



Tribal Wetland Program Highlights



Acknowledgments

This publication was prepared by the Wetlands Division, Office of Wetlands, Oceans and Watersheds, in the Office of Water, U.S. Environmental Protection Agency (EPA). Reginald Parrish initiated project research while Matthew Witten (Wetlands Division 1997 Sea Grant Fellow) collaborated with Parrish to move the project forward. Brett Melone (Wetlands Division 1998 Sea Grant Fellow) continued the project in 1998 with assistance from Lorraine Williams. Through the leadership of Kathleen Kutschenreuter, the project was completed in 2000. Contractor support for document production and design was provided by Tetra Tech, Inc.

The Wetlands Division acknowledges the efforts of the Tribal Wetland Work Group (TWWG), whose members helped shape the project. The TWWG was formed in late 1997 to serve as a sounding board for the project and to provide information on Tribes with wetland programs. It is composed of Boyd Nystedt and Jerry Pardilla of the National Tribal Environmental Council, Patrick Durham of the Native American Fish and Wildlife Society, EPA's American Indian Environmental Office, EPA's Region 8 and their Montana Office, and EPA's Region 4 Office. Other valuable contributions are the result of staff reviews by EPA's Office of Water (Office of Wetlands, Oceans and Watersheds and the American Indian Environmental Office) and EPA's Region 5 Office.

The success of this project is largely the result of the dedication and hard work of the people who represent the Tribes and Native organizations included as case studies in this report. The Wetlands Division gratefully acknowledges the contributions of Mary Clare Weatherwax of the Blackfeet Tribe; Mike Connolly and Stephanie Ostrom of the Campo Band of Kumeyaay Indians; Mary Price of the Confederated Salish and Kootenai Tribes of the Flathead Reservation; Douglas Cox of the Menominee Tribe of Wisconsin; Janet Strong of the Nisqually Tribe; Steve Linskens of the Oneida Tribe of Indians of Wisconsin; Christine Celentano, Paul Jackson (now with The Nature Conservancy), Tom Evans, Robin Reich, Walter Meganack, and Violet Yeaton of Port Graham/Nanwalek Native Villages; Craig Tepper, Patti Lodge, and Rhonda Roff of the Seminole Tribe of Florida; Luis Zamora and Don LightningBow of the Taos Pueblo; Jeff Day and Matthew Vanderhoop of the Wampanoag Tribe of Gay Head; and Candy Lupe of the White Mountain Apache Tribe. The Wetlands Division would also like to thank Dan LaPlant (U.S. Department of Agriculture, Natural Resources Conservation Service, Anchorage, Alaska) for his assistance with the Port Graham/Nanwalek case study. In addition, the Wetlands Division extends many thanks to Amy Wing and the Native American Fish and Wildlife Society for providing basic data on Tribal water programs.

The Wetlands Division would also like to recognize the time and consideration of all those Tribes and individuals whose wetland programs are not included in this report, but who contributed to the project in important and meaningful ways. They include Fran King Brown of the Southern Ute Indian Tribe; Daniel Pawless of the



Bad River Band of Chippewa Indians; Butch Garner of the Cherokee Nation of Oklahoma; Eric Kreeger of the Coeur D'Alene Tribe; Vina Smith of the Fort Peck Assiniboine and Sioux Tribes; Gene Duncan of the Miccosukee Tribe; Greg Soder of the Narragansett Tribe; Jonathan Matthews of the Nez Perce Tribe; Chris Gannon of the Warm Springs Tribe; Julie Coffin and Heidi Leighton of the Passamaquoddy Tribe; Skip Wyle, Dan Kuzneers, Tammis Coffin, and John Banks of the Penobscot Nation; D.J. Monette of the San Carlos Apache Tribe; Beth Janello of the Pueblo of Sandia; Victor Martino and Keith Dublanica of the Skokomish Tribe; Dave Fuller of the Suquamish Tribe; and Jim Piatt of the Tesuque Pueblo.

Executive Summary

The nation's wetlands are vital links between land and water resources. The U.S. Environmental Protection Agency (EPA), in partnership with other federal agencies, state, Tribal, and local governments, is responsible for restoring and maintaining the chemical, physical, and biological integrity of the nation's waters. EPA uses both regulatory and nonregulatory programs to further its mission of wetland protection.

The Wetlands Division, a division of the Office of Wetlands, Oceans and Watersheds in EPA's Office of Water, prepared this document to encourage Tribes to develop effective wetland programs. Eleven case studies highlight various components of wetland programs of Tribes and Native organizations. In each case study, the description of the wetland programs or projects came directly from the Tribe or Native organization itself. The programs and projects are categorized by general program components, such as wetland and watershed planning or restoration. Where a Tribe or Native organization has developed a unique program to protect its wetlands, such programs are described separately from general program components. Additionally, some of the case studies discuss program components that have a beneficial impact on wetland resources even though they do not have a direct wetland focus.

The case studies provide information about many of the tools and strategies Tribes and Native organizations from around the country are using to address wetland issues so that other Tribes, as well as state and local governments, can learn from their experience. Creative solutions can often emerge from reviewing what others have done, and both failures and successes can be instructive. In some of the case studies presented, Tribes or Native organizations have evaluated the effectiveness of a tool or strategy and adjusted their wetland program to reflect what they have learned.

In addition to the case studies, *Tribal Wetland Program Highlights* includes a comparative analysis of the tools and strategies the 11 Tribes and Native organizations are using to meet their wetland protection goals. It is summarized in a table listing the various program components and cross-referencing them to indicate which Tribes or Native organizations include a program component as part of their wetland protection program. Finally, appendices in the report include a wide range of wetland-related information that Tribes should find useful.

Each Tribe is unique, and the range of possible ways to implement an effective wetland protection program is not limited to what was done in the past. One objective of this report is to demonstrate that every program or project to protect wetlands is a step toward greater understanding and protection of wetland resources.



Contents

Acknowledgements	i
Executive Summary	iii
Contents	v
Chapter 1 Introduction	1
Chapter 2 Comparative Analysis	5
Chapter 3 Case Studies of Tribal Wetland Programs	15
Blackfoot Tribe	17
Campo Band of Kumeyaay Indians	21
Confederated Salish and Kootenai Tribes of the Flathead Reservation	23
Menominee Tribe of Wisconsin	27
Nisqually Tribe	31
Oneida Tribe of Indians of Wisconsin	35
Port Graham/Nanwalek Native Villages	39
Seminole Tribe of Florida	43
Taos Pueblo	47
Wampanoag Tribe of Gay Head	51
White Mountain Apache Tribe	55
Chapter 4 Conclusions	59
Appendix I EPA Regional Tribal and Wetland Contacts	I-1
Appendix II Sources of Support for Tribal Wetland Programs	II-1
Appendix III Information on Relevant Publications and Outreach Materials	III-1
Appendix IV Draft Core Essential Elements of a State or Tribal Wetlands Program	IV-1



This document presents case studies that feature various components of Tribal wetland programs and describes the experiences of various Tribes and Native organizations in their efforts to protect wetlands. Given the geographical and political diversity of the Tribes and Native organizations featured in the case studies, this report covers a range of topics, depending on the types of wetlands, the range of impacts affecting Tribal wetlands, and the resources available to Tribes to implement programs and projects to protect their wetlands.

Purpose

The purpose of *Tribal Wetland Program Highlights* is to document the exemplary efforts that selected Tribes and Native organizations are making to protect their wetland resources. Disseminating information about efforts by Tribes and Native organizations to protect wetlands can be of great benefit to other Tribes, as well as other interested parties. Some of the wetland protection approaches included in the case studies might be directly applicable to current challenges facing Tribes; in other instances, the issues described may generate useful ideas for implementing more comprehensive Tribal wetland protection programs. The report will be distributed mainly to those with a particular interest in Tribal natural resource issues, although the case studies could also be useful to local, regional, and possibly state wetland protection efforts. A long-term purpose of *Tribal Wetland Program Highlights* is to initiate a process for documenting Tribal efforts to protect wetlands. The case studies highlighted here will form part of a baseline of information on Tribal wetland programs against which future progress can be compared and measured.

Background

EPA Policy for Environmental Protection in Indian Country

In 1984 EPA issued its *Indian Policy and Action Plan*, which described the Agency's government-to-government relationship and overall commitments to environmental protection in Indian country. According to the 1984 *Indian Policy and Action Plan* for Indian country, EPA

recognizes Tribal governments as the primary parties for setting standards, making environmental policy decisions, and managing [environmental] programs . . . consistent with Agency standards and regulations.

In 1994 EPA Administrator Carol Browner reaffirmed the *Indian Policy and Action Plan*. She also announced *Actions for Strengthening EPA's Tribal Operations*, including a commitment that each EPA program would establish a strategy for achieving Tribal environmental work plans. EPA's *Strategic Plan*, released in 1997,



describes programmatic and quantitative measures for improving water quality nationwide, including both states and Indian country. To support attaining the objectives of the *Strategic Plan* in Indian country, EPA's Office of Water published *Protecting Public Health and Water Resources in Indian Country: A Strategy for EPA/Tribal Partnership*.

Two common themes found in EPA's state and Tribal policies and programs are capacity building and partnerships. EPA believes that the protection of public health and environmental resources can be most effectively achieved when efforts are designed and carried out at the local level and are based on collaborative partnerships between local, regional, state, and national stakeholders. EPA's Wetlands Division has historically used this strategy of encouraging capacity building and fostering partnerships in its efforts to promote the protection and wise use of the nation's wetland resources.

Tribe-Specific Eligibility Criteria

For Tribes to assume many of EPA's major grant or regulatory programs, they usually must go through a process called "Treatment in a Manner Similar to a State," also known as TAS. TAS was first put into place in the 1986 and 1987 amendments to the Safe Drinking Water Act (SDWA) and Clean Water Act (CWA). These amendments allowed EPA to develop a process by which Tribes could apply for grants and program authority. EPA established a TAS process for eligibility under various programs according to the criteria identified in the SDWA and CWA. To be eligible for TAS, a Tribe must meet the following criteria:

- The Tribe must be federally recognized.
- The Tribe must have or be able to exercise substantial governmental powers.
- The Tribe must have or have been delegated jurisdiction over the area in question.
- The Tribe must have the financial, physical, and human resource capability to implement a program effectively.

In the initial years of the TAS process, many Tribes and EPA staff found the process to be overly burdensome. EPA has increasingly improved its own capacity to help Tribes meet the eligibility requirements, and in 1994, the Agency developed the "TAS Simplification Rule". Under this rule, EPA eliminated the need to meet all four criteria each time a Tribe applies for a program. In general, once a Tribe has been deemed eligible for one EPA program, it need only establish that it has jurisdiction and capability for each subsequent program. This requirement is necessary because each program might require different skills and activities to provide protection that meets the requirements of specific statutes and regulations.

EPA Wetland Programs in Indian Country

EPA began to provide financial support to Tribal wetland programs in 1990 with the establishment of the EPA Wetland Development Grant Program. EPA established the program to support state and Tribal efforts in the development and implementation of wetland protection programs. In 1997 the program was expanded to include assistance to local governments. More information about the Wetland Development Grant Program is provided in Appendix II.

Tribal Wetland Program Highlights represents a continuing commitment on the part of EPA's Wetlands Division to support the evolution of Tribal wetland programs around the country. Geographical, ecological, cultural, and political differences among Tribes make drawing comparisons among Tribal wetland programs a challenge. As the case studies illustrate, tools and strategies currently used by Tribal wetland programs are a function of many different factors, and no two programs are alike.

Goals of Tribal Wetland Programs

The goals of Tribal efforts to protect wetland resources are based in part on an acknowledgment that Tribal cultures have existed and evolved in the context of the natural environment. Respect for and wise use of the environmental resources on which Tribal societies depend is at the foundation of all their wetland programs, which generally aim to protect economic, ecological, aesthetic, recreational, medicinal, and spiritual values. Historically, Indians have viewed human life as part of the natural environment, not in opposition to it. Today, non-Indians are coming to realize that the concept of intergenerational equity should be central in environmental preservation and restoration philosophy. They acknowledge the wisdom and experience of Tribal ways. Likewise, Indians are realizing that some technologies can be compatible with their traditional beliefs and practices.

Organization of Report

This chapter discusses the purpose of the report and provides background information on Tribal wetland programs. Chapter 2 presents a comparative analysis of tools and strategies the 11 selected Tribes and Native organizations are using to meet their wetland protection goals. This comparative analysis is summarized in a table listing the various wetland program components and cross-referencing them to indicate which Tribes and Native organizations include a program component as part of their wetland protection activities.

Chapter 3 presents the 11 case studies, organized by Tribe or Native organization:

- Blackfeet Tribe
- Campo Band of Kumeyaay Indians
- Confederated Salish and Kootenai Tribes of the Flathead Reservation
- Menominee Tribe of Wisconsin
- Nisqually Tribe
- Oneida Tribe of Indians of Wisconsin
- Port Graham/Nanwalek Native Villages
- Seminole Tribe of Florida
- Taos Pueblo
- Wampanoag Tribe of Gay Head
- White Mountain Apache Tribe

Chapter 4 presents the report's conclusions. It briefly discusses EPA's future plans for working with Tribes to share information and develop wetland protection strategies that meet their programmatic and technical needs and interests.

Appendices included in the report present a wide range of wetland-related information that Tribes should find useful:

- Appendix I: EPA Regional Tribal and Wetland Contacts
- Appendix II: Sources of Support for Tribal Wetland Programs
- Appendix III: Information on Relevant Publications and Outreach Materials
- Appendix IV: Draft Core Essential Elements of a State or Tribal Wetlands Program

This chapter presents a comparative analysis of the tools and strategies that the 11 Tribes and Native organizations selected for the case studies are using to meet their wetland protection goals. The Tribal wetland programs and projects described in the case studies are categorized by general program components. Where a Tribe or Native organization has developed a unique program to protect its wetlands, such programs are described separately from the general program components. Additionally, some of the case studies discuss program components that have a beneficial impact on wetland resources even though they do not have a direct wetland focus. The comparative analysis is summarized in Figure 1.

Often, Tribes develop wetland programs and projects in response to pressing issues that must be addressed immediately. A Tribal wetland program may initially focus on one area and gradually evolve into a more comprehensive program. Instead, a Tribe should begin developing its wetland protection program by reviewing publications and outreach materials (Appendix III) that provide guidance for development of wetland programs and “Draft Core Essential Elements of a State or Tribal Wetlands Program” (Appendix IV). This approach, given sufficient funding and other resources, could result in a more comprehensive and efficient wetland program.

The purpose of this comparative analysis is not to advocate one approach over another. EPA recognizes and respects the diverse situations of Tribes. The purpose is to show what features the programs have in common and where the programs diverge as they seek to meet the unique needs of each Tribe or Native organization. The following general program components used in the case studies are also used in the comparative analysis:

- Wetland and Watershed Planning
- Wetland Inventory, Assessment, Mapping
- Regulation
- Restoration
- Mitigation
- Partnerships and Stakeholder Coordination
- Education and Outreach
- Monitoring



Figure 1. Summary of Comparative Analysis

Tribe or Native Organization	Program Component							
	Wetland and Watershed Planning	Wetland Inventory, Assessment, Mapping	Regulation	Restoration	Mitigation	Partnerships and Stakeholder Coordination	Education and Outreach	Monitoring
Blackfoot Tribe								
Campo Band of Kumeyaay Indians								
Confederated Salish and Kootenai Tribes of the Flathead Reservation								
Menominee Tribe of Wisconsin								
Nisqually Tribe								
Oneida Tribe of Indians of Wisconsin								
Port Graham/Nauwalwek Native Villages								
Seminole Tribe of Florida								
Taos Pueblo								
Wampanoag Tribe of Gay Head								
White Mountain Apache Tribe								

The 11 case studies represent diverse situations, but the motivations of Tribes to protect wetland resources provide an appropriate starting point for a comparison of Tribal wetland programs. Similarities are present in both the motivations of Tribes to develop wetland programs and the types of tools and strategies used to protect their wetlands. Considerations such as the amount of wetland acreage, types of wetlands, wetland hydrology, Tribal political framework, human impacts on wetlands—both on and off Tribal lands, the cultural significance of wetlands, and the species that depend on wetland habitat will in part determine the specific types of tools and strategies for program implementation.

Many Tribes have wetlands that have been adversely affected by human activities both on and off Tribal lands. In these cases, Tribal wetland programs often aim to stop degradation, followed by a strategy of restoration and a plan to mitigate potential future impacts. Other Tribes are fortunate to have wetlands that are in a relatively pristine state, and in these instances protection of the resource from potential impacts is the desired strategy. More common are Tribal lands that encompass both pristine and degraded wetlands, requiring an adaptive strategy that includes protection, restoration, and mitigation.



Wetland and Watershed Planning

A number of Tribes and Native organizations discussed in the case studies initiated development of their wetland programs by securing an EPA Wetland Development Grant. Development of a wetland program is one of the primary purposes of this grant program. Historically, awards to Tribes, in comparison to state and local governments, represent a significant portion of overall program funds. Whether or not an EPA Wetland Development Grant or similar planning-oriented funding source is secured, Tribes that engage in a wetland planning process usually develop a road map for future activities. In many cases, a specific issue is examined during the planning process. For instance, the White Mountain Apache Tribe in Arizona is particularly interested in riparian and wetland restoration, and thus their planning efforts focused on that area. The Oneida Nation in Wisconsin is concerned about nonpoint sources of pollution. This interest led to a cooperative effort with neighboring counties to assess the sources of those pollutants and to develop abatement strategies along with education and outreach.

The Nisqually Tribe, because of its proximity to the Fort Lewis Military Reservation in Washington and intensive harvesting of forest products, has found it necessary to participate in basinwide planning efforts. This approach has gained the Tribe the respect of other stakeholders, and has given the Tribe an opportunity to have input into planning efforts that could potentially affect Tribal lands. The Port Graham/Nanwalek Native Villages initiated a wetland-focused watershed planning process to protect the pristine state of the Lower Kenai Peninsula of Alaska. Coordinated by the Port Graham/Nanwalek Watershed Council, this planning effort has emphasized educating Native members about the functions and values of wetlands.



Wetland Inventory, Assessment, Mapping

In many cases, inventory and mapping of Tribal wetlands takes place as part of the planning process. A determination of the location, extent, and condition of a Tribe's wetlands supports the planning process. Compiling this information and subsequently storing it in a relational, geographically referenced database can lay the groundwork for a useful planning tool and monitoring system. The Port

Graham/Nanwalek Native Villages have created an extensive geographic information system (GIS) database that includes information on geology, hydrology, climate, soil, plant communities, water quality, wetlands, land ownership, land uses, and wildlife and fishery resources. The Confederated Salish and Kootenai Tribes of the Flathead Reservation and the Blackfeet Tribe, both in Montana, and the Seminole Tribe of Florida, have carried out inventory and assessment efforts and have developed a GIS that supports their planning processes. The Wampanoag Tribe of Gay Head in Massachusetts delineated and mapped its wetlands, and developed a geographically referenced database that will store data from the Tribe's wetland monitoring program.

Tribes must determine the appropriate level of assessment to be conducted based on their financial and human resources and their goals. There are both low-cost/low-tech and high-cost/high-tech solutions for wetland assessment. A Tribe that cannot afford expensive computer hardware and software and outside consultants should not dismiss the possibility of conducting an assessment of its wetlands. In many cases, Tribes have harnessed technical assistance from federal agencies and universities to help carry out assessment and mapping efforts. Increasingly, volunteers are conducting, assessing, and monitoring wetlands. Volunteer programs promote outreach and education goals while also meeting data needs. Taos Pueblo in New Mexico developed a volunteer monitoring program for its surface water monitoring program and plans to expand it to wetlands monitoring. Reaching out to local experts can be the key to the development and execution of an effective wetland assessment and mapping effort.

The Campo Band of Kumeyaay Indians in Southern California is developing its own definition and classification of wetlands based on climatic fluctuations in addition to those based simply on hydrology, soils, and vegetation. Because of wide variations in rainfall from year to year, the Campo Band is creating a three-tier classification system so that wetlands with dry cycles would still be considered wetlands. In conjunction with development of the classification system based on climatic fluctuations, the Campo Band is drafting a wetland protection plan and ordinance that will provide greater legal protection for "dry cycle" wetlands.



Regulation

Developing and instituting specific wetland regulations is a realm into which many Tribes have not yet ventured. The Oneida Nation developed an Environmental Policy that establishes a framework within which environmental regulations can be developed. The Policy ensures that development activities are compatible with the Tribe's traditional environmental beliefs. However, it does not provide for specific protection of wetland resources.

The Seminole Tribe of Florida is approved by EPA for TAS to manage its Clean Water Act (CWA) Section 303 Water Quality Standards Program, CWA Section 401 Water Quality Certification Program, CWA Section 319 Nonpoint Source Grant Program, and CWA Section 106 Water Quality Management Grants Program. This affords the Tribe a considerable amount of sovereignty in protecting its aquatic resources. Specific criteria and standards for wetlands are being developed in conjunction with the Tribe's extensive monitoring program.

The Confederated Salish and Kootenai Tribes of the Flathead Reservation in Montana are also approved for TAS to manage their CWA Section 303 Water Quality Standards Program, CWA Section 401 Water Quality Certification Pro-

gram, and CWA Section 106 Water Quality Management Grants Program. The Confederated Tribes’ water quality standards also apply to wetlands although there are no wetland-specific criteria and standards at this time. The Confederated Tribes’ Aquatic Lands Conservation Ordinance is similar to the CWA Section 404 Wetlands Protection Program. It allows for extensive review and consultation with the Confederated Tribes’ water quality projects that have potential to impact aquatic resources on the Tribe’s lands.

