



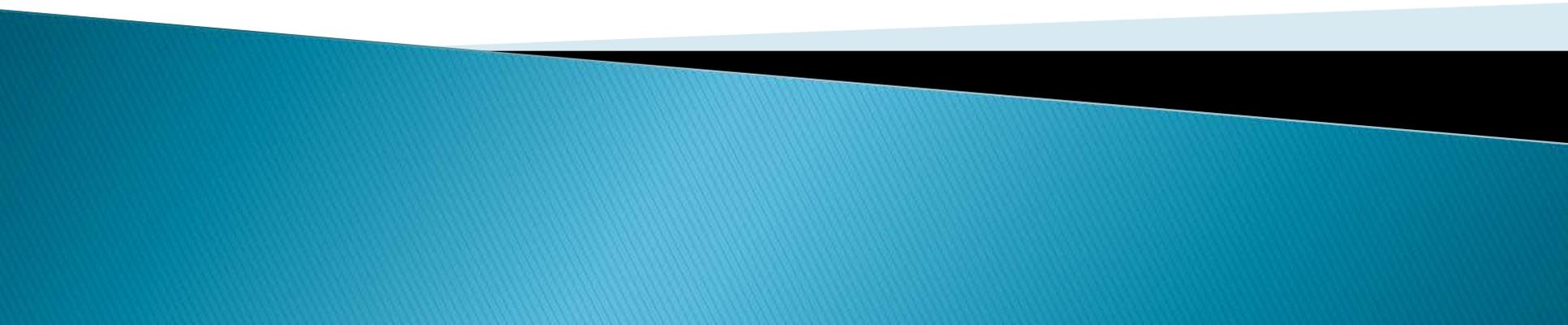
National Water Quality Monitoring Council

Working together for clean water



National Water Quality Monitoring Council Update for ACWI

Susan Holdsworth (EPA) and Gary Rowe (USGS)
October 27, 2015





National Water Quality Monitoring Council

Working together for clean water

HOME THE FRAMEWORK PRODUCTS PUBLICATIONS CONFERENCES WORKGROUPS ABOUT US

Methods & Protocols

Monitoring Networks

Volunteer Monitoring

Water Quality Data

Newsletter

Webinar Series

Meeting Minutes

YouTube Channel

2016 Conference

ACWI

EPA

USGS



NEWS & HIGHLIGHTS



Seeing into Water in New Ways: [The Visualizing Nutrients Challenge](#)

Compelling, innovative, and comprehensive visualizations to inform on nutrient pollution and inspire action. Read about [the winners of the Visualizing Nutrients Challenge here...](#)



10th National Monitoring Conference

Join us **May 2-6, 2016 in Tampa, FL** for oral presentations, posters, workshops, short courses and Round Tables (NEW!) that cover topics related to water resources. [More information on the conference here...](#)



COLLABORATION HIGHLIGHT: [Nutrient Sensor Challenge](#)

Federal agencies, the Alliance for Coastal Technologies, the Council, and other partners are issuing a challenge to accelerate the development of new affordable technologies to measure nutrients. [Read more here...](#)



WEBINARS

Effective Science Communication with emphasis on visual science communication tools

[View on our YouTube channel](#)

View Past Webinars on YouTube!



Visit our [YouTube Channel](#) to see past presentations on a wide variety of monitoring topics.

CALENDARS

National Monitoring Conference

[Tampa, FL, May 2 - 6, 2016](#)

ACWI

[ACWI Meeting Schedule](#) (incl. Council meeting info)

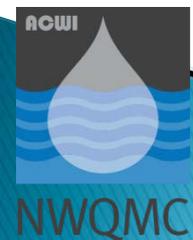
Other

[Other Meetings of Interest](#)



National Water Quality Monitoring Council Goals

- Bring together diverse expertise-- our membership and the broader community collecting and using water quality data
- Develop collaborative, comparable, and cost-effective approaches for monitoring and assessing the Nation's waters— our workgroups' mission and project objectives
- Support successful management and sustainability of our waters— our intended outcome



Council Membership

💧 Federal Agencies

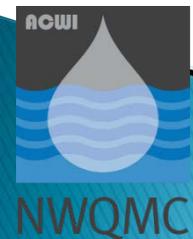
- USEPA, USGS, NOAA, USDA (NRCS, USFS), USFWS, NPS, TVA, and USCOE

