

How Water Quality Standards Protect

Tribal Waters

Office of Water (4005-1)
EPA-823-B-02-002
www.epa.gov
June 2002

Clean Water Act goal:

"...restore and maintain the chemical, physical, and biological integrity of the surface waters of the United States."

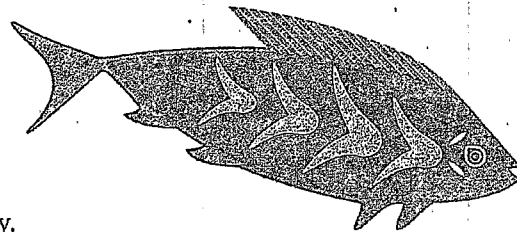


United States
Environmental Protection Agency
Ariel Rios Building
1200 Pennsylvania Avenue N.W.
Washington, DC 20460

What are Water Quality Standards?

Water quality standards (WQS) are the foundation of the nation's surface water quality protection program. WQS are a tool for protecting and improving water quality. WQS define the use of the waterbody as well as the amount of pollutants that may be discharged into waters from sources such as industrial facilities, wastewater treatment plants, and storm sewers. WQS help reduce pollution from rural and urban areas. WQS comprise three components:

- ✦ The designated use (description of the goal for the waterbody, such as fishing, swimming, cultural, or traditional)
- ✦ Water quality criteria (limits on pollutants and conditions that will protect the designated use)
- ✦ An antidegradation policy governing changes in water quality.



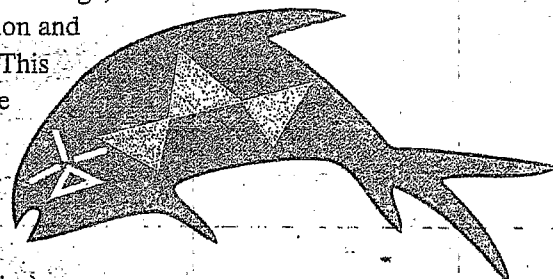
Water quality standards are adopted for all surface waters of the United States, including rivers, streams, intermittent streams, lakes, natural ponds, wetlands, and marine waters such as estuaries and near-shore coastal waters.

Indian Tribes Can Administer the Water Quality Standards Program on Tribal Land

With the water quality standards program, an approved Indian tribe can set the water quality goals for all surface waters (e.g., streams, rivers, lakes and wetlands) on the reservation. The tribe will also determine whether activities which require a federal license or permit are consistent with the tribe's water quality standards.

Setting Water Quality Standards — An Example

During the development of its WQS, a tribe decides, after holding public hearings, that it wants a waterbody on the reservation to be suitable for the protection and propagation of warmwater aquatic life (e.g., sunfish, bass, and crayfish). This becomes the *designated use*. The tribe adopts numeric criteria or narrative descriptions (*water quality criteria*) of various pollutants like toxic chemicals, and limits for water quality parameters, such as dissolved oxygen. Keeping pollutant concentrations below the criteria levels will ensure that the designated use is protected. The tribe must also protect water quality that is better than the minimum levels (*antidegradation policy*).



How Authorization Under the Clean Water Act Benefits Indian Tribes

- ✦ Under Section 401, if a requested license or permit within the reservation results in a discharge adversely affecting water quality, an eligible tribe may certify whether the requested license or permit satisfies the tribe's water quality standards.
- ✦ Tribes establish water quality goals for reservation waters to protect water resources.
- ✦ Tribes designate uses of waterbodies which may include cultural or traditional purposes.

Terms in this folder are defined in the enclosed glossary.

Graphics were taken from Clip Art © 1990-97, RT Computer Graphics, Inc., NM.

QUESTIONS ABOUT PROGRAM AUTHORIZATION:

What does a tribe need to start the Water Quality Standards (WQS) process for our reservation lands?

Before a tribe may adopt standards consistent with the Clean Water Act, it must receive authorization to administer the WQS Program.

What is program authorization?

