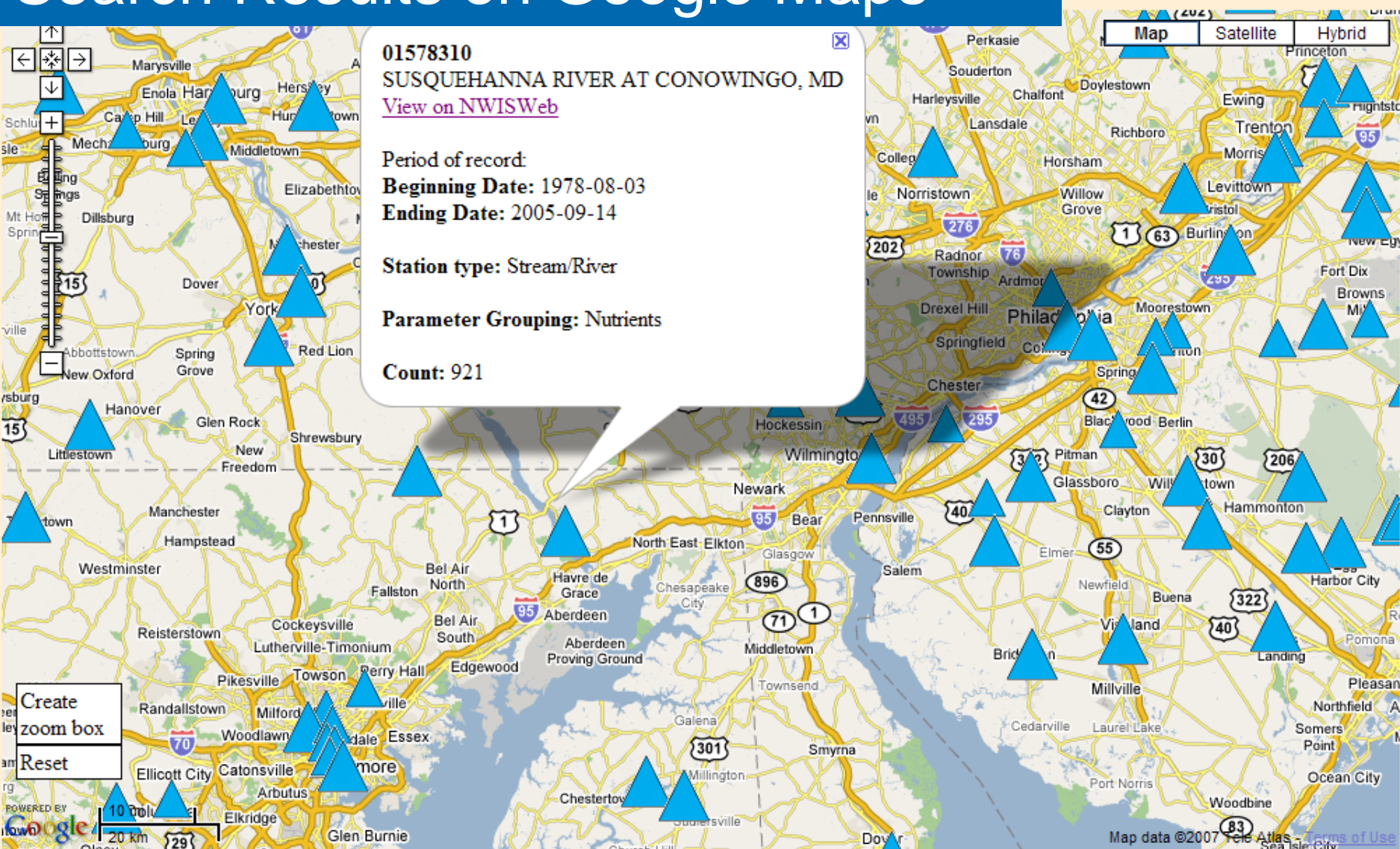
USGS Water Data Explorer

USGS Home
Contact USGS
Search USGS

View Search Criteria with Google Maps



Search Results on Google Maps



Legend - # of Obs./Years

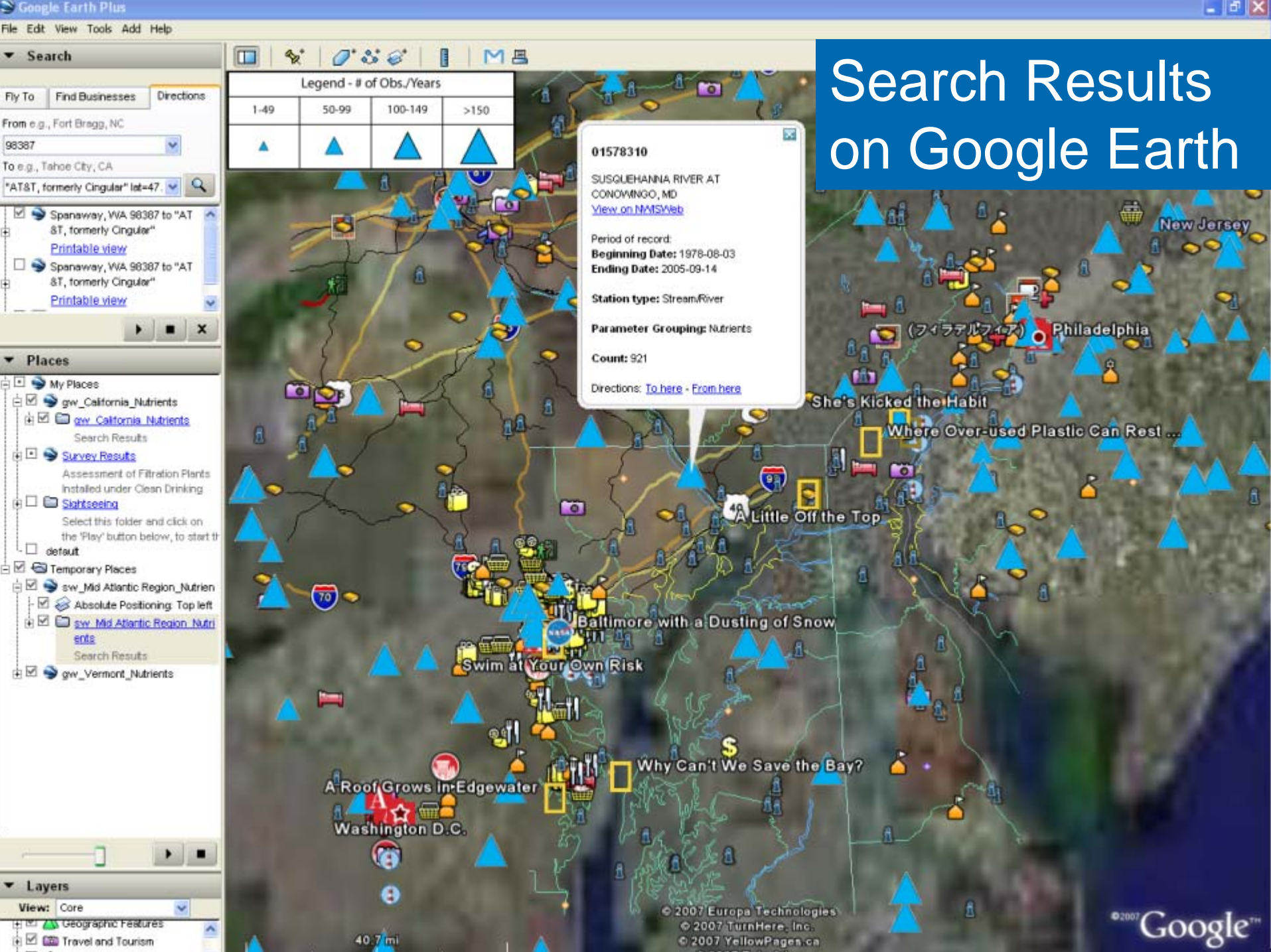
1-49

50-99

100-149

>150





News: [Available Now in NWISWeb](#)