💧 States and Tribes

- States representing USEPA Regions 1-10 (current states include NH, NJ, VA, SC, MN, OK, IA, UT, CA, OR)
- National Tribal Council (Fond du Lack Band of Lake Superior Chippewa)

💧 Other Interests

- Professional Organizations: ACWA, NACWA, NALMS, AASG, WEF, NCASI,
- Interstate Organizations: ORSANCO, Great Lakes region, Gulf of Mexico Alliance
- Academia: ASLO, CUAHSI

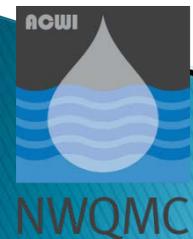


Council Monitoring Framework



Council Teams and Workgroups

- ◆ **Methods and Data Comparability Board**
 - Dan Sullivan (USGS), April Dupre (USEPA)
- **Aquatic Sensor Workgroup**
 - Dan Sullivan (USGS), Chuck Dvorsky (TCEQ)
- ◆ **Water Information Strategies Workgroup**
 - Mary Skopec (IA DNR), second co-chair vacant
- **Water Quality Portal Team**
 - Charles Kovatch (USEPA), Jim Kreft (USGS)
- ◆ **National Network of Reference Watersheds**
 - Mike McHale, Bill Wilber (both USGS)
- ◆ **National Monitoring Network for Coastal Waters**
 - Hugh Sullivan (USEPA), Dennis Apeti (NOAA)
- ◆ **Collaboration and Outreach (C&O) Workgroup**
 - Danielle Donkersloot (NJ DEP), Candice Hopkins (USGS)
- ◆ **Conference Planning Committee**
 - Alice Mayo (USEPA), Jeff Schloss (NALMS), Callie Oberlin (USGS)
- ◆ **Volunteer Monitoring and Citizen Science Workgroup**
 - Danielle Donkersloot (NJ DEP), Alice Mayo (USEPA), Barb Horn





Council Products

- National Monitoring Conference (held biennially)
- Water Quality Portal
- National Environmental Methods Index
- Statistical Methods option for NEMI
- Coordination with volunteer monitoring groups, and State, Regional and Tribal Councils,
- National Network of Reference Watersheds
- National Monitoring Network for Coastal Waters
- Newsletter and webinars
- Fact Sheets, Technical Reports and White Papers on Monitoring Issues



Working Together for Clean Water

10th National Monitoring Conference

<http://acwi.gov/monitoring/conference/2016/>

- ▶ Tampa, Florida
- ▶ May 2–6, 2106
- ▶ Attracts 800 participants
 - Government, federal, state, tribal. local
 - Volunteer citizen science
 - Industry
 - Academia



Conference Themes

- Designs for the 21st Century
- Connecting Coastal to Freshwater Ecosystems
- Innovations in Monitoring and Assessment
- Identifying and Assessing Emerging Risks
- Effectiveness of Management Actions
- Managing, Sharing, Communicating, and Mining Data
- Building Collaborations
- Assessing Trends in Water Resources



Building the Agenda

- 468 abstracts submitted for oral or poster presentations
- 16 proposals for workshops or short courses
- 9 proposals for facilitated round tables
- Field trips
- 5K walk/run



Awards!

The Council is currently accepting nominations for:

- Elizabeth J. Fellows Award

- Outstanding achievement
- Exemplary service
- Distinguished leadership

- Barry A. Long Award

- Exceptional perseverance
- Positive spirit
- Significant contributions

- Vision Award for a council or group

Nominations due: January 31, 2016





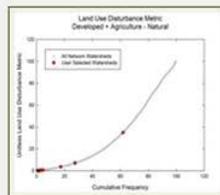
The National Network of Reference Watersheds

- About NNRW
- Core Watersheds
- Watershed Search
- User Guide
- Cooperators

The National Network of Reference Watersheds is a collaborative and multipurpose network of minimally disturbed watersheds and monitoring sites. The purpose of this website is to allow users to search the NNRW database of reference watersheds, to identify watersheds of interest, and download watershed information and water quality data. The current scope of the network is limited to freshwater streams. Membership in the network is voluntary and open to individuals, agencies, and institutions interested in participating in monitoring and (or) research in minimally disturbed and pristine watersheds.

WHAT IS A REFERENCE WATERSHED?

The NNRW defines reference watersheds as those minimally disturbed by human activity preferably in an area protected from human-induced changes. Reference watersheds can be used to measure changes in soil chemistry, vegetation, water quality, and biology through time as well as to compare to disturbed watersheds.