EPA uses four criteria to determine the eligibility of a tribe to administer the WQS program. These are:

- ✿ The tribe must be federally recognized;
- ✿ The tribe must have a governing body that carries out substantial governmental duties and powers;
- ✿ The tribe must have authority to administer the program for reservation waters; and
- ✿ The tribe must be capable of administering an effective WQS program.

Upon receiving authorization, the tribe can submit its WQS for approval to EPA. You can submit both applications for program authorization and tribal adopted WQS at the same time.

How does a tribe apply for the WQS program?

There is not a standard application to apply for program authorization. An Indian tribe submits documentation to show that it meets the four criteria above. Documentation should include copies of tribal laws or regulations and other supporting information. The appropriate EPA Regional Administrator (addresses are listed in this folder) reviews the information.



How will EPA evaluate a tribe's application for program authorization?

EPA will notify other governmental entities (states, tribes, and other federal agencies located contiguous to the reservation) that the tribe's application is under review and provide them with an opportunity to comment within 30 days, on the tribe's regulatory authority to administer the program.

How long can EPA take to review the application?

There is no specific timeframe for review because a decision is not made until a complete application is submitted and EPA has had an opportunity to review comments submitted by relevant governmental entities. EPA's processing of an application must be timely. The applicant tribe will be promptly notified when the EPA Regional Administrator makes a decision on the tribe's application.

QUESTIONS ABOUT WATER QUALITY STANDARDS:

Must an Indian tribe administer the WQS program?

No. It's up to the tribe. And the tribe can make that decision at any time.

When can a tribe start developing its WQS?

An Indian tribe may begin developing its WQS at any time, taking into account the unique characteristics of the waterbodies within the reservation. A tribe may submit its WQS to EPA at the same time it applies to administer the WQS program, or it can wait until EPA has approved its application for program authorization. EPA cannot approve a tribe's WQS submission until it has authorized the tribe's program.

Who does a tribe contact to get started?

Applications to administer the WQS program may be sent to the appropriate EPA Regional Contact listed in this folder (either the WQS Coordinator or the Indian Coordinator). EPA will work with the tribe throughout the application process. During the development of its WQS, we hope the tribe will frequently consult with the appropriate EPA WQS Coordinator (names and phone numbers are contained in this folder). Dialogue between the tribe and EPA is an essential part of the WQS development process. After the tribal WQS are adopted by the Tribal Council (or its equivalent), the tribe submits those WQS to EPA for review and approval or disapproval. EPA's Standards and Health Protection Division, Water Quality Standards Branch can also provide more information (see the contact page for the address and phone number).

U.S. Environmental Protection Agency Contacts

EPA Region 1

1 Congress Street
Boston, MA 02114-2023
www.epa.gov/region01
William Beckwith, WQS
Coordinator (617-918-1544)
James Sappier, Indian
Coordinator (617-918-1672)

EPA Region 2

290 Broadway
New York, NY 10007-1866
www.epa.gov/region02
Wayne Jackson, WQS
Coordinator (212-637-3807)
Christine Yost, Indian
Coordinator (212-637-3564)

EPA Region 3

1650 Arch Street
Philadelphia, PA 19103-2029
www.epa.gov/region03
Denise Hakowski, WQS
Coordinator (215-814-5726)
There are no federally recognized tribes located in Region 3.

EPA Region 4

61 Forsyth Street SW
Atlanta, GA 30303-3104
www.epa.gov/region04
Fritz Wagener, WQS
Coordinator (404-562-9267)
Mark Robertson, Indian
Coordinator (404-562-9639)

EPA Region 5

77 West Jackson Boulevard
Chicago, IL 60604-3507
www.epa.gov/region05
David Pfeifer, WQS Coordinator
(312-353-9024)
Casey Ambutas, Indian
Coordinator (312-353-1394)

EPA Region 6

1445 Ross Avenue
Dallas, TX 75202-2733
www.epa.gov/region06
Russell Nelson, WQS
Coordinator (214-665-6646)
Eve Boss, Indian Coordinator
(214-665-2118)