Water Quality Samples for the Nation

USGS 01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD

Available data for this site

Water-Quality: Field/Lab samples

GO

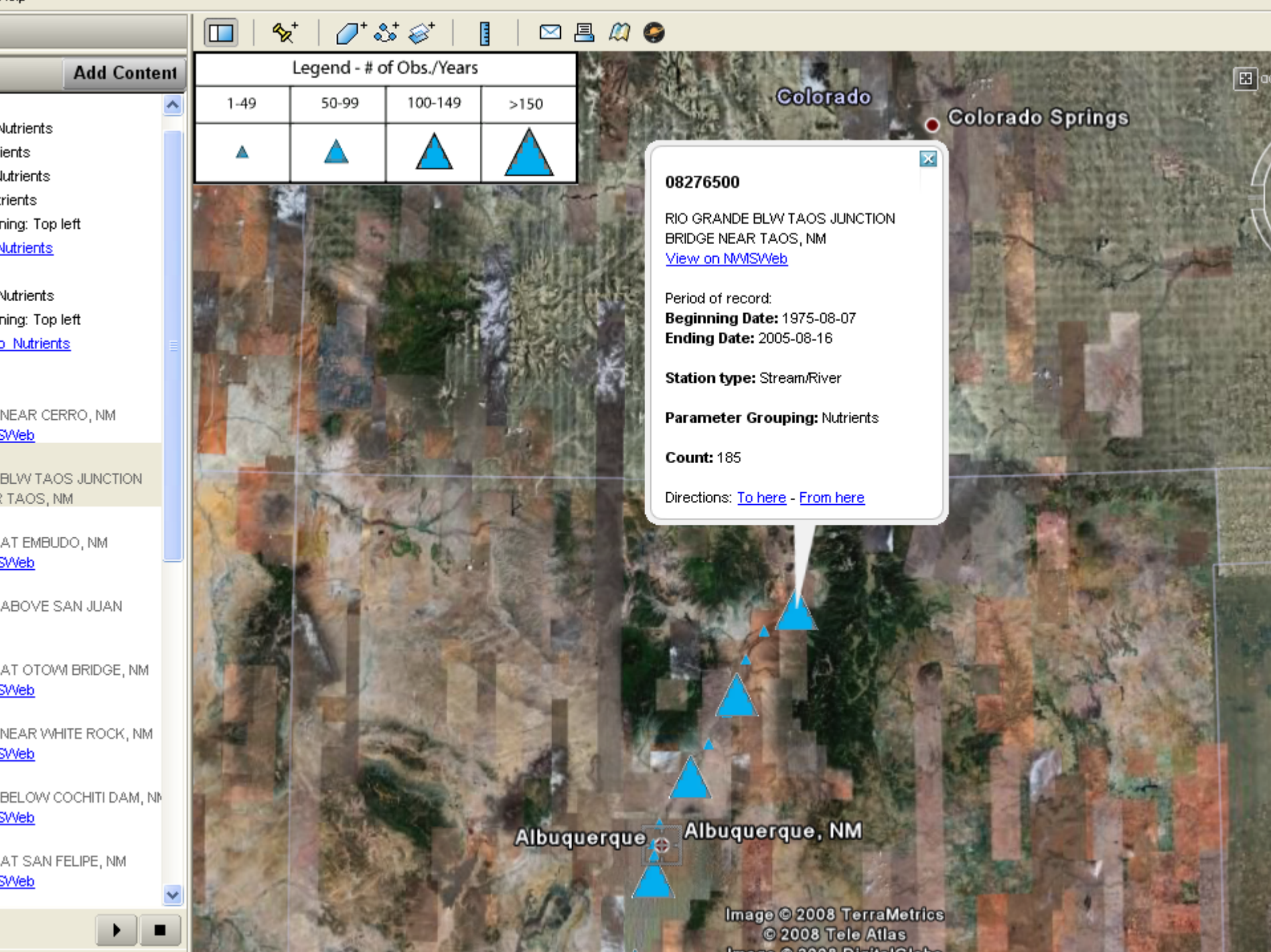
Harford County, Maryland
Hydrologic Unit Code 02050306
Latitude 39°39'28.1", Longitude 76°10'28.2" NAD27
Drainage area 27,100 square miles
Gage datum 5.00 feet above sea level NGVD29

Output formats

[Parameter Group Period of Record table](#)[Inventory of available water-quality data for printing](#)[Inventory of water-quality data with retrieval](#)[Tab-separated data, one result per row](#)[Tab-separated data one sample per row with remark codes combined with values](#)[Tab-separated data one sample per row with tab-delimiter for remark codes](#)[Reselect output format](#)





Parameter group summary of available data

Parameter Group	First Date	Last Date	Number of Samples	Number of Values
All -- include all parameter groups	1978-01-29	2007-06-05	1097	55232
Information	1978-11-09	2007-06-05	1056	2395
Biological	1979-03-28	1995-09-06	176	422
Nutrients	1978-08-03	2007-05-16	952	16854
Organics	1978-08-03	2004-09-13	176	7338
Major Inorganics	1978-08-03	2007-06-05	973	7810
Minor and Trace Inorganics	1978-08-03	2007-04-10	613	5545
Physical Properties	1978-08-03	2007-06-05	1070	11825



Add Content

Legend - # of Obs./Years

1-49	50-99	100-149	>150
			

- Nutrients
- rients
- Nutrients
- rients
- ning: Top left
- [Nutrients](#)
- Nutrients
- ning: Top left
- [Nutrients](#)
- NEAR CERRO, NM
- [SWeb](#)
- BLW TAOS JUNCTION
- R TAOS, NM
- AT EMBUDO, NM
- [SWeb](#)
- ABOVE SAN JUAN
- AT OTOWI BRIDGE, NM
- [SWeb](#)
- NEAR WHITE ROCK, NM
- [SWeb](#)
- BELOW COCHITI DAM, NM
- [SWeb](#)
- AT SAN FELIPE, NM
- [SWeb](#)

Colorado

Colorado Springs

08276500

RIO GRANDE BLW TAOS JUNCTION
BRIDGE NEAR TAOS, NM
[View on NMSWeb](#)

