



NATIONAL TRIBAL WATER COUNCIL

A GUIDEBOOK FOR DEVELOPING TRIBAL WATER QUALITY STANDARDS



Developed by the National Tribal Water Council
October 2022



CREDITS AND ACKNOWLEDGMENTS

A Guidebook for Developing Tribal Water Quality Standards is the result of the authorship of two individuals – Mr. James Grijalva and Ms. Cheryl Pailzote - who provided their valuable time and effort to making this project a success. We acknowledge and appreciate the National Tribal Water Council’s (NTWC) Chairman Ken Norton for spearheading this project and for the NTWC members’ input and review of the guidebook.

We thank James Grijalva, law school professor and member of the National Tribal Water Council’s Tribal Advisory Committee, for describing the legal governmental framework of tribes, and a tribe’s inherent authority to develop and establish tribal water quality standards for their waters.

We thank Cheryl Pailzote, consultant from the White Mountain Apache Tribe (WMAT) and director of the WMAT’s Water Resources Department, for developing the technical component of the guidebook.

Furthermore, NTWC wishes to thank its federal partner, the U.S. Environmental Protection Agency’s Office of Water, for supporting the work and effort of the NTWC and this project. In particular, we appreciate Danielle Anderson, Nizanna Bathersfield, Corey Buffo, Karen Gude and Fred Leutner of EPA’s Office of Water for reviewing and providing excellent feedback to strengthen this guidebook.

Lastly, we acknowledge the work of the NTWC staff - Elaine Wilson, NTWC Project Manager, and Elaina Doral, NTWC Project Assistant, for their work in reviewing, editing, and designing this guidebook.

NATIONAL TRIBAL WATER COUNCIL MEMBERS

Ken Norton, *Hoopa Valley Tribe*
Region 9 (NTWC Chair)

Michael Bolt, *Eastern Band of Cherokee Indians*
Region 4 (NTWC Vice Chair)

Daniel Kusnierz, *Penobscot Indian Nation*
Region 1

Brian Patterson, *Oneida Nation*
Region 2

Shaun Livermore, *Poarch Band of Creek Indians*
Region 4 - At-Large

Kathleen Brosemer, *Sault Ste. Marie Chippewa*
Region 5 - At-Large

Nancy Schuldt, *Fond du Lac Band of Lake Superior Chippewa*, *Region 5*

Jaclyn McCasland, *Delaware Nation*
Region 6

Denise Jensen, *Winnebago Tribe of Nebraska*
Region 7

Heather Bartlett, *Cow Creek Umpqua Tribe*
Region 10

Eric Morrison, *Salamatof Tribe*
Region 10 - Alaska

Ann Wyatt, *Klawock Cooperative Association, Tribe*
Region 10 - Alaska

Yolanda Barney, *Navajo Nation*
Region 9



TABLE OF CONTENTS

I. INTRODUCTION	4
II. DEVELOPING A TRIBAL WATER QUALITY PROGRAM	6
A. Constitutional Law	6
B. Tribal Law	6
C. Tribal Jurisdiction	8
D. Tribal Treatment-as-a-State under Federal Environmental Programs	8
III. MANAGING TRIBAL WATER QUALITY	10
A. Water Quality Standards	10
B. Role of WQS in a Water Quality Management Program	12
C. Benefits of Water Quality Standards	12
D. Tribal Water Pollution Permit Programs	13
E. Relationship of Tribal WQS to EPA-Approved WQS	14
IV. TECHNICAL COMPONENTS	15
A. Administration of the Water Quality Standards Program	15
B. Water Quality Standards	18
V. CONCLUSION	24
VI. APPENDICES	26
A. Tribal Example	26
B. Useful Links	27



I. INTRODUCTION

Since the very beginning, we have known that water is life. Water is essential for our bodies' survival. It is essential for the physical survival of all our relations. Water also makes possible the endless varieties of natural ecosystems. These ecosystems provide habitat for the plants and animals we rely on as food for our physical sustenance, and as materials for our cultural vibrancy. Our relations and relationships are the center of our spiritual identity, and its foundation is in water. The all-encompassing importance of water imposes on us a sacred duty to protect it.

We have the power to protect water—it's called sovereignty. Sovereignty means different things to different people, but mainly it means *governmental* authority. Governmental authority is the legal power to regulate people and activities within our territories to protect the health and welfare of our communities. Importantly, tribal sovereignty is *inherent*. As the first and original Nations of this continent, our sovereignty is automatically part of our communities. Tribal sovereignty does not come from the United States federal government. So, while the federal government has set out a water quality management approach in the Clean Water Act and Environmental Protection Agency regulations, we may decide to take different approaches to water protection. Moreover, even when a tribe participates in the federal Clean Water Act system, the basic building block is still a tribal program, designed by tribal staff and adopted under tribal law.

Section II describes the legal background for tribal water quality programs in more detail. For now, recognize that while a water quality program is mostly a technical one based in science, for it to operate as part of the government's public health and welfare responsibility it must be legally authorized. Your tribe may have an environmental or natural resources department, but chances are if you are reading this guidebook, the tribal council (council) has not yet authorized your department to run a water quality program. It could be that you were recently authorized to begin creating a program, or maybe authorized to explore creating a program. The point is that your department has only the legal authority that the council gave to it. In building and then running a program, you must stay within the authority given and follow any procedures set out by the council.



Water quality management programs can be as varied as the tribes who develop them. This guidebook focuses on the most common fundamental element of any program: water quality standards, referred to in short as WQS. A simple analogy for a WQS is a speed limit sign. A speed limit sign tells us the maximum legal speed for a particular stretch of road. Behind that number, though, is a deliberate government decision. Deciding on the right speed limit requires thinking carefully about a number of things: the kind of road; the way the road is used and intended to be used; the road's current condition; and other concerns that affect use of the road, like weather, traffic, entrances and exits, and other roads. The final decision of the speed limit is a kind of *value judgment*: it balances the need for efficient transportation with the need for safe travel. When the speed limit is posted on a sign on the road, it communicates the government's value judgment to everyone who uses the road, and carries potential legal consequences for those who ignore it.

In a similar way, WQS are value judgments a government makes about the importance of its community's waters. For each waterbody or segment of water in its reservation, the government assesses its nature, current and possible future uses, current water quality, and other concerns. Using scientific criteria, the government sets limits for protecting the desired water uses, and achieving a proper balance between use and preservation. For example, a specific amount of a certain pollutant in a particular waterbody might be reasonably safe; any more than that amount might create unacceptable public risk. In a different waterbody, the acceptable amount of that pollutant might be less, or more. Like speed limit signs, these WQS communicate the government's decision about the desired water quality, and are used in various ways to control pollution and create legal consequences for activities that harm water quality.