EPA Region 7

901 N. 5th Street
Kansas City, KS 66101-2907
www.epa.gov/region07
Pat Costello, WQS Coordinator
(913-551-7939)
Wolfgang Brandner, Indian
Coordinator (913-551-7381)

EPA Region 8

999 18th Street, Suite 500
Denver, CO 80202-2466
www.epa.gov/region08
William Wuerthele, WQS
Coordinator (303-312-6943)
Sadie Hoskie, Indian
Coordinator (303-312-6343)

EPA Region 9

75 Hawthorne Street
San Francisco, CA 94105-3901
www.epa.gov/region09
Gary Wolinsky, WQS
Coordinator (415-744-1978)
Clancy Tenley, Indian
Coordinator (415-972-3785)

EPA Region 10

1200 Sixth Avenue
Seattle, WA 98101-1128
www.epa.gov/region10
Marcia Lagerloef, WQS
Coordinator (206-553-0176)
Sandra Johnson, Indian
Coordinator (206-553-6220)

U.S. Environmental Protection Agency

Office of Water
Standards and Health Protection
Division (4305)
Water Quality Standards Branch
Ariel Rios Building
1200 Pennsylvania Ave., NW
Washington, DC 20460
202-566-0400
www.epa.gov/ost

EPA Regional Offices and States in EPA's Regions

Region 1

Connecticut
Maine
Massachusetts
New Hampshire
Rhode Island
Vermont

Region 3

Delaware
District of Columbia
Maryland
Pennsylvania
Virginia
West Virginia

Region 5

Illinois
Indiana
Michigan
Minnesota
Ohio
Wisconsin

Region 7

Iowa
Kansas
Missouri
Nebraska

Region 9

Arizona
California
Hawaii
Nevada
American Samoa
Guam
Commonwealth of the Northern Mariana Islands

Region 2

New Jersey
New York
Puerto Rico
Virgin Islands

Region 4

Alabama
Florida
Georgia
Kentucky
Mississippi
North Carolina
South Carolina

Region 6

Arkansas
Louisiana
New Mexico
Oklahoma
Texas

Region 8

Colorado
Montana
North Dakota
South Dakota
Utah
Wyoming

Region 10

Alaska
Idaho
Oregon
Washington

If you wish to view tribal WQS approved by EPA,

Water Quality Standards offer solutions to real environmental problems on reservations – some examples:

The Problem: High levels of nutrients from agricultural activities caused undesirable plant growth and limited fish production.