Period of record:
Beginning Date: 1975-08-07
Ending Date: 2005-08-16

Station type: Stream/River

Parameter Grouping: Nutrients

Count: 185

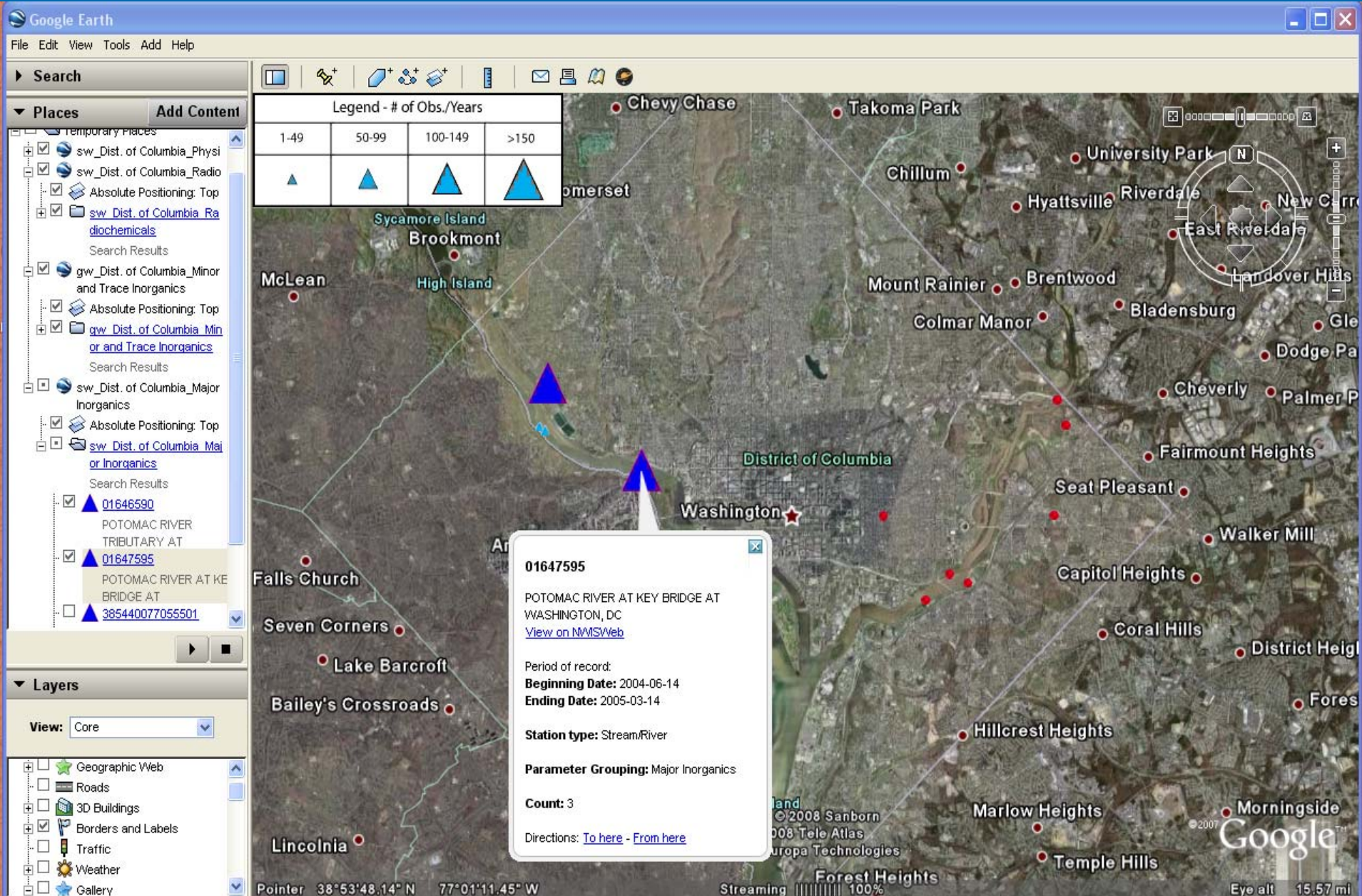
Directions: [To here](#) - [From here](#)

Albuquerque Albuquerque, NM

Image © 2008 TerraMetrics

© 2008 Tele Atlas

Image © 2008 DigitalGlobe



Google Earth vs. Google maps

- Many More Features
- User can easily overlay lots of different themes on same map
- KML files usable widely
- Requires admin rights to install, and so permission by the organization
- slower startup times before you see the map
- Fast and simple with no install so great for new users and iterations between search criteria and results
- Nearby sites display on top of each other and are not individually selectable at this time



USGS National Water Quality Assessment Data Warehouse

NAWQA Data Home

MAP SITES & RESULTS

Map Chemical Conc.
on The National Map

RETRIEVE DATA

Site Information

Constituent Finder

Ground Water

Surface Water/ Bed
Sediment

Mixed (SW & GW)

Animal Tissue

Daily Stream
Discharge

Bio Community

SEARCH SUMMARY
REPORTS

HELP

Data Retrieval Tips

About NAWQA Data

Glossary

FAQ

Contact Us

How to find Data in NAWQA Warehouse

October 19th, 2006

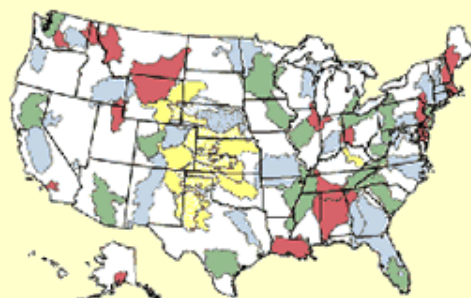
New Data Warehouse factsheet

A new USGS publication is available showcasing the features and capabilities of the NAWQA Data Warehouse website. Downloads are available at:
<http://pubs.usgs.gov/fs/2006/3101/>

NAWQA Data Warehouse Home

What's New? [Click here](#) for a list of recent updates

Data subject to change - source data extracted between 10/13/2006 and 10/14/2006. Data available through 9/30/2005.



Get Started Here:

- ✧ [Map Chemical Concentrations](#)
- ✧ [Data Selection/ Navigation Help](#)
- ✧ [Constituent Finder](#)
- ✧ [View the Glossary](#)

About the NAWQA Data Warehouse



[USGS Home](#)
[Contact USGS](#)
[Search USGS](#)

USGS National Water Quality Assessment Data Warehouse

[NAWQA Data Home](#)

[MAP SITES & RESULTS](#)

[Map Chemical Conc. on The National Map](#)

[RETRIEVE DATA](#)

[Site Information](#)

[Constituent Finder](#)

[Ground Water](#)

[Surface Water/ Bed Sediment](#)

[Mixed \(SW & GW\)](#)

[Animal Tissue](#)

[Daily Stream Discharge](#)

[Bio Community](#)

[SEARCH SUMMARY REPORTS](#)

[HELP](#)

[Data Retrieval Tips](#)

[About NAWQA Data](#)

[Glossary](#)

[FAQ](#)

[Contact Us](#)

Map Site Locations and Chemical Concentrations on USGS Maps

>> [Open the mapper in a new window](#)



Sample map from the Mapper. (Click map to launch)

[Link to chemical concentration map application](#)

allows you to view chemical concentrations found in streams, lakes, wells, and other sampling sites in the US. The data points presented on the map are generated directly from the 14 million water quality results stored in the NAWQA data warehouse. After a map is created, statistical distributions can be viewed, additional details can be queried for individual sites, and background maps from the [USGS National Map](#) can be turned on to provide spatial context to the water quality themes.

Quick Start Guide

To try out some of the mapper's capabilities, click the link (above) to open the mapper in a new browser window. Then, in the mapper application, click on one of the Predefined Maps shown in the tab labeled 'Predefined Maps'.

[Predefined Maps](#)

[Custom Maps](#)

[Background](#)

Select a predefined theme from below by clicking on the corresponding tab.

[US Atrazine \(wf\)](#)

[Atrazine for entire US. Topo Background.](#)

[Caffeine in streams nr Washington DC](#)

[Orthophotos and placenames on.](#)

Zoom To: Keep current extent

Zoom To City/Zip Code

Export Results To: MS Excel

Go

Predefined Maps

Custom Maps

Background Maps

Legend

Graph

Site Type

All Site Types
GROUND-WATER OTHER T
STREAM
SPECIFIC SOURCE

Geography

State:

Any State
ALABAMA
ALASKA
ARIZONA

EPA Region:

Any Region
R 01 (New England)
R 02 (NY-NJ)
R 03 (PA-VA)

Study Unit:

Any Study Unit
Acadian-Pontchartrain
Albemarle-Pamlico Drainage
Allegheny and Monongahela

Sites Water Quality

Select water quality criteria from the options below and site criteria from the options at left. A constituent *must* be selected or WQ data will not be mapped. Click a mapping button (to the right) to map the data.