There are several reasons a tribe might develop WQS. First, the process generates a useful database of reservation waters, their current water quality and any existing pollution sources. Second, that information creates a *baseline* of current water quality, allowing the tribe to track trends in the future. If future data shows a significant decline in water quality, that could prompt the tribe to take appropriate action. Third, if the tribe issues a permit or takes a similar regulatory action, WQS offer measurements that can be incorporated to help ensure the permitted action does not damage water quality. Fourth, if EPA or an adjacent state issues a permit or takes a similar regulatory action, the tribe's WQS offer guidance, or in some cases mandatory requirements for protecting tribal waters.

In all these circumstances, the overarching goal is to preserve a level of water quality that allows all of the community's desired uses of reservation waters to be made safely now and into the future. In doing so, we determine for ourselves the level of environmental quality necessary to continue our ancient cultural and spiritual practices. That is environmental self-determination. That is sovereignty.



II. DEVELOPING A TRIBAL WATER QUALITY PROGRAM

This guidebook is intended to assist you in developing a water quality standards program. This section touches briefly on the legal and administrative aspects of developing a water quality program. Having general familiarity with the legal background will help you more effectively create and run the program, which is described in more detail in Sections III and IV below.

A. CONSTITUTIONAL LAW

As noted in Section I, **sovereignty means tribes inherently possess governmental (legal) power to regulate people and things within their territories for the benefit of tribal citizens.** Some tribes have written down their inherent powers in a constitution. For those tribes, the constitution lists the areas over which the tribal government has legal authority. Constitutions rarely refer to administrative agencies like environmental or natural resource departments, so it is unlikely your department is explicitly authorized by your tribe's constitution. More commonly, constitutions authorize tribal councils to appoint committees, commissions, and subordinate administrative-like entities to assist in serving the public health and welfare. Any limits the constitution sets on the tribal government would of course apply to any tribal agencies created by the council.

B. TRIBAL LAW

Apart from a constitution, most people think of one source of tribal law—ordinances issued by tribal councils. That is the most common source of tribal law. Most likely, a tribal council ordinance created your department. That ordinance is kind of like a constitution: it sets out the department's mission, its general areas of authority and any legal restrictions on the department's powers. All of your department's actions must be consistent with this ordinance or they may be invalid.

Each tribe's law controls how a tribal water quality program is created, but there are two common ways. One is for the tribal council to create the entire program: it passes an ordinance that sets out the complete program of legal requirements and standards for protecting reservation waters. Those requirements and standards



Two Common Ways to Develop a Tribal Water Quality Program

Tribal Council passes an ordinance that creates entire program with legal requirements and standards for protecting reservation waters.

Tribal Council passes an ordinance authorizing the environmental or natural resources department to develop WQS and issue them as administrative regulations without further

are usually developed by an administrative body with expertise in water quality, like an environmental or natural resources department, and then given to the council to adopt in the ordinance. This approach is probably the most common. It gives your department the first opportunity to shape the scope and direction of the program, based on your expertise in science and water quality, but leaves the final decision to the council. Thus, your ideas are subject to change by the council, so the package you submit to the council should be well explained and you should be prepared to answer questions about program specifics, and justify why one approach was taken over another.

A second way to create a tribal water quality program is for the tribal council to pass an ordinance authorizing the environmental or natural resources department to develop WQS and issue them as administrative regulations without further input by the council. This is a less common approach for tribal governments, but is very common for state and federal governments. An area of law called Administrative Law sets out the basic rules for how administrative agencies exercise their powers, like developing and issuing regulations, and provides courts with authority to review challenged agency actions to ensure the agencies stay within their authority. One aspect of state and federal administrative law that you are probably familiar with is the requirement that state and federal agencies give the public an opportunity to comment on proposed actions before agencies finalize them.

Unfortunately, many tribes do not have administrative law procedures guiding agency action. That can create confusion for tribal agencies and the public, and can create inconsistent actions by different tribal agencies. To avoid some of these problems, the tribal council ordinance authorizing development of your water quality program should include required procedures. For example, the ordinance should require that you announce to the tribal community your proposed standards and seek their input. It also makes sense to inform adjacent tribal and state governments, as well as your EPA region, and seek their comments. They have water quality expertise and sharing their experiences could be helpful to you. Developing relationships with adjacent regulators also makes good sense in case you need assistance in the future, or if an issue involving pollution that crosses borders arises later.

Whichever approach is used to create the program, it is common for the council to delegate responsibility for running the water quality program to an administrative body like your environmental or natural resources department.



C. TRIBAL JURISDICTION

Your tribal constitution probably sets out the scope of the tribal council’s jurisdiction. **Jurisdiction means the power to make and enforce a decision, which has two parts: power over the subject, and power over the actor.**

For example, assume a tribal business is throwing its trash into a reservation river. The council probably has jurisdiction over the subject—improper disposal of trash—because of its authority to protect the health and welfare of the tribal community. The council probably also has jurisdiction over the actor—the tribal business—because it is owned by the tribe or tribal members, and it is operating within the tribe’s territory. If the council has authorized your department to regulate trash disposal, you would exercise the council’s jurisdiction over the business’ improper trash disposal.

You have probably heard that tribes do not always have jurisdiction over non-Indians within tribal territory. The United States Supreme Court has not been clear on this issue: it has said tribes usually lack authority over non-Indians. However, the Supreme Court has also said tribes have inherent sovereignty over non-Indian activities that present serious health and welfare risks to tribal communities. It is easy to imagine many non-Indian activities that present such risks. Polluting a reservation river used by tribal citizens is one obvious example. But tribal lawyers are very careful on jurisdictional questions. The Supreme Court has not decided a case of tribal jurisdiction over non-Indian environmental polluters. So we can’t be sure if the Supreme Court would uphold tribal environmental regulation of non-Indian polluters. In cases involving non-Indian activities like hunting and fishing, housing developments, car accidents, bank loans, state enforcement actions, and others, the Supreme Court has decided their risks are insufficient to justify tribal jurisdiction over them.

Some tribes have hesitated to apply their environmental programs to non-Indians within tribal territories because of concern over whether a federal court would allow it. That is an issue that should be carefully considered with your legal department and the council. One option for decreasing this risk is to partner with the federal Environmental Protection Agency (EPA), which is discussed briefly in Subsection E below. Even if your tribe decides not to apply environmental programs to non-Indians, there are still good reasons for developing such programs. They can protect the reservation environment by regulating actions taken by tribal citizens, businesses owned by tribal citizens and by the tribe itself. There are also other benefits to tribal environmental programs that are addressed in Section III below.

D. TRIBAL TREATMENT-AS-A-STATE UNDER FEDERAL ENVIRONMENTAL PROGRAMS

The Supreme Court has said Congress has the power to pass laws that authorize tribal jurisdiction over non-Indians. Congress said in the federal Clean Water Act (CWA) that EPA has authority to “treat an Indian tribe as a



State” (TAS) for many of the CWA programs including the WQS program. EPA has interpreted the CWA TAS provision as a congressional “delegation” to tribes of jurisdiction over non-Indian water polluters on reservations. That means your tribe does not have to prove its inherent jurisdiction over non-Indians to get your water quality programs approved by EPA. It also means that once EPA approves your program, there is less risk that a state or non-Indian would sue your tribe to challenge the application of your tribal CWA program to non-Indians on the reservation. That benefit alone has encouraged many tribes to develop water quality programs consistent with the CWA and seek EPA approval.

The TAS approach has other benefits, as well as some potential drawbacks. You could take advantage of EPA’s technical assistance. EPA has extensive reference resources that can be especially helpful for tribes beginning to develop their technical knowledge. EPA sometimes offers technical training programs specifically for tribal staff. For example, you might be able to attend a session and learn how to take water quality samples. EPA sometimes has financial grants for tribes to build environmental expertise and infrastructure, although the grants are limited and not consistently offered. These benefits can also be seen as drawbacks: to get EPA assistance, you must follow the approaches laid out by the CWA and EPA regulations. There is substantial flexibility to adapt the federal requirements to serve tribal traditional values and culture, but because they have been established by the federal government your tribe may not view them as reflecting indigenous methods or values. The federal program may also be narrower than you want, or might have elements you don't want. In short, there are both pros and cons to partnering with EPA. You will have to compare them to the tribe’s overall goal to decide the best approach for your program.

HELPFUL RESOURCES

- **General information for Tribal Assumption of Federal Laws - Treatment as a State (TAS)**

The EPA’s website provides a basic overview of the federal environmental laws that authorize the EPA to treat eligible federally recognized Indian tribes in a similar manner as a state (TAS) for certain environmental programs, such as the Clean Air Act, Clean Water Act, and Safe Drinking Water Act.

<https://www.epa.gov/tribal/tribal-assumption-federal-laws-treatment-state-tas>

- **EPA’s Water Quality Standards Tools for Tribes**

This website lists tools and resources available to assist tribes with adopting new and/or revised water quality standards. The site includes templates for a TAS application and model WQS.

<https://www.epa.gov/wqs-tech/water-quality-standards-tools-tribes>



III. MANAGING TRIBAL WATER QUALITY

Section I used the analogy of a speed limit sign to describe how WQS are value judgments tribal governments make about the importance of their communities' waters. Those value judgments, and the process of making them, are important exercises of sovereignty that build tribal capacity for environmental management. Ideally, tribal WQS become the foundation of a broader tribal water quality management program that ensures protection of tribal water resources through permits, inspections and enforcement.

A. WATER QUALITY STANDARDS

So what makes a WQS a *value judgment*? Two things. First, it is the tribal government's decision of which "uses" of each reservation waterbody to protect. There are a number of uses humans make of water that might be valuable for a particular waterbody: drinking water, agriculture, stock-watering, industrial, recreational, traditional use, etc. The most basic kind of "use" of water is that it supports water-based or "aquatic" ecosystems. The plants, fish, amphibians, birds and wildlife that live in these ecosystems are our relations and we have a sacred obligation to protect them in healthy, functioning natural environments. Many of these aquatic organisms are also valuable to us as food, medicine and/or cultural resources. So, most tribes would consider as a fundamental value the "use" of protecting healthy populations of endemic or native aquatic species in every reservation waterbody. Not surprisingly, that use is one of two uses required at a minimum by the federal CWA.

The second minimum use required by the CWA is called "recreation," and is often described as things like swimming, canoeing and fishing. Tribes are also likely to value this kind of use when understood in a slightly different context: EPA interprets the CWA's recreation use broadly to include indigenous cultural, traditional and subsistence uses, and has consulted with tribes on establishing federal WQS protective of Indian rights to fish, hunt and gather under treaties and federal law. This effort appropriately focuses on reserved rights for Indian subsistence fishing at indigenous fish consumption rates and not simply people who eat fish they catch as a recreational activity. Most if not all tribes that have developed WQS specifically designate cultural and traditional



CLEAN WATER ACT: TWO MINIMUM “USES” OF WATER

1. Water-based or “Aquatic” Ecosystems

Our relatives plants, fish, amphibians, birds, and wildlife live in these ecosystems and its our obligation to protect them. Many aquatic organisms are valuable to us as food, medicine, and cultural resources.

2. Recreation

This includes activities such as swimming and canoeing. EPA interprets recreation use to include Indigenous cultural, traditional, and subsistence uses, and has consulted with tribes on establishing federal WQS protective of Indian rights to fish, hunt and gather under treaties and federal law.

uses of reservation waters as uses to be protected. For example, the Seminole Tribe of Florida protects waterbodies that are “important for ceremonial and religious uses.” The Bad River Band of Chippewa Indians in northern Wisconsin protects “water-based activities essential to maintaining the tribe’s cultural heritage, including ... ceremony, subsistence fishing, hunting and harvesting.” The Puyallup Tribe in western Washington protects water-based “activities involving traditional Native American spiritual and cultural practices.”

Once the government decides which uses of a particular waterbody are valued, the government makes a second value judgment: determining how much of any particular pollutant can be in the water and still make sure the designated uses can be made safely. These allowable water quality levels are called “water quality criteria,” and are the most important part of WQS. Water quality criteria set the maximum amounts of specific pollutants legally allowed in the waterbody. The criteria are technical; scientific data and traditional ecological knowledge are essential. EPA has numerous resources to assist tribal environmental staff in making these decisions, but you will need to work hard to build your expertise to understand the material and apply it to your circumstances.

Two examples illustrate the importance of getting this right. First, what if tribal citizens immerse themselves in the river for religious and cultural ceremonies? How much arsenic can be in the water without creating a significant health risk to them? Arsenic can cause cancer. The federal EPA tries to set allowable pollution limits for carcinogenic pollutants so that no more than 1 person in 1 million people will develop cancer. That is a very small



risk – just a tiny fraction of one percent. The tribe might think that small risk is acceptable here. Or the tribe might think that *any* risk in this context is too much.

Second, what if tribal citizens are consuming fish from the river? How much mercury or selenium or other toxic pollutant in the water is safe? While the average American eats about 22 grams of fish per day (g/day), many Indigenous people consume much more. EPA estimates a subsistence level of 142 g/day. A survey by the Columbia River Intertribal Fish Commission revealed its members eat up to 175 g/day. If the state set its WQS for fish protection based on the average American’s diet, how likely are those standards to protect Indigenous fishers? These two examples show how important it is that tribal governments establish WQS to ensure appropriate pollution controls to protect tribal traditional values and culture.

B. ROLE OF WQS IN A WATER QUALITY MANAGEMENT PROGRAM

The role of WQS depends on your water quality management program. For many tribes, WQS are the entire program. These standalone standards identify the tribe’s desired uses for its waters and help track trends in water quality. The standards also contain water quality criteria setting the maximum amount of pollution for each reservation waterbody. Unlike a speed limit sign on a stretch of highway, however, WQS have no direct legal effect on individual polluters; the tribal water quality criteria must be converted into specific pollution limits in permit conditions.

So, some tribes create broader water quality management programs by requiring permits to discharge pollutants into reservation waters, as discussed in Subsection D below. Permits have conditions designed to avoid or minimize negative environmental impacts. Instead of creating permit conditions from scratch, WQS can be used to establish conditions for discharges of water pollution to ensure water quality criteria are not violated. Because WQS are specific to the waterbody receiving the pollution, the permit conditions will be tailored to meeting the uses of that waterbody.

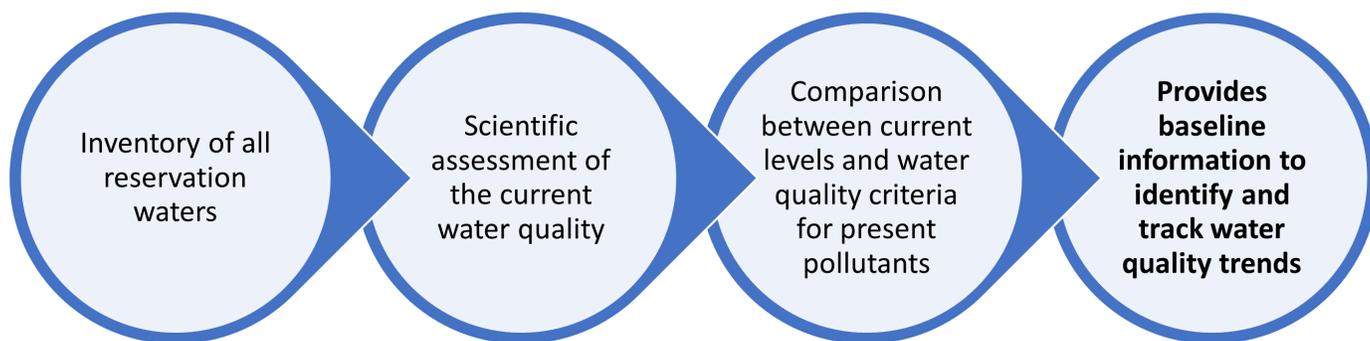
C. BENEFITS OF WATER QUALITY STANDARDS

Tribal WQS offer a number of benefits. The process of developing WQS creates a baseline of important information. First is the list or “inventory” of all reservation waters, their current uses and probably any obvious sources of pollution. Second is the scientific assessment of the current quality of reservation waters. Third is comparing the current levels of pollution in reservation waters to examples of water quality criteria for the pollutants present in those waters. This baseline information allows you to identify and track trends in water quality by comparing later monitoring data. Such comparisons may also alert you to new sources of pollution.

Developing WQS also builds technical capacity in your department that can have multiple benefits. It



BENEFITS OF WATER QUALITY STANDARDS



increases the likelihood your program will achieve its goals of protecting the tribe’s designated uses of its waters. It enhances the legitimacy of the tribal environmental program, which can help build productive relationships with neighboring governments and EPA. And it increases the chances the tribe will expand its environmental program management to better protect the health and welfare of tribal citizens.

D. TRIBAL WATER POLLUTION PERMIT PROGRAMS

Let’s return to the analogy of WQS as a speed limit sign. The sign clearly signals the tribe’s value judgment about water quality. But on the road, we all know that some drivers voluntarily respect the speed limit while others do not. So, after making water quality value judgments, how does a tribe ensure polluters respect them? Subsection E below explains that tribal WQS approved by EPA under the CWA must be converted into specific pollution limits in permits issued by federal agencies inside Indian reservations, as well as permits issued by upstream states if their pollution will affect tribal water quality. That is a significant benefit that has encouraged many tribes to develop WQS and seek EPA approval under the CWA. For tribes that decide not to seek EPA approval, or are not yet ready to seek EPA approval for the water quality standards program, the tribal permit model offers a potential answer to the question of how a tribe ensures respect for its water quality value judgments.

Just as tribes can use their sovereignty to develop tribal WQS without EPA approval, tribes can also develop independent programs requiring permits for activities that may impact water quality. For example, tribes could require permits from industrial or commercial facilities that discharges liquid wastes directly into reservation rivers or lakes. Many tribes don’t have these kinds of pollution sources at present, although future economic development is always a possibility. Other activities that indirectly affect water quality include agriculture, forestry, energy and mineral development, and land development like housing projects. Some of these activities may require federal permits but some do not. Regardless, your tribe could require permits for these activities, with conditions limiting water pollution and degradation so your WQS are not violated. That program would also authorize your department to monitor these activities to ensure compliance with the permit conditions, and to enforce violations.



But recall Subsection II. C above noted the importance of jurisdiction: tribes can only require permits of polluters over whom they have jurisdiction. The Supreme Court has sent mixed and confusing signals about tribal sovereignty over non-Indians in Indian country, so tribes should proceed very carefully before asserting their governmental programs to non-Indian activities. However, strong protection from jurisdictional challenges may be found in seeking EPA approval of tribal permit programs. EPA reads the CWA's Indian-related language as showing Congress' intent that EPA-approved tribal programs apply automatically to non-Indian water polluters.

Of course, EPA-approved tribal programs apply to tribal entities, and even without EPA approval, tribal programs should apply to tribal citizens, tribal businesses and the tribe itself. The Supreme Court has not questioned those uses of tribal sovereignty. So, apart from regulating non-Indian polluters, tribal environmental programs have substantial authority over many common activities in Indian country that may negatively affect reservation water quality. Independent tribal programs also don't have to track the CWA requirements, and so in some cases they might regulate pollution more broadly.

E. RELATIONSHIP OF TRIBAL WQS TO EPA-APPROVED WQS

Many of the WQS concepts discussed in this guidebook are similar to the federal CWA program. Tribes are not required to participate in the CWA WQS program, and as governments with inherent sovereignty, tribes can develop completely different types of WQS and water quality management programs. Yet, the main idea of CWA WQS is straightforward and serves goals tribes surely value. Most if not all tribes that have developed WQS have used the CWA model and have sought EPA approval.

While there are certainly legitimate reasons why some tribes might decide not to seek EPA approval, there are clear benefits for receiving EPA approval. One benefit is that EPA interprets the CWA as allowing tribes (and states) to develop WQS that are more stringent than EPA's recommended criteria or the WQS of adjacent states. That view respects tribes' sovereign authority to make independent value judgments. A second benefit is that under the CWA any federal permit issued for a facility within tribal territory must comply with federally approved tribal WQS. That makes tribal value judgments enforceable under federal law even where the tribe does not issue the permit. A third benefit is that tribes would get notice of draft permits and permit denials for dischargers who could affect tribal water quality. A fourth and very significant benefit of EPA approval of tribal WQS is that EPA regulations require permits issued by upstream states include conditions that derive from and comply with any applicable WQS of downstream tribes (and states). That indirectly extends the reach of tribal sovereignty beyond reservation borders, better protecting tribal health, traditional values, and culture from pollution that comes onto the reservation from off-reservation sources.



IV. TECHNICAL COMPONENTS

The previous section noted tribes can develop WQS independently or through EPA’s TAS process. This section covers the approach of protecting your waters using EPA tools to adopt tribal WQS.

A. ADMINISTRATION OF THE WATER QUALITY STANDARDS PROGRAM

A tribe will need to determine who or which department will administer the water quality standards program. As stated in the previous section, water quality programs are usually administered by an environmental or natural resources department, but varies among tribes.

A tribe can apply for TAS to be eligible to receive EPA Section 106 grant program funding. This program assists tribes in designing and implementing water quality programs, including hiring program staff, training, purchasing equipment and supplies for monitoring and other activities. Another option is EPA’s Indian Environmental General Assistance Program (GAP) funding. This program assists tribes in planning, developing and establishing environmental programs. This program can help in hiring staff, training and purchasing equipment and supplies.

The tribe could start with conducting an inventory of your surface water bodies and setting WQS. The first step is assessing the surface water resources on your reservation. List all streams, rivers, lakes, springs, and near coastal waters and estuaries.

You may want to contact other organizations to assist in your inventory, including your EPA regional office, <https://www.epa.gov/aboutepa/regional-and-geographic-offices>, as well as other sources, such as the ones listed below.

- EPA’s **Watershed Assessment, Tracking, and Environmental Results (WATERS) Reach** integrates information from various EPA water programs by linking it to the national surface water network. This can provide you with a base map of streams and rivers. WATERS Reach data and tools are available at



<https://www.epa.gov/waterdata/waters-watershed-assessment-tracking-environmental-results-system>.

- United States Geological Survey (USGS), **National Hydrography Dataset (NHD)** is a comprehensive set of digital spatial data that contains information about surface water features such as lakes, ponds, streams, rivers, springs and wells. NHD data is available at <http://nhd.usgs.gov>.
- The United States Department of Agriculture's (USDA's) **Natural Resources Conservation Service (NRCS)** provides several applications that can assist on soils, water, snow and climate mapping. NRCS applications are available at <https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/home/?cid=stelprdb1049255>.

Other resources include agencies from neighboring states or tribes (e.g., departments of health, environment, parks and recreation, natural resources, forestry, fish and wildlife). Also, local colleges or universities, and perhaps most important, members of your tribe, are excellent sources of information.

Now that you have a list of surface waters, the next step is to identify your environmental and water quality concerns and needs. This will be a good time to reach out to other resource staff, monitoring programs, tribal programs, and community leaders and members. They will provide knowledge based on direct observation, experience and an oral history encompassing several generations. Having your community involved through the process will ensure that your monitoring plan meets the needs of the tribe.

Next, review your list. How are the bodies of water used? These are considered your designated uses. There are two basic uses of water: supporting aquatic ecosystems, and recreation. There are other uses you will need to identify. For example, does a segment of your streams or rivers provide drinking water to your communities? What areas are used for cultural use and or traditional activities? Are there springs in your area that tribal members use to collect drinking water or harvest native plants? What areas are important for fisheries and wildlife habitat? Are there favorite fishing areas or places where the community swim or canoe that need to be protected?

Based on your review of the water bodies, what issues, concerns, or impacts do you observe or foresee about your waters? This is considered monitoring the presence of pollutants in your waters. Are there issues of high nutrients? Bacteria problems? Any invasive species? Are there burned sites or eroded areas that are adding sediments to the area? Are there stream segments impacted by mining? Are the temperatures of your streams getting warmer? These are a few examples that can help you to determine impacts to your waters.

There is no one correct way to prioritize your concerns, but there are factors you might want to take into consideration by asking yourself the following questions:



- What concerns or needs are most important to your tribe? How do the concerns or needs relate to one another? (i.e., will your tribe have to address one concern or need before it can address another concern or need?)
- Do the concerns and needs pose a threat to public health, safety or the environment?
- How much will it cost to address the concern or the need?

Prioritizing your concerns or needs will help you decide which activities require urgent attention and which cannot or do not need to be addressed immediately. They will also help shape your program goals.

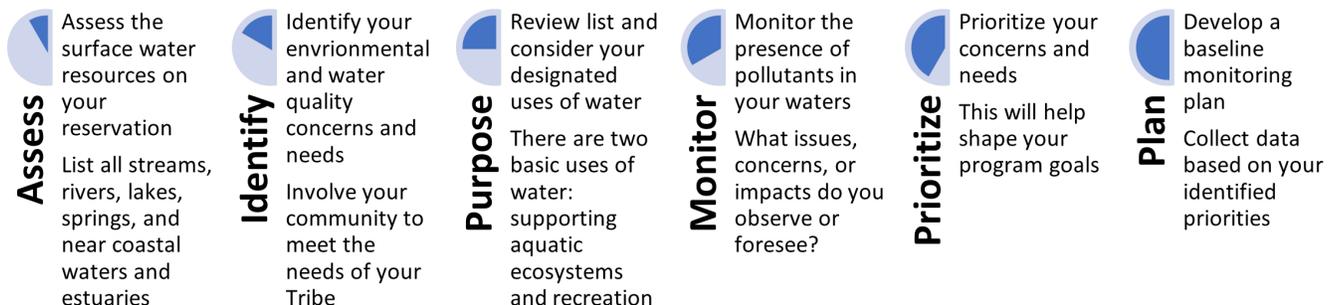
Once you have identified the problems that exist and prioritized your environmental and water quality needs, you will need to find out how bad the problem is. This is where you will need to develop a baseline monitoring plan. This will require more responsibility from the program who is overseeing the water quality program. Funding will need to be available to purchase basic equipment, training of staff, and time getting to the sites and monitoring.

Section III. C mentioned multiple benefits of WQS. Monitoring will provide data that will assess the water quality and help make informed decisions of current and future projects that may impact the aquatic ecosystems. In addition, the baseline data can be used to help evaluate the waterbody’s capacity to receive waste waters without affecting the aquatic system.

There are many resources available on how to start your own water quality monitoring plan. You can use handbooks or guidebooks such as a “water quality volunteer monitoring” handbook to get you started. Basic parameters that you can start measuring include temperature, pH, specific conductivity, turbidity, nutrients and *Escherichia (E) coli*. In addition, pictures and field notes are important to share what you observed.

As you continue to collect data, you will need to develop Standard Operating Procedures (SOPs) and/or a Quality Assurance Project Plan (QAPP). These are documents that outline procedures for staff who are monitoring to

DEVELOPING A WATER QUALITY PROGRAM





ensure that the data collected are meeting program requirements. It records methods you use and provides goals and steps of how you are conducting your sampling, monitoring, testing, etc.

If you are using different probes to measure water quality, it is important to develop protocols to calibrate your equipment. A good place to start for resources on calibration is the calibration manuals in the equipment cases.

Section III. A referred to WQS as value judgments. Now that you have a list of surface water locations, priority sites and a monitoring plan, you are ready to determine which uses of a waterbody to protect and how much pollution can be allowed in the water and still be safe.

B. WATER QUALITY STANDARDS

Water quality standards consist of three key elements: designated uses; water quality criteria; and an antidegradation policy. Each will be covered in this section.

The Water Quality Standards Tools for Tribes (<https://www.epa.gov/wqs-tech/water-quality-standards-tools-tribes>) provides a Model Water Quality Standards Template for Waters on Indian Reservations. The site also provides a Human Health Criteria Calculator (HHCC). The WQS template is customizable while meeting EPA's CWA regulations at 40 CFR 131. The HHCC can help develop numeric Human Health Criteria and can help tribes determine fish consumption rates and cancer risk levels. This is only a template to give you an overall example of what WQS are:

1. Designation of Uses

Designated uses are those uses desired for each waterbody whether or not they are currently being attained. For each waterbody you have listed, you will need to decide on the designated uses, which are based on your tribe's values and goals. This will help create your water quality criteria.

There are a number of uses humans make of water. The two most fundamental uses are supporting healthy populations of native aquatic species in every waterbody and recreation. The following are additional examples of designated uses:

- Fish consumption;
- Public drinking water supply; and
- Agricultural, industrial, navigational and other purposes.

A tribe can adopt subcategories of uses and/or seasonal uses in its classification system to further refine designated uses. Recreational uses are often divided into two subcategories:

- **Primary Contact** protects people from illness due to immersion in water. This may include cultural or



ceremonial use – fishing, hunting, gathering, harvesting, as well as swimming, water-skiing, skin diving, and surfing. This includes all activities where ingestion is likely.

- **Secondary Contact** protects people when engaging in activities where ingestion is unlikely, such as boating and wading.

Tribal WQS are often more stringent and list more pollutants than the National Recommended Water Quality Criteria and neighboring state regulations. For example, the Hoopa Valley Tribe evaluated the most sensitive life stages of salmonids, the embryonic development of when larval fish are emerging from the spawning gravel, to determine the optimum temperature. These criteria were based on scientific literature. Thus, the Hoopa Valley Tribe determined its water quality criteria based on existing scientific literature.

The following are examples of designated uses by tribes.

- **Ute Mountain Ute Tribe** (<https://www.utemountainuteenvironmental.org/index.cfm/water-quality/>)
 - Agriculture
 - Coldwater Aquatic Life
 - Drinking Water Source
 - Fish Consumption
 - Industrial Use
 - Primary Contact – Recreation
 - Secondary Contact – Tribal culture use, and warmwater aquatic life
- **Pueblo of Isleta**
 - Primary Contact Ceremonial Use - use of a stream, lake, spring, or impoundment for religious or traditional purposes by members of the tribe
 - Primary Contact Use - contact and the risk of ingesting water in quantities sufficient to pose a health hazard, like when swimming and water skiing
 - Marginal Coldwater Fishery Use, Coldwater Fishery Use, Warmwater Fishery Use
- **Other Designated Uses by Other Tribes**
 - Wild rice protection
 - Commercial - supports the use of water in propagation of fish fry for the tribal hatchery and/or irrigation of community agricultural projects
 - Wetlands

2. Water Quality Criteria (WQC)

WQC are developed to determine how much of a pollutant can be in the water, but still protect the



designated uses of the water. The criteria apply to human health, aquatic ecosystems, and wildlife. The basic types of WQC include numeric and narrative.

Numeric criteria are measurable concentrations and science-based. They are parameter-specific such as dissolved oxygen, temperature, turbidity, etc. As you assess a waterbody, you determine if the WQS is met based on concentration, duration and frequency. For example, if you have a limit that has been exceeded, how long (time) must the condition be met and how often would it be acceptable to go over this concentration over duration? Just because one sample's WQC has been exceeded does not mean its designated use has been affected.

If you need guidance on how to set up your numeric criteria, EPA publishes recommended WQC corresponding to several key designated uses. Criteria for aquatic life uses, human health protection, and taste and odor are provided on the [National Recommended Water Quality Criteria Tables | US EPA](#) page.

Tribes can adopt all the numeric water quality criteria from EPA's section 304(a) National Recommended Water Quality Criteria or select certain criteria that applies to them. For example, the Bad River Band WQS states the following in regards to its numeric criteria: "Except where more protective criteria are specified in these tribal water quality standards, the Bad River Tribe adopts by reference all the numeric criteria and methodologies from the Great Lakes Guidance, 40 CFR 132.6, and the Great Lakes Guidance shall be used to calculate all criteria. If these criteria are deemed not appropriate, Clean Water Act 304 (a) criteria may be used. For all other pollutants where the Great Lakes Guidance methodology is not applicable, or where more stringent criteria is determined to be necessary for protection of tribal surface waters, the applicable criteria will be more protective value of either the provisions of these tribal water quality standards, or the most recent U.S. EPA published criteria recommendations required by the Clean Water Act 304(a) or criteria developed applying methodologies and procedures acceptable under 40 CFR 131."

Narrative criteria are statements that describe the desired water quality goal. A tribe can describe the desired conditions of a waterbody being free from negative conditions or pollutants, such as oil and scum, free from odor, taste, sight, and substances that can harm people, animals and aquatic life.

3. Antidegradation

Once the existing uses of a waterbody have been established, the tribe must maintain the level of water quality identified as necessary to support those uses. The tribe would need to establish an antidegradation policy as part of its standards. If a waterbody's water quality is better than the standard to support those uses, a tribe can allow the degradation of the waterbody for economic or social development opportunities. "High quality waters" are those whose levels are equal or better than that necessary to protect fish, shellfish, wildlife and recreation.



Tribes can set up a three-tiered antidegradation policy and implementation procedure as follows:

- **Tier 1** maintains and protects existing uses of a waterbody. Discharges into Tier 1 water are expected, at a minimum, to maintain water quality sufficient to protect existing uses;
- **Tier 2** maintains and protects “high quality” waters - water bodies where existing conditions are better than necessary to support fishable/swimmable uses. However, water quality can be lowered in such waters with goals of minimal impact. Following intergovernmental coordination and public participation, allowing lower water quality is sometimes necessary for economic or social development reasons; and
- **Tier 3** maintains and protects water quality in outstanding tribal resource waters (OTRW). This could include unique aquatic ecology, or recreation, or ceremony, or aesthetic characteristics. Discharges into Tier 3 waters are prohibited unless the discharge has no impact to water quality.

The antidegradation review process is triggered when a new or expanded discharge or activities point source which will degrade or lower water quality is proposed for discharge to surface waters. If a tribe does not have WQS, EPA coordinates with the tribe through government-to-government consultation to address discharges into reservation waters. These approvals are required only for degradation of activities that cannot be avoided and provide important benefits. An example would be an expanded water treatment plant.

4. Other Provisions

There are other provisions that your tribe may want to include in the WQS or at least consider. If your tribe decides to evaluate non-point sources, the program should ensure that reasonable best management practices are implemented. Nonpoint source pollution refers to pollutants released in a wide area. A few examples of non-point sources include forestry practices that create sedimentation, malfunctioning septic systems, livestock overgrazing, construction sites and some agricultural practices.

When it comes to discharges into the streams, tribes can include their WQS policies for low flows, variances, and mixing zones. A **mixing zone** is a defined area or volume of water where initial dilution of a discharge takes place and where certain numeric water quality criteria may be exceeded. Thus, the area may alter the aquatic community. Any effect on the waterbody must be limited to the area of the mixing zone.

By authorizing a mixing zone, tribes allow some portion of the waterbody to mix with and dilute particular wastewater discharges before evaluating whether the waterbody as a whole is still protecting its designated use and meeting its criteria. Dilution can be considered when in developing by the National Pollutant Discharge Elimination System (NPDES) water quality based effluent limitations. See 40 CFR 122.44(d) (1)(ii); and Chapter 6 of the Permit Writers’ Manual, https://www.epa.gov/sites/default/files/2015-09/documents/pwm_chapt_06.pdf.



To ensure that adopted criteria are protective of the designated uses, states and tribes generally establish critical low-flow values to support criteria implementation. The values are used to determine the available dilution for the purposes of determining the need for and establishing NPDES water quality-based effluent limits. Section 5.2 of the Water Quality Standards Handbook, available at <https://www.epa.gov/sites/default/files/2014-09/documents/handbook-chapter-5.pdf>, EPA provides an overview of critical low flows.

For example, to determine the dilution allowable in calculating NPDES permit limit, the Ute Mountain Ute Tribe established critical flows for its rivers and streams as follows:

- Chronic Aquatic Life - 4-day, 3-year flow (the lowest four-consecutive-day average flow event expected to occur once every three years on average);
- Acute Aquatic Life - 1-day, 3-year flow;
- Human Health (carcinogens) - harmonic mean flow (the harmonic mean of daily flows); and
- Human Health (non-carcinogens) - 4-day, 3-year flow.

When tribes determine mixing zones policies, they should evaluate restriction risks to human health. For example, mixing zones should not be near drinking water sources. Where fish tissue residues are a concern, exposure time affecting aquatic organisms in the mixing zone would need to be evaluated. Lastly, where waters are designated for primary contact recreation, mixing zones for bacteria should not result in significant human health risks to people recreating in the water.

Low flow statistics are estimates of the lowest flow event in a stream or river that would be expected to occur over some period of record. NPDES permit writers typically use these estimates when authorizing a regulatory mixing zone and associated dilution credits, or dilution factors for use in reasonable potential analyses an/or WQBEL calculations. https://www.epa.gov/sites/default/files/2018-11/documents/low_flow_stats_tools_handbook.pdf.

Lastly, there may be waterbody areas where you cannot meet WQS. A written justification for a water quality **variance** must be reviewed and approved by EPA. If approved, it grants a waterbody or waterbody segment a temporary variance with a specified timeframe. A public hearing is also required. The variance allows progress over time to reach the criteria.

Several examples of justifications for variances include:

- Naturally occurring pollutant concentrations, including arsenic, mercury, phosphorus, etc.;
- Ephemeral, intermittent, or low-flow conditions of water levels;
- Human-caused conditions of pollutants prevent attainment;
- Dams, diversions, or other structures prevent attainment and it is not feasible to restore the waterbody to its original condition; and



- Natural physical conditions such as flow cover.

EPA has a WQS Variance Building Tool to help guide your tribe in developing the variance that is appropriate. The following questions will help once you start the Building Tool.

- What is the designated use for the waterbody segment and the location?
- What are the pollutants or water quality parameters to which the WQS variance will apply to?
- What is the current applicable criterion for the pollutant?
- Will it apply to one or more NPDES permits?
- Why is the designated use not attainable?

The tool kit is available at the following website: <http://www.epa.gov/wqs-tech/water-quality-standards-variances>.

5. Review and Revision Process

At least once every three (3) years a tribe should review its WQS. During this time, the tribal program administering the water quality program will need to conduct an internal review to address any concerns by staff. Next, you will involve the public and have intergovernmental coordination. Community members are aware of the water quality conditions on their homeland, tribal employees who work in the field would have insight in their respective fields, and federal programs (e.g., Bureau of Indian Affairs (BIA), Indian Health Service (IHS), U.S. Fish and Wildlife Service (USFWS) employees who work directly on tribal lands or provide assistance would be able to provide information as well.

During the review process, additions and/or revisions to the standards can be made to ensure that their requirements meet the needs of the tribe. Tribes may revise designated uses, water quality criteria, antidegradation policies, and adopted implementation procedures. This process will help to ensure the standards are kept up to date and that the public is aware of the process and provide their input.

THREE KEY ELEMENTS OF WATER QUALITY STANDARDS

Designated Uses	Two basic uses of water: Supporting aquatic ecosystems and Recreation
	Two subcategories of recreation: Primary and Secondary
Water Quality Criteria	Two types of criteria: Numeric and Narrative
	Used to determine how much of a pollutant can be in the water
	Applies to human health, aquatic ecosystems, and wildlife
Antidegradation Policy	Establishes a framework for maintaining and protecting water quality that has already been achieved. The policy provides three tiers of protection.



V. CONCLUSION

Inherent tribal sovereignty is what distinguishes us from every other interest group in the nation, and is our strongest tool for protecting the environment. Sovereignty means your tribe has governmental power to decide its environmental values and goals, its priorities and strategies for protecting those values and goals, and its requirements and conditions for land use activities that could degrade or damage the environment. Your tribe has governmental power to implement those concepts in ways that tribal citizens, businesses and even the tribe itself must respect. In some situations, non-Indian reservation residents may have to respect them as well.

In the water quality context, tribal sovereignty means that tribes, not states or the federal government, decide which uses of water are important. We can set the spiritual and cultural uses central to our indigenous identity as the cornerstones of tribal water quality programs. We can also decide how stringent the criteria must be to ensure full protection of those uses. Tribes may believe that the spiritual and cultural values clean water protect demand standards with a substantial margin of safety. Tribes may decide that better water quality is more important to the community than short-term economic returns. That is the power of governmental value judgments. They serve the public health and welfare as defined by the community.

Tribes' inherent sovereignty mean tribes do not have to follow the federal CWA model or seek EPA approval for their water quality programs or WQS. Tribal environmental programs apply to tribal citizens and businesses and agencies without regard to federal environmental laws and regulations. Working with EPA under the CWA model, though, can offer significant benefits to tribes. It takes nearly all jurisdictional challenges by states and non-Indians off the table. EPA approval of tribal WQS also means that federal permits issued on reservations must contain conditions designed to meet the applicable tribal standards. And permits issued off-reservation, even by state governments, may include conditions based on the applicable tribal WQS.

Moreover, EPA can provide technical training and occasionally financial assistance to help build tribal capacity and regulatory infrastructure. After your first read of this guidebook, the technical complexity and many



steps needed to build WQS might seem a bit overwhelming, so take it one step at a time. Ask for help from EPA and other tribes. Look at examples. Attend trainings and conferences and reach out to those who have gone before you for tips and guidance. The work is challenging but achievable. It is a responsibility we cannot leave to others.

Water is life. Preserving the water quality of indigenous territories is critical to our physical sustenance, and that of our children, grandchildren and their grandchildren. Furthermore, preserving the environment of indigenous territories is critical to maintaining ancient spiritual and cultural connections with all our relations. Our ancestors knew this and passed to us a sacred duty to protect it.

VI. APPENDICES

APPENDIX A – TRIBAL EXAMPLE: PYRAMID LAKE PAIUTE TRIBE’S WATER QUALITY MONITORING PROGRAM



Located in western northern Nevada, approximately 35 miles north of Reno, is the Pyramid Lake Paiute Reservation, where the high-desert terminal Pyramid Lake sits at the bottom of the Truckee River watershed. Before Contact, the Tribe developed an identity and way of life that continues today.

Presently, the Pyramid

Lake Paiute Tribe (PLPT) operates a world class fishery that thrives by the use of rigorous conservational practices based on current scientific understanding. The Tribe established the Water Quality Program (WQP) in 1981 for the attainment of water quality standards, which were established for preserving and propagating wildlife and aquatic life, and protecting established cultural and recreational uses. Under the PLPT Natural Resources Department, the Tribe manages its water resources within the Pyramid Lake reservation through several programs and field activities including the following.

Monthly Truckee River Monitoring/Sampling

The WQP performs monitoring at 10 sites along the Truckee, measuring parameters like temperature, dissolved oxygen, pH, specific conductivity, salinity and turbidity with the multi-sensor YSI EXO1 sonde. Additionally, water samples are collected and taken to the Pyramid Lake Fisheries laboratory, where they are analyzed for phosphorus, ammonia, nitrates and total Kjeldahl nitrogen (TKN) content.

Annual Truckee River/Reservation Stream Bioassessments

The WQP also performs annual monitoring, sampling and bioassessments at 13 sites along the Truckee River, where the team assesses the riparian character by measuring riparian canopy cover, substrate composition, river embeddedness, and other metrics. Additionally,

the team collects and analyzes the health of aquatic bugs as a leading riparian ecosystem indicator.

The Pyramid Lake reservation contains many perennial and intermittent streams. The program performs monitoring, sampling and bioassessment activities annually in the springtime at 15 remote stream sites scattered across the Virginia, Pah Rah and Lake Range foothills.

Annual Wetlands Monitoring and Bioassessments

Within the PLPT Natural Resources Department is the Wetlands Program. Typically, there is a total of 22 wetlands on the reservation that are monitored every year. Some of these wetlands are riverine wetlands, and due to the meandering nature of the Truckee River, along with large flood events, these wetlands can be lost or change from year to year. The Wetlands Program staff monitors these wetlands annually. The monitoring includes collecting water samples from each wetland for water quality analysis, along with conducting a California Rapid Assessment Method (CRAM) on each wetland. The Wetlands Program decided to use the CRAM on each wetland due to Nevada not having a finalized method. Using CRAM, the overall health of the wetland can be assessed every year by rating its ambient conditions, such as vegetation, topography, and buffers surrounding each wetland.

Although the Lake Tahoe-Pyramid Lake watershed is highly regulated in recent years due to increased upstream population growth, and industrialization along the connecting Truckee River corridor have resulted in downstream ecosystem degradation. The Tribe coordinates with various federal, state, and local governments, along with inter-tribal agencies in improving environmental management armed with current scientific knowledge in order to protect threatened and endangered aquatic species endemic to the watershed, water quality, and to protect the health of its members, its cultural identity and way of life.

Tribal Example is provided by Aaron Bill, Water Quality Specialist, Pyramid Lake Paiute Tribe and was featured in the [NTWC's September 2021 Newsletter](#).



APPENDIX B - USEFUL LINKS

Tribal Grants under Section 106 of the Clean Water Act

<https://www.epa.gov/water-pollution-control-section-106-grants/tribal-grants-under-section-106-clean-water-act>

Indian Environmental General Assistance Program (GAP)

<https://www.epa.gov/tribal/indian-environmental-general-assistance-program-gap>

EPA Tribes and Water Quality Standards

<https://www.epa.gov/wqs-tech/tribes-and-water-quality-standards>

EPA Watershed Academy

Provides learning modules on the Clean Water Act and Nonpoint Source Pollution

<https://www.epa.gov/watershedacademy>

EPA Water Quality Standards Academy

<https://www.epa.gov/wqs-tech/water-quality-standards-academy>

EPA WQS Variance Building Tool

<http://www.epa.gov/wqs-tech/water-quality-standards-variances>

EPA Quality Assurance Project Plan Development Tool

<https://www.epa.gov/quality/quality-assurance-project-plan-development-tool>

Example: Navajo Nation Primary Drinking Water Regulations

<https://navajopublicwater.navajo-nsn.gov/NNPDWA>

Example: Hoopa Valley Tribe Water Quality Monitoring

<http://www.hoopatepa.org/water.html>

Example: Pyramid Lake Paiute Tribe Water Quality Program

<http://www.plptwq.org/>