



USGS Water Information NOW !

(“Watches”, nrtwq, NWISmapper, WaterAlert, WaterNow, BioData, Pubs warehouse, Library, Water Quality Portal)

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U.S. Department of the Interior
U.S. Geological Survey

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Working Together for Clean Water
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USGS “Watches” and real-time information products on the web

- **WaterQualityWatch** - Continuous Real-Time Water Quality of Surface Water in the United States <http://waterwatch.usgs.gov/wqwatch/> Displays maps and NWISweb data with comparison to environmentally-relevant criteria. Historical information available through NWISWeb since 2007.
- National Real Time Water Quality web page <http://nrtwq.usgs.gov/> presents all past and current computed “surrogate” and measured water quality for concentrations, loads, and model information and techniques to develop surrogate model.
- NWISWeb (National Water Information System) <http://waterdata.usgs.gov/nwis> Public access to discrete and continuous water-resources data collected at approximately 1.5 million sites in all 50 States, the District of Columbia, Puerto Rico, the Virgin Islands, Guam, American Samoa and the Commonwealth of the Northern Mariana Islands.
- **WaterWatch** <http://waterwatch.usgs.gov/> Displays maps, graphs, and tables describing real-time, recent, and past streamflow (~1900 – current) for sites in NWIS. Floods, droughts, all kinds of info!
- **GroundwaterWatch** <http://groundwaterwatch.usgs.gov/>. Displays maps, graphs, and current recent values in a historical context. Mix of annual measurements, daily, and real-time sites.



WaterQualityWatch

<http://waterwatch.usgs.gov/wqwatch/>

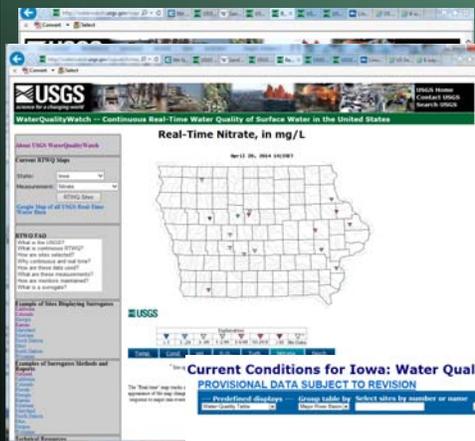


- The collaborative national **surface water quality** network is a synthesis of short and long-term sites.
- Substantial increase in the number of sites since 2001

Measurement	2001	April 2014
Discharge	7,245	7,994
Water Temperature	850	1,699
Specific Conductance	531	871
Dissolved Oxygen	251	470
Turbidity	90	372
Nitrate	2	57



What is the current condition real-time nitrate value at Turkey River at Garber, IA (05412500)?



- Select Nitrate
- Select State
- Hover over sites to select site with current value or select table of sites in state

Current Conditions for Iowa: Water Quality -- 20 site(s) found

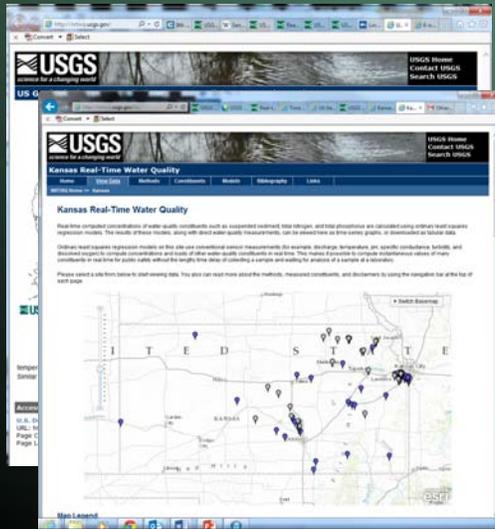
PROVISIONAL DATA SUBJECT TO REVISION

Customize table to display other current-condition parameters

Station Number	Station name	Date/Time	Nitrate nitrite mg/L as N	Nitrate + nitrite mg/L as N	Nitrate + nitrite mg/L as N	Nitrate + nitrite mg/L as N
05412500	Turkey River at Garber, IA	04/10 12:15 CDT	--	--	--	5.73
05418410	NF Maquoketa River below Bear Cr at Dyersville, IA	04/10 13:00 CDT	--	--	--	7.44
05418400	North Fork Maquoketa River near Fulton, IA	04/10 13:00 CDT	--	--	--	5.93



