

Role of WQX in Water Monitoring Data Activities

Susan Holdsworth, U.S. EPA Office of Water

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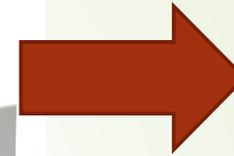
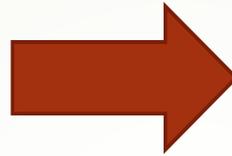


Outline

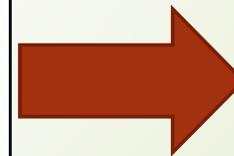
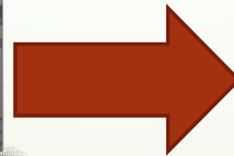


- When to consider WQX and why?
- Key things to know before you get started
- The role of unique identifiers
- Importance of consistent data format and management: Tracking changes and maintaining a flow
- Where to get more information

Value of Data



Limited Return
on Investment



Shared Data is
more valuable

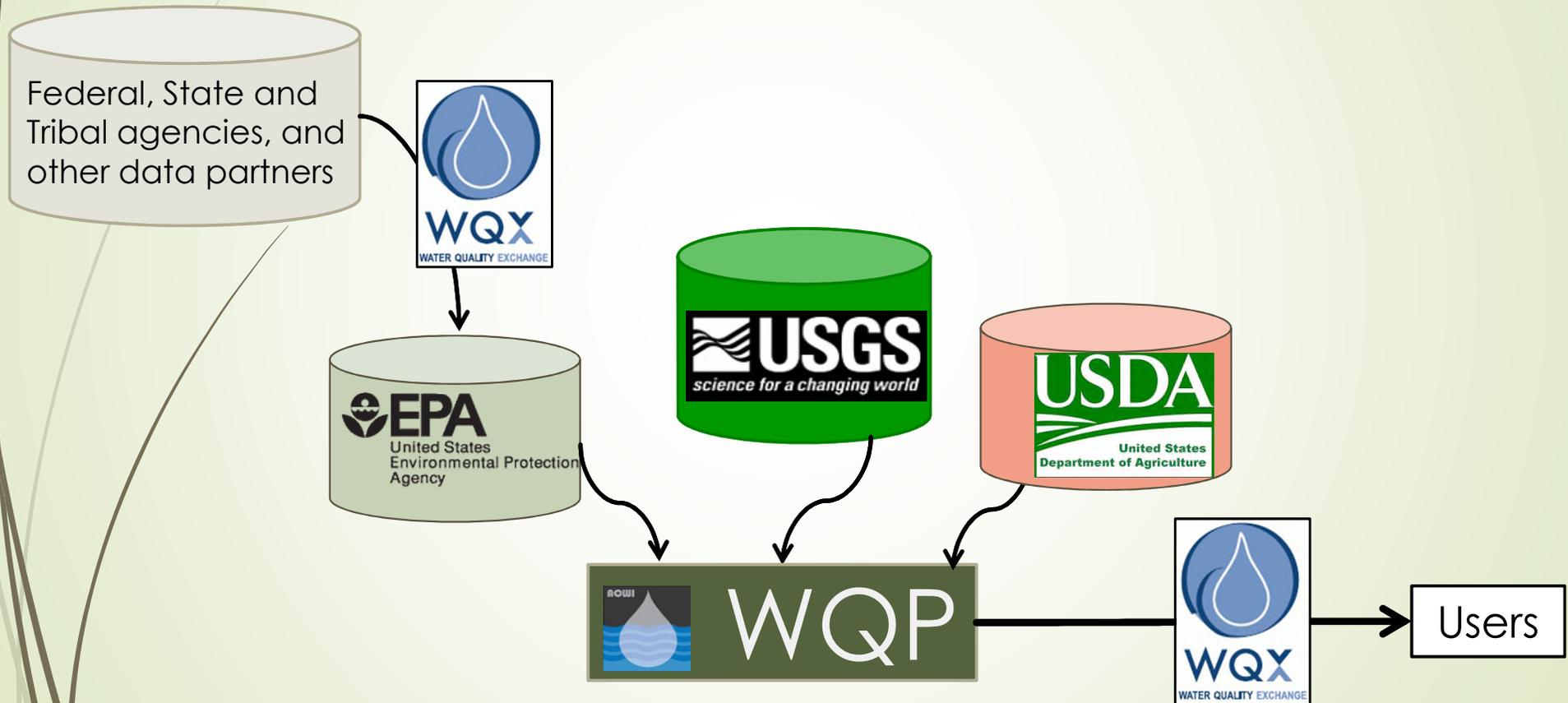




Planning Ahead Saves Time

- ▶ When planning your sampling events, you can save time by considering the following:
 - ▶ How will I consistently keep track of the information that's being collected?
 - ▶ How will I get the data back from the lab?
 - ▶ How will I capture the data in the field?
 - ▶ How do I name and identify my monitoring locations?
 - ▶ What 'terms' should I use to describe my data (i.e. parameter names)
 - ▶ Where will my data be stored and in what format?
 - ▶ How will I keep track of what data I've QA/QC'd?
- ▶ Considering WQX as you're thinking through this will help you answer these questions and save you time later!

The Role of WQX in Data Sharing



WQX is the **'language'** used for sharing water quality monitoring data. It's how we can all describe data in a consistent way so that we can reuse the data.



Key Things to Know: How to describe **Monitoring Locations** for WQX format

- ▶ Consider having **meaningful names** for your station (i.e. “Bear River at Hwy 84 crossing”).
- ▶ **Latitude and Longitude** Coordinates. Don't forget the ‘-’ sign on longitude (unless you actually are in the Eastern Hemisphere). These should be separate fields.
- ▶ **Locational Metadata:** Method used to get a lat/long (i.e. GPS, map, etc.)
 - ▶ **Datum-** coordinate reference system (I.e. NAD83)
 - ▶ Helps others know how accurate lat/long is
 - ▶ Don't forget **Map Scale** if you're using a map to derive your lat/longs



Key Things to Know: How to describe **Activities** for WQX format

- Methods, Methods, Methods-**Collection**, **Analytical**, **Lab Preservation**, all of these methods help someone understand your data. Keeping track of them up front will make it easier later.
- WQX has a set list of **terms** (i.e. characteristics, units, sample fraction, etc.). Defining these for your data set before getting started will save you time mapping the data fields to WQX later.