The network is currently composed mainly of U.S. Geological Survey and U.S. Environmental Protection Agency watersheds however, as the network expands watersheds will be added from other Federal, State, tribal, interstate, academic, local and private sector organizations that choose to participate.

The "Watershed Search" section of the website allows users to search the entire network database. The database includes many types of reference watersheds; some are considered reference based on low hydrologic disturbance, others based on land use disturbance, and others based on water quality, stream biology, or some combination of criteria. Results of users searches can be placed into context with all watersheds in the database on cumulative frequency diagrams like the one to the right.

The "Core Watersheds" section of the website allows users to search a subset of the NNRW database that contains only the most pristine watersheds based on **specific land use criteria**. Core watersheds also have stream discharge data available.

Select the "Core Watersheds" tab to explore the most pristine watersheds in the network or select the "Watershed Search" tab to search the entire NNRW database of reference watersheds and access data available for those sites.

If you would like to submit a watershed or a group of watersheds to be included in the network please contact [Mike McHale](#)

TODAY'S FEATURED WATERSHED

Cache Creek



The Cache Creek Basin is located in western Wyoming. Cache Creek drains about 27 km² of steep mountain and canyon terrain in the Gros Ventre Mountains...

WATERSHEDS WHERE I LIVE

Find a Core Reference Watershed near your location
Input either a 5 digit zipcode or latitude and longitude (in decimal degrees).

Zipcode: Latitude:

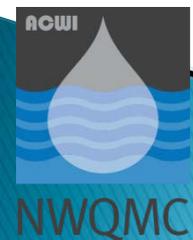
Longitude:





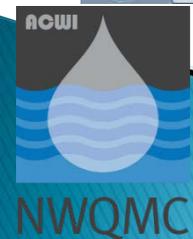
Goals of National Reference Watershed Network

- Assist with establishing “background” conditions for select hydrologic variables and water-quality
- Provide access to data and information of documented quality for minimally or least disturbed watersheds
- Increase the efficiency of monitoring through opportunities to leverage existing reference sites, networks, and financial resources