Map Selected Data &
Resize Map to Fit DataMap Selected Data &
Do Not Resize Map

Constituent:

Choose a statistical function in the "Statistical Options" section below to aggregate sampled concentrations to a single value per site. For surface water sites, all samples taken during the time-period of interest are considered. For groundwater sites, one sample from NAWQA's first cycle (1992-2002) and one from the second cycle (2002+) are aggregated unless the time period of interest does not cover both cycle periods. The list below displays constituent name and the percent of NAWQA samples that include a respective analysis of that constituent.

Caffeine_ water_ filtered_ recoverable_ micrograms per liter (Sample

Search Constituents

Statistical Options:

Select a method to define bins for value ranges.

Binning Method:

Equal Count

Aggregate Type

Choose a statistical function to aggregate the time-series of samples collected at each site.

Median value

Water Year:

Water Years are 1990-current and are 4 digit years. Enter a single year, or a year range.

Specific Year:

Water Year Range:

thru

Start Year

End Year

Plot Order:

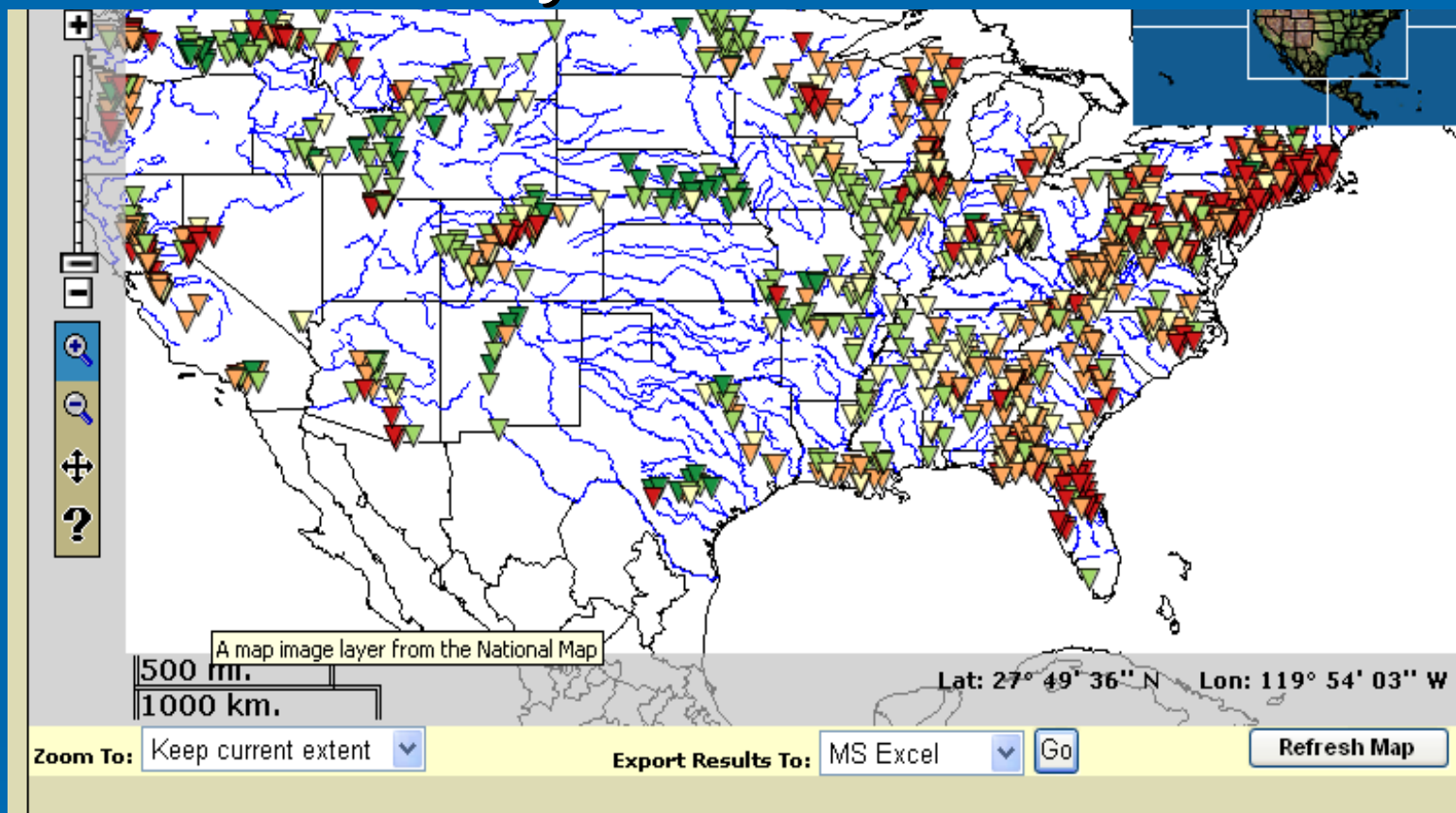
Select the order the points are plotted. Random mixes the point stacking order, giving an even view of areas with many sampling locations. For all options, groundwater points are plotted on top of surface water points.

Random ordering

NAWQA Data
Warehouse
Mapper used by
50% of visitors to
our site



Mercury in bed sediment



Predefined Themes

Water Quality

Background Layers

Legend

Graph

NAWQA Data Warehouse Layer Legend

Site Type

● GW

▼ SW

34910 Mercury, bed sediment smaller than 62.5 microns, wet sieved, field, total digestion, dry weigh

● Not Detected

● 0 - 0.050

● 0.050 - 0.070

● 0.070 - 0.150

● 0.150 - 19.000

L8 /#20

Options - Water Quality

Predefined Maps

Custom Maps

Background Maps

Legend

Graph

Site Type

All Site Types
GROUND-WATER OTHER
STREAM
SPECIFIC SOURCE

Geography

State:
Any State
ALABAMA
ALASKA
ARIZONA

EPA Region:
Any Region
R 01 (New England)
R 02 (NY-NJ)
R 03 (PA-VA)

Study Unit:
Apalachicola-Chattahooche
Bottom-sediment Core Stud
Central Arizona Basins
Central Columbia Plateau-Y

Sites

Water Quality

Map Selected Data & Resize Map to Fit Data

Map Selected Data & Do Not Resize Map

Select water quality criteria from the options below and site criteria from the options at left. A constituent *must* be selected or WQ data will not be mapped. Click a mapping button (to the right) to map the data.

Constituent:

Choose a statistical function in the "Statistical Options" section below to aggregate sampled concentrations to a single value per site. For surface water sites, all samples taken during the time-period of interest are considered. For groundwater sites, one sample from NAWQA's first cycle (1992-2002) and one from the second cycle (2002+) are aggregated unless the time period of interest does not cover both cycle periods. The list below displays constituent name and the percent of NAWQA samples that include a respective analysis of that constituent.

Nitrite plus nitrate_water_filtered_milligrams per liter as nitrogen (%)

Search Constituents

Statistical Options:

Select a method to define bins for value ranges.

Binning Method:
Equal Count

Aggregate Type
Choose a statistical function to aggregate the time-series of samples collected at each site.
Median value

Water Year:

Water Years are 1990-current and are 4 digit years. Enter a single year, or a year range.

