FOSTERING INCLUSIVITY & RESPECT

Engagement With Indigenous Peoples in the Management and Presentation of Protected Areas in North America

NAWPA COMMITTEE

The North American Intergovernmental Committee On Cooperation For Wilderness and Protected Areas Conservation

ABOUT NAWPA

The North American Intergovernmental Committee on Cooperation for Wilderness and Protected Areas Conservation (NAWPA) is a collaborative initiative fostering the exchange of ideas, experiences, best practices, and innovative solutions on shared conservation opportunities at the North American continental scale and across multiple agencies and jurisdictions. It was established through a Memorandum of Understanding in 2009 at WILD9, the 9th World Wilderness Congress in Merida, Mexico.

NAWPA is comprised of six of the largest land and resource management agencies in North America:

- Canada—Parks Canada Agency (PCA)
- Mexico—Ministry of Environment and Natural Resources, National Commission of Natural Protected Areas (CONANP)
- United States—Department of Agriculture (USDA), United States Forest Service (USFS); Department of the Interior (DOI), Bureau of Land Management (BLM), United States Fish and Wildlife Service (USFWS), and National Park Service (NPS); United States Geological Survey (USGS) (official partner)

Participating agencies recognize that protected areas and wilderness play a critical role in conserving biodiversity and supporting human health and well-being. They provide recreation, education, and research opportunities and support the economy by providing resource benefits, ecosystem services, tourism destinations, and ecological resilience.

NAWPA agencies promote sound management for these areas through:

- conservation and restoration efforts
- public outreach, youth engagement, and education initiatives
- recreation and visitor enjoyment opportunities
- capacity-building activities

WILD Foundation provides facilitation and secretariat services to NAWPA.

SUGGESTED CITATION

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For further information on this report and the work of the NAWPA, please contact the commitee facilitator at nawpa@wild.org.

IMAGES

All photographs in this report are of places, wildlife, and people involved in the featured Stories of Engagement. Cover: Hul`qùmi`num-Gulf Islands National Park, Listening to the Sea, Looking to the Future, British Columbia, Canada. Credit: Parks Canada Agency

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Canada—Parks Canada Agency

www.pc.gc.ca

On behalf of the people of Canada, the Parks Canada Agency (PCA) is responsible for protecting nationally significant examples of cultural and natural heritage and sharing the stories of these treasured places. Established as the world's first national park service in 1911, Parks Canada protects and presents a vast network of heritage places that includes 171 national historic sites, 47 national parks, five national marine conservation areas and one national urban park. In the past decades, Parks Canada has worked with Indigenous communities across Canada to build collaborative and respectful ways to manage the heritage places that it administers. This work has resulted in the establishment of over 20 national parks and national park reserves through modern treaties, the creation of over 30 cooperative management regimes with Indigenous partners, and the development of innovative programs and initiatives such as the Guardian and Watchmen programs. Parks Canada is committed to a system of national heritage places that recognizes and honors the historic and contemporary contributions of Indigenous peoples, their histories and cultures, as well as the special relationships Indigenous peoples have with ancestral lands and waters.

Mexico—Ministry of the Environment and Natural Resources, National Commission of Natural Protected Areas

www.gob.mx/conanp

The Mexican National Commission of Natural Protected Areas (CONANP) is a decentralized body of the Ministry of the Environment and Natural Resources (SEMARNAT). It works to conserve Mexico's natural heritage and the ecological processes within Protected Areas (PAs), by balancing conservation goals and the welfare of the Mexican people. CONANP contributes to the peoples' welfare by promoting sustainable economic and social development. Close collaboration with people living in and receiving benefits from the PAs is key to the conservation, restoration, and sustainable and responsible use of Mexico's natural heritage.

CONANP currently manages 182 Federal PAs representing 90,839,522 hectares, as well as 336 Voluntarily Destined for Conservation Areas (ADVCs) another 505,918 hectares, all of them recognized by the General Law of Ecological Balance and Protection of the Environment of Mexico. Around 1.7 million people (nearly 1.4% of the total population of Mexico), from which approximately 13.3% are from Indigenous communities, live in these PAs.