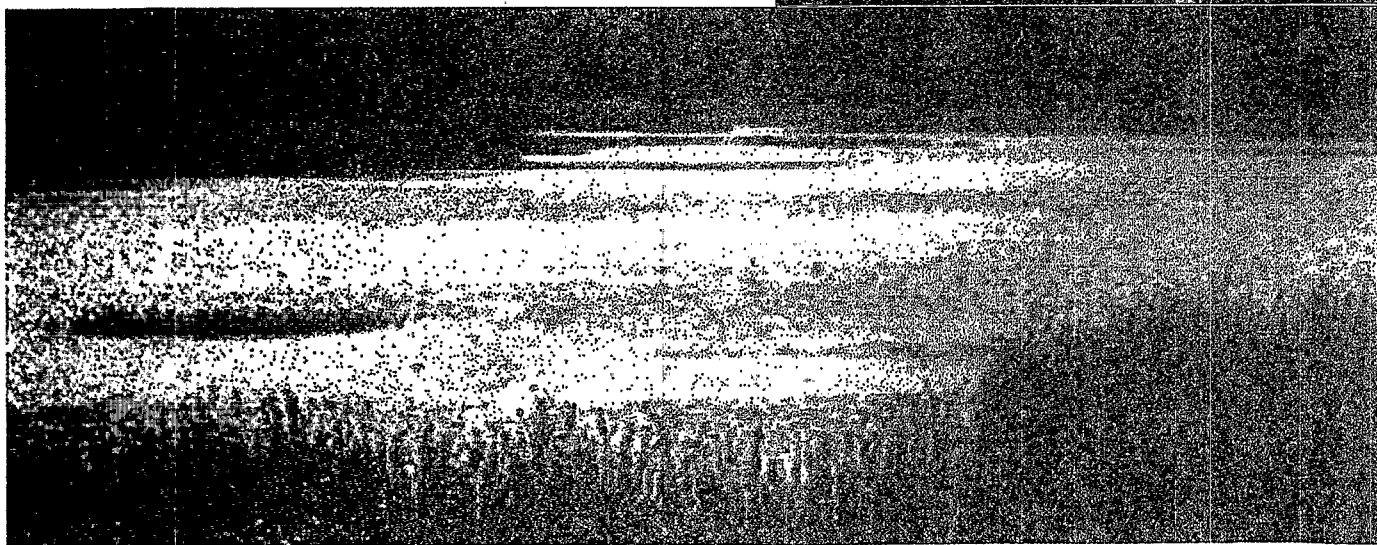
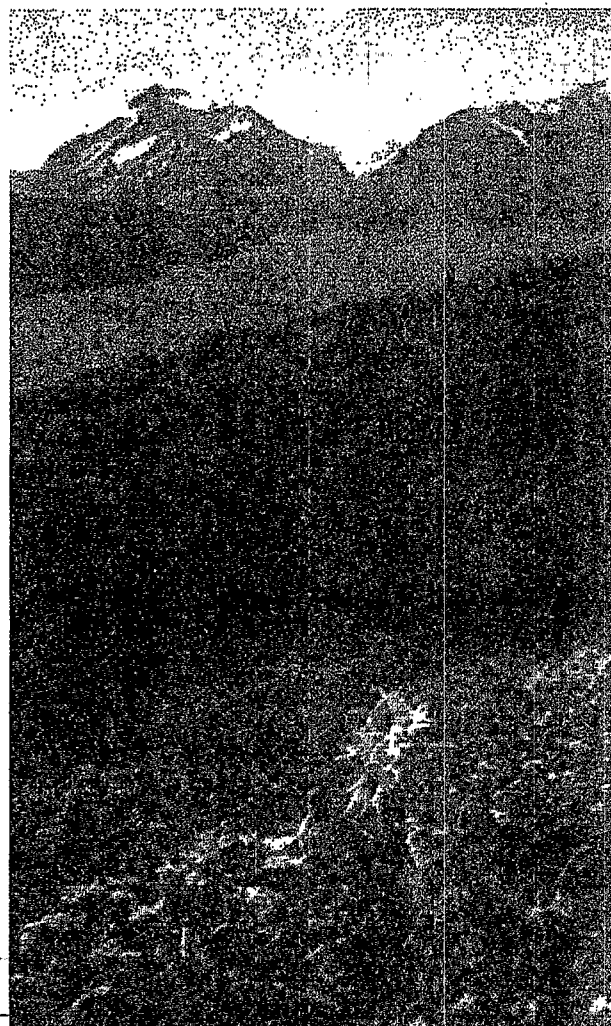
The WQS Solution: The tribe adopted a numeric limit for phosphorus. This resulted in reduced discharges from agricultural activities.

The Problem: High levels of ammonia being discharged by a sewage treatment plant that caused elevated ammonia concentrations in reservation waters which reduced fish populations.

The WQS Solution: The tribe adopted numeric limits for ammonia. This resulted in the sewage treatment plant altering its treatment processes to reduce the amount of ammonia being discharged.

The Problem: Fish populations were reduced even though numeric limits on pollutants were being met.

The WQS Solution: The tribe adopted biological criteria to describe the desired conditions of the fish community and other aquatic life. This gave them the regulatory basis for improving the fish populations.