Many of the Tribes and Native organizations included in the case studies have assumed some portion of administration of the CWA. These Tribes and Native organizations recognize the significance of managing these programs in terms of the degree of sovereignty they exert over their lands and the environmental policies that can protect them. Determination of which CWA programs that should be assumed by a Tribe depends on the needs, interests, resources, and capacities of individual Tribes. The CWA Section 106 Water Quality Management Grants Program is most commonly assumed by Tribes because this program allows a Tribe to direct funds to particular projects. It can help develop the foundation for water quality standards as well as other water quality programs. Table 1 indicates programs under the CWA for which these Tribes and Native organizations are granted TAS.

Table 1

Clean Water Act Section 106 Water Quality Management Grants Program	Clean Water Act Section 314 Clean Lakes Grant Program	Clean Water Act Section 319 Nonpoint Source Grant Program	Clean Water Act Section 303/401 Water Quality Standards and Certification Program
Wampanoag Tribe of Gay Head Seminole Tribe of Florida Menominee Tribe of Wisconsin Oneida Tribe of Indians of Wisconsin Taos Pueblo Blackfeet Tribe Confederated Salish and Kootenai Tribes of the Flathead Reservation Campo Band of Kumeyaay Indians White Mountain Apache Tribe	Menominee Tribe of Wisconsin Blackfeet Tribe	Seminole Tribe of Florida Wampanoag Tribe of Gay Head — Application Pending Campo Band of Kumeyaay Indians	Seminole Tribe of Florida Campo Band of Kumeyaay Indians — Application Pending Confederated Salish and Kootenai Tribes of the Flathead Reservation White Mountain Apache Tribe



Restoration

Loss and degradation of wetlands are two of the primary challenges facing wetland and water quality specialists throughout the country, both on and off Indian lands. Wetland planning and regulation help to reduce losses and identify the types and sources of impacts affecting wetlands. Once the sources have been identified and measures taken to address them, there is a need to regain the functions and values of the healthy wetlands. Ecological restoration, particularly wetland restoration, is being carried out across the country to return degraded wetlands to full integrity. Determining which sites are in need of restoration and prioritizing restoration efforts are key challenges Tribal wetland programs face today. Wetland planning and assessment can help with these decisions, but determination and prioritization of wetland restoration efforts must take place at the local level. Many Tribes have found it useful to determine their wetland restoration priorities in terms of the significance (e.g., cultural, ecological, economic) of specific wetlands, the actual and potential impacts affecting them, and the potential for restoration. With this information as a starting point, many Tribes are developing practical restoration strategies.

The Confederated Salish and Kootenai Tribes of the Flathead Reservation identified wetland restoration as one of the priorities of their Wetlands Conservation Strategy. As part of implementation of the Confederated Tribes' restoration/mitigation project, the Tribes' wetlands coordinator developed clearly stated goals and objectives, performance standards, a detailed monitoring plan (including a monitoring and reporting schedule), and operation and maintenance considerations.

The White Mountain Apache Tribe identified restoration as an integral part of achieving sustainability. The Tribe believes there are four cornerstones to sustainability—people, ecosystems, culture, and sovereignty—which they consider forms of natural and social capital. The Tribe's Wetlands Conservation Plan addresses these cornerstones and discusses the role of each in attaining sustainability. The Tribe has focused on riparian and wetland restoration, with a particular emphasis on shifting dominant vegetation from exotic to native species. The Tribe also developed an evaluation component to measure progress and provide feedback to improve future restoration efforts.

The Oneida Nation, in addition to using restoration as a tool to mitigate development impacts, is engaging in bioengineering to stabilize stream channels. The Tribe decided to use bioengineering methods instead of traditional rip-rap because bioengineering is more effective in the long run, less energy-intensive, and more pleasing aesthetically. The Oneida Nation has also undertaken a comprehensive ecological restoration plan for a 100-acre agricultural field that includes a significant amount of wetland acreage. Part of the restoration effort was a commitment to refrain from the use of chemical pesticides and fertilizers.

The Wampanoag Tribe of Gay Head is focusing its wetland restoration efforts on the Tribe's cranberry bogs. The Tribe cultivates cranberries traditionally and organically, using no mechanization and no synthetic pesticides or fertilizers. Restoration of the bogs involves manually clearing vegetation that competes with the cranberries for light, soil, and nutrients. The Tribe is also considering installation of retention ponds and scrubber systems to minimize petrochemical and heavy metal inflow from roadways. The Campo Band of Kumeyaay Indians is using traditional wetland and stream restoration techniques in its modern restoration program. For centuries, the Kumeyaay people have assembled rock structures in arroyos (intermittent streams) to build up silt carried by floodwaters, thereby developing riparian wetland areas through the accrual of moist

sediments over time. The Campo Band has successfully restored several wetlands in this way.

The mighty salmon is driving the restoration efforts of the Nisqually Tribe. Many of the salt marshes along the Nisqually River were converted to cropland early in this century, and now efforts are under way to turn these areas back into marshes. The Nisqually National Wildlife Refuge provides motivation and support.

Wild rice and sturgeon are both extremely important culturally and nutritionally to the Menominee Tribe of Wisconsin. Efforts are ongoing to reintroduce wild rice in Tribal lakes and restore sturgeon in the Wolf River. Restoration will be most successful and garner the most support from Tribal members when the wetlands in question are significant to the Tribe for cultural, economic, nutritional, or other reasons.



Mitigation

Wetland compensatory mitigation and wetland mitigation banking are integral to wetland regulation. Wetland compensatory mitigation aims to compensate for unavoidable wetland losses due to development authorized under the CWA Section 404 Wetlands Protection Program permitting process. A wetland mitigation bank is a wetland area that is restored, created, enhanced, or (in exceptional circumstances) preserved and then set aside to compensate for future conversions of wetlands for development activities. Although wetland mitigation and mitigation banking remain controversial, many states, Tribes, local governments, private corporations, and nonprofit organizations across the country are conducting mitigation projects and are realizing multiple benefits.

The Oneida Nation is engaged in a mitigation effort that is compensating for wetland loss due to authorized development, while at the same time restoring previously degraded wetlands to full health. In addition, the Oneida Nation is discussing plans with the Wisconsin Department of Transportation to use Tribal lands as a wetland mitigation bank. In such an arrangement, the Tribe would gain wetland acreage while mitigating the impact of highway projects elsewhere in the state. The Confederated Salish and Kootenai Tribes of the Flathead Reservation, in partnership with the Montana Department of Transportation, are implementing a project to mitigate unavoidable impacts on wetlands resulting from highway construction on the reservation. The Montana Department of Transportation is providing funds, and the Confederated Tribes are restoring a site degraded by many years of grazing as well as drainage for crop production.

The Nisqually Tribe carried out a mitigation effort to compensate for wetlands lost as a result of construction of a hatchery along the Nisqually River. The Tribe has avoided nearly all impacts on the river shoreline as this is the only developed site. The remainder of the reservation shoreline and the slope up to the top of the bluff are maintained in mature forest and intact wetlands.



Partnerships and Stakeholder Coordination

An essential component of every wetland program is a mechanism for stakeholder coordination during planning and program implementation. Although the goals of stakeholders may vary, coordination and regular communication allow them to participate in planning and implementing a wetland program and thus help to ensure “buy-in” at key points in the process.

In the case of the Port Graham/Nanwalek Watershed Council, the Council itself is providing the forum for stakeholder coordination. These efforts are supported by technical assistance from the Natural Resources Conservation Service of the U.S. Department of Agriculture and involve not only the Port Graham and Nanwalek Native Villages, but also the Alaska Native Claims Settlement Act (ANCSA) corporations, which are the major landowners in the watershed. Individual Native Allotment owners are also active in the process. The Confederated Salish and Kootenai Tribes of the Flathead Reservation engage in extensive stakeholder communication to ensure the success of their wetland protection efforts. The Confederated Tribes are supported by the numerous federal and state agencies and nongovernmental organizations that have land management responsibilities within the borders of the reservation.



Education and Outreach

Education and outreach for Tribal environmental staff, as well as Tribal members and the community, is critical to the success of any environmental protection effort. Training for Tribal wetland staff is an effective way to build the capacity necessary to manage a comprehensive wetland program. The White Mountain Apache Tribe and Taos Pueblo Environmental Office are both involved in hosting training in which other Tribes have taken part. Such cooperation is an effective way to get the most out of funds available for training. The White Mountain Apache Tribe has apprenticeship and mentor programs that help develop Tribal managers under the supervision and training of experienced managers. In addition, the Tribe has regularly scheduled Natural Resource Workshops that bring leaders and resource managers together to hone their leadership skills in natural resource management. When Tribes boost their capacity to administer wetland and water quality programs, they reduce potential reliance on outside consultants and enhance their ability to maintain sovereignty over their lands and programs.

Many wetland impacts are human-induced. Regulatory and technical tools are important in reducing such impacts on wetlands. These tools, however, cannot be relied on to meet all wetland protection and restoration goals. A large part of the challenge of wetland protection is changing the mind-set of individuals whose combined efforts could help protect the resource over the long term. Tribes are using numerous approaches to educate Tribal members and surrounding communities about wetland-related issues.

Taos Pueblo is developing a curriculum that will teach children about wetlands through field work, lab work, and classroom studies. The curriculum is for grades K through 12 and is tailored to the needs of individual grade levels. The Blackfeet Tribe environmental staff teach a wetland course at the local community college, which promotes interest in wetland issues among young adults seeking a career path, as well as older people who have the ability to influence others because of their stature in the community. The Menominee Tribe established the Menominee Sustainable Development Institute (MSDI) under the umbrella of the College of the Menominee Nation. The focus of MSDI is to analyze the achievements of the Menominee in sustainable forestry and apply the findings to the larger model of sustainable development—one that can support the economy while balancing the environmental and social requirements of the Tribe.

The White Mountain Apache Tribe asserts that people are the human capital needed to fortify the foundations of sustainability. To this end, the Tribe secured

an EPA Wetland Development Grant to help fund its Ecological Youth Camp for Tribal children. It will raise their awareness of ecology and give them hands-on experience.

The Port Graham/Nanwalek Watershed Council is taking an innovative approach to education and outreach. As part of its planning and assessment process, the Council is conducting a survey to measure the values of wetlands as village residents perceive them. The survey results are expected to bring relevance to the hydrogeomorphic (HGM) wetlands assessment method by linking specific wetland functions to the local wetland values they support. The Council believes that by linking wetland values as perceived by the community to the functional assessment process, the outreach and survey effort will educate people and provide a tool to support long-range planning.



Monitoring

Long-term monitoring of wetland health is an undertaking that involves detailed planning, but the rewards are many. Monitoring may be the single most important tool in measuring the overall success of a wetlands protection program. Monitoring data can provide information to wetland specialists that will guide future planning efforts, identify stressors, help prioritize restoration sites, measure the success of restoration and mitigation projects, and support development of water quality standards for wetlands. A range of wetland features can be monitored, but always in consideration of Tribal needs and resources. Because the objective of the Clean Water Act is to “restore and maintain the physical, chemical, and biological integrity of the Nation’s waters,” EPA promotes the use of a combination of monitoring methods to ensure the most accurate assessment of wetland integrity. Wetland monitoring can include biological, chemical, and physical parameters.

As noted earlier (see Wetland Inventory, Assessment, Mapping on page 7), monitoring can be costly and it requires a degree of expertise that may take time for a Tribe to acquire. Much technical expertise is available to support the design of monitoring projects as well as ongoing identification and analysis. Partnering with agencies such as EPA, the U.S. Fish and Wildlife Service, and the U.S. Department of Agriculture’s Natural Resources Conservation Service, as well as academics and local, regional, and state governments, can help Tribes locate experts in relevant fields. In addition, the use of volunteers in monitoring programs can be effective for collection of data and serves as an important education and outreach function as well.

The Seminole Tribe of Florida, as part of its wetland inventory effort, engaged in two years of characterization of specific reference wetlands in terms of water quality and vegetative/macroinvertebrate community types. Ongoing monitoring includes water quality monitoring (twice monthly), macroinvertebrate collection (quarterly), vegetative transect inventory (quarterly), and panoramic photos (quarterly). The Tribe will use this information in the development of wetland-specific water quality standards. Taos Pueblo has an extensive water quality monitoring program that focuses on surface waters and boasts a successful volunteer monitoring component. The program measures chemical and biological conditions essential to the health of aquatic ecosystems. The Taos Pueblo Environmental Office is educating its staff in preparation for applying to EPA for TAS for the CWA Section 303/401 Water Quality Standards and Certification Program. In addition, the Pueblo would like to incorporate wetlands into its monitoring program and develop wetland-specific water quality standards.

The Wampanoag Tribe of Gay Head delineated all of its wetlands and put all of this information into a geographically referenced database. The Tribe is now implementing a wetland monitoring program. The monitoring data will be stored in the database created as part of delineation and assessment and will be used to track the success of preservation and restoration efforts.

The Port Graham/Nanwalek Native Villages have developed bioassessment protocols in cooperation with the University of Alaska-Anchorage campus. During the summer of 1998, at least six sample stations were established with the assistance of the Port Graham/Nanwalek Watershed Council. Macroinvertebrate samples were collected to establish baseline reference conditions of Native Villages' riverine wetlands.

Other Approaches

This comparative analysis focused on tools and strategies that Tribes are using to protect their wetlands. From the discussion, it is obvious that Tribes customize these tools and strategies to meet their needs and resource limitations. In addition, Tribes are creative in the approaches they take in grappling with the larger issues of resource use, sustainability, respect for the natural environment, and the role humans and their societies play in encouraging the wise use and preservation of natural resources.

Some of these unique approaches are discussed earlier in the context of their use as tools in wetland protection. The Port Graham/Nanwalek Watershed Council, for example, is working to link wetland assessment with education and outreach. Other unique approaches are not discussed in this comparative analysis simply because they do not fall within a specific category. For example, the Oneida Nation is working to improve the overall sustainability of its food system by encouraging the use of organic growing methods and developing both on- and off-reservation markets for its sustainable products. The Oneida Nation, like all Tribes, recognizes how natural resource issues are interconnected. This knowledge places Tribes in a unique position to educate their own members and others about how people can reconcile environmental and economic concerns.

Case Studies of Tribal Wetland Programs

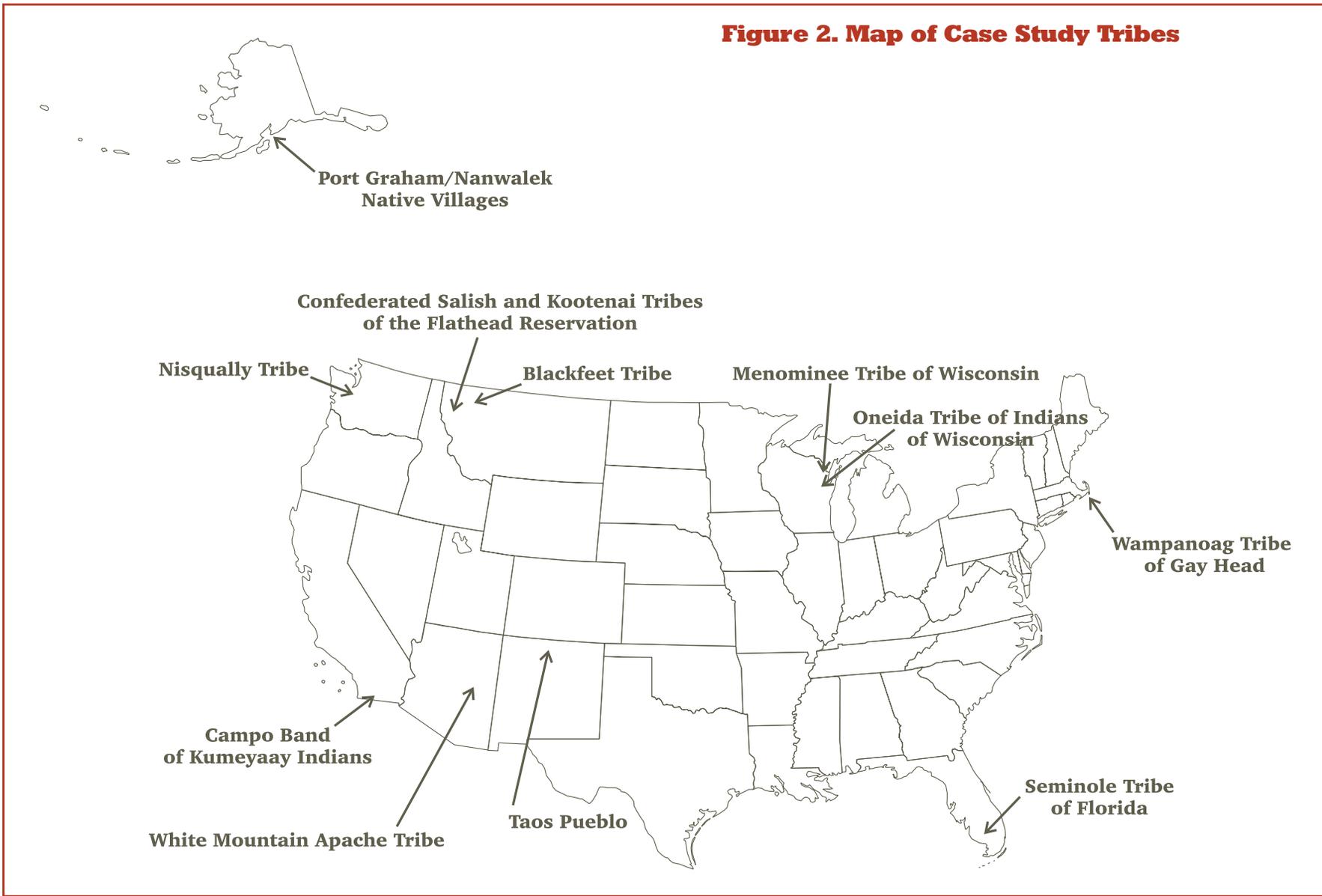
This chapter presents the case studies of selected wetland programs of Tribes and Native organizations. The case studies provide information about the tools and strategies that 11 federally recognized Tribes and Native organizations from around the country (Figure 2) are using to address wetland protection issues. To the extent possible, these wetland programs were selected to represent a range of wetland protection issues and approaches and to demonstrate the geographic diversity among Tribal wetland programs. The following 11 Tribes and Native organizations were selected for comparison:

- Blackfeet Tribe
- Campo Band of Kumeyaay Indians
- Confederated Salish and Kootenai Tribes of the Flathead Reservation
- Menominee Tribe of Wisconsin
- Nisqually Tribe
- Oneida Tribe of Indians of Wisconsin
- Port Graham/Nanwalek Native Villages
- Seminole Tribe of Florida
- Taos Pueblo
- Wampanoag Tribe of Gay Head
- White Mountain Apache Tribe

The wetland programs and projects described in these case studies are categorized by general program components summarized in Chapter 2. Where Tribes and Native organizations have developed unique programs to protect their wetlands, such programs are described separately. Additionally, some of the case studies discuss program components that have a beneficial impact on wetland resources even though they do not have a direct wetland focus.



Figure 2. Map of Case Study Tribes



Blackfeet Tribe



Program Components:

Wetland and Watershed Planning • Wetland Inventory, Assessment, Mapping • Regulation • Restoration • Mitigation • Education and Outreach

Background

The Blackfeet Reservation encompasses more than 518 miles of streams that are part of the Missouri River and Saskatchewan River systems. The reservation covers four watersheds and occupies a unique location on the North American continent as some of its watersheds drain to the Gulf of Mexico and one drains into Hudson Bay. Reservation lands are comprised of Rocky Mountain peaks with elevations ranging from 3,400 to 9,000 feet and foothills and plains east of the Continental Divide. The Blackfeet Reservation is bordered to the north by the Canadian Province of Alberta and to the west by Glacier National Park.

Of the Tribe's total reservation lands of 1,525,712 acres, an estimated 5-10 percent are wetlands. The Blackfeet Environmental Office is concerned with mitigating historic wetland loss and protecting wetland aquatic species at risk. The estimated 8,500 Blackfeet living on Tribal lands put a high cultural value on their wetlands. Several plant species are used for medicinal, ceremonial, and practical purposes. For instance, the willows found in wetlands on the Blackfeet Reservation are used to make back rests as well as sweat lodges. Several animals important to the Tribe use wetlands as habitat, such as the beaver.



Wetland and Watershed Planning

The Tribe prepared a draft Blackfeet Wetlands Conservation Plan, which will be distributed for public comment during 2000. The draft plan was developed by the Blackfeet Environmental Office through a collaborative process that allowed for input from the Blackfeet Natural Resources staff.



Wetland Inventory, Assessment, Mapping

In 1994, wetland assessment field work began in the Two Medicine Watershed, followed by the Cut Bank Watershed in 1995 and the Milk River Watershed in 1996. The St. Mary's Watershed was the fourth and last to be sampled. Each watershed is comprised of 15 to 20 USGS topographic quadrangles and there are more than 100 wetlands in each watershed. Field workers usually sampled for wetland assessments at eight sites per USGS quadrangle and classified the wetlands during the field visits. Environmental Office staff sampled physical water parameters and screened rather than exhaustively surveying wildlife. As of May 1998, the wetland inventory and assessment was complete and the data compiled. The Blackfeet Environmental Office expects to begin analyzing the data in 2000.

