



National Association of Wetland Managers and
Saint Mary's University GeoSpatial Services

Tribal Clean Water Act Training Module #2

Data Management for Tribal CWA Monitoring & Assessment Programs

PART 1: INTRODUCTION AND GEOSPATIAL DATA

Welcome!

If you have any technical difficulties during your online training experience, please send your question to Portia Osborne at portia@nawm.org or call (207) 892-3399.



Online Training Modules

Welcome

Introduction to Online Course and Optional Quiz

(9 knowledge questions)

Trainer Introduction

Training Presentation

(3 sections)

How to Access the Online Quiz and Receive a Certificate of Completion

(For use in obtaining CEUs)



Tribal Clean Water Act Training Module #2

Data Management for Tribal CWA Monitoring & Assessment Programs

Target Audience:

Tribal water resources staff who want to learn more about data management for water quality applications, particularly in the context of Clean Water Act compliance.

Learning Objectives:

By taking part in this online training, participants should be able to:

1. Practice some basic principles for effective data management
2. Give a short definition/explanation of metadata.
3. Understand what WQX and ATTAINS are and can do for your program.
4. Explain, generally, what a Quality Assurance Project Plan (QAPP) is.
5. Understand where/how data assessment fits into the data life cycle.



What is on the Quiz?

Nine questions related to key takeaways from the online training presentation.

This module will provide information on how to access the quiz after the presentation is complete (3 sections).

On average, the quiz takes less than 15 minutes to complete.



Trainer Introduction



Kathy Allen

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What *is* Data Management?

According to the EPA's report [*Tribal Data Management for WQX Submission:*](#)

- The process of recording, storing, organizing, maintaining, and safeguarding data and information.
- Allows programs to manipulate, summarize, and analyze results to make decisions.
- Saves time and facilitates the maintenance of accurate information about water quality.



Why is Data Management Important?

From the EPA's report [*Tribal Data Management for WQX Submission*](#):

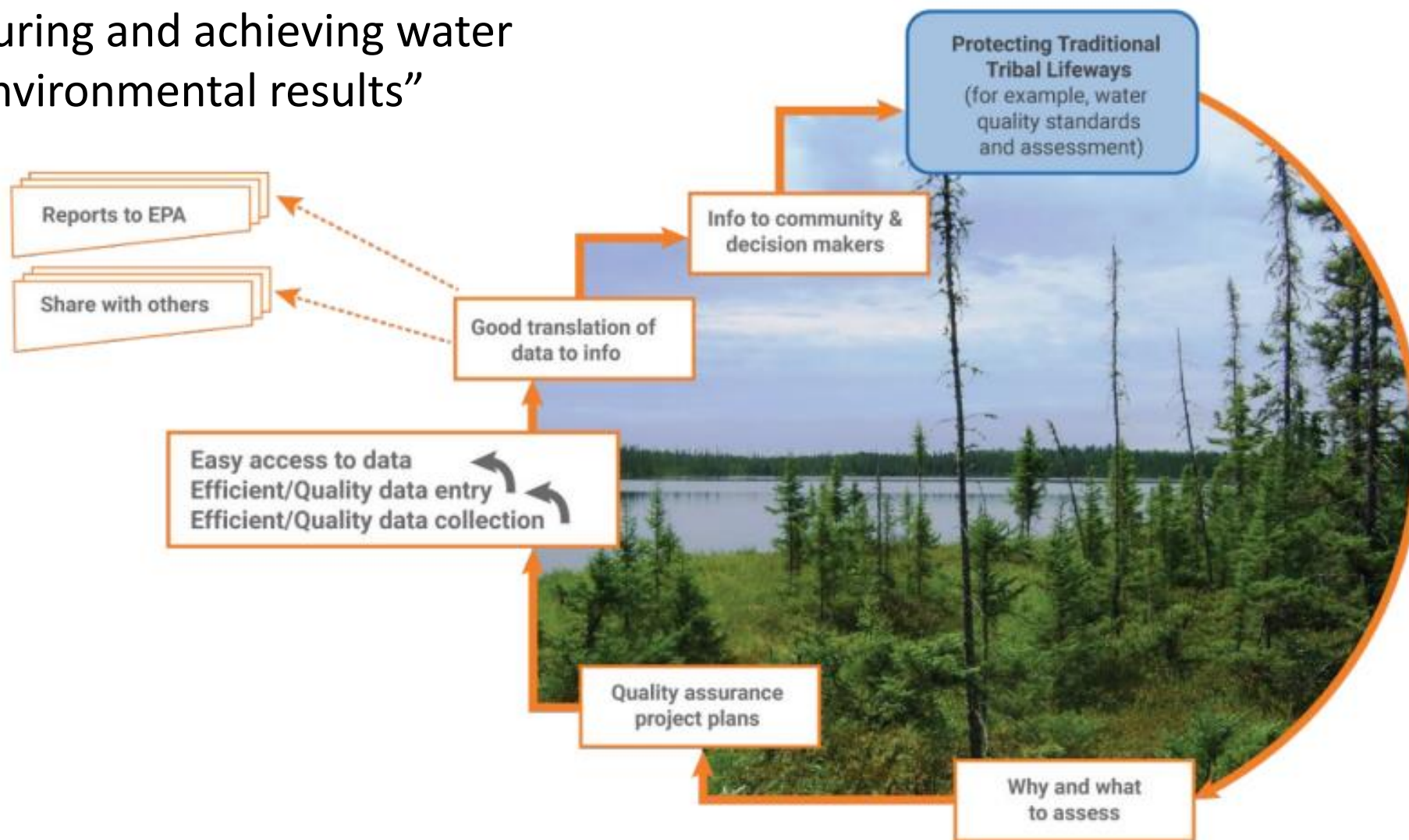
“Good data management empowers Tribes to use the data to determine the physical, chemical, and biological conditions of a waterbody to measure and identify water quality trends to improve and maintain water quality. An organized and thorough data management program provides the foundation for measuring and achieving water quality environmental results while helping Tribes meet EPA data reporting requirements.”

“This document is intended to supplement the CWA Section 106 Tribal Guidance by providing useful suggestions and tips to Tribes about how to establish a data management system that reflects tribal water quality goals and manage the system, so the data are accessible and reliable.”

WQX = Water Quality Exchange



Data Management – “the foundation for measuring and achieving water quality environmental results”



Building a Solid Foundation

- Data management approach depends on type of data collected and the goals for analyzing/reporting that data.
- Consider and plan for data management during sampling design phase, to keep data from accumulating and becoming unmanageable
- A Data Management Plan (DMP) can provide a prescribed roadmap to ensure data quality, as well as help current/future staff better understand the purpose for the data and methods for collecting, maintaining, storing, and sharing.
 - A living document, updated as procedures change



Some Questions to Consider

What are the goals/management questions?

- How often will information need to be produced?
- What formats will information need to be presented in?

What different data types will be produced?

- What path will data take from field or lab to management platform?
- What metadata will be needed?

Who will be responsible for data management/analysis?

- What support will staff need to properly manage data?

What resources are available to support a data management program?

- What software options or approaches are best suited to your needs?
- Is there a budget for data management support? What are the best options given resource constraints?

What functions are desired in a database?

- Who will need access to review/enter data?
- Is a relational database needed?
- How will data be prepared and submitted to WQX?
- What other systems would the database need to be able to integrate with?
- How will data be evaluated/validated for quality?



From Tribal Data Management for WQX Submission

Specific Management Principles - #1

- Within databases and spreadsheets, agree upon what types of data to track and which data elements to require (e.g., always include units)
- Use common naming conventions for sampled parameters, monitoring stations, etc.
- Standard formats for data elements (e.g., dates) make it easier to work with data during analysis
- Standard formats for spreadsheets – consistent column order, column heading names, etc.