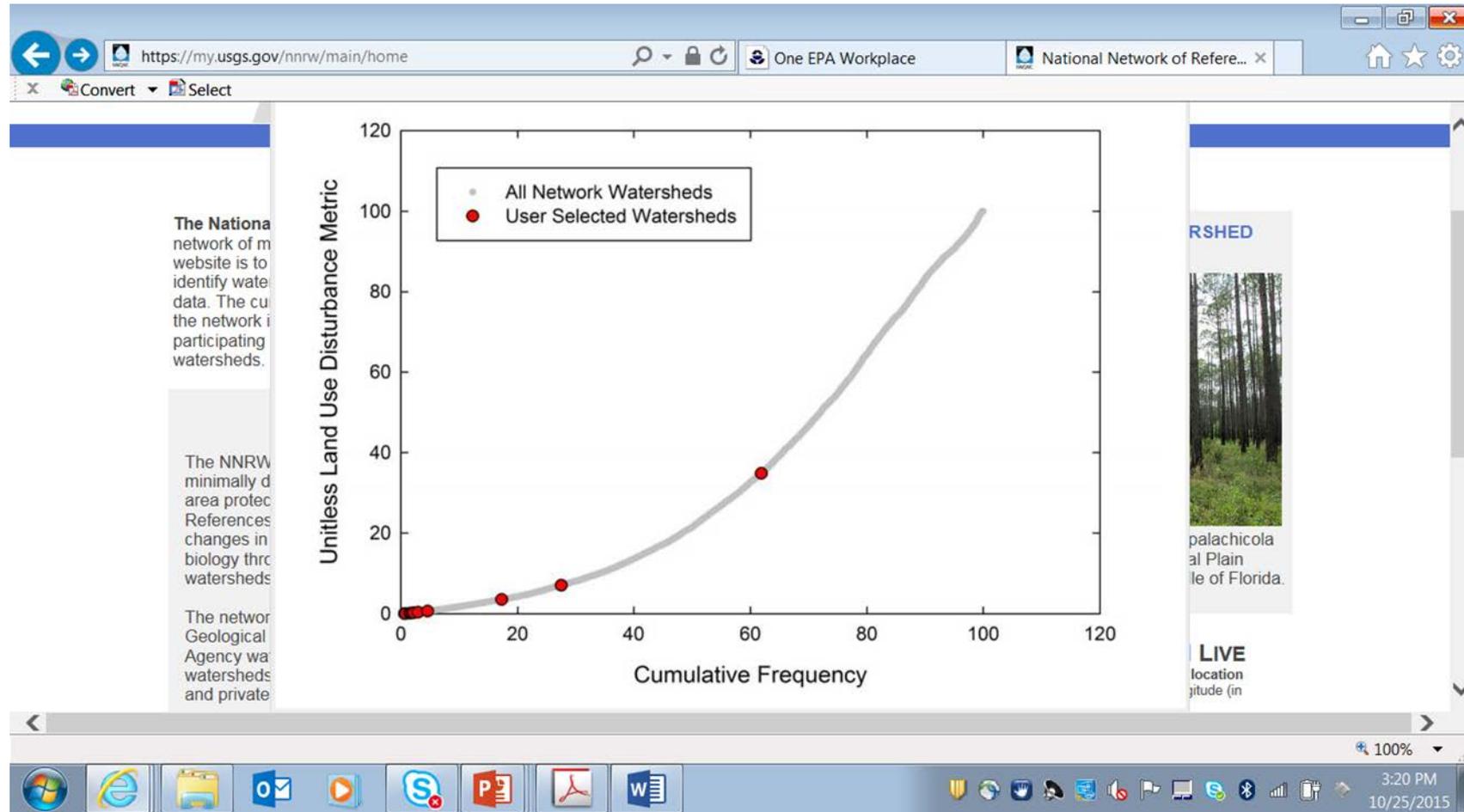


Search the Current Database

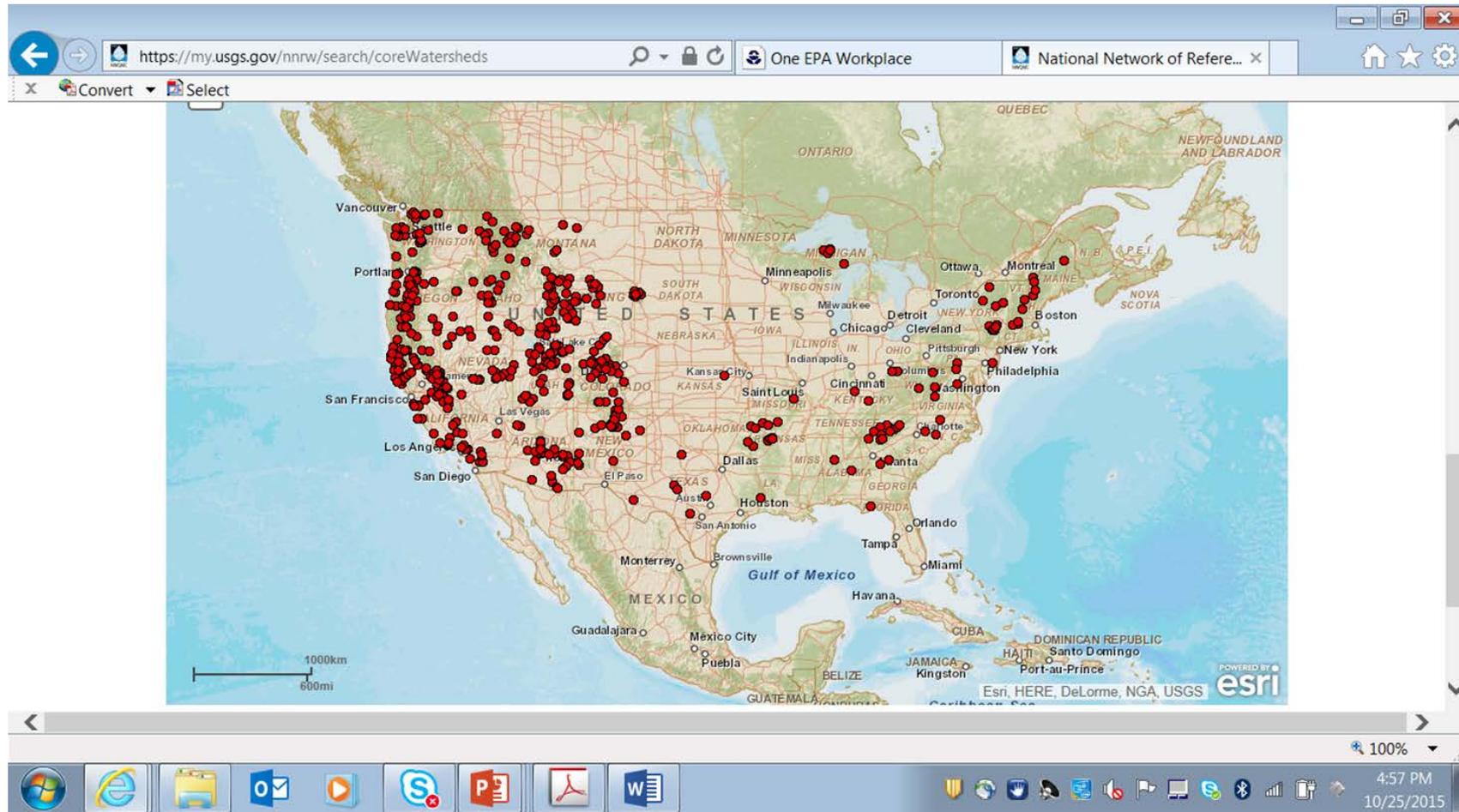
The image is a screenshot of a web browser displaying a map of the United States. The browser's address bar shows the URL <https://my.usgs.gov/nnrw/search/watershedSearch>. The map is densely populated with red circular markers, representing data points across the continental United States. Major cities and states are labeled on the map. The browser's taskbar at the bottom shows several application icons, including Internet Explorer, Outlook, and Word. The system clock in the bottom right corner indicates the time is 4:49 PM on 10/25/2015. The map includes a scale bar for 1000km and 600mi, and is powered by Esri.