- **Units** should be in a different column from **parameter** and/or **result**
- **Non Detects** are captured in WQX using a different field (not in the result field). You also will need **detection limits**.
- Make sure you are using **sample fraction** (i.e. Total, Dissolved, etc.) and **speciation** (i.e. 'as N', 'as NO3', etc) correctly



Unique **Identifiers** Are Critical for Managing your Data

- Unique Identifiers label specific pieces of your data and allow you to retrieve, interact with, update, and delete that data in the future.
- Three Key Identifiers:
 1. **Project Identifiers** – Uniquely identify the project under which the samples were taken (defines Why you were collecting the data)
 2. **Monitoring Location Identifiers** – Uniquely identify the monitoring location (defines Where the data were collected)
 3. **Activity Identifiers** – Uniquely identifies the sample collected or activity performed. Is often unique for a given date/location, but must also be unique by equipment type and collection method.



Tracking Changes: the Importance of Consistency to WQX

- ▶ Build a mechanism and procedure for tracking changes in your Monitoring Program:
 - ▶ Sampling procedure changes
 - ▶ Data changes- file formats, data storage locations, spreadsheet layouts, personnel or lab changes
- ▶ This will help keep your data format in sync with the data in WQX and provide seamless data submission in the future
- ▶ It's fairly easy to re-submit a data set to WQX, so long as the Identifiers have remained the same



Maintaining Your Data Flow to WQX

- ▶ So, you made it through the year of data collection, and successfully shared that data through WQX, now what?
 - ▶ Take note of any lessons learned in sharing the data
 - ▶ Make changes in next year's data management to correct for any challenges faced this year
 - ▶ Try to develop a repeatable process with minimal manual steps. For those steps that are manual, document them.
 - ▶ Data sharing to WQX can be completely automated



Where Do I Go to Get Started?

- ▶ The STORET/WQX Team has put extensive resources on-line to help you get started. Two key places to look:

<https://www.epa.gov/waterdata/storage-and-retrieval-and-water-quality-exchange>

<http://www.exchangenetwork.net/data-exchange/wqx/>

- ▶ Grants are also available to help automate your data submittals

<https://www.epa.gov/exchangenetwork/exchange-network-grant-program>

- ▶ The STORET Help Desk is here to help:

storet@epa.gov



Questions?