United States—Department of Agriculture, United States Forest Service

www.fs.usda.gov

The Forest Service (USFS) is an agency that administers the nation's 154 national forests and 20 national grasslands, which encompass 193 million acres. The mission of the Forest Service is "to sustain the health, diversity, and productivity of the Nation's forests and grasslands to meet the needs of present and future generations."

The Forest Service provides leadership in the protection, management, and use of the nation's forest, rangeland, and aquatic ecosystems. Through implementation of land and resource management plans, the agency ensures sustainable ecosystems by restoring and maintaining species diversity and ecological productivity that helps provide recreation, water, timber, minerals, fish, wildlife, wilderness, and aesthetic values for current and future generations of people.

United States—Department of the Interior, Bureau of Land Management

www.blm.gov

The Bureau of Land Management (BLM) administers more surface land (245 million acres or one tenth of America's land base) and more subsurface mineral estate (700 million acres) than any other government agency in the United States. The BLM's mission directs the agency to carry out a dual mandate: that of managing public land for multiple uses while conserving natural, historical, and cultural resources. Multiple uses under BLM management include, but are not limited to, energy development, livestock grazing, hard rock mining, timber harvesting, and outdoor recreation.

The conservation side of the BLM's mission includes preserving specially designated landscapes, such as wilderness areas, wilderness study areas, national monuments, national conservation areas, historic trails, and wild and scenic rivers; protecting wild horses and burros; conserving wildlife, fish, and plant habitat; preserving Native American and "Old West" artifacts; and protecting paleontological resources, such as dinosaur bones.

United States—Department of the Interior, United States Fish and Wildlife Service

www.fws.gov

The U.S. Fish and Wildlife Service (USFWS) is an agency whose mission is to work with others to conserve, protect, and enhance fish, wildlife, plants, and their habitats for the continuing benefit of the people of the United States. Among the responsibilities of the USFWS are enforcing federal wildlife laws, protecting endangered species, restoring nationally significant fisheries, and preserving wilderness areas. The USFWS administers the National Wildlife Refuge System, a diverse network of lands and waters dedicated to conserving America's rich fish and wildlife heritage. The Refuge System includes National Monuments, Wetland Management Districts, and 568 National Wildlife Refuges, encompassing 95 million land acres and 760 million acres of submerged lands and waters.

United States—Department of the Interior, National Park Service

www.nps.gov

The National Park Service (NPS) is an agency that preserves unimpaired the natural and cultural resources and values of the National Park System for the enjoyment, education, and inspiration of this and future generations. The NPS cooperates with partners to extend the benefits of natural and cultural resource conservation and outdoor recreation throughout the United States and the world. Parks preserve sites of traditional importance to Native American, Native Hawaiian, and Alaska Native communities and celebrate this cultural heritage.

PREFACE

Since time immemorial Indigenous peoples have lived, and continue to live, throughout North America utilizing and caring for its resources. The land and resources are used in accordance with Indigenous systems of knowledge, laws, governance, and traditional practices. Many Indigenous worldviews see humans as part of, and inextricably linked with, the ecosystems on which they rely. This intimate relationship with the land is expressed through various means, including the continuation of cultural practices and stewardship activities, and the sharing of knowledge which, through inclusive and respectful engagement with Indigenous peoples, benefit the management and presentation of protected areas.

The North American Intergovernmental Committee on Cooperation for Wilderness and Protected Areas Conservation (NAWPA) is pleased to present *Fostering Inclusivity and Respect: Engagement With Indigenous Peoples in the Management and Presentation of Protected Areas in North America*. It is our hope that these stories of collaborative achievement will inspire fresh dialogue and discussion about land-management practices in North America and provide models for our ongoing conservation efforts.

In recent years, the limitations of land-management decisions based predominantly on Western knowledge have become apparent. By adopting a more holistic perspective, we can improve our understanding of the interconnected forces that shape ecology throughout North America and expand our tools and approaches for land and resource conservation. Incorporating and implementing the demonstrated knowledge of Indigenous peoples can prove crucial for the survival of some of our most critically threatened ecosystems and species, the sustainable use of our cherished protected areas and the surrounding landscapes and seascapes, and for the revitalization of human health and connections to nature.