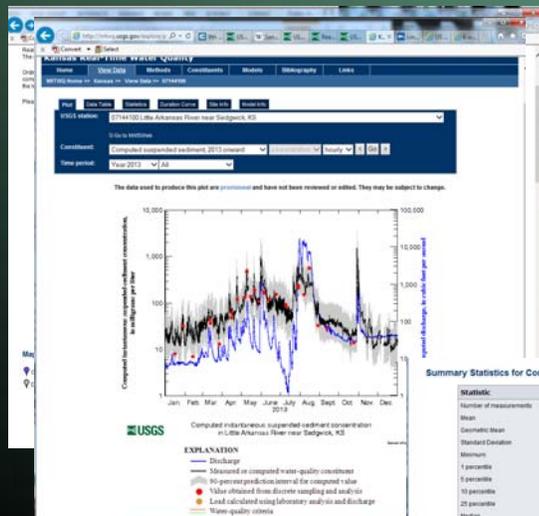
Surrogate web pages <http://nrtwq.usgs.gov/>



- Developed in 1999 to present computed water-quality concentrations and loads using in-stream water-quality sensors measurements as surrogates for other water-quality constituents that cannot be measured directly by a sensor.... Yet...
- Concentrations, loads, methods used, and models as well as published reports are available.
- Available in 14 States at about 120 current and historical sites.



Graph of suspended-sediment concentrations for CY2013 Little Arkansas River near Sedgwick, Kansas



- Select site from map or table
- Select 2013
- Select Sediment
- Also can get summary statistics table

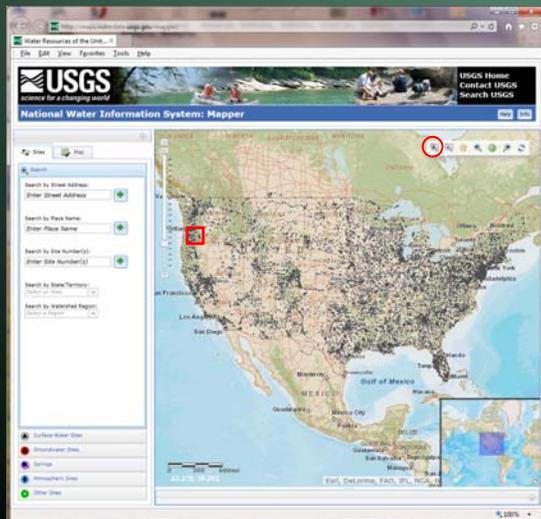
Summary Statistics for Computed Instantaneous Suspended Sediment

Statistic	Statistic Value
Number of measurements	2447
Mean	84 mg/L
Geometric Mean	50 mg/L
Standard Deviation	110 mg/L
Minimum	6.7 mg/L
1 percentile	11 mg/L
5 percentile	13 mg/L
10 percentile	15 mg/L
20 percentile	23 mg/L
Median	43 mg/L
75 percentile	100 mg/L
90 percentile	229 mg/L
95 percentile	300 mg/L
99 percentile	530 mg/L
Maximum	1000 mg/L



NWIS Mapper

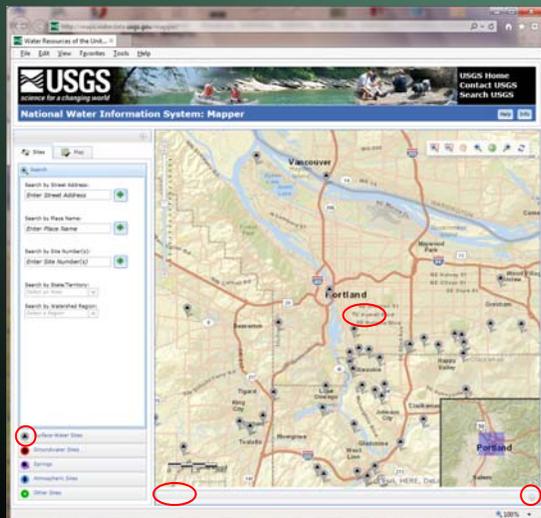
<http://maps.waterdata.usgs.gov/mapper/>



- A map-based interface to the USGS NWIS database
- Navigate to the site of interest, then access data from the pop-up balloon containing site information
- Can save lists of sites or shapefiles

NWIS Mapper

<http://maps.waterdata.usgs.gov/mapper/>



- Zoom to the area of interest
- Select the site type from list at left (SW, GW, active/inactive)
- Can list sites by expanding the tools at bottom
- Lists can be exported to tables or shapefiles
- Click on “Access Data”

NWIS Mapper

<http://maps.waterdata.usgs.gov/mapper/>

The screenshot shows the USGS NWIS Mapper interface for site 14211720. The 'AVAILABLE DATA' table is as follows:

Data Type	Begin Date	End Date	Count
Current / Historical Observations (availability statement)	2009-10-31	2014-04-22	
Entry Data			
Temperature, water, degrees Celsius	1979-11-27	2014-04-21	13247
Discharge, cubic feet per second	1979-10-31	2014-04-21	13175
Gage height, feet	2014-04-10	2014-04-21	12
Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius	1979-12-10	2014-04-21	14487
Dissolved oxygen, water, unfiltered, milligrams per liter	2009-10-31	2014-04-21	4885

- Now on the Inventory page for the site
- Select the type of data of interest
 - “Field/Lab water quality samples” to get to water-sample data
 - “Current / Historical Observations” to access real-time and historical time-series data
- Graph and table the data as you choose



Water Alert

<http://water.usgs.gov/wateralert/>

The screenshot shows the USGS WaterAlert interface. On the left, there are search options: 'Search by Street Address', 'Search by Site Number(s)', 'Search by State/Territory', and 'Search by Watershed Region'. The 'Search by Site Number(s)' and 'Search by State/Territory' options are circled in red. On the right, there is a map of the Pacific Northwest region, showing major cities like Vancouver and Portland.

- Notification service for user-defined conditions
- Be notified via text message or email when user-defined criteria met
- Begins with mapper interface
- Or, access WaterAlert from NWIS-Web graphics



Water Alert—Subscription Process

- Provide mobile phone number or email address
- Set notification frequency
- Set criteria
- Check the box, and
- Submit



Water Now <http://water.usgs.gov/waternow/>

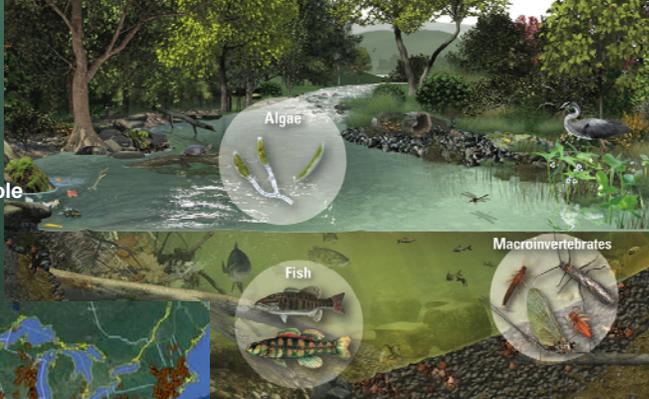
- On-demand water data
- Direct to mobile phone or via email
- Send text message or email to **WaterNow@usgs.gov**
- Put site ID in text message or subject line
- Optionally put parameter codes in text message or subject line



BioData - Aquatic Bioassessment Data for the Nation

<https://aquatic.biodata.usgs.gov/>

- Developed by USGS
 - Office of Water Quality
 - National Water-Quality Assessment Program (NAWQA)
- Released in 2011
- Centralized, web-accessible database to access and manage aquatic bioassessment data



Biological community and associated physical habitat data

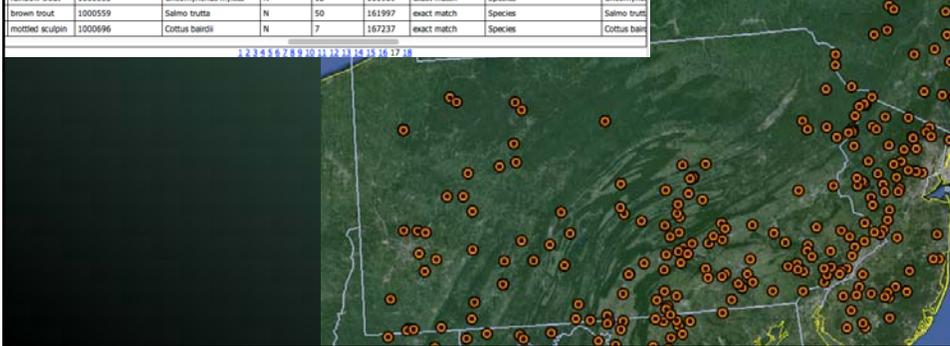
- Algae
- Macroinvertebrates
- Fish

Preview: [Fish Count: 1] File Type: Microsoft Excel 2007-2010 [Download Data]

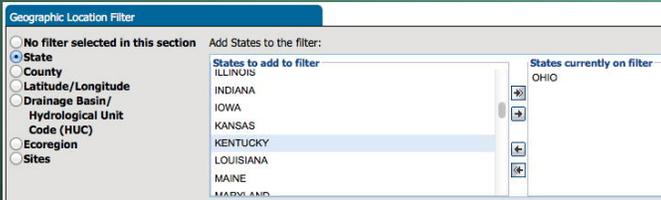
Your selected data set and filter criteria of "State AND Month Year AND Project" will return 347 records, with samples collected between 07/06/1993 and 07/17/2013.

CommonName	PublishedSortOrder	BioDataTaxonName	HybridFlag	Abundance	TTIS_TSN	TTIS_MatchCode	PublishedTaxonNameLevel	Published
chiselmouth	1000090	Acrocheilus alutaceus	N	2	163531	exact match	Species	Acrocheilus
common carp	1000129	Cyprinus carpio	N	2	163244	exact match	Species	Cyprinus ca
Utah chub	1000147	Gila atraria	N	1	163543	exact match	Species	Gila atraria
speckled dace	1000356	Rhinichthys osculus	N	6	163387	exact match	Species	Rhinichthys
reeside shiner	1000360	Richardsonius balteatus	N	22	163528	exact match	Species	Richardson
bridgip sucker	1000381	Catostomus columbianus	N	51	163897	exact match	Species	Catostomus
largescale sucker	1000387	Catostomus macrochellus	N	8	163896	exact match	Species	Catostomus
rainbow trout	1000553	Oncorhynchus mykiss	N	5	161989	exact match	Species	Oncorhynch
brown trout	1000559	Salmo trutta	N	26	161997	exact match	Species	Salmo trutt
mottled sculpin	1000696	Cottus bairdi	N	5	167237	exact match	Species	Cottus bair
reef shiner	1000119	Cyprinella lubrensis	N	67	163792	exact match	Species	Cyprinella l
Utah chub	1000147	Gila atraria	N	2	163543	exact match	Species	Gila atraria
fathead minnow	1000327	Pimephales promelas	N	1	163517	exact match	Species	Pimephales
longnose dace	1000351	Rhinichthys cataractae	N	1	163384	exact match	Species	Rhinichthys
speckled dace	1000356	Rhinichthys osculus	N	2	163387	exact match	Species	Rhinichthys
bridgip sucker	1000381	Catostomus columbianus	N	50	163897	exact match	Species	Catostomus
largescale sucker	1000387	Catostomus macrochellus	N	28	163896	exact match	Species	Catostomus
rainbow trout	1000553	Oncorhynchus mykiss	N	12	161989	exact match	Species	Oncorhynch
brown trout	1000559	Salmo trutta	N	50	161997	exact match	Species	Salmo trutt
mottled sculpin	1000696	Cottus bairdi	N	7	167237	exact match	Species	Cottus bair

- Examples –
- Fish "data set"
 - Pennsylvania sites with bioassessment data



Workflow - Step through Three Pages



Geographic Location Filter

No filter selected in this section

State

County

Latitude/Longitude

Drainage Basin/Hydrological Unit Code (HUC)

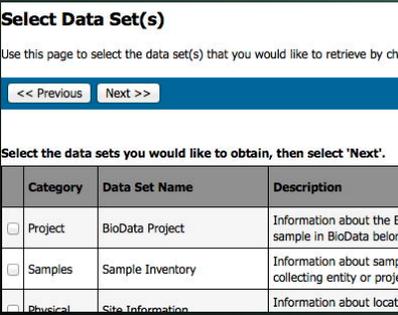
Ecoregion

Sites

Add States to the filter:

States to add to filter: ILLINOIS, INDIANA, IOWA, KANSAS, KENTUCKY, LOUISIANA, MAINE, MARYLAND

States currently on filter: OHIO



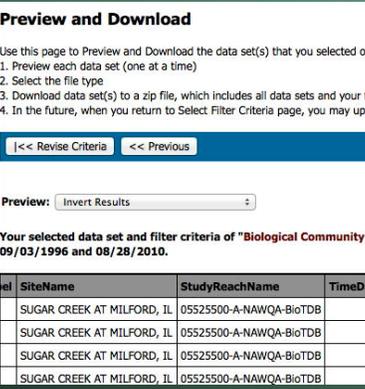
Select Data Set(s)

Use this page to select the data set(s) that you would like to retrieve by checking the boxes in the left-most column.

<< Previous Next >>

Select the data sets you would like to obtain, then select 'Next'.

Category	Data Set Name	Description
<input type="checkbox"/>	Project	BioData Project
<input type="checkbox"/>	Samples	Sample Inventory
<input type="checkbox"/>	Physical	Site Information



Preview and Download

Use this page to Preview and Download the data set(s) that you selected on the Select Data Set(s) page.

1. Preview each data set (one at a time)
2. Select the file type
3. Download data set(s) to a zip file, which includes all data sets and your filter criteria
4. In the future, when you return to Select Filter Criteria page, you may upload a saved filter set.

<< Revise Criteria << Previous

Preview: Invert Results

Your selected data set and filter criteria of "Biological Community, 09/03/1996 and 08/28/2010."

SiteName	StudyReachName	TimeDate
SUGAR CREEK AT MILFORD, IL	05525500-A-NAWQA-BioTDB	
SUGAR CREEK AT MILFORD, IL	05525500-A-NAWQA-BioTDB	
SUGAR CREEK AT MILFORD, IL	05525500-A-NAWQA-BioTDB	
SUGAR CREEK AT MILFORD, IL	05525500-A-NAWQA-BioTDB	

BioData - Aquatic Bioassessment Data for the Nation

[Contact The BioData Team](#) | [About Public Data Retrieval](#)

Select Filter Criteria

The U.S. Geological Survey (USGS) collects fish-, aquatic macroinvertebrate-, and algae-community samples and conducts stream physical habitat surveys as part of its fundamental mission to describe and understand the Earth. Download your data in three steps: 1) On this page select filter criteria; 2) on the next page, choose data set(s), and; 3) on the third page, preview your data and select a download format.

Choose filters and set filter criteria from one or more sections, then select the "Next" button to go to the Select Data Set(s) page.

Next >>

Filter(s) "Biological Community/Data Type AND State" will return 63 samples.

Upload saved filter set:
 biodata-query.xml

Filter(s) "Biological Community/Data Type AND State" will return 63 samples.

[Contact The BioData Team](#)

Select Data Set(s)

Use this page to select the data set(s) that you would like to retrieve by checking the boxes in the left-most column.

<< Previous Next >>

[Download Data Dictionary](#)

Select the data sets you would like to obtain, then select 'Next'.

Category	Data Set Name	Description	Matching Records
<input type="checkbox"/>	Project	BioData Project	75
<input checked="" type="checkbox"/>	Samples	Sample Inventory	2566
<input type="checkbox"/>	Physical	Site Information	1180

Water Quality Portal – NWIS/STORET/USDA-ARS STEWARDS data sources <http://www.waterqualitydata.us>



- Access to over 220 million **sample** results collected at over 2 million sites via a simple web interface
- Robust web services make it easy to integrate Water Quality Portal data into your own application



U. S. Geological Survey Publications Warehouse <http://pubs.er.usgs.gov/>

Online access > 120,000 citations to USGS-authored scientific publications, and full-text access to > 80,000 USGS publications.

Includes featured new publications and limits to search full-text documents, journal articles, USGS numbered series, and publications written for the general public.



U. S. Geological Survey Denver Library Photographic Collection

<http://libraryphoto.cr.usgs.gov/>

Mission: To collect, preserve, and make available the images
taken during USGS scientific research

An archive of more than 500,000 still photographs and sketches,
dating from 1868 to present,
taken by USGS scientists as part of their field studies and project work.



Questions?

