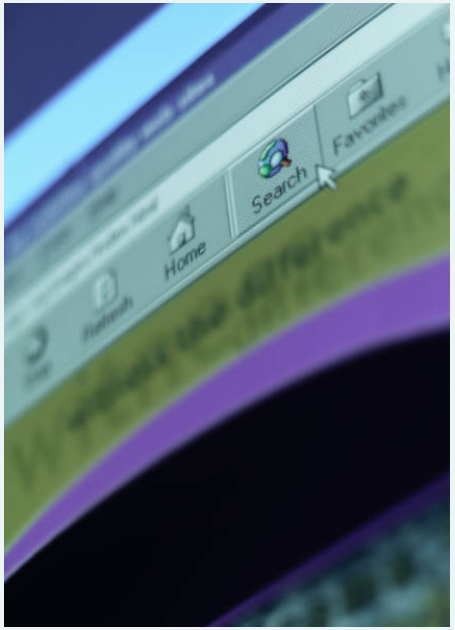
Retrieving USGS Hydrologic Data Using Water Data for the Nation Web Interface (NWISWeb)

USGS Nevada Water Science Center
Steve Berris
Nevada Networks Chief
Sonya Vasquez
Database Administrator

USGS
science for a changing world

Objective

Describe how to search, find, and retrieve USGS hydrologic information from USGS Water Data for the Nation web interface (NWISWeb), WaterWatch, and other information sources.



USGS
science for a changing world

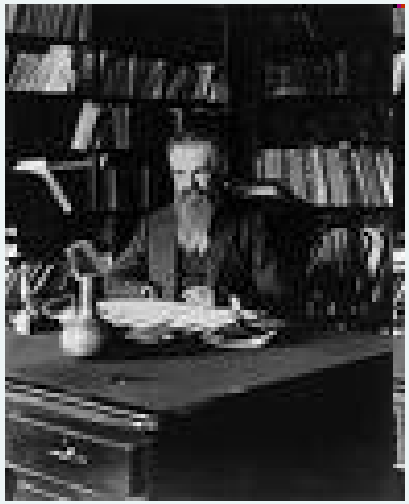
Agenda

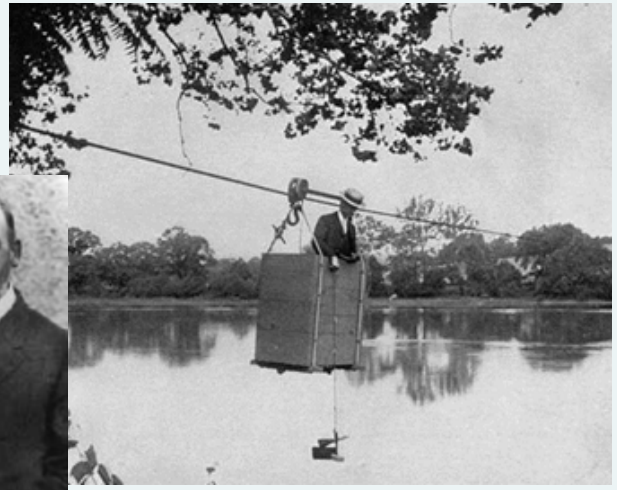
- Short history of USGS data collection – Large database
- Water data reports
- WaterWatch – Easy way to display maps, graphs, tables
- WaterNow and WaterAlert – Data sent to you
- NWISWeb – Access and retrievals from USGS water database
  - Navigation
  - Basic process
  - Output formats
  - Site Selection
  - Data type selection
  - Data categories
- References – Handy links and fact sheets
- Questions – If time, we can go through an example or two

USGS
science for a changing world

We've come a long way

- Streamgaging: 1889 at Embudo, NM
- Frederick H Newell led development with direction from John Wesley Powell
- 1895: began sharing cost with the States (Kansas State Engineer)



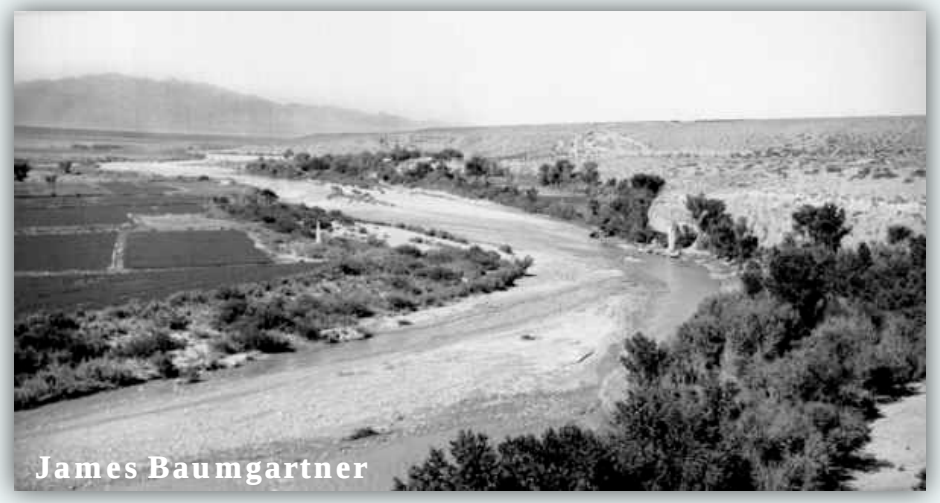


USGS
science for a changing world

Long History of measuring water in Nevada

- East Fork Carson River near Gardnerville (1890)
- Truckee River at Tahoe City (1895)
- Humboldt River at Palisade (1902)
- Truckee River below Derby Dam (1909)
- Virgin River at Littlefield (1929)

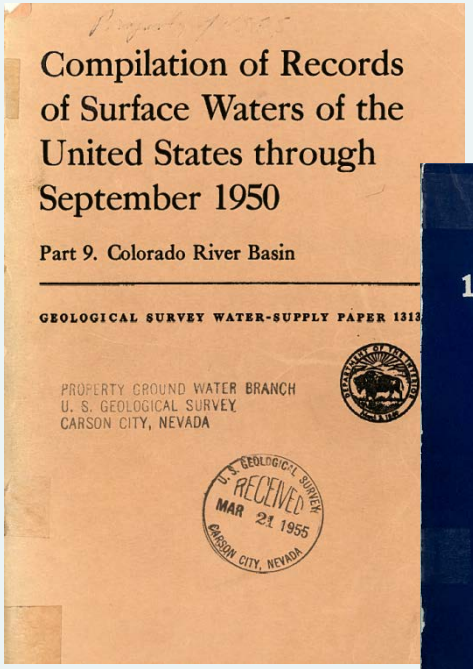

University Nevada Reno

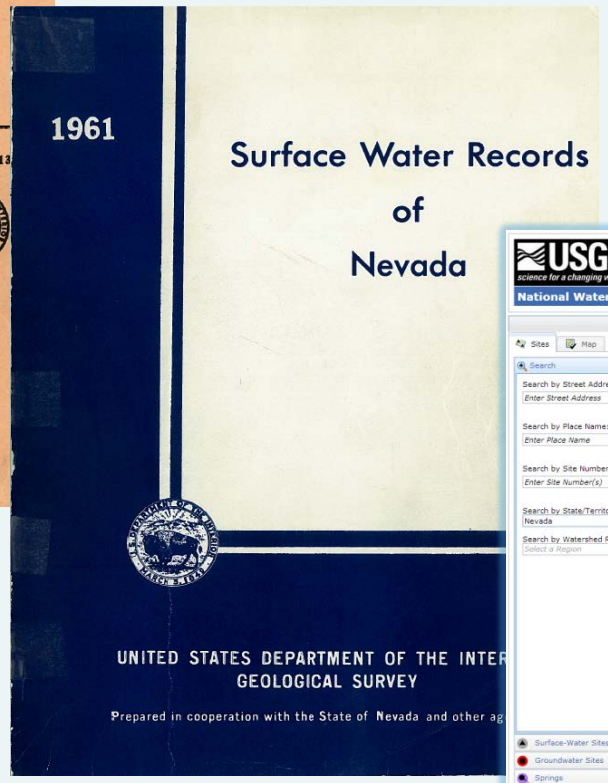

James Baumgartner

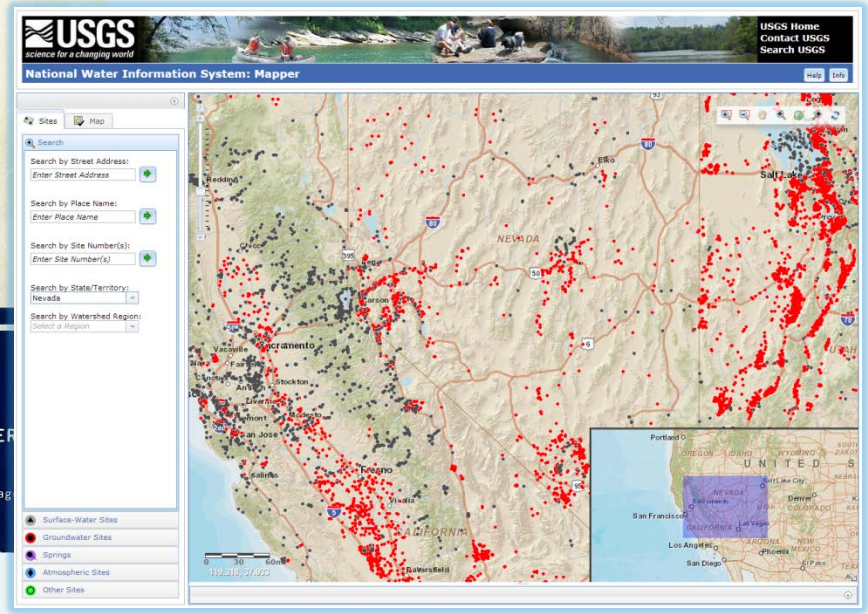
USGS
science for a changing world

We've come a long way in reporting our data

Water-Data Reports - http://wdr.water.usgs.gov/







USGS
science for a changing world

Water-Data Reports – A History

- Data Prior to September 1960
  - Paper reports called, “Compilation of Records of Surface Waters of the United States”
- 1961 to 2002
  - Paper reports only
- 2002 to 2004
  - Paper reports and available online
- 2005 to present
  - Online individual electronic Site Data Sheets with mapping interface

USGS
science for a changing world

Water-Data Reports – Site Data Sheet

642. Muddy River near Overton, Nev.1/

Location.--Lat 36°38', long. 114°30', in NW¼NE¼ sec. 21, T. 15 S., R. 67 E., at Wells Siding diversion dam, 2 miles northwest of Logandale, 5 miles downstream from Meadow Valley Wash, 6⅝ miles northwest of Overton, and 7¼ miles southeast of Moapa.
Drainage area.--About 8,180 sq mi, of which about 4,230 sq mi contribute directly to surface runoff, for site near Overton, 1948-50. About 200 sq mi greater for sites near St. Thomas, 1913-16 (now submerged by Lake Mead).
Gage.--Water-stage recorder at present site since Dec. 13, 1947; crest of Wells Siding dam is control. Datum of gage is 1,432.16 ft above mean sea level, datum of 1929 (Bureau of Reclamation bench mark).
Prior to Feb. 21, 1914, staff gage 14⅝ miles downstream at different datum. Mar. 15, 1914, to Sept. 30, 1916, staff gage 15 miles downstream and a quarter of a mile upstream from mouth at different datum. Altitude of gage is 1,100 ft (from river-profile map).
Extremes.--1913-16, 1947-50: Maximum discharge, 6,500 cfs Feb. 22, 1914 (gage height, between 8 and 9 ft, datum then in use), from rating curve extended above 300 cfs on basis of slope-area determination of peak flow; no flow at times in most years.
Greatest flood peaks known, 10,000 cfs (estimated) Mar. 3, 1938, and 12,000 cfs (estimated, corrected) Aug. 11, 1941.
Remarks.--Many diversions above station for irrigation in 1913-16 above station and in 1948-50 above and below station. Records for both 1913-16 and 1948-50 were obtained below point of diversion for irrigation in vicinity of Logandale. Diversions at Wells Siding dam are not included in records for 1948-50. Records for 1913-16 show flow into Virgin River; those for 1948-50 show flow below Wells Siding dam and inflow to Lake Mead except for waste and drainage return from irrigated lands in vicinity of Logandale and diversion to a wild-life refuge.

Monthly and yearly mean discharge, in second-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1913	-	-	-	-	-	-	-	-	0.26	0.41	1.10	2.49	-
1914	3.87	14.0	19.2	24.7	136	13.5	8.71	10.2	2.82	.92	.42	4.58	19.3
1915	3.84	12.0	21.3	34.8	63.7	23.4	5.56	51.2	-	-	-	-	-
1916	-	-	-	77.2	61.6	20.5	2.44	2.74	.93	9.58	12.7	2.48	-
1948	-	-	25.5	26.5	34.9	12.5	6.3	1.2	1.0	0	.1	9	-
1949	.03	12.1	25.4	30.5	29.2	11.8	1.7	0	0	0	0	9	9.1
1950	0	1.89	18.8	22.2	3.77	1.06	.25	.28	.01	.06	0	9	3.98

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1913	-	-	-	-	-	-	-	-	16	25	68	148	-
1914	238	833	1,180	1,440	7,560	831	518	629	168	56	26	272	13,950
1915	360	714	1,310	2,140	3,540	1,440	331	3,150	-	-	-	-	-
1916	-	-	-	4,750	3,540	1,260	145	169	56	589	781	148	-
1948	-	-	1,570	1,630	2,010	772	373	73	58	0	4.0	0	-
1949	2.0	720	1,560	1,880	1,620	726	103	0	0	0	0	0	6,610
1950	0	112	1,160	1,360	209	6.5	15	17	.6	4.0	0	0	2,880

Yearly discharge, in second-feet

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1913	359	-	-	0	-	-	-	-
1914	389	6,500	Feb. 22, 1914	.1	19.3	13,950	19.5	14,080
1915	409	a820	Feb. 11, 1915	-	-	-	-	-
1916	439	b1,700	Jan. 20, 1916	-	-	-	-	-
1948	1119	-	-	0	-	-	-	-
1949	1149	-	-	0	9.1	6,610	9.9	7,200
1950	1179	-	-	0	3.98	2,880	7.73	5,600

a Maximum for water year.
b Maximum discharge observed.

1/ Published as "near St. Thomas", 1913-16.

USGS science for a changing world

Water-Data Report 2012

09419507 Muddy River At Lewis Avenue At Overton, NV

Lower Colorado-Lake Mead Basin
Muddy Subbasin

LOCATION.--Lat 36°32'07", long 114°25'42" referenced to North American Datum of 1983, in NE ¼ NW ¼ sec.19, T.16 S., R.68 E., Clark County, NV, Hydrologic Unit 15010012, east of State Route 169, on Lewis Avenue in Overton, NV, upstream of Overton Wash, and 5.75 mi upstream from Lake Mead.

DRAINAGE AREA.--6,940 mi² of which 3,700 mi² probably is noncontributing.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--Aug 1997 to current year. Data prior to Aug 2006 available from the Southern Nevada Water Authority.

REVISED RECORDS.--WDR NV-99-1: 1998.

GAGE.--Water-stage recorder. Elevation of gage is 1,251 ft above North American Vertical Datum of 1988 (Southern Nevada Water Authority).

COOPERATION.--Southern Nevada Water Authority

REMARKS.--Records good except estimated daily discharges, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,000 ft³/s, Jan. 12, 2005, gage height, 10.86 ft; minimum daily, 1.9 ft³/s, July 12, 2004.

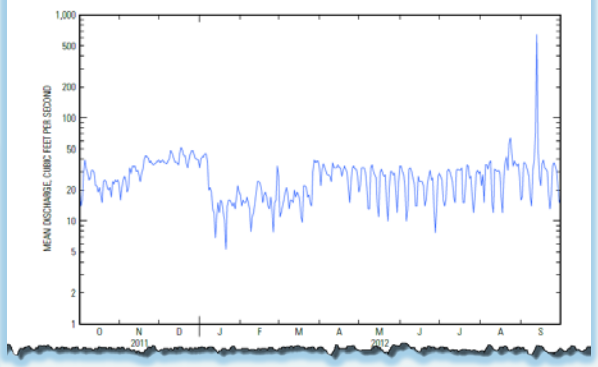
EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,000 ft³/s, Sept. 12, gage height, 10.01 ft; minimum daily discharge, 5.3 ft³/s, Jan. 20.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	22	16	37	40	14	11	22	22	34	27	22	17
2	14	21	38	42	16	12	32	33	30	25	28	37
3	16	25	39	42	15	14	36	33	28	16	15	37
4	30	27	37	45	15	16	33	33	21	14	35	34
5	39	25	37	45	17	19	30	29	10	16	35	31
6	32	19	36	37	15	21	28	21	13	30	32	27
7	29	21	38	20	13	18	28	13	32	32	37	17
8	25	33	40	21	7.9	13	27	13	33	30	38	14
9	26	29	48	19	11	16	24	33	30	27	15	31
10	31	34	46	13	12	16	37	35	26	24	12	39
11	31	34	42	12	15	15	33	30	23	17	32	72
12	29	34	38	6.9	19	20	33	28	14	15	31	637
13	22	30	37	11	24	17	33	26	14	31	30	49
14	22	31	37	15	24	19	35	14	27	32	31	27
15	19	28	35	12	23	18	33	11	24	31	29	22
16	21	24	46	16	20	16	33	29	24	31	17	36

SUMMARY STATISTICS

	Calendar Year 2011		Water Year 2012		Water Years 1998 - 2012	
Annual total	10,780.6		10,266.3			
Annual mean	29.5		28.1		16.9	
Highest annual mean					29.6	2011
Lowest annual mean					8.76	2004
Highest daily mean	63	Jan 1	637	Sep 12	2,410	Jan 12, 2005
Lowest daily mean	8.4	Aug 13	5.3	Jan 20	1.9	Jul 12, 2004
Annual seven-day minimum	11	Aug 30	12	Jan 15	4.0	Jan 28, 2001
Maximum peak flow			2,000	Sep 12	4,000	Jan 12, 2005
Maximum peak stage			10.01	Sep 12	10.86	Jan 12, 2005
Annual runoff (ac-ft)	21,380		20,360		12,270	
10 percent exceeds	42		39		30	
50 percent exceeds	31		27		13	
90 percent exceeds	14		14		6.4	



USGS science for a changing world

Water-Data Reports
Why do we need them?

- Provides a snapshot in time of site conditions
- Manuscripts provide descriptive information
  - Location
  - Period of Record
  - Historical extremes outside period of record
  - Record accuracy
  - Other remarks pertinent to station operation

USGS
science for a changing world

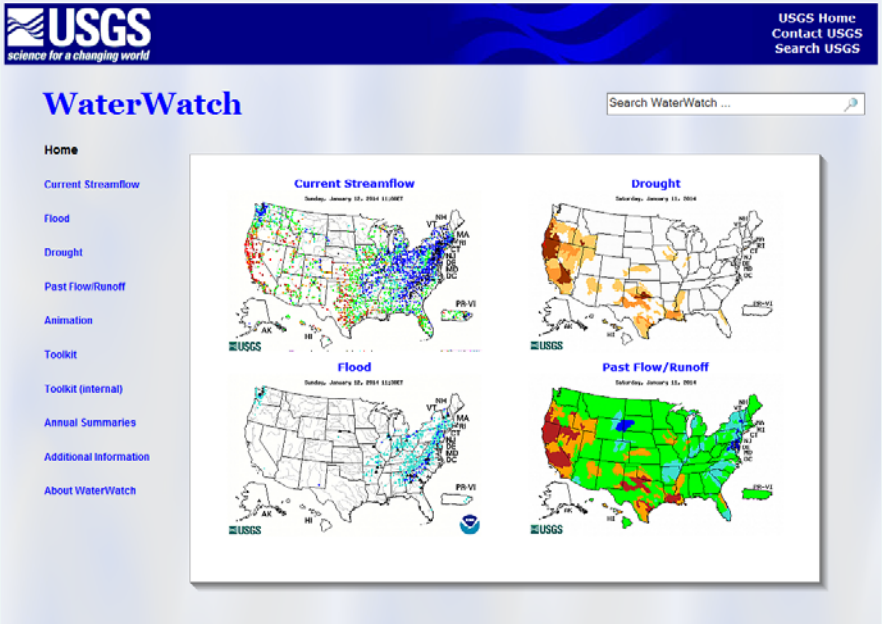
Water-Data Report Retiring– an end but a new beginning

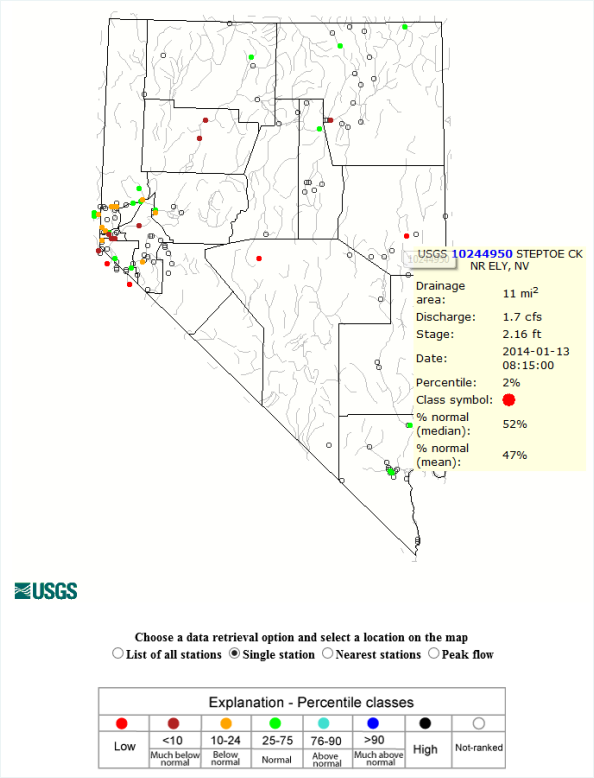
- Water Year 2013 will be the last year of the Water-Data Report series
- To be released in 2014
  - Print Friendly 12 month Summary of Daily Values
  - Users choose 12 month period of available data
    - Manuscript Information
    - Daily values table
    - Statistics
    - Graph

USGS
science for a changing world

Use WaterWatch to quickly evaluate current and past conditions

- http://waterwatch.usgs.gov
- View surface water conditions in National and State Perspectives



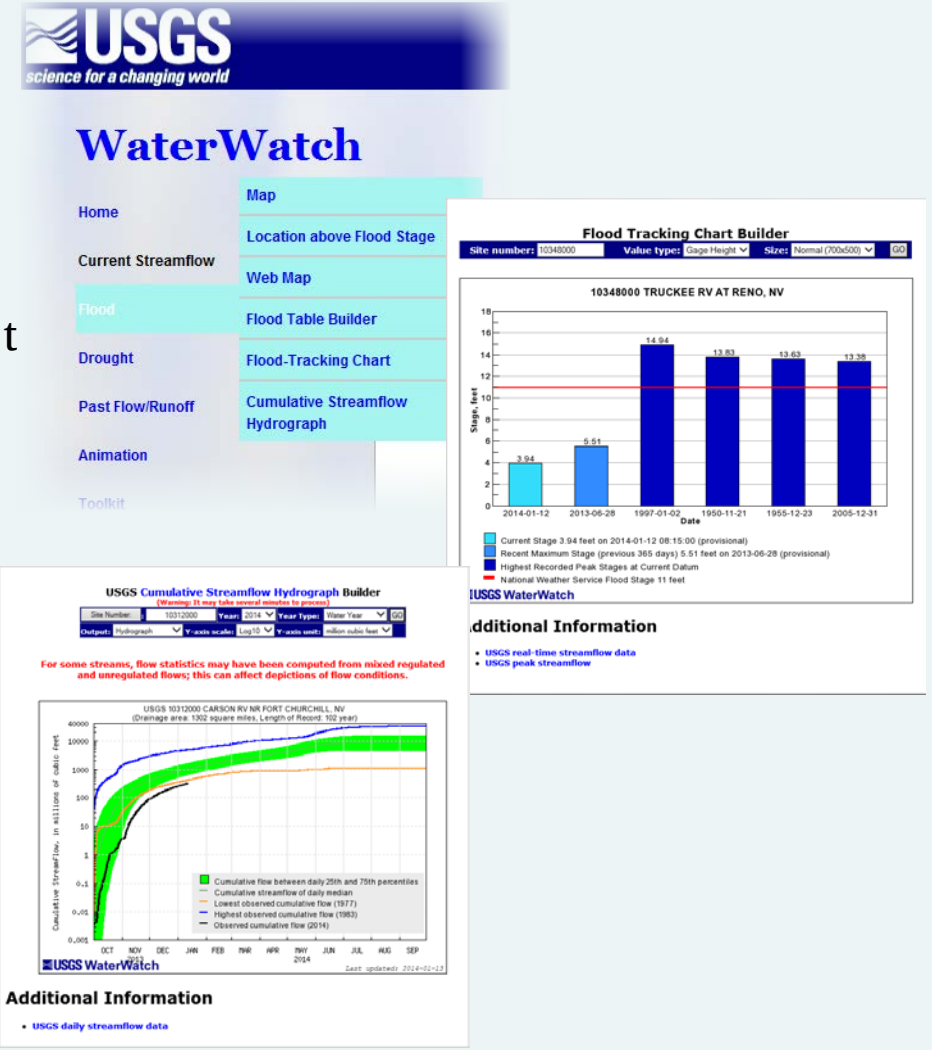


- Access data in historical context
- Plot hydrograph
- Compare flow with historical flood peaks
- Retrieve stage-discharge rating

USGS
science for a changing world

WaterWatch - tools to evaluate conditions at regional levels and at specific gages

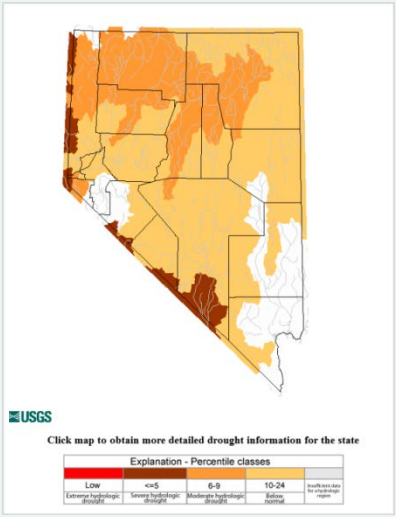
- Menu on left provides many options for evaluations
- Flood Tracking Chart puts current flow into historical context
- Cumulative Streamflow hydrograph puts cumulative stream volumes into historical perspective



USGS
science for a changing world

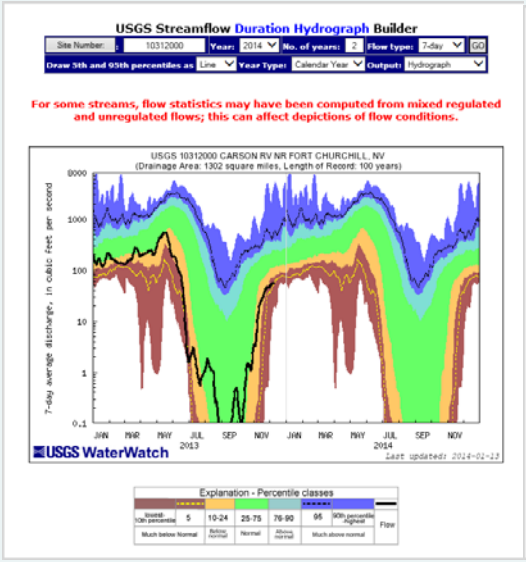
WaterWatch - tools to evaluate conditions at regional levels and at specific gages – continued

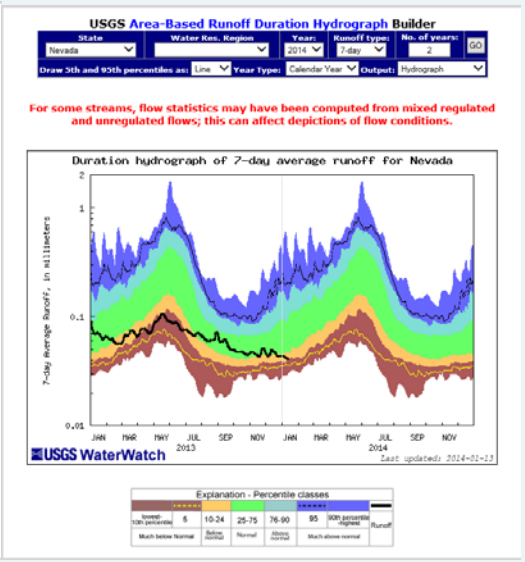
- Menu on left provides many options for evaluations



- Drought Tracking Chart puts current flow into historical context

- Site and State Duration Hydrographs put drought flows into perspective

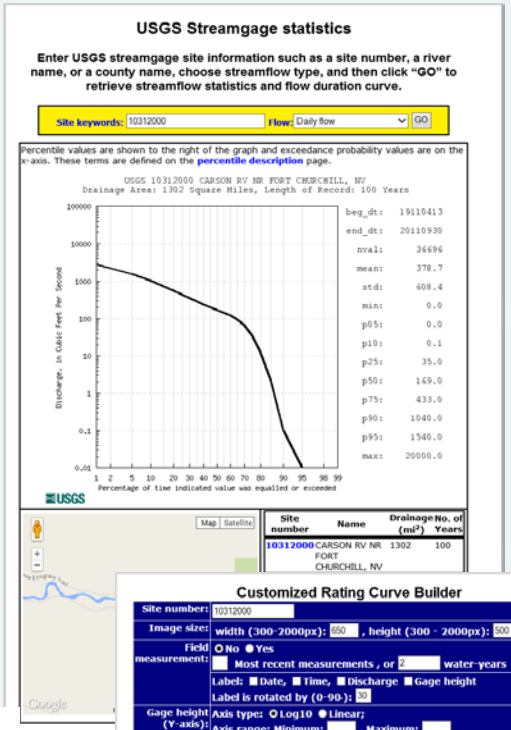


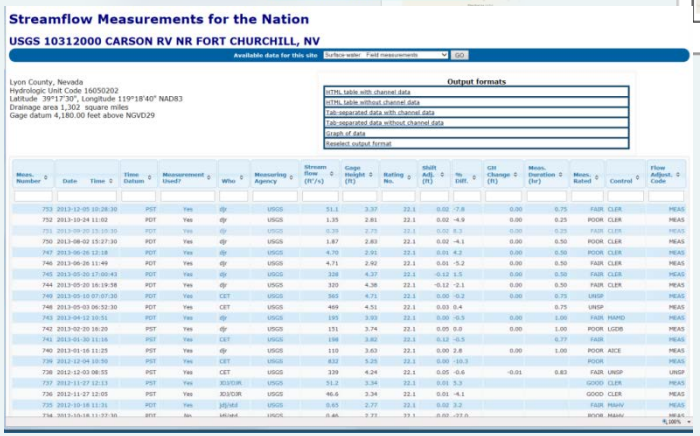


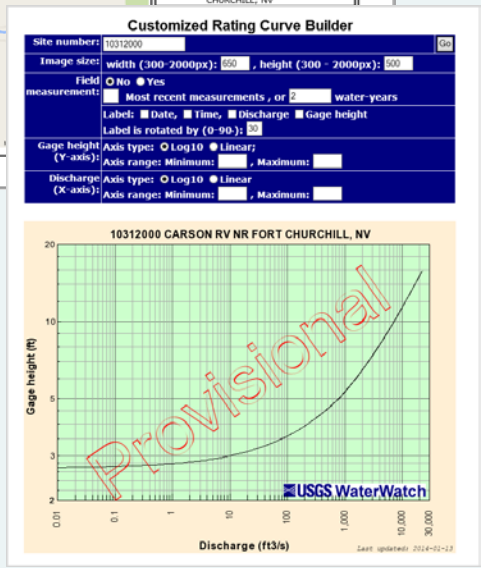
USGS
science for a changing world

WaterWatch provides tools to evaluate water data at gaging stations

- Use the Toolkit to retrieve streamflow statistics, stage-discharge rating curves, and streamflow measurements



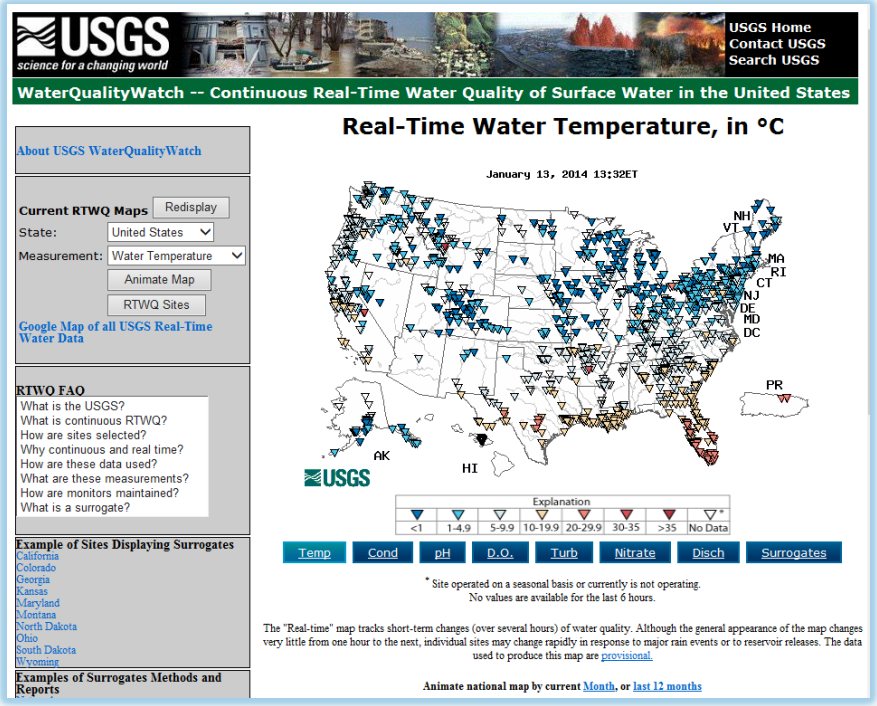


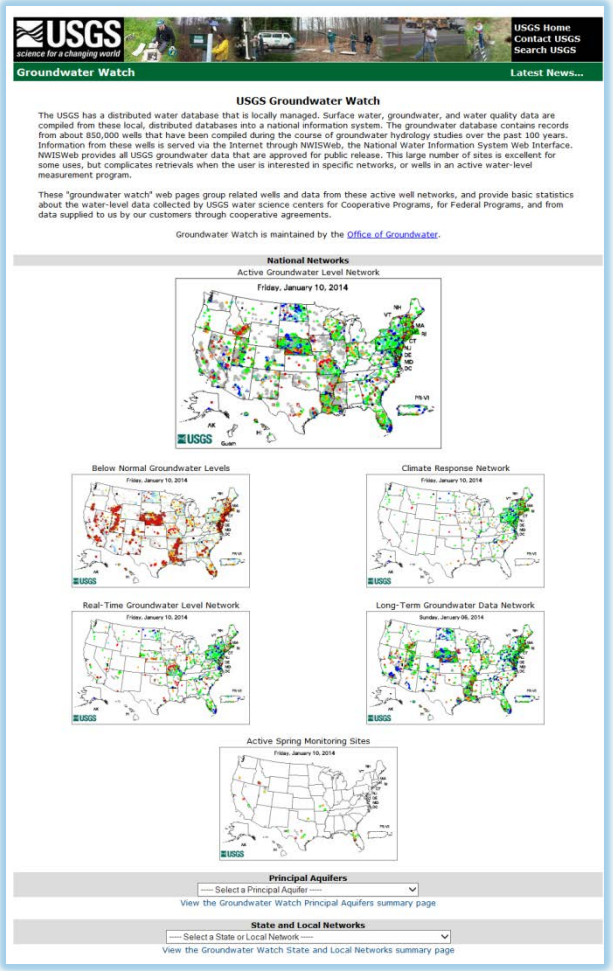


USGS science for a changing world

GroundwaterWatch and WaterQualityWatch - quickly evaluate current and past conditions

- http://groundwaterwatch.usgs.gov
- http://waterwatch.usgs.gov/wqwatch
- View conditions in National, State, and gaging station perspectives

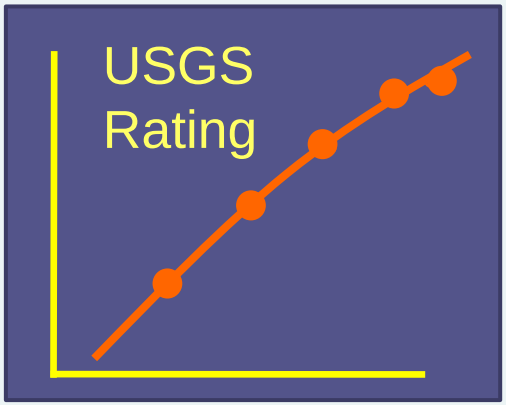


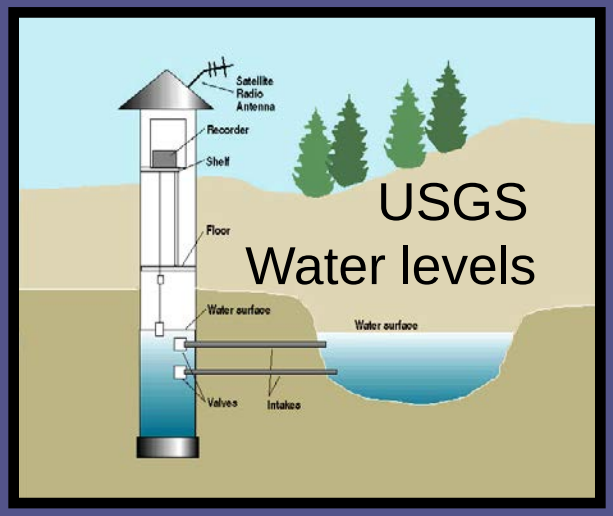


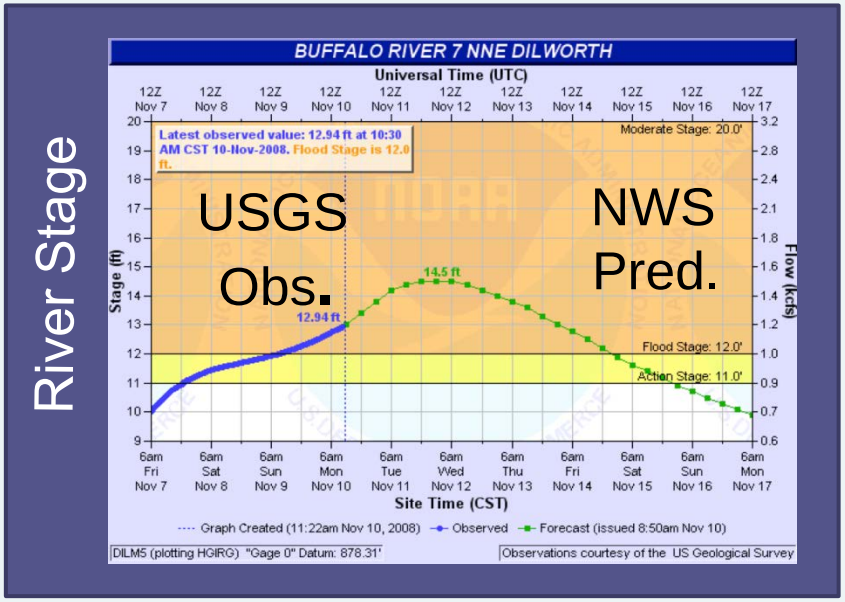
USGS
science for a changing world

Get the data sent to you - Extremes, river and reservoir operations, recreation…

NWS Rainfall Forecast





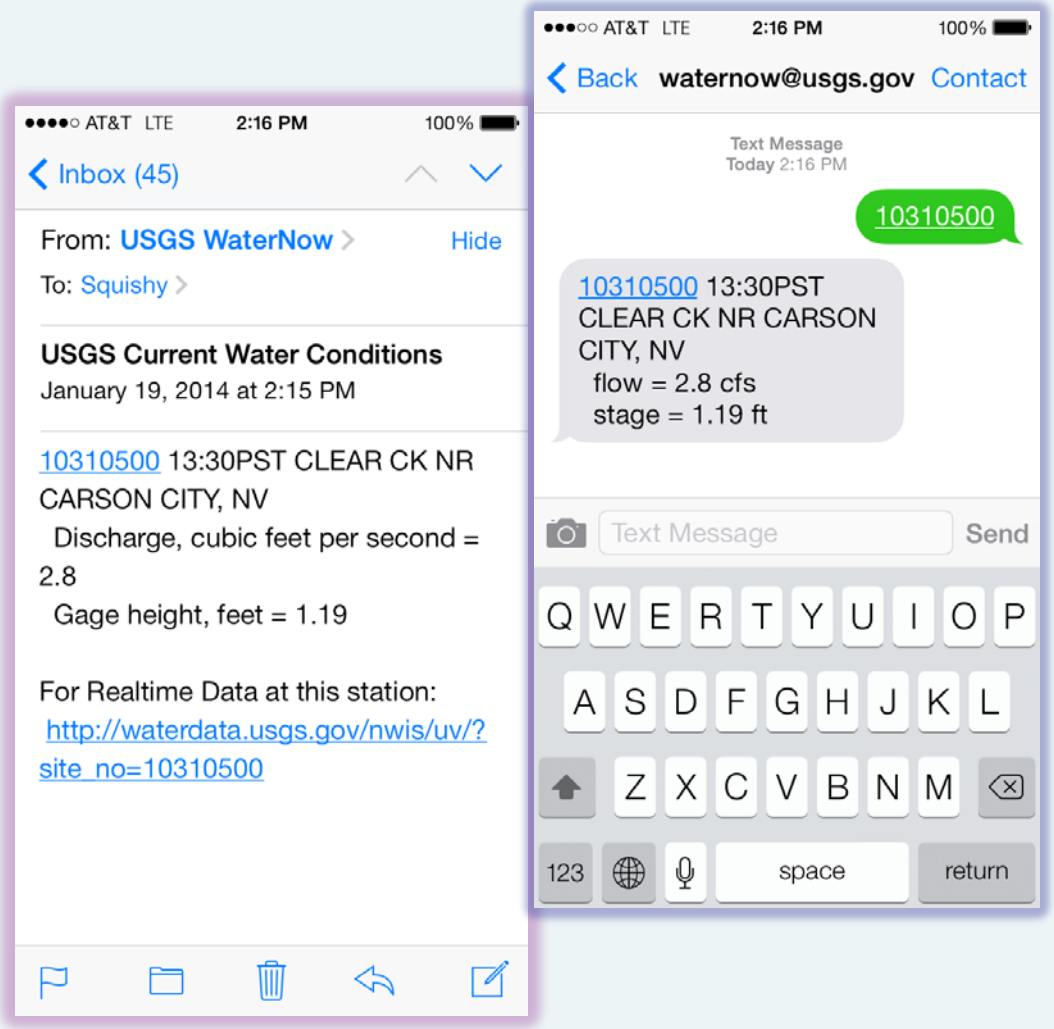


USGS
science for a changing world

WaterNow - http://water.usgs.gov/waternow/

Current data direct to mobile or email

- Send an email or text to
  - WaterNow@usgs.gov
- Include Site Number in Text or in Email subject
  - Other options:
    - SiteNumber Parameter
    - SiteNumber Parm1, Parm2
    - SiteNumber ?

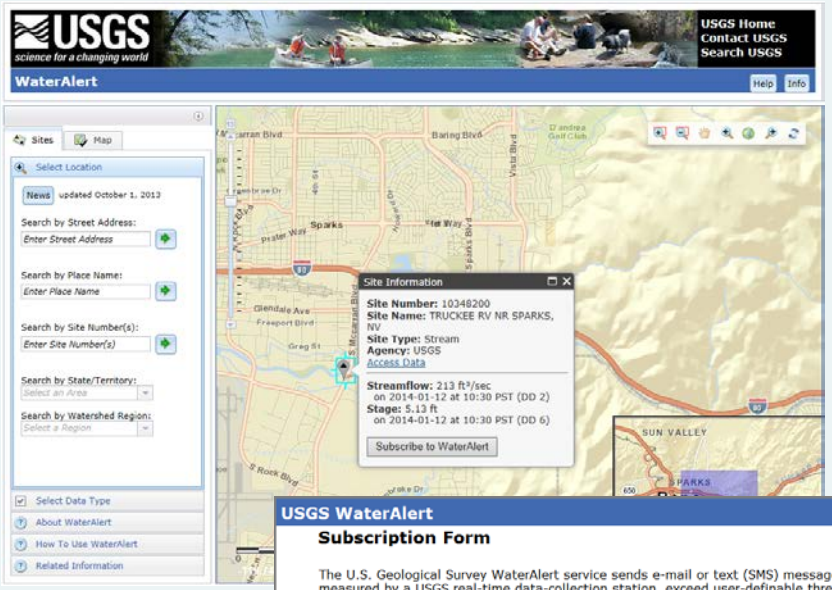


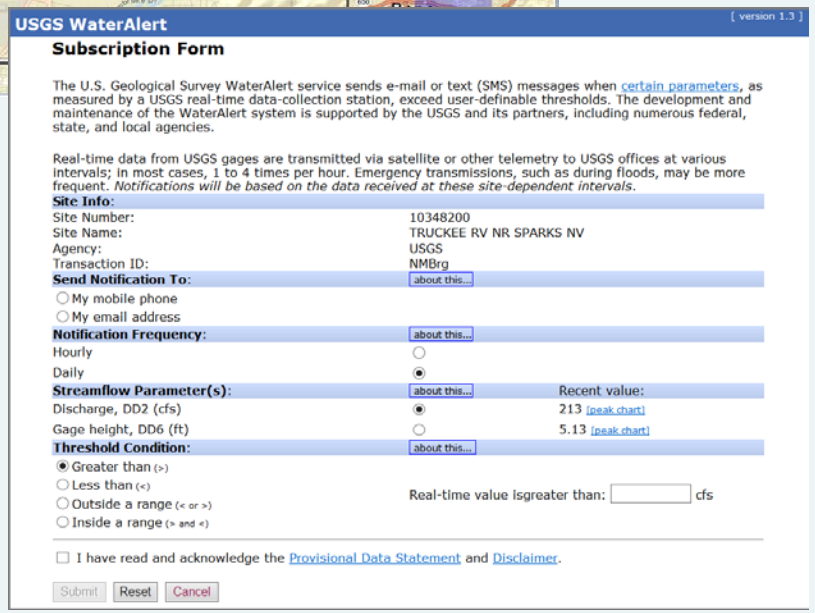
USGS science for a changing world

WaterAlert –

http://maps.waterdata.usgs.gov/mapper/wateralert/

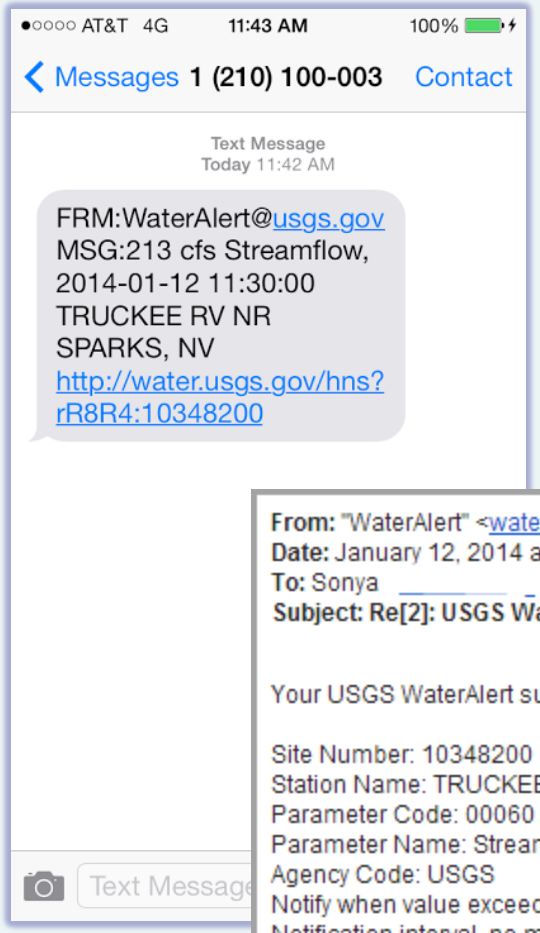
- Sends e-mail or text messages when parameters exceed user-defined thresholds at real-time sites
- Select the site and data type
- Submit your subscription form
- Change parameter thresholds at any time



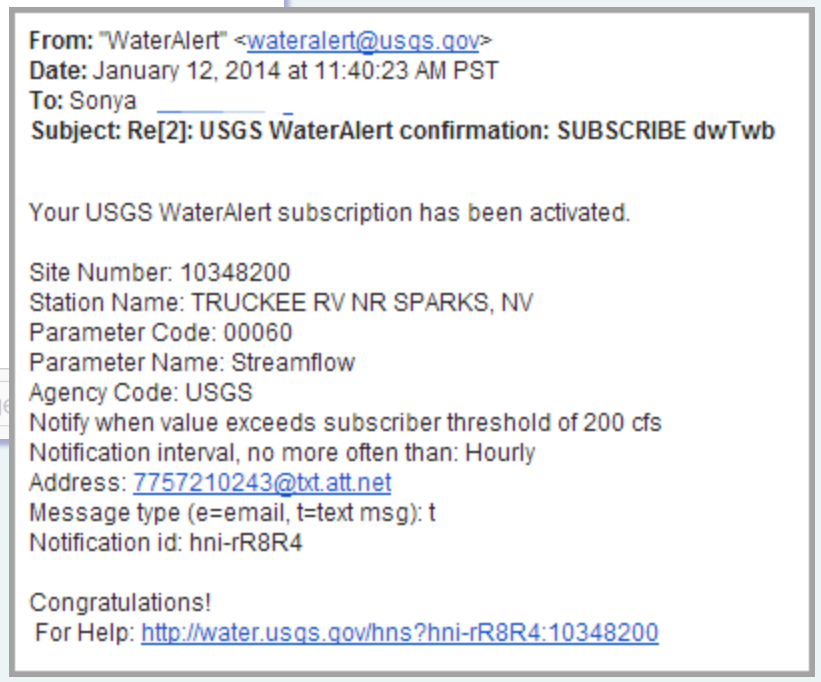


USGS
science for a changing world

WaterAlert



Email or Text Alerts



From: "WaterAlert" <wateralert@usgs.gov>
Date: January 12, 2014 at 11:40:23 AM PST
To: Sonya
Subject: Re[2]: USGS WaterAlert confirmation: SUBSCRIBE dwTwb

Your USGS WaterAlert subscription has been activated.

Site Number: 10348200
Station Name: TRUCKEE RV NR SPARKS, NV
Parameter Code: 00060
Parameter Name: Streamflow
Agency Code: USGS
Notify when value exceeds subscriber threshold of 200 cfs
Notification interval, no more often than: Hourly
Address: 7757210243@txt.att.net
Message type (e=email, t=text msg): t
Notification id: hni-rR8R4

Congratulations!
For Help: http://water.usgs.gov/hns?hni-rR8R4:10348200

Various Parameters:

Surface Water:

Streamflow
Gage height (stage)
Lake/reservoir level
Stream level
Stream velocity

Groundwater:

Water level (depth)
Water Level (elevation)

Water Quality:

Water temperature
Specific conductance
pH
Dissolved oxygen
Salinity
Turbidity

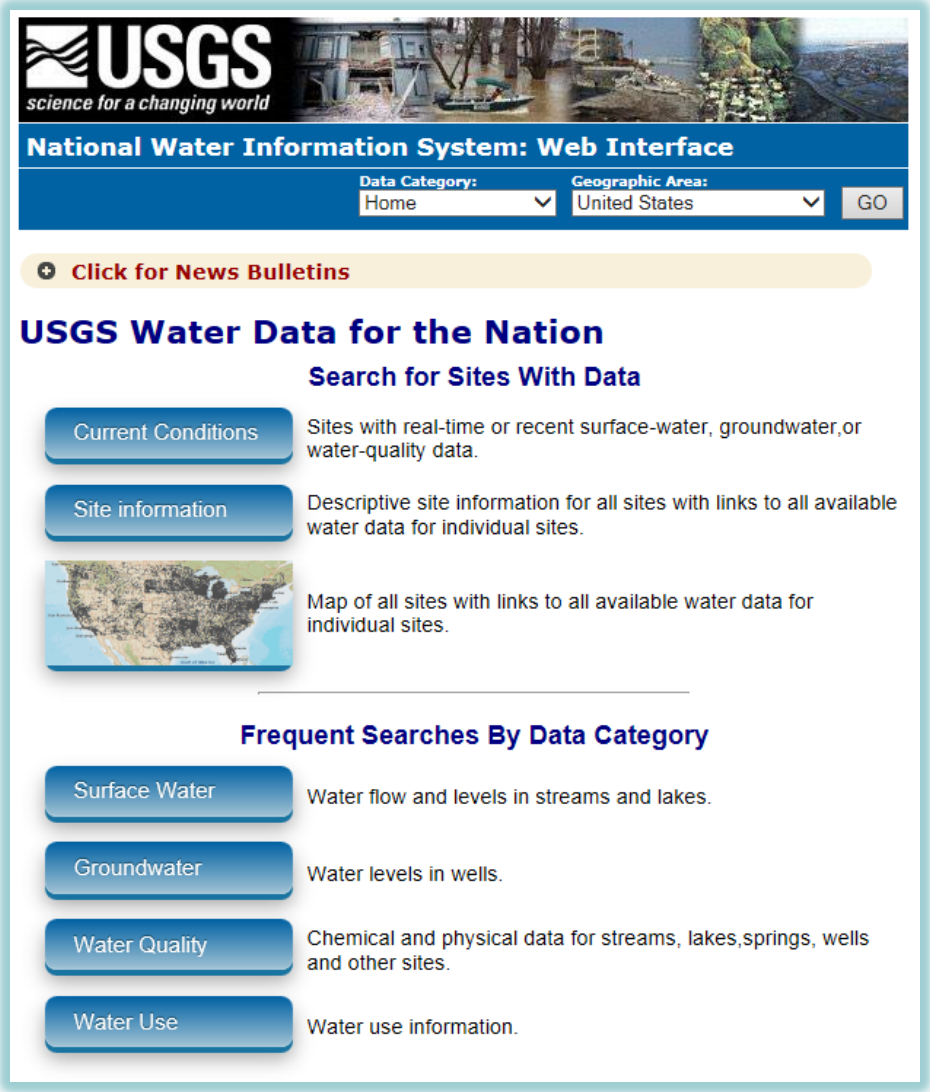
Precipitation:

Total precipitation

USGS
science for a changing world

NWISWeb - http://waterdata.usgs.gov/

- What we provide
  - Access to 1.5 million sites
  - Site and location
  - Surface Water
  - Groundwater
  - Water Quality
  - Water Use
- Navigation
- Basic Process
- Output
- Site Selection
- Data type selection
- Data Category Specifics

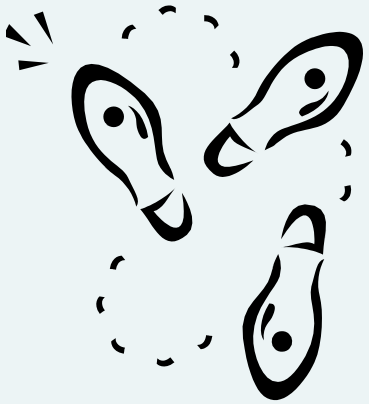


USGS
science for a changing world

NWISWeb - Navigation

USGS
science for a changing world

Basic Process



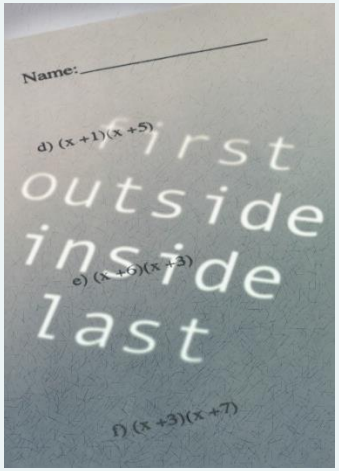
Begin your search

- Data Categories
- Geographic Areas
- Mapper

Refine your Search

- Site Selection Criteria
  - Site Location
    - County
    - Hydrographic Area
  - Site Identifier
    - Site Name
    - Site Numbers
  - Site Attribute
    - Site Type
  - Data Attribute
    - Parameters
    - Number of Observations
    - Last Updated

Output the data



USGS
science for a changing world

NWISWeb – Output Formats

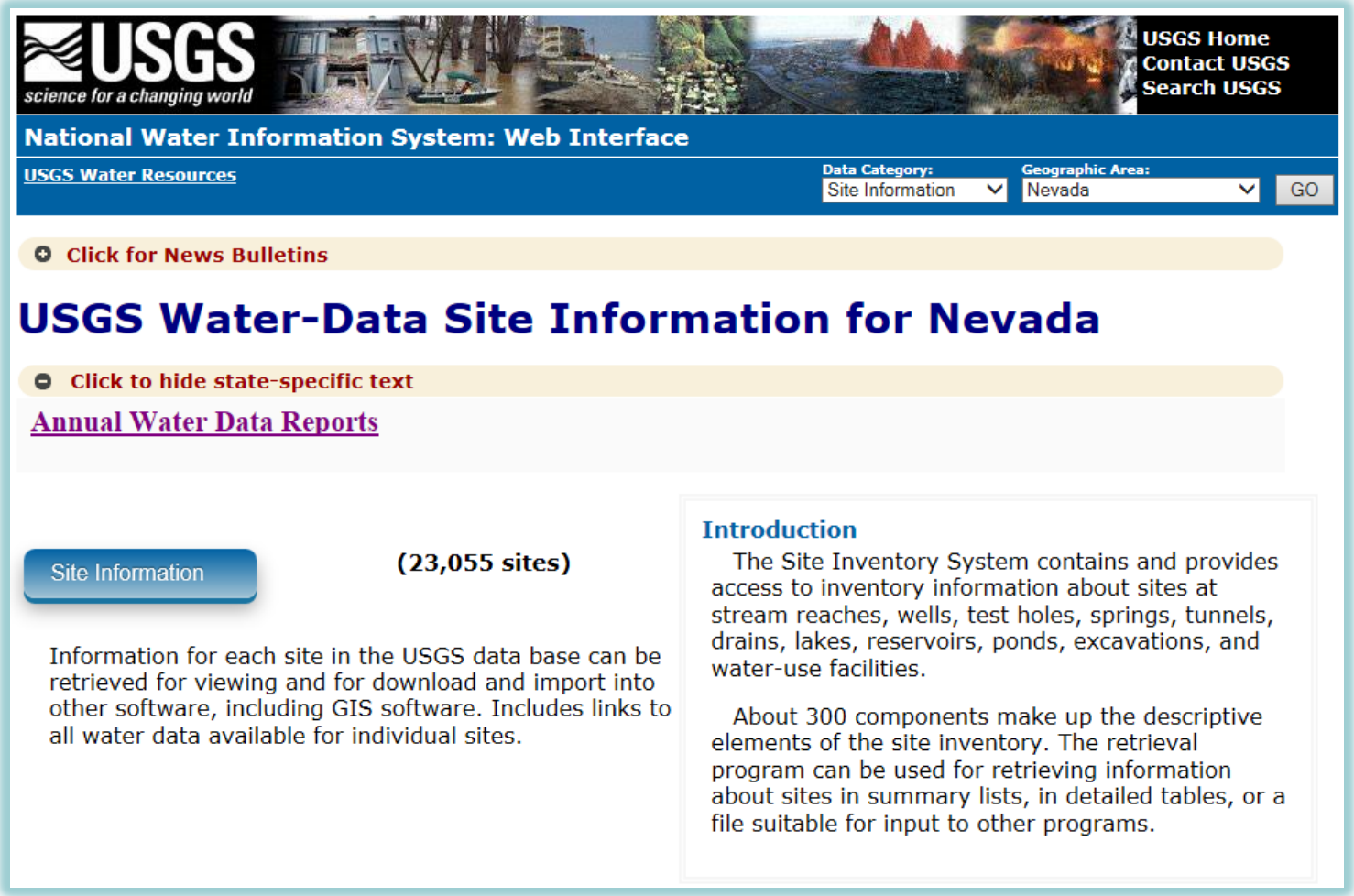
- Graphs
  - Real-time stream flow, water levels, and water quality
- Tables
  - HTML and ASCII tab-delimited files
  - Tipsheet for loading our RDB format into Excel
    - http://nwis.usgs.gov/nwisweb/NWISWebUG/tutorials_staging/downloading_data.html#Excel

- Files for Google Earth and GIS
  - KML and shapefiles

- Automated retrievals (Web Services)
  - http://waterservices.usgs.gov/
  - http://waterdata.usgs.gov/nwis/?automated_retrieval_info
  - Site Information, Unit Values, Daily Values, Water Quality, Groundwater Levels

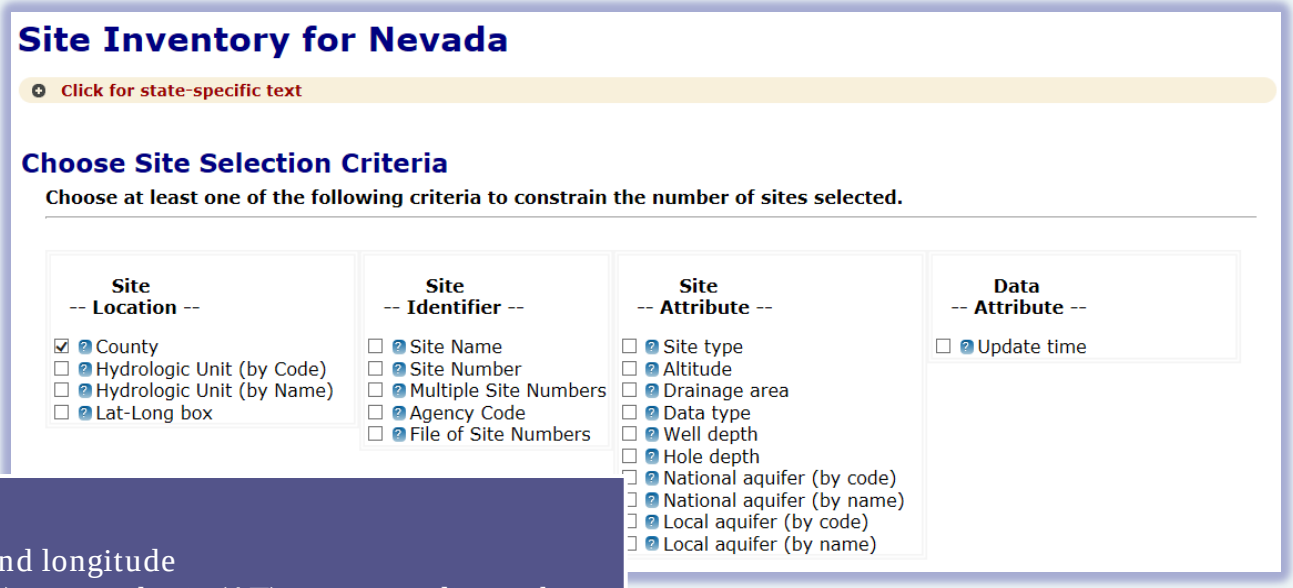
USGS
science for a changing world

Site Information



USGS
science for a changing world

Site Selection



Site Numbers

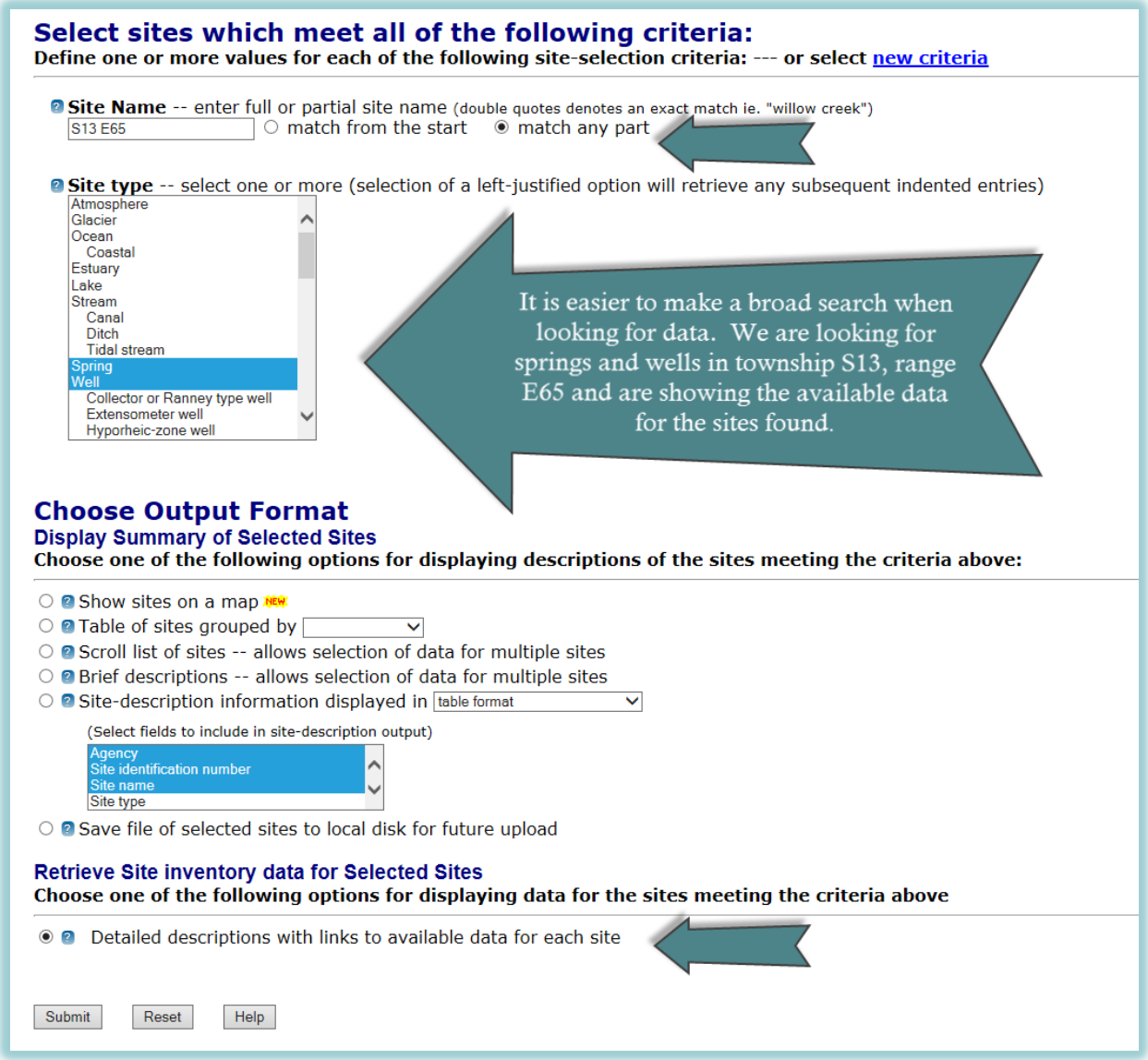
- Those based on latitude and longitude
  - Wells (GW), springs (SP), atmospheric (AT), water-quality grab samples (QW), places where there is difficulty assigning a meaningful downstream order number
- Those based on downstream order number
  - Continuous SW stations, partial record (SW and QW) stations, QW sites, Spring stations where discharge measurements are routine

Station Names

- Based on a combination of NV hydrographic areas, township, range, section, and quarter section and other common name
  - Mostly wells and some springs
  - Example: 219 S13 E65 28BDBA1 USGS CSV-2
- Based on name of water body
  - Mostly surface water and some springs
  - Example: Muddy River near Moapa, NV

USGS science for a changing world

Site Selection – Broad searches



USGS science for a changing world

Site Selection – Site Inventory

Available data for this site | SUMMARY OF ALL AVAILABLE DATA | GO

- Location map
- Time-series: Current/Historical Observations
- Time-series: Daily data
- Time-series: Daily statistics
- Time-series: Monthly statistics
- Time-series: Annual statistics
- Water-Quality: Field/Lab samples
- Groundwater: Field measurements
- USGS Annual water-data report(s): (Offsite)
- Offsite: USGS Groundwater watch
- EPA Surf your watershed: Offsite

Well Site

DESCRIPTION:

Latitude 36°46'50.64", Longitude 114°43'21.86" NAD8
Clark County, Nevada , Hydrologic Unit 15010012
Well depth: 478. feet
Hole depth: 478 feet
Land surface altitude: 2,185.9 feet above NGVD29.
Well completed in "Basin and Range carbonate-rock aquifers" (N400BSNRGC) national aquifer.
Well completed in "Carbonate Rocks" (300CRBN) local aquifer

AVAILABLE DATA:

Data Type	Begin Date	End Date	Count
Current / Historical Observations (availability statement)	2007-10-04	2014-01-21	
Daily Data			
Depth to water level, feet below land surface	1991-02-06	2014-01-20	5668
Daily Statistics			
Depth to water level, feet below land surface	1991-02-06	2012-09-30	5191
Monthly Statistics			
Depth to water level, feet below land surface	1991-02	2012-09	
Annual Statistics			
Depth to water level, feet below land surface	1991	2012	
Field groundwater-level measurements	1985-02-06	2013-12-06	161
Field/Lab water-quality samples	1986-01-26	2003-07-08	2
Additional Data Sources	**Begin Date**	**End Date**	**Count**
Annual Water-Data Report (pdf) **offsite**	2005	2012	8
Groundwater Watch **offsite**	1985	2014	5826

OPERATION:

Record for this site is maintained by the USGS Nevada Water Science Center
Email questions about this site to Nevada Water Science Center Water-Data Inquiries

USGS 364650114432001 219 S13 E65 28BDBA1 USGS CSV-2

Available data for this site | Location map | GO

Clark County, Nevada
Hydrologic Unit Code 15010012
Latitude 36°46'50.64", Longitude 114°43'21.86" NAD83
Land-surface elevation 2,185.9 feet above NGVD29
The depth of the well is 478 feet below land surface.
The depth of the hole is 478 feet below land surface.
This well is completed in the Basin and Range carbonate-rock aquifers (N400BSNRGC) national aquifer.
This well is completed in the Carbonate Rocks (300CRBN) local aquifer.

Location of the site in Nevada

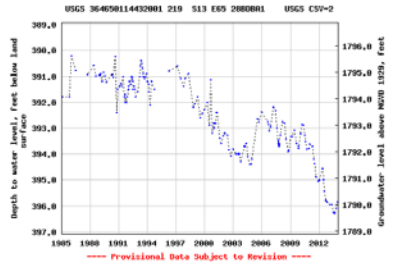
USGS 364650114432001 219 S13 E65 28BDBA1 USGS CSV-2

Available data for this site | Groundwater Field measurements | GO

Clark County, Nevada
Hydrologic Unit Code 15010012
Latitude 36°46'50.64", Longitude 114°43'21.86" NAD83
Land-surface elevation 2,185.9 feet above NGVD29
The depth of the well is 478 feet below land surface.
The depth of the hole is 478 feet below land surface.
This well is completed in the Basin and Range carbonate-rock aquifers (N400BSNRGC) national aquifer.
This well is completed in the Carbonate Rocks (300CRBN) local aquifer.

Output formats

- Table of data
- Tab-separated data
- Graph of data
- Reselect period

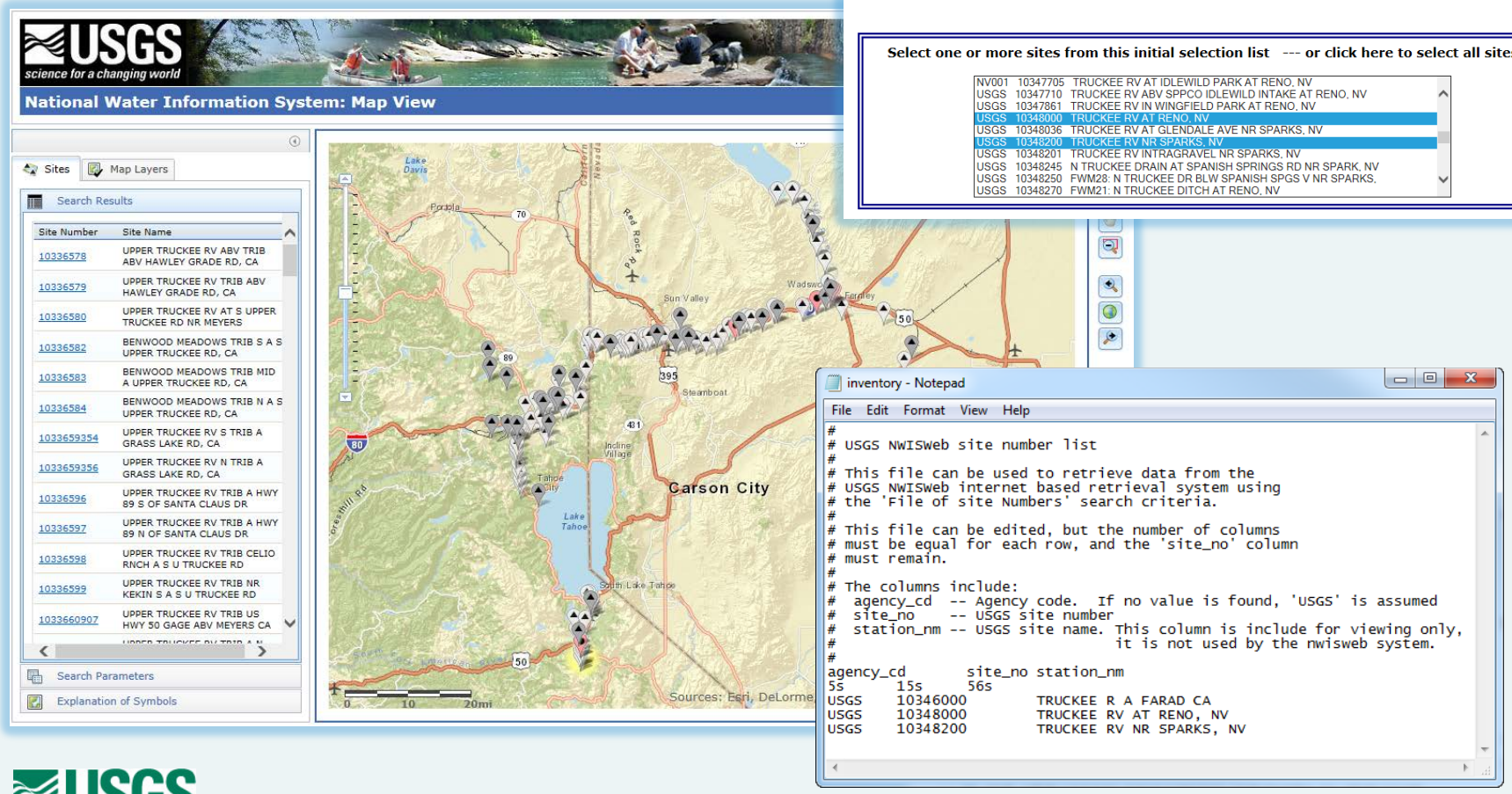


Breaks in the plot represent a gap of at least one year between field measurements.
Download a presentation-quality graph

USGS science for a changing world

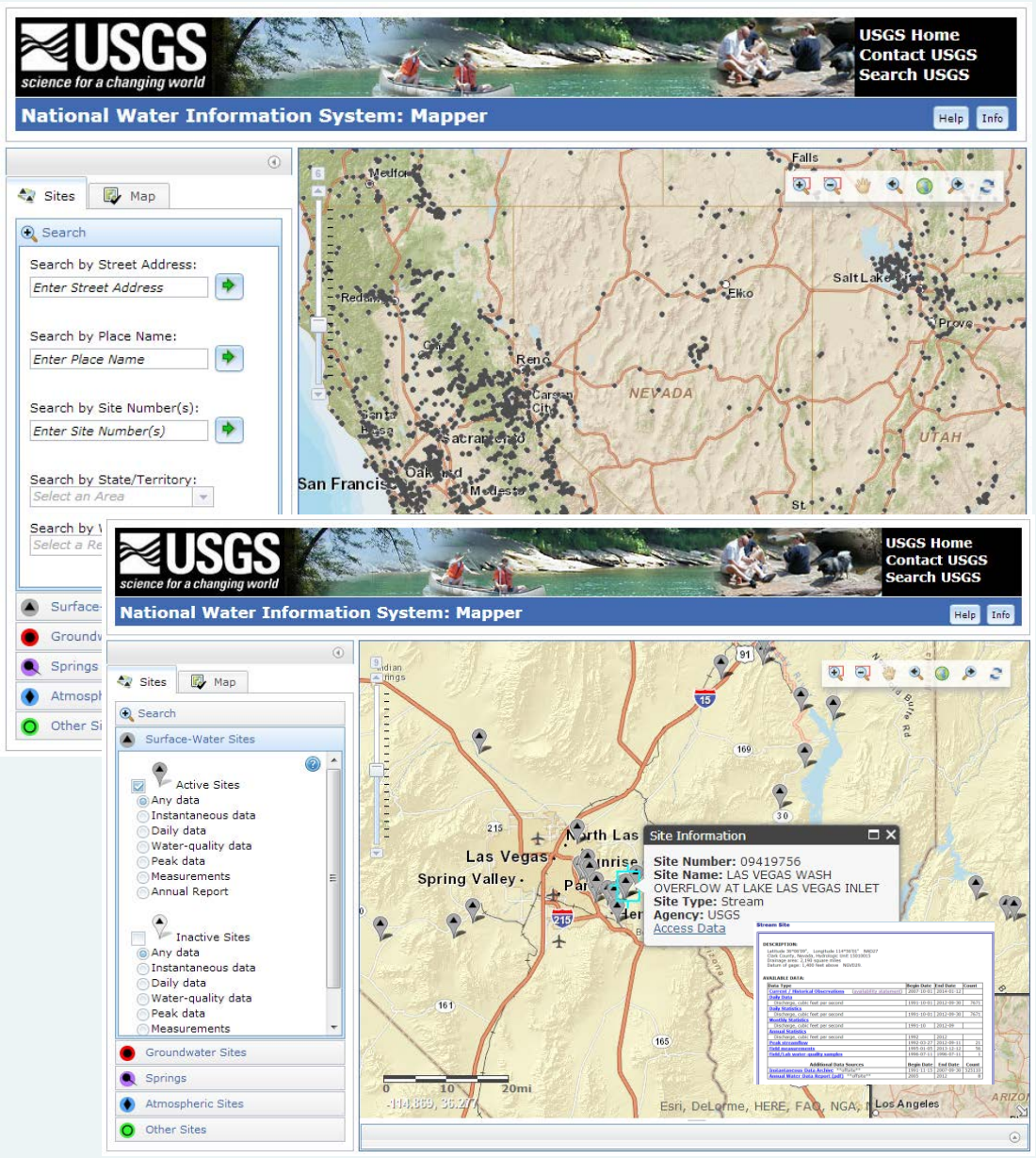
Site Selection - Output

- Search “Truckee”



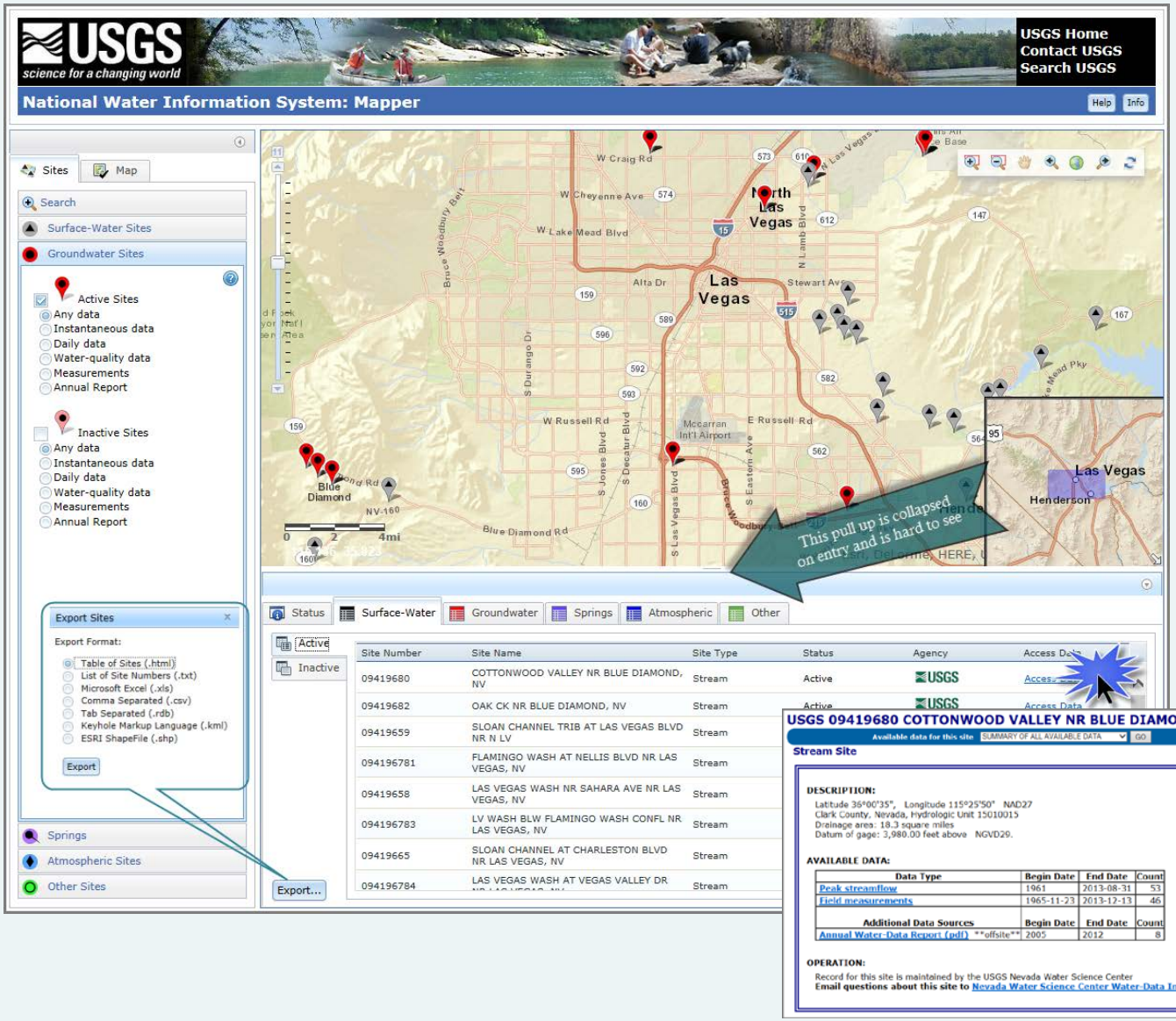
NWIS Mapper

- Select any data collection site by 'point and click' function
- Can zoom and pan
- Enter stations numbers, place names, street addresses
- Sites become clickable at certain zoom levels
- Sites can be viewed by
  - Active
    - Time-series in the last 6 months
    - Discrete in the last 13 months
  - Inactive
  - Real-time
  - Site Type
- Export features
  - Site lists
  - KML for Google Maps
  - Shapefile for GIS



USGS
science for a changing world

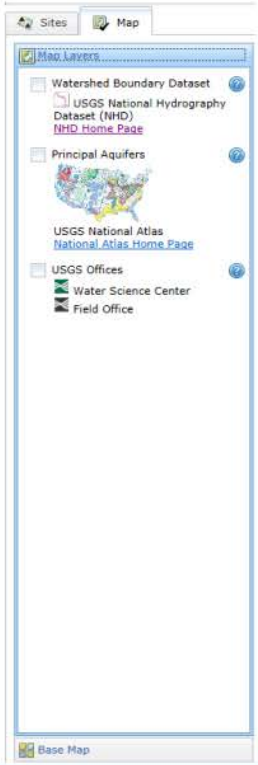
NWIS Mapper – Navigating



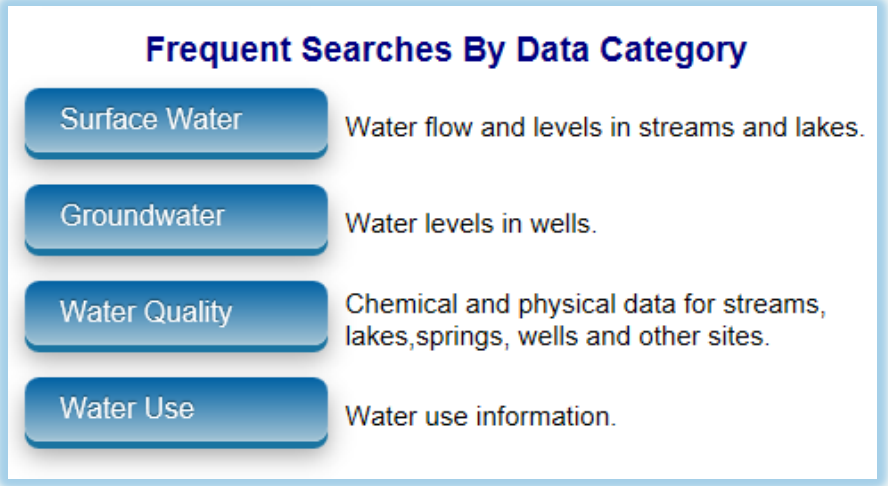
USGS
science for a changing world

NWIS Mapper – Base Maps

The default will show the Map Layer, pop up Base map to change the base map.



Searches by Data Category

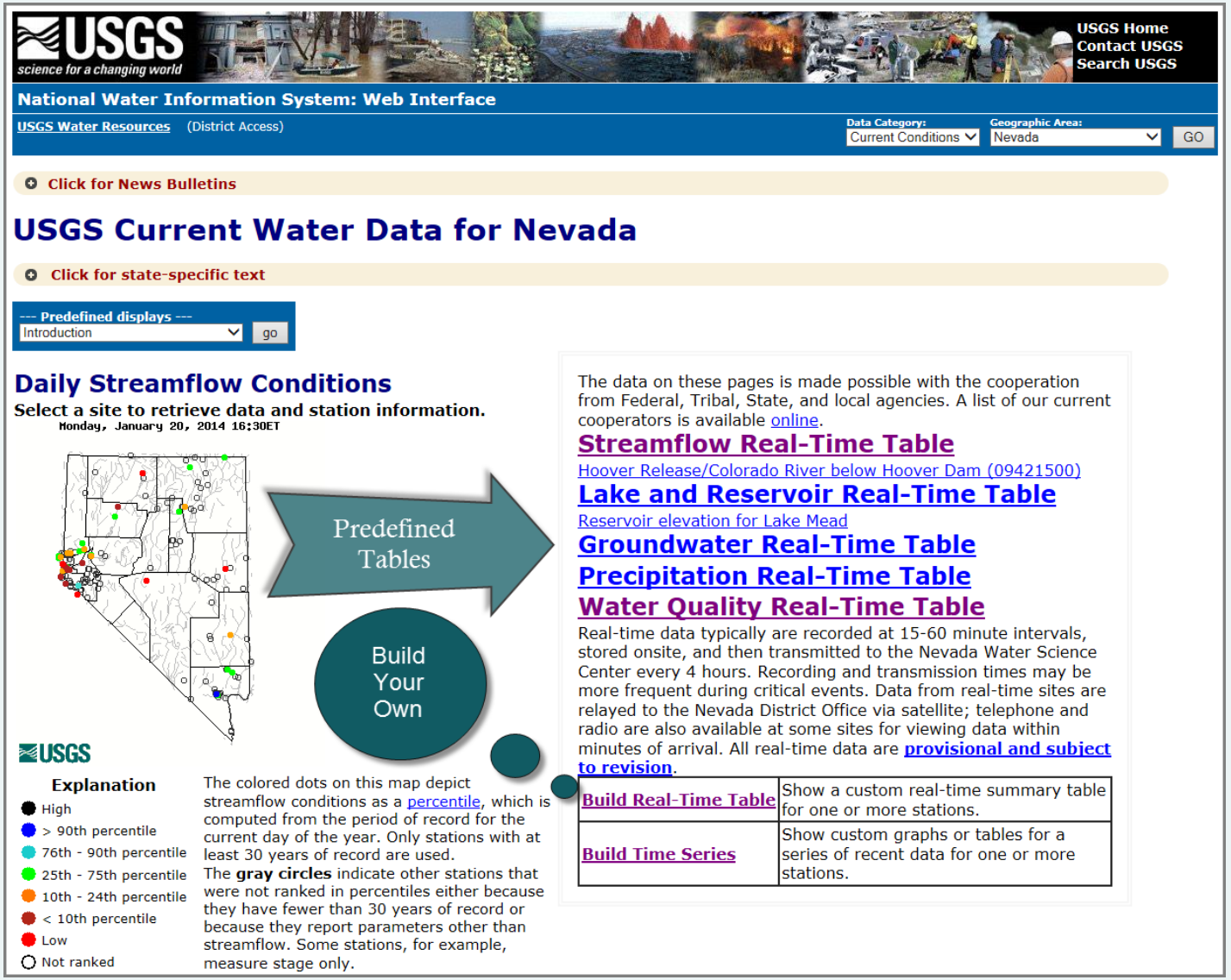


Common Themes

Current Conditions	Current Unit Values
Historical Observations	Historical Unit values back to 10/2007
Daily Data	Daily Values
Statistics	Monthly, Annual and Daily
Field Measurements	Field Measurements and Samples

USGS science for a changing world

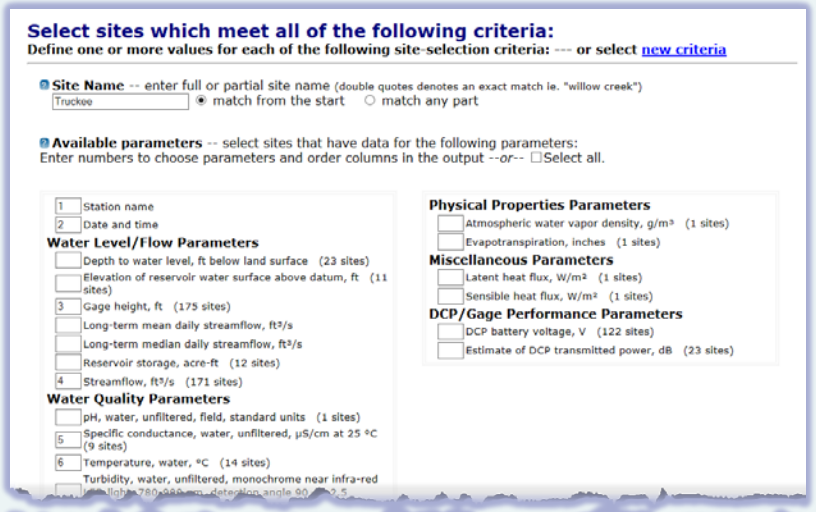
Current Conditions – Real-time data

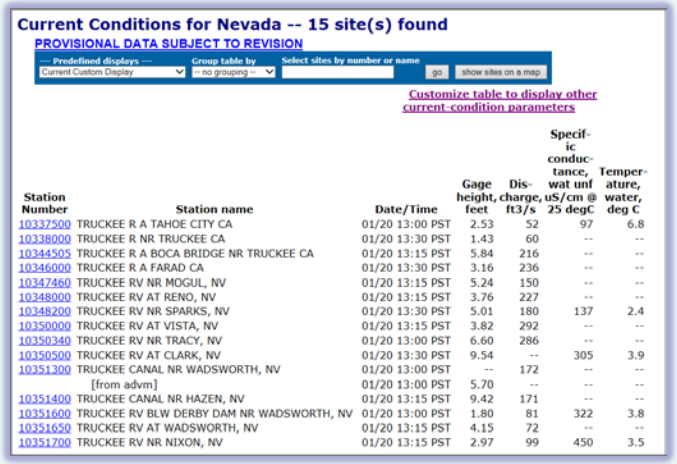


USGS
science for a changing world

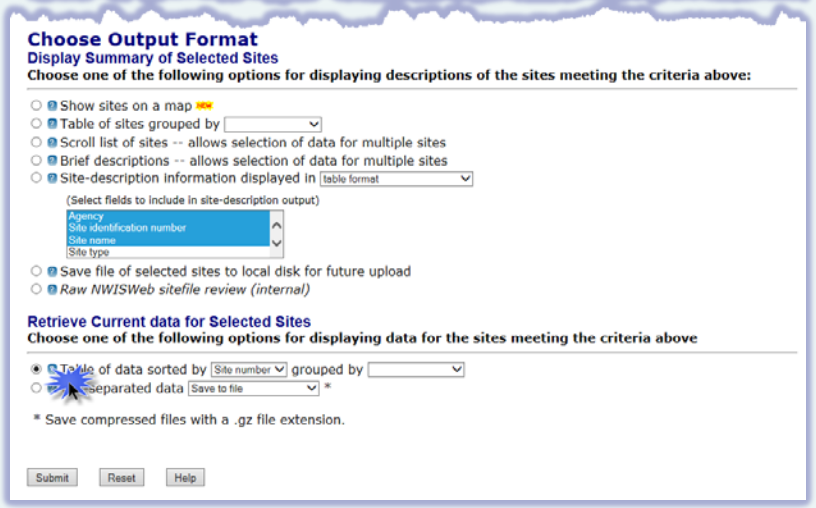
Current Conditions – Build Your Own

Build Real-Time Table	Show a custom real-time summary table for one or more stations.
Build Time Series	Show custom graphs or tables for a series of recent data for one or more stations.





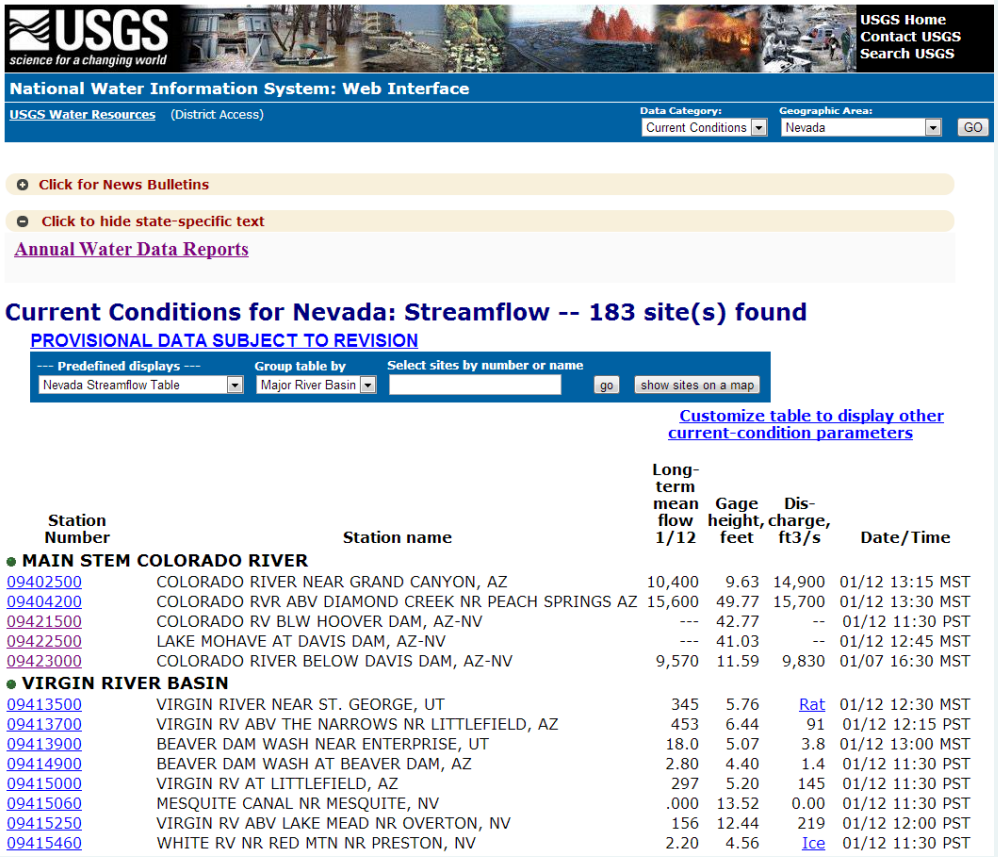
Station Number	Station name	Date/Time	Gage height, feet	Dis-charge, ft3/s	Specif-ic conduc-tance, wat unf uS/cm @ 25 degC	Temper-ature, water, deg C
10337500	TRUCKEE R A TAHOE CITY CA	01/20 13:00 PST	2.53	52	97	6.8
10338000	TRUCKEE R NR TRUCKEE CA	01/20 13:30 PST	1.43	60	--	--
10344505	TRUCKEE R A BOCA BRIDGE NR TRUCKEE CA	01/20 13:15 PST	5.84	216	--	--
10346000	TRUCKEE R A FARAD CA	01/20 13:30 PST	3.16	236	--	--
10347460	TRUCKEE RV NR MOGUL, NV	01/20 13:15 PST	5.24	150	--	--
10348000	TRUCKEE RV AT RENO, NV	01/20 13:15 PST	3.76	227	--	--
10348200	TRUCKEE RV NR SPARKS, NV	01/20 13:30 PST	5.01	180	137	2.4
10350000	TRUCKEE RV AT VISTA, NV	01/20 13:15 PST	3.82	292	--	--
10350340	TRUCKEE RV NR TRACY, NV	01/20 13:00 PST	6.60	286	--	--
10350500	TRUCKEE RV AT CLARK, NV	01/20 13:30 PST	9.54	--	305	3.9
10351300	TRUCKEE CANAL NR WADSWORTH, NV	01/20 13:00 PST	--	172	--	--
	[from advm]	01/20 13:00 PST	5.70	--	--	--
10351400	TRUCKEE CANAL NR HAZEN, NV	01/20 13:15 PST	9.42	171	--	--
10351600	TRUCKEE RV BLW DERBY DAM NR WADSWORTH, NV	01/20 13:00 PST	1.80	81	322	3.8
10351650	TRUCKEE RV AT WADSWORTH, NV	01/20 13:15 PST	4.15	72	--	--
10351700	TRUCKEE RV NR NIXON, NV	01/20 13:15 PST	2.97	99	450	3.5



USGS
science for a changing world

Nevada Current Conditions

http://waterdata.usgs.gov/nv/nwis/current/?type=flow



USGS science for a changing world

USGS Home | Contact USGS | Search USGS

National Water Information System: Web Interface

USGS Water Resources (District Access) | Data Category: Current Conditions | Geographic Area: Nevada | GO

Click for News Bulletins

Click to hide state-specific text

Annual Water Data Reports

Current Conditions for Nevada: Streamflow -- 183 site(s) found

PROVISIONAL DATA SUBJECT TO REVISION

--- Predefined displays --- : Nevada Streamflow Table | Group table by: Major River Basin | Select sites by number or name | go | show sites on a map

Customize table to display other current-condition parameters

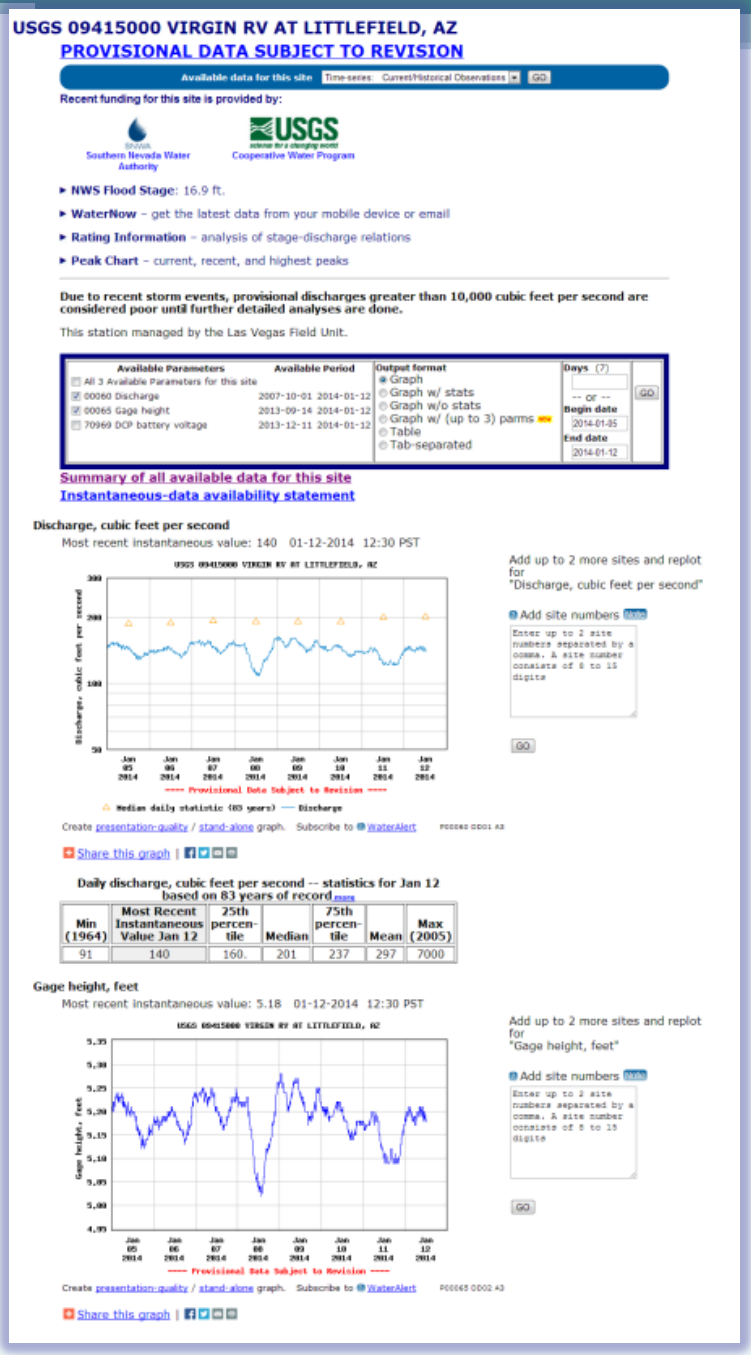
Station Number	Station name	Long-term mean flow 1/12	Gage height, feet	Dis-charge, ft3/s	Date/Time
MAIN STEM COLORADO RIVER					
09402500	COLORADO RIVER NEAR GRAND CANYON, AZ	10,400	9.63	14,900	01/12 13:15 MST
09404200	COLORADO RVR ABV DIAMOND CREEK NR PEACH SPRINGS AZ	15,600	49.77	15,700	01/12 13:30 MST
09421500	COLORADO RV BLW HOOVER DAM, AZ-NV	---	42.77	--	01/12 11:30 PST
09422500	LAKE MOHAVE AT DAVIS DAM, AZ-NV	---	41.03	--	01/12 12:45 MST
09423000	COLORADO RIVER BELOW DAVIS DAM, AZ-NV	9,570	11.59	9,830	01/07 16:30 MST
VIRGIN RIVER BASIN					
09413500	VIRGIN RIVER NEAR ST. GEORGE, UT	345	5.76	Rat	01/12 12:30 MST
09413700	VIRGIN RV ABV THE NARROWS NR LITTLEFIELD, AZ	453	6.44	91	01/12 12:15 PST
09413900	BEAVER DAM WASH NEAR ENTERPRISE, UT	18.0	5.07	3.8	01/12 13:00 MST
09414900	BEAVER DAM WASH AT BEAVER DAM, AZ	2.80	4.40	1.4	01/12 11:30 PST
09415000	VIRGIN RV AT LITTLEFIELD, AZ	297	5.20	145	01/12 11:30 PST
09415060	MESQUITE CANAL NR MESQUITE, NV	.000	13.52	0.00	01/12 11:30 PST
09415250	VIRGIN RV ABV LAKE MEAD NR OVERTON, NV	156	12.44	219	01/12 12:00 PST
09415460	WHITE RV NR RED MTN NR PRESTON, NV	2.20	4.56	Ice	01/12 11:30 PST

- List of Sites with most recent data
- Options for various predefined displays, table groupings
- Show listed sites on a map
- Special flags for current issues at site
- Access to other available data
- Customize your own table to show other parameters

USGS science for a changing world

Overview of Single Site Current Conditions

- General site information
- List of recent cooperators that contribute funds to operate site
- Access to available data and various output
  - Location Map
  - Daily Data
  - Statistics
  - Field measurements
  - Water Quality
  - Links to offsite data
- Graphs
- Comparison graphs



USGS science for a changing world

Single Site Current Conditions – Various Outputs

Available Parameters	Available Period
☐ All 3 Available Parameters for this site	
☑ 00060 Discharge	2007-10-01 2014-01-12
☑ 00065 Gage height	2013-09-14 2014-01-12
☐ 70969 DCP battery voltage	2013-12-11 2014-01-12

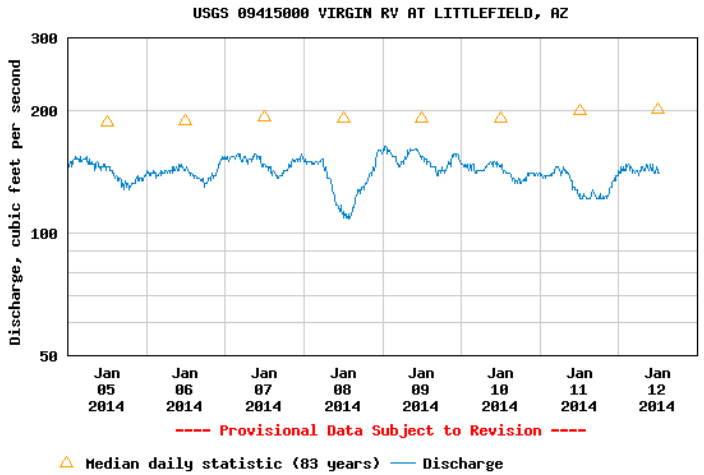
Output format
- ◉ Graph
- ○ Graph w/ stats
- ○ Graph w/o stats
- ○ Graph w/ (up to 3) parms NEW
- ○ Table
- ○ Tab-separated

Days (7) -- or -- **Begin date** 2014-01-05 **End date** 2014-01-12 GO

[Summary of all available data for this site](#)
[Instantaneous-data availability statement](#)

Discharge, cubic feet per second

Most recent instantaneous value: 140 01-12-2014 12:30 PST



Create presentation-quality / stand-alone graph. Subscribe to WaterAlert P0006

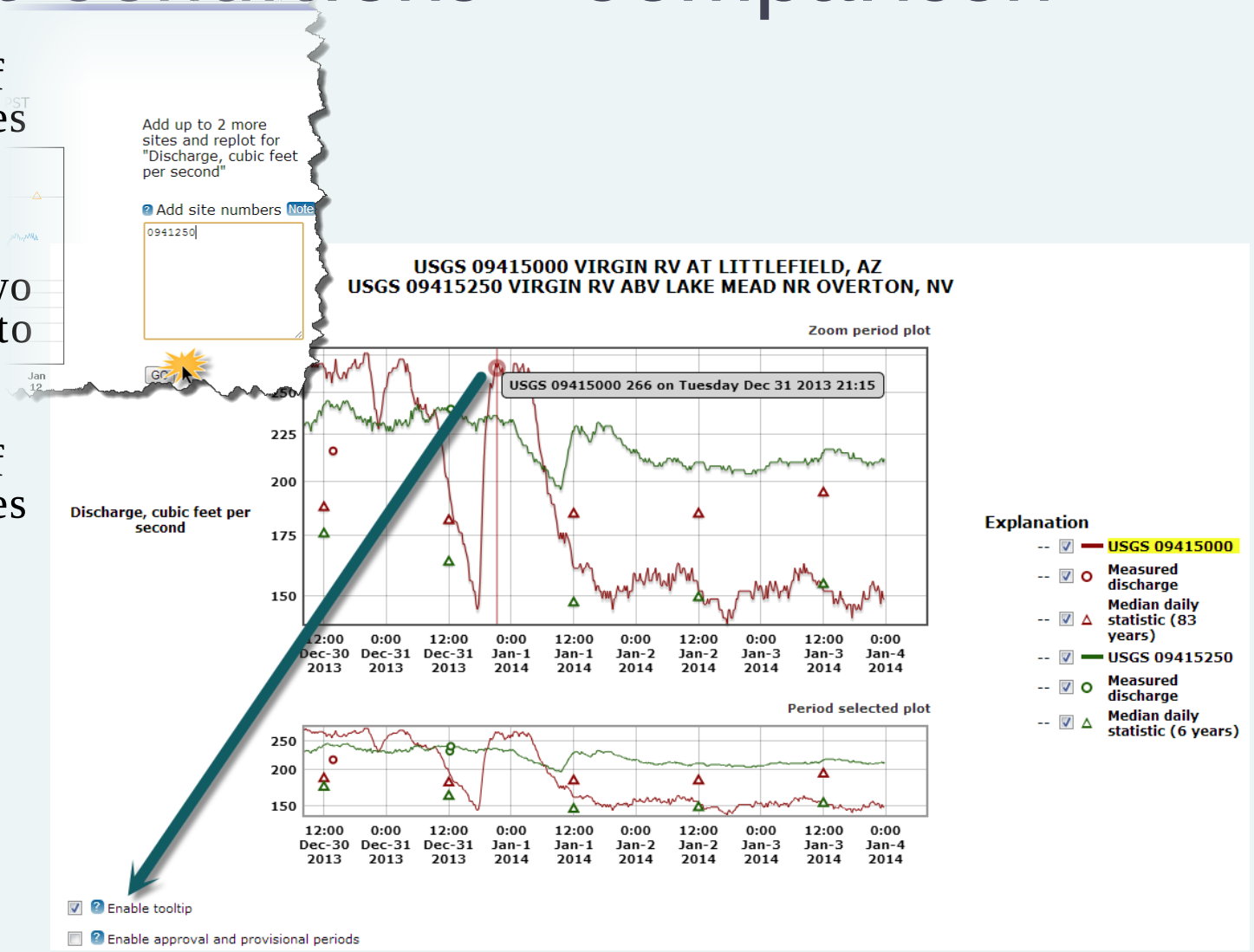
Share this graph |

```
# ---------------------------------- WARNING ----------------------------------------
# The data you have obtained from this automated U.S. Geological Survey database
# have not received Director's approval and as such are provisional and subject to
# revision.  The data are released on the condition that neither the USGS nor the
# United States Government may be held liable for any damages resulting from its use.
# Additional info: http://waterdata.usgs.gov/nwis/?provisional
#
# File-format description:  http://waterdata.usgs.gov/nwis/?tab_delimited_format_info
# Automated-retrieval info: http://waterdata.usgs.gov/nwis/?automated_retrieval_info
#
# Contact:   gs-w_support_nwisweb@usgs.gov
# retrieved: 2014-01-12 16:16:05 EST       (sdww02)
#
# Data for the following 1 site(s) are contained in this file
#    USGS 09415250 VIRGIN RV ABV LAKE MEAD NR OVERTON, NV
# -----------------------------------------------------------------------------------
#
# Data provided for site 09415250
#    DD parameter   Description
#    01   00065     Gage height, feet
#    02   00060     Discharge, cubic feet per second
#
# Data-value qualification codes included in this output:
#     P  Provisional data subject to revision.
#
agency_cd       site_no datetime        tz_cd   01_00065        01_00065_cd     02_00060        02_00060_cd
5s      15s     20d     6s      14n     10s     14n     10s
USGS    09415250        2014-01-05 00:00        PST     12.40   P       210     P
USGS    09415250        2014-01-05 00:15        PST     12.39   P       208     P
USGS    09415250        2014-01-05 00:30        PST     12.39   P       208     P
USGS    09415250        2014-01-05 00:45        PST     12.38   P       206     P
USGS    09415250        2014-01-05 01:00        PST     12.38   P       206     P
USGS    09415250        2014-01-05 01:15        PST     12.38   P       206     P
USGS    09415250        2014-01-05 01:30        PST     12.37   P       204     P
USGS    09415250        2014-01-05 01:45        PST     12.38   P       206     P
USGS    09415250        2014-01-05 02:00        PST     12.37   P       204     P
USGS    09415250        2014-01-05 02:15        PST     12.37   P       204     P
USGS    09415250        2014-01-05 02:30        PST     12.37   P       204     P
USGS    09415250        2014-01-05 02:45        PST     12.37   P       204     P
USGS    09415250        2014-01-05 03:00        PST     12.36   P       202     P
USGS    09415250        2014-01-05 03:15        PST     12.37   P       204     P
USGS    09415250        2014-01-05 03:30        PST     12.37   P       204     P
USGS    09415250        2014-01-05 03:45        PST     12.37   P       204     P
USGS    09415250        2014-01-05 04:00        PST     12.37   P       204     P
USGS    09415250        2014-01-05 04:15        PST     12.37   P       204     P
USGS    09415250        2014-01-05 04:30        PST     12.37   P       204     P
USGS    09415250        2014-01-05 04:45        PST     12.37   P       204     P
USGS    09415250        2014-01-05 05:00        PST     12.37   P       204     P
```

USGS science for a changing world

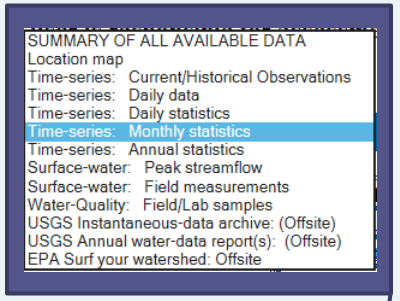
Current Conditions - Comparison

- Comparison of flow at two sites can help evaluate what may happen between the two sites (seepage to groundwater, gains, etc.)
- Comparison of flow at two sites can help evaluate the quality of the provisional record.
- Tooltips allow for data point information



USGS science for a changing world

Daily Data and Statistics



Surface-water daily data example.

Select sites which meet all of the following criteria:

Define one or more values for each of the following site-selection criteria: --- or select new criteria

Site Name -- enter full or partial site name (double quotes denotes an exact match ie. "willow creek")

412910117321001 ◉ match from the start ○ match any part

Available parameters -- select sites that have data for the following parameters:

Select one or more parameters --or-- leave blank to select all:

Water Level/Flow Parameters

- ☑ Depth to water level, ft below land surface (44 sites)
- ☐ Elevation above NGVD 1929, m (1 sites)
- ☐ Elevation of reservoir water surface above datum, ft (14 sites)

Choose Output Format

Display Summary of Selected Sites

Choose one of the following options for displaying descriptions of the sites me above:

○ Show sites on a map NEW

Retrieve USGS Surface-Water Daily Data for Selected Sites

Choose one of the following options for displaying data for the sites meeting t

Retrieve data for:

◉ the previous 365 days (1 - 365) **OR**

○ for the date range: First date: 2013-01-26 Last date: 2014-01-25 (1838-01-01 throu

Output Options:

○ Graphs of data -- ☐ use arithmetic Y-axis for streamflow

◉ Graphs of data with long-term statistics -- ☐ use arithmetic Y-axis for streamf

USGS 412910117321001 069 N42 E39 25CAC 1 USBLM

PROVISIONAL DATA SUBJECT TO REVISION

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

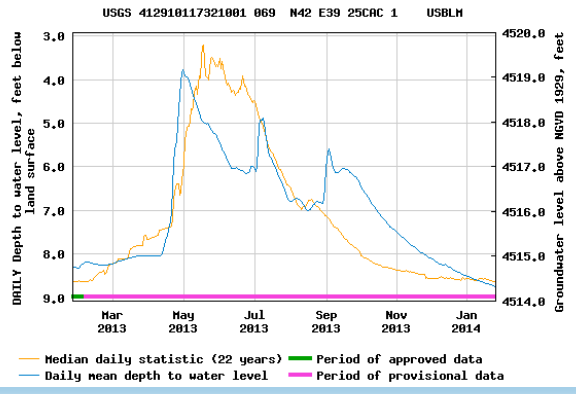
This station managed by the Elko Field Unit.

Available Parameters	Period of Record	Output format	Days (365)
☐ All 1 Available Parameters for this site		○ Graph	-- or --
☑ 72019 WaterLevel, BelowLSD(Mean)	1987-06-25 2014-01-25	◉ Graph w/ stats	Begin date 2013-01-25
		○ Graph w/ meas	End date 2014-01-25
		○ Graph w/ (up to 3) parms NEW	GO
		○ Table	
		○ Tab-separated	
		○ Tab-separated w/ meas	

Summary of all available data for this site

Instantaneous-data availability statement

Depth to water level, feet below land surface



Add up to 2 more sites and replot for "Depth to water level, feet below land surface"

Add site numbers Note

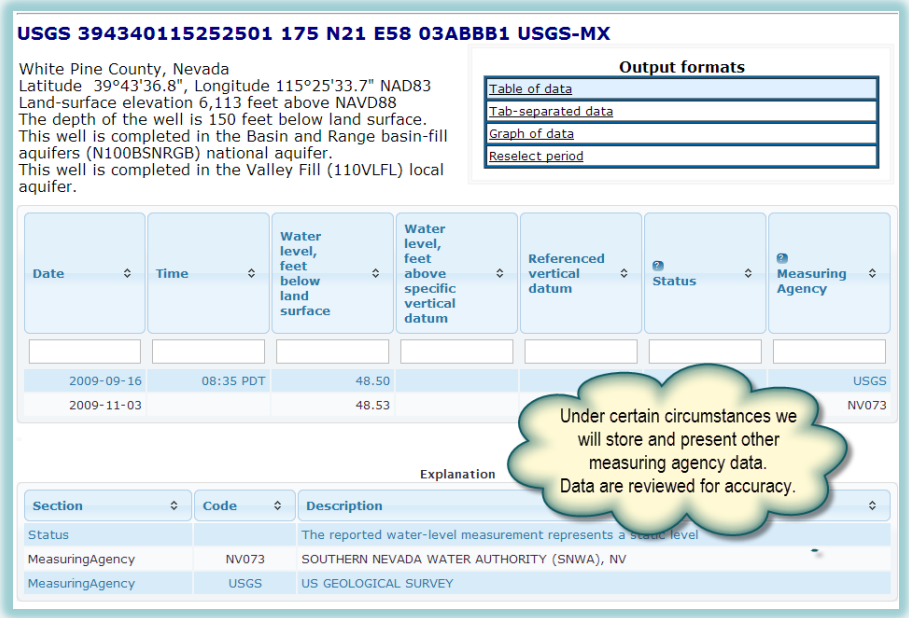
Enter up to 2 site numbers separated by a comma. A site number consists of 8 to 15 digits

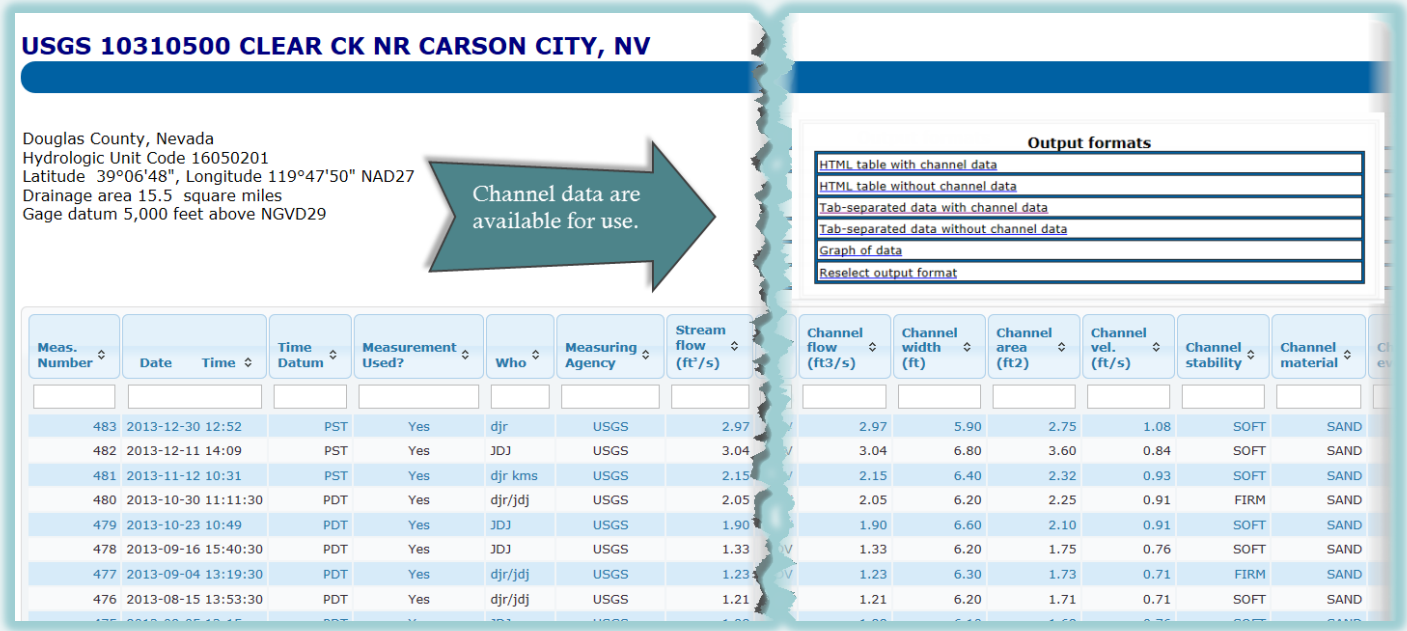
GO

USGS science for a changing world

Field Measurements

- Similar site selection criteria
- Similar output

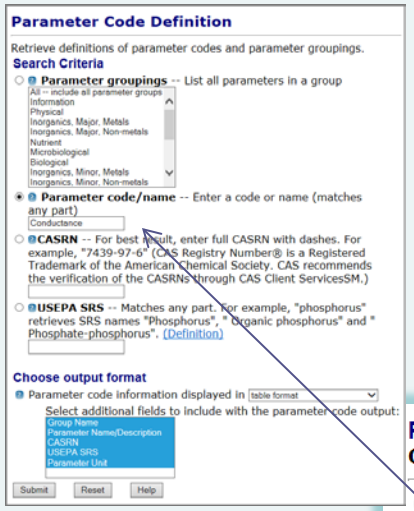


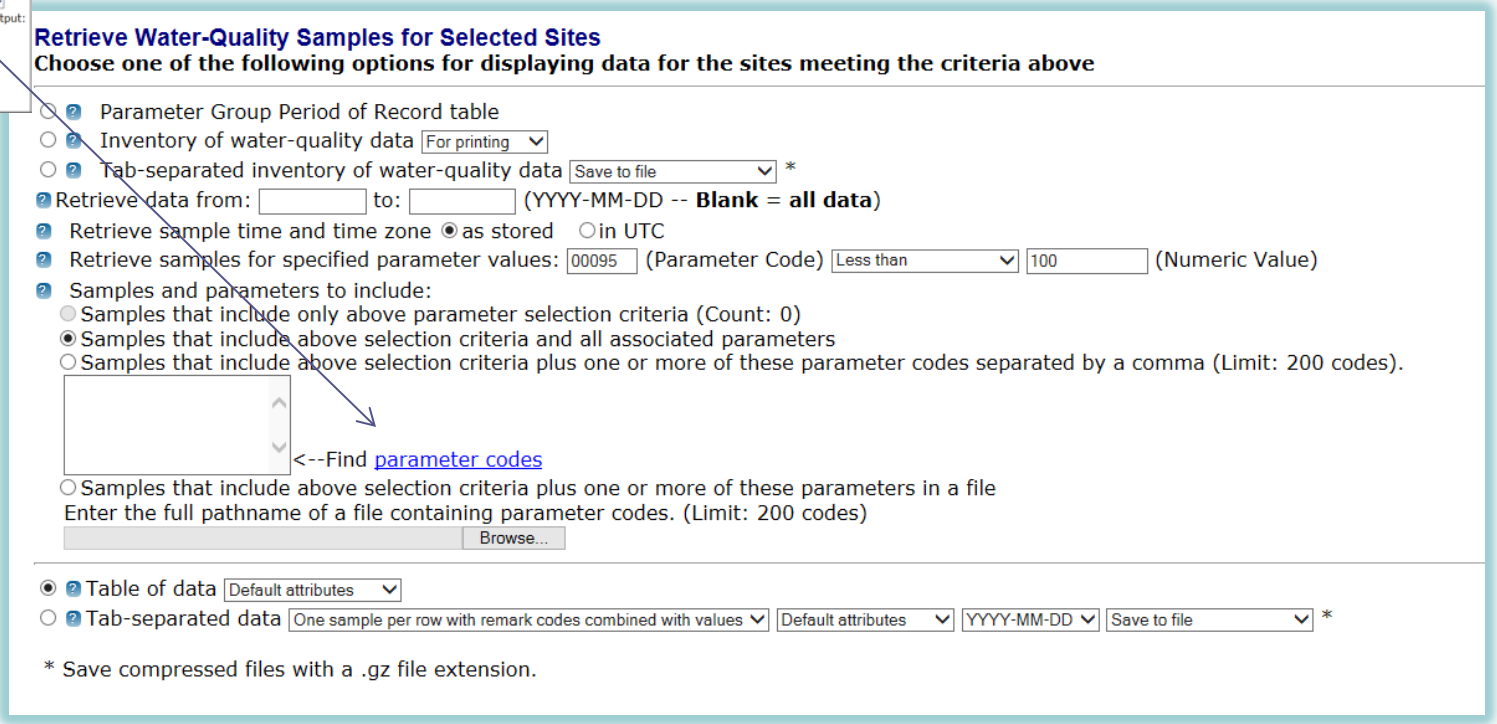


USGS science for a changing world

Field/Lab Samples

- Similar Site Selection criteria
- Similar output
- Way too many ways to narrow down the data.
  - Use the tool tips [?]
  - Parameter groupings
  - Single parameters





USGS science for a changing world

Field/Lab Sample Results

USGS 10310500 CLEAR CK NR CARSON CITY, NV

Available data for this site: Water-Quality: Field/Lab samples — GO

Douglas County, Nevada
Hydrologic Unit Code 16050201
Latitude 39°06'48", Longitude 119°47'50" NAD27
Drainage area 15.5 square miles
Gage datum 5,000 feet above NGVD29

Output formats

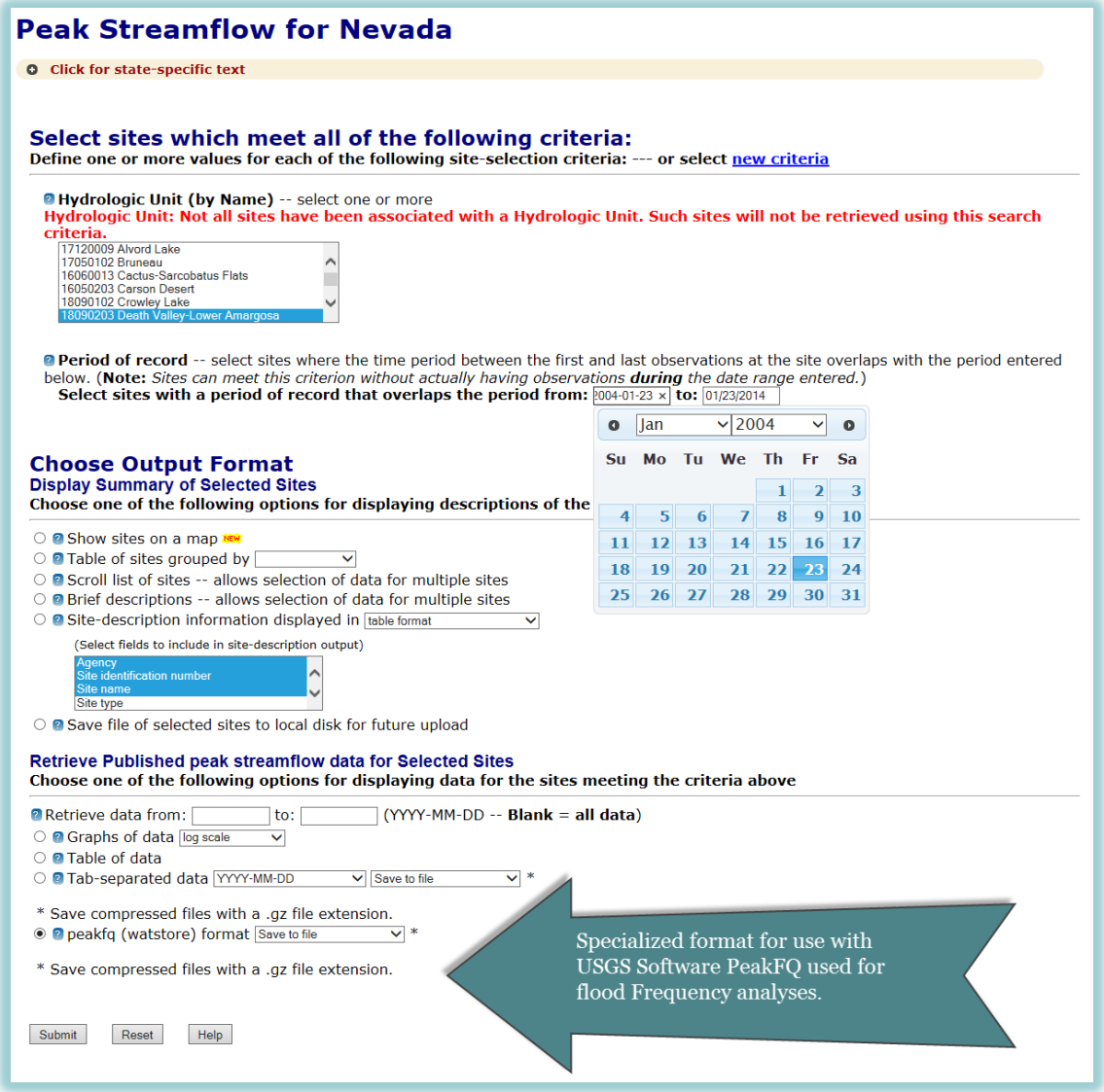
- Parameter Group Period of Record table
- Inventory of available water-quality data for printing
- Inventory of water-quality data with retrieval
- Tab-separated data, one result per row
- Tab-separated data one sample per row with remark codes combined with values
- Tab-separated data one sample per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

Sample Datetime	Time datum	Time datum reliability code	Sample Medium Code	Agency Collecting Sample, Code	Stream width, feet (00004)	Temperature, water, deg C (00010)	Temperature, air, deg C (00020)	Barometric pressure, mm Hg (00025)	Agency analyzing sample, code (00028)	Instantaneous discharge, ft3/s (00061)	Number of sampling points, count (00063)	Gage height, feet (00065)	Turbidity, NTU (0007
2010-10-05 11:07	PDT	K	WS	USGS-WRD		9.3	7.0			7.1		1.58	
2011-03-06 16:45	PST	K	WS	USGS-WRD	6.00	5.5	8.0			5.8	10	1.37	

Specific conductance, wat unf uS/cm @ 25 degC (00095)	Hydrogen ion, water, unfltrd calcd, mg/L (00191)	pH, water, unfltrd field, std units (00400)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, ton/d (80155)
74	0.00003	7.5	104	2.0
88	0.00001	7.9	38	0.60

USGS science for a changing world

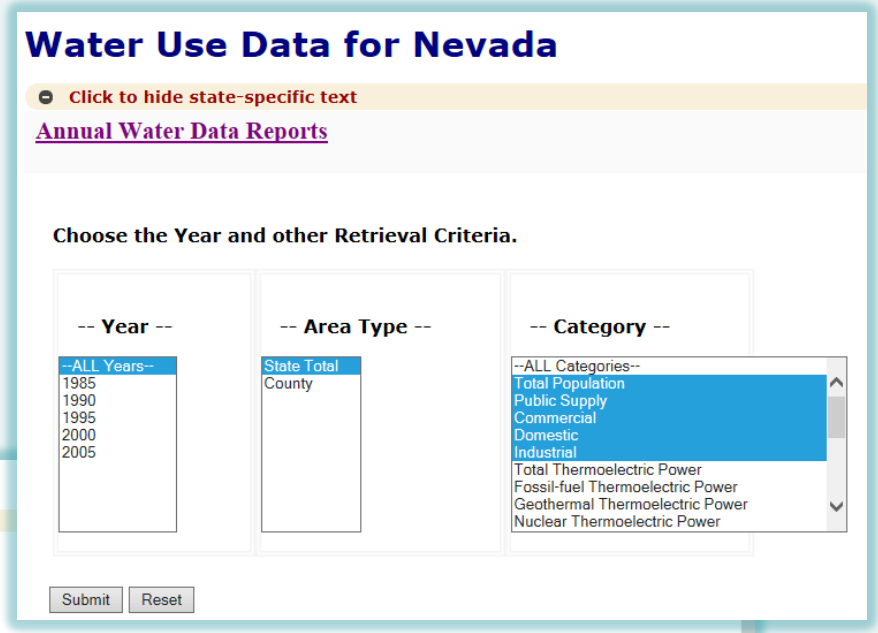
Peak Streamflow

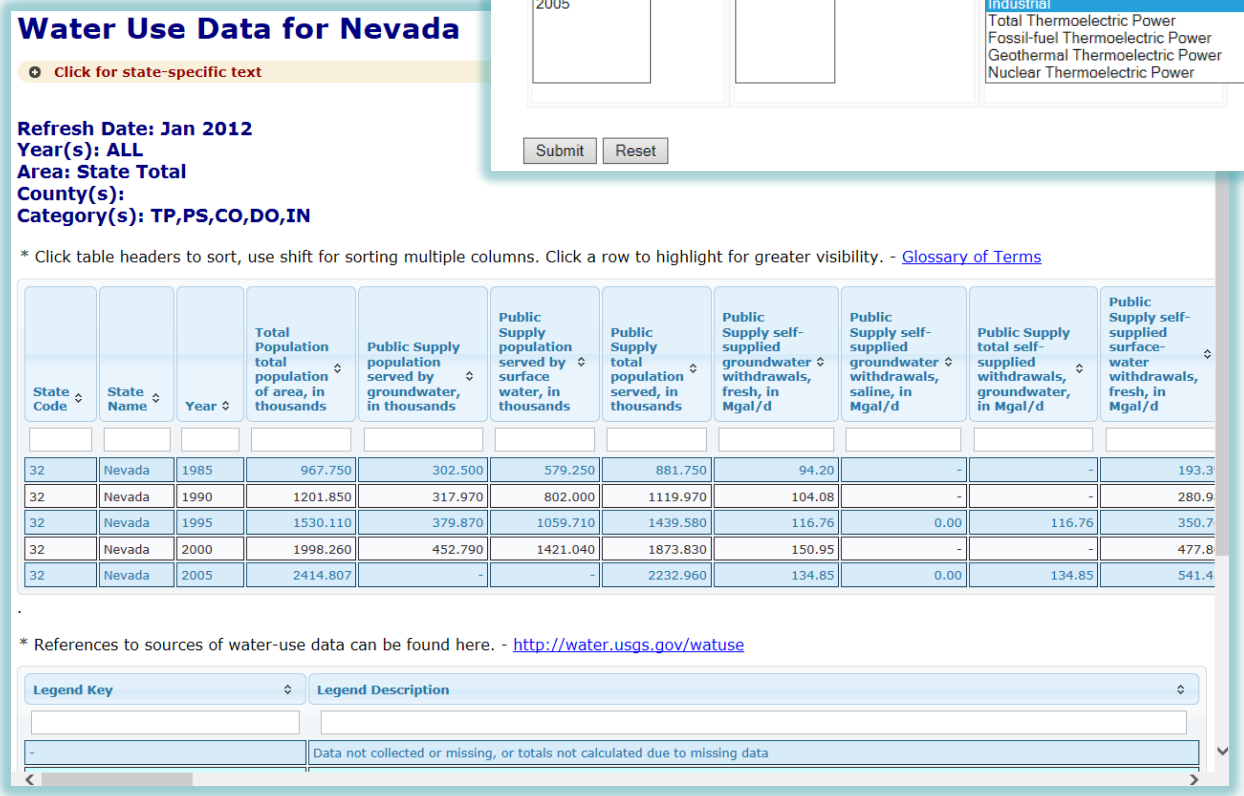


USGS Software PeakFQ used for flood frequency analyses -http://water.usgs.gov/software/PeakFQ/

Water Use

- Data are current best estimates
- May be revised from previous publications



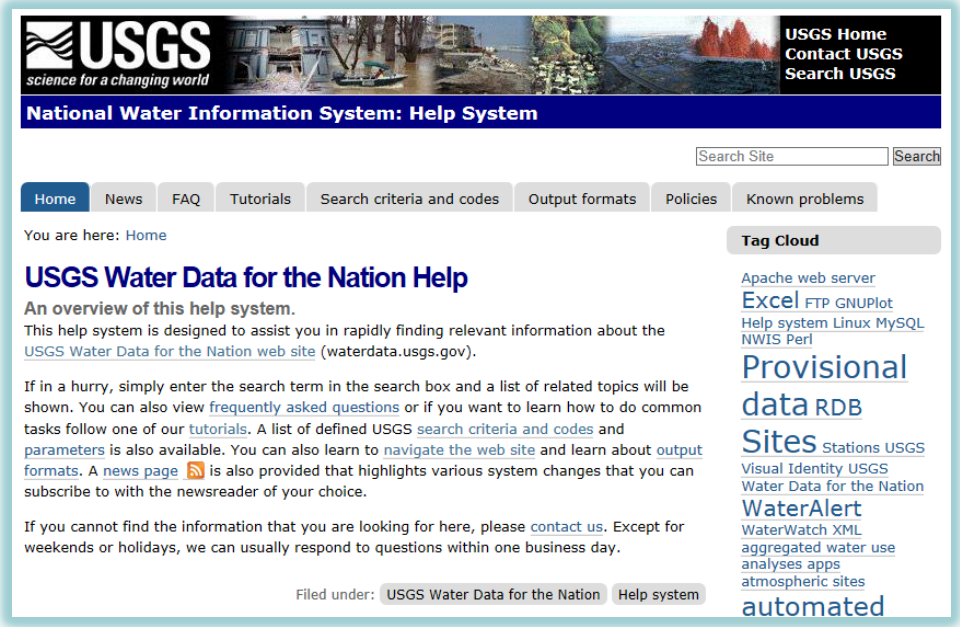


USGS science for a changing world

Tutorials and Help

http://help.waterdata.usgs.gov/tutorials

http://help.waterdata.usgs.gov/

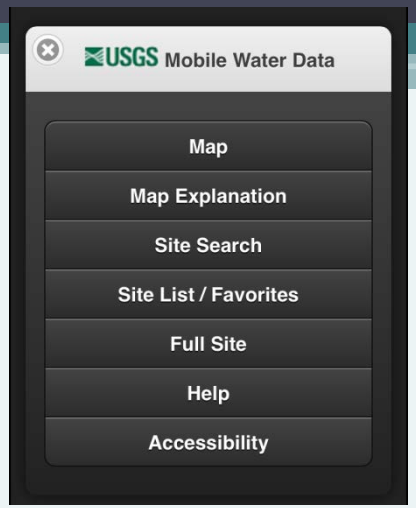


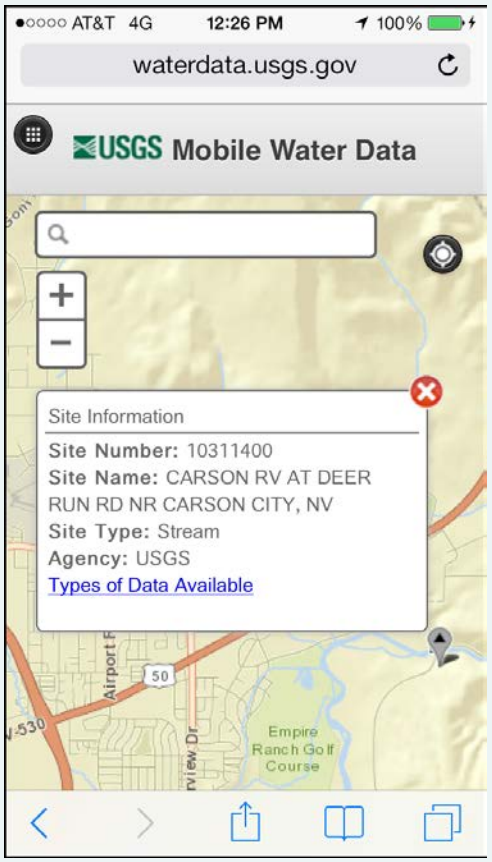
USGS
science for a changing world

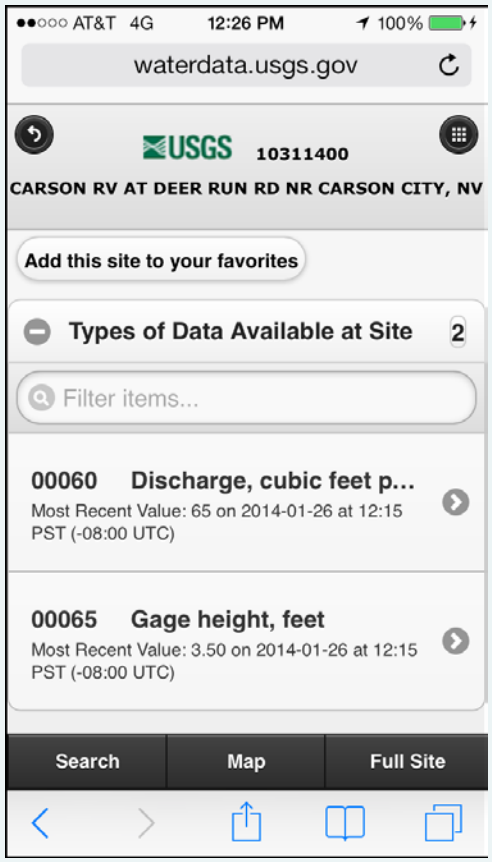
NWISWeb Mobile

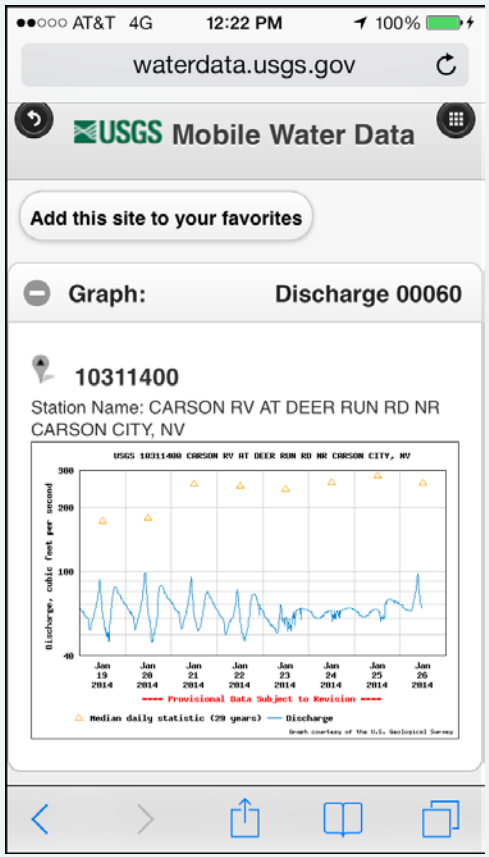
http://m.waterdata.usgs.gov

- Can use phone location
- Search by Site Number
- Add to Favorites
- Toggle to main site







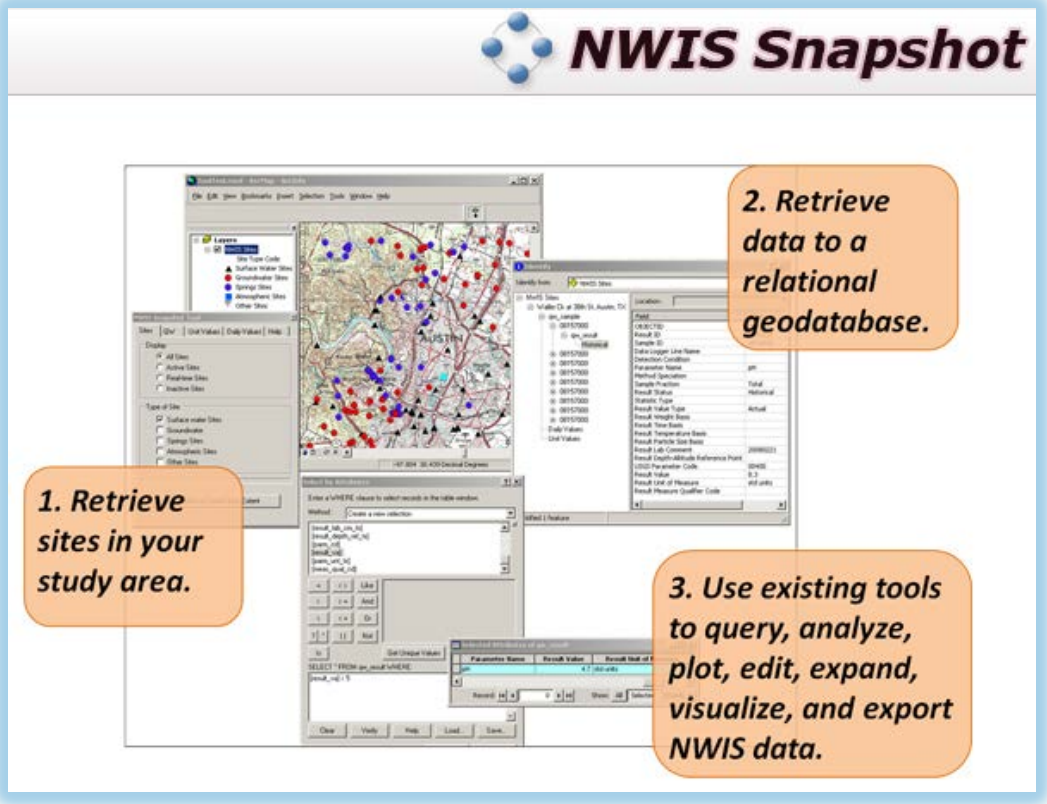


USGS science for a changing world

USGS NWIS Snapshot

http://txpub.usgs.gov/snapshot/

- Uses NWIS Web Services
- Creates geodatabase
- Has built in relationships between tables
- Can build new relationships with other data
- Standard ArcGIS functions can be used to analyze and export data to analyze in other software



USGS
science for a changing world

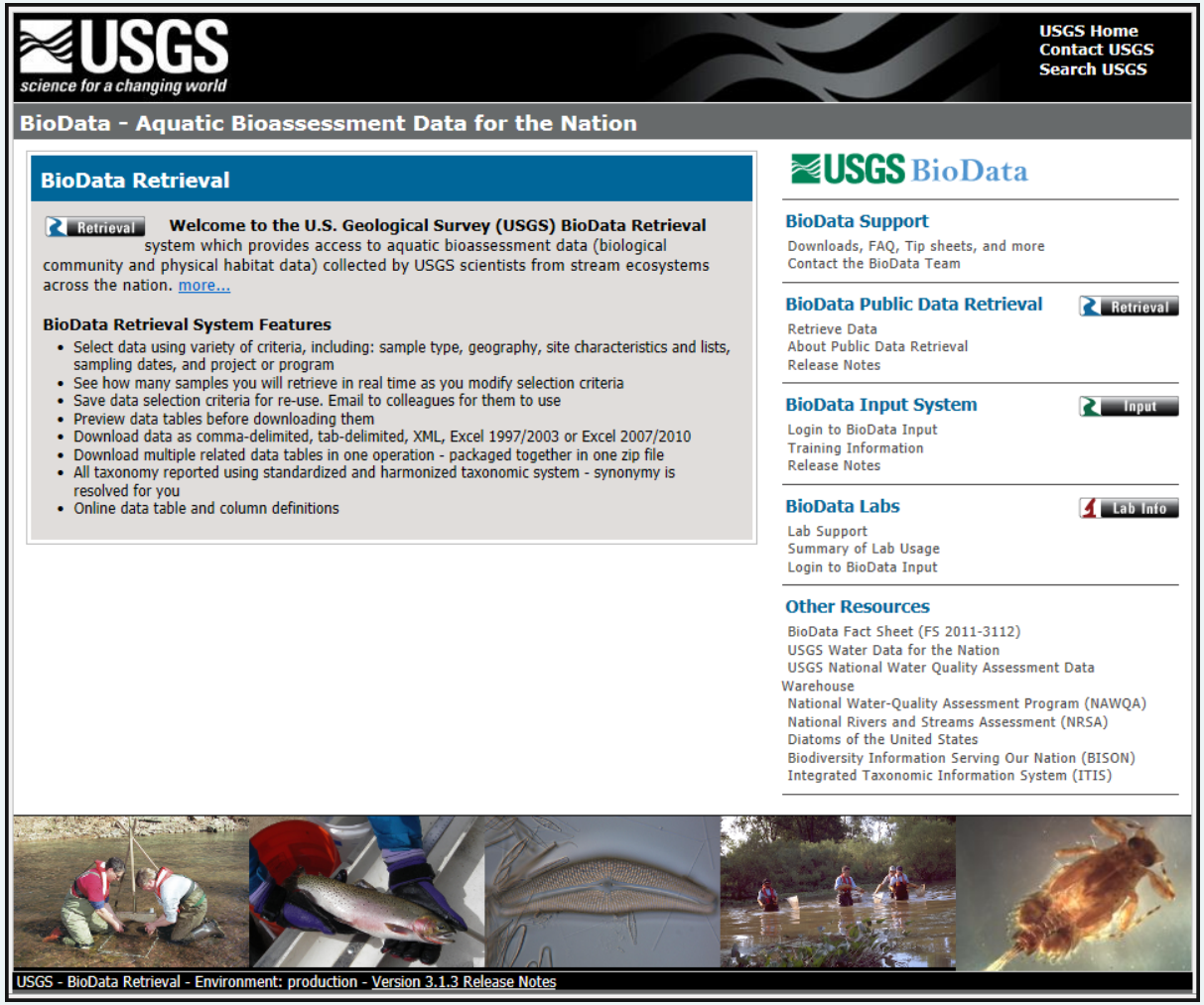
BioData

Aquatic Bioassessment Data for the Nation

https://aquatic.biodata.usgs.gov/landing.action

Access to aquatic bioassessment data (biological community and physical habitat data) collected by USGS scientists.

1991 samples by National Water-Quality Assessment (NAWQA).



USGS
science for a changing world

So many websites so little time….

Water Data Discovery
http://water.usgs.gov/data

Nevada Water Science Center
http://nevada.usgs.gov/water/

Water-Data Report
http://wdr.water.usgs.gov

National Water Information System (NWIS): Web Interface – Provides access to USGS water data
http://waterdata.usgs.gov

Nevada Current Conditions
http://waterdata.usgs.gov/nv/nwis/rt

Instantaneous-Data Archive (IDA) – Obtain instantaneous data
http://ida.water.usgs.gov/ida/index.cfm

NWIS automated retrievals – Obtain USGS water data via automated methods
http://waterdata.usgs.gov/nwis/?automated_retrieval_info

USGS Water Services
http://waterservices.usgs.gov

USGS NWIS Snapshot – Query, visualize, and analyze NWIS data from geodatabase
http://txpub.usgs.gov/snapshot

Water Watch - Quick evaluation of current and past conditions; surface water
http://waterwatch.usgs.gov

Groundwater Watch - Quick evaluation of current and past conditions
http://groundwaterwatch.usgs.gov

Water Quality Watch - Quick evaluation of current and past conditions
http://waterwatch.usgs.gov/wqwatch

Water Now – Current data direct to mobile or email
http://water.usgs.gov/waternow

Water Alert – Sends email or text messages when parameters exceed thresholds
http://maps.waterdata.usgs.gov/mapper/wateralert

BioData: A National Aquatic Bioassessment Database
https://aquatic.biodata.usgs.gov/landing.action

USGS
science for a changing world

...and a bunch Fact Sheets as well....

U.S. Geological Survey Water Resources Internet Tools
http://pubs.usgs.gov/fs/2013/3072/

NWISWeb: New Site for the Nation's Water Data
http://permanent.access.gpo.gov/waterusgsgov/water.usgs.gov/pubs/fs/fs-128-02/index-1.htm

Streamflow, Groundwater, and Water-Quality Monitoring by USGS Nevada Water Science Center
http://pubs.usgs.gov/fs/2013/3004/

WaterWatch-Maps, Graphs, and Tables of Current, Recent, and Past Streamflow Conditions
http://pubs.usgs.gov/fs/2008/3031/

From the River to You: USGS Real-Time Streamflow Information
http://pubs.usgs.gov/fs/2007/3043/

Recent Improvements to the U.S. Geological Survey Streamgaging Program ...from the National Streamflow Information Program
http://pubs.usgs.gov/fs/2007/3080/

U.S. Geological Survey Community for Data Integration: NWIS Web Services Snapshot Tool for ArcGIS
http://pubs.usgs.gov/fs/2011/3141/

StreamStats: A Water Resources Web Application
http://pubs.usgs.gov/fs/2008/3067/

The National Streamflow Statistics Program: Estimating High and Low Streamflow Statistics for Ungaged Sites
http://pubs.er.usgs.gov/publication/fs20073010

Estimating magnitude and frequency of floods using the PeakFQ program
http://pubs.er.usgs.gov/publication/fs20063143

Real-time ground-water data for the nation
http://pubs.usgs.gov/fs/fs-090-01/

U.S. Geological Survey Real-Time River Data Applications
http://pubs.usgs.gov/fs/1998/fs029-98/

BioData: A National Aquatic Bioassessment Database
http://pubs.usgs.gov/fs/2011/3112/

USGS
science for a changing world

If you can only remember one link, make it

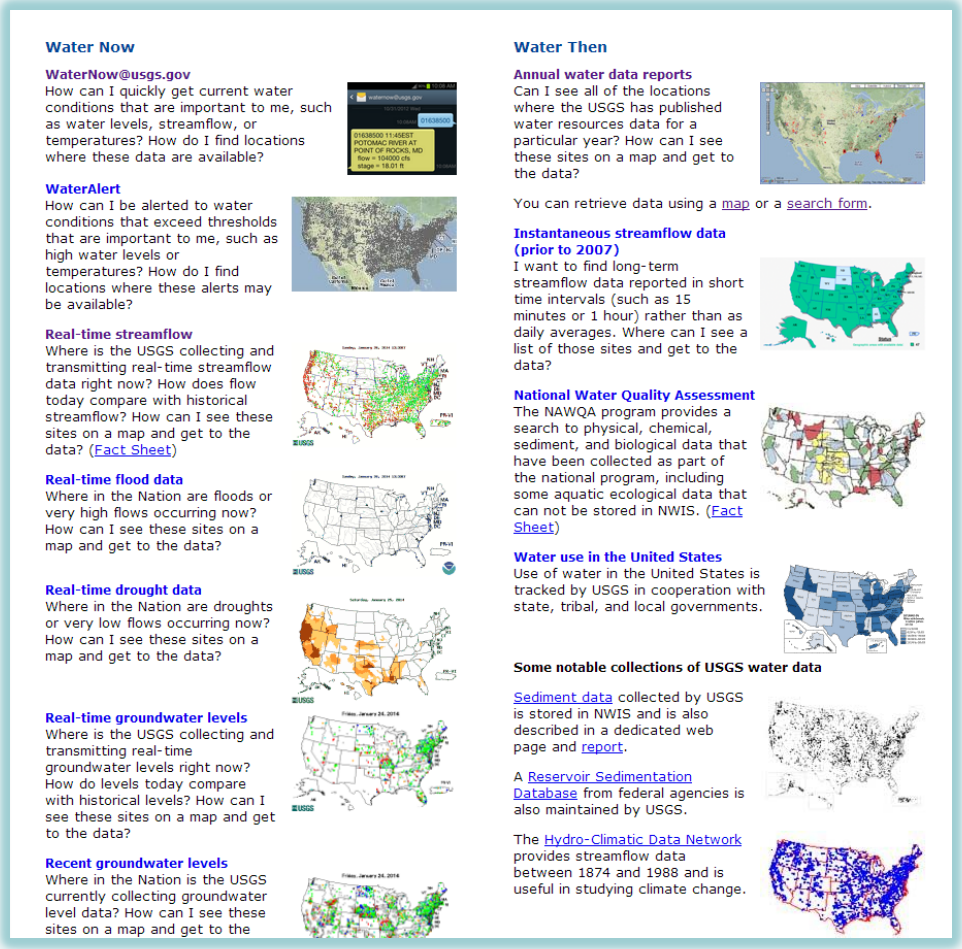
Water Data Discovery
http://water.usgs.gov/data/

What are you looking for?

What is happening today...
Water Now

What happened in the past...
Water Then

What might happen in the future...
Water Tomorrow



Water Now

WaterNow@usgs.gov
How can I quickly get current water conditions that are important to me, such as water levels, streamflow, or temperatures? How do I find locations where these data are available?

WaterAlert
How can I be alerted to water conditions that exceed thresholds that are important to me, such as high water levels or temperatures? How do I find locations where these alerts may be available?

Real-time streamflow
Where is the USGS collecting and transmitting real-time streamflow data right now? How does flow today compare with historical streamflow? How can I see these sites on a map and get to the data? (Fact Sheet)

Real-time flood data
Where in the Nation are floods or very high flows occurring now? How can I see these sites on a map and get to the data?

Real-time drought data
Where in the Nation are droughts or very low flows occurring now? How can I see these sites on a map and get to the data?

Real-time groundwater levels
Where is the USGS collecting and transmitting real-time groundwater levels right now? How do levels today compare with historical levels? How can I see these sites on a map and get to the data?

Recent groundwater levels
Where in the Nation is the USGS currently collecting groundwater level data? How can I see these sites on a map and get to the

Water Then

Annual water data reports
Can I see all of the locations where the USGS has published water resources data for a particular year? How can I see these sites on a map and get to the data?

You can retrieve data using a map or a search form.

Instantaneous streamflow data (prior to 2007)
I want to find long-term streamflow data reported in short time intervals (such as 15 minutes or 1 hour) rather than as daily averages. Where can I see a list of those sites and get to the data?

National Water Quality Assessment
The NAWQA program provides a search to physical, chemical, sediment, and biological data that have been collected as part of the national program, including some aquatic ecological data that can not be stored in NWIS. (Fact Sheet)

Water use in the United States
Use of water in the United States is tracked by USGS in cooperation with state, tribal, and local governments.

Some notable collections of USGS water data

Sediment data collected by USGS is stored in NWIS and is also described in a dedicated web page and report.

A Reservoir Sedimentation Database from federal agencies is also maintained by USGS.

The Hydro-Climatic Data Network provides streamflow data between 1874 and 1988 and is useful in studying climate change.

USGS
science for a changing world

Questions??

Steve Berris
snberris@usgs.gov
775-887-7693

Sonya Vasquez
slvasque@usgs.gov
775-887-7718

We have two main offices in Nevada:

Carson City Office
2730 N. Deer Run Rd.
Carson City, NV 89701
phone: 775-887-7600

Henderson Office
160 N. Stephanie St.,
Henderson, NV 89074
phone: 702-564-4600

We also have two smaller field offices:

Elko Field Office
phone: 775-778-6616

Mercury Field Office
phone: 702-564-4600

USGS
science for a changing world

Support Slides not discussed during the session

Detailed information about WaterWatch

Instantaneous Data Archive (IDA) – unit values prior to 10/1/07

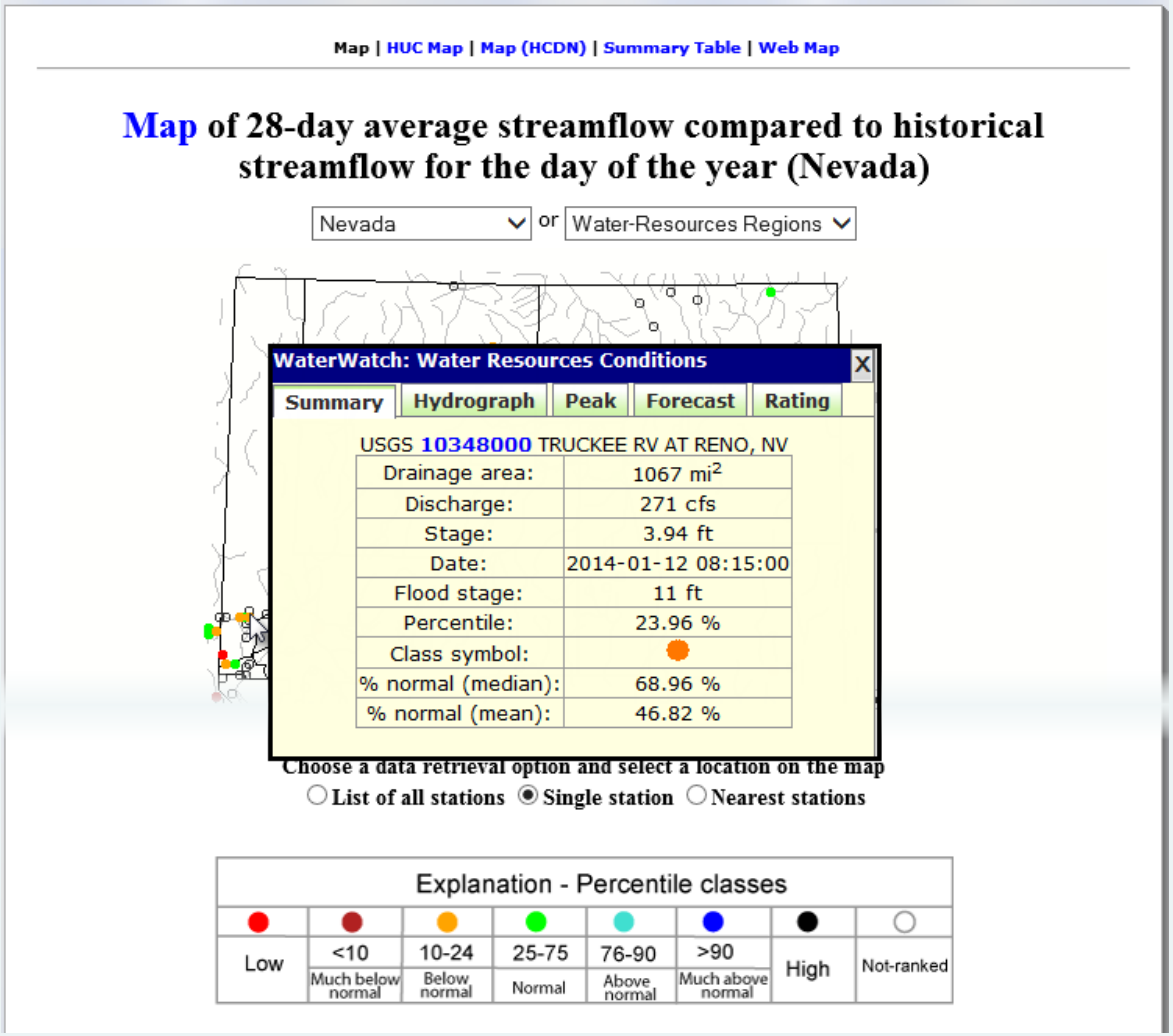
USGS
science for a changing world

WaterWatch – What is it?

- Current, recent, and historical maps
  - Real-time, flood, 1-, 7-, 14-, 28-day, and monthly average flow
  - Site-by-site and hydrologic unit region maps
- Graphs and Tables
  - Summary of flow conditions in a region
  - List of streamflow condition information
- Tools to customize WaterWatch products
  - Interactive maps, Google Earth kml output
- Links to just about every data delivery site you need

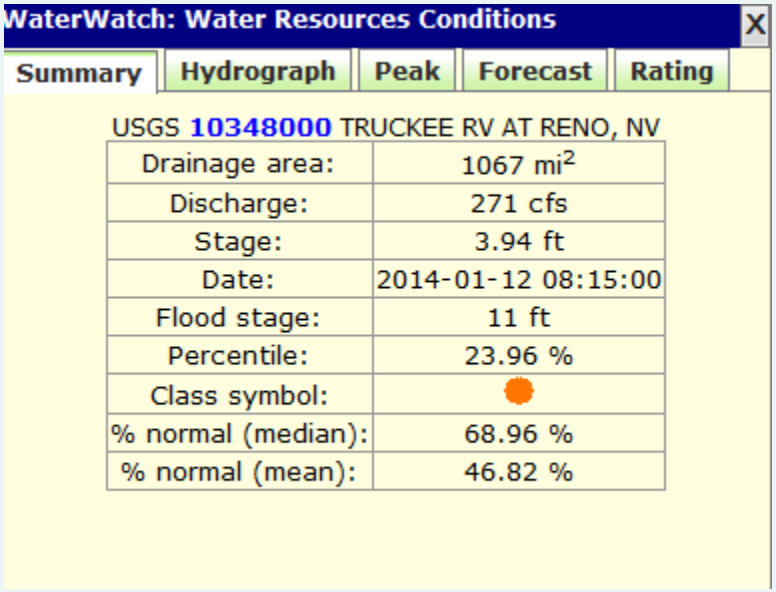
USGS
science for a changing world

WaterWatch



USGS
science for a changing world

WaterWatch



USGS science for a changing world

USGS Home
Contact USGS
Search USGS

National Water Information System: Web Interface

USGS Water Resources (District Access)

Data Category: Site Information | Geographic Area: Nevada | GO

Click for News Bulletins

Click for state-specific text

USGS 10348000 TRUCKEE RV AT RENO, NV

Available data for this site: SUMMARY OF ALL AVAILABLE DATA | GO

Stream Site

DESCRIPTION:

Latitude 39°31'49", Longitude 119°47'40" NAD27
Washoe County, Nevada, Hydrologic Unit 16050102
Drainage area: 1,067 square miles
Datum of gage: 4,444.53 feet above NGVD29.

AVAILABLE DATA:

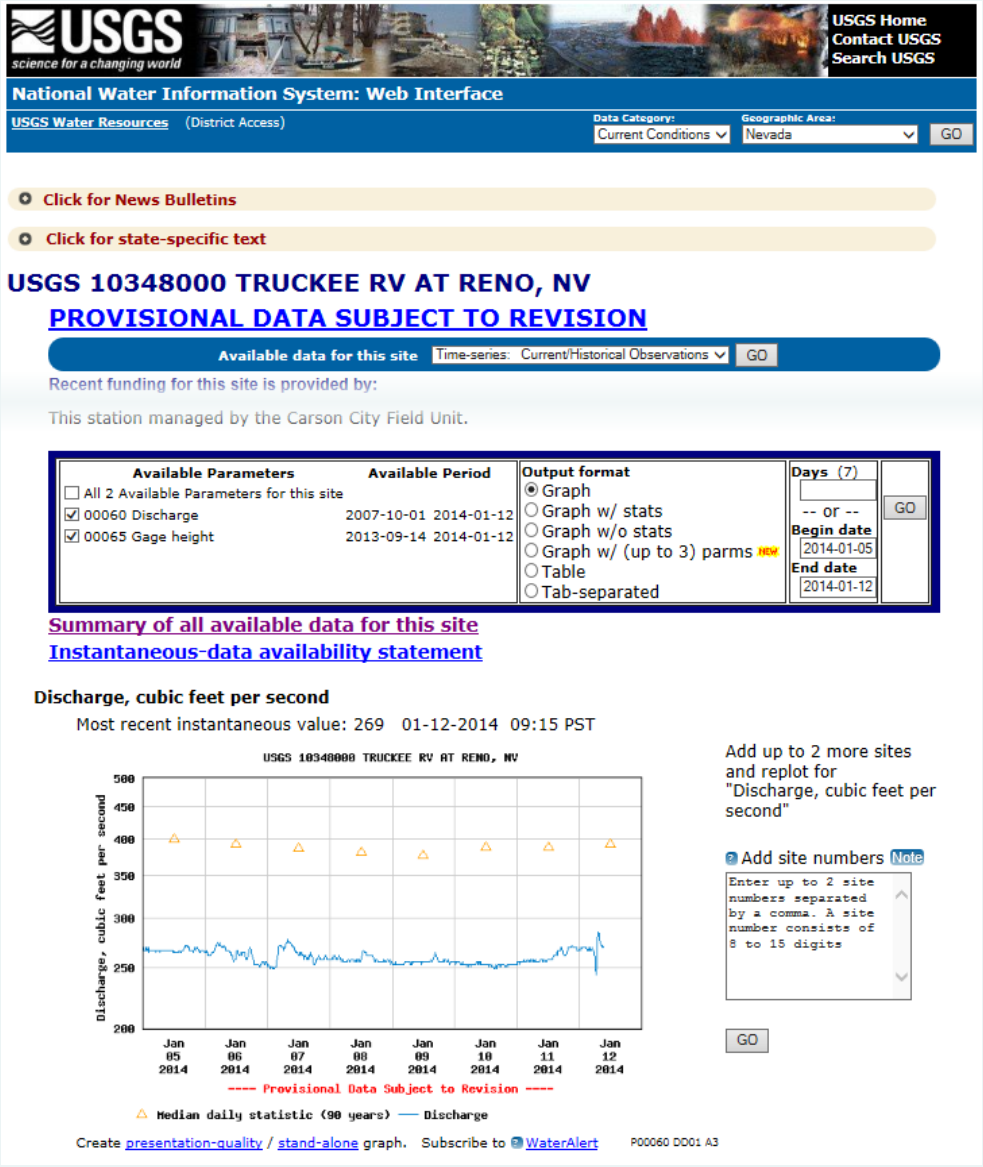
Data Type	Begin Date	End Date	Count
Current / Historical Observations (availability statement)	2007-10-01	2014-01-12	
Daily Data			
Temperature, water, degrees Celsius	1989-08-26	1998-09-30	8235
Discharge, cubic feet per second	1906-10-01	2014-01-11	33023
Daily Statistics			
Temperature, water, degrees Celsius	1989-08-26	1998-09-30	2745
Discharge, cubic feet per second	1906-10-01	2013-10-30	32950
Monthly Statistics			
Temperature, water, degrees Celsius	1989-08	1998-09	
Discharge, cubic feet per second	1906-10	2013-10	
Annual Statistics			
Temperature, water, degrees Celsius	1989	1998	
Discharge, cubic feet per second	1907	2014	
Peak streamflow	1907-03-18	2012-04-26	87
Field measurements	1908-10-09	2013-12-20	861
Field/Lab water-quality samples	1977-04-11	2001-03-14	154
Additional Data Sources	**Begin Date**	**End Date**	**Count**
Instantaneous-Data Archive **offsite**	1989-01-11	2007-09-30	587862
Annual Water-Data Report (pdf) **offsite**	2005	2012	8

OPERATION:

Record for this site is maintained by the USGS Nevada Water Science Center
Email questions about this site to Nevada Water Science Center Water-Data Inquiries

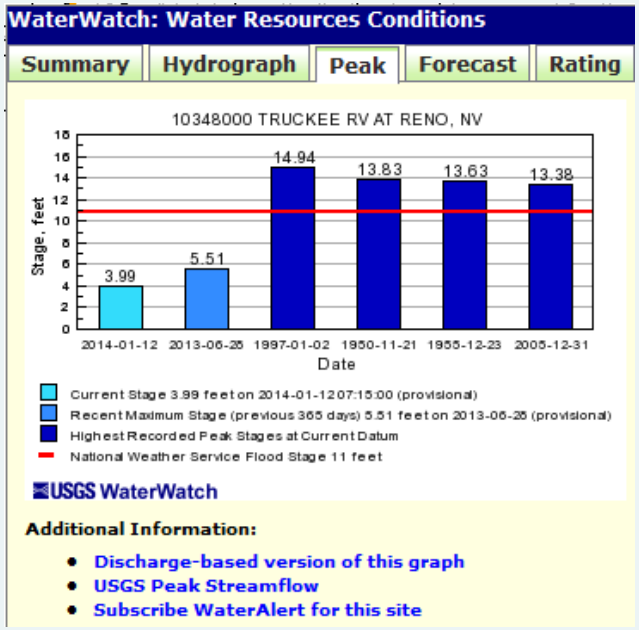
USGS science for a changing world

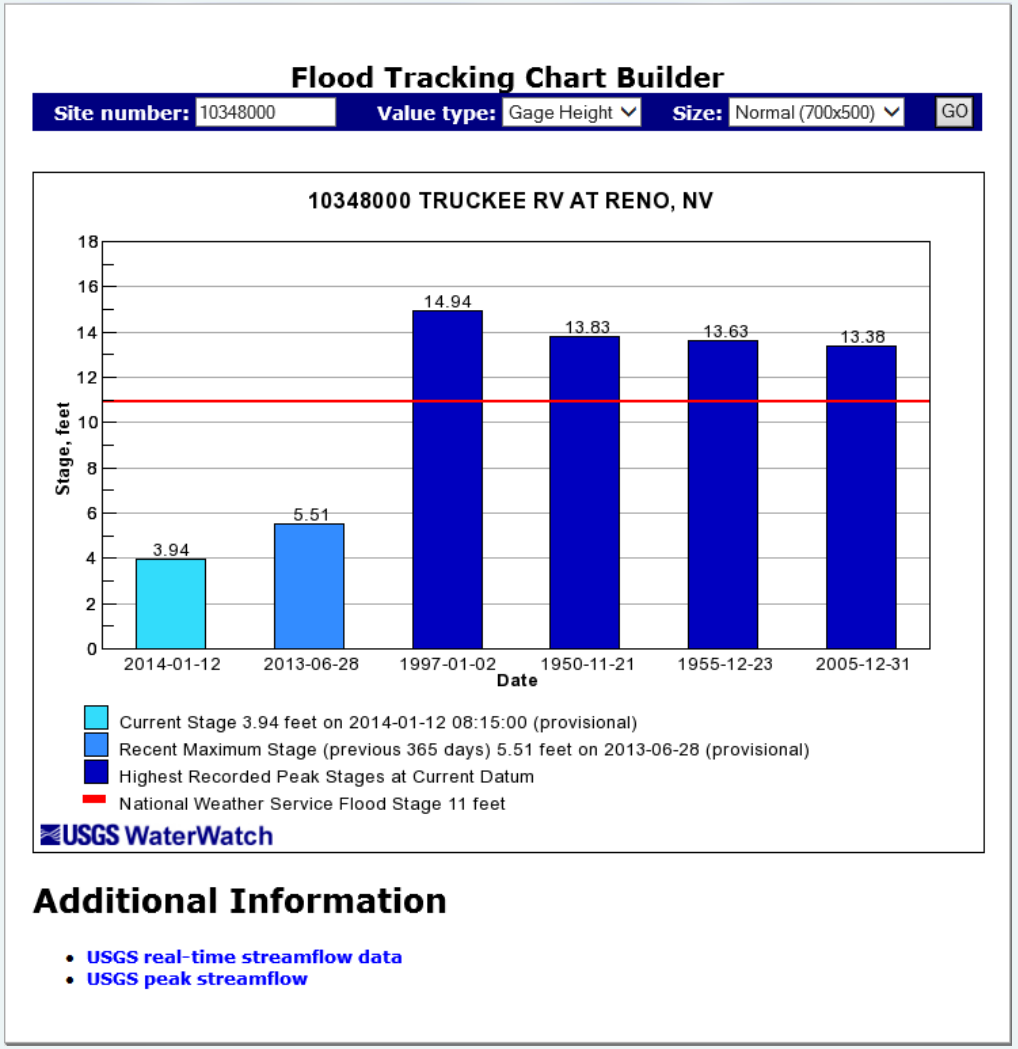
WaterWatch



USGS
science for a changing world

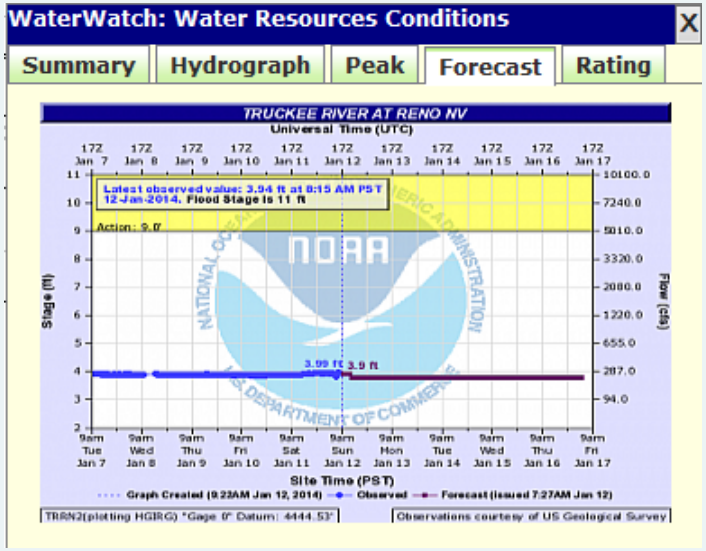
WaterWatch

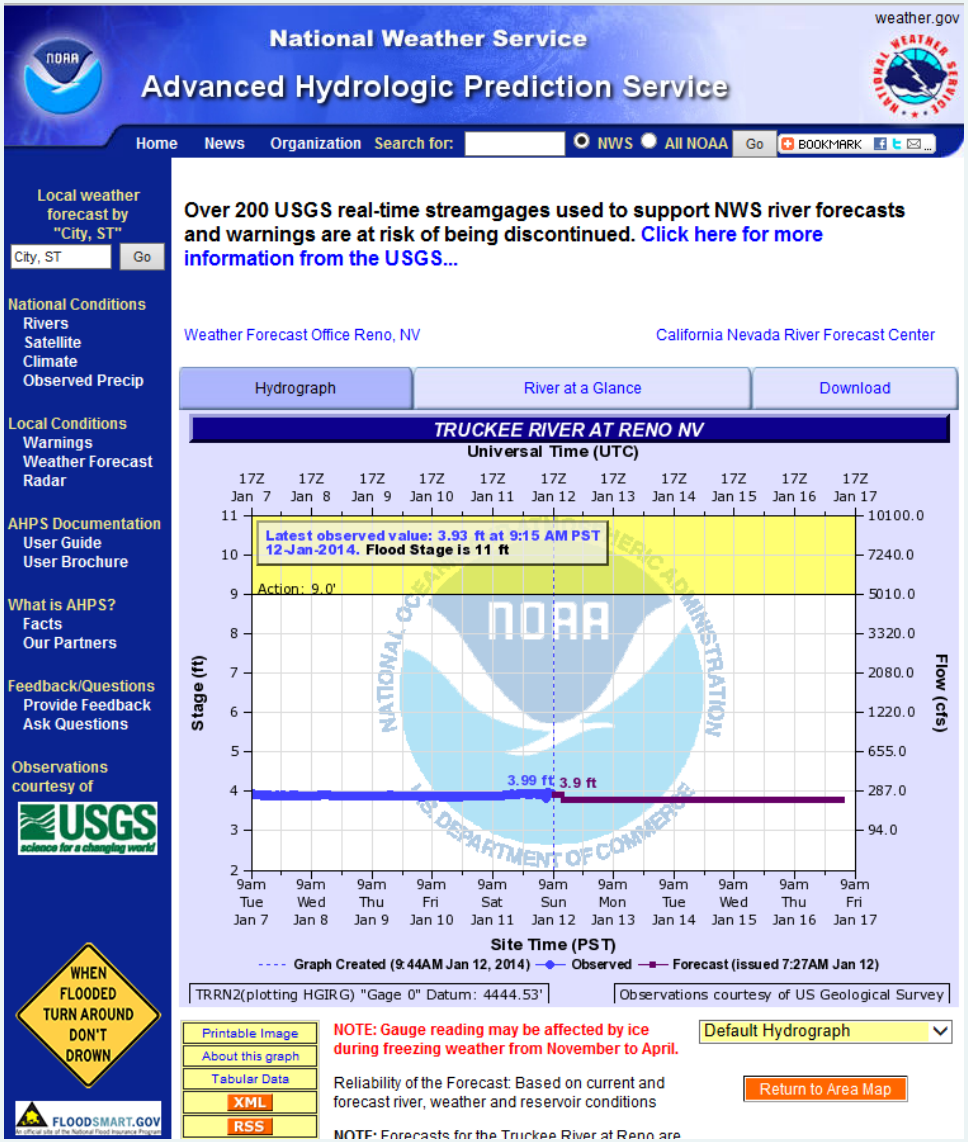




USGS
science for a changing world

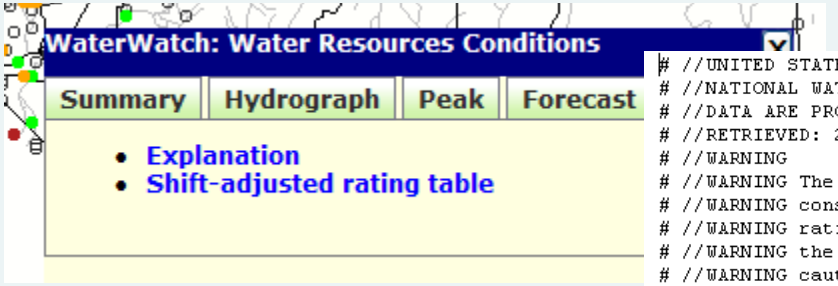
WaterWatch





USGS
science for a changing world

WaterWatch



Stage-discharge relations

Stage-discharge relations (**ratings**) are usually developed from
current-meter discharge measurements (sometimes called calibratic
stages and discharges. Measurements are made on various schedul
purposes. Each measurement is carefully made, and undergoes qua
Frequently, measurements indicate a change in the rating, often due
streambed or riparian vegetation. Such changes are called shifts; th
long-term change in the rating for the gage. In normal useage, the n
corrections) are applied mathematically to a defined rating. Ratings
invalidated and unavailable due to backwater conditions caused by
variable physical obstructions.

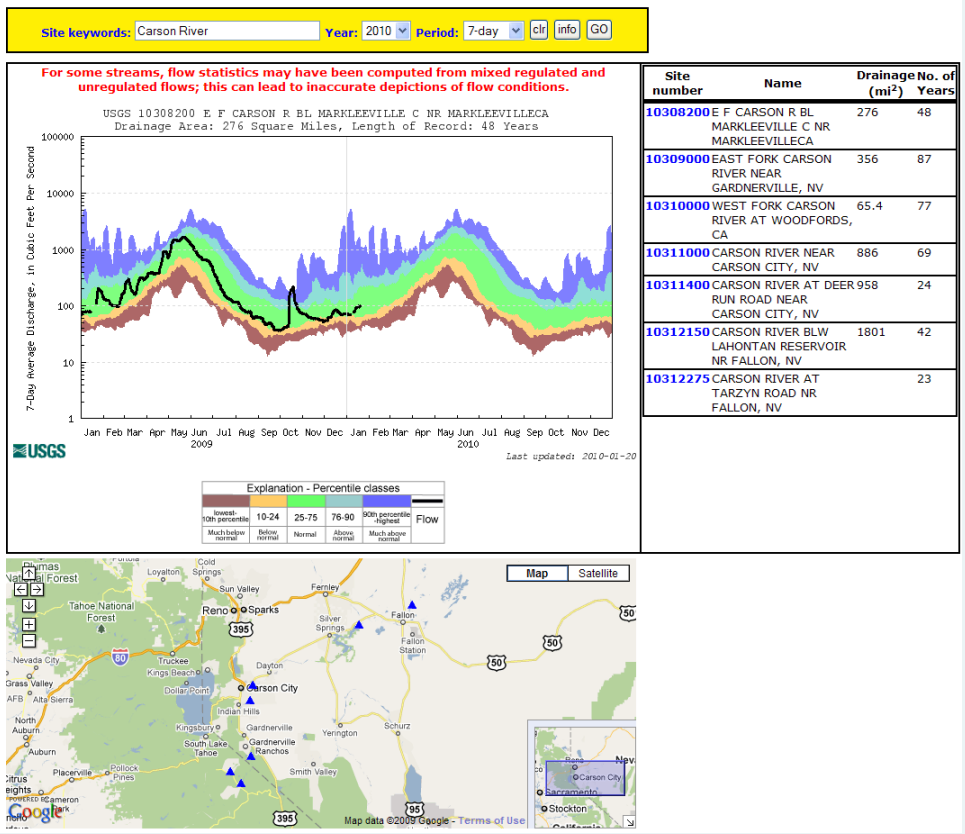
The tables being provided are shift corrected, incorporating the ma
ease of use by the recreational user. The shift adjustments are appli
as measured data becomes available, resulting in an adjusted rating
as often as weekly, others may not change for months.

```
# //UNITED STATES GEOLOGICAL SURVEY       http://water.usgs.gov/
# //NATIONAL WATER INFORMATION SYSTEM     http://water.usgs.gov/data.html
# //DATA ARE PROVISIONAL AND SUBJECT TO CHANGE UNTIL PUBLISHED BY USGS
# //RETRIEVED: 2009-11-12 20:45:56
# //WARNING
# //WARNING The stage-discharge rating provided in this file should be
# //WARNING considered provisional and subject to change. Stage-discharge
# //WARNING ratings change over time as the channel features that control
# //WARNING the relation between stage and discharge vary. Users are
# //WARNING cautioned to consider carefully the applicability of this
# //WARNING rating before using it for decisions that concern personal or
# //WARNING public safety or operational consequences.
# //WARNING
# //FILE TYPE="NWIS RATING"
# //DATABASE NUMBER=1  DESCRIPTION=" Standard data base for this site."
# //STATION AGENCY="USGS " NUMBER="10348000       " TIME_ZONE="PST" DST_FLAG=Y
# //STATION NAME="TRUCKEE RV AT RENO, NV"
# //DD NUMBER="   1" LABEL="Discharge (cfs)"
# //PARAMETER CODE="00060"
# //RATING SHIFTED="20091112200000 PST"
# //RATING ID="29.1" TYPE="STGQ" NAME="stage-discharge" AGING=A
# //RATING REMARKS="Extension of rating #29.0"
# //RATING EXPANSION="logarithmic"
# //RATING OFFSET1=0.00
# //RATING_INDEP ROUNDING="2223456782" PARAMETER="Gage height (ft)"
# //RATING_DEP ROUNDING="2222233332" PARAMETER="Discharge (cfs)"
# //RATING_DATETIME BEGIN=20021120120100 BZONE=PST END=20090531235959 EZONE=PDT AGING=A
# //RATING_DATETIME BEGIN=20090601000000 BZONE=PDT END=20090930235959 EZONE=PDT AGING=R
# //RATING_DATETIME BEGIN=20091001000000 BZONE=PDT END=23821230160000 EZONE=PST AGING=W
# //SHIFT_PREV BEGIN="20091112120000" BZONE="PST" END="---------------" EZONE="---"
# //SHIFT_PREV STAGE1="3.00" SHIFT1="0.03" STAGE2="4.80" SHIFT2="0.03" STAGE3="6.20" SHIFT3="0.00"
# //SHIFT_PREV COMMENT="V2 defined by QM#759 prorate on declining stage"
# //SHIFT_NEXT BEGIN="---------------" BZONE="---" END="---------------" EZONE="---"
# //SHIFT_NEXT STAGE1="---" SHIFT1="---" STAGE2="---" SHIFT2="---" STAGE3="---" SHIFT3="---"
# //SHIFT_NEXT COMMENT=" "
INDEP SHIFT DEP   STOR
16N   16N   16N   1S
1.87  0.03  16    *
1.88  0.03  16
1.89  0.03  17
```

USGS
science for a changing world

WaterWatch
Streamflow Duration Hydrographs

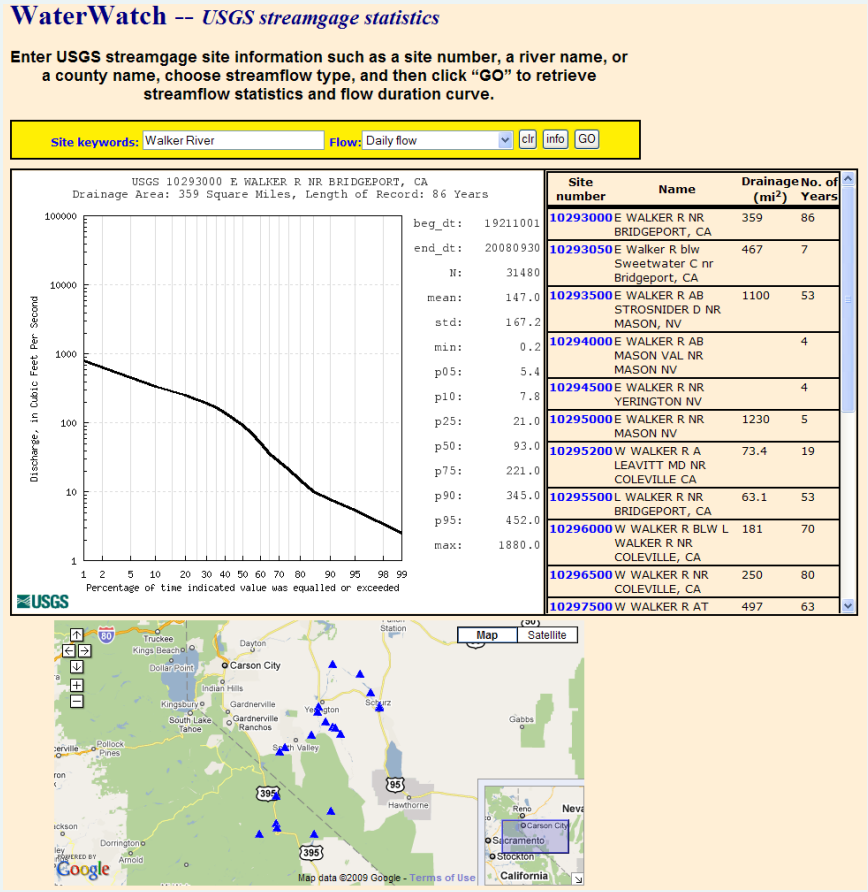
- Create duration graph of 7-, 14-, and 28-day flows for all USGS sites for any year
- Search sites by location and site number
- Access via a map interface showing site locations and a table showing site information
- Can display and download statistics



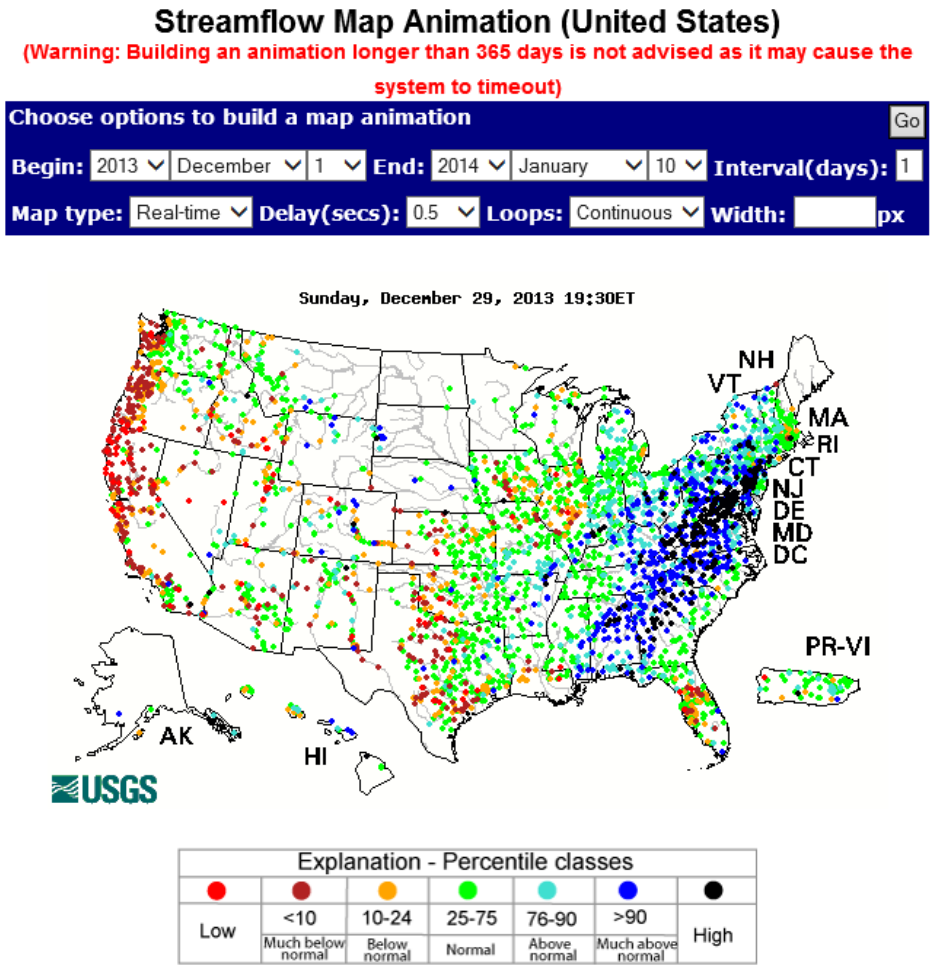
USGS
science for a changing world

WaterWatch
Streamgage Statistics

- Daily and 7-day lowest flow statistics and flow duration curve
- Search all USGS sites
- Access via Google Map showing location and a table showing site information
- Simple approximation for 7 yr, 10 day, low flow (7Q10)



USGS science for a changing world

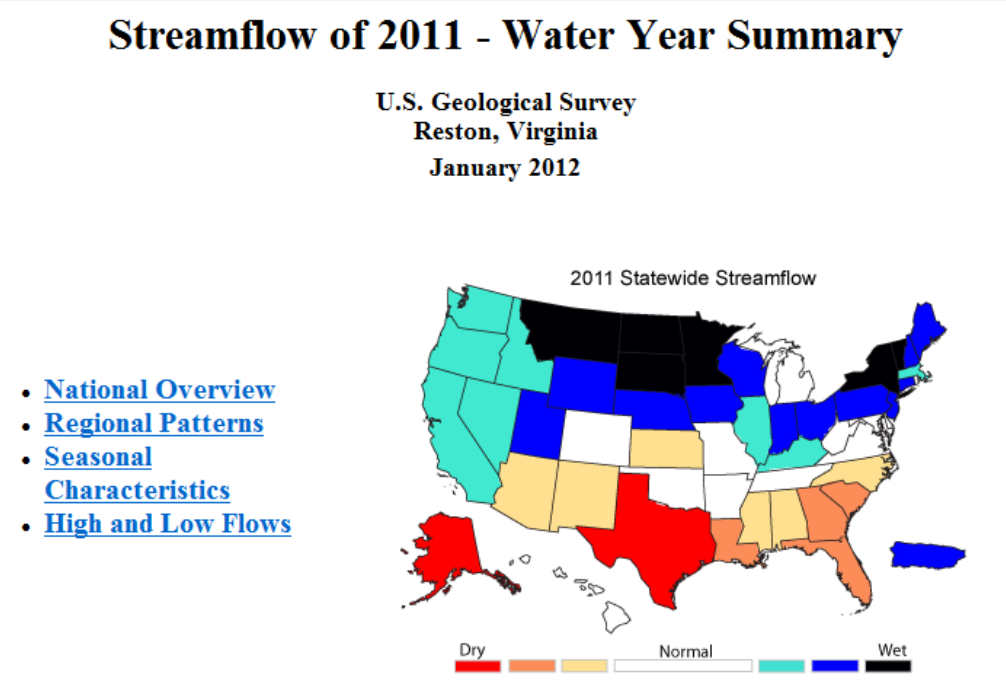


WaterWatch-Streamflow Map Animation

- Build customized WaterWatch map animations
- Real-time and flood maps

USGS science for a changing world

WaterWatch
Annual Streamflow Summary



- Annual streamflow summary has been published since 2006
- Provides annual and seasonal overview by state and hydrologic unit
- Summarizes high and low flows measured at streamgages

USGS science for a changing world

WaterWatch - Flood Intensity and Extent

WaterWatch -- *Current water resources conditions*

Retrieve Summary of Recent Flood and High Flow Conditions

(Warning: These Data are Provisional and May be Prone to Error.)

State: nv clr | Begin Date: 2005-05-01 | End Date: 2010-01-20 | Help

Output format: table text | Sort by: No. of years of historical peaks | ascend descend | GO

Summary of Recent Flood and High Flow Conditions for Nevada

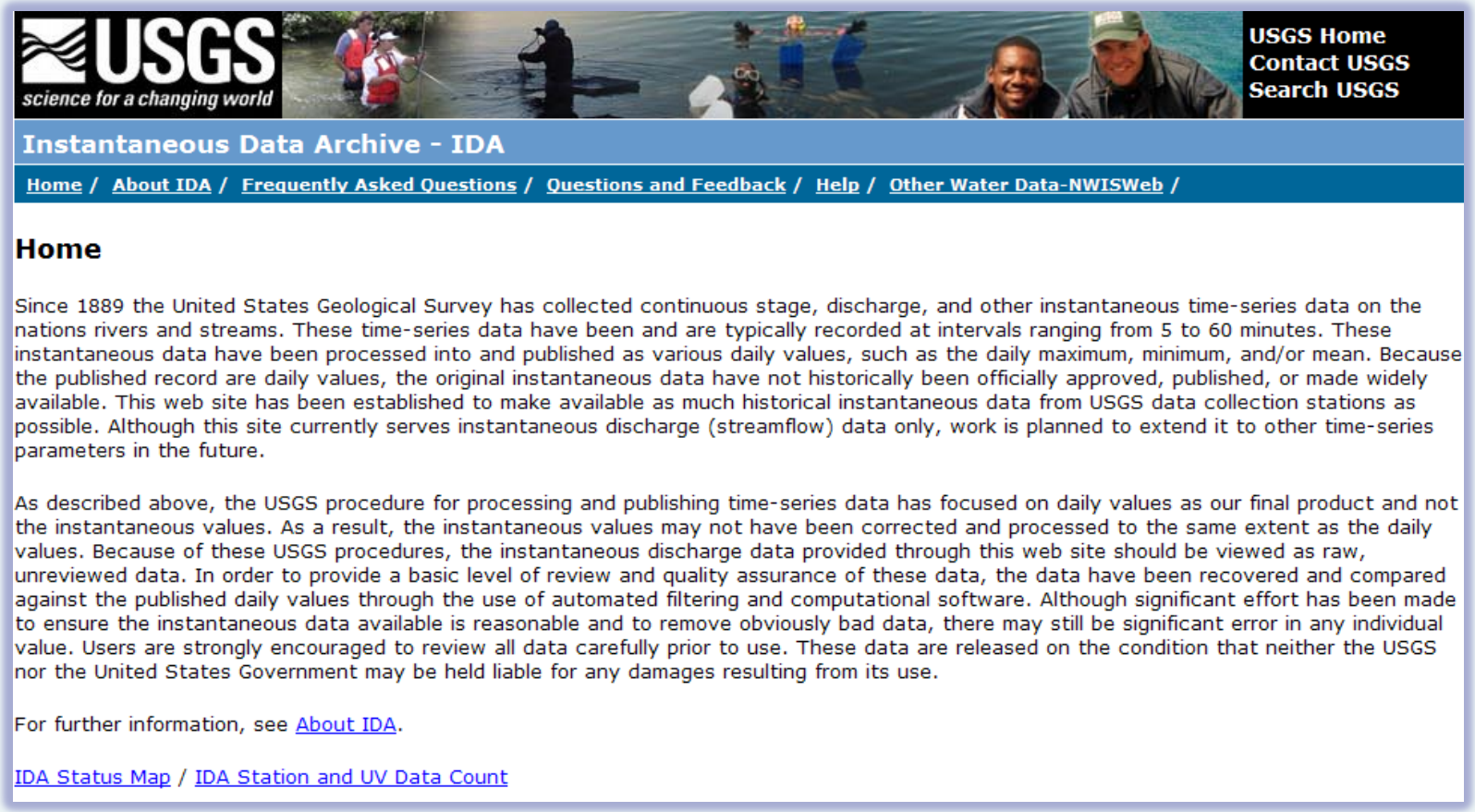
["---", no data; "<", less than all historical peaks]

USGS station number	USGS station name	Drainage area [mi^2]	NWS flood stage [ft]	No. of days above flood stage	Highest peak from 2005-05-01 to 2010-01-20					Historical peaks	
					Date	Time	Discharge [ft^3/s]	Stage [ft]	Rank	No. of years	Maximum (year) [ft^3/s]
10311250	VICEE CYN CK NR CARSON CITY, NV	1.30	--	--	2005-07-18	20:15:00	--	1.89	--	1	6.60 (1983)
09415920	WARM SPGS W NR MOAPA, NV	--	--	--	2008-10-30	07:00:00	4.7	1.09	1	1	4.4 (2008)
09415558	HOT CK NR SUNNYSIDE, NV	--	--	--	2009-11-02	16:30:00	15	7.73	1	1	15 (2007)
09415640	ASH SPGS CK BLW HWY 93 AT ASH SPGS, NV	--	--	--	2009-07-27	14:00:00	34	4.59	<	1	185 (2006)
09419745	C-1 CHANNEL ABV MOUTH NR HENDERSON, NV	--	--	--	2009-12-07	18:30:00	6.9	2.95	<	2	9.6 (2007)

- Analyze high flows in a region during a specific period and compare to historical floods
- Uses provisional data which may be prone to errors

USGS science for a changing world

Instantaneous-Data Archive – IDA



USGS science for a changing world

USGS Home
Contact USGS
Search USGS

Instantaneous Data Archive - IDA

Home / About IDA / Frequently Asked Questions / Questions and Feedback / Help / Other Water Data-NWISWeb /

Home

Since 1889 the United States Geological Survey has collected continuous stage, discharge, and other instantaneous time-series data on the nations rivers and streams. These time-series data have been and are typically recorded at intervals ranging from 5 to 60 minutes. These instantaneous data have been processed into and published as various daily values, such as the daily maximum, minimum, and/or mean. Because the published record are daily values, the original instantaneous data have not historically been officially approved, published, or made widely available. This web site has been established to make available as much historical instantaneous data from USGS data collection stations as possible. Although this site currently serves instantaneous discharge (streamflow) data only, work is planned to extend it to other time-series parameters in the future.

As described above, the USGS procedure for processing and publishing time-series data has focused on daily values as our final product and not the instantaneous values. As a result, the instantaneous values may not have been corrected and processed to the same extent as the daily values. Because of these USGS procedures, the instantaneous discharge data provided through this web site should be viewed as raw, unreviewed data. In order to provide a basic level of review and quality assurance of these data, the data have been recovered and compared against the published daily values through the use of automated filtering and computational software. Although significant effort has been made to ensure the instantaneous data available is reasonable and to remove obviously bad data, there may still be significant error in any individual value. Users are strongly encouraged to review all data carefully prior to use. These data are released on the condition that neither the USGS nor the United States Government may be held liable for any damages resulting from its use.

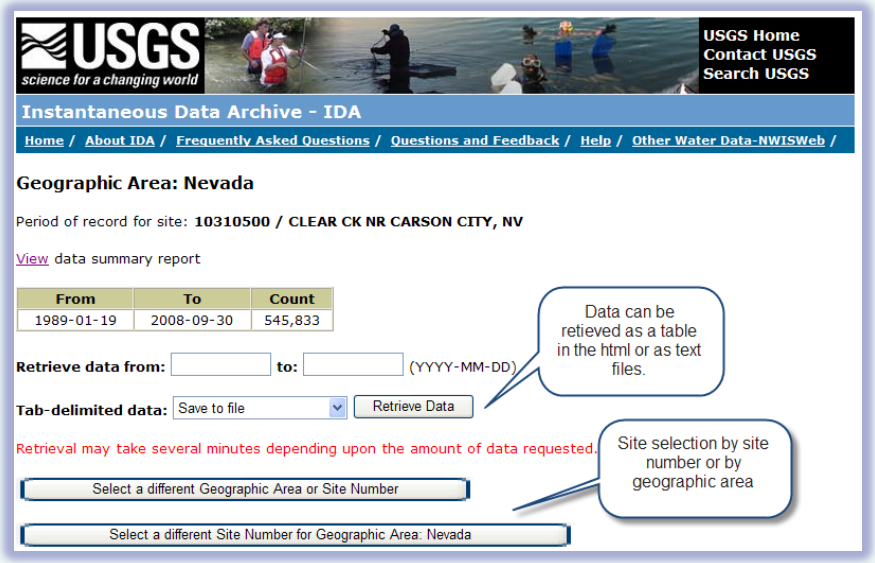
For further information, see About IDA.

IDA Status Map / IDA Station and UV Data Count

USGS science for a changing world

What is IDA?

- Repository of available instantaneous (unit value) discharge data prior to 10/01/2007
- Corresponds to the period of published daily-mean data
- 15 minute interval
- Data typically start in the 1980's
- Values are to be considered raw
- Should be reviewed prior to use



USGS
science for a changing world