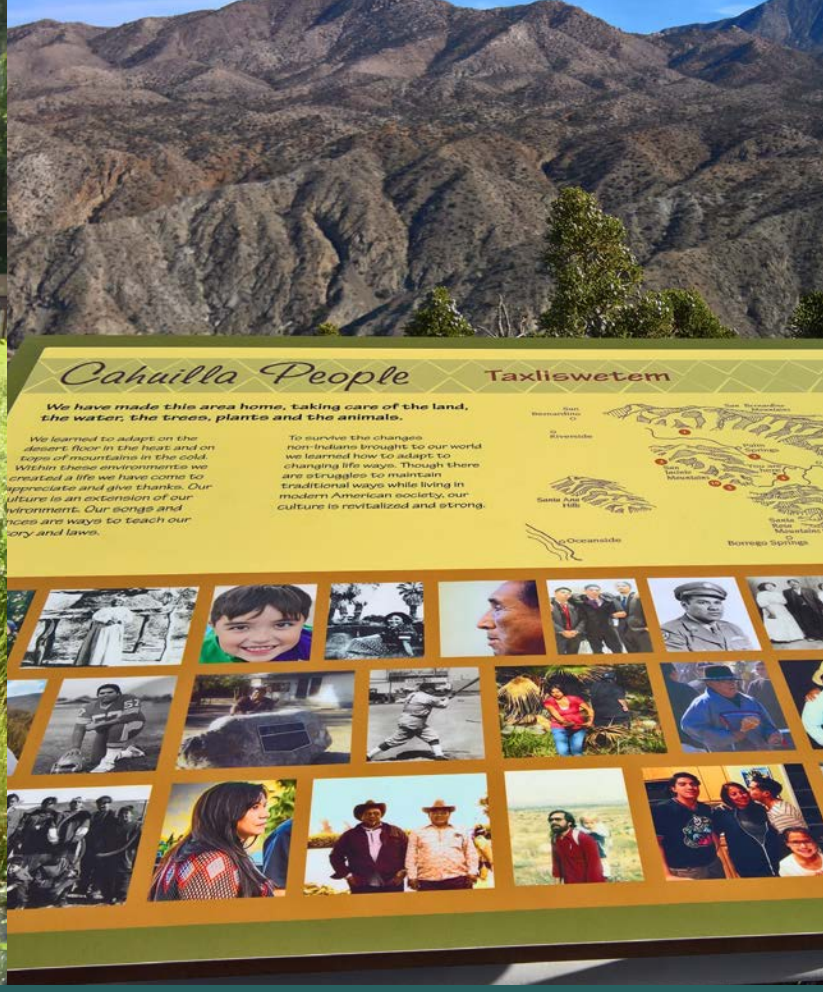
The following stories, shared by NAWPA member agencies, illustrate a diversity of approaches to collaboration among Indigenous organizations and communities and federal managers to inclusively manage public lands. Collectively, they illustrate how we can create a better future, one in which we live with respect for nature and each other, and understand that all is inextricably linked. We will continue to identify new models as they emerge through such collaborative processes, adapting and learning from them in our ongoing attempt to respect and preserve our shared heritage, and supporting the role of Indigenous peoples in decision-making and governance.

NAWPA COMMITTEE
MEDIO AMBIENTE
CONANP
Parks Canada Parcs Canada
U.S. FISH & WILDLIFE SERVICE
NATIONAL PARK SERVICE
U.S. DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT
FOREST SERVICE DEPARTMENT OF AGRICULTURE

The North American Intergovernmental Committee on Cooperation for Wilderness and Protected Area Conservation
El Comité Intergubernamental de Norteamérica de Cooperación para la Conservación de las Áreas Protegidas y Silvestres
Comité intergouvernemental nord-américain pour la coopéracion sur la conservation des milieux sauvages et des aires protégées

Partner / Socio / Partenaire
USGS science for a changing world

Hopi Waters for Life Project,
Kaibab National Forest, USA. Credit: USFS



Images of Cahuilla people past and present, Interpretive Panel, California, USA. Credit: Tracy Albrecht, BLM

Native Youth Community Adaptation and Leadership Congress, Presentation, USA. Credit: USFWS

EXECUTIVE SUMMARY

Most land-management agencies around the world engage with Indigenous organizations and communities in multiple ways as they strive for the best possible management of protected areas and resources while respecting and preserving traditional lands, rights, and resources affected by their decisions. In North America, each NAWPA agency is guided by its own unique laws, policies, and history, however the stories in this publication demonstrate a shared commitment to fostering respectful and innovative collaborative approaches to land management with Indigenous leaders.