Compare Selected Watersheds to the Range in the Database



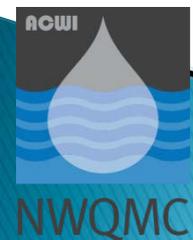
Core Watersheds





Next Steps

- Add watersheds to the database
 - Contact Mike McHale via the website
- Encourage broader participation in the network and water quality data portal
- Look toward additional land use updates and other watershed attributes
- Migrate to the Council website
- Take a look, provide us feedback --
<https://my.usgs.gov/nnrw/>



Water Quality Portal

www.waterqualitydata.us

The screenshot shows a web browser window displaying the Water Quality Portal homepage. The browser's address bar shows the URL <http://waterqualitydata.us/>. The page content includes a main heading, a descriptive paragraph, and three main sections: 'DOWNLOAD DATA', 'HOW TO USE THE WQP', and 'ABOUT THE WQP'. The 'DOWNLOAD DATA' section lists supported file formats. The 'HOW TO USE THE WQP' section lists available guides and data upload options. The 'ABOUT THE WQP' section provides information about the portal's purpose and contributing organizations. The browser's taskbar at the bottom shows various application icons and the system clock indicating 7:43 PM on 10/26/2015.

Water Quality Portal

The Water Quality Portal (WQP) is a cooperative service sponsored by the United States Geological Survey (USGS), the Environmental Protection Agency (EPA), and the National Water Quality Monitoring Council (NWQMC). It serves data collected by over 400 state, federal, tribal, and local agencies.

DOWNLOAD DATA

Download water-quality data in Excel, CSV, TSV, and KML formats.

HOW TO USE THE WQP

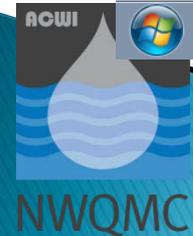
- User Guide
- Web Services Guide
- FAQs
- Upload Data

NATIONAL RESULTS COVERAGE

Water-quality data in your state.

ABOUT THE WQP

- What is the WQP?
- Contributing organizations
- Other Water Quality Portals
- Contact us