Specific Management Principles - #2

- Include **Metadata** – ‘data about the data’
 - Where was the sample or measurement collected?
 - When was it collected?
 - What was collected?
 - How was it collected?
 - Why was it collected?
 - Who collected it?
- Helps others confidently use the data and allows future counterparts to maintain continuity in data use and management
- May want to store in a separate database from results (helpful with WQX upload); could be “connected” in a relational database.



Metadata Table Example

	Where?	Why?	When?	Who?	How?	What?	
Activity_ID	Site_ID	Program	Date	Collector	Method	Parameter	Unit
001	Green_01	WQ_Ambient	6/15/2022	D. Jones	Sonde	Temperature	deg C
002	Green_01	WQ_Ambient	6/15/2022	D. Jones	Sonde	Conductivity	μS/cm
003	Green_01	WQ_Ambient	6/29/2022	C. Smith	Sonde	Temperature	deg C
004	Green_01	WQ_Ambient	6/29/2022	C. Smith	Sonde	Conductivity	μS/cm

Activity_ID	Date	Result
001	6/15/2022	22.3
002	6/15/2022	0.25
003	6/29/2022	22.8
004	6/29/2022	0.18

Can be “connected” to actual data result by an “identifier”



Metadata Best Practices

- Choose a metadata “style” that fits your needs or create your own – a style is a set of rules regarding which elements must be included and a style sheet for displaying their content. Create a checklist for your organization to use when assembling metadata.
- If possible, create a metadata template for your organization with basic contact, distribution, and constraints information.
- Periodically review and revise your metadata guidelines, as national or agency standards may be periodically updated.



Metadata Style Sheet Excerpts

Identification Information:

Citation:

Citation Information:

Originator:

Publication Date:

Title:

Geospatial Data Presentation Form:

Publication Information:

Publication Place:

Publisher:

Online Linkage:

Description:

Abstract:

Purpose:

Supplemental Information:

Time Period of Content:

Time Period Information:

Range of Dates/Times:

Beginning Date:

Ending Date:

Currentness Reference:

Status:

Progress:

Maintenance and Update Frequency:

Spatial Domain:

Description of Geographic Extent:

Bounding Coordinates:

West Bounding Coordinate:

East Bounding Coordinate:

North Bounding Coordinate:

South Bounding Coordinate:

Keywords:

Access Constraints:

Use Constraints:

Point of Contact:

Contact Information:

Contact Person Primary:

Contact Person:

Contact Organization:

Contact Address:

Data Quality Information:

Attribute Accuracy:

Attribute Accuracy Report:

Logical Consistency Report:

Completeness Report:

Positional Accuracy:

Horizontal Positional Accuracy:

Vertical Positional Accuracy:

Lineage:

Process Step:

Process Description:

Process Date: /

Entity and Attribute Information:

Detailed Description:

Entity Type:

Entity Type Label:

Entity Type Definition:

Entity Type Definition Source:

Attribute:

Attribute Label:

Attribute Definition:

Attribute Definition Source:

Attribute Domain Values:



Specific Management Principles - #3

- When working with labs for sample analysis, have a plan to “join” the results with data collected in the field on the same day
- Consider supplying the lab with a data template to help return lab results in a format that will be more easily incorporated into your data management system.



Protecting Indigenous Knowledge/ Cultural Resources

From EPA's *Tribal Data Management for WQX Submission*:

“The Section 106 Program is committed to respect tribal Indigenous Knowledge and acknowledge that this information is owned by them. Tribes that use Section 106 funds to collect Indigenous Knowledge **will not be required** to report that shared knowledge as part of their grant requirements. Tribes are expected to meet the reporting requirements of the 106 Grant but are not expected to share the underlying Indigenous Knowledge used to inform water quality objectives and management practices.”



USACE photo



Protecting Indigenous Knowledge/ Cultural Resources

“Programmatic activities that reflect decisions based on Indigenous Knowledge, such as location of sampling sites and monitoring data, are still subject to grant reporting requirements; however, the Indigenous Knowledge-based rationale for site selection does not have to be reported to EPA.”

****Engage with your Project Officers early to discuss how Indigenous Knowledge can be protected if it is used to influence policy and regulatory decision making.****



BLM photo



Additional Data Management Resources

- USGS Data Management Plan page (www.usgs.gov/data-management/data-management-plans) includes [a checklist](#), FAQs, sample templates from USGS science centers, and writing best practices.
- Tribal Exchange Network Group (www.tribalexchangenetwork.org) offers [web resources](#), [workshops](#), monthly “data drop-in sessions”, and mentorship opportunities. Request no-cost technical assistance [here](#).
- Collaborative Research Center for American Indian Health (CRCAIH) [Research Data Management Toolkit](#) (Version 2)
- EPA [Open Data Metadata Editor](#) for non-geospatial data

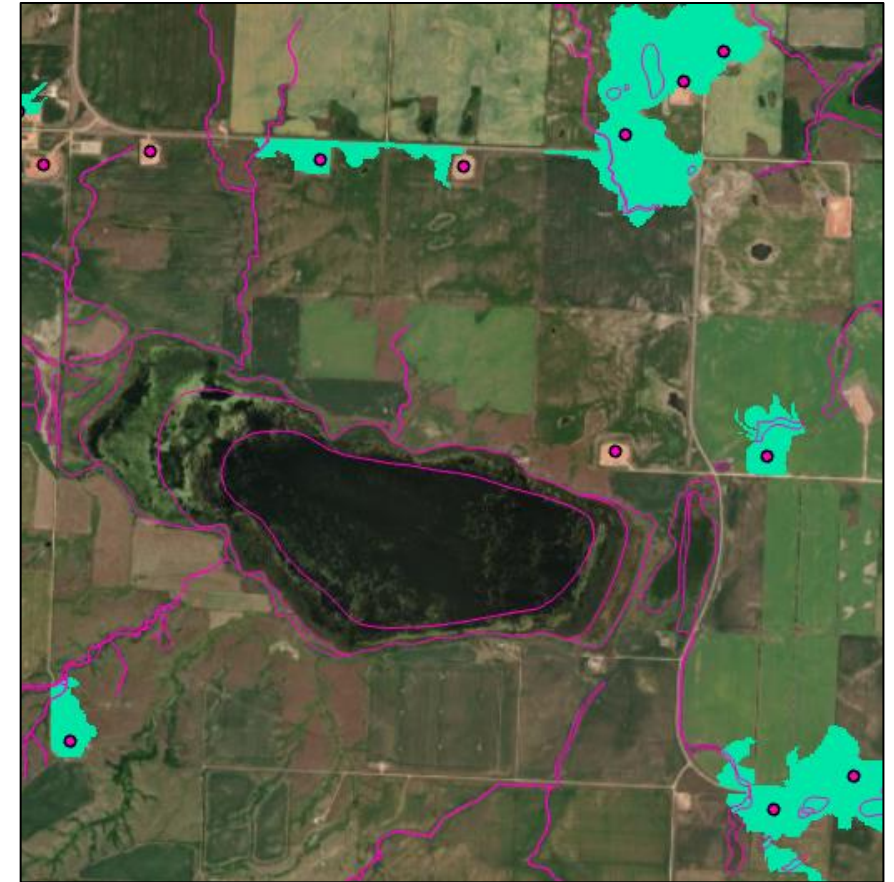




Managing Geospatial Data

What is Geospatial Data?

- Information that describes features or events that have a location on or near the earth's surface
- Can include points, lines, polygons, or a series of gridded cells/pixels called a raster (photos/images)
- Data can be collected in the field (with GPS units), remotely (e.g., by satellite), or created in a computer program.



Who Provides Guidance/Standards?