Specific Year:

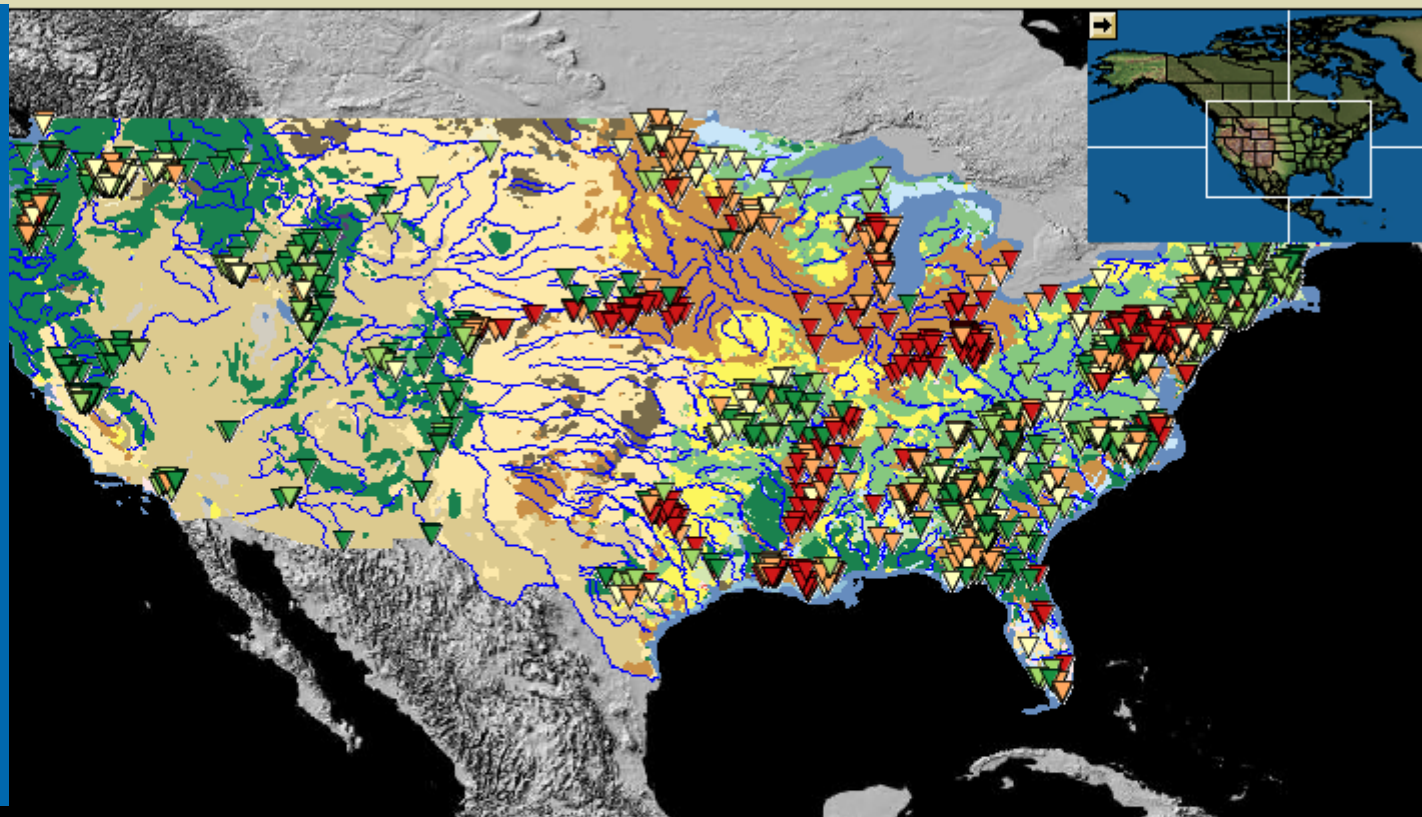
Water Year Range:
thru

Start Year End Year

Plot Order:

Select the order the points are plotted. Random mixes the point stacking order, giving an even view of areas with many sampling locations. For all options, groundwater points are plotted on top of surface water points.

Random ordering



Zoom To: Keep current extent

Zoom To City/Zip Code

Export Results To: MS Excel

Go

Predefined Maps

Custom Maps

Background Maps

Legend

Graph



USGS National Map

Search

LAND USE/LAND COVER (1/23)

LAND COVER (1/21)

MDVI Aug 12 2004

“Drill” to sites on map for all data

Identify NAWQA Location

STUDY INFORMATION	
NAWQA STUDY UNIT	Potomac River Basin-Delmarva Penin
STUDY CYCLE I START	1991
STUDY CYCLE II START	2001
ADDITIONAL STUDY INFORMATION	
STUDY WEBSITE	Link

SITE INFORMATION	
SITE TYPE	STREAM
AGENCY	USGS
STATION ID	01618000
STATION NAME	POTOMAC RIVER AT SHEPHER
STATE	WEST VIRGINIA
COUNTY	JEFFERSON
LATITUDE/LONGITUDE (NAD83)	39.4 / -77.8
BASIN AREA (sq miles)	5936
HUC	02070004
REPRESENTED LAND USE	Mixed
ADDITIONAL SITE INFORMATION	
NAWQA Site Report	Link
NWIS WEB Report	Link

RESULT INFO	
PARAMETER CODE	34910
PARAMETER NAME	Mercury, bed sediment smaller than 62 weight, micrograms per gram
VALUE AT SITE	null
REPORTING UNITS	ug/g

ADDITIONAL CONSTITUENT INFORMATION	
PRIMARY LAB SCHEDULE	Trace elements in sediment (2420) [48]
HBSL	NA ug/g

SUMMARY OF OTHER CONSTITUENTS MEASURED					
LAB SCHEDULE	PCODE	PARAMETER NAME	# of SAMPLES	# of DETECTS	% DETECTION
Discharge in surface water	00060	Discharge	2557	2557	100
Discharge in surface water	00061	Discharge_instant.	35	35	100
FIELD PARAMETERS	00025	Air pressure	35	35	100
FIELD PARAMETERS	39086	Alkalinity_wf_icr_f	8	8	100
FIELD PARAMETERS	00453	Bicarbonate_wf_icr_f	8	8	100
FIELD PARAMETERS	00300	Dissolved oxygen	36	36	100
FIELD PARAMETERS	00095	Specific cond at 25C	36	36	100
FIELD PARAMETERS	70331	Suspnd sed <63u_sd	20	20	100
FIELD PARAMETERS	80154	Suspnd sedmnt conc	35	35	100
FIELD PARAMETERS	00010	Temperature_water	36	36	100
FIELD PARAMETERS	00400	pH	34	34	100
Major Anions and Cations (2750) [13]	00915	Calcium_wf	10	10	100
Major Anions and Cations (2750) [13]	00940	Chloride_wf	10	10	100
Major Anions and Cations (2750) [13]	00950	Fluoride_wf	10	8	80
Major Anions and Cations (2750) [13]	01046	Iron_wf	9	8	88.89
Major Anions and Cations (2750) [13]	00925	Magnesium_wf	10	10	100
Major Anions and Cations (2750) [13]	00935	Potassium_wf	10	10	100
Major Anions and Cations (2750) [13]	70300	Residue_ROE@180C_wf	10	10	100
Major Anions and Cations (2750) [13]	00955	Silica_wf	10	10	100
Major Anions and Cations (2750) [13]	00930	Sodium_wf	10	10	100
Major Anions and Cations (2750) [13]	90095	SpecCond_wu25degCLab	19	19	100
Major Anions and Cations (2750) [13]	00945	Sulfate_wf	10	10	100
Nutrients - Nitrogen and Phosphorous (2702) [8]	00608	Ammonia_wf	34	31	91.18
Nutrients - Nitrogen and Phosphorous (2702) [8]	00623	NH3+orgN_wf	25	25	100

Export All Data in Current map view to:

- Excel
- Tab Delimited
- Google Earth

25 mi.
25 km.