Water Quality Portal Stats

260 million records available
from **2.2 million** monitoring sites

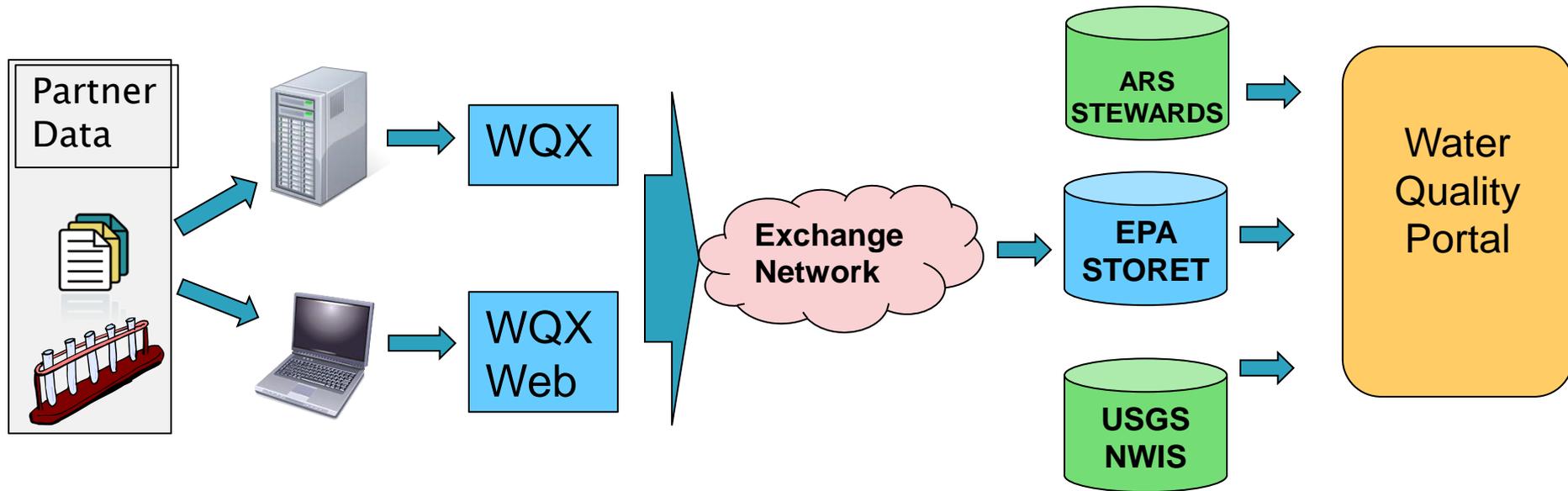
1.4 Billion Automated Web Retrievals
4,155 visits from
2,600 users

Automated Web Retrievals
Downloaded

100 million
Maximum number of
Records downloaded in a single day

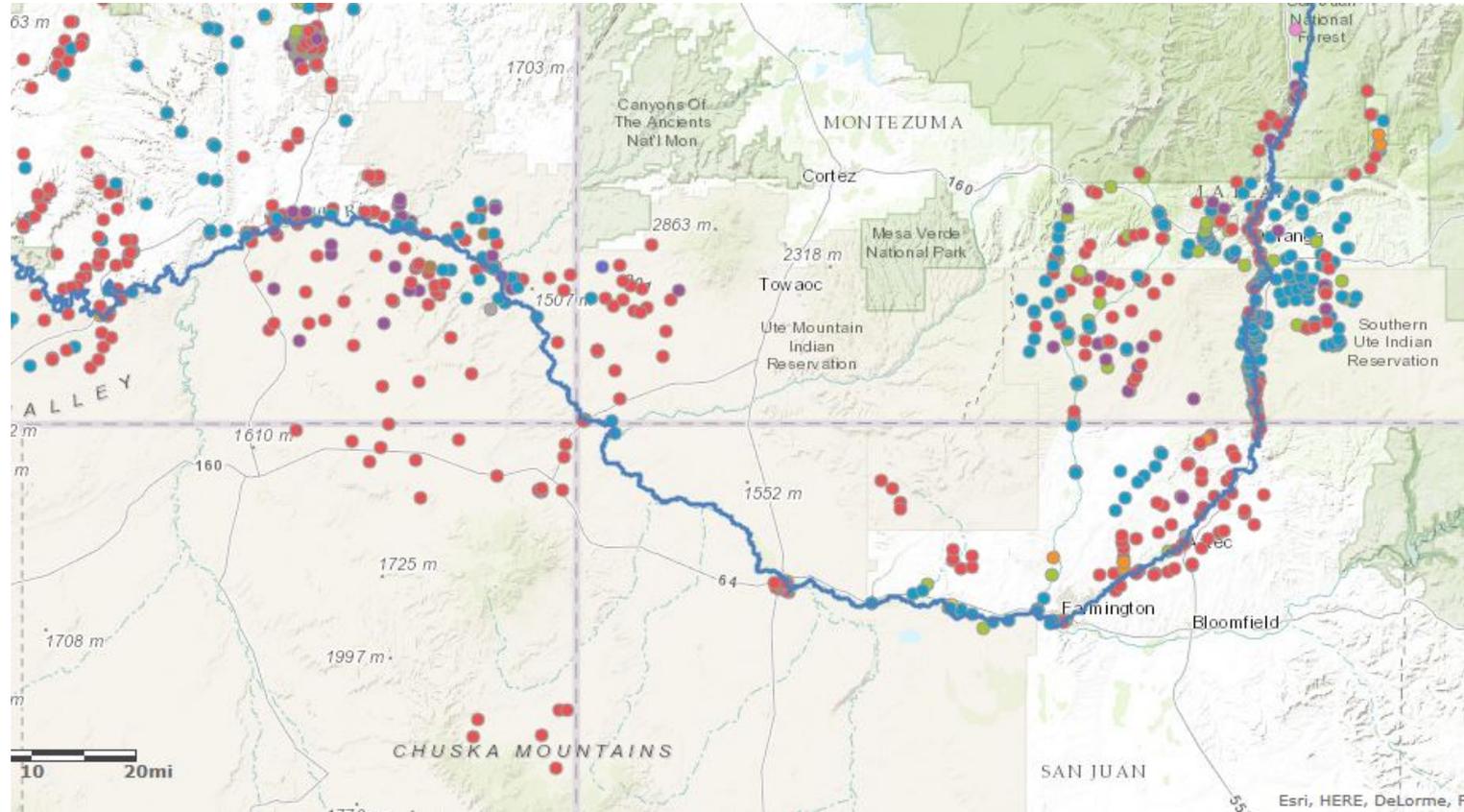


Portal Data Flow

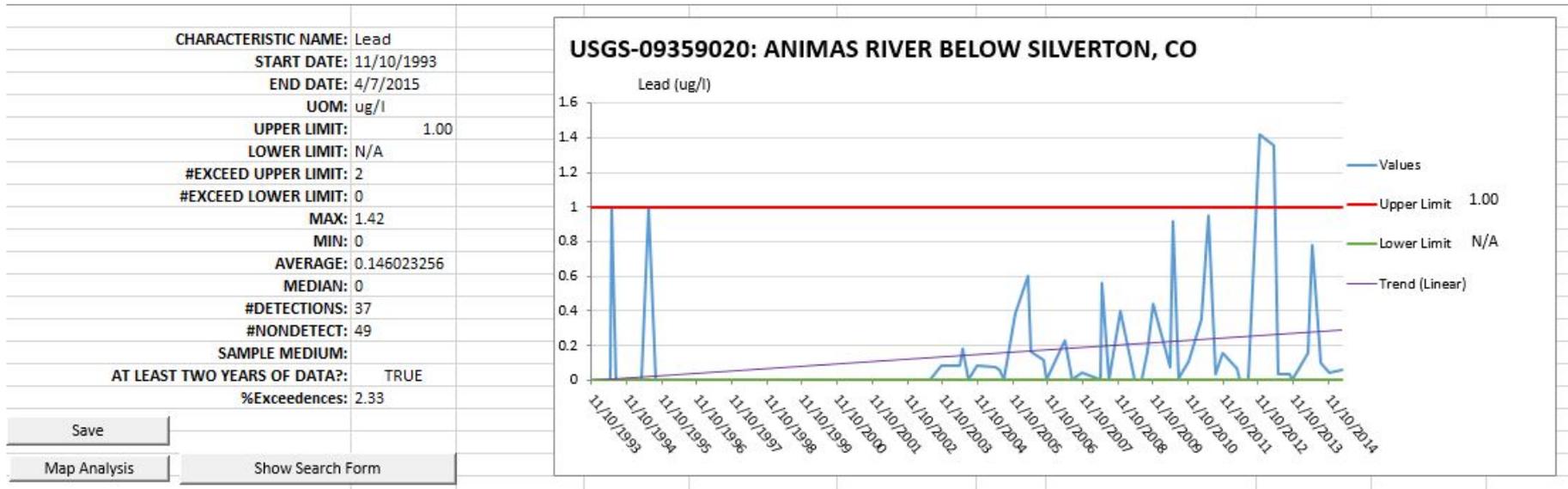


- ◆ The WQP **includes** physical, chemical, biological results and metadata
- ◆ Data **must be** organized and formatted using the Water–Quality Exchange (WQX) template
- ◆ New data are **welcome** and technical support is available to crosswalk your data structure to WQX
- ◆ These data are available via website query or automated web services which can be incorporated into any other third party application

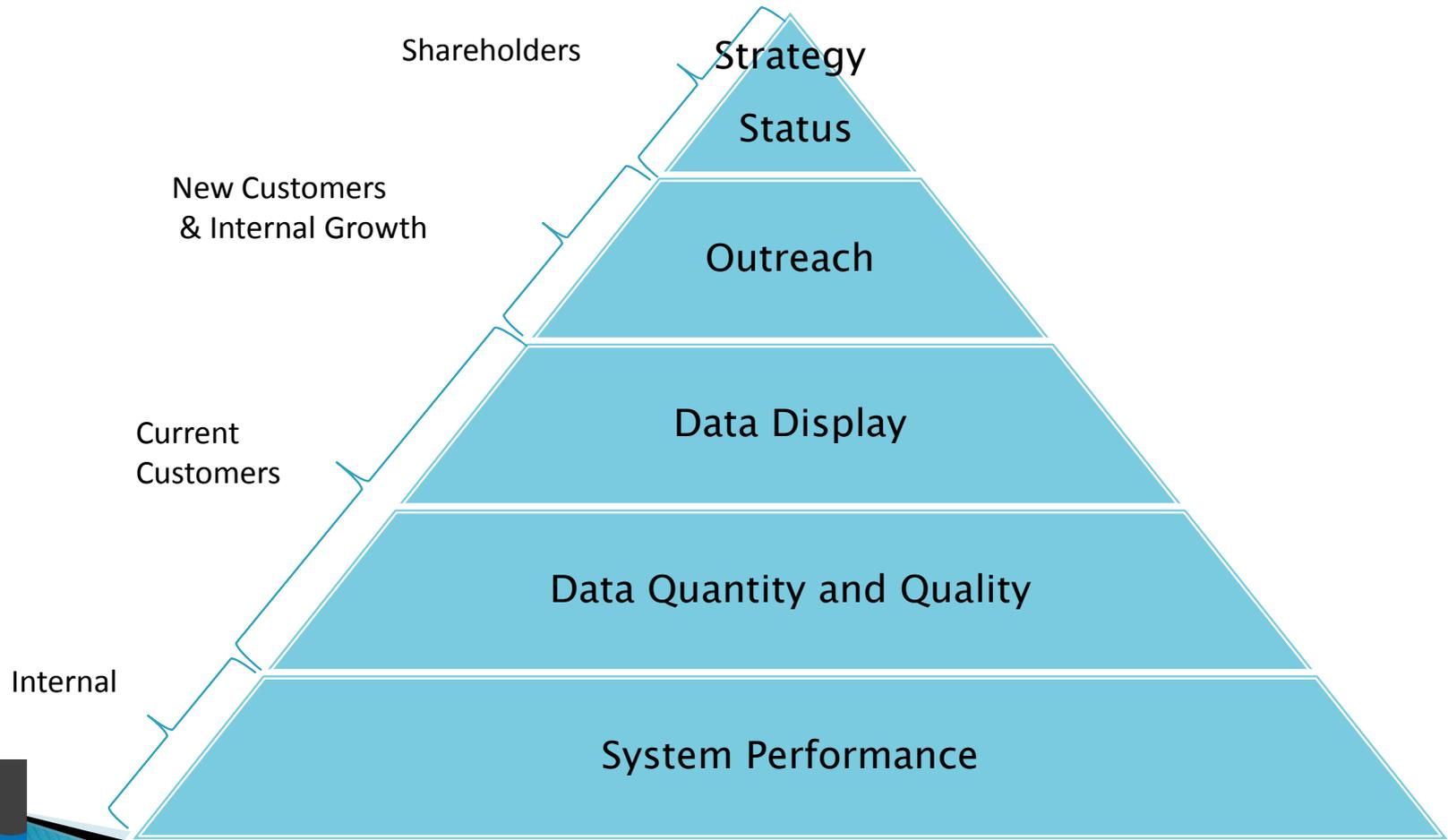
Example Application – *Web service calls stations by 8 digit hydrologic unit*



Example Application – *Web service download to spreadsheet for basic plots*



Portal Vision – *Guiding the Portal for the Next Five Years*



Additional Information

- USEPA Co–Chair: Susan Holdsworth:
holdsworth.susan@epa.gov
- USGS Co–Chair: Gary Rowe
glrowe@usgs.gov
- Council Executive Secretary: Candice Hopkins
chopkins@usgs.gov
- Council website:
<http://acwi.gov/monitoring/>
- Water Quality Portal:
<http://www.waterqualitydata.us/>
- Council Workgroup websites:
<http://acwi.gov/monitoring/workgroups/>