The Federal Geographic Data Committee (FGDC) is “an organized structure of Federal geospatial professionals and constituents that provide executive, managerial, and advisory direction and oversight for geospatial decisions and initiatives across the Federal government” (www.fgdc.gov/organization)

- lead entity in the executive branch of government for the development, implementation, and review of policies, practices, and standards relating to geospatial data



FGDC.GOV
FEDERAL GEOGRAPHIC DATA COMMITTEE

GeoSpatial Data and the EPA

The EPA adopted a National Geospatial Data Policy (NGDP) that “establishes principles, responsibilities, and requirements for collecting and managing geospatial data used by Federal environmental programs and projects within the jurisdiction of the U.S. Environmental Protection Agency”

- This policy applies to all EPA organizations, grantees, agents working on behalf of EPA, tribes, localities and partner states of EPA who design, develop directly or indirectly, compile, operate, or maintain EPA information collections developed for environmental program support.

From the [National Geospatial Data Policy](#) (EPA 2005)



GeoSpatial Data and the EPA

Additional policies on

- Procedure for Geospatial Metadata Management
- National Geospatial Deliverable Standard - intended to establish a uniform method for submitting geospatial data and related products to the US EPA (e.g., geospatial file delivery formats). All data files:
 - must be in an approved format (outlined in policy document)
 - must have spatial reference information that describes the projection/coordinate system, datum, and units of measure
 - are required by the EPA National Geospatial Data Policy to have associated metadata



Geospatial Data Life Cycle Phases in the NGDP

- Data Planning – Develop QAPPs*, determine data sensitivity, state data accuracy goals, adhere to data design/collection standards
- Data Collection and Acquisition – include geo-referenced point data, geographic area boundaries, geospatial data accuracy, and geospatial metadata; provide information on data acquisition steps and methods
- Data Processing and Documentation – adequately document methods used
- Data Storage and Access - transmission of geospatial data to EPA and subsequent storage
- Data Maintenance and Retirement - program office or project sponsor is responsible for spatial data maintenance/decisions

*QAPP = Quality Assurance Project Plan



Getting Started - Develop Procedures for GIS Database Maintenance

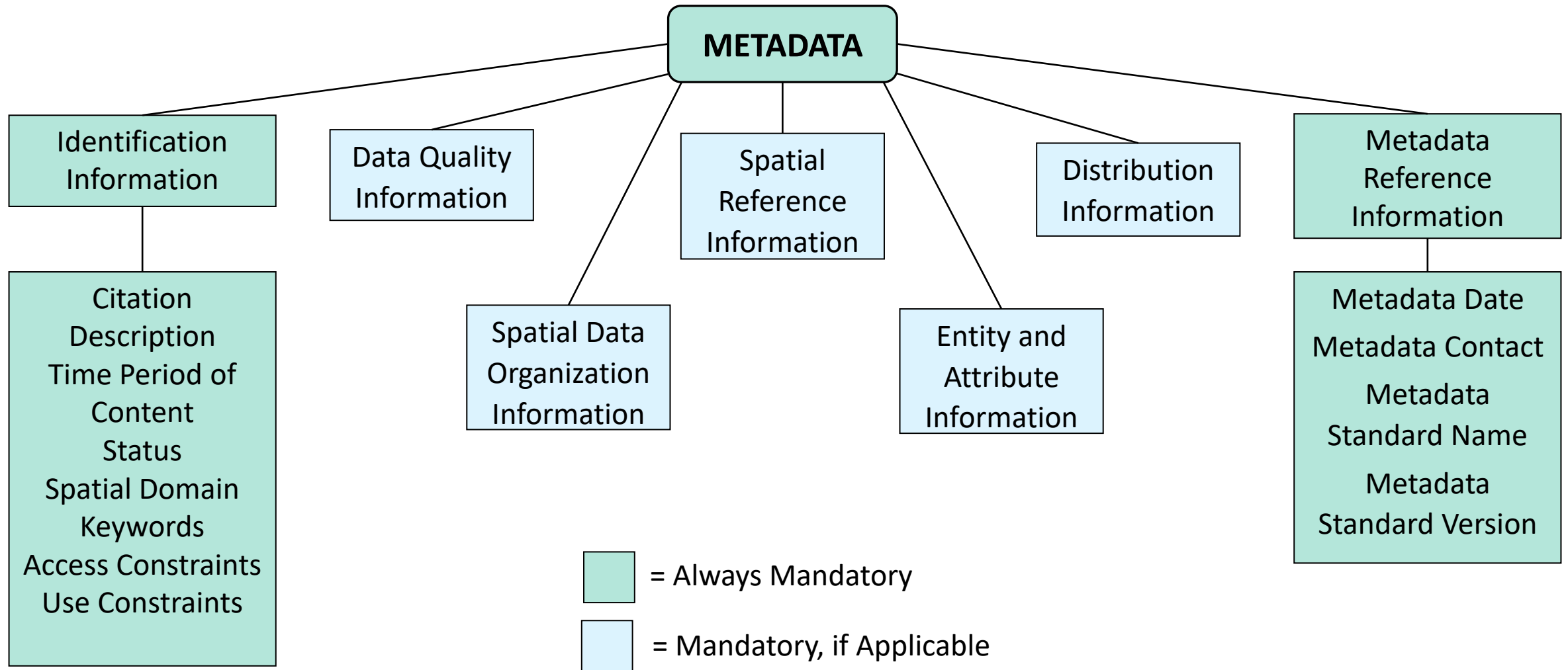
For adding new information *and* updating/correcting information

- Identify and document information flow
- Identify responsible personnel and their tasks
- Determine update frequency
- Establish naming conventions (no spaces or special characters)

** Don't forget about **Metadata** – establish procedures/standards to ensure metadata is consistently collected and entered for all geospatial data **



Geospatial Metadata Includes:



Adapted from [FGDC 1998](#)



Remember Your Metadata Best Practices!

- Choose a metadata “style” that fits your needs or create your own – a style is a set of rules regarding which elements must be included and a style sheet for displaying their content. Create a checklist for your organization to use when assembling metadata.
- If possible, create a metadata template for your organization with basic contact, distribution, and constraints information.
- Periodically review and revise your metadata guidelines, as national geospatial metadata standards are continuously revised.



Additional Resources

- National Tribal Geographic Information Support Center (tribalgis.com)
 - Webinar recording – [Data Management Tips and Tricks](#)
- FGDC's [Content Standard for Digital Geospatial Metadata](#) website– publications, learning resources, and tools.
- Esri [Metadata Help](#)
- Esri online courses (free with an Esri account)
 - [Getting Started with Data Management](#)
 - [Manage and Edit Data in ArcGIS Pro](#)



** Don't have Esri? All federally recognized tribes are now eligible to receive Esri licenses and training at no cost through a partnership between Esri and the BIA's Branch of Geospatial Support (BOGS). Learn more [here](#) **