CASE STUDY

The Fort Peck Tribes Use Biological Criteria Their Water Quality Standards*

The Fort Peck Tribes used biological assessments to identify degraded waterbodies on the reservation. Damage to streambanks (such as erosion and loss of vegetation) resulting from heavy livestock grazing is a common cause of degradation to reservation waters. The Tribes have obtained federal grants to restore the streams. Integrating biological criteria into their water quality standards program helps the Tribes detect problems in reservation waters that other regulatory approaches cannot always find. For example, a type of fish may disappear because erosion has destroyed its spawning sites. Chemical criteria would not identify this, but an assessment of the plants and animals living in the stream could reveal these impacts.

Biological criteria allow a tribe to set goals for waterbodies based on the types and numbers of aquatic species that should be present in the waterbodies. Establishing biological criteria as part of their water quality standards will allow the Fort Peck Tribes to use federal programs, both regulatory and non-regulatory, to meet their water quality goals.

Why use biological information and biological criteria?

More than 25 years after it was passed, the Clean Water Act still challenges us to answer critical questions about the physical, chemical, and biological state of our waters. One of the most meaningful ways of answering these questions is to observe the plants and animals that live in bodies of water. The number and types of aquatic plants and animals are affected by both pollution and loss of habitat. They can reveal problems that might otherwise be missed or underestimated using chemical water quality criteria. Biological criteria are narrative or numeric standards that describe the biological community that should live in a waterbody. Biological data are the core for setting protection or restoration goals, for determining what to watch and how to understand what is found, for ranking which problem areas get worked on first, and for judging the effectiveness of management actions.

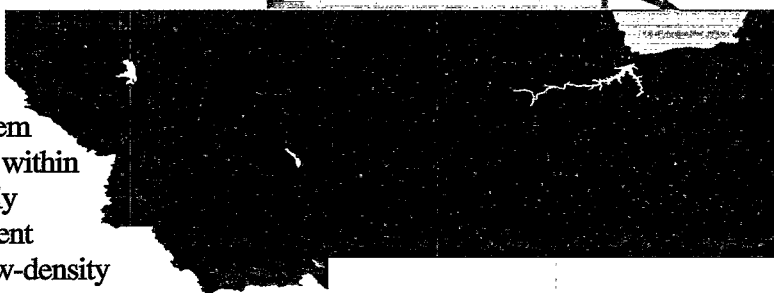
Tribal Background and Operations

The Fort Peck Reservation and trust lands, located in northeastern Montana, are home to the Assiniboiné and Sioux Tribes. Within the 2-million-acre reservation lie seven major watershed drainages, all of them tributaries to the Missouri River. Land use within the Fort Peck Tribes reservation is primarily agricultural: 55 percent rangeland, 43 percent cropland, and 2 percent forestland, plus low-density urban area and roads. Agricultural practices cause 98 percent of the problems in the Tribes' streams.

The U.S. Environmental Protection Agency approved the Tribes' water quality standards in 2000.

The Tribes' Office of Environmental Protection introduced the concept of including biological criteria in the Tribes' water quality management strategy. Incorporating biological criteria into their water quality standards complemented the chemical and physical criteria the Tribes had been using.

Fort Peck Reservation



* Environmental terms used in this case study are defined in the enclosed glossary.

In 1991, the Tribes began collecting data on macroinvertebrates (e.g., crayfish, clams, insects) and fish communities at 16 sites on streams across the reservation. They used this biological community data to develop numeric biological criteria for the tribal streams based on the type of organisms living there and their habits. Using the macroinvertebrate data, the Office of Environmental Protection developed a scoring system (the Biological Condition Rating) to assess a stream.

Successful Application

By using biological information, the Fort Peck Tribes Office of Environmental Protection identified and addressed specific environmental problems within the reservation. By using the Biological Condition Rating system, they have been able to determine what stream segments on the reservation are most degraded and therefore, require immediate attention. They can use information collected through the Biological Condition Rating system in funding requests to federal agencies to document specific problems.

The Tribes have used a \$350,000 grant from the U.S. Department of Agriculture through the Environmental Quality Incentives Program, and a \$168,000 grant from the U.S. Environmental Protection Agency through the Nonpoint Source Program to build sources of water away from streambanks, install a pipeline, and establish cross-fencing to improve riparian habitat along the stream. The biological assessment program is sampling and analyzing aquatic organisms at the sites where the improvements were made to see if the Biological Condition Rating is detecting a change in the environment.

Monitoring chemical and physical parameters alone may not be enough to document water quality problems. For example, one station downstream from an area where grazing cattle were eroding streambanks recorded chemical data within normal ranges. However, the Biological Condition Rating system showed impacts to aquatic organisms, indicating damage to stream habitat. In this type of situation, measuring the biological community is a much better tool for identifying problems.

Insights to Share with Other Tribes

Fort Peck Tribes believe that biological assessment tools are especially useful for environmental management programs with limited staff and resources. For example:

- ⊕ Office of Environmental Protection used one full-time staff person, plus 10 percent of a nearby college biologist's time, and a summer intern.
- ⊕ Start-up and maintenance costs for equipment for biological assessment were relatively low.
- ⊕ They did all sampling and analysis in-house, eliminating the cost of sending samples out for analysis.
- ⊕ Because biological techniques detect degraded biological conditions regardless of the cause, they can be more effective than other approaches at identifying problems caused by agricultural nonpoint sources, which are common on many Indian reservations.

For Further Information Contact

Deb Madison
Office of Environmental Protection
Fort Peck Tribes
Poplar, MT
Phone 406-768-5155
E-mail: twohorses@nemontel.net
www.fortpecktribes.org



CASE STUDY

The Seminole Tribe of Florida Uses Water Quality Standards to Solve a Nutrient Problem*

When the Seminole Tribe of Florida began to administer its water quality standards program in 1994, it targeted a severe nutrient problem on the Big Cypress reservation. Increased nutrients in the water – in this case, phosphorus – were disrupting natural plant and animal communities. The problem came from large-scale agricultural operations around Lake Okeechobee and the Everglades as well as activities on the reservation. Five years after starting its water quality standards program, the Tribe measured decreases in nutrients entering the reservation's waters. In addition, the Tribe became an equal partner with all state, regional, and federal agencies involved with the area's water resource planning and permitting activities. In effect, the Tribe's water quality standards have played an important role in protecting the quality of the reservation waters.

Tribal Background and Operations

The Seminole Tribe of Florida has five reservations that differ greatly in topography, degree of urbanization, and business pursuits affecting land use. For these reasons, the Tribe decided to prioritize its reservations in developing water quality standards rather than adopt a single set of standards covering them all. The U.S. Environmental Protection Agency approved tribal standards for the Big Cypress Reservation in September 1997 and for the Brighton Reservation in November 1998. They are developing water quality standards for the remaining reservations.

The Tribe's Water Resource Management Department is responsible for developing and implementing the water quality standards program. Its mission is to protect and evaluate the Tribe's land and water resources and to facilitate wise use and conservation of those resources. A staff of 17 manages a tribally-funded budget of about \$900,000. In addition, the Water Resource Management Department seeks funds from federal agencies such as the U.S. Department of the Interior and the U.S. Environmental Protection Agency. Although these funds fluctuate annually, they are a very important part of the overall budget.



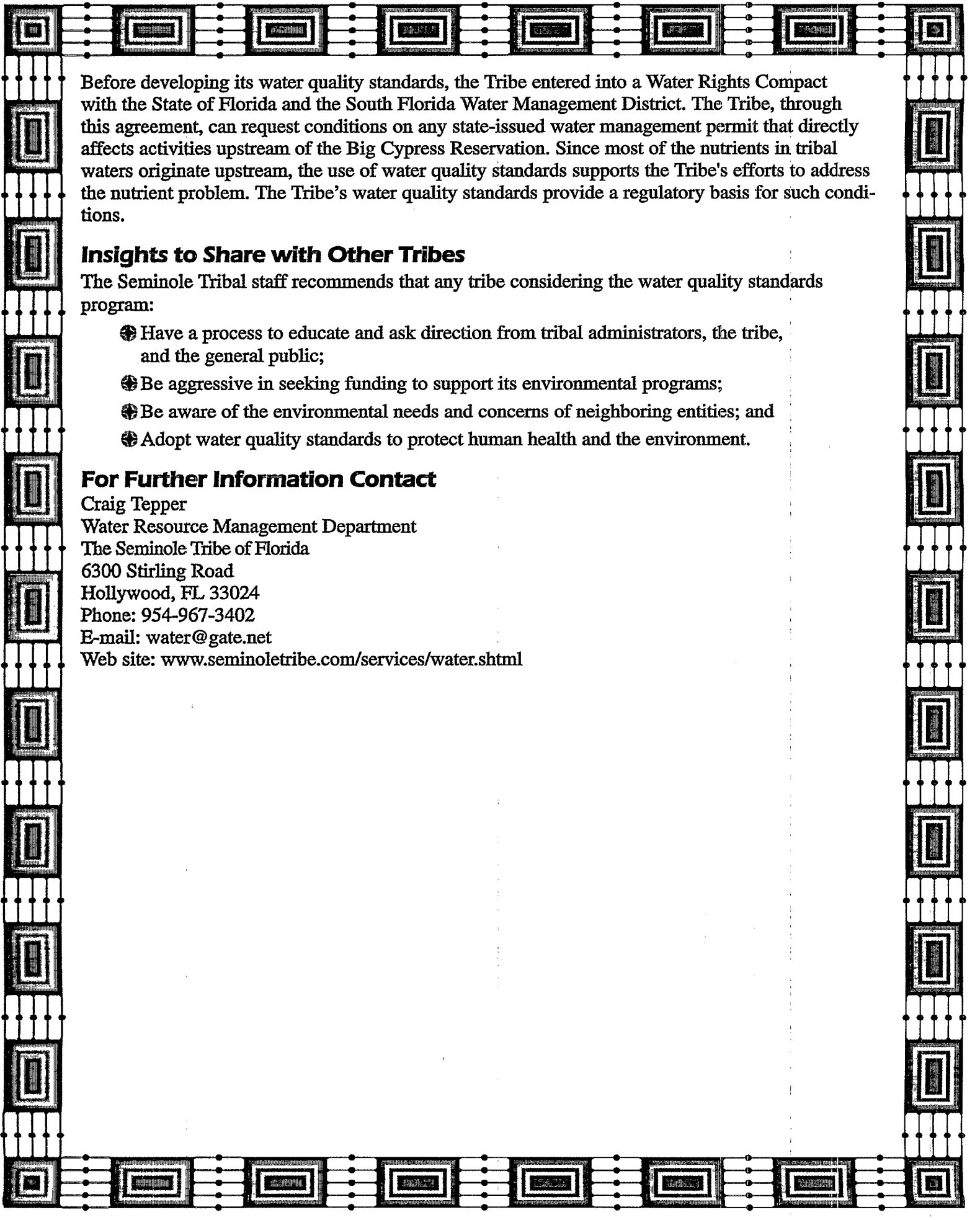
Brighton Reservation
Big Cypress Reservation

The Seminoles' Approach

Water quality standards are an important component of the Tribe's program to protect the quality of reservation waters – and the health and welfare of tribal members. Unlike standards used by the State of Florida, the Tribe has designated selected waterbodies for cultural and traditional uses.

The Tribe adopted a narrative water quality criterion to address a nutrient problem and is conducting research to develop numeric water quality criteria for nutrients on each of its reservations.

* Environmental terms used in this case study are defined in the enclosed glossary.



Before developing its water quality standards, the Tribe entered into a Water Rights Compact with the State of Florida and the South Florida Water Management District. The Tribe, through this agreement, can request conditions on any state-issued water management permit that directly affects activities upstream of the Big Cypress Reservation. Since most of the nutrients in tribal waters originate upstream, the use of water quality standards supports the Tribe's efforts to address the nutrient problem. The Tribe's water quality standards provide a regulatory basis for such conditions.

Insights to Share with Other Tribes

The Seminole Tribal staff recommends that any tribe considering the water quality standards program:

- ⦿ Have a process to educate and ask direction from tribal administrators, the tribe, and the general public;
- ⦿ Be aggressive in seeking funding to support its environmental programs;
- ⦿ Be aware of the environmental needs and concerns of neighboring entities; and
- ⦿ Adopt water quality standards to protect human health and the environment.

For Further Information Contact

Craig Tepper
Water Resource Management Department
The Seminole Tribe of Florida
6300 Stirling Road
Hollywood, FL 33024
Phone: 954-967-3402
E-mail: water@gate.net
Web site: www.seminoletribe.com/services/water.shtml

Glossary of Terms Used in Case Studies and Folder

Antidegradation policy — policy required by EPA's water quality standards regulation that states and authorized Indian tribes must adopt to conserve, maintain, and protect water quality that is better than that necessary to protect designated uses.

Biological assessments — evaluation of the biological condition of a waterbody using biological surveys and other direct measurements of resident biota in surface waters.

Biological community — all the groups of organisms living together in the same area, usually interacting or depending on each other for existence.

Biological criteria — narrative or numeric expressions that describe the desired biological condition of aquatic communities inhabiting particular types of waterbodies.

Biological integrity — the condition of the aquatic community inhabiting unimpaired waterbodies of a specific habitat as measured by community structure and function.

Biological survey — collecting, processing, and analyzing a representative portion of the resident aquatic community to determine its structural and/or functional characteristics.

Designated use — the use defined in water quality standards as the goal for each waterbody or waterbody segment whether or not that use is being met.

Impact — change in the chemical, physical (including habitat), or biological quality or condition of a waterbody caused by natural occurrences (e.g., flood) or by man (e.g., pollution).

Macroinvertebrate — animals without backbones that live in or on the sediment. They are large enough to be seen without using a microscope.

Narrative biological criteria — general statements that describe the expected aquatic community for a given designated aquatic life use.

Narrative criteria — criteria expressed in concise statements, generally in a "free from" format. General statements of attainable or attained conditions of ecological integrity and water quality for a given use designation.

Nonpoint source pollution — pollution sources that are diffuse and do not have a single point of origin. Examples include runoff from agriculture, forestry, and construction sites.

Numeric biological criteria — quantitative indices that describe the expected aquatic community for a given designated aquatic life use.

Nutrients — those substances (e.g., nitrogen and phosphorus) that affect the growth rate of plants.

Point source pollution — pollution resulting from discharges into waters from any discernible, confined, and discrete conveyance, such as a pipe, ditch, or sewer.

Reference site — specific place on a waterbody that is unimpaired or minimally impaired and is representative of the expected biological condition of other localities on the same waterbody or nearby waterbodies.

Riparian zone — area beside and along a watercourse that often is vegetated and that is a buffer zone between the nearby lands and watercourse.

Sedimentation — the deposition of fine materials (e.g., sand, silt, clay) onto the bottom of streams and lakes.

Stressors — chemical, physical, and biological factors that adversely affect aquatic organisms and stream health.

Water quality criteria (narrative and numeric) — narrative water quality criteria are concise statements, generally in a "free from" format, of attainable or attained conditions of water quality for a given use designation. Numeric water quality criteria are numerical concentrations or limits for specific chemicals in water which, if not exceeded, will protect aquatic life and human health. All water quality criteria are elements of water quality standards adopted by states and authorized Indian tribes under Section 303(c) of the Clean Water Act.

Watershed — a drainage area or basin into which all land and water areas drain or flow toward a central collector, such as a river, stream or lake.

Water Quality Standards — the cornerstone of Indian tribal and state water quality management programs. The water quality standards program consists of three components (designated uses, water quality criteria and the antidegradation policy) that form the legal basis for controls on the amount of pollutants a specific waterbody can contain. Water quality standards describe the quality of water that will support a specific use.