Lat: 48° 05' 13'' N Lon: 123° 39' 32'' W

Zoom To: Keep current extent

Export Results To: Google KML

Go Refresh Map

Predefined Themes Sites Water Quality Bacteria Legend Graph

Site Type: All Site Types
DIVERSION
ESTUARY
GROUND-WATER OTHER THAN SPRING
LAKE/RESERVOIR

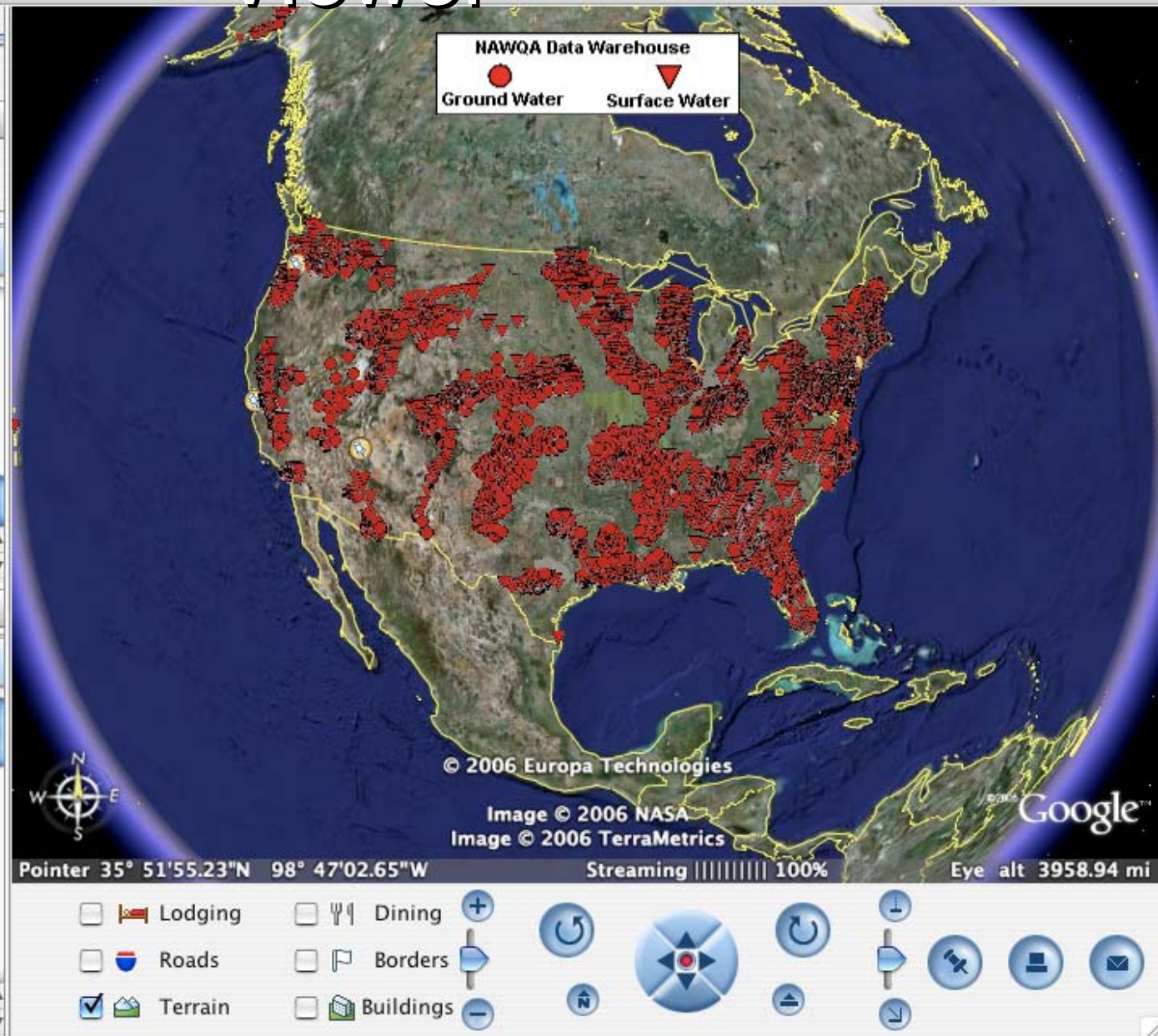
Constituent: NO2+NO3_wf (58473) (public:Y; MCL:Y)

Water Year: Water Years are 1896-current and are 4 digit years. Enter a single year, or a year

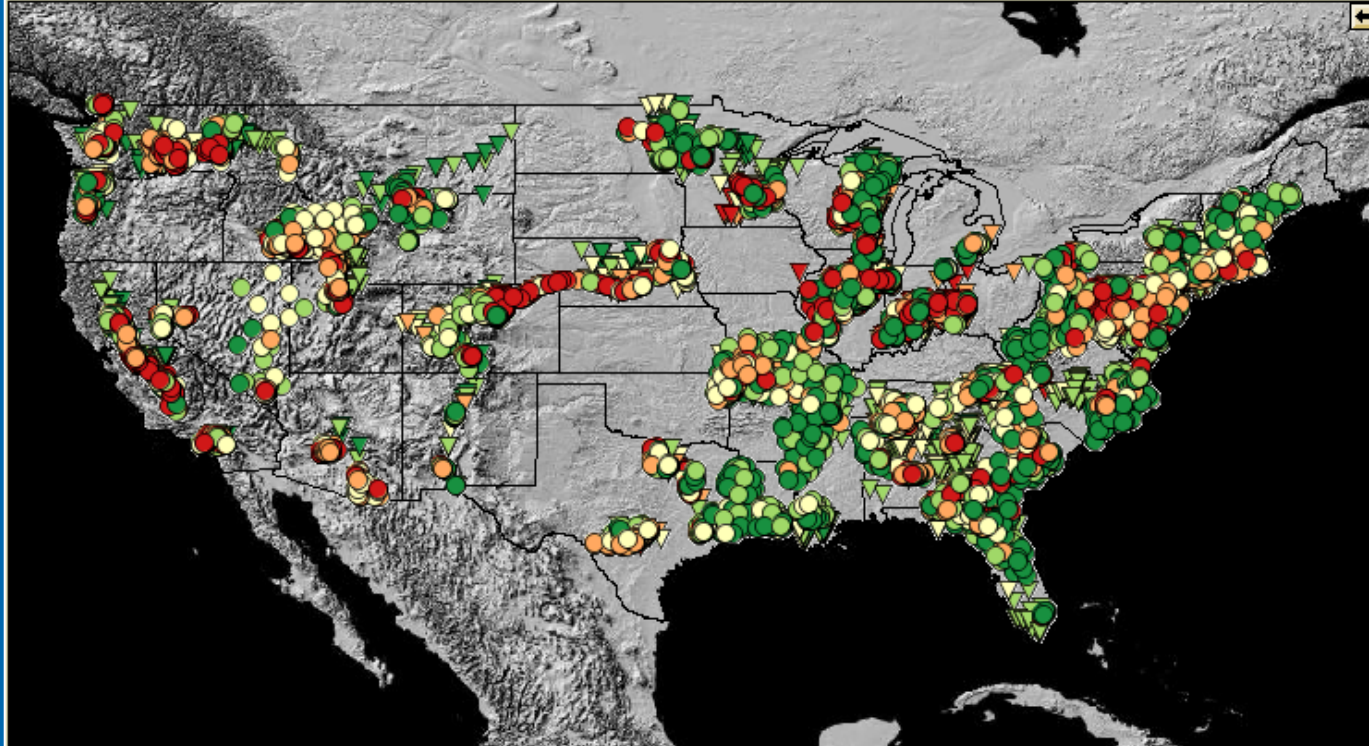
NAWQA sites on Google Earth Viewer

Google Earth interface elements:

- Search bar: "e.g., 1600 Pennsylvania Ave, 20006"
- Buttons: "Fly To", "Find Businesses", "Directions"
- Places panel:
 - USGS
 - NAWQA
 - Sites
 - Temporary Places
 - USGS NAWQA Stations
- Layers panel:
 - Layers
 - terrain
 - National Geographic Magazine
 - Google Earth Community
 - Community Showcase
 - Google Earth Community (Unranked)
 - Populated Places
 - Alternative Place Names
 - borders
 - Dining
 - Lodging



first_nitrit
e_low
er48



Zoom To: Keep current extent ▼ Zoom To City/Zip Code ↗ Export Results To: MS Excel ▼ Go

Predefined Maps Custom Maps Background Maps Legend Graph

Site Type

All Site Types
GROUND-WATER OTHER
STREAM
SPECIFIC SOURCE

Geography

State:

Any State
ALABAMA
ALASKA
ARIZONA

EPA Region:

Any Region
R 01 (New England)
R 02 (NY-NJ)
R 03 (PA-VA)

Study Unit:

Sites Water Quality ✓

Select water quality criteria from the options below and site criteria from the options at left. A constituent *must* be selected or WQ data will not be mapped. Click a mapping button (to the right) to map the data.

Map Selected Data &
Resize Map to Fit
Data

Map Selected Data &
Do Not Resize Map

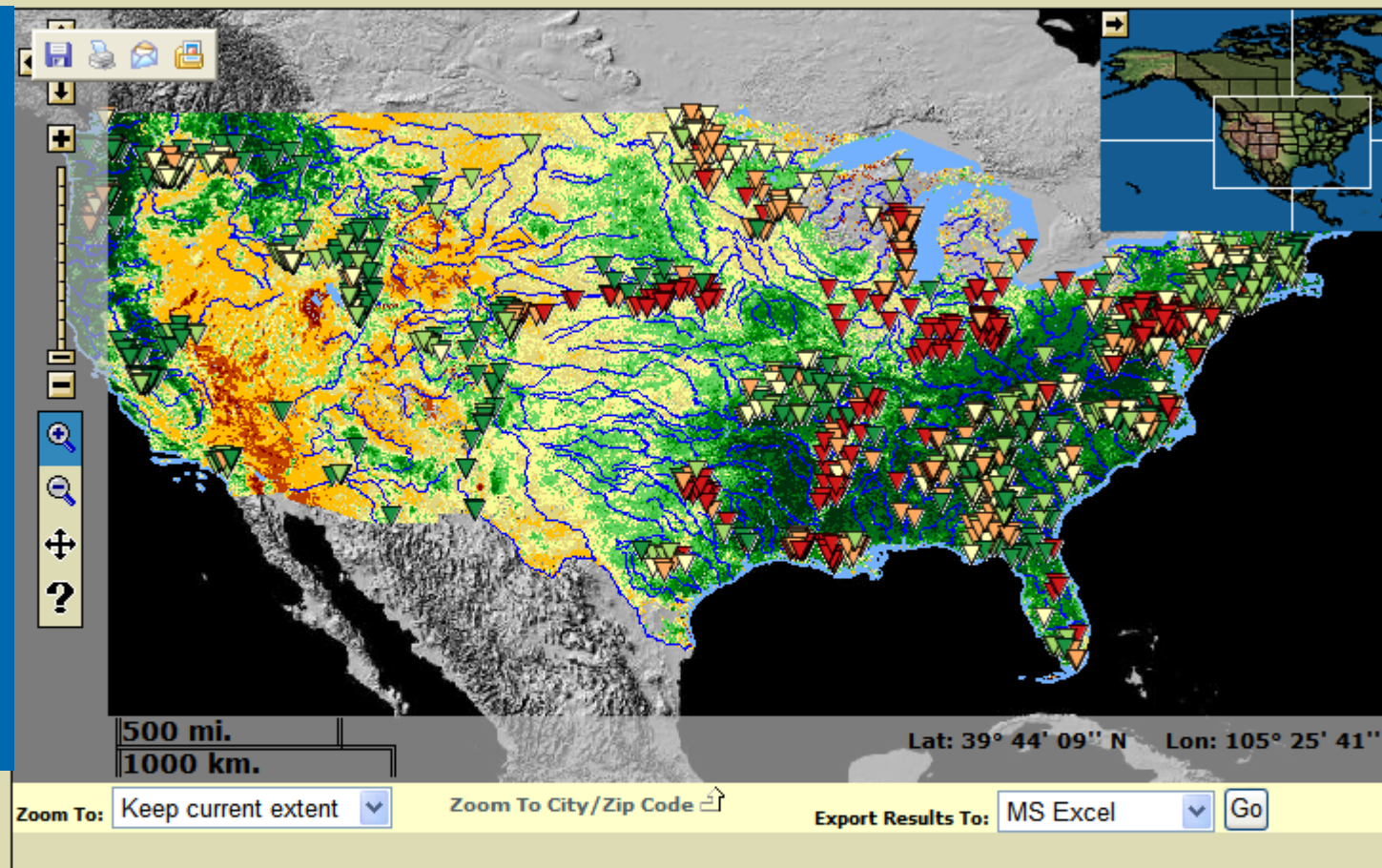
Constituent:

Choose a statistical function in the "Statistical Options" section below to aggregate sampled concentrations to a single value per site. For surface water sites, all samples taken during the time-period of interest are considered. For groundwater sites, one sample from NAWQA's first cycle (1992-2002) and one from the second cycle (2002+) are aggregated unless the time period of interest does not cover both cycle periods. The list below displays constituent name and the percent of NAWQA samples that include a respective analysis of that constituent.

Nitrite plus nitrate_water_filtered_milligrams per liter as nitrogen (S ▼)

➤ Atrazine
in
Surface
Water

➤ Over
Greenne
ss Map



Predefined Maps

Custom Maps

Background Maps

Legend

Graph

Site Type

All Site Types
GROUND-WATER OTHER THAN S
STREAM
SPECIFIC SOURCE

Geography

State:

Any State

Sites

Water Quality ☒

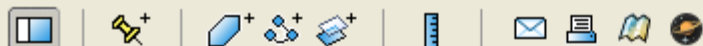
Select water quality criteria from the options below and site criteria from the options at left. A constituent *must* be selected or WQ data will not be mapped. Click a mapping button (to the right) to map the data.

The end

- Questions / Comments?
- <http://water.usgs.gov/data/discovery> links to:
- <http://water.usgs.gov/nawqa/data>
- <http://water.usgs.gov/data/explorer>
- akwill@usgs.gov
- Cell 253-376-8273 Sandy Williamson
- Txt: 2533768273@txt.att.net

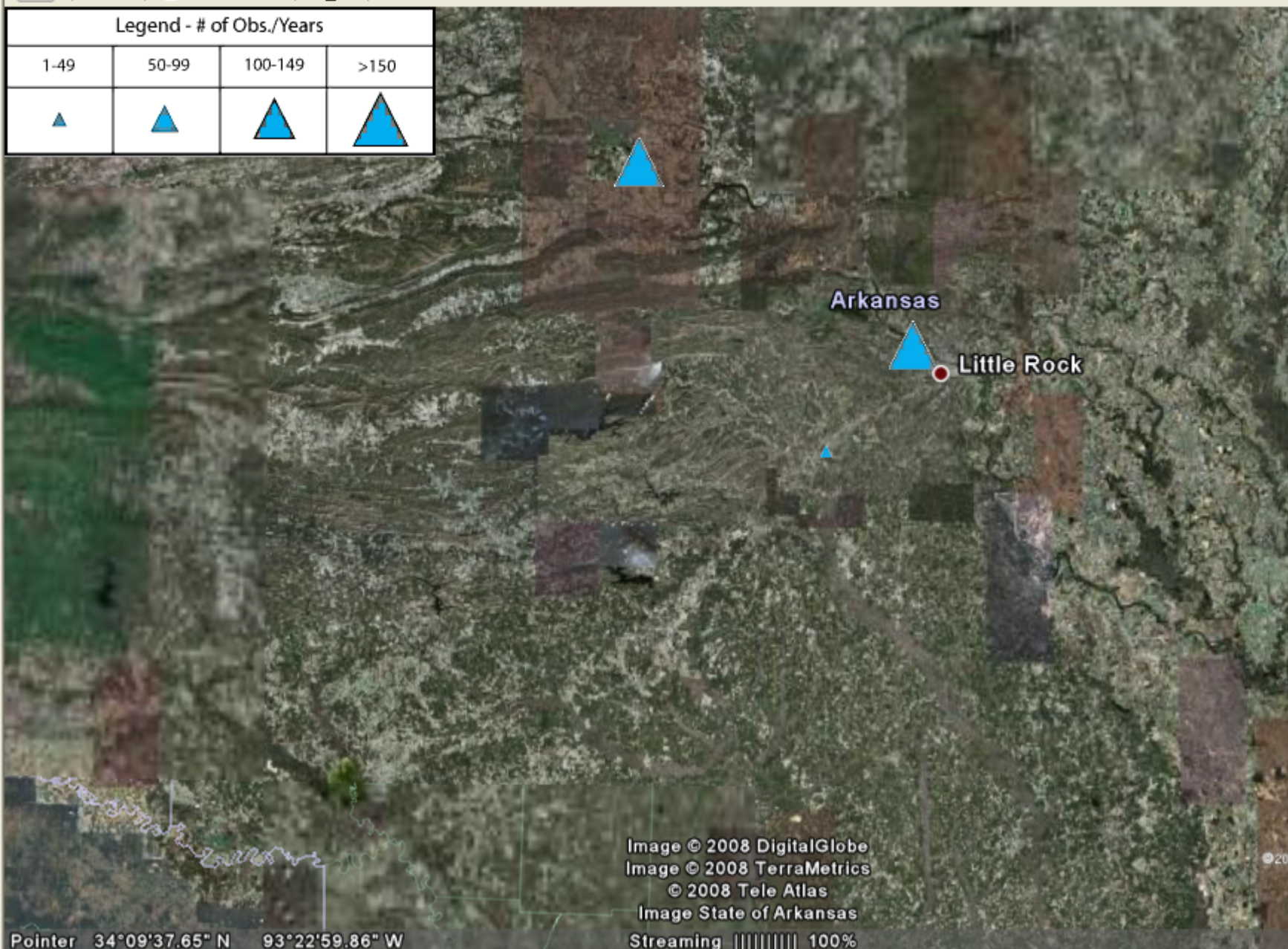
Add Content

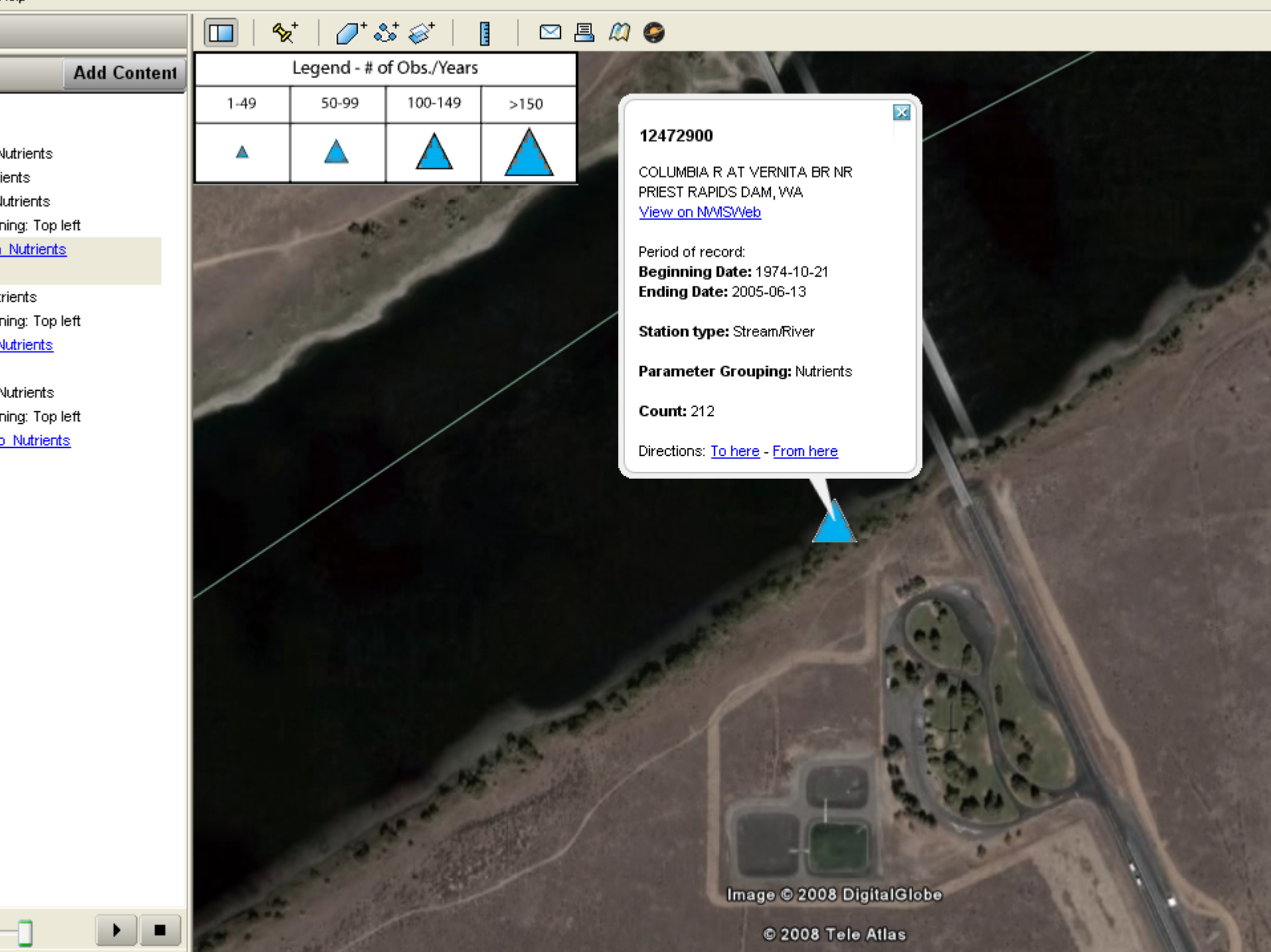
as
ey_Nutrients
Nutrients
on_Nutrients
_Nutrients
ositioning: Top left
as_Nutrients
ults
co_Nutrients
ositioning: Top left
exico_Nutrients
ults



Legend - # of Obs./Years

1-49	50-99	100-149	>150





Add Content

Legend - # of Obs./Years

1-49

50-99

100-149

>150



12472900

COLUMBIA R. AT VERNITA BR NR
PRIEST RAPIDS DAM, WA

[View on NWSWeb](#)

Period of record:

Beginning Date: 1974-10-21

Ending Date: 2005-06-13

Station type: Stream/River

Parameter Grouping: Nutrients

Count: 212

Directions: [To here](#) - [From here](#)

Image © 2008 DigitalGlobe

© 2008 Tele Atlas