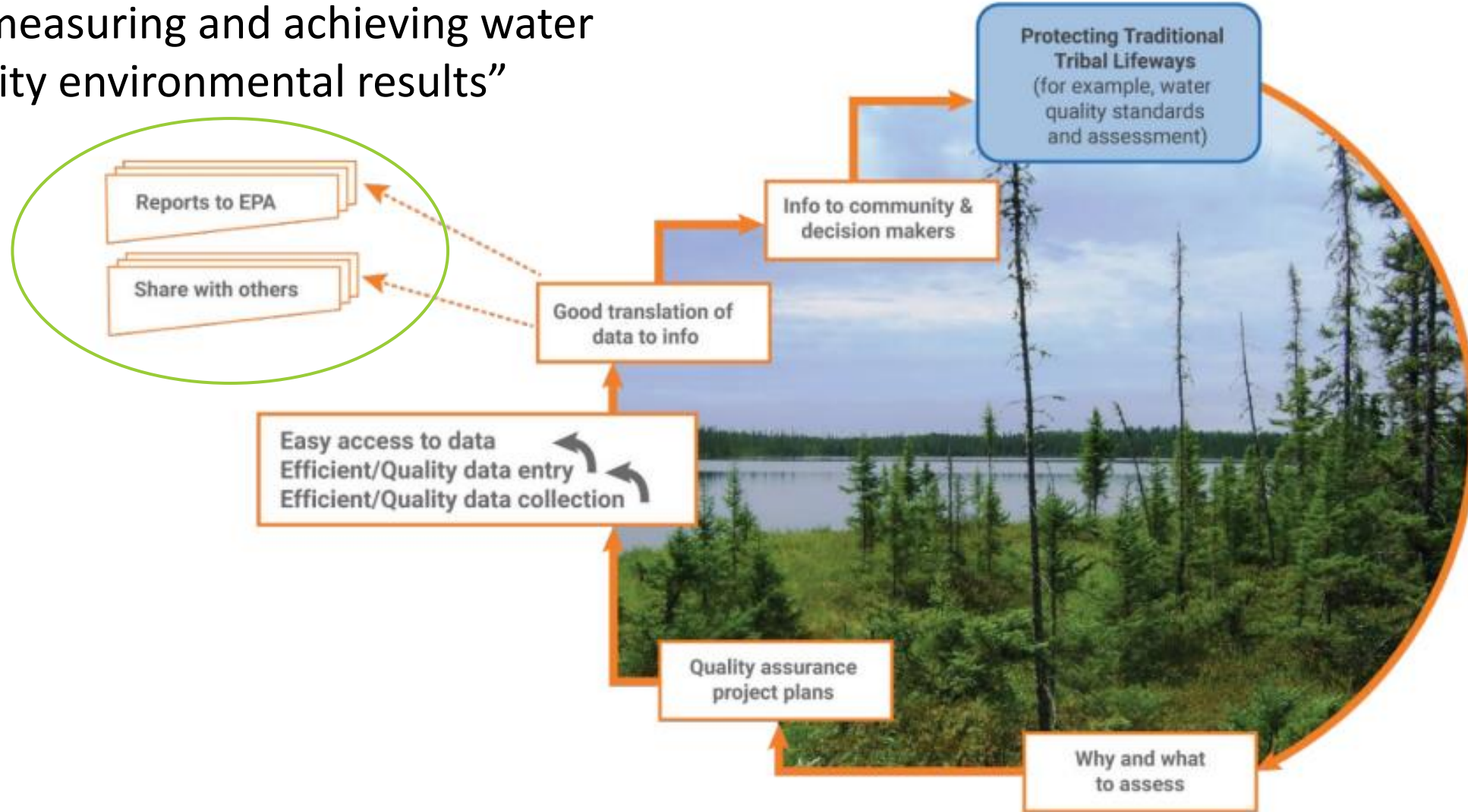
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Tribal Clean Water Act Training Module #2

Data Management for Tribal CWA Monitoring & Assessment Programs

PART 2: EPA DATA MANAGEMENT SYSTEMS (WQX AND ATTAINS)

Data Management – “the foundation for measuring and achieving water quality environmental results”



Graphic reproduced from EPA’s Tribal Data Management for WQX Submission, photo courtesy of Fond du Lac Band

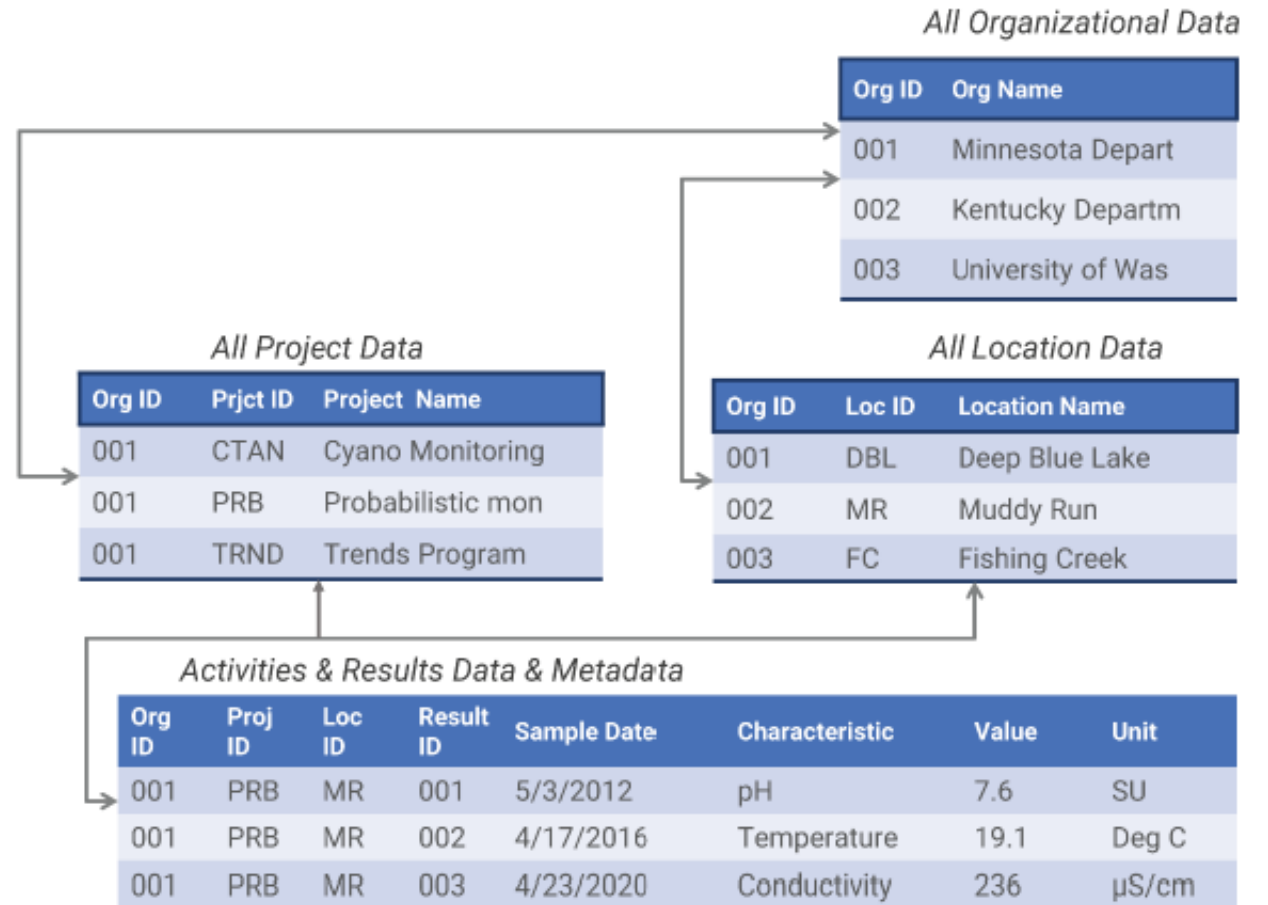
Water Quality Exchange (WQX) Basics

- WQX is a standards-based data format for exchanging water quality data; it defines a standard set of allowable fields (or elements) that can capture and describe water data and metadata.
- Submitting water quality data to WQX is a reporting requirement of the CWA Section 106 Program.
- Once data are in WQX, users can retrieve them from the online Water Quality Portal (WQP) for use in a variety of studies and analyses.



WQX Format/Structure

- Relational and hierarchical
- Data describing Projects and Locations must come before data describing the Monitoring Activities and Results Data; users *must* associate Activities and Results with a properly documented Project and Location before they can be stored.



Getting Started

First, determine which water quality data you'll have to submit

- WQX requires that users report certain information in a specific way, depending on data type – may influence how you want to document data during collection.

Examples of results information in WQX (full tables available in [*Tribal Data Management for WQX Submission*](#))

Field Name	Description	Source
Activity Media Name	Medium in which activity occurs	Listed in template allowable values.
Activity Start Date	Date activity began (MM/DD/YYYY)	Date samples or measurements taken
Sample Collection Method ID	Valid WQX sample collection method, required if activity type is sample.	User-created based on QAPP
Characteristic Name	Valid WQX characteristic name	Listed in template allowable values
Result Value	Measured value of characteristic	From lab results or field sheet
Result Value Units	Units for characteristic result	From lab results or field sheet



Getting Started

- Consider adopting/checking the WQX Web Template Files to ensure that required data elements are complete at the time of entry, and that value-naming conventions match
- Templates (Excel spreadsheets) provide detailed guidance on the requirements for each field that may need to be provided (e.g., allowable or required values)
 - Field lengths
 - Defined formats or domain lists (i.e., allowable values)
 - Required unique identifiers
- The WQX Web Template User Guide offers a step-by-step guide through one of the templates to prepare data for import into the WQX Web tool



Getting Started

- When submitting results, data managers need to select the Analytical Method Context and Analytical Method ID for their field and lab procedures – all allowable values are in WQX templates
- Utilizing EPA's Best Practices Guides for WQX Nutrients, WQX Metals, and Sharing Benthics Data can help improve data quality
- Additional resources and tools on EPA's website at <https://www.epa.gov/waterdata/learn-more-about-water-quality-data>



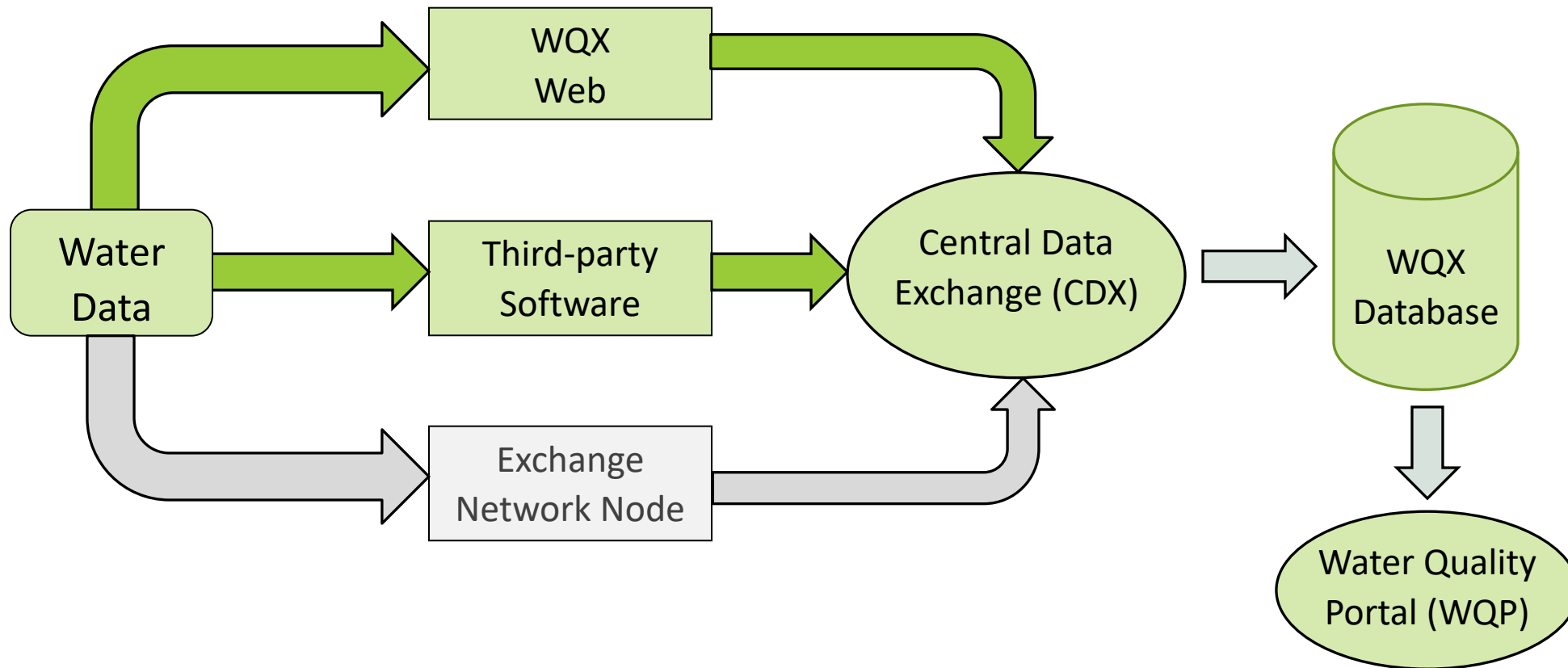
Mechanisms for Upload to WQX

Choose the best approach for your program

1. Submit data through the WQX Web Submission Tool (WQX Web) - web-based user interface for uploading text and spreadsheet files of Project, Station, and Results data to WQX; allows users to correct data errors
2. Third-party WQX-compliant data management software for purchase - several providers of enterprise data management systems have added WQX compatibility to their software systems; these platforms provide functionality for several data management functions, like entry, data integration, analysis, import, and export, in a variety of formats.
3. Submit data to WQX using an Exchange Network node or node client - flows water quality monitoring data from a Tribe's data system to WQX via Exchange Network nodes or node client; utilized by Tribes that have been awarded Exchange Network grants (nodes not supported by current grants, but still used by some tribes)



Mechanisms for Upload to WQX



WQX Web

- Users must [register with the EPA](#) and create a CDX-Web (Central Data Exchange) account; only system requirement is a web browser
- Templates are available, along with a [step-by-step guide](#) to using the WQX Web Monitoring Data Entry Template for Physical/Chemical data to prepare your data for import into the WQX Web tool
- Full [User Guide available](#) online



Third-party WQX-compliant Software

- Developed by companies/organizations that provide enterprise data management systems; usually web-based
- Can assist with data review, QA/QC processes, and data analysis (e.g., statistical reports, ANOVA, graphs, exceedance maps)
- Examples: [AWQMS](#) (Ambient Water Quality Monitoring System), maintained by Gold Systems, is utilized by 85+ tribal water quality programs across 6 regions. Systems have also been developed by the Northwest Indian Fisheries Commission and tribes in Oklahoma (Open Waters).



Exchange Network Grants

- The Environmental Information Exchange Network (EN) is a partner-inspired, developed, implemented and governed information network that facilitates environmental data sharing among EPA, states, tribes and territories.
- Grants are available annually for projects that 1) Facilitate the sharing of environmental data; 2) Streamline data collection and exchanges; 3) Increase the quality and access to environmental data; and/or 4) Support better decisions on environmental and health issues
- Tribes have used EN grants to develop databases, WQX reporting systems, data management plans, and provide staff training.



Additional Resources

- EPA's [water quality data page](#) and [data upload page](#) include FAQs, tools, training videos, and more.
- EPA offers a help desk (1-800-424-9067 or [wxq@epa.gov](mailto:wqx@epa.gov)), one-on-one assistance by appointment, and a monthly “user call” to share updates and answer questions
- [Exchange Network Program Grant](#) information



What is ATTAINS?

The Assessment and TMDL Tracking and Implementation System (ATTAINS) provides a national platform for reporting tribal and state water quality decisions (e.g., impairment)

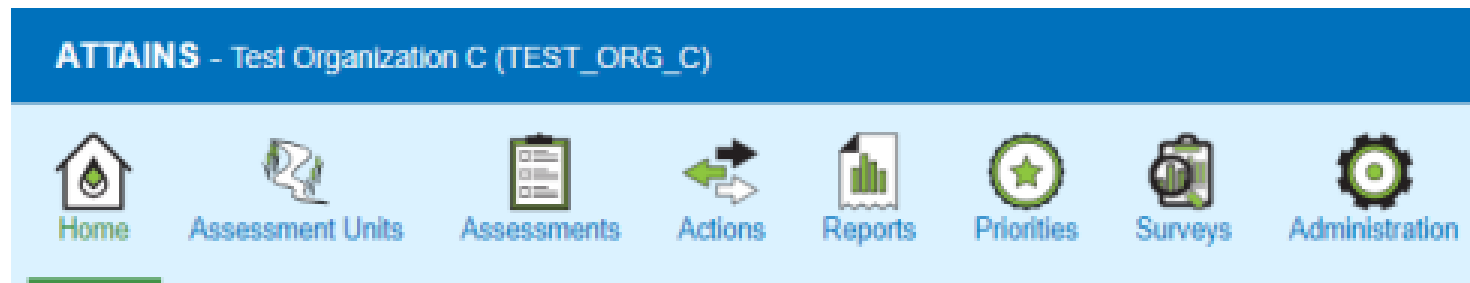
- Tribal decisions are available, alongside decisions by states and territories, in the “How’s My Waterway” online map/database, providing a more complete picture of water quality across the nation
- Reporting helps inform EPA of water quality issues on tribal lands, and helps make tribal information more accessible in decision-making by watershed partners

**** ATTAINS does NOT provide a tool or process for making assessment decisions, it is a reporting and information-sharing system. ****



Fulfilling Reporting Requirements

- Water Quality Assessment decisions submitted to ATTAINS for sharing on “How’s My Waterway” can replace a written Tribal Assessment Report.
- Tribes with TAS for Section 303(d) can combine their impaired waters list with their Section 106 assessment report and submit the combined report electronically through ATTAINS.

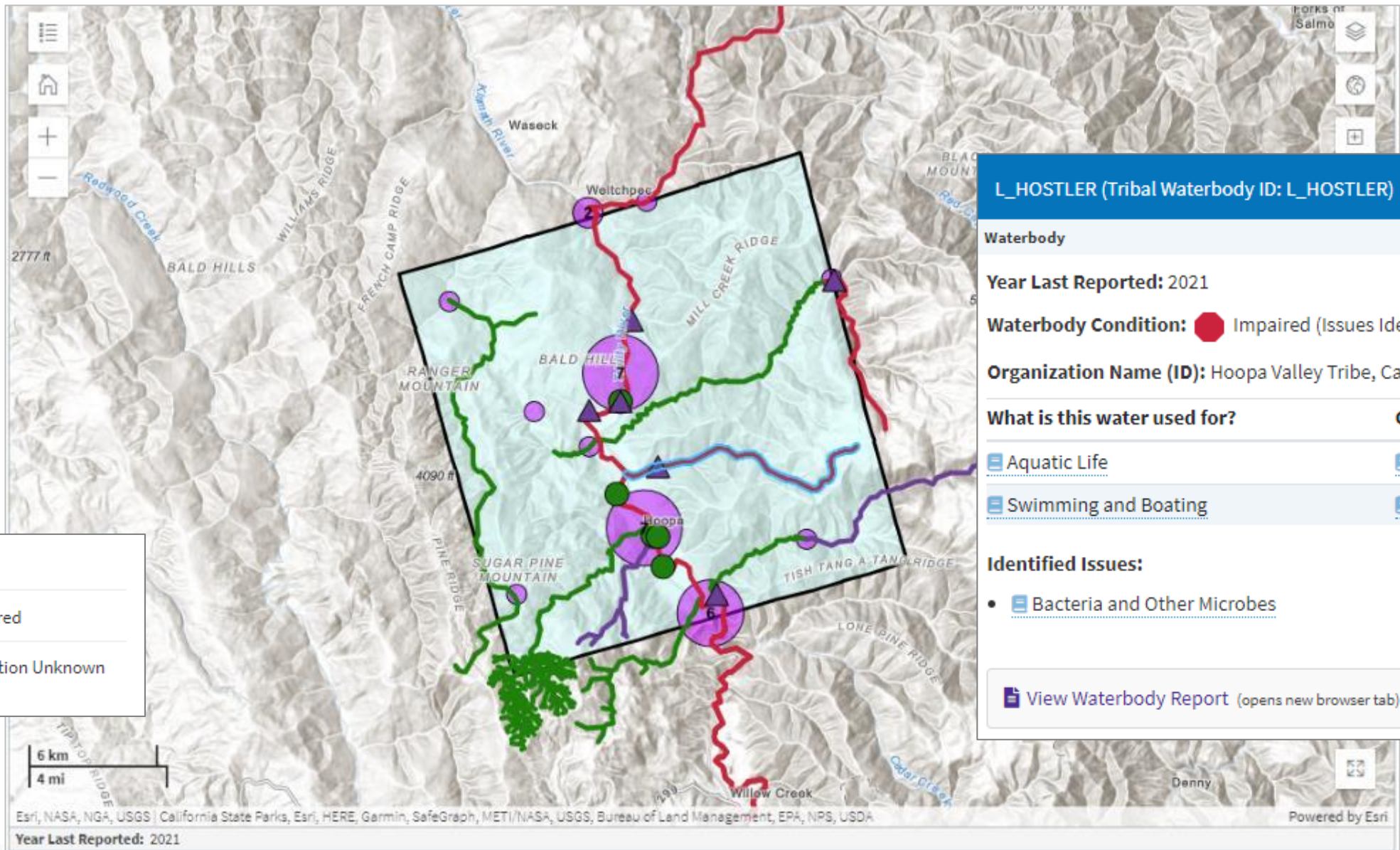


Tribes using ATTAINS/ How's My Waterway

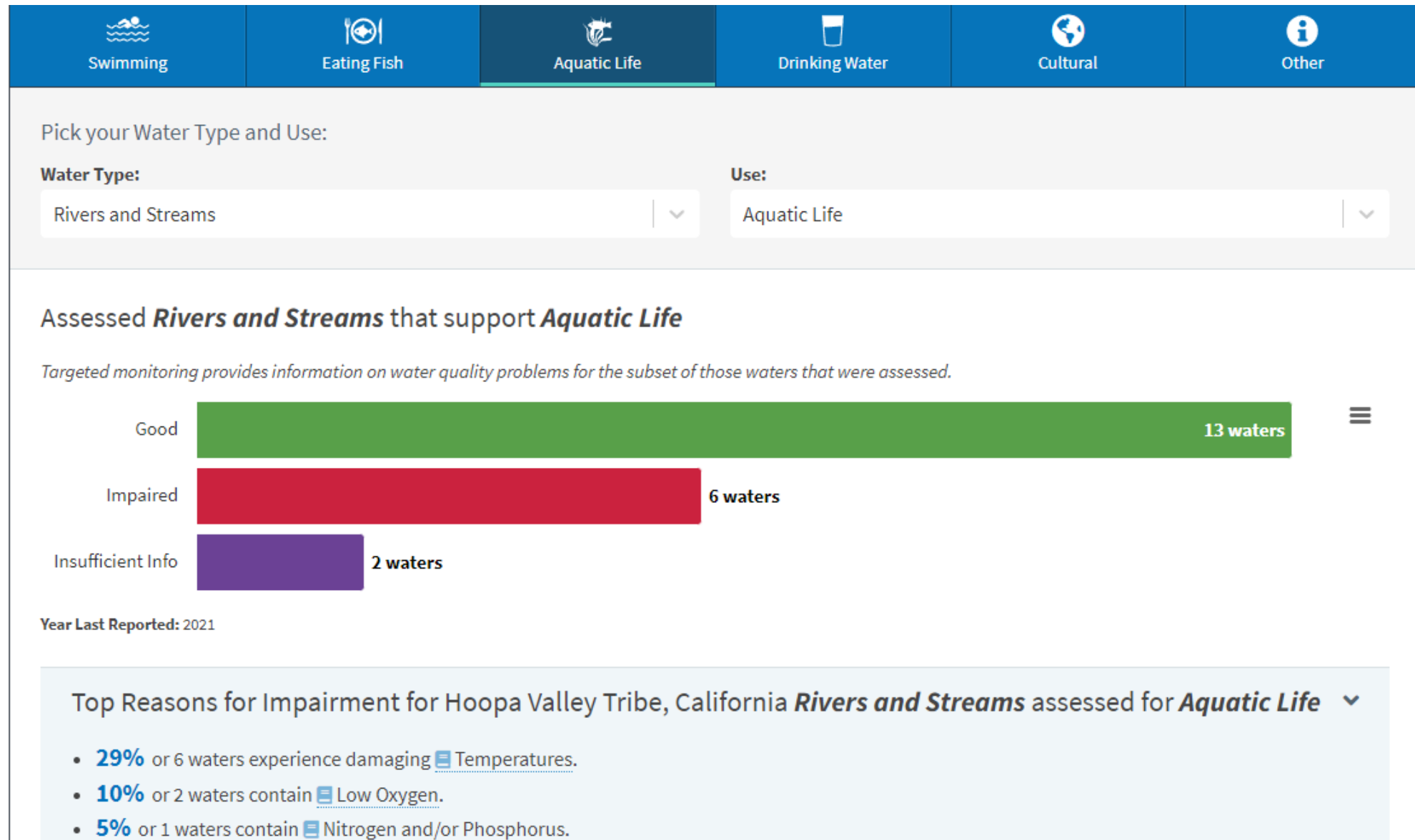
- Cherokee Nation (OK)
- Citizen Potawatami Nation (OK)
- Comanche Nation (OK)
- Delaware Nation (OK)
- Hoopa Valley Tribe (CA)
- Otoe Missouria Tribe of Oklahoma
- Fond du Lac Band of Lake Superior Chippewa (MN)
- Pueblo of San Ildefonso (NM)
- Pueblo of Santa Ana (NM)
- Pueblo of Tesuque (NM)
- Red Lake Band of Chippewa Indians (MN)
- Sac & Fox Nation (OK)
- Saint Regis Mohawk Tribe (NY)
- Seneca-Cayuga Nation (OK)
- The Chickasaw Nation (OK)
- The Choctaw Nation of Oklahoma
- Ute Mountain Ute Tribe (CO/UT/NM)
- Wyandotte Nation (OK)



How's My Waterway Mapper



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Additional Resources

- See EPA's [ATTAINS Resources](#) page for information on getting started, tools, and many tutorials and trainings, including:
 - [ATTAINS 101 Training Video](#)
 - How to upload data
 - Features that are available in reports
 - How to enter actions (e.g., TMDLs)
- Explore Tribal information on [How's My Waterway](#) (select "Tribe" in the left dropdown, then select a tribe in the right dropdown) and check out the EPA's [educational materials](#)





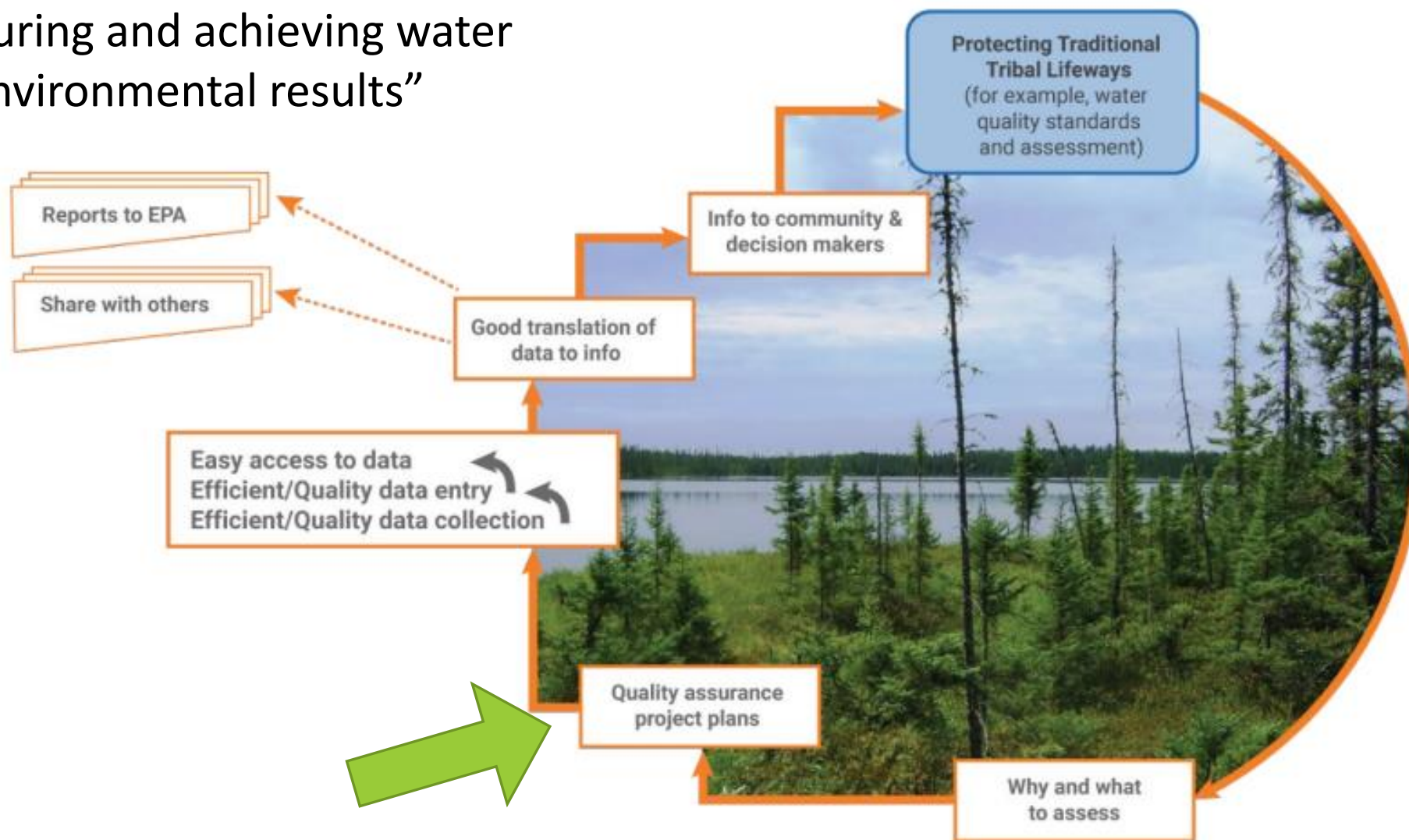
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Data Management for Tribal CWA Monitoring & Assessment Programs

PART 3: QUALITY ASSURANCE PROJECT PLANS (QAPP) AND DATA
QUALITY ASSESSMENT

Data Management – “the foundation for measuring and achieving water quality environmental results”



Graphic reproduced from EPA's Tribal Data Management for WQX Submission, photo courtesy of Fond du Lac Band

What is a Quality Assurance Project Plan (QAPP)?

- A written, formal document with defined procedures for its contents and its approval
- A description of exactly how the data are to be obtained, analyzed, and validated (project blueprint)
- A living document that is revised to reflect significant changes
- A mandatory part of the EPA's Quality System



Do we need a QAPP?

- QAPPs are required of recipients of EPA funds for work involving environmental information
- A QAPP is project-specific (e.g., water quality monitoring, air quality monitoring, etc.); an organization may also be required to document its overall quality program in a Quality Management Plan



EPA photo

Required Elements of a QAPP

(from *EPA Requirements for Quality Assurance Project Plans*)

- Project Management – Includes problem definition/background, project/task description and roles, quality objectives and criteria
- Data Generation and Acquisition - All aspects of project design and implementation
- Assessment and Oversight - Activities for assessing the effectiveness of project implementation
- Data Validation and Usability - Includes validation and verification methods



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Example QAPP - Table of Contents

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Example QAPP - Table of Contents

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- assessing effectiveness of
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Data validation/verification
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Additional Resources - QAPPs

- EPA's [QAPP Development Tool/Guidance](#) – “intended to step one through the thought process of planning a project, as well as to provide a framework for documenting the plan”
- EPA's [Guidance for Quality Assurance Project Plans](#) (pdf)
- EPA Region 10 [Tribal QAPP Guidance and Template](#)
- [Example QAPP](#) for tribal surface water quality monitoring
- ITEP's [“Writing a QAPP”](#) video series



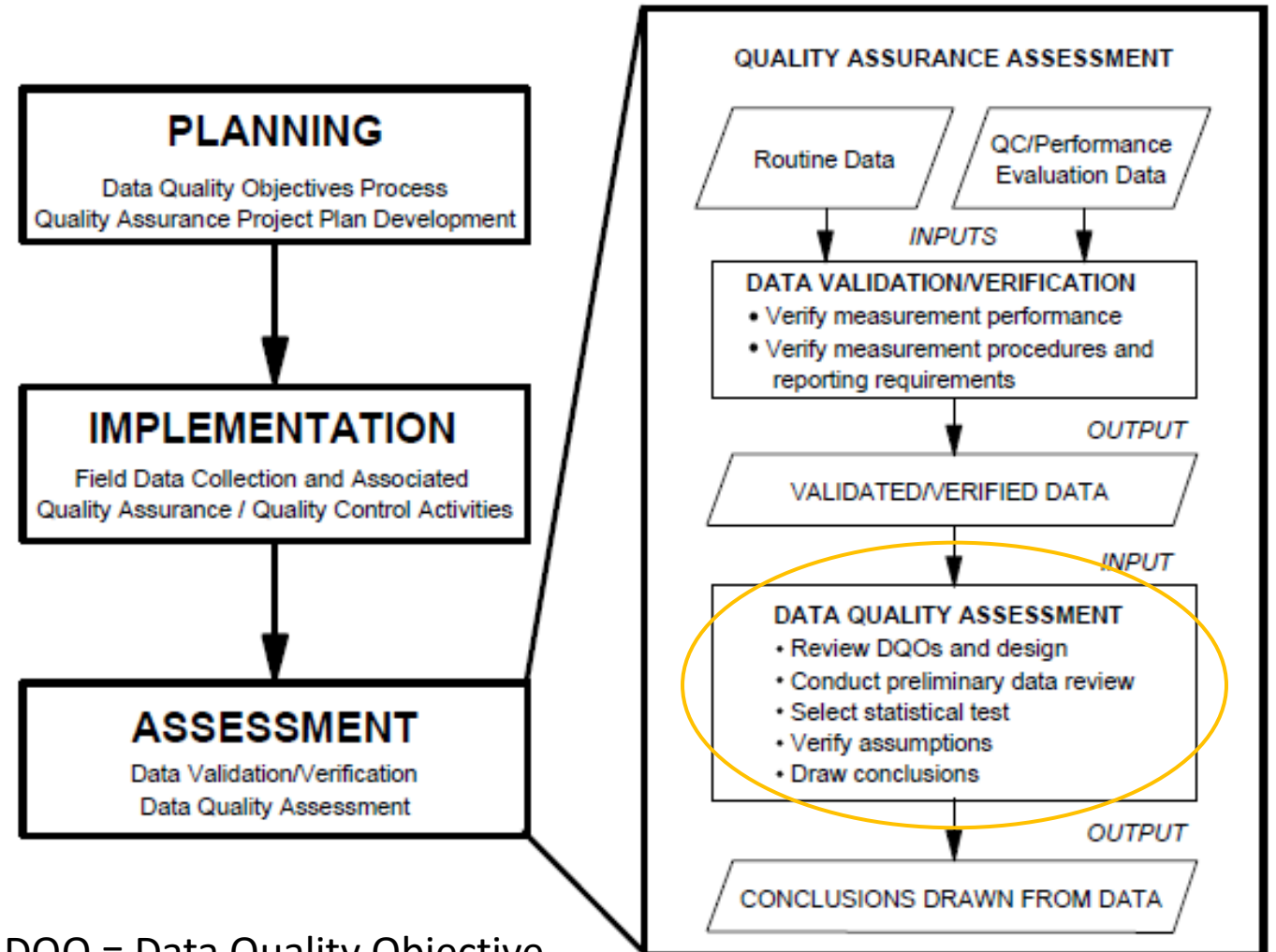
What is Data Quality Assessment?

- EPA defines as “the scientific and statistical evaluation of data to determine if data obtained from environmental data operations are of the right type, quality, and quantity to support their intended use” (some data are of adequate quality for some purposes but not for others)
- Different from but complementary to data verification (evaluating the completeness, correctness, and conformance/compliance of a data set against the method or procedural requirements) and data validation (a sample-specific process to determine the analytical quality of a specific data set)



Data Life Cycle

From [*Guidance for Data Quality Assessment: Practical Methods for Data Analysis*](#) – a 5-step process to enable non-statisticians to analyze results in a meaningful fashion, including step-by-step directions.



DQO = Data Quality Objective

Data Quality Objectives (DQOs)

DQOs refer to the overall degree of data quality or uncertainty that a decision maker is willing to accept for a decision; applies to all measurements, field and lab (e.g., sampling locations, collection/handling methods, lab analyses). To develop DQOs:

Step 1. State the Problem – Define the problem; identify the planning team; examine budget, schedule.

Step 2. Identify the Study Goal – How will data be used to meet objectives; identify study questions; define alternative actions/outcomes

Step 3. Identify Information Inputs (information, sampling/analysis methods needed)

Step 4. Define the Study's Boundaries – Specify spatial/temporal limits, characteristics of interest, scale of inference.

Step 5. Develop the Analytic Approach – Define parameter of interest (mean, median, max); develop logic for drawing conclusions

Step 6. Specify Performance or Acceptance Criteria – (e.g., acceptable limits on uncertainty/potential error OR a statistical hypothesis test)

Step 7. Develop the Plan for Obtaining Data – Select resource-effective sampling and analysis plan that meets performance criteria.

From [*Guidance on Systematic Planning Using the Data Quality Objectives Process*](#)



Preliminary Data Review

- Review quality assurance reports.
- Calculate basic statistical quantities (e.g., mean, median, variance, standard deviation, variable correlations).
- Generate and review graphical representations of data
 - May identify patterns/trends or identify potential problems that might go unnoticed if only looking at numbers.
- Results are used to select a procedure for statistical testing



Additional Resources – Data Assessment

- [Guidance on Systematic Planning Using the Data Quality Objectives Process](#) – includes examples/case studies of the DQO process
- For examples and descriptions of statistical analysis and verification tests, see the EPA's [Guidance for Data Quality Assessment: Practical Methods for Data Analysis](#).
- USGS publication: [Statistical Methods in Water Resources](#)
- Tribal Exchange Network Group ([TXG](#)) [videos and webinar recordings](#)



Optional Online Quiz

Thank you!

Thank you for listening to this online training from the National Association of Wetland Managers and Saint Mary's University of Minnesota. We hope you found the presentation interesting and informative.

Optional Online Quiz

We invite you to take an optional online quiz for this training module. To take the quiz, you will need to return to the NAWM online training page on the NAWM.org website and select the link to the quiz for this module.

To Receive Your Certificate of Completion

In order to receive a Certificate of Completion to submit to an accrediting organization for continuing education credits or units (CEUs):

- You must complete the quiz; and
- You must receive a score of 80% or higher.

You will have the opportunity to retake the quiz one additional time if you do not pass.



Certificates of Completion

Certificates of Completion are available to you when you successfully complete the training module. Participants who both view the module presentation and complete the module quiz are eligible for a NAWM Certificate of Completion for 1.0 hours of training.

You will need to create a unique username and password in *ClassMarker* for each certificate. After completing the module quiz, you will be prompted to download your certificate.

You are responsible for sending the NAWM certificate to your accrediting organization.

Certificates are **free** for NAWM members and for tribal members and staff.

- For tribal members or tribal staff who are not a member of NAWM: if you are interested in taking the module quiz to earn a certificate, please contact Laura Burchill at the NAWM office at laura@nawm.org or (207) 892-3399.
- For non-members: there is a \$25 administrative fee per certificate that must be paid before you can access the quiz.

For complete details, please return to the NAWM online training modules webpage.