These stories NAWPA collected reveal a diversity of approaches geared to different ecological and social contexts, timelines, and cultural considerations. While not exhaustive, they provide examples that land management practitioners and community leaders can consider and learn from as they attempt to foster increasingly productive relationships in their own work.

The following 10 stories include projects that draw on both Indigenous and Western knowledge systems to address the following objectives:

- expanding community development
- establishing innovative solutions for challenging conservation issues
- improving resource management and protection
- enhancing education, planning, and research through improved agency and community relationships

Specific lessons and observations gleaned from these projects include:

- allowing sufficient time for cross-cultural awareness and communication
- acknowledging ancestral territory, knowledge, tradition, and culture
- engaging communities at all stages of policy development, project, or program
- showing openness to new perspectives and approaches
- recognizing and, if necessary, rebuilding connections to the landscape
- valuing youth as ambassadors for change
- building trust through openness to the ancestral knowledge and expertise of Indigenous partners

These examples show how partnership and collaboration between agencies and Indigenous organizations and communities can minimize geographic and cultural boundaries, help address sources of tension, such as historical colonialism, build and maintain positive relationships, and help strengthen protected area stewardship for the future.

Restoring California Condors Initiative, Condor, California, USA. Credit: Chris West

INTRODUCTION

The stories presented in this document reveal how NAWPA agency project participants and Indigenous organizations and communities can successfully innovate, manage, and maintain respectful relationships. They show that such collaboration often leads to better management, improved productivity, and more satisfying professional relationships.

Many of the stories demonstrate the importance of successful engagement among Indigenous leaders and youth, traditional practitioners, subsistence hunters and fishermen, farmers, Indigenous businesses, government agencies, tourism organizations, private and non-profit organizations, and academia.

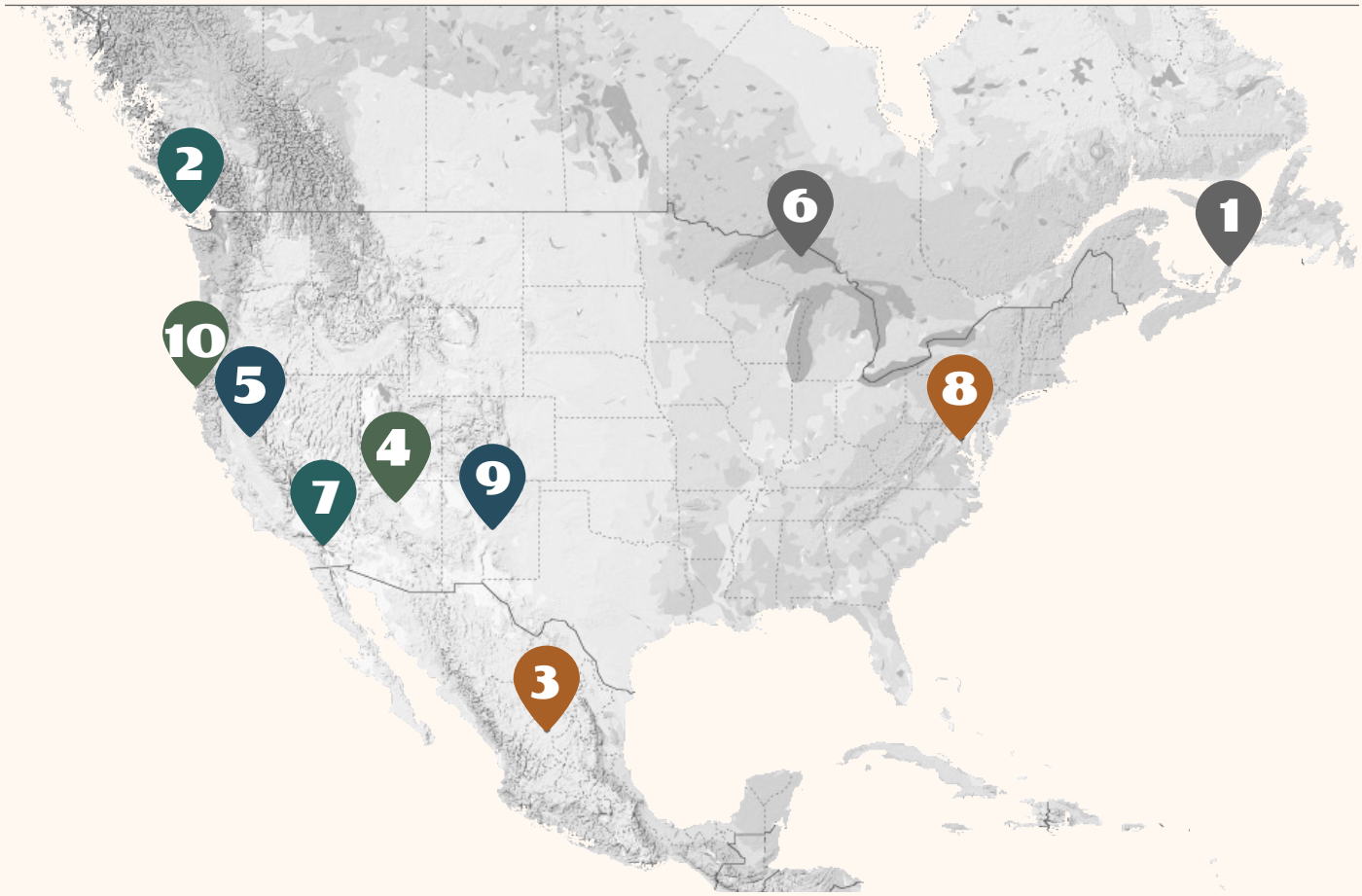
Others show how initial resistance to unfamiliar or misunderstood land management practices can be overcome by involving wider communities, drawing on Indigenous knowledge as well as scientific evidence, and communicating effectively with the public.