All wetlands that were sampled were labeled on USGS topographic quadrangles for future reference. A complete set of quadrangles sampled is on file at the Blackfeet Environmental Office.



Regulation

Tribal Ordinance 90 is the Aquatic Lands Protection Law, which protects wetlands within the Blackfeet Reservation. Tribal Ordinance 90 provides for

enforcement by fine. In November 1995, Blackfeet Community College was fined for filling a wetland. Some non-Tribal members have also been fined for violations of this ordinance.



Restoration

To support the restoration, enhancement, and construction of wetlands on Tribal lands, the Blackfeet Environmental Office, in cooperation with Blackfeet Community College, Browning Public Schools, Glacier National Park, the Bureau of Reclamation, and Montana State University, is building a greenhouse to grow native plants for revegetation. Wetland and non-wetland native plants will be grown in the greenhouse.



Mitigation

Currently, the Blackfeet Environmental Office is working with the Montana Department of Transportation and the Tribal Roads Department to develop a wetland mitigation policy. In addition, a constructed wetland on the Perry Ranch site is being designed by the Montana Department of Transportation as a mitigation site.



Education and Outreach

The Tribe implemented several programs to educate Tribal members about wetlands protection and management. The Environmental Office teaches an environmental studies course at the Tribal community college that focuses on the natural resources of the reservation environment. Included in this course is a segment on the Tribe's wetlands. Currently under development is an "outdoor classroom" that will be used to educate young Tribal members about wetlands, while also implementing a wetland enhancement project. The Tribe's Wetlands Program Manager makes presentations to Tribal schools on wetlands protection and water quality.

The Blackfeet Environmental Office held a series of public meetings in which the wetlands management program was presented to Tribal members. There was media coverage of the public meetings. The Tribe's draft wetlands conservation plan will be presented to the public for comment before being finalized.

An important component of the Blackfeet wetlands program is continuing education for staff. Training for staff is provided in numerous areas, including wetland delineation, herbology of native people, building partnerships for watershed protection, Tribal stewardship of environmental resources, wetlands biocriteria, water quality monitoring, bird identification, and use of global positioning systems (GPS) and GIS software.

Sources of Support

The Tribe received funding for wetlands assessment work beginning in 1993 through an EPA Wetland Development Grant. The Tribe was able to continue developing its comprehensive wetlands program through additional funding by EPA's Wetland Development Grant Program for 1996 and 1997. The Tribe was again awarded an EPA Wetland Development Grant in 1998, specifically for developing a wetland mitigation strategy for all highway construction projects to ensure that wetlands protection goals are met. Work on the wetland mitigation strategy will be done in cooperation with Tribal natural resource programs, the U.S. Bureau of Indian Affairs, and the Montana Department of Transportation.

Contact

Mary Clare Weatherwax, Manager, Wetlands Program, or

Gerald Wagner, Director, Blackfeet Environmental Office

P.O. Box 2029

Browning, MT 59417

Phone: (406) 338-7421/7422

Fax: (406) 338-7451

Campo Band of Kumeyaay Indians



Program Components:

Specialized Wetland Classification System • Wetland and Watershed Planning • Regulation • Restoration

Background

The Campo Indian Reservation, located in southwestern California, lies 45 miles east of the Pacific Ocean and one-half mile north of the United States border with Mexico. The reservation is on a high desert plateau with oak woodlands and chamise and redshank chaparral grasslands. Waters of the reservation include the Campo and Diabold Creeks and Springs, and riparian and spring-fed isolated wetlands south of the Laguna Mountains. The reservation consists of two separate areas: Old Campo, which has 710 acres, and the New Reservation, which has 15,802 acres. All reservation land is Tribally owned. All land use decisions, including where to locate even a single home, are made by the General Council for the benefit of the Tribe as a whole.

Growth in industrial and residential development, both on and off the reservation, has made environmental planning a priority for the Campo Band. Agricultural activities, septic systems, underground storage tanks, industrial activities, and residential development pose threats to the integrity of the surface and ground waters of the reservation. Currently, the Campo Band has a water pollution control program that includes an Existing Water Resource Information Inventory, weather monitoring, inventory and monitoring of groundwater and streams, and identification and delineation of wetlands.

Specialized Wetland Classification System

The Campo Band is developing its own definition and classification of wetlands based on climatic fluctuations in addition to soils, hydrology, and vegetation. The region experiences wide variations in rainfall from year to year. Dry cycles occur with several years of desert-type rainfall with less than 10 inches of precipitation annually. Wet cycles also occur with several years of up to 30 inches of annual precipitation. On the average, the region receives from 16 to 20 inches of annual precipitation. There are areas on the Campo Reservation where in wet cycle years, a wetland (standing water and wetland vegetation) is present, but few indicators of wetlands are present in dry cycle years. The Campo Band is creating a specialized 3-tier wetland classification system, under which wetlands that may not be considered wetlands according to U.S. Army Corps of Engineers delineation criteria during dry cycles would be considered wetlands. The classification system will be used to help prioritize which wetlands require the most protection.

The Campo Band is also integrating the specialized wetland classification system into a modeling effort to determine the storage capabilities of aquifers. Rates of replenishment and depletion of aquifers vary depending on rainfall, the type of geology overlying the aquifer, and the type of wetland. Through this effort, the Campo Band is integrating its wetland program with other parts of its water program to achieve multiple goals.



Wetland and Watershed Planning

The Tribe prepared a draft wetlands protection plan. The draft plan includes efforts to increase protection of those wetlands that would be identified as dry cycle wetlands under the Tribe's specialized wetland classification system.



Regulation

A draft wetlands ordinance was prepared along with the draft wetlands protection plan. The draft ordinance would provide greater legal protection for wetlands that would be identified as dry cycle wetlands under the Tribe's specialized wetland classification system. The Tribe is also in the process of developing water quality standards.



Restoration

From evidence of historic wetland and stream restoration activities throughout the original Kumeyaay territory, including the reservations of the Kumeyaay in what is today Mexico, the Campo Environmental Protection Agency developed a modern restoration program. For centuries, the Kumeyaay people have assembled rock structures (formerly by hand) in arroyos (intermittent streams) to build up silt carried by floodwaters, thereby developing riparian wetland areas through the accrual of moist sediments over time. Using modern methods, the Campo Band has restored wetlands in riparian areas. In 1993, the Campo Band completed a project that successfully restored an intermittent stream to a perennial stream.

In 1995, the Campo Band discontinued leases with cattle ranchers who used to graze cattle on Tribal lands. Cattle grazing caused adverse impacts on wetlands in riparian areas. This restriction on grazing has allowed planted willow trees to thrive and native grasses to compete with European grasses.

Sources of Support

Since their long-term assessment strategy attempts to consider the impacts of multi-year meteorological and hydrological cycles, and does not offer rapid results, the Campo Band has had difficulty obtaining funding to support efforts in this area. In the past, the Campo Band received funding under EPA's Wetland Development Grant Program and Nonpoint Source Grant Program.

Contact

Mike Connolly
Water Pollution Control Program
Campo Environmental Protection Agency
36190 Church Road, Suite 4
Campo, CA 91906
Phone: (619) 478-9369 or 478-2177
Fax: (619) 478-2758 or 478-2367

Confederated Salish and Kootenai Tribes of the Flathead Reservation



Program Components:

Wetland and Watershed Planning • Wetland Inventory, Assessment, Mapping • Regulation • Restoration • Mitigation • Partnerships and Stakeholder Coordination



Background

The Flathead Reservation in west-central Montana has a population of about 20,000 and covers more than 1.2 million acres. Although much of the reservation is rural and agricultural, development pressures from highway construction and suburban sprawl from nearby cities are a constant threat. Farming and ranching also have impacts on the reservation's natural resources. Historically, grazing and wetland drainage for agriculture have posed some of the most significant impacts on the reservation's wetland resources. The reservation is the home to five other threatened or endangered species, specifically, the trumpeter swan, grizzly bear, bald eagle, peregrine falcon, and northern grey wolf. These and many other fish and wildlife species found on the reservation are at least in part dependent on wetland ecosystems for food, water, and habitat.

Aquatic resources on the Flathead Reservation are extensive and diverse. Lacustrine wetlands (associated with lakes and reservoirs) occur adjacent to Flathead Lake, the largest natural freshwater lake in the western United States, and around numerous large irrigation reservoirs. Riverine wetlands (associated with larger rivers and streams) occur along the Flathead, Jocko, and Little Bitterroot Rivers. Palustrine wetlands (associated with ponds, small streams, seeps, springs, and wet meadows) occur throughout the reservation, including areas of extremely high densities of pothole wetlands in the Mission Valley.



Wetland and Watershed Planning

In December 1994, the Confederated Tribes completed The Flathead Reservation Wetlands Conservation Strategy. This strategy was intended to provide baseline information and an initial framework to help private, state, federal, and Tribal entities involved in wetland management on the reservation work in a more coordinated and efficient manner. Comprehensive in nature, the strategy includes:

- The Confederated Tribes' wetlands conservation goals and objectives
- Assessment of wetland resources on the reservation
- A wetland inventory quality assurance project plan
- Evaluation of existing Tribal mechanisms for wetlands protection and restoration
- Strategies for improving the protection, restoration, and development of wetlands

- Recommended procedures for documenting progress
- Recommendations for implementing the *Wetlands Conservation Strategy*

Currently, the Wetlands Coordinator is developing the Confederated Tribes' Wetlands Conservation Plan. When complete, the plan will be a detailed road map of how to implement the Wetlands Conservation Strategy.



Wetland Inventory, Assessment, Mapping

As part of developing the Wetlands Conservation Strategy, the Confederated Tribes completed an extensive assessment of the wetland resources on the reservation. Specific tasks completed by the Confederated Tribes as part of this process included:

- Production of National Wetland Inventory (NWI) maps, in cooperation with the U.S. Fish and Wildlife Service (reservation lands are the only place in Montana with NWI maps)
- Digitization of NWI maps for use in the Confederated Tribes' geographic information system (GIS)
- Acquisition and classification of high-resolution multi-spectral digital imagery, ADAR (Airborne Data Acquisition and Registration), to identify wetlands missed by the NWI and to identify wetland changes in the pothole wetland areas of the Mission Valley
- Use of Arc/Info and GRID software to analyze the GIS data from the NWI maps and classified remote imagery
- Completion of vegetation and water quality inventories of selected wetlands

The last task involved field inventories of wetland plant communities and riparian areas. The field inventories also collected information on wetland water quality (chemical and physical) features.



Regulation

The Confederated Tribes have two programs that serve to legally protect wetland resources on the reservation. The two programs and their legal mechanisms are discussed below.

The Shoreline Protection Program is responsible for administering the Shoreline Protection Ordinance 64A (revised) and the Aquatic Lands Conservation Ordinance 87A. The purpose of the Shoreline Protection Ordinance is to “conserve and protect Flathead Lake and all navigable waters within the Flathead Reservation.” The purpose of the Aquatic Lands Conservation Ordinance is to “prevent the degradation of Reservation waters and aquatic lands by regulating construction or installation of projects upon aquatic lands whenever such projects may cause erosion, sedimentation, or other disturbances adversely affecting the quality of Reservation waters and aquatic lands.”

The Confederated Tribes are approved for TAS to manage their CWA Section 303 Water Quality Standards Program and CWA Section 401 Water Quality Certification Program. Water quality criteria, designated uses, and an antidegradation policy are all included in the Confederated Tribes' water quality standards. The Confederated Tribe's water quality standards were recently challenged by the State of Montana. The Supreme Court ruled in favor of the Confederated Tribes and EPA, holding that the Confederated Tribe's TAS was appropriately determined.

In addition to developing and administering the Water Quality Standards Program and the Water Quality Certification Program, the Water Quality Program administers the Water Quality Management Ordinance 89B. The purpose of this ordinance is to “restore, and maintain the chemical, physical, and biological integrity of Reservation waters.” The ordinance specifies programmatic items such as reporting requirements and enforcement mechanisms.

The Water Quality Program is also developing a nonpoint source management plan detailing the implementation of best management practices at the watershed level. This plan will evaluate the contribution of nonpoint sources of pollution to surface waters. Tribal water quality staff have assisted with development of a nutrient loading study for Flathead Lake conducted by the Flathead Basin Commission.



Restoration

In partnership with the Montana Department of Transportation, which is providing funding, the Confederated Tribes are implementing the first wetland ecosystem restoration project on the reservation. Before restoration began, the site was impacted by extensive grazing along with drainage of wetlands to allow for crop production. In addition, the dominant vegetation at the site had shifted from native to introduced species. A key goal of the project is to return as much vegetation as possible to native species.

Essential to the long-term success of the wetland restoration project are clearly stated goals and objectives, performance standards, a detailed monitoring plan (including a monitoring and reporting schedule), and operation and maintenance considerations. The monitoring plan will be implemented beginning in 1999, when the restoration work is complete. The Confederated Tribes will monitor selected parameters to determine achievement of performance standards. The selected parameters are wetland mapping; functional assessment, before and after restoration; annual photographic records; water level; vegetation; aquatic invertebrates; wildlife populations; and amphibians. The breadth and depth of the monitoring plan demonstrates the complexity of this restoration project. The Confederated Tribes are eager to see the results of their hard work and planning on this project, so they will be better equipped to plan for the next restoration opportunity on the reservation.



Mitigation

One of the priorities of the Wetland Protection Office, as outlined in the Wetlands Conservation Strategy, is the mitigation of impacts from highway construction. The Confederated Tribes are implementing a wetland ecosystem restoration project to mitigate for unavoidable impacts to wetlands resulting from highway construction on the reservation. This restoration project and its associated monitoring plan were described earlier.



Partnerships and Stakeholder Coordination

Not unlike many other reservations throughout the country, a significant portion of Flathead Reservation lands are held by non-Indian interests. This makes management of natural resources difficult to coordinate because of the large number of private landowners that are stakeholders. Compounding this problem are the myriad governmental agencies and conservation organizations that have land holdings or land management responsibilities on the reservation. These agencies and organizations include the Bureau of Indian Affairs; U.S. Fish and Wildlife Service; Bureau of Reclamation; Natural Resources Conservation Service; Montana Department of Fish, Wildlife, and Parks; Montana Department of State Lands; The Nature Conservancy; Montana Land Alliance; and Lake,

Sanders, Missoula, and Flathead Counties. The Wetlands Coordinator and Water Quality Program staff coordinate extensively with stakeholders, including government agencies, private landowners, nongovernmental organizations, and others, to promote effective protection and wise use of the Tribe's aquatic resources.

Sources of Support

EPA awarded the Confederated Salish and Kootenai Tribes funding under the Clean Water Act Section 104(b)(3) Wetlands Protection Program for 1992-1994, which enabled the Confederated Tribes to develop the *Wetlands Conservation Strategy*. Clean Water Act Section 104(b)(3) Wetlands Protection Program funding was also awarded in 1995 and 1996, which was used to develop the *Wetlands Conservation Plan*, in addition to producing a refined assessment of wetland resources, the development of specific public outreach and education objectives and projects, and evaluation criteria for development of watershed-based wetlands protection projects. In 1998, Clean Water Act Section 104(b)(3) Wetlands Protection Program funding was also awarded, to develop and provide wetlands training to the Shoreline Protection Board and Shoreline Protection Office in six training modules, classroom presentations, and field trips to project sites carried out under the Tribal Aquatic Lands Ordinance.

Contact

Mary Price, Wetlands Coordinator

Natural Resources Department

P.O. Box 278

Pablo, MT 59855

Phone: (406) 675-2700

Fax: (406) 675-2806

Menominee Tribe of Wisconsin



Program Components:

Forest-Based Sustainable Development • Restoration • Education and Outreach

Background

The Menominee Indian Reservation is located in northeastern Wisconsin, near the city of Green Bay. Of the 235,000 acres of Tribal land, 220,000 acres are forested and 24,000 acres are wetlands, including peat swamps and wild rice fields. The word “Menominee” means “people of the wild rice” in the Algonquin dialect that the Menominee People speak. There are more than 440 miles of rivers and streams, and 123 lakes covering 4,000 acres, throughout the reservation. The Wolf River and its South Branch drain most of the Menominee lands.

The water resources found on the reservation are important to the Menominee People and the natural environment. A diverse population of wildlife and flora depend on the forested and riverine environments. In turn, those species represent essential cultural, spiritual, and nutritional resources upon which the Menominee People depend. These resources include wild rice, trout, sturgeon, bald eagles, osprey, a variety of duck species, swans, geese, heron, cranes, otters, beaver, crows, ravens, thrushes, chickadees, black bear, and deer.

The Menominee are very proud of the Tribe’s efforts to maintain their magnificent forest, which sits in sharp contrast to neighboring deforested areas. The Menominee believe they continue to enjoy a healthy forest as a result of the interplay of several factors over the past 200 years. History, culture, politics, litigation and court decisions, legislation, economics, spiritual and ethical values, and applied forestry, ecology, and technology, have combined to enable the Menominee to avoid the “tragedy of the commons” so often cited as the cause of much environmental degradation. In doing so, they have succeeded in maintaining the quality of their wetland and water resources.

Forest-Based Sustainable Development

The Menominee Tribal government has collaborated with the business arm of the Tribe, Menominee Tribal Enterprises, along with many other partners, to institutionalize forestry best management practices, creating a renowned forest-based sustainable economy that protects the rivers, streams, lakes, and wetlands on the reservation. Although the Tribe’s forest-based sustainable development program is not a wetlands protection program, the protection of wetlands afforded by forestry best management practices is substantial. Sustained yield, continuous forest inventory, and harvesting methods such as selection cutting, shelterwood, and clear-cutting, are used to maximize the profitability and sustainability of the enterprise. The forestry practices that the Tribe has long maintained are designed to protect the waters of the Tribe as well as the soil and air.

Menominee Tribal Enterprises produces forest products that are certified to be harvested sustainably and ensure long-term stewardship of forest resources. Their products are certified by two independent certification agencies—Scientific

Certification Systems (The Forest Conservation Program) and the Rainforest Alliance (Smart Wood). The Forest Stewardship Council (FSC) is an international body that has developed principles and criteria for forest stewardship worldwide. FSC in turn accredits certification agencies to certify sustainable forestry operations. A 1997 booklet on the Menominee forest-based sustainable development tradition tells visitors to the Menominee reservation:

Because of the wisdom and commitment our ancestors used in the practices and principles of sustainable development, while on the Reservation you will be able to travel through a forest where you will find: towering white pines, some of which are more than 200 years old . . . thriving species used as indicators for ecosystem health such as the Eastern Hemlock and Canadian Yew; eagles soaring over treetops, and cormorants feeding their young in the old mill pond; and bobcat, bear, and a host of other wildlife species . . .

At the foundation of the management principles and practices of Menominee Tribal Enterprises is recognition of a need for a balance between the environment, the community, and the economy. The Menominee philosophy is based on traditional beliefs and is further supported by the modern notion of “Sustainable Development.” An excerpt from the Menominee Tribal Enterprises web site explains:

Menominee Tribal Enterprises has been built upon the understanding of the need to integrate advanced science, technology, and business practices, within a cultural context, to remain competitive and profitable for current as well as future generations of Menominee People. The commitment to intergenerational equity is a key determinate of the decision-making and management of MTE, in that immediate gain is deferred to a long term (150 year) and sustainable planning horizon.



Restoration

Historically, wild rice and sturgeon are two of the most important cultural and nutritional resources for the Menominee Tribe. These two native species depend on wetlands habitat for survival. The Tribe is working to enhance the biological integrity of its wetlands through wild rice reintroduction in Tribal lakes and restoration of sturgeon in the Wolf River. These ongoing restoration efforts are being monitored and will be evaluated to determine their success.



Education and Outreach

In 1993, the Menominee Sustainable Development Institute (MSDI) was established under the umbrella of the College of the Menominee Nation. The focus of MSDI is to analyze the achievements of the Menominee in sustainable forestry and apply this to the larger model of sustainable development—one that can support the economy while balancing the environmental and social requirements of the Tribe. The MSDI and the college are working at all grade levels to increase the number of Tribal members who pursue advanced degrees in natural resources and business management. For example, MSDI is developing activities for students in grades K-12 that will emphasize the Menominee as both a traditional people with strong cultural ties to the forest and a people that make visionary decisions regarding resource management.

As part of a project funded by EPA's Great Lakes National Program Office, the Menominee produced several outreach products that promote their sustainable forestry practices. The Tribe produced a technical manual describing the

Menominee forestry practices and the Menominee Tribal Enterprises Forest Management Plan. The technical manual describes some of the Tribe's forestry practices. A more general "layman" brochure was produced to raise awareness in the community and across the state about the positive effects of the program. In addition, the Tribe produced and distributed a sustained yield forestry management video, conducted tours, and organized a seminar promoting the Menominee silviculture model. The Menominee recognize outreach and education as important components of their program and choose various media to reach diverse audiences. The Tribe's outreach efforts can help others in the Wolf River basin implement sustainable forestry practices, thereby increasing opportunities for sustainable development.

Sources of Support

The Menominee Tribe has received funding from numerous sources, including the U.S. Bureau of Indian Affairs, Wisconsin Department of Natural Resources, University of Wisconsin (along with assistance from professors, researchers, and students), U.S. Forest Service, EPA, The Ford Foundation, and First Nations Development Institute Eagle Staff Fund.

Contact

Douglas Cox
Environmental Services Department
P.O. Box 910
Keshena, WI 54135-0910
Phone: (715) 799-4937
Fax: (715) 799-4323

Nisqually Tribe



Program Components:

Wetland and Watershed Planning • Wetland Inventory, Assessment, Mapping • Restoration • Partnerships and Shareholder Coordination

Background

The Nisqually River arises from a glacier on Mount Rainier and flows 78 miles in a northwesterly direction to enter the southern end of Puget Sound. Historically, the Nisqually People lived throughout the Nisqually River basin and in nearby areas of southern Puget Sound. Today, the Nisqually Indian Reservation, approximately 1,500 acres, is located along 6 miles of the western shore of the Nisqually River, beginning 5 miles upstream from the river's delta. The reservation lies mostly on a high gravelly plateau above the river. All wetlands within the reservation are located in the floodplain of the river at the foot of a high bluff. These wetlands were created either out of seeps from the steep valley wall or from meandering and flooding of the river itself. The entire reservation shoreline and the slope up to the top of the bluff are maintained in mature forest and intact wetlands. The only developed area along the shore is the site of the Kalama Fish Hatchery, one of two fish-rearing facilities managed by the Tribe. The Clear Creek Hatchery, a larger facility constructed by the Tribe, sits within the reservation boundaries on lands occupied by the Fort Lewis Military Reservation on the eastern side of the river. Mitigation required for site development has resulted in the creation of 5 acres of wetlands near the hatchery plus 8 acres of tidal wetlands.

The Nisqually River enjoys better protection along its entire length than many of the other rivers in Washington State. Its headwaters and the uppermost 13 river miles reside within Mount Rainier National Park and a good portion of its delta lies in the Nisqually National Wildlife Refuge. No major industrial or population centers are located in the basin. However, two hydroelectric dams approximately 40 miles upstream from the refuge block the upstream migration of anadromous salmonids. (Historically, a natural waterfall in this location similarly blocked upstream fish movement.) Much of the remaining shoreline is in a natural state due to efforts by several entities such as the Fort Lewis Military Reservation, the City of Tacoma (as partial mitigation for its two dams), the Nisqually River Basin Land Trust, and the Nisqually Indian Tribe.



Wetland and Watershed Planning

The Nisqually Tribe acts to protect wetlands in the basin beyond reservation boundaries in a number of ways. It participates in the Timber, Fish and Wildlife Agreement, a 10-year-old cooperative process for regulating forest practices in Washington State. This agreement allows for Tribal recommendations and technical input regarding logging activities near streams and wetlands. The Tribe's Natural Resources Department employs staff knowledgeable about wetlands to review applications, make recommendations, and render technical assistance to landowners and state agency personnel.

Only recently were wetlands considered for additional protection under the state's watershed analysis process. The Nisqually Tribe, along with other treaty

Tribes, are very active in this process. Covered by the Washington State Forest Practices Regulations, this process calls for the analysis of whole sub-basins to determine the best ways to prevent damage to streams, fish, and more recently, wetlands. The Nisqually Tribe initiated the two most recent watershed analyses in the Nisqually River basin. The Tribe is making efforts, under new grant funding, to develop a comprehensive watershed plan, including identifying key wetlands for protection and restoration.

The Nisqually Tribe sits on the Nisqually River Council, an interagency body committed to the protection and enhancement of the Nisqually River basin through education, advocacy, and coordination. Created in 1987, the Council also includes state and federal resource agencies, local governments, and Fort Lewis.



Wetland Inventory, Assessment, Mapping

Most of the middle Nisqually River basin and nearly all of its major tributary, the Mashel River, lie within the commercial forest lands of four major timber interests. These timber interests, along with the Nisqually Tribe, the Nisqually River Council, and others have formed a Natural Resource Management Plan for cooperative protection of the waters of the basin. One of the results of this effort, funded by both the Washington Department of Ecology's Centennial Clean Water Fund and the Nisqually Tribe, is a complete inventory of the wetlands in the plan area. The final document not only contains comprehensive maps and ratings of each wetland, but also makes recommendations for restoration activities specific for each wetland. The next phase of this effort involves the identification and prioritization of wetlands most in need of restoration along with evaluation of the most cost-effective methods of restoring those wetlands.



Restoration

The Nisqually Tribe began a long-sought-after wetland restoration effort in 1998. Historically, the Nisqually River delta occupied hundreds of acres on the edge of Puget Sound, home to myriad creatures, including salmon resting and feeding before their seaward migration. At the turn of the century, farmers diked most of this salt marsh, converting these biologically productive areas into pasture and cropland. The Nisqually National Wildlife Refuge currently occupies the western half of the former marsh. The refuge is developing plans to breach the dike in several spots to allow the waters of Puget Sound to enter and regain some of the tidelands. Across the river, the eastern portion is still occupied by a 400-acre active farming operation. After years of negotiation, the Nisqually Tribe recently purchased this farm with the intention of gradually bringing back the salt marsh. The process of restoration has already begun through the creation of an opening in a dike to allow tidal water to enter 8 acres of pasture. Eventually, most of the Nisqually River delta will once more be home to a thriving community of tideland creatures including, of course, the young salmonids.



Partnerships and Stakeholder Coordination

Extensive cooperation between the U.S. Army at Fort Lewis Military Reservation and the Nisqually Tribe has occurred over the past several years. Under a Department of Defense grant, both in-stream work and riparian restoration were accomplished along Muck Creek, a major salmon stream passing through Fort Lewis. Plantings around a large headwater spring/wetland were included in the project. At the Tribe's urging, Fort Lewis has protected several headwater wetlands on its lands.

Just as in other areas, wetland loss due to agricultural development has occurred in the Nisqually River basin. The Nisqually Tribe has worked with a

large dairy farm adjacent to the river to reduce pollutants entering the river and associated wetlands. However, there are numerous small “hobby” farms dotting the landscape whose cumulative impacts on wetlands are substantial. Wetland impacts from these small farms are the next logical issue to address in terms of wetlands protection. This process demands a gradual building of communication and rapport with local rural citizens groups and conservation districts. The Nisqually Tribe has begun to build those bridges.

The Tribe’s staff work very closely with the Nisqually River Basin Land Trust, a nonprofit corporation whose primary objective is to keep the entire shoreline of the river in its natural state flowing through mature forests and productive wetlands. The land trust holds title to 215 acres, including several riparian wetlands in the river corridor. Tribal fishers have donated and prepared delicious baked salmon for land trust functions and Tribal artisans have donated traditional art objects for the land trust’s annual fund-raising auction.

In summary, the Nisqually Tribe actively participates with many different groups—governmental, community, environmental, and civic—with the goal of protecting or restoring the rivers, streams, and wetlands in the Nisqually River basin. They do this by serving on committees, acquiring funding for practical projects, supporting wetland assessment and planning efforts, and staffing positions to offer regulatory and technical assistance. In general, the Tribe gets involved whenever the opportunity arises to influence the future of the aquatic resources in the basin.

Sources of Support

Washington State Department of Ecology’s Centennial Clean Water Fund and the U.S. Fish and Wildlife Service have funded nearly all the projects described in the case study. However, the Bureau of Indian Affairs supports the Timber, Fish, and Wildlife technical staff position and has provided funding for the two Tribe-initiated watershed analyses. The Department of Defense has funded work for the protection of Muck Creek since it involves mostly Fort Lewis lands.

Contact

Janet Strong
Natural Resources Division
12501 Yelm Highway, SE
Olympia, WA 98513
Phone: (360) 438-8687
Fax: (360) 438-8742

Oneida Tribe of Indians of Wisconsin



Program Components:

Wetland and Watershed Planning • Restoration • Mitigation •
Partnerships and Stakeholder Coordination • Monitoring

Background

The Oneida Nation Reservation is located on the metropolitan fringe of the city of Green Bay in northeastern Wisconsin. The reservation boundaries encompass some 65,400 acres, of which 11,500 acres are owned by the Tribe or Tribal members. The reservation is home to nearly 4,000 of the 12,000 Tribal members who comprise the Oneida Tribe of Indians of Wisconsin. Duck Creek, a major tributary of Green Bay, divides the reservation in half. Burma Swamp, the headwaters of Duck Creek, lies outside reservation lands, and is heavily affected agricultural runoff. Due to the checkerboard nature of the reservation, the Tribe's environmental resources are affected not only by its own activities, but also by those of its neighbors. Indeed, 90 percent of the original wetlands within the boundary of Tribal lands were destroyed through ditching and conversion to cropland. The Tribe determined through aerial photographs that approximately 1,454 acres of the 65,400 acres that comprise the reservation are wetlands. The cumulative impacts of wetlands losses and ongoing nonpoint source pollution has led to degraded water quality and unstable stream flows on the reservation.

Through its various environmental programs and policies, the Oneida Nation attempts to balance the economic needs of the Tribe with environmental protection. This is reflected in their Environmental Policy, as well as in the Tribal governmental structure that makes decisions affecting economic development, planning, and environmental protection. The Oneida Nation developed an Environmental Policy that serves as a guide for all Tribal development activities. The goal of the Tribe's Environmental Policy is twofold. It serves as the framework for the development of environmental codes, and it ensures that development activities are compatible with the Tribe's traditional environmental beliefs. The Policy describes the Oneida Environmental Philosophy, distinguishing between historical and contemporary perspectives. The historical perspective explains that environmental respect and protection are part of the Oneida collective heritage, upon which its existence is based. The contemporary perspective acknowledges the modern challenges to this heritage and states that this policy will have the force of law in 1) working toward the goal of nondegradation of the environment, 2) maintaining a level of zero discharge of toxic and hazardous chemicals to the environment, and 3) recognizing the use of best available technologies for environmental restoration activities and disposal of hazardous materials. In addition, the Environmental, Health and Safety Department requires National Environmental Policy Act (NEPA) review on all Tribal projects. This ensures that environmental assessments are conducted on all proposed projects and that alternatives are considered before impacts take place.

To promote economic development while protecting natural resources, the Oneida have established cooperative links between their Environmental Resources Board and their Economic Development Division. For example, in 1993

the Economic Development Division proposed to build a business park and expand a gaming facility. The Environmental Resources Board worked with the Economic Development Division to mitigate the impact.

Recognizing the linkages between their local food system and their natural resources, the Oneida are also concerned with reducing the environmental impacts of their agricultural practices. The Oneida Community Integrated Food System is committed to “environmentally sensitive and responsible agricultural development” and “organic and healthy food production and processing,” while feeding the Tribe’s people and building external markets for their products. This effort further demonstrates that economic development and environmental protection are not mutually exclusive.

Like many Tribes in the United States, the Oneida Tribe has struggled to maintain both the quantity and quality of its lands. Beyond the ecological functions provided by wetlands to humans, the Oneida culture places high value on the wildlife that depend on wetlands as habitat. In addition to improving environmental conditions that impact human health and well-being, the Oneida Nation is concerned with protecting and restoring wildlife habitat.



Wetland and Watershed Planning

The Oneida National Water Quality Standards (WQS) include provisions that serve to protect, preserve, restore, and enhance water quality and the quantity necessary to maintain healthy aquatic habitats within the Waters of the reservation. It is a goal to maintain populations of wetland plant and wildlife by protecting food supplies, reproductive and nursery areas, and preventing the establishment of nuisance species.

The Oneida are involved in cooperative policy making and planning beyond reservation borders. Under the provisions of the Wisconsin Nonpoint Source Pollution Abatement Program, the Oneida Nation, in partnership with the Wisconsin Department of Natural Resources, the Wisconsin Department of Agriculture, Trade and Consumer Protection, the Brown County Land Conservation Department, and the Outagamie Land Conservation Department, developed the Nonpoint Source Control Plan for the Duck, Apple, and Ashwaubenon Creeks Priority Watershed Project. Approximately 95 percent of the Oneida Nation Reservation lies within those watershed boundaries. Development of the plan was a collaborative effort, aimed at assessing nonpoint sources of pollutants in the watershed and developing abatement and education strategies. The importance of wetlands and stream corridors is highlighted in the plan as integral to improving water quality. In addition, restoration of wetlands and riparian areas is a recommended strategy for improving the water quality of this watershed.



Restoration

As a demonstration project for the Nonpoint Source Control Plan for the Duck, Apple, and Ashwaubenon Creeks Priority Watershed Project, the Oneida Environmental, Health and Safety Department is using bioengineering techniques for stream stabilization in Duck Creek. Bioengineering uses vegetation as an alternative to rip-rap. The project experienced some difficulties in establishing vegetation, but this was expected. The Environmental, Health and Safety Department chose bioengineering over traditional rip-rap because the stabilization is more effective once vegetation is established, it is more aesthetically pleasing, it impacts the environment less, and the work is less energy-intensive. These advantages compensate for the fact that revegetation will take longer than installing rip-rap.

In 1994, the Dexter Road Project was initiated as a comprehensive ecological restoration plan for a 100-acre agricultural field that was historically planted in crops. This restoration effort involved a comprehensive plan for woodland, wetland, and grassland restoration, with a commitment to refrain from using chemical pesticides or fertilizers during the restoration. The project involved reintroducing more than 100 native species of forbs and grasses on 37 acres. During the spring of 1996, 36,000 conifer and hardwood seedlings were planted as part of this project. The small natural wetland was allowed to restore itself naturally.



Mitigation

The Tribe requires wetland mitigation, using an unofficial but working policy of a 2:1 replacement ratio (i.e., two wetland acres are restored for each wetland acre impacted) in current and future projects. Similarly, there are mitigation requirements for trees removed, at a 2:1 ratio. In 1993, the Environmental Resources Board and the Economic Development Division agreed to set aside 270 acres surrounding the Oneida Nation Light Business Park for wildlife habitat restoration. A comprehensive restoration plan was developed and work began in 1994. The plan included reforestation, grassland habitat, food plots for wildlife, wetlands, and brooding ponds. The Tribe reports that planted vegetation has become established and many mammals and birds (including nine species of ducks) have returned to the restoration area. Currently, the Tribe is developing a maintenance and management plan for the site, to ensure its ecological success. Additionally, the Tribe is designing and installing signs to educate the public about this restored wildlife habitat.

The Tribe is discussing plans with the Wisconsin Department of Transportation to use Tribal lands as a wetland mitigation bank. Under such an arrangement, the Tribe would gain wetland acreage while mitigating the impact of highway projects in other parts of the state.



Partnerships and Stakeholder Coordination

The Oneida Nation has participated in many U.S. Department of Agriculture programs intended to restore and protect the natural environment of the reservation. In 1997, the Tribe received a \$677,312 grant under the Environmental Quality Incentives Program to provide cost-share funding to landowners who install best management practices to reduce nonpoint source pollution. In addition, the Oneida Nation Farm has placed more than 1,500 acres of sensitive land into the Conservation and Wetland Reserve Programs.

The Oneida are a partner in the U.S. Department of the Interior, Bureau of Indian Affairs, Circle of Flight program, which focuses on enhancing waterfowl habitat. Since 1991, the Circle of Flight program has distributed \$3.7 million to 24 reservations and 3 inter-Tribal organizations for waterfowl and wetland enhancement projects.



Monitoring

The tributaries within the Oneida Reservation are affected by nonpoint source pollution, as well as pollution coming directing from the Fox River. This has resulted in fish consumption advisories, degraded water quality, and decreased recreational and cultural uses. The objective of monitoring is to gather environmental information on the water quality of the Reservation. This information will be used for analysis and research, and compliance with Oneida Water Quality Standards and the Oneida Water Resource Ordinance.

Although many investigations have been undertaken, comprehensive water quality monitoring is only beginning on waters of the Reservation. The Oneida Water Resources Team works cooperatively with USGS in establishing fixed sites for the collection of water quality data and hydrologic data. The goals of monitoring are to 1) determine the basic water quality in Reservation lakes and streams and 2) determine the successes or failures of best management practices by tracking water quality over time.

Sources of Support

The Oneida have received funding from numerous sources, including the Oneida Nation Environmental Resources Board, Circle of Flight, the Wisconsin Department of Natural Resources Nonpoint Source Pollution Abatement Program, the U.S. Department of Agriculture's Environmental Quality Incentives Program, and EPA's Coastal Environmental Management and Great Lakes Programs.

Contact

Steve Linskens or Jeff Sanders, Environmental Planners
Environmental, Health and Safety Department
P.O. Box 365
Oneida, WI 54155
Phone: (920) 497-5812
Fax: (920) 496-7883

Port Graham/ Nanwalek Native Villages



Program Components:

Wetland and Watershed Planning • Wetland Inventory, Assessment, Mapping • Partnerships and Stakeholder Coordination • Education and Outreach • Monitoring

Background

Port Graham and Nanwalek are two Aleutian villages located on the Lower Kenai Peninsula of Alaska. The Port Graham/Nanwalek Watershed Council was formed to protect and preserve an area that includes two adjacent watersheds: English Bay River and Port Graham River and their tributaries. The two watersheds consist of approximately 100,000 acres of steep mountainous terrain and glacially developed river valleys with elevations ranging from 3,000 feet to sea level. The valley bottoms and lower slopes are covered with Sitka spruce old growth forests; alpine tundra meadows occur in the higher elevations.

Marine, estuarine, riverine, palustrine, and lacustrine type wetlands are represented in the two watersheds. A large number of these wetlands provide high-quality spawning and rearing habitat for resident and anadromous fish, including five species of salmon, halibut, cod, and trout. The Nanwalek Salmon Enhancement Project has resulted in restoring yearly returns of approximately 40,000 adult sockeye salmon in the English Bay Lakes.

Other wildlife represented include numerous types of shellfish, waterfowl and marine birds, eel, harbor seals, moose, black bear, mountain goat, porcupine, and otter. Plant communities include Sitka spruce forest, tall alder shrub, halophytic grass wet meadows, halophytic sedge wet meadows, sedge moss bog meadows, alpine scrub, bluejoint reedgrass-forb meadows, pondlily, eelgrass, and marine algae. Each one of these plants and animals constitutes an integral part of the two villages' subsistence-based economies. Medicinal plants and berries found in the watersheds are important culturally and in providing medicine for village members. Some medicinal plants and berries found in the two watersheds are yarrow, Bethlehem star, devil's club bark and root, licorice fern, mountain ash, rose petals and hips, cranberry, salmonberry, blueberry, mossberry, trailing raspberry, nagoonberry, watermelon berry, fiddleheads, wild celery, goose tongues, and wild onions.



Wetland and Watershed Planning

The Port Graham/Nanwalek Watershed Council was formed as a result of meetings convened by the Chugachmiut Environmental Health Program to conduct a region-wide survey on where funding for a wetlands protection plan was most needed. The Chugach Regional Resources Commission, the U.S. Department of Agriculture Natural Resources Conservation Service, and the Tribal councils and Alaska Native Claims Settlement Act (ANCSA) corporations attended the meetings. Discussion at these meetings revealed that, in spite of the pristine nature of the area's wetlands and other resources, proposed logging and other commercial activities threatened the status quo, and that the watersheds of the

Port Graham and Nanwalek Villages stood in greatest need of a wetlands plan. Once funding was secured, the Council was charged with developing a Wetlands Conservation Plan encompassing the 100,000-acre planning area comprising the two watersheds. The Port Graham/Nanwalek Watershed Council, which is composed of people from various organizations within the two villages, meets every two months for discussions and workshops.

Because the ecosystems are largely healthy, the management approach of the Watershed Council is to prevent degradation as both communities experience growth in transportation systems, housing, and commercial resource harvests of timber and fish. The Port Graham and Nanwalek Wetlands Conservation Plan is turning out to be a watershed management plan with a wetland emphasis because all of the resources are so closely linked. The Plan uses the Natural Resources Conservation Service's planning process as a model and represents a broad base of sponsors and stakeholders with mutual interests in the watersheds and wetlands of the area, including Tribal councils, regional and village Native corporations, and special interest groups. The plan is not intended to create or expand wetland regulation, but rather to help landowners, local residents, and land managers make wise land and resource management decisions that are compatible with existing laws and regulations. To that end, the plan will recommend how federal, state, and borough regulations should be implemented within the two watersheds. The plan will also be used to leverage assistance or funding from other projects, both regional and federal.

The Port Graham and Nanwalek Wetlands Conservation Plan is comprehensive in scope, and includes:

- A detailed description of the planning area, including geology, hydrology, climate, soils, plant communities (with names of species listed in Aleutian and Latin), water quality, wetlands, land ownership, land uses, and wildlife and fishery resources
- A section on plant and animal species used for subsistence
- Village histories
- An overview of relevant laws and regulations
- Stakeholder scoping issues, including:
 - Natural resource and other development activities
 - Environmental impacts that have been identified
 - The relationship between regulation and property rights
 - The role of education in watershed and wetland management and protection
 - Specific management issues that need to be addressed by the Council
- Guidance in formulating alternatives to plan recommendations
- Plan implementation, providing annual work plans



Wetland Inventory, Assessment, Mapping

As a result of efforts of the Council, stakeholders in the two watersheds have gained a greater appreciation for the interconnectedness of the region's wetlands and the other natural resources that support humans, animal, and plant life. A focus of the Council is to develop resource management planning tools that help people understand why wetlands are important. For management and assessment purposes, they have developed a matrix that identifies local society

values of wetland dependent natural resources. These values are stated in terms of subsistence, cultural, and spiritual importance to the communities. Additional columns will then be added to the matrix that identify the wetland functions that support each expressed value, as well as the HGM (the hydrogeomorphic method of assessing wetland functions) subclass and model. The Council also recognizes the importance of linking HGM with measures of biological integrity “because people can relate to critters and are interested in protecting them.” The Council benefits from the work of a geographic information system contractor, who was hired to help organize information about the villages’ resources. An example of the matrix is presented below:

Wetland Resources	Subsistence value	Cultural value	Spiritual value	How used (when, where, why)	HGM subclass & model	Supporting function
Plants						
Herbs						
Shrubs/Trees						
Berries						
Large Animals						
Moose						
Bear						
Goat						
Small Animals						
Porcupine						
Rabbit						
Grouse						
Fish						
Dollies						
Trout						
Salmon						



Partnerships and Stakeholder Coordination

The Council itself is providing the forum for stakeholder coordination. These efforts are supported by technical assistance from the Natural Resources Conservation Service of the U.S. Department of Agriculture and consist of not only the Port Graham and Nanwalek Native Villages, but also the Alaska Native Claims Settlement Act (ANCSA) corporations, which are the major landowners within the watershed. Individual Native Allotment owners are also active participants in the process.



Education and Outreach

For education and outreach purposes (including educating the Council itself), the Council developed a fact sheet that discusses 1) how a wetland assessment tool is needed to make management decisions about wetlands; 2) that the important things about wetlands are called wetland values, which include such things as the plant and animal life that they support and the flood protection and groundwater replenishment they provide; 3) that wetlands have value because of where they are (location) and what they do (function); and 4) that determining their location and function is essential in the assessment, planning, and management of wetlands. The fact sheet discusses the role of HGM and how the Council is applying it by focusing on those wetland functions that support

local wetland values. Finally, it explains that mapping wetlands is an important component of the assessment process.

The Council also developed education and outreach tools to help village members better understand the functions and values of wetlands, what is being done to protect them, and what they can do to help. These tools include a colorful and informative brochure that is simple and easy to read, but provides a level of detail allowing those with more in-depth or technical interests to be engaged, and an 11-minute video that displays local wetland types and associated natural resources and including sound bites from several Council members describing the importance of wetlands and watershed planning. The video and brochure, which were distributed to every household in the two villages, invite all members to join in the planning process.



Monitoring

The Port Graham/Nanwalek Native Villages have developed bioassessment protocols in cooperation with the University of Alaska-Anchorage campus. During the summer of 1998, at least six sample stations were established within the project area, with the assistance of the Port Graham/Nanwalek Watershed Council. Macroinvertebrate samples were collected to establish the baseline reference conditions of the Native Villages' riverine wetlands.

Sources of Support

The Port Graham and Nanwalek Native Villages have received funding from numerous sources, including the Chugachmiut Environmental Health/Protection Program, Chugachmiut Forestry/Lands Program, an EPA Wetland Development Grant, and the Natural Resources Conservation Service.

Contacts

Christine Celentano
Chugachmiut
4201 Tudor Centre Drive, Suite 210
Anchorage, AK 99508
Phone: (907) 562-4155
Fax: (907) 563-2891

Dan LaPlant
USDA Natural Resources Conservation Service
949 East 36th Avenue, Suite 400
Anchorage, AK 99508
Phone: (907) 271-2424
Fax: (907) 271-3951

Seminole Tribe of Florida



Program Components:

Wetland Inventory, Assessment, Mapping • Regulation • Monitoring • Wetland Research

Background

The sovereign lands of the Seminole Tribe of Florida are spread out among five reservations, known as the Hollywood, Big Cypress, Brighton, Tampa, and Immokalee Seminole Indian Reservations. In addition to these reservations, the Seminole Tribe has reserved Tribal fishing and hunting rights on lands adjacent to the eastern boundary of the Big Cypress Reservation that were granted to the Seminole Tribe by the State of Florida.

In spite of modernization of many aspects of Seminole life, Tribal members still maintain strong ties with their land and natural resources. For instance, cypress trees and sabal palms are harvested to construct chickee huts, once the only form of shelter, now used for ceremonial and recreational purposes. Many Tribal members are avid hunters who enjoy the availability of wild hogs and deer within the swamps, marshes, and hammocks of the rural reservations. The Seminoles place a high value on arable soils, surface and ground water, swamps, marshes, rangeland, timber, medicinal plants, and wildlife. In one way or another, these natural resources are either directly dependent on wetlands, or the manner in which they are managed can impact the health of wetlands. Thus, wetland conservation is a top priority for the Seminole Tribe.

Like many contemporary Tribal members throughout the United States today, Seminoles range from traditionalists who see themselves as one with nature and are ever protective of it to more progressive members who have taken the opportunity to capitalize on their available resources to obtain economic self-sufficiency and advancement for the Seminole Tribe as a whole. The Tribal government is faced with reconciling these often competing interests and encouraging growth and development that need to be sustained to provide future generations of Seminoles with opportunities.

Big Cypress Reservation

The Big Cypress Reservation is the largest of the Seminole reservations, located in the southeastern corner of Hendry County and the northwestern corner of Broward County, encompassing approximately 81.5 square miles or 52,160 acres. This reservation is an integral part of the regional water management system, as a pathway for water flow into the adjacent Big Cypress National Preserve, and ultimately into Everglades National Park. In addition, the Tribe depends on surface and groundwater resources located on Big Cypress for potable uses as well as agricultural production. Due to the ecological, cultural, and socioeconomic importance of the Big Cypress Reservation, it is the focus of much of the Tribe's efforts in defining and solving natural resource problems overall.

The Big Cypress Reservation lies at a junction of soil and vegetation types. To the east lie the classic sawgrass everglades (extensive prairies with occasional

tree islands), underlain by highly organic muck soils. Muck soils indicate that, at least in the past, high soil moisture inhibited degradation of plant remains and peat formed. To the west, there is primarily a more sand or rocky soil base and, in general, a forested terrain with occasional wet prairies interspersed. Cypress heads/strands are frequent and higher sites consist of pine flatwoods maintained by a schedule of burning. The winter dry season is followed by a summer wet season, leading to wide fluctuations in water levels across the reservation. Most wetlands dry out completely when rains slacken. This may have been different in the past before extensive regional hydrologic modifications (described later) were made. For example, in one old-growth cypress head in the southern “Native Area” there are very tall cypress knees, up to 5.5 feet tall. This indicates that the maximum water level at this site used to be in the 5-foot range, yet the present-day maximum seems to be less than 2 feet based on the height of the lichen/moss line on the knees. The knees of these extremely old cypress trees remain as bioindicators of hydrology prior to drainage.

Development of water resources and urbanization both on and off Tribal lands has led to considerable impacts on the quantity and quality of water, as well as wetland and wildlife resources on the reservation. Upstream agriculture has increased phosphorus loadings, leading to an imbalance in the composition and distribution of flora within the larger Everglades ecosystem. Regional hydrologic modifications (in the form of the Central and Southern Florida Flood Control Project built during the canal building era of the 1960s) have greatly reduced the regional supply of water, virtually stopping all water flow into the reservation from the north except for that which enters through the North and West Feeder Canals. Local hydrologic changes (in the form of construction of wetland rim ditches and berms, and field and collection ditches in the pastures and agricultural fields) affect the distribution of water that is still available, and thus represent significant impacts on wetland integrity as well.



Wetland Inventory, Assessment, Mapping

In 1992, with funding from an EPA Wetland Development Grant, the Tribe undertook a comprehensive program for locating, delineating, and mapping wetland resources on all its reservations, including the Big Cypress Reservation. A wetland database was developed, including 1) wetland boundaries digitized from 1" = 400' scale aerial photographs and field truthed for verification, 2) a two-tiered classification system distinguishing between swamps and marshes and distinctive types of each, 3) a classification modifier that identified types of evident impacts, and 4) the acreage of each wetland mapped.

The primary objective of the mapping and inventory project was to identify the limits of wetlands, as defined under prevailing federal guidelines (1987 Corps of Engineers methodology), for use as a planning tool in the design and regulation of future projects on the reservation. This mapping project produced a planning tool that is now used to assess the wetland impacts from proposed uses of Tribal lands.



Regulation

In 1987, as part of a settlement agreement resulting from a water rights dispute, the Seminole Tribe, the State of Florida, and the South Florida Water Management District entered into a Water Rights Compact. The Compact set ground rules by which the parties to the Compact had to abide in relation to water rights, outlined how future disputes would be resolved, and allowed for essential protection of wetlands within reservation boundaries. The signing of the Compact led the Tribal Council of the Seminole Tribe of Florida to create the Water Resource Management Department (WRMD). WRMD, overseen by the

Seminole Water Commission (SWC), is charged with protecting and evaluating the Tribe's land and water resources and facilitating wise use and conservation of these resources by other departments and individuals doing business on Tribal lands.

SWC and WRMD developed the Tribal Water Code to establish a legal framework for protecting and restoring the waters of the Tribe's reservations. The Seminole Tribe was granted TAS status by EPA to implement the Clean Water Act, including setting water quality standards for Tribal lands. In early 1998, SWC approved Final Rules for Water Quality Protection and Restoration: Rules to Carry Out the Federal Clean Water Act and the Tribal Water Code. The Final Rules include water quality standards for the Brighton and Big Cypress Reservations, and provisions for the beneficial use and conservation of water resources. These standards and provisions cover wetlands as well as surface waters. WRMD is working to improve the existing water quality standards to place more emphasis on wetlands. These efforts are described below.

The overall goal of the Big Cypress Water Conservation Plan, of which the Tribe's wetlands program is an integral part, is to join all of the reservation's water and land resources in a single, controllable system to better serve both human and environmental needs. This integrated concept of reconnecting wetland resources with the associated upland areas will be assessed as a possible guide for other landowners in the Everglades watersheds and other American Indian reservations with wetland resources.



Monitoring

Part of the inventory effort described earlier included two years of characterization of specific reference wetlands, in terms of water quality and vegetative and macroinvertebrate community types. This effort was continued into an ongoing monitoring program. The current monitoring program includes water quality monitoring (twice monthly), macroinvertebrate collection (quarterly), vegetative transect inventory (quarterly), and panoramic photos (quarterly). In addition, each of the monitoring sites has a water level recorder for groundwater elevation monitoring.

The Tribe is developing wetland biocriteria to assist in the early detection of impairment to water quality resulting from land use upstream of reservation wetlands. The Tribe would like to incorporate biological criteria for wetlands into the Tribal Water Code Water Quality Standards. Ultimately, thresholds will be found where wetland functions can be maintained while serving the many water resource needs of the reservation, such as water storage, flood control, water quality enhancement, and water table/aquifer replenishment, thereby improving the Tribe's ability to protect and enhance its wetland resources while at the same time maintaining or enhancing species diversity through the establishment of specific biological criteria. The current monitoring program provides a strong foundation upon which to build a biocriteria development program.

In addition to augmenting the wetlands data they collect, in terms of types of information and number of sites monitored, it is a top priority of WRMD to improve the quality of the data collected. Random lab testing is done on a constant basis, and the quality assurance plan for data collection is currently being revised and updated.

Wetland Research

WRMD is constantly reassessing and fine tuning its research questions to ensure that the Tribe's efforts are directing scarce resources to the most pertinent issues. Nutrient loading and the effects of previous hydrologic modification pose specific challenges to the Tribe, and part of their research is aimed at developing

best management practices that can reduce the impacts of these factors on wetland water quality and habitat integrity. An emerging area of research interest for the Tribe is forested wetland systems (especially bald and pond cypress), which form a large part of the western Everglades. These systems are understudied and ill-defined. The Tribe believes that research into the functioning of these systems will help increase the overall understanding of the Everglades as an ecological system.

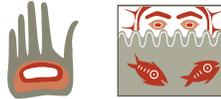
Sources of Support

The Seminole Tribe received an EPA Wetland Development Grant that supported the Tribe's wetland mapping and inventory project on the Big Cypress Reservation. Ongoing monitoring and research efforts are supported through a collaboration of Tribal, BIA, EPA, and NPS funding sources.

Contact

Craig Tepper, Director
Water Resource Management Department
6300 Stirling Road
Hollywood, FL 33024
Phone: (954) 967-3402
Fax: (954) 967-3489
e-mail: water@gate.net

Taos Pueblo



Program Components:
Education and Outreach • Monitoring

Background

Taos Pueblo, sitting at an elevation of 7,600 feet, is the northernmost of the 19 Pueblos of New Mexico, located in north-central New Mexico. Tribal lands consist of approximately 98,000 acres, encompassing three distinct biozones—alpine tundra and lakes, mixed conifer and aspen forests, and high desert pinon and juniper forests.

The Rio Pueblo and the Rio Lucero, along with their associated watersheds, compose the two major drainage basins on Taos Pueblo lands. Both rivers have their headwaters—Blue Lake and Bear Lake, respectively—in the northern montane region of the reservation known as the Blue Lake Wilderness Area. Both rivers flow from an elevation of approximately 12,000 feet at their headwaters to 5,200 feet at their floodplains, where they meet the Rio Grande. These two lakes are designated as “outstanding Tribal resource waters” and are provided special protection under the Tribe’s proposed water quality standards. The Rio Pueblo flows directly through the historic village, supplying water for ceremonial and domestic purposes. The Rio Lucero is primarily used for irrigation and grazing. Taos Pueblo members are extremely proud of their traditional culturally oriented lifestyle, as evidenced by the following statement on their web site: “We pride our lifestyle with nature as the true source of our existence.”

Taos Pueblo has approximately 800 acres of freshwater wetlands on Tribal lands. These wetlands are an ancient glacial bed, and snowmelt from higher elevations recharges them. According to the Taos Pueblo Environmental Office, there used to be 1,000 acres of wetlands in this area. The loss of wetlands is attributed to development and an increased demand for water beyond Pueblo borders, resulting in over-pumping of groundwater. Loss of natural springs near these wetlands is also attributed to groundwater pumping. Annual spring runoff has not been sufficient to compensate for the increased demand for water.

The remaining wetlands on Taos Tribal lands are in relatively pristine condition. To protect them, the Pueblo employs the traditional tools of rotation and exclusion of livestock, including cattle, horses, bison, and buffalo, to avoid the impacts of overgrazing on water quality. Additionally, all crops grown upstream from the wetlands are grown “organically,” without the use pesticides, fertilizers, and other chemicals that could impact the integrity of Tribal waters. Other sustainable agriculture techniques, such as the use of cover crops, buffer strips, and composting, are used to promote healthy soil and reduce erosion.



Education and Outreach

Education and training of Environmental Office staff and Tribal members is a top priority for Taos Pueblo’s environmental program. Pueblo members are very traditional in their view of the environment—they want very much to protect it, but are apprehensive about using modern, technological approaches to protection. One of the main objectives of the Environmental Office’s education and

outreach effort is to help Pueblo members overcome this apprehension, which will ultimately help the Pueblo develop effective environmental protection programs.

Capacity building of staff is furthered by embracing a partnership approach to education and training. Taos Pueblo is fortunate to receive expert technical assistance from Dr. Gerald Jacobi of New Mexico Highlands University in the area of benthic macroinvertebrate identification. The River Watch Network, a nongovernmental organization, has been extremely valuable in training staff on monitoring techniques. Continuing education is an integral component of the environmental program at Taos Pueblo. In fact, other Tribes and pueblos in the region have benefitted from the knowledge of the Taos Pueblo Environmental Office. Environmental Office staff have conducted several training sessions in water quality monitoring for other Tribes and pueblos, which are now developing and implementing their own monitoring programs.

In addition to the monitoring program, the Environmental Office is engaged in other education and outreach activities. The Environmental Office produced several brochures that describe their programs, and specifically, the biological monitoring program. Currently under development are separate curricula designed for four different age groups: K-3, 4-6, 7-9, and 10-12. Three different curricula are being developed for each group, covering 1) benthic macroinvertebrates and their relationship to water quality and monitoring; 2) wetlands ecology and conservation, and their relationship to the larger watershed ecosystem; and 3) solid waste issues. The three major components of the curricula are class work, lab work, and field experience. The Environmental Office is receiving support on this project from EPA Region 6, and there is much interest from other schools, pueblos, and Tribes. The Environmental Office believes that education and outreach are two of their most important tasks in furthering environmental protection on and off the Pueblo.

The Pueblo has not yet adopted its own water quality standards. The Environmental Office is focusing on educating and building the capacity of its staff. In this way, once standards are adopted, the staff will be positioned with the appropriate knowledge to implement the program. According to an Environmental Office brochure: "Taos Pueblo's goal of the environmental program is to become self sufficient and train Tribal members to understand and implement protection and preservation of our environment." The Tribe prides itself on the fact that environmental staff is made up solely of Pueblo members, furthering a sense of ownership of Tribal resources. The Environmental Office also collaborates extensively with other Tribes and organizations that have similar interests. Taos Pueblo has a volunteer monitoring program that supports the specific goals of the water quality monitoring program, while also furthering the outreach efforts of the Environmental Office by educating interested Pueblo members about water quality and the impacts humans have on environmental quality.



Monitoring

Taos Pueblo has an extensive water quality monitoring program that focuses on surface waters. They are already in the process of developing a monitoring program specifically for wetlands, based on the foundation and success of the surface water monitoring program. The Environmental Office believes that it is important to monitor the health of wetlands, just as it is for surface waters, to have a baseline of integrity to use as a reference point in making management decisions and evaluating impacts to the resources. The surface water quality monitoring program considers chemical and biological conditions to measure the health of the ecosystem and determine the type and

source of stressors impacting the waterbodies. Chemical monitoring includes pH, conductivity, dissolved oxygen, temperature, total alkalinity, phosphorus, and nitrates. Biological monitoring focuses on the collection and identification of benthic macroinvertebrates. The Benthic Macroinvertebrate Identification Project began in the spring of 1996. The biological monitoring program is based on reference site criteria, with a pristine site, an impacted site, and a recovered site. The program uses protocols based on the EPA Rapid Bioassessment Protocol.

Sources of Support

The Taos Pueblo has received funding or technical assistance and support from EPA Region 6, EPA's American Indian Environmental Office, Bureau of Reclamation, Bureau of Indian Affairs, River Watch Network, Rio Grande Restoration, and the HACH Technical Training Center. Several technical experts also provide support to the Pueblo, including Kenneth King, Licensed Geologist; Dr. Gerald Jacobi, New Mexico Highlands University; and Jeff Toomey, Northern New Mexico Community College.

Contact

Luis Zamora, Director
Environmental Office
P.O. Box 1864
Taos, NM 87871
Phone: (505) 751-4601
Fax: (505) 751-3905
e-mail: tpeo@laplaza.org
Internet home page: www.laplaza.org/tpeo

Wampanoag Tribe of Gay Head



Program Components:

Wetland and Watershed Planning • Wetland Inventory, Assessment, Mapping • Restoration • Monitoring

Background

The Wampanoag Tribe of Gay Head (Aquinnah) is located on the westernmost point of Martha's Vineyard, off the coast of southern Massachusetts. Tribal lands span 530 acres, of which 35 percent are wetlands. While all of the wetlands are culturally important to the Tribe, cranberry bogs are especially significant for the Wampanoag. Wampanoag means "colors by the sea" in the Aquinnah Wampanoag language, and this name is exemplified by the ripening cranberries during harvest season. Cranberry bogs are naturally occurring on Tribal lands and were created by receding glaciers (i.e., glacial waters filling depressions scoured by the glacier movements). In previous centuries, the Tribe harvested what the bogs produced naturally. Cranberries are now cultivated by the Tribe, using traditional methods that preserve the cranberry plant's habitat. Cranberry bogs make up 15 to 20 acres of the Tribe's total acreage and produce a bounty of cranberries every year. This harvest is celebrated on Cranberry Day, the Wampanoag traditional holiday, held on the second Tuesday of October every year.

Aquinnah is practically an island unto itself, with the Coastal Great Ponds, Menemsha and Squinocket, separating it from the rest of Martha's Vineyard. The two ponds are each 600 acres, one being salt water and the other brackish. The ponds are very important to the local economy as a tourist attraction as well as for commercial and recreational fishing. The ponds are shared between the Tribe and the towns of Aquinnah and Chilmark. This joint use has encouraged the three entities to collaborate on a comprehensive watershed plan discussed below. Other wetlands in the area are important habitat for fish, shellfish, and waterfowl (including Canada geese, teal, mallard, and black ducks), all of which are harvested for subsistence by Tribal members. Bay scallops, quahogs, soft shell clams, oysters, other shellfish, and lobster are also found in these areas and are very important to the local Tribal economy. Tribal lands lie above Martha's Vineyard's sole source aquifer. Most of the island depends on well water for its drinking water supply, making wetland protection even more important.

Other significant species relying on the habitats in and around the bogs include several species of orchids and Nantucket shadbush, which is listed as threatened by the state. This habitat is also essential nesting and foraging habitat for the Northern harrier hawk.



Wetland and Watershed Planning

To ensure that shared resources in the watershed are protected, the Tribe engaged in a watershed planning process with the towns of Aquinnah and Chilmark in 1996. The three jurisdictions share the Coastal Great Ponds, and all have an impact on the water resources upon which residents of the two towns and Tribal members depend. The trio convened a scoping session with stakeholders from the towns and the Tribe, which resulted in a prioritization of assessment

activities. Through this prioritization effort, the towns and the Tribe identified policies that should be enacted to protect their shared water resources.



Wetland Inventory, Assessment, Mapping

The Tribe delineated all of its wetlands and stored the data in ArcView, a geographic information system (GIS). The Tribe also conducted a nonpoint source assessment for their portion of the watershed and cultural use studies of their wetland resources.



Restoration

Although cranberry cultivation in Massachusetts is a big business, the Wampanoag cultivation of cranberries is strictly a cultural, as opposed to commercial, activity. In other words, all of the cranberries harvested are reserved for Tribal consumption. The Tribe cultivates cranberries traditionally and organically, using no mechanization and no synthetic pesticides or fertilizers. All work associated with growing the cranberries is done by hand, an important tradition in the Wampanoag culture. The Tribe views cranberry cultivation as integral to their Tribal heritage and current well-being, and thus believes that by avoiding the use of machines and chemicals, they are preserving the cranberry habitat so that it can continue to produce cranberries for current and future generations. The Tribe's goal is to preserve the bogs as they are naturally occurring.

The Wampanoag Natural Resources Department is engaged in a variety of activities to preserve and restore the cranberry bogs. Restoration of the bogs involves manually clearing vegetation that competes with the cranberry plants, blocking light and using soil and nutrients that the cranberry plants need. Preservation efforts are concerned with mitigating the impacts of nonpoint source pollution flowing into the bogs. A highway goes right through the bogs and has thus disturbed the natural drainage that existed before the road was built. The Tribe is concerned about the potential impacts of runoff of petrochemicals and heavy metals from the highway as well as storm water runoff. Currently, the Tribe is looking into building retention ponds and installing petroleum scrubbing catch basins along the flow of storm water to remove the petrochemicals and heavy metals.



Monitoring

Through funding from EPA and technical assistance from the Natural Resources Conservation Service (NRCS) of the U.S. Department of Agriculture, the Tribe is in the process of implementing a wetlands monitoring program. The Tribe periodically inventories biological diversity, including species diversity, within the bogs. This monitoring data will be stored in the Tribe's GIS database. It will be used to track the success of their wetland preservation and restoration efforts.

Sources of Support

The Tribe has received Clean Water Act Section 104(b)(3) Wetlands Protection Program funding as well as Section 106 funding. The NRCS provides funding for a part-time Tribal-NRCS staff position. The Tribe continues to receive funding from the U.S. Bureau of Indian Affairs' Section 638 Tribal Program for water resources, fish and wildlife, and natural resources.

Contact

Matthew Vanderhoop, Director

Natural Resources Department

20 Black Brook Road

Gay Head, MA 02535

Phone: (508) 645-9265

Fax: (508) 645-3790

White Mountain Apache Tribe



Program Components:

Wetland and Watershed Planning • Restoration • Education and Outreach

Background

The Fort Apache Indian Reservation, home to the White Mountain Apache Tribe, is located in east-central Arizona. Tribal lands encompass more than 1.6 million acres ranging in elevation from 2,700 to 11,400 feet. Thousands of miles of streams flow through the reservation, including more than 600 miles of fish-bearing streams. In recognition of the ecological and cultural significance of these waters, the Tribe designated all riparian zones as sensitive areas to be restored to full health. The Tribe adopted a Wetlands Conservation Plan to guide the restoration and other wetlands that are degraded.

Tribal wetlands provide habitat at various life stages for many species of plants and animals that are economically and culturally important to the White Mountain Apache Tribe. Trophy elk, ponderosa pine, native trout, the Arizona willow, and other native wetland plant species are among the biota that depend on healthy wetland habitat. The White Mountain Apache's diverse environmental management programs work together to protect these and other resources that Tribal members depend on for subsistence, cultural, and economic reasons.

Overgrazing by domestic, feral, and wild ungulates is a major source of riparian degradation, leading to soil compaction, bank erosion, and shifts in vegetation composition to non-native species. Livestock overgrazing dates back to the early part of this century when non-Indian grazing permits were first issued by the federal government. Subsequently, intensive road and railroad construction, vegetation eradication, reseeding with exotic species, channel manipulations, and other federal land management efforts contributed to a legacy of riparian degradation.

The protection of the Tribe's water resources is an integral part of its multipronged effort to achieve sustainable development. The White Mountain Apache acknowledge four cornerstones to sustainability, which are interdependent and mutually reinforcing. The Tribe recognizes these cornerstones as forms of social and natural capital essential to its existence. The four cornerstones are:

- *People*, with knowledge, awareness, faith, and energy to promote sound resource management
- *Ecosystems*, that are currently in, or can be restored to, healthy and productive conditions
- *Culture*, instilling strong values that bind communities, that facilitate long-range planning based on traditional knowledge and experience, and that encourage promotion of healthy ecosystems
- *Sovereignty*, including the power to make unfettered decisions about Tribal resources

At the heart of the Tribe's sustainable development program is the strategy of restoration of all four cornerstones. The Tribe's wetlands protection efforts

address three of the cornerstones directly and are discussed in this case study. The fourth area, sovereignty, is all-encompassing and is addressed by virtue of the Tribe's proactive approach to natural resource management.



Wetland and Watershed Planning

In 1995, the Tribe was awarded an EPA Wetland Development Grant to begin development of a wetlands conservation plan. The Tribal Wetlands Conservation Plan (Council Resolution 12-97-367) was adopted in December 1997. It serves as a guide for the riparian and wetland restoration efforts currently under way.

The Wetlands Conservation Plan focuses on protecting, maintaining, and restoring the Tribe's wetlands. Protection guidelines currently under development will address the needs of different wetland types (meadows, marshes, and lakes), to protect them from the primary sources of impacts to wetlands (cattle overgrazing, feral horses, elk, and roads). The implementation plan proposes demonstration projects for the ID Restoration Area and North Fork Watershed. The plan also includes a monitoring and evaluation program that will allow for measuring progress as well as providing feedback to the implementation process.



Restoration

In 1995, the White Mountain Apache Tribe initiated a riparian-wetland assessment and restoration program on the reservation. The program initially focused on passive restoration at 13 sites by excluding livestock from riparian areas with fencing. The primary objective of the riparian restoration program was to encourage the recovery of degraded sites by allowing vegetation to grow. By emphasizing relatively low-cost passive restoration, the program sought to generate a broad base of information on the recovery potential of degraded areas and guide more intensive restoration efforts. Sites were selected across the reservation at various ecological zones ranging in elevation from 5,000 to nearly 9,000 feet. Sites were chosen based on preliminary identification of problem areas and/or suggestions by Tribal members familiar with the history of degradation and recovery potential of the sites.

In addition to livestock exclusion, the White Mountain Apache Wetlands Program works to reduce feral horse and elk populations in sensitive areas to encourage recovery of wetland plants. In addition, the Tribe seeds and transports native species in sensitive areas.

In 1997, the Tribe conducted an evaluation of seven restoration sites to gauge the effectiveness of the initial restoration strategy. The sites included Horseshoe Cienega and Pacheta Cienega, both of which are meadows that sit at high elevations. Kentucky bluegrass and Rocky Mountain iris had displaced the native sedges at Horseshoe Cienega as a result of a lowering of the water table. Exclusion, sedge seeding, and transplanting, and other measures, helped to re-establish the native wetland plants.

Many lessons were learned from the initial restoration efforts that have helped shape future activities. For instance, passive restoration was successful at sites that had native wetland plants, but not in sufficient concentrations due to heavy animal impacts. These sites tended to be more functional than some of the other sites. In these cases, fencing was the most appropriate tool. At other sites, however, the channels were hampered by severe physical dysfunctions that needed to be addressed before passive restoration could yield much improvement.

Knowledge gained from these lessons sparked the development of a decision-making process to support planning for future restoration projects. The decision-making process is focused on site-level planning to address those factors that most

limit riparian recovery. The Tribe notes that while making such evaluations, it is critical to keep in mind how the controlling forces of geomorphology, plants, and animals are intertwined. The early phase of the process should assess the extent to which channel hydrology and geomorphology are limited by off-site conditions.

One of the most important lessons that the White Mountain Apache learned from their restoration efforts is that non-woody wetland vegetation, such as sedges, rushes, reeds, and bulrushes, play a critical role in maintaining stream structure and function. This lesson is now being applied to the more arid lands at lower elevations of the reservation.



Education and Outreach

People are the human capital needed to fortify the foundations of sustainability. Education and outreach for staff and Tribal members are integral components of the White Mountain Apache's restoration strategy. Regularly scheduled Natural Resource Workshops bring together leaders and resource managers to hone leadership skills in natural resource management. Apprenticeship and mentor programs help develop Tribal managers under the supervision and training of experienced managers. The Tribe holds field workshops that attract Tribal members from all over the West. The most recent workshop, which focused on riparian management, was held in cooperation with the InterTribal Timber Council.

A permanent fund was established by the Tribal Council to assist students of natural resource management. An EPA Wetland Development Grant helped fund an Ecological Youth Camp for young Tribal members to raise their awareness of ecology and to get hands-on experience in the field.

The cultural dimension of restoration is addressed through various efforts to enlist elders and other Tribal members to apply traditional knowledge of place, plants, and animals. This information guides resource management and education programs. The Tribe is working to encourage eco-tourism ventures by Tribal members, while instituting plans to ensure that such development is compatible with cultural and environmental concerns. In 1999 the Tribe's Land Restoration Fund, matched by outside funds, began to provide a permanent source of funding to sustain these evolving initiatives.

Sources of Support

The White Mountain Apache Tribe received an EPA Wetland Development Grant under Clean Water Act Section 104(b)(3), and an EPA Water Pollution Control Grant under Clean Water Act Section 106. The Tribe also received a U.S. Fish and Wildlife Service Challenge Cost Share Award. Other funding and support were obtained from the Arizona Water Protection Fund, the U.S. Forest Service Rocky Mountain Station in Flagstaff, Arizona, and through the Job Training Partnership Act.

Contact

Candy Lupe, Manager
 Watershed Program, Wetlands Project
 P.O. Box 700
 Whiteriver, AZ 85941
 Tel: (520) 338-4346 x 284
 Fax: (520) 338-5195

EPA is dedicated to supporting Tribal efforts to maintain and restore the physical, chemical, and biological integrity of aquatic ecosystems throughout Indian country. As government-to-government relations have evolved, EPA and Tribes are improving their abilities to work together to solve complex environmental and public health issues. The EPA Wetland Development Grant Program provides support for development of Tribal wetland programs that achieve wetland-specific goals along with supporting a Tribe's broader strategy of protecting and enhancing environmental quality and public health. Steady financial support for Tribal programs will help to ensure future monitoring, research, and protection for Tribal wetlands.

EPA serves as a catalyst to bring interested parties and experts together to discuss wetland-related issues. EPA's Wetlands Division has sponsored two Tribal, wetland-focused meetings in different regions of the country. In July 1997, the Oneida Nation hosted *Building Native American Partnerships—Wetlands Conservation Planning for the Protection and Restoration of Wetland, Floodplain, Riparian and River Systems* in Green Bay, Wisconsin. In September 1998, the Skokomish Tribe hosted *p3tu'las, A Time for Hearing—A Tribal Forum for Natural and Aquatic Resources* in Olympia, Washington. These two meetings were planned in response to discussions at EPA's National Wetlands Meeting in Boulder, Colorado, in September 1996. Tribal representatives attending that meeting pointed out the need for improved communication and coordination between EPA and Tribes to work more effectively toward meeting natural resource protection and restoration goals. The two regional meetings were very successful in providing a forum for frank discussion of past and current problems and in generating ideas for developing solutions to these problems.

As this report demonstrates, there is a growing recognition by both Tribes and EPA that much can be learned from one another in protecting wetland resources. The single most daunting challenge facing Indian and non-Indian natural resource managers today is development of strategies to protect and restore ecosystems without negatively affecting local and national economies. This challenge is particularly acute for Tribes because in many cases their economies have not developed to the extent necessary to provide the desired standard of living for their members. Their natural resources may be severely degraded by activities from which they did not gain monetarily. This type of situation puts many Indians at a disadvantage not necessarily understood by non-Indians. Additionally, the cultural and spiritual significance of Tribal natural resources and the associated traditional knowledge of these resources are poorly understood by non-Indians, making even more difficult the process of overcoming cultural differences to work together to protect the environment and public health.



EPA will continue to work with Indians, other native peoples, and non-Indians to tackle environmental protection and public health issues. EPA sponsors applied wetlands research that may be applicable to Tribal wetland protection efforts. EPA will continue to share this information with Tribes and work with them to develop strategies that meet their programmatic and technical needs and interests. The EPA Wetlands Division hopes that these case studies will serve as a resource for Tribal governments and other governments as they develop and refine their wetland protection programs. The Division invites all interested Tribes to share their experiences in wetlands protection and planning so this valuable information resource can be updated and expanded in the future.

EPA Regional Tribal and Wetland Contacts

REGION 1

U.S. Environmental Protection Agency
JFK Federal Building Boston, MA 02203
Phone: (617) 918-1111
Fax: (617) 565-3660

Jim Sappier, Indian Coordinator
Mail Code PAG 2300
Phone: (617) 918-1672
Fax: (617) 918-4940

Patricia Anderson, Wetlands Coordinator
Phone: (617) 918-1824

REGION 2

U.S. Environmental Protection Agency
290 Broadway
New York, NY 10007-1866
Phone: (212) 637-3000
Fax: (212) 637-3526

Christine Yost, Indian Coordinator
Mail Code 2PM-E1
Phone: (212) 637-3564
Fax: (212) 637-3772

Dan Montella, Wetlands Coordinator
Phone: (212) 637-3801

REGION 3

(NOTE: There are no federally recognized Indian tribes in Region 3)

U.S. Environmental Protection Agency
841 Arch Street
Philadelphia, PA 19106
Phone: (215) 814-5000
Fax: (215) 814-5103

Ralph Sphagnola, Wetlands Coordinator
Phone: (215) 814-2718

REGION 4

U.S. Environmental Protection Agency
61 Forsyth Street
Atlanta, GA 30303-3104
Phone: (404) 562-9900
Fax: (404) 562-8174

Mark Robertson, Indian Coordinator
Phone: (404) 562-9639
Fax: (404) 562-9598

William L. Cox, Wetlands Coordinator
Phone: (404) 562-9351

REGION 5

U.S. Environmental Protection Agency
77 W. Jackson Boulevard
Chicago, IL 60604-3507
Phone: (312) 353-2000
Fax: (312) 353-4135

Casey Ambutas, Indian Coordinator
Mail Code 5ME-19J
Phone: (312) 353-1394
Fax: (312) 353-1120

Sue Elston, Wetlands Coordinator
Phone: (312) 886-6115

REGION 6

U.S. Environmental Protection Agency
1445 Ross Avenue
12th Floor, Suite 1200
Dallas, TX 75202-2733
Phone: (214) 665-6444
Fax: (214) 665-2146

Ellen Greeney, Indian Coordinator
Mail Code 6E-FF
Phone: (214) 665-6778
Fax: (214) 665-2118

Richard Prather, Wetlands Coordinator
Phone: (214) 665-8333

REGION 7

U.S. Environmental Protection Agency
726 Minnesota Avenue
Kansas City, KS 66101
Phone: (913) 551-7000
Fax: (913) 551-7467

Kim Olson, Indian Coordinator
Phone: (913) 551-7539
Fax: (913) 551-7863

Cheryl Crisler, Wetlands Coordinator
Phone: (913) 551-7820

REGION 8

U.S. Environmental Protection Agency
999 18th Street, Suite 500
Denver, CO 80202-2405
Phone: (303) 312-6312
Fax: (303) 312-6369

Sadie Hoskie, Tribal Manager
Mail Code 80EA
Phone: (303) 312-6343
Fax: (303) 312-6741

Dave Ruter, Wetlands Coordinator
Phone: (303) 312-6794

REGION 9

U.S. Environmental Protection Agency
75 Hawthorne Street
San Francisco, CA 94105
Phone: (415) 744-1305
Fax: (415) 744-2499

Clancy Tenley, Tribal Program Manager
Mail Code E-4
Phone: (415) 744-1607
Fax: (415) 744-1604

Nancy Woo, Wetlands Coordinator
Phone: (415) 744-1164

REGION 10

U.S. Environmental Protection Agency
1200 Sixth Avenue
Seattle, WA 98101
Phone: (206) 553-1200
Fax: (206) 553-0149

Alan Moomaw, Tribal Program Specialist
Phone: (206) 553-6220
Fax: (206) 553-6647

Scott Sufficool, Indian Coordinator
Phone: (206) 553-6220
Fax: (206) 553-0151

Lee Daneker, Chief
Aquatic Resources Unit
Phone: (206) 553-1380

Sources of Support for Tribal Wetland Programs

These case studies demonstrate the many diverse partnership opportunities available to Tribes to protect their wetlands and associated resources. The EPA Wetland Program Development Grant (see page II-4) is an excellent source of funding for Tribes to initiate and develop wetland programs. Long-term operational costs of Tribal wetland programs pose particular challenges to Tribes, as funding for operational expenses is difficult to secure. The scarcity of long-term funding for Tribal wetland programs has led many Tribes to develop partnerships with organizations that can help them meet their wetlands protection goals. Partnerships may result in funding of particular projects, but in-kind assistance to Tribes is also a practical way for Tribes and their partners to meet mutually beneficial goals even though dollars do not change hands. Examples of in-kind assistance in these case studies include management assistance provided by the Natural Resources Conservation Service to the Port Graham/Nanwalek Watershed Council and technical expertise provided by professors at Northern New Mexico Community College and New Mexico Highlands University to the Taos Pueblo.

The sections below present a list of programs available through EPA and the U.S. Department of Agriculture (USDA) that support Tribal wetland programs. Other federal agencies that have programs that support Tribal wetland programs include the Department of Defense, the Department of Commerce/National Oceanic and Atmospheric Administration, the Department of Health and Human Services, the Department of the Interior/Bureau of Indian Affairs and Fish and Wildlife Service, and the Department of Transportation. A more complete overview is available from the publication, *Funding for Habitat Restoration Projects: A Compendium of Current Federal Programs with Fiscal Year 1996-1998 Funding Levels, A Citizens Guide* (see Appendix III for information). It offers a comprehensive survey of many of the programs discussed here as well as those available from the other federal agencies mentioned earlier. Additionally, the 1997 *Catalogue of Federal Domestic Assistance* is an excellent source of funding information (see Appendix III for information).

EPA Programs

Clean Water State Revolving Fund—Section 205 of the Clean Water Act authorized the Clean Water State Revolving Fund (SRF) to provide grants or “seed money” to all 50 states plus Puerto Rico to capitalize state loan funds. The states, in turn, make loans to communities, Tribes, individuals, and others for high priority water quality activities. As money is paid back into a revolving fund, new loans are made to other recipients that need help in maintaining the quality of their water. Currently, the program has more than \$20 billion in assets. The SRF allows states and Tribes the flexibility to use funding for projects that will address their highest-priority water quality needs. While traditionally used to build or improve wastewater treatment plants, loans are increasingly used for wetlands protection;

agricultural, rural, and urban runoff control; estuary improvement projects; wet weather flow control, including storm water and sewer overflows; and, alternative treatment technologies such as constructed treatment wetlands.

Many people believe they would rather have a grant. Most water quality experts are more familiar with grants and, consequently, many misconceptions persist. In fact, a loan may be a better deal. Why? First, no cash is required up front. Most grant programs require significant cost shares (as much as 40 percent or more). An SRF loan can cover 100 percent of project costs with no cash up front. Second, SRF loans provide significant cost savings over the life of the loan. A 0 percent SRF loan will cost approximately 50 percent less than the same project financed by a commercial loan at 7.5 percent. Additionally, a 0 percent SRF loan is equivalent to receiving a 50 percent grant (where the other 50 percent (match) is financed at market rate). Third, financing a project with an SRF loan means fewer federal requirements than any federal grant. In addition, the 51 SRF programs are experienced in helping applicants through the loan application process and providing a wide range of technical assistance.

Contact

U.S. Environmental Protection Agency
Clean Water State Revolving Fund Branch (4204)
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460
Phone: (202) 260-7359
Fax: (202) 260-1827
Internet: www.epa.gov/owm

Community/University Grants—This grant program is administered through the Office of Environmental Justice and is funded by media-specific statutes. The objective of the program is to increase environmental awareness, expand outreach, and provide education and training in socioeconomically disadvantaged communities. Historically, grants have involved partnerships between Tribal colleges and universities.

Contact

Environmental Justice Hotline: (800) 962-6215

Drinking Water State Revolving Fund—Authorized by the Safe Drinking Water Act Amendments of 1996, this program offers formula grants to assist public water systems in building drinking water infrastructure and protecting source water quality. Up to 10 percent of funds can be used for land acquisition and conservation easements in order to protect source waters.

Contact

Safe Drinking Water Hotline: (800) 426-4791

Environmental Education Grant Program—Section 6 of the National Environmental Education Act provides funding to support the design and implementation of environmental education programs that enhance critical thinking and problem solving skills to ensure informed, responsible decisions are made to protect the environment. Information may be obtained from the Regional Tribal Contact (Appendix I).

Environmental Justice Small Grants—This grant program, administered by the Office of Compliance Assurance, is funded by media-specific statutes. Its purpose is to provide assistance to grassroots, community-based groups to support projects related to environmental justice. Historically, grants have involved Tribal efforts to monitor and improve the health of Tribal waters.

Contact

Environmental Justice Hotline: (800) 962-6215

Indian Environmental General Assistance Program—This program, administered by the American Indian Environmental Office, provides funding for Tribes to build their capacity to plan, develop, and establish environmental protection programs. Information may be obtained from the Regional Tribal Contact (Appendix I).

Indian Set-Aside Program—Section 518 of the Clean Water Act authorized EPA to create a grants program to help pay for the planning, design, and construction of wastewater treatment systems to serve Indian Tribes and Alaska Native Villages. The Indian Set-Aside (ISA) Program is administered by EPA through a cooperative effort with the Indian Health Service. Applicants can obtain a copy of the guidance document, entitled “Guidelines and Requirements for Applying for Grants from the Indian Set-Aside Program” (April 1988), to determine how to apply for these grants. An Addendum to the guidance document was issued in March 1995. The guidance document can be obtained by contacting EPA’s Regional ISA Coordinator (Appendix I) for the area in which you are located. The guidance document can be obtained by contacting your Regional Tribal Coordinator (Appendix I).

Nonpoint Source Implementation—This program is authorized by Section 319 of the Clean Water Act. It is administered by the Office of Wetlands, Oceans, and Watersheds, and aims to assist states and Tribes in implementing EPA-approved nonpoint source programs. Programs funded in the past have included a variety of wetland, riparian, and watershed restoration activities.

Contact

U.S. Environmental Protection Agency
Nonpoint Source Control Branch (4503F)
Assessment and Watershed Protection Division
Office of Wetlands, Oceans, and Watersheds
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460
Phone: (202) 260-7100
Fax: (202) 260-7024

Partnership for Environmental Research: Water and Watersheds

Competition—This grant program is authorized by the Clean Water Act and administered through the Office of Research and Development and the National Science Foundation. It aims to support research that contributes to an improved understanding of the processes that govern the quality of water resources.

Contact

Barbara Levinson: (202) 564-6911

Sustainable Development Challenge Grant Program—This grant program is administered by the Office of Air and Radiation and is funded by media-specific statutes. It aims to address non-sustainable behavior through community involvement.

Contact

Pamela Hurt: (202) 260-2441

Water Pollution Control State and Interstate Program—This program is authorized under Section 106 of the Clean Water Act and is administered by the Office of Wastewater Management. It aims to establish and maintain adequate measures for prevention and control of surface and groundwater pollution.

Contact

U.S. Environmental Protection Agency
Office of Wastewater Management (4201)
Section 106 Tribal Coordinator
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460
Phone: (202) 260-5828
Fax: (202) 260-1040

Water Quality Management Planning—Section 106 of the Clean Water Act authorizes funding through formula grants to assist states and Tribes in water quality management planning. The program is administered by the Office of Wetlands, Oceans, and Watersheds.

Contact

U.S. Environmental Protection Agency
Assessment and Watershed Protection Division (4503F)
Office of Wetlands, Oceans, and Watersheds
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460
Phone: (202) 260-7040
Fax: (202) 260-7024

Wetland Program Development Grants—Section 104(b)(3) of the Clean Water Act provides funding to states, Tribes and local governments for wetland protection, management or restoration. The grants must be used for the development of new, or refinement of existing wetland programs, not for operational support. This grant program is administered through the Office of Wetlands, Oceans and Watersheds. Annual Grant Guidance for this program can be found on EPA's website at www.epa.gov/owow/wetlands/partner.html.

Contact

Shanna Draheim
U.S. Environmental Protection Agency
Wetlands Division (4502F)
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460
Phone: (202) 260-6218
Fax: (202) 260-8000

U.S. Department of Agriculture (USDA) Programs

Conservation of Private Grazing Land Initiative—The Conservation of Private Grazing Land (CPGL) Initiative will ensure that technical, educational, and related assistance is provided to those who own private grazing lands. It is not a cost-share program. This technical assistance will offer opportunities for better grazing land management, protecting soil from erosive wind and water, using more energy-efficient ways to produce food and fiber, conserving water, providing habitat for wildlife, sustaining forage and grazing plants, using plants to sequester greenhouse gases and increase soil organic matter, and using grazing lands as a source of biomass energy and raw materials for industrial products. For more information about CPGL, contact USDA's Natural Resources Conservation Service (NRCS).

Conservation Technical Assistance—The purpose of Conservation Technical Assistance (CTA) is to assist land users, communities, units of state, Tribal, and local government, and other federal agencies in planning and implementing conservation systems. The purpose of the conservation systems is to reduce erosion,

improve soil and water quality, improve and conserve wetlands, enhance fish and wildlife habitat, improve air quality, improve pasture and range condition, reduce upstream flooding, and improve woodlands.

Contact

U.S. Department of Agriculture
Deputy Chief for Natural Resources Conservation Programs
Natural Resources Conservation Service
P.O. Box 2890
Washington, DC 20013
Phone: (202) 720-4527

Environmental Quality Incentives Program—The Environmental Quality Incentives Program (EQIP) provides technical, educational, and financial assistance to eligible farmers and ranchers to address soil, water, and related natural resource concerns on their lands in an environmentally beneficial and cost-effective manner. The program provides assistance to farmers and ranchers in complying with federal, state, and Tribal environmental laws, and encourages environmental enhancement. The program is funded through the Commodity Credit Corporation. The purposes of the program are achieved through the implementation of a conservation plan that includes structural, vegetative, and land management practices on eligible land. Five- to ten-year contracts are made with eligible producers. Cost-share payments may be made to implement one or more eligible structural or vegetative practices, such as animal waste management facilities, terraces, filter strips, tree planting, and permanent wildlife habitat. Incentive payments can be made to implement one or more land management practices, such as nutrient management, pest management, and grazing land management. Of the funding available for the program, 50 percent will be targeted at natural resource concerns relating to livestock production. The program is carried out primarily in priority areas that may be watersheds, regions, or multi-state areas, and for significant statewide natural resource concerns that are outside of geographic priority areas. For more information about EQIP, contact your local NRCS office, or:

U.S. Department of Agriculture
Deputy Chief for Natural Resources Conservation Programs
Natural Resources Conservation Service
P.O. Box 2890
Washington, DC 20013
Phone: (202) 720-1845

Rise to the Future: Fish US—This program is administered by the U.S. Forest Service and offers grants and assessment and implementation assistance to protect and restore national forest fish habitats and enhance opportunities for use and enjoyment of national forest fisheries.

Contact

Fisheries Program Leader, Mark Hudy: (202) 205-1205

Soil Survey Programs—The National Cooperative Soil Survey (NCSS) program is a partnership led by NRCS, state agricultural experiment stations, and state, Tribal, and local units of government that provide soil survey information necessary for understanding, managing, conserving, and sustaining the nation's limited soil resources. Soil surveys provide an orderly, on-the-ground, scientific inventory of soil resources that includes maps showing the locations and extent of soils, data about the physical and chemical properties of those soils, and information derived from that data about potentialities and problems of use on each kind of soil in sufficient detail to meet all reasonable needs for farmers, agricultural technicians, commu-

nity planners, engineers, and scientists in planning and transferring the findings of research and experience to specific land areas. Soil surveys provide the basic information needed to manage soil sustainably. They also provide information needed to protect water quality, wetlands, and wildlife habitat. Soil surveys are the basis for predicting the behavior of a soil under alternative uses, its potential erosion hazard, potential for ground water contamination, and suitability and productivity for cultivated crops, trees, and grasses. Soil surveys are important to planners, engineers, zoning commissions, tax commissioners, homeowners, and developers, as well as agricultural producers. For more information about NCSS, contact your local NRCS office.

Stewardship Incentives Program—The Stewardship Incentives Program (SIP) provides technical and financial assistance to encourage non-industrial private forest landowners to keep their lands and natural resources productive and healthy. Qualifying land includes rural lands with existing tree cover, or land suitable for growing trees, that is owned by a private individual, group, association, corporation, Indian Tribe, or other legal private entity. Eligible landowners must have an approved Forest Stewardship Plan and own 1,000 or less acres of qualifying land. Authorizations may be obtained for exceptions of up to 5,000 acres. For more information about SIP, contact your state forestry office.

Watersheds Operations—Small Watershed Program and Flood Prevention Program (WF 08 or FP 03)—The Small Watershed Program works through local government sponsors and helps participants solve natural resource and related economic problems on a watershed basis. Projects include watershed protection, flood prevention, erosion and sediment control, water supply, water quality, fish and wildlife habitat enhancement, wetlands creation and restoration, and public recreation in watersheds of 250,000 or fewer acres. Both technical and financial assistance are available. For more information, contact your local NRCS office, or:

Contact

U.S. Department of Agriculture
Deputy Chief for Natural Resources Conservation Programs
Natural Resources Conservation Service
P.O. Box 2890
Washington, DC 20013
Phone: (202) 720-4527

Watershed Surveys and Planning—The Watershed and Flood Prevention Act, P.L. 83-566, August 4, 1954, (16 U.S.C. 1001-1008) authorized this program. Prior to FY96, small watershed planning activities and the cooperative river basin surveys and investigations authorized by Section 6 of the Act were operated as separate programs. The 1996 appropriations act combined the activities into a single program, entitled the Watershed Surveys and Planning program. Activities under both programs are continuing under this authority. The purpose of the program is to assist federal, state, and local agencies, and Tribal governments to protect watersheds from damage caused by erosion, floodwater, and sediment, and to conserve and develop water and land resources. Resource concerns addressed by the program include water quality, opportunities for water conservation, wetland and water storage capacity, agricultural drought problems, rural development, municipal and industrial water needs, upstream flood damages, and water needs for fish, wildlife, and forest-based industries. Types of surveys and plans include watershed plans, river basin surveys and studies, flood hazard analyses, and flood plain management assistance. The focus of these plans is to identify solutions that use land treatment and nonstructural measures to solve resource problems. For more information, contact your local NRCS office.

Wetlands Reserve Program—The Wetlands Reserve Program (WRP) is a voluntary program to restore wetlands. Participating landowners can establish conservation easements of either permanent or 30-year duration, or can enter into restoration cost-share agreements where no easement is involved. In exchange for establishing a permanent easement, the landowner receives payment up to the agricultural value of the land and 100 percent of the restoration costs for restoring the wetlands. The 30-year easement payment is 75 percent of what would be provided for a permanent easement on the same site and 75 percent of the restoration cost. The voluntary agreements are for a minimum 10-year duration and provide for 75 percent of the cost of restoring the involved wetlands. Easements and restoration cost-share agreements establish wetlands protection and restoration as the primary land use for the duration of the easement or agreement. In all instances, landowners continue to control access to their land. For more information about WRP, contact your local NRCS office, or:

Contact

U.S. Department of Agriculture
Watersheds and Wetlands Division
Natural Resources Conservation Service
P.O. Box 2890
Washington, DC 20013
Phone: (202) 690-0848

Wildlife Habitat Incentives Program—The Wildlife Habitat Incentives Program (WHIP) provides financial incentives to develop habitat for fish and wildlife on private lands. Participants agree to implement a wildlife habitat development plan and USDA agrees to provide cost-share assistance for the initial implementation of wildlife habitat development practices. USDA and program participants enter into a cost-share agreement for wildlife habitat development. This agreement generally lasts a minimum of 10 years from the date the contract is signed. For more information about WHIP, contact your local NRCS office, or:

Contact

U.S. Department of Agriculture
Deputy Chief for Natural Resources Conservation Programs
Natural Resources Conservation Service
P.O. Box 2890
Washington, DC 20013
Phone: (202) 720-1845

Information on Relevant Publications and Outreach Materials

Funding

Catalog of Federal Domestic Assistance. June 1998. General Services Administration, Washington, DC. A government-wide compendium, updated twice yearly, of all 1,381 federal programs, projects, services, and activities that provide assistance or benefits to the American public. These programs provide grants, loans, loan guarantees, services, information, scholarships, training, insurance, etc. Available in multiple formats. For a copy, contact: Federal Domestic Assistance Catalog Staff (MVS), General Services Administration, 300 7th Street, SW, Suite 101, Washington, DC 20407. Phone: (202) 708-5126. Available on the Internet: <http://aspe.os.dhhs.gov/cfda/index.htm>, or www.cfda.gov.

Catalog of Federal Funding Sources for Watershed Protection (Second Edition), EPA 841-B-99-003. February 2000. The Catalog provides information to watershed practitioners on Federal funding programs that might be available to fund different aspects of watershed protection and local-level watershed projects. The document contains one-page fact sheets for each of the 69 funding sources (grants and loans) that provide information on the type of projects funded and eligibility requirements. Contacts and Internet sites are also provided for each of the programs so the reader may obtain further information. This Second Edition of the Catalog updates EPA's *Catalog of Federal Funding Sources for Watershed Protection*, printed in 1997 (EPA 841-B-97-008). For a copy, contact NSCEP (see page III-4).

Funding for Habitat Restoration Projects: A Compendium of Current Federal Programs with Fiscal Year 1996-1998 Funding Levels, A Citizens Guide. 1998. Restore America's Estuaries (RAE), Washington, DC. For a copy, contact: RAE, 1200 New York Avenue, NW, Suite 400, Washington, DC 20005. Phone: (202) 289-2380, Fax: (202) 842-4932. Available on the Internet: www.estuaries.org.

Financing State Wetland Programs. 1990. U.S. Environmental Protection Agency, Office of Wetlands Protection. For a copy, call the EPA Wetlands Information Hotline at 1-800-832-7828.

Performance Partnership Grants for State and Tribal Environmental Programs: Revised Interim Guidance. 1996. U.S. Environmental Protection Agency. For a copy, call the EPA Wetlands Information Hotline at 1-800-832-7828.

General

Top 10 Watershed Lessons Learned. 1997. U.S. EPA, Office of Wetlands, Oceans, and Watersheds, Washington, DC. EPA 840-F-97-001. For a copy, contact NSCEP (see page III-4).

Exploring Wetlands Stewardship: A Reference Guide for Assisting Washington Landowners. 1996. Washington State Department of Ecology, Olympia, WA. Publication No. 96-120. For a copy, contact Washington State Department of Ecology, Publications Office, P.O. Box 47600, Olympia, WA 98504-7600. Phone: (360) 407-7472. Available on the Internet: www.wa.gov/ecology.

Handbook for Wetlands Conservation and Sustainability, Second Edition. 1998. Izaak Walton League of America. For a copy, contact Izaak Walton League of America, Save Our Streams Program, 707 Conservation Lane, Gaithersburg, MD 20878-2983. Phone: (301) 548-0150, Fax: (301) 548-0146. Email: sos@iwla.org. Internet: www.iwla.org.

Office of Wetlands, Oceans, and Watersheds 1998 Publication List. 1998. U.S. EPA, Office of Wetlands, Oceans, and Watersheds, Washington, DC. EPA 840-B-98-001. For a copy, contact NSCEP (see page III-4).

Wetlands Information Resource Guide. 1994. U.S. Environmental Protection Agency, Region 2, Water Management Division, Marine and Wetlands Protection Branch. EPA 902-K-94-001. For a copy, call the EPA Wetlands Information Hotline at 1-800-832-7828.

Monitoring, Assessment, and Technical Documents

Tribal Environmental and Natural Resource Assistance Handbook. 1999. Product of the White House Domestic Policy Council, Working Group on American Indians and Alaska Natives, Subgroup on Environment and Natural Resources and the Native American Fish & Wildlife Society. Available on the Internet at www.epa.gov/indian/tribhand.htm.

Federal Coastal Wetland Mapping Programs. 1990. U.S. Department of the Interior, Fish and Wildlife Service, Washington, DC. Biological Report 90 (18). For a copy, call the EPA Wetlands Information Hotline at 1-800-832-7828.

A Handbook of Constructed Wetlands: A Guide to Creating Wetlands for Agricultural Wastewater, Domestic Wastewater, Coal Mine Drainage and Stormwater in the Mid-Atlantic Region. 1995. U.S. Department of Agriculture, Natural Resources Conservation Service and the U.S. EPA, in cooperation with the Pennsylvania Department of Environmental Resources. For a copy, call the EPA Wetlands Information Hotline at 1-800-832-7828.

Monitoring Wetlands: A Manual for Training Volunteers. 1996. Adopt a Beach, in cooperation with U.S. EPA Region 10 and King County Surface Water Management Division. For a copy, contact Adopt a Beach, P.O. Box 21486, Seattle, WA 98111-3486.

Protecting Natural Wetlands: A Guide to Stormwater Best Management Practices. 1996. U.S. EPA, Office of Wetlands, Oceans, and Watersheds, Washington, DC. EPA 843-B-96-001. For a copy, call the EPA Wetlands Information Hotline at 1-800-832-7828.

The Volunteer Monitor, Volume 10, No. 1, Spring 1998. For a copy, call the EPA Wetlands Information Hotline at 1-800-832-7828. This is the National Newsletter of Volunteer Water Quality Monitoring. The specified issue is solely dedicated to wetlands monitoring. Previous issues have also dealt with wetlands, and are available from The Volunteer Monitor, 1318 Masonic Avenue, San Francisco, CA 94117. Fax: (415) 255-0199. Back issues also available on the Internet at www.epa.gov/owow/volunteer/vm_index.html.

The Volunteer Monitor's Guide to Quality Assurance Project Plans. 1996. U.S. EPA, Office of Wetlands, Oceans, and Watersheds, Washington, DC. EPA 841-B-96-003. For a copy, contact NSCEP (see page III-4).

Volunteer Stream Monitoring: A Methods Manual. 1997. U.S. EPA, Office of Wetlands, Oceans, and Watersheds, Washington, DC. EPA841-B-97-003. For a copy, contact NSCEP (see page III-4).

Wetland Bioassessment Fact Sheets. 1998. U.S. EPA, Office of Wetlands, Oceans, and Watersheds, Washington, DC. EPA 843-F-98-001. For a copy, call the EPA Wetlands Information Hotline at 1-800-832-7828.

Outreach

Adopt Your Watershed! 1997. U.S. EPA, Office of Wetlands, Oceans, and Watersheds, Washington, DC. EPA-800-F-97-001. For a copy, contact NSCEP (see page III-4).

America's Private Land: A Geography of Hope. 1996. U.S. Department of Agriculture, Natural Resources Conservation Service. For a copy, call the EPA Wetlands Information Hotline at 1-800-832-7828.

America's Wetlands: Our Vital Link Between Land and Water. 1995. U.S. EPA, Office of Wetlands, Oceans, and Watersheds, Washington, DC. EPA843-K-95-001. For a copy, call the EPA Wetlands Information Hotline at 1-800-832-7828.

Oases for Wildlife: Small and Farmed Wetlands. 1996. National Audubon Society. For a copy, call the EPA Wetlands Information Hotline at 1-800-832-7828.

Protecting Floodplain Resources: A Guidebook for Communities. 1996. Federal Interagency Floodplain Management Task Force. For a copy, call the EPA Wetlands Information Hotline at 1-800-832-7828.

Wetlands and Highways: A Natural Approach. 1994. U.S. Department of Transportation, Federal Highway Administration. Publication No. FHWA-PD-94-004. For a copy, call the EPA Wetlands Information Hotline at 1-800-832-7828.

Wetlands Reading List: Pre-Kindergarten through Grade 12. 1994. U.S. Environmental Protection Agency, Office of Wetlands, Oceans, and Watersheds, Washington, DC. EPA 843-B-94-002. For a copy, call the EPA Wetlands Information Hotline at 1-800-832-7828.

Working With Wetlands. 1994. U.S. Department of Agriculture, Soil Conservation Service, Washington, DC. Agriculture Information Technical Bulletin Number 672. For a copy, call the EPA Wetlands Information Hotline at 1-800-832-7828.

Policy/Guidance

Water Quality Criteria and Standards Plan—Priorities for the Future. June 1998, Interim Final Draft. U.S. Environmental Protection Agency, Office of Water, Washington, DC. EPA 822-R-98-003. For a copy, contact NSCEP (see page III-4).

Water Quality Standards for Wetlands. 1990. U.S. EPA, Office of Wetlands, Oceans, and Watersheds, Washington, DC. EPA 440/S-90-011. For a copy, call the EPA Wetlands Information Hotline at 1-800-832-7828.

Wetlands and 401 Certification: Opportunities for States and Eligible Indian Tribes. 1989. U.S. EPA, Office of Wetlands, Oceans, and Watersheds, Washington, DC.

Web Sites of Interest

Bureau of Indian Affairs: www.doi.gov/bureau-indian-affairs.html

Code of Federal Regulations: www.access.gpo.gov/nara/cfr/cfr-table-search.html

Envirofacts—EPA Grants Information and Database Query:
www.epa.gov/enviro/html/gics/index.html

Environmental Law Institute: www.eli.org

EPA American Indian Environmental Office: www.epa.gov/indian

EPA Office of Grants and Debarment: www.epa.gov/ogd/index.htm

EPA Office of Wastewater Management: www.epa.gov/owm/indian

EPA Wetlands Division: www.epa.gov/owow/wetlands

Federal Register: www.access.gpo.gov/su_docs/aces/aces140.html

National Environmental Performance Partnership System (NEPPS):
www.epa.gov/regional/regional.htm

Office of Management and Budget (OMB) Grant Management Circulars:
www.whitehouse.gov/WH/EOP/OMB/html/miscdoc/status.html

Guide to OMB's Grants Management Circulars and Related Documents and Fax-on-Demand Information: www.whitehouse.gov/WH/EOP/OMB/Grants

Society of Wetland Scientists: www.sws.org

The Nature Conservancy: www.tnc.org

U.S. Army Corps of Engineers Waterways Experiment Station:
www.wes.army.mil/el/wetlands/wetlands.html

U.S. Department of Agriculture, Natural Resources Conservation Service:
www.nrcs.usda.gov

U.S. Fish and Wildlife Service: www.fws.gov

Wetland Science Institute: www.pwrc.usgs.gov/wli

Many more wetland links available at:
www.epa.gov/OWOW/wetlands/partners/links.html

EPA's Wetlands Information Hotline—The EPA Wetlands Information Hotline is a contractor-operated, toll-free telephone service and e-mail correspondent, which answers requests for information about wetlands regulation, legislation, and policy pursuant to Section 404 of the Clean Water Act, wetlands values and functions, and wetlands agricultural issues. Documents on various wetlands topics are available free of charge from the Hotline. Call the Hotline For a copy the EPA Wetlands Information Hotline Publication List, containing more than 125 publications. The Hotline frequently adds new documents to its inventory, including new regulatory guidance, technical documents, and other specialized wetlands publications.

Wetlands Information Hotline
SC&A, Inc.
1355 Beverly Road, Suite 250
McLean, VA 22101
Phone: (800) 832-7828
Fax: (703) 525-0201
E-mail: wetlands-hotline@epamail.epa.gov
Internet: www.epa.gov/OWOW/wetlands/wetline.html

National Service Center for Environmental Publications—The EPA's National Service Center for Environmental Publications (NSCEP) offers more than 5,000 EPA publications available in hard copy and multimedia product, free of charge. Check out their web site or call to order a catalog.

U.S. EPA/NSCEP
P.O. Box 42419
Cincinnati, OH, USA 45242-2419
Phone: (800) 490-9198
Fax: (513) 489-8695
Internet: www.epa.gov/ncepi

Draft Core Essential Elements of a State or Tribal Wetlands Program

EPA's Wetland Program Development Grants have assisted states and Tribes in developing or refining their wetland programs since 1990. Under the Wetland Program Development Grants, funds can only support development or enhancement of wetland programs; funds cannot support operation or implementation of wetland programs. EPA's Wetlands Division recognizes that not being able to fund the operation of state and Tribal programs has been problematic to states and Tribes.

To address this problem, EPA's Wetlands Division is likely to implement an initiative in FY 2001 that will provide a limited exception to the normal competitive process for wetland grants. In FY 2001, states and Tribes may be eligible for some operational support of their wetlands program through their Performance Partnership Grants (PPG). To be eligible for this funding, states and Tribes must have in place several core essential elements for a comprehensive, effective wetland program.

This FY01 initiative is intended to provide those states and Tribes that have worked hard to develop and establish comprehensive, effective, environmentally sound programs that protect, manage, and restore their wetland resources with funding to partially implement those programs. The standard is set high, but it is attainable for states and Tribes with comprehensive wetland programs.

If a state or Tribe feels that they meet the identified core essential elements, they should provide documentation to the appropriate EPA Regional Office (Wetland Coordinator). If they demonstrate that their wetland program meets all the final core elements, and EPA (Region and Headquarters) agrees, the state or Tribe is eligible to receive a determined level of base funding to support the operation of its wetlands program.

A state or Tribe's wetland program must meet **ALL** of the following core essential elements to qualify for operational support funding through a Performance Partnership Grant (PPG).

State or Tribal "Vision"

The state or Tribe shall have completed an analysis or evaluation of the current status of its wetland and wetland-related program(s). As part of this process, the state or Tribe should develop a strategy for contributing to the national goal of no net loss/net gain of wetlands. This evaluation could be accomplished in a number of ways such as completion of a State/Tribal Wetland Conservation Plan, the development of a Wetland Strategic Plan or other similar effort or initiative.

Coordination

In many states, wetland programs and/or wetland-related programs are administered within several state agencies including the traditional water quality agencies, natural resource agencies, fish and wildlife agencies, agriculture agencies,

state planning offices, parks and recreation agencies, departments of transportation, natural heritage programs, and others. Adding all these programs together, the state's program may contain all the identified core elements to qualify for operational support funding under this funding option. However, if the various agencies do not work together, the state may not have a functioning comprehensive program.

To qualify for funding under this option, the state shall have a demonstrably effective mechanism to assure that all the various agencies with wetland or wetland-related programs function together as a whole, comprehensive, coordinated program. In addition, if only one of the state agencies is designated as the entity to receive a PPG, that agency shall have the ability, and the willingness, to pass PPG funds on to the other state agencies that administer wetland programs.

[NOTE: If appropriate, this provision also applies to Tribal governments. We anticipate that most Tribal governments are not large enough for this issue to be as much concern as for state government.]

Watershed (Ecosystem) Protection, Management and Restoration Approach

The Watershed (Ecosystem) Protection Approach implements EPA, state, Tribal, and local programs in a holistic, integrated manner to address natural resource protection. The watershed approach is a coordinating framework for environmental management that focuses public and private sector efforts to address the highest priority problems within hydrologically defined geographic areas, taking into consideration both ground and surface water flow. This approach recognizes wetlands as components of larger hydrologic units that include surface and ground water resources. In addition, these hydrologic units are part of larger aquatic and terrestrial systems.

The Wetlands Program supports watershed approaches that work to integrate wetlands into a Watershed (Ecosystem) Approach to protect resources, prevent pollution, achieve sustainable environmental goals, and meet other objectives important to the community. Although watershed approaches may vary in terms of specific objectives, priorities, elements, timing, and resources, they should be based on the following guiding principles taking from EPA's *Watershed Approach Framework* (EPA 840-S-96-001, June 1996).

Partnerships. Those people most affected by management decisions are involved throughout and help shape key decisions. This ensures that environmental objectives are well integrated with those for economic stability and social/cultural goals. It also provides that people who depend upon the natural resources within watersheds are well informed of and participate in planning and implementation activities.

Geographic Focus. Activities are directed within specific, defined geographic areas, typically the areas that drain to surface water bodies or overlay ground waters or a combination of both.

Sound Management Techniques based on Strong Science and Data. Collectively, watershed stakeholders employ sound scientific data, tools, and techniques in an iterative decision making process which includes:

- Assessment and characterization of the natural resources and the communities that depend upon them
- Goal setting and identification of environmental objectives based on the condition of vulnerability of resources and the needs of the aquatic ecosystem and the people within the community

- Identification of priority problems
- Development of specific management options and action plans
- Implementation of such action plans
- Evaluation of effectiveness and revision of plans, as needed

Because stakeholders work together, actions are based upon shared information and a common understanding of the roles, priorities, and responsibilities of all involved parties. Concerns about environmental justice are addressed and, when possible, pollution prevention techniques are adopted. The iterative nature of the watershed approach encourages partners to set goals and targets and to make maximum progress based on available information while continuing analysis and verification in areas where information is incomplete.

States and Tribes shall consider and use, as appropriate, the following list of process actions for implementing a watershed (ecosystem) approach. These actions are from *Practical Steps to Implement an Ecosystem Approach in Great Lakes Management* (USEPA/Environment Canada/IJC/Wayne State University, 1995).

- Adopt the watershed/bioregion as the primary unit for management
- Develop a partnership agreement or other mechanism for cooperative multi-stakeholder management and ensure commitment of top leaders
- Identify and empower an “umbrella” watershed organization for coordination
- Develop a long-term vision, goals and quantitative indicators for the “desired future state” of the ecosystem that can be understood by all partners
- Reach agreement on a set of principles to guide multi-stakeholder, decision-making process
- Ensure all watershed planning processes acknowledge the vision, goals, indicators, and principles
- Establish a geographic information system (GIS) and decision support systems capability within watershed organizations
- Compile data and information for input into GIS and ensure a strong commitment to research and monitoring to understand the ecosystem and fill knowledge and data gaps
- Set priorities that target major causes of ecosystem health risks, evaluate remedial and preventive options, implement preferred actions, and monitor effectiveness in an iterative fashion
- Ensure full costs and benefits are assessed for each project in the watershed
- Consolidate capital budgets and pool resources to move high priority projects forward
- Create the framework and conditions for private sector involvement and capitalize on its enterprise, initiative, creativity, and capability for investment
- Use market forces and economic incentives to achieve ecosystem objectives
- Commit public, biennial, state-of-the-environment and economy reporting to measure and celebrate ecosystem progress, and to measure stakeholder satisfaction

- Ensure a strong commitment to broad-based, ecosystem education and human resource development throughout the process

To qualify under this special grant provision the state or Tribe shall participate in and encourage watershed projects that are comprehensive and that adequately address wetlands management issues within the watershed. Projects must have a substantial wetlands component; should address other water resource issues; should involve various levels of government and stakeholders (federal, state, Tribal and local government, interest groups, and landowners); and should consider a multitude of possible environmental protection techniques, programs or approaches to identify and address the problems. These projects should focus on comprehensive solutions that consider environmental protection and economic development needs. Public involvement is a key component in any watershed project.

Regulatory (Permit) Program

Geographic scope. The state or Tribe shall have a comprehensive wetland regulatory (permit) program that is similar to the Clean Water Action section 404 program. The program must be statewide (reservation-wide) and not just within a limited area within the total jurisdiction of the state or Tribe. For example, a regulatory program just within the coastal (tidal) zone or that exempts large areas from regulation would not qualify.

Delineation. The state or Tribe's program shall be consistent/equivalent with or more stringent than the federal program. The state/Tribe must use a delineation method that is equivalent to the federal methodology. The state or Tribal scope of geographic jurisdiction must be at least that of the federal program. Use of the state or Tribal delineation methodology should arrive at the same "line" as the federal delineation method.

Activities regulated. The state or Tribe's program shall regulate at least the same activities that the federal program regulates—discharges of dredged or fill material into waters of the United States, including wetlands. A number of activities may result in a discharge of dredged or fill material into waters of the U.S. These can include, but are not limited to, industrial, recreational and commercial construction; building of intake and outfall structures, utility lines, or impoundments; building of causeways or roads, dams, dikes, groins, sea walls, breakwaters, levees, or artificial islands; mining; disposal of dredged material; beach nourishment; and ditching or mechanized land clearing activities. In addition to the activities regulated under the federal program, the state or Tribe could choose to regulate wetland impacts caused by activities other than filling.

A state or Tribal program that regulates only a subset of the activities regulated by the federal program will not qualify for this funding option.

404(b)(1) Guidelines. The state or Tribe's program shall use environmental review criteria that are in compliance with the 404(b)(1) Guidelines. The premise of the Guidelines is that no discharge of dredged or fill material will be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's waters would be significantly degraded. The Guidelines establish a sequential permit review process in which the applicant must first demonstrate that impacts to wetlands and other aquatic resources have been avoided to the maximum extent practicable. Next, the Guidelines require the applicant to minimize unavoidable impacts to wetlands and other aquatic resources. Finally, the applicant must provide compensation to the extent appropriate and practicable for any remaining unavoidable impacts. In addition to these sequential requirements, the Guidelines also prohibit projects which would violate other applicable laws such as

state or Tribal water quality standards, toxic effluent standards, or which would result in jeopardy to threatened or endangered species or adverse modification to critical habitat. Finally, no discharge can be permitted if it would cause or contribute to significant degradation of the waters of the United States.

While it is unlikely that any state or Tribe will adopt the Guidelines word-for-word, the state or Tribe shall have environmental review criteria that contain the basic principles included in the Guidelines.

Enforcement. The state or Tribe shall have a demonstrably effective enforcement program that serves to deter violations of the state or Tribal program while also having direct punitive value when there is a violation. The enforcement program must allow the state or Tribe to conduct compliance or oversight of activities that impact wetlands and pursue corrective actions through either administrative or penalty processes. The program shall have the authority to assess both civil and criminal penalties.

[NOTE: A state or Tribe does not have to have an assumed section 404 program to fulfill the components identified above.]

Monitoring and Assessment Approach

States and Tribes shall be working to develop comprehensive programs to monitor and assess the biological, physical, and chemical conditions of their wetlands or to integrate wetlands into existing surface water monitoring programs. While the states, Tribes, and EPA are working to achieve the short-term goal of “no net loss” of wetlands, wetland programs also need to focus on the longer-term goal of increasing the quantity and quality of the Nation’s wetlands.

Inventory. States and Tribes shall develop and manage an inventory of wetland acreage within their boundaries. This inventory shall follow standards set by the Federal Geographic Data Committee to allow for comparison of data. This inventory shall be maintained and updated on a regular basis.

Classification system. States and Tribes shall adopt a wetland classification system that is based on landscape position, hydrology, and vegetation. States and Tribes can adopt existing classification system, such as the HGM (hydrogeomorphic) classification system or the Cowardin classification system, or can develop their own based on similar principles.

Permit and Restoration Tracking System. State and Tribal programs shall manage an up-to-date system to track wetlands information, including Clean Water Act section 401 water quality certifications, wetlands permits, and other relevant information. The purpose of this tracking system is to know the location of wetland losses. Such a georeferenced permit tracking system can be as simple as a map with numbered pins referenced to files in filing cabinets or as complex as a computer database tied to a geographic information system. At a minimum, the system shall include information on the location of the impacts to a wetland(s), the size of the impact, a map of the site, and a description of the impact. Summaries of permit activities shall be included in the 305(b) Reports. The tracking system shall be maintained and updated on a regular basis.

In addition to tracking permit actions, the state or Tribal programs shall manage an up-to-date system to track wetland restoration activities on state or Tribal and private lands within their boundaries. Summaries of restoration activities shall be included in the 305(b) Reports. Individual restoration projects should be reported into a national restoration database.

[Note: For projects funded by the federal government, information can be obtained by contacting relevant agencies such as county or state NRCS offices, regional FWS offices, BLM offices, and others.]

Biological Monitoring and Assessment Programs. While states and Tribes have not yet developed and implemented biological monitoring and assessment programs for wetlands, they should be working to develop these programs. States or Tribes do not need to have an effective monitoring program in place to initially qualify for operational support funding through a PPG. However, they must currently be developing a wetland bio-monitoring program and EPA must determine that they are making significant progress, each year following initial qualification, toward such a program. After five years, a state or Tribe shall at least monitor the majority of wetlands in targeted, priority wetlands and should be making progress towards monitoring wetlands throughout their jurisdiction. Also in five years, a state or Tribe shall have calibrated and tested bioassessment methods for at least one wetland type (e.g., depressional, riverine) and shall be making significant progress towards developing or calibrating existing methods for use in other types of wetlands in their jurisdiction. If after five years, states or Tribes no longer qualify for this funding option until EPA agrees that the monitoring program is “operational.” Volunteer monitoring programs can supplement state bioassessment programs, but should never replace them. Volunteer monitoring programs are encouraged, but will not be considered for this requirement.

Recommended components of a comprehensive bioassessment program include:

- Identified study area(s) boundaries. The study areas could be either an entire state/reservation; a set of key watersheds, ecoregions, hydrogeomorphic classes; or other geographically targeted areas. Pilot studies in key watersheds would be good links to watershed protection projects.
- Classification of wetlands to account for the variability in biological communities in different wetland types. Remember that, in this case, the endpoint is not a classification method. The purpose of classifying wetlands is to better understand how biological communities are degraded by human activities. Traditional classification systems (e.g., HGM, Cowardin) may be good starting points, but the wetland types should ultimately be based on the biological communities. This is important for conducting bioassessments because we do not want to compare biological communities that are naturally different.
- Identification of a set of minimally impaired reference wetlands for the study area. Permanent sampling plots should be established in reference wetlands. In addition to minimally impaired sites, a set of degraded wetlands should be identified to determine the range of potential conditions. Reference wetlands should be sampled at least once a year.
- A random sample design or a targeted sample design based on the monitoring program’s purpose. Targeted sampling is recommended while developing the assessment protocols because it is necessary to have sites across a gradient of conditions. When implementing a program to monitor biological conditions of wetlands, a random sampling design is recommended.
- The state or Tribe should identify at least two potential indicator assemblages, which could include assemblages such as vascular plants, algae, birds, amphibians, fish, or macroinvertebrates.
- The state or Tribe should develop and test biological monitoring and assessment protocols for at least two assemblages. The assessments should

be based on an index of biological integrity, multivariate statistics, or some combination. During the development phase, chemical and physical measurements of wetlands (e.g., hydrology, pH, water chemistry) help refine the classification scheme and identify types of stressors degrading biological communities. During the implementation phase, bioassessments provide a way to screen wetlands for signs of degradation. If a wetland shows signs of degradation, then wetland professionals can return and then conduct additional tests and measurements to determine the extent of the problem and how to fix it.

- Ultimately, the state or Tribe can conduct bioassessments and compile a database of results to test and refine the sampling protocols and biological indicators. This database can also provide information from which to prioritize restoration, evaluate the success of mitigation and restoration projects, protect high quality or outstanding waters, and derive narrative and numeric biological criteria for water quality standards. In addition, states and Tribes should then define and/or determine the attainment of designated uses in their wetlands for inclusion in the Clean Water Act section 305(b) reports.

Section 305(b) Reporting. Tribes are encouraged to submit comprehensive sections on wetlands in their Clean Water Act section 305(b) reports. The content of the wetland section of the report should respond to the content and format directions specified in *Guidelines for Preparation of the Comprehensive State Water Quality Assessments (305(b)) Reports and Electronic Updates: Report Contents* (EPA-841-B-97-002A) and *Guidelines for Preparation of the Comprehensive State Water Quality Assessments (305(b)) Reports and Electronic Updates: Supplement* (EPA-841-B-97-002B). In general, a state must assess the effectiveness of its wetland program(s) and must report on the current status (quality and quantity) of wetlands within the state.

Water Quality Standards

Inclusion of wetlands in water quality standards is necessary to ensure that, under provisions of the Clean Water Act, wetlands are afforded the same level of protection as other waters. Water quality standards provide a programmatic basis for a variety of water quality management activities including, but not limited to, monitoring and assessment under section 305(b), permitting under section 402 and section 404, water quality certification under section 401, and control of nonpoint source pollution under section 319. Wetlands should be incorporated into existing water quality standards and criteria should be refined, when appropriate (e.g., dissolved oxygen, pH, biological criteria), to reflect conditions found in wetlands. To qualify for funding, the state or Tribal wetland program shall contain the following essential elements for water quality standards programs:

Definition of state or Tribal waters. The state or Tribe shall explicitly incorporate the term “wetlands” into their definition of state or Tribal waters. This definition should be included in regulations for both water quality standards and the Clean Water Act section 401 water quality certification program.

Designated uses. The state or Tribe shall establish and assign designated uses to their wetlands (e.g., aquatic life use support).

Refined criteria. The state or Tribe shall refine criteria or water quality standards, where appropriate, to reflect conditions found in wetlands (e.g., pH, dissolved oxygen, biological criteria).

Biological criteria. The state or Tribe shall establish or be in the process of developing biological assessment methods and biological criteria (narrative and numeric) for wetlands.

Anti-degradation policy. The state or Tribe shall specifically incorporate wetlands into their anti-degradation policy.

Clean Water Act Section 401 Water Quality Certification Program

To qualify for funding, the state or Tribe's wetland program shall contain the following essential elements of a Clean Water Act section 401 water quality certification program:

- The state or Tribe shall actively implement a section 401 water quality certification program by actively reviewing federal section 404 and other appropriate federal permits.
- The state or Tribe shall develop or modify their regulations and guidelines for section 401 certification and water quality standards to clarify their programs, codify their decision process, and incorporate special wetlands considerations into the more traditional water quality approaches.
- The state or Tribe shall have a system to track their section 401 water quality certification actions. This system should be maintained and updated on a regular basis.

Wetlands Restoration Program

The state or Tribe shall have a program which encourages and supports wetland restoration and enhancement. Mitigation required under a regulatory program does not fulfill this requirement. A state or Tribal wetland restoration/enhancement program may include:

- Direct state or Tribal funding of wetland restoration projects
- An active program of wetland restoration on state or Tribal owned land
- Provisions for technical assistance to landowners or organizations carrying out wetland restoration projects
- Active research regarding effective wetland restoration projects and methods to measure the effectiveness of restoration activities

Partnerships

State and Tribal governments cannot comprehensively protect, manage, and restore their wetlands by themselves. To qualify for funding:

- States and Tribes shall demonstrate ongoing partnerships with federal, state, Tribal, local, and/or public/private organizations for the specific purpose of wetlands protection, management, and/or restoration.
- States and Tribes shall develop a partnership strategy to outline specific activities to be taken to increase the state or Tribe's involvement in working with all levels of government as well as other public/private sector entities.

Outreach Program

A public that understands the reasons for wetland protection can make the job of wetlands regulation and management easier. The state or Tribe shall maintain an outreach/public education program to provide information about the importance of wetlands, such as their function and values, as well as information about the state or Tribe's wetland protection (regulatory) and other wetland-related programs.

Other Non-Regulatory Programs

- The state or Tribe shall have an active, funded wetland acquisition program.
- The state or Tribe shall have a program which actively encourages protection of private wetlands through a conservation easement program, the purchase of development rights, or similar programs.
- The state or Tribe shall administer a tax incentive program designed to encourage protection of privately owned wetlands.

Possible Alternative Approach

If a state or Tribe can provide documentation that they measure wetland gain and loss on a watershed-by-watershed basis, and can document a significant increase of wetland acreage each year, EPA's Wetlands Division will consider that the state or Tribe has met the core essential elements.



Comment Form

Please photocopy this page and send us your comments.
You are also invited to include information about your Tribal wetland program or projects.
Mail forms to:

Kathleen Kutschenreuter, US EPA, 1200 Pennsylvania Ave., N.W. (4502F), Washington, DC 20460

Kutschenreuter.Kathleen@epa.gov or 202-260-5356, x2356 (fax)

**What did you find most useful about this document
and/or how can it be improved?**

What is your Tribe or Native organization doing to protect wetlands?

Other comments:



www.epa.gov/owow/wetlands
www.epa.gov/indian