

USGS Streamgaging and Related Activities



Rio Grande at Embudo, NM 1889

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Outline

- Streamgaging Program Status
- ARRA Stimulus Funding
- Hydroacoustics
- Value Engineering Study
- Water Data Portal
- Data Access Tools

USGS National Streamgaging Program

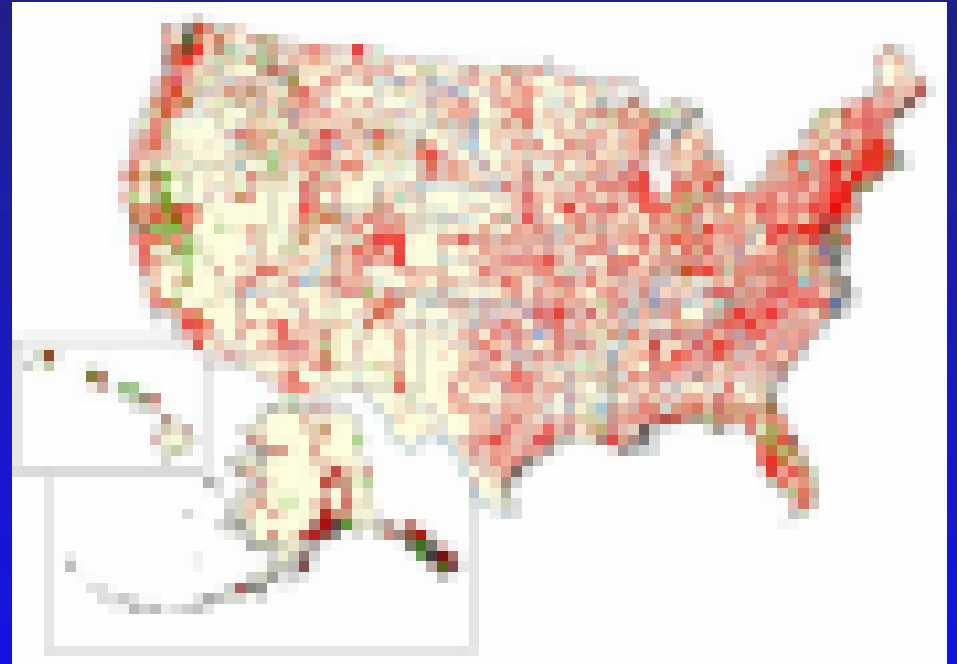
Streamgauge Network

7,600 streamgages

95 % real-time

\$147 M per year

850+ Cooperators



Funding Sources (2009)

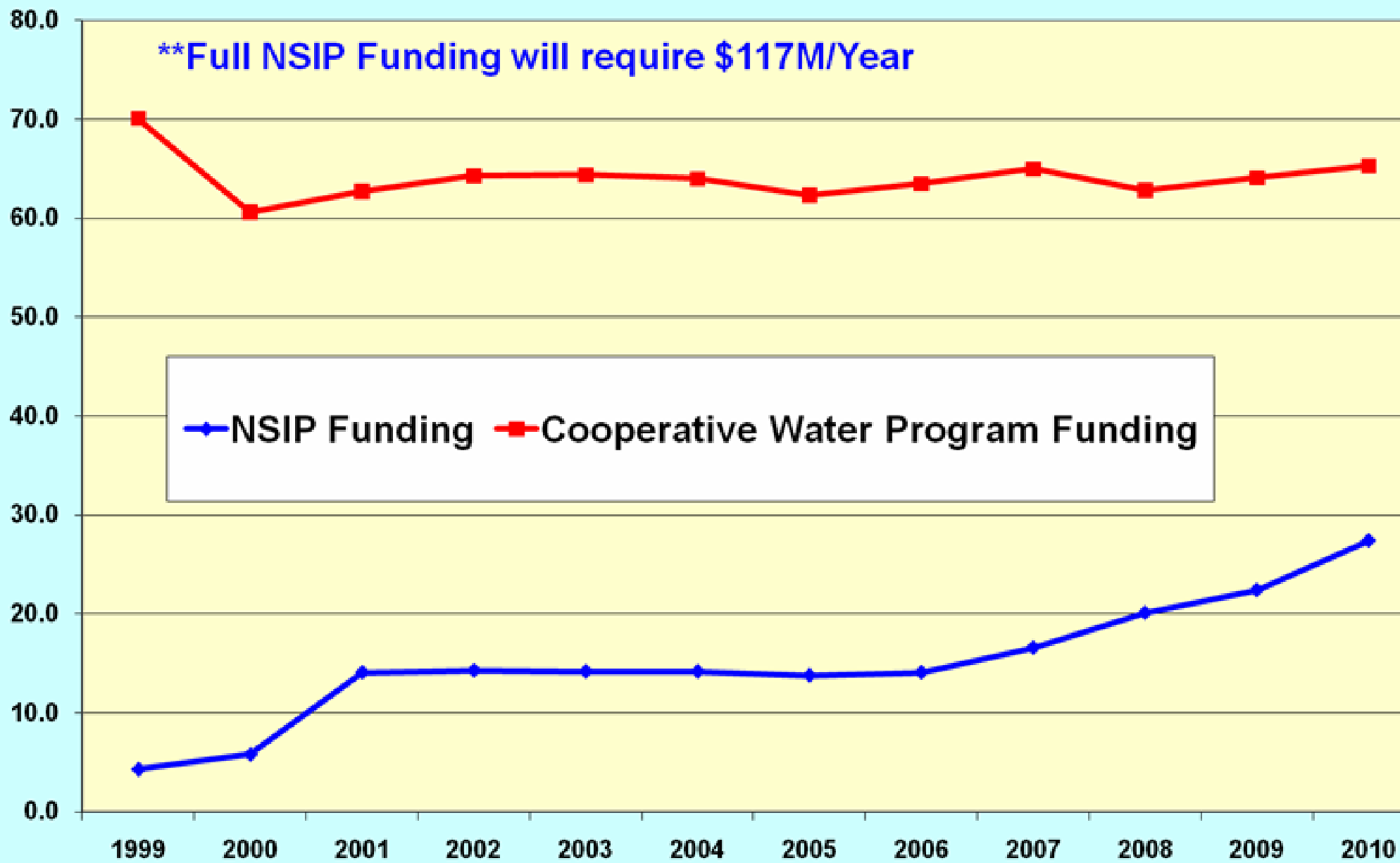
State / Local agencies (\$69.0M) 47%

Other Federal agencies (\$30.2M) 21%

USGS Cooperative Water Program (\$25.1M) 17%

USGS NSIP (\$22.0M) 15%

Dollars, in Millions



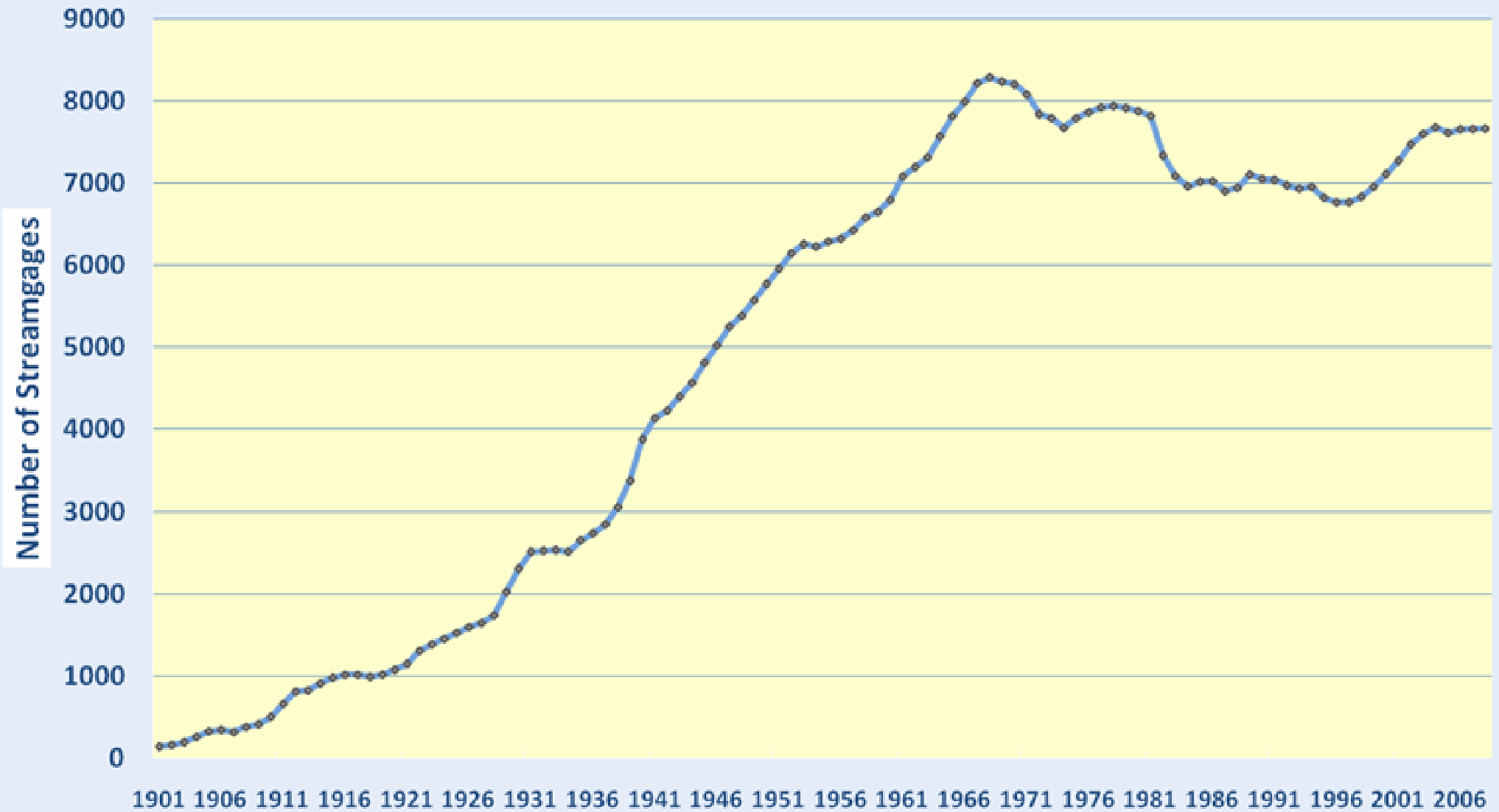
**Full NSIP Funding will require \$117M/Year

NSIP Funding Cooperative Water Program Funding

FY10 Appropriations

- FY10 Enacted Appropriations
 - NSIP \$27.7M - Plus \$5.3M
 - CWP \$65.6 – Plus \$1.5M
- FY11 Presidents Budget
 - NSIP \$27.1 M - Minus \$585K for management efficiencies
 - CWP \$63.6M – Minus \$1.96M for management efficiencies
- FY12 – Washington Post
 - Minus 5% cut and use 2.5% of cut for priority items

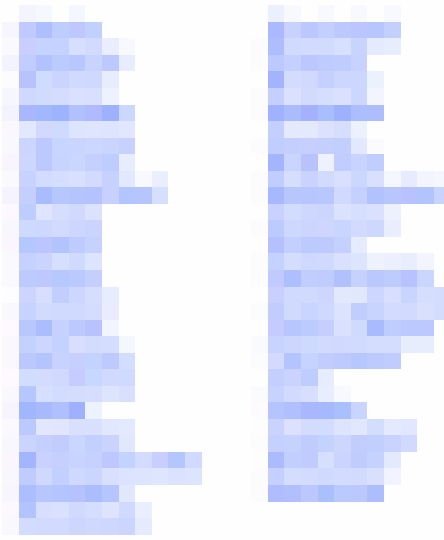
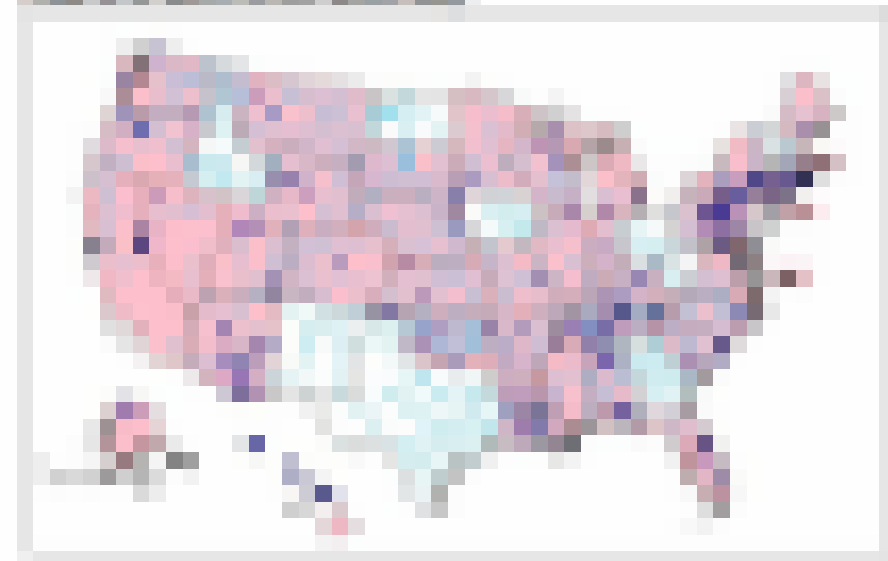
Active USGS Streamgages 1901 - 2008



2022 Presidential Ballot of Massachusetts Candidates

The 2022 Presidential Ballot of Massachusetts is a list of candidates for the 2022 United States presidential election. The ballot is held on the same day as the 2022 Massachusetts state election. The ballot is held on Tuesday, November 8, 2022. The ballot is held at the same time as the 2022 Massachusetts state election. The ballot is held at the same time as the 2022 Massachusetts state election.

Ballot



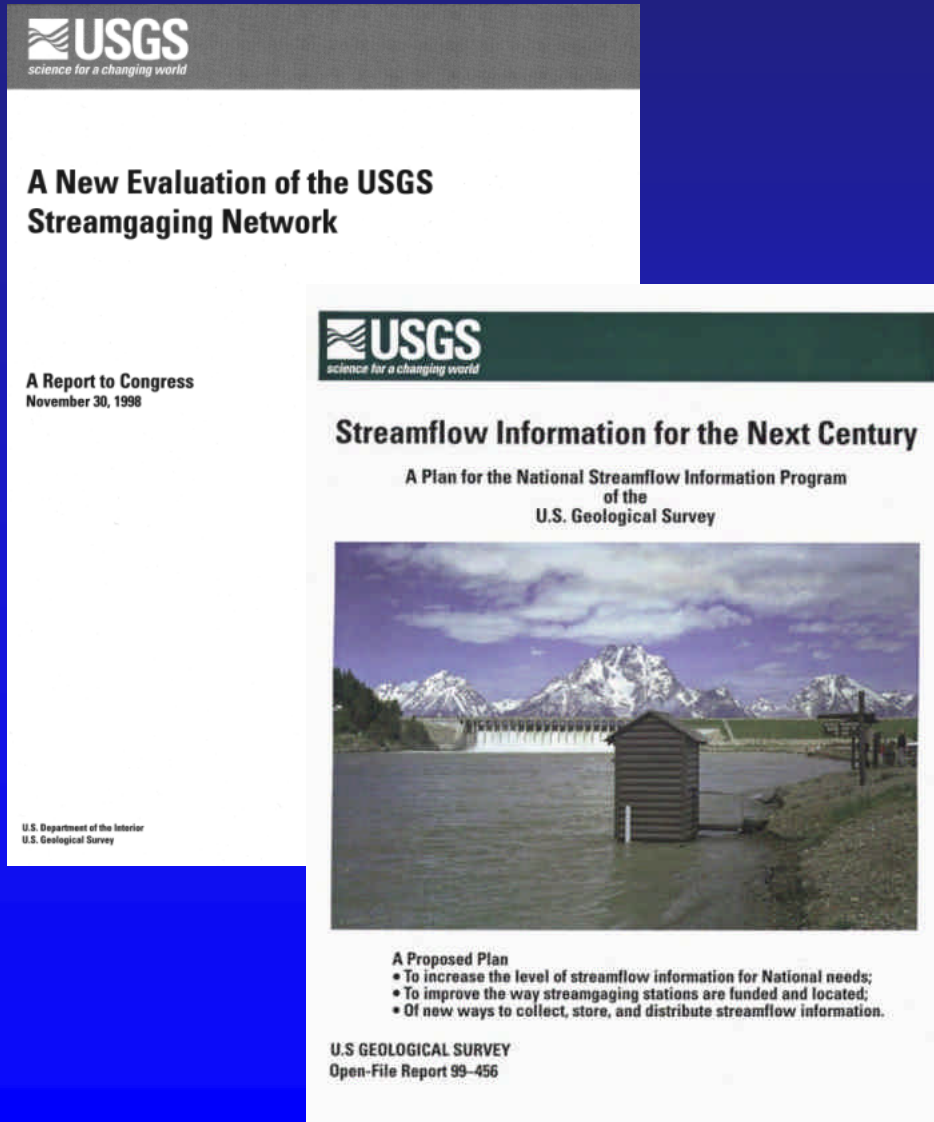
■ Districts/Counties available in the 2022 ■ Not in 2022

2022 Massachusetts Presidential Ballot
 2022 Presidential Ballot of Massachusetts



Year	Ballot District	Year	Ballot District
2022	1st Congressional District	2022	Massachusetts General Election
2022	2nd Congressional District	2022	Massachusetts General Election
2022	3rd Congressional District	2022	Massachusetts General Election
2022	4th Congressional District	2022	Massachusetts General Election
2022	5th Congressional District	2022	Massachusetts General Election
2022	6th Congressional District	2022	Massachusetts General Election
2022	7th Congressional District	2022	Massachusetts General Election
2022	8th Congressional District	2022	Massachusetts General Election
2022	9th Congressional District	2022	Massachusetts General Election
2022	10th Congressional District	2022	Massachusetts General Election
2022	11th Congressional District	2022	Massachusetts General Election
2022	12th Congressional District	2022	Massachusetts General Election
2022	13th Congressional District	2022	Massachusetts General Election
2022	14th Congressional District	2022	Massachusetts General Election
2022	15th Congressional District	2022	Massachusetts General Election
2022	16th Congressional District	2022	Massachusetts General Election
2022	17th Congressional District	2022	Massachusetts General Election
2022	18th Congressional District	2022	Massachusetts General Election
2022	19th Congressional District	2022	Massachusetts General Election
2022	20th Congressional District	2022	Massachusetts General Election
2022	21st Congressional District	2022	Massachusetts General Election
2022	22nd Congressional District	2022	Massachusetts General Election
2022	23rd Congressional District	2022	Massachusetts General Election
2022	24th Congressional District	2022	Massachusetts General Election
2022	25th Congressional District	2022	Massachusetts General Election
2022	26th Congressional District	2022	Massachusetts General Election
2022	27th Congressional District	2022	Massachusetts General Election
2022	28th Congressional District	2022	Massachusetts General Election
2022	29th Congressional District	2022	Massachusetts General Election
2022	30th Congressional District	2022	Massachusetts General Election
2022	31st Congressional District	2022	Massachusetts General Election
2022	32nd Congressional District	2022	Massachusetts General Election
2022	33rd Congressional District	2022	Massachusetts General Election
2022	34th Congressional District	2022	Massachusetts General Election
2022	35th Congressional District	2022	Massachusetts General Election
2022	36th Congressional District	2022	Massachusetts General Election
2022	37th Congressional District	2022	Massachusetts General Election
2022	38th Congressional District	2022	Massachusetts General Election
2022	39th Congressional District	2022	Massachusetts General Election
2022	40th Congressional District	2022	Massachusetts General Election
2022	41st Congressional District	2022	Massachusetts General Election
2022	42nd Congressional District	2022	Massachusetts General Election
2022	43rd Congressional District	2022	Massachusetts General Election
2022	44th Congressional District	2022	Massachusetts General Election
2022	45th Congressional District	2022	Massachusetts General Election
2022	46th Congressional District	2022	Massachusetts General Election
2022	47th Congressional District	2022	Massachusetts General Election
2022	48th Congressional District	2022	Massachusetts General Election
2022	49th Congressional District	2022	Massachusetts General Election
2022	50th Congressional District	2022	Massachusetts General Election

National Streamflow Information Program



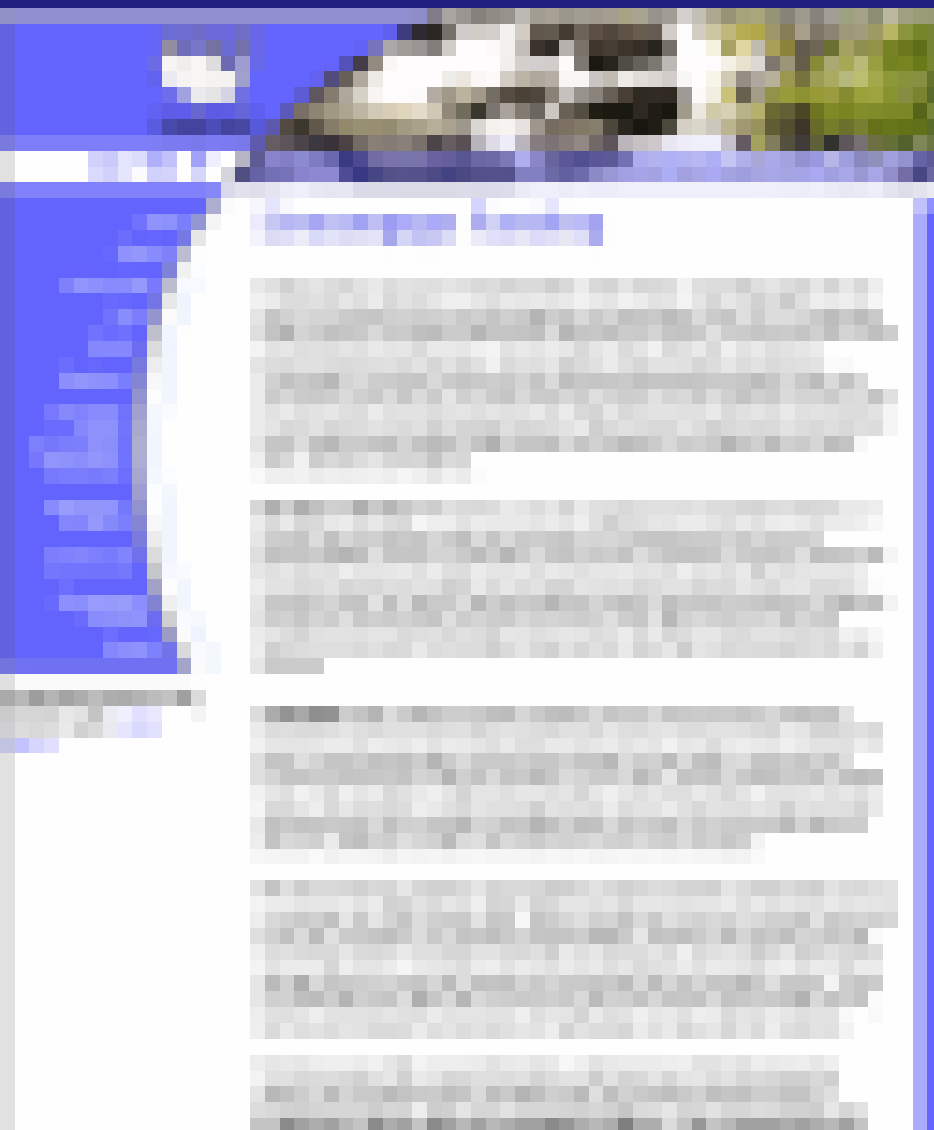
P.L. 111-11, the Omnibus Public Land Management Act of 2009
Subtitle F—Secure Water

SEC. 9507. WATER DATA ENHANCEMENT BY UNITED STATES GEOLOGICAL SURVEY.

(a) NATIONAL STREAMFLOW INFORMATION PROGRAM.

(1) IN GENERAL.—The Secretary, in consultation with the Advisory Committee and the Panel and consistent with this section, shall proceed with implementation of the national H. R. 146—350 streamflow information program, as reviewed by the National Research Council in 2004.

Stakeholder Support for the Streamgaging Network



ARRA Stimulus Funding

ARRA Stimulus Funding

- \$15M for Streamgaging upgrades to new technologies
 - \$10M for HDR DCPs - more than 2000 HDRs
 - \$5M for other new technologies –hydroacoustic equipment
 - Purchases only through the HIF; limited set of equipment
- \$15M for Deferred Maintenance
 - Removal of discontinued streamgages, cableways, and wells in DM-CI database

Hydroacoustics

HYDROACOUSTICS



Current Profilers



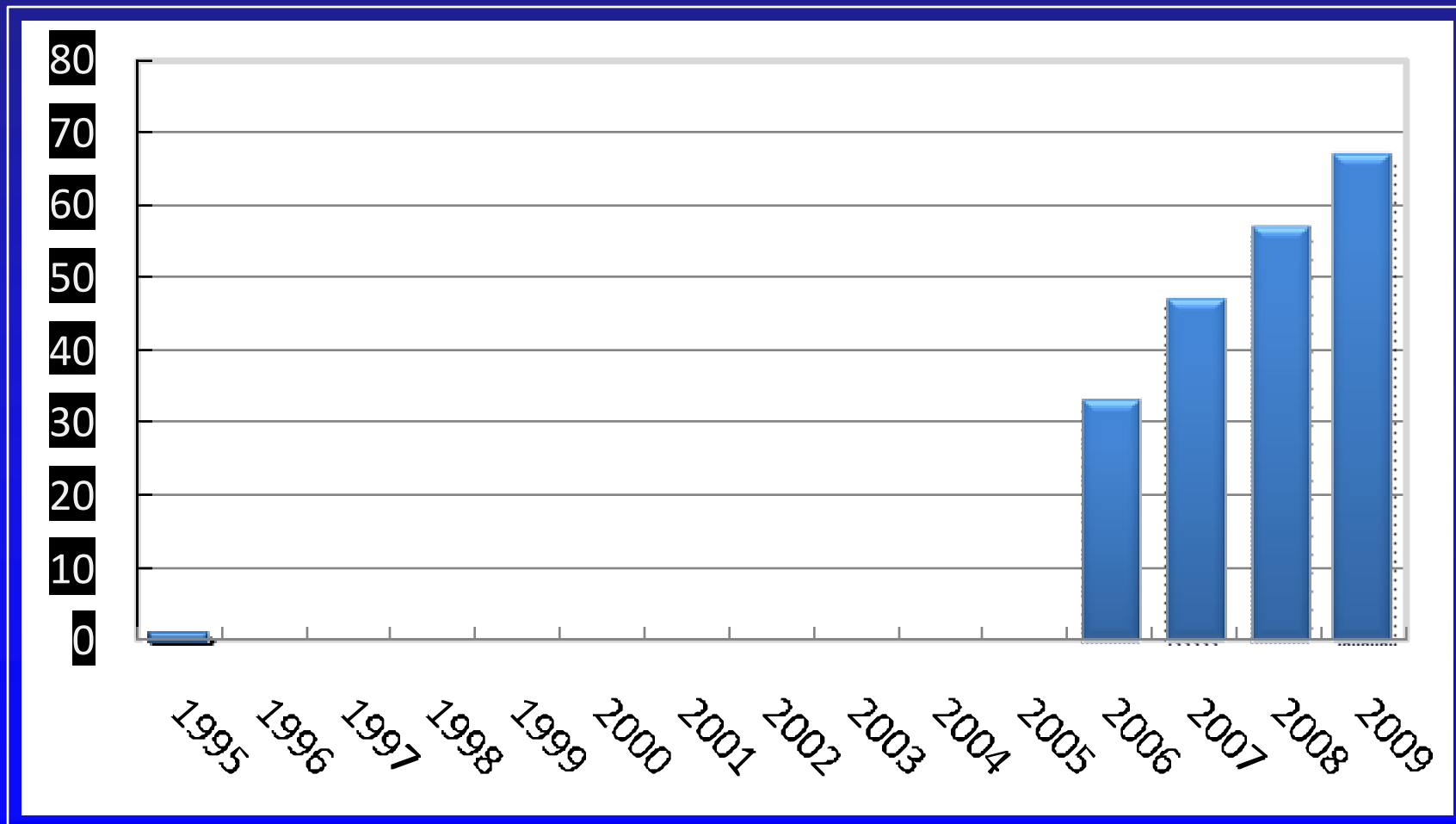
Wading



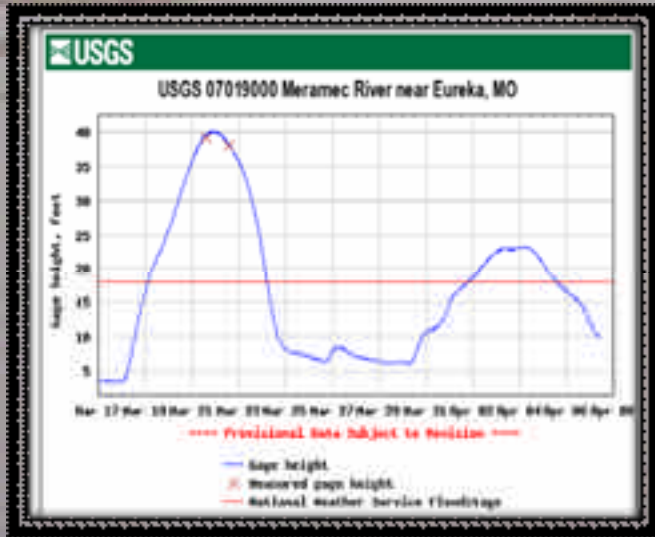
Side Looking

1995: ~100% mechanical meters

2009: 67% of all Qm's are hydroacoustic



2008 Flood Qm's



- Iowa

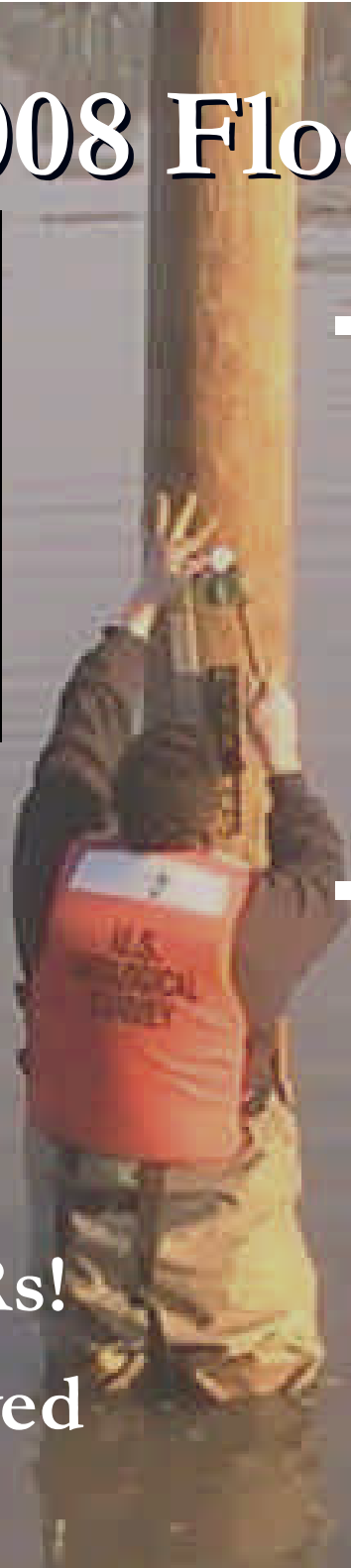
- 63 Qm's from June 8 – July 1
- No indirects despite 20 PoRs!
- Acoustics “saved the day”

- Indiana

- >60 Qm's
- 2-3 times more Qm's than with conventional equipment

- Missouri

- >100 Qm's – nearly all hydroacoustic
- Increased efficiency
- More accurate Qm's



Value Engineering Study

Value Engineering

- Identify Opportunities for Improving the Efficiency of USGS Data Programs Through Application of Private Sector Value Engineering and Lean Enterprise Management
- Organized with the help of ICWP
- Partnerships with YSI/Sontec, Insitu
- Surface Water and Water Quality Studies Completed – Ground Water - Fall 2010

Water Data Portal

Water Data Portal

- ACWI – Ground-Water + Surface Water Subcommittees and National Water Quality Monitoring Council
- CUAHSI Hydrologic Information System (HIS) - <http://his.cuahsi.org/>
 - Funding - \$5 million NSF – 5 years
 - Federal Data Partners – USGS, EPA, NOAA, NASA

Data Access Tools

Streammail;

WaterAlert;

WaterWatch

USGS StreaMail

- System for accessing real-time river stage and streamflow from hand-held wireless devices, such as cell phones and Blackberries.
- Send an email or text message to "streamail@usgs.gov" and use a USGS station number in the "Subject" line. In a few minutes you'll get back an email with the most recent stage and streamflow.
- Try it - 01631000 S. F. Shenandoah River at Front Royal, VA

Header area containing a profile picture and user information.

Header area containing search and navigation buttons.

Section 1: Introduction or main heading.

Section 2: Sub-section or detailed text.

Section 3: Sub-section or detailed text.

Section 4: Sub-section or detailed text.

Section 5: Sub-section or detailed text.

Section 6: Sub-section or detailed text.

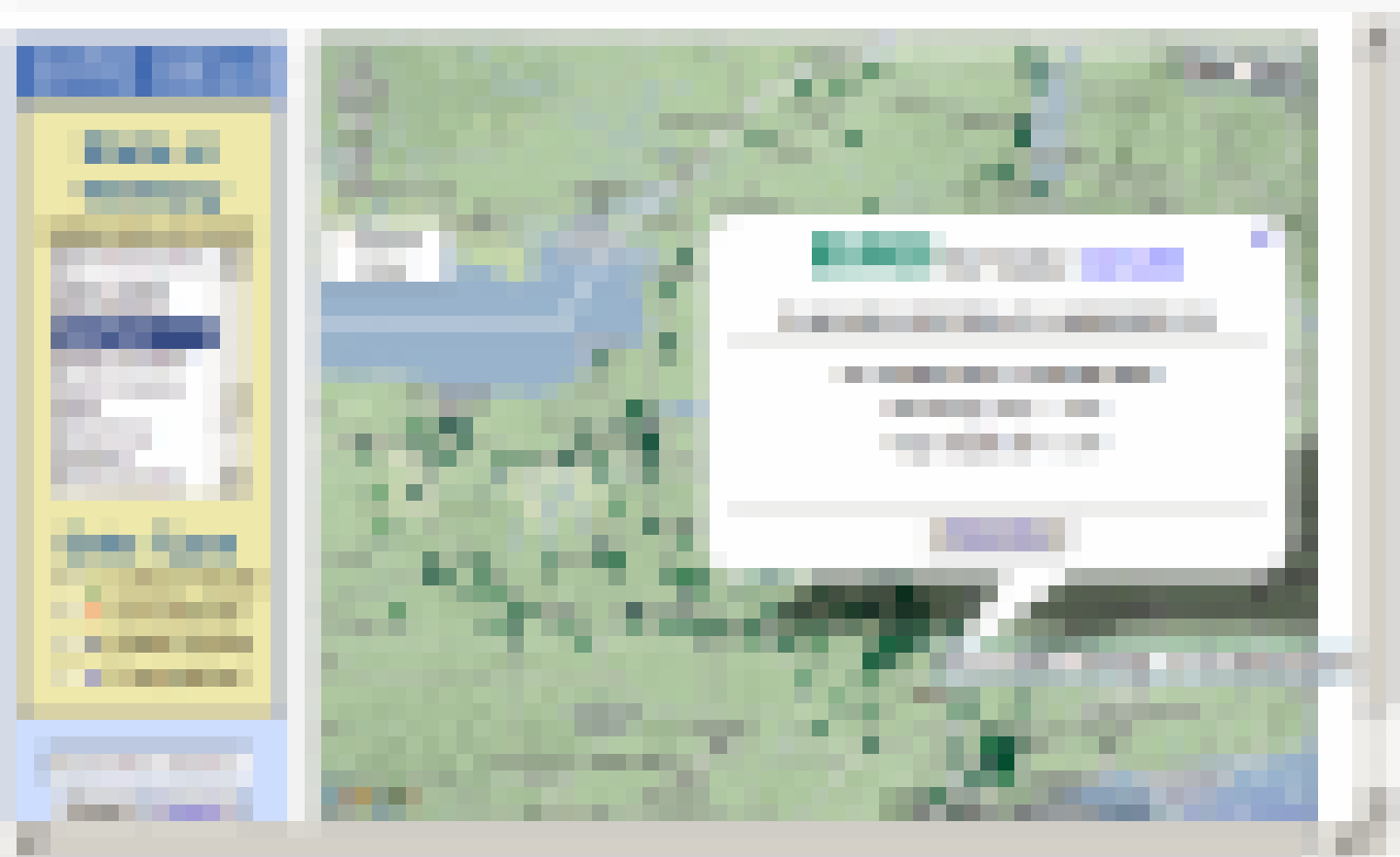


WaterAlert - Threshold Notification Service

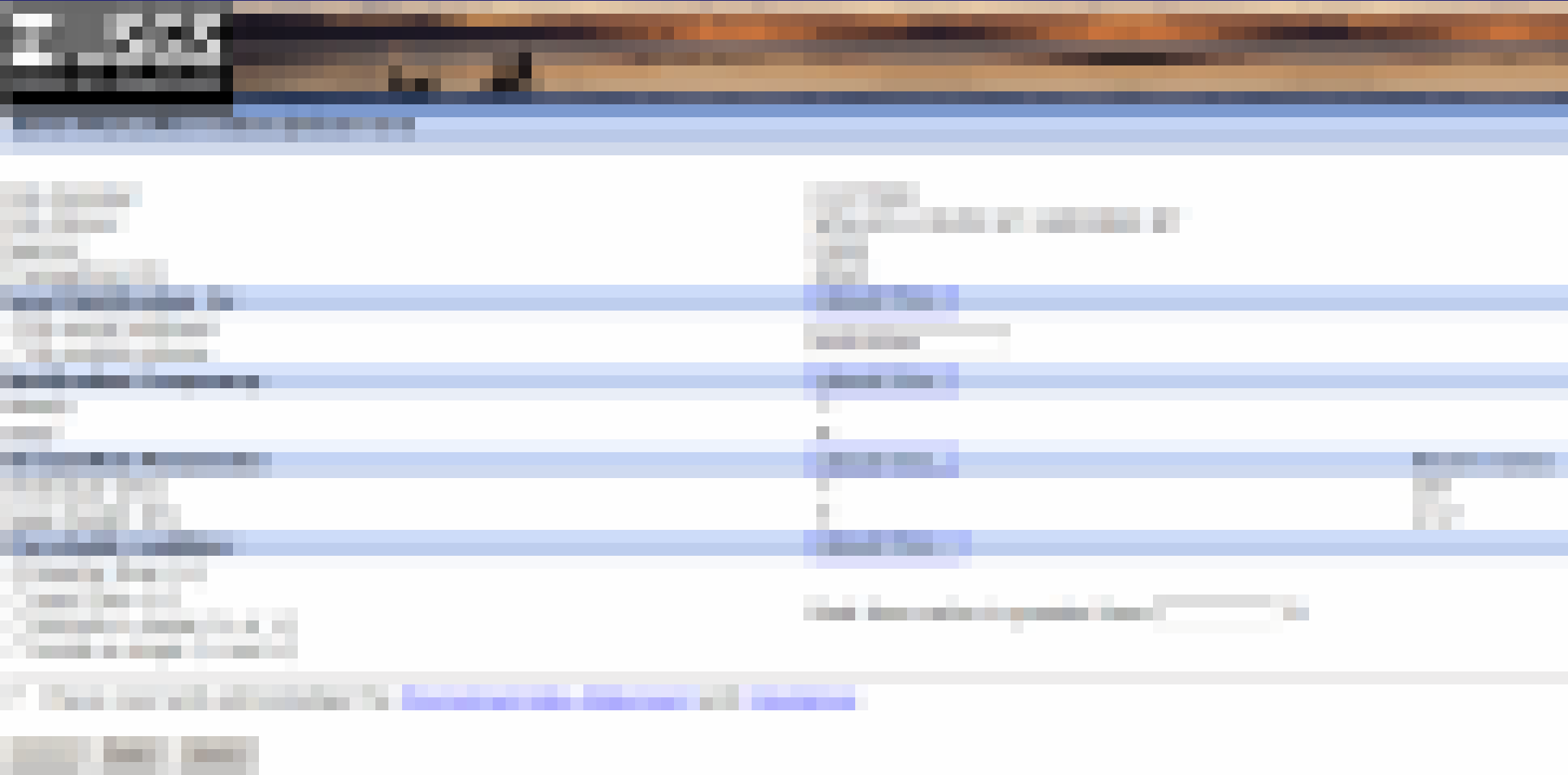
The screenshot shows the USGS WaterAlert website. At the top, there is a navigation bar with links for Home, Data, Publications, Maps/GIS, Software, Multimedia, Programs, Education, About Us, Contact, and Internal. Below this is a search bar for USGS Water Sites. The main content area is titled "USGS WaterAlert" and includes a version number [0.1.2]. The text describes the service: "The U.S. Geological Survey WaterAlert service sends e-mail or text messages when certain parameters measured by a USGS data-collection station exceed user-definable thresholds. The development and maintenance of the WaterAlert system is supported through the USGS Cooperative Water Program, the National Streamflow Information Program, and by USGS data-collection partners, including numerous federal, state, and local agencies. All WaterAlert data is made available from the National Water Information System." It also states: "Real-time data from USGS gages are transmitted via satellite or other telemetry to USGS offices at various intervals; in most cases, once every 1 or 4 hours. Emergency transmissions, such as during floods, may be more frequent. Notifications will be based on the data received at these site-dependent intervals." A section titled "How to Subscribe" lists two steps: 1. Select the Site and Data Type - Use the interactive map below to browse the network of USGS real-time sites in one or more contiguous states or territories by data type. If you already know a site by its number or partial name within your current selection, you may map it directly by entering it in the "Search this selection" field. Use the zoom tools in the upper left of the map to focus on your area of interest. On the map, click on the site's marker for which you would like to get notifications, then click "Subscribe". Each notification subscription must be submitted separately. You must allow pop-up windows from this site. 2. Submit Your Subscription Form - Choose to receive the notifications at either your email address or text-enabled (SMS) mobile phone. Select your preferred notification method, enter your contact information, and submit the form. Below the text is a map of the United States with a legend and a search box. The map shows various sites marked with colored dots. The legend includes categories like "Streamflow", "Groundwater", and "Water Quality".

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

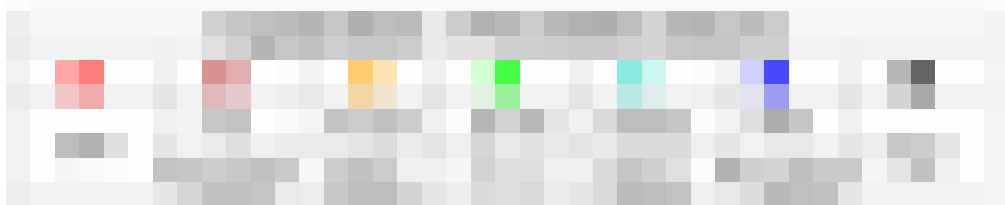
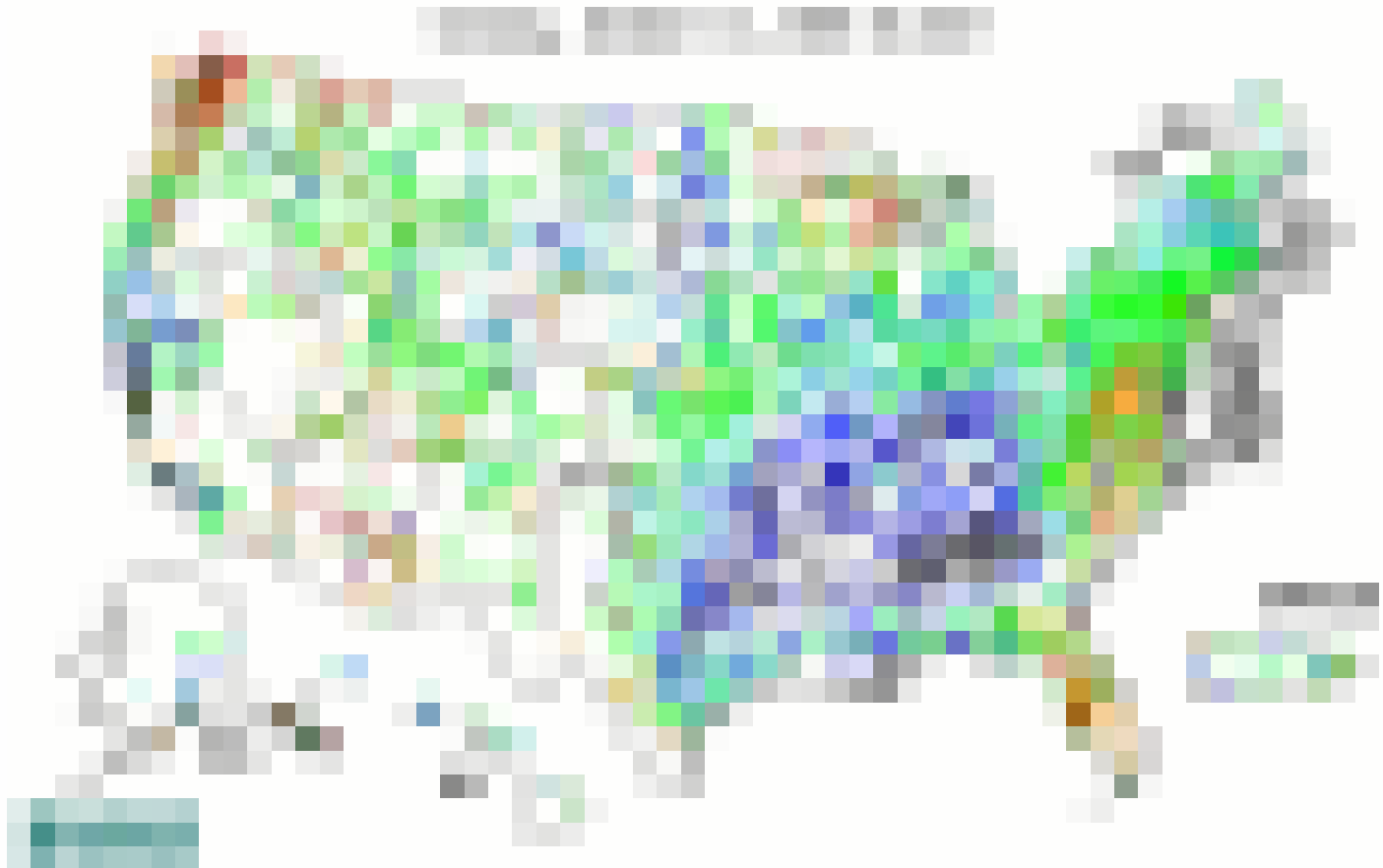
Navigation bar with search and menu options.



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



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WaterWatch – lots of new products added

USGS
United States Geological Survey

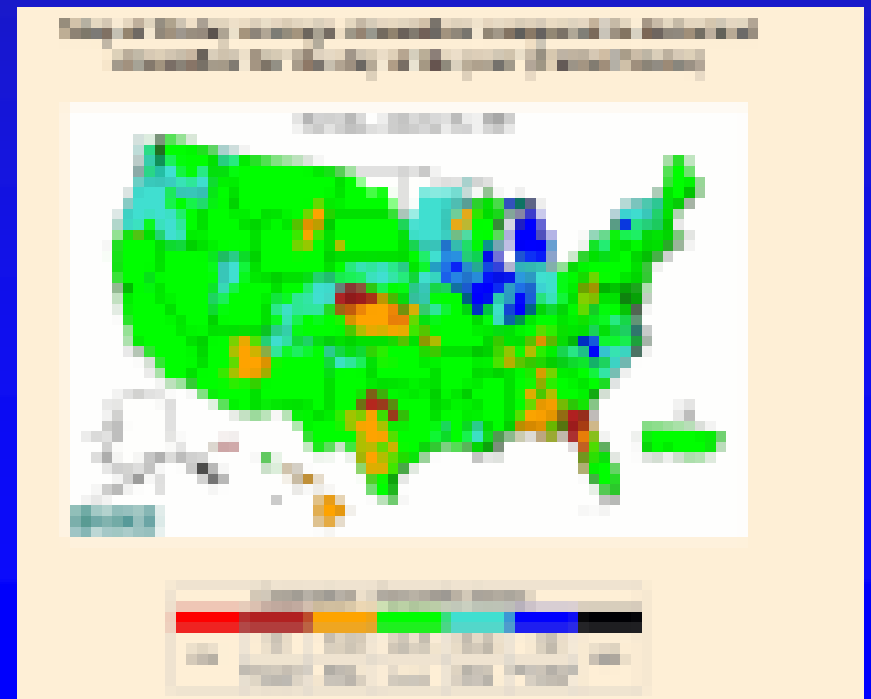
Current River Graphs | Flood Plots | Drought Plots | Recent Historical River Graphs

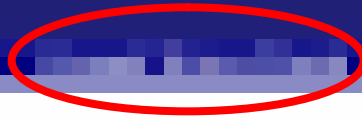
28-Day Average Streamflow
7-Day Average Streamflow
14-Day Average Streamflow
28-Day Average Streamflow

Chemical water resources conditions
average streamflow compared to historical for the day of the year (United States)

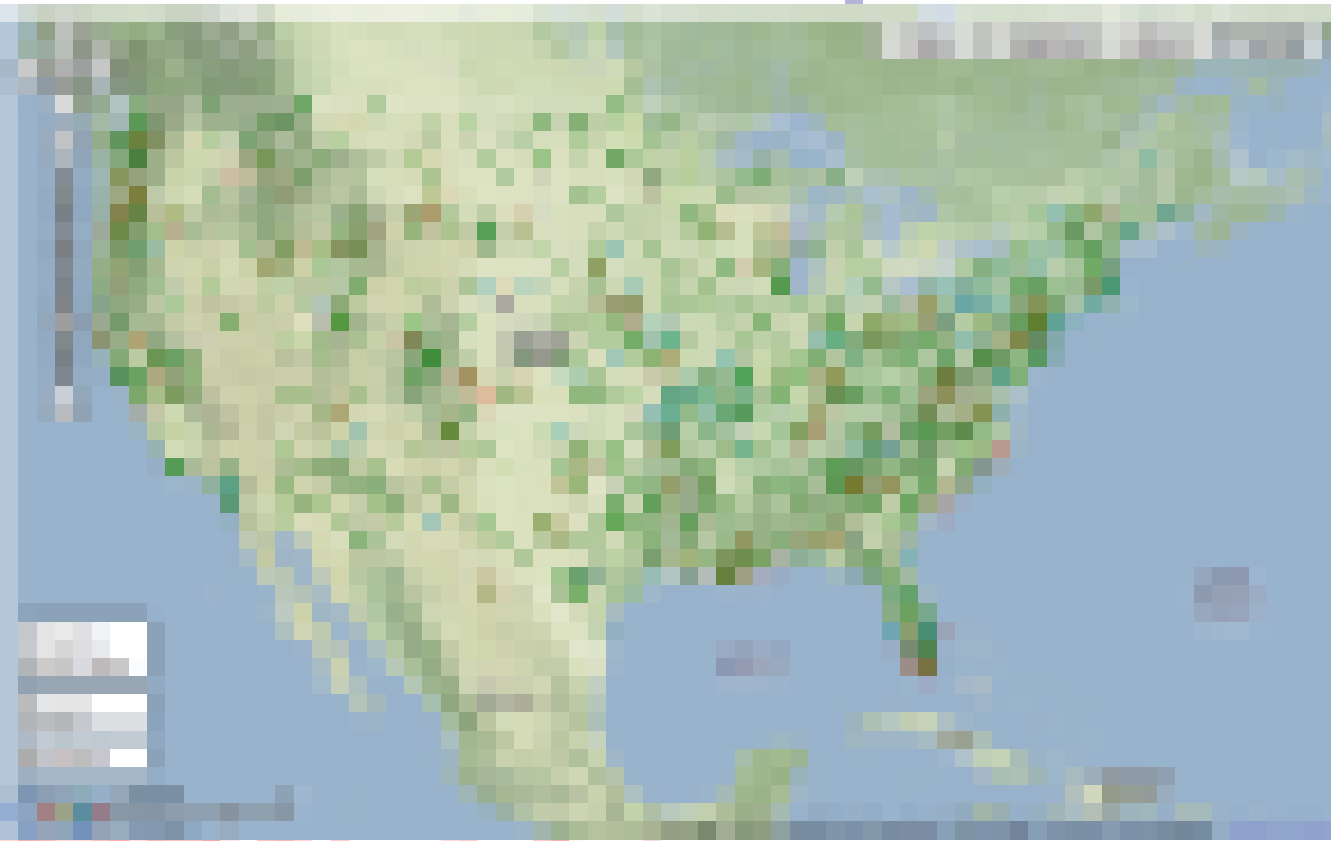
Map
Summary Plot
Percent Summary Plot
Summary Table
Map Animation – Day of Year
Locations above Flood Stage
Google Earth KMZ
Summary Report Conditions

- Real-time, 7-day, 14-day, 28 day averages
- Floods and high flows
- Drought conditions
- Google coverage
- Animations
- etc





Navigation menu items, including "Home", "About", "Contact", and "Services".



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QUESTIONS?



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