Even if years of mistrust and misunderstanding between federal agencies and Indigenous peoples must be overcome, successful and truly collaborative land-management programs can be achieved, strengthened, and lent credibility by inclusive input and investment.

When protected area managers engage respectfully with Indigenous peoples and their communities, they come to appreciate and respect the interconnectedness of nature and culture that is crucial to the resilience of the ecosystems they steward. We hope that these stories will inspire others to work collectively in creating a more just and sustainable North America.

Criollo Maize Conservation Program, CONANP, Maize, Mexico. Credit: CONABIO

STORIES OF ENGAGEMENT



1. Bring Back the Boreal: Restoring Forest Health in the Highlands (PCA)
2. Listening to the Sea, Looking to the Future: Clam Garden Restoration Project (PCA)
3. Criollo Maize Conservation Program (CONANP)
4. Hopi Waters for Life Project, Kaibab National Forest (USFS)
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9. Technical Assistance with Fish Health Issues on Tribal Reserved Lands (USFWS)
10. Restoring California Condors to the Pacific Northwest, United States (NPS)

The following 10 stories are only some of the many successful collaborative initiatives that exist, and NAWPA member agencies are committed to expanding these efforts. We understand it is vital that we respond to ongoing environmental and social challenges by learning from traditional ways of relating to and managing our natural resources in ecologically sustainable and culturally sensitive ways. This approach is essential to nurture the mutual respect of all participants and to serve the long-term ecological aims of 21st-century land management and conservation.

1

Cape Breton Highlands National Park, Nova Scotia, Canada

Bring Back the Boreal: Restoring Forest Health in the Highlands (PCA)

This collaborative initiative between Parks Canada Agency, Mi'kmaq of Nova Scotia, neighboring communities, stakeholders, and visitors focused on restoring the ecological integrity of forested areas in Cape Breton Highlands National Park.

2

Gulf Islands National Park Reserve, British Columbia, Canada

Listening to the Sea, Looking to the Future: Clam Garden Restoration Project (PCA)

Parks Canada Agency and Coast Salish First Nations worked together to restore an eco-cultural landscape by returning to the land to harvest and manage clams in traditional ways in the Gulf Islands National Park Reserve.

3

Mexico

Criollo Maize Conservation Program (CONANP)

The National Commission of Natural Protected Areas (CONANP) worked together with farmers, including Indigenous and local communities, to improve people's livelihoods and the conservation of resources within Protected Areas by promoting the conservation and recovery of different varieties of criollo maize and its wild relatives in their natural environments.

4

Arizona, United States

Hopi Waters For Life Project, Kaibab National Forest (USFS)

Hopi elders, cultural advisors, tribal youth from the Hopi Workforce Innovation and Opportunity Act program, and the U.S. Forest Service worked together to restore and inventory natural spring sites and perform other land restoration activities in culturally important areas on the Coconino, Kaibab, and Tonto National Forests.

5

Six Rivers and Klamath National Forests, California, United States

Karuk Tribe and Six Rivers National Forest Partner to Return Fire to the Landscape (USFS)

The Karuk Tribe, indigenous to the Six Rivers National Forest area, and the U.S. Forest Service collaborated on integrating Traditional Ecological Knowledge and Western science to achieve resilient landscapes, fire-adapted communities, and safe and effective wildfire response.

6

The Great Lakes: Minnesota, Michigan, Wisconsin, United States

Modeling a Cooperative Relationship through a Memorandum of Understanding: Eleven Ojibwe Tribes and the USDA Forest Service (USFS)

Ojibwe tribes and U.S. Forest Service officials negotiated a Memorandum of Understanding to acknowledge, interpret, and implement treaty rights on ceded lands falling within U.S. National Forests.

7

Santa Rosa and San Jacinto Mountains National Monument, California, United States

Cahuilla Tewanet Vista Point Revitalization, Santa Rosa and San Jacinto Mountains National Monument (BLM and USFS)

Working together, the Bureau of Land Management and Cahuilla peoples developed and installed panels and an audio box in the Santa Rosa and San Jacinto Mountains National Monument to inform visitors of the Cahuilla peoples' relationship to the land, traditional culture, and language, as well as facts and stories about native animals, and identification and traditional use of plants.

8

Washington, D.C., United States

Native Youth Community Adaptation and Leadership Congress (USFWS)

The Native Youth Community Adaptation and Leadership Congress, a federal and non-governmental collaborative, invited Native communities to work together to address conservation challenges in a changing environment.

9

New Mexico, United States

Technical Assistance with Fish Health Issues on Tribal Reserved Lands (USFWS)

A cooperative initiative between the U.S. Fish and Wildlife Service and Southwest Tribal Fisheries Commission worked to identify and manage an outbreak of bacterial kidney disease in tribal hatcheries, as well as to address other potential emerging fish health issues.

10

Redwood National Park, California, United States

Restoring California Condors to the Pacific Northwest, United States (NPS)

The Yurok Tribe, National Park Service, U.S. Fish and Wildlife Service, and others worked together to aid recovery of the California condor by establishing a thriving population in their historic range.

CASE STUDY **1**

Bring Back the Boreal: Restoring Forest Health in the Highlands (PCA)

BACKGROUND

Bring Back the Boreal was a five-year pilot project started in 2014 to restore the ecological integrity of forested areas in Cape Breton Highlands National Park (CBHNP), Nova Scotia. Parks Canada Agency (PCA) worked closely with the Mi'kmaq of Nova Scotia, neighboring communities, strategic partners, stakeholders, and visitors, through specific actions to identify and achieve the following objectives:

- reduce the impact of hyperabundant moose on the health of CBHNP forested ecosystems
- strengthen park communities and residents' understanding of traditions and knowledge of the natural and cultural heritage of the region
- build mutually-beneficial relationships with Mi'kmaq communities
- work towards reconciliation through the acknowledgment of Mi'kmaq harvest rights and collaborative engagement in shared stewardship activities

CBHNP is home to a boreal forest ecosystem that provides many benefits for people and nature, including regulating climate and soil moisture, absorbing atmospheric carbon, providing opportunities for people to appreciate and connect with nature, and supporting a rich diversity of species.

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Since time immemorial, the Mi'kmaq have lived in harmony with the boreal forests of Unama'ki—unceded territory that includes Cape Breton Island and Cape Breton Highlands National Park. As stewards, Mi'kmaq practice Netukulimk—the use of the natural bounty provided by the Creator for the self-support and well-being of the individual and the community. Mi'kmaq describe Netukulimk as achieving adequate standards of community nutrition and economic well-being without jeopardizing the integrity, diversity, or productivity of our environment.

The Parks Canada Agency personnel works with 13 Mi'kmaq communities in Nova Scotia, including Millbrook First Nation, Sipekne'katik First Nation, and all others represented by the Assembly of Nova Scotia Mi'kmaq Chiefs. On behalf of the Assembly, the Kwilmu'kw Maw-klusuaqn Negotiation Office leads negotiate with the PCA on legal matters involving Mi'kmaq Aboriginal and Treaty rights, and the Unama'ki Institute of Natural Resources oversees natural resource initiatives on Cape Breton Island.

Research suggested that, without intervention, the boreal forest would not recover from the severe moose browsing.

In the past 40 years, the boreal forest in CBHNP has undergone dramatic changes. Spruce budworm (*Choristoneura fumiferana*) infestations killed most mature balsam fir–dominant forests in the region. This loss of mature trees created open spaces for new seedlings and saplings to grow, and the resulting large areas of even-aged white birch and balsam fir provided an abundance of high-quality food for moose and other browsing mammals. With plentiful food, few predators, and no hunting pressure inside the national park, the moose population grew rapidly to a hyperabundant state. This resulted in over-browsing, which reduced forest regeneration and species diversity, thus negatively impacting the health of the forest ecosystem. The over-browsing of trees stalled the natural regeneration process, and large areas of boreal forests were converted to grasslands—a landscape not typically found in this ecosystem.

Moose population ecology and boreal forest regeneration in the Cape Breton Highlands had been studied and discussed for more than 15 years prior to project implementation. Research and Mi'kmaq knowledge and understanding suggested that, without intervention, the boreal forest would not recover from the severe moose browsing. As a result, PCA and the Mi'kmaq of Nova Scotia initiated Bring Back the Boreal to restore the ecological integrity of CBHNP forested areas through specific conservation actions.

PROJECT ACTIVITIES

Engagement and communication—Formal consultation for the Bring Back the Boreal project was initiated between PCA and Kwilmu'kw Maw-klusuaqn Negotiation Office (KMKNO) in

Moose, an iconic species of the Cape Breton Highlands, Canada. Credit: Michel Soucy

December 2013 based on processes established between PCA and the Mi'kmaq of Nova Scotia through the National Parks Interim Arrangement (2011). This agreement recognized Mi'kmaq first access to harvest hyperabundant wildlife within PCA administered places in Nova Scotia. Unama'ki Institute of Natural Resources (UINR) worked with PCA on the design and implementation of active management measures to ensure that traditions and knowledge of the natural and cultural heritage of the region were integrated into project outcomes. KMKNO was consulted on an ongoing basis as the project evolved.

The plan encouraged PCA and the Mi'kmaq to collaborate on areas of mutual interest, including cultural and natural resources, consultation, access to the park, gathering of plants and other natural objects, and the establishment of advisory committees.

In addition to this ongoing core partnership between PCA and the Mi'kmaq communities, several institutions, businesses, organizations, and community groups contributed to the project, including Nova Scotia universities and colleges, local schools, youth groups, Birds Canada, and the Canadian clothing company Tentree. Youth were involved in the tree-planting and monitoring activities which provided hands-on experience and opportunities for engagement and collaboration. A Mi'kmaq youth camp (Nikani Awtiken) also participated in the project. Participants learned about the project, as well as the skills involved in ecosystem restoration from both scientific and Mi'kmaq cultural perspectives.

PCA and UINR consulted and communicated with stakeholders through community workshops, public sessions, and meetings to:

- share information about conservation and restoration planning for CBHNP.
- answer questions and gather feedback and input from the community.
- acquire insight into community knowledge and promote opportunities for collaboration.
- raise awareness of Mi'kmaq Aboriginal and Treaty rights.
- provide consistent messaging about the project to the public, stakeholders, and visitors.
- foster understanding and support for conservation and restoration as management tools to restore species and ecosystems, and protect cultural resources.

Plans, partnerships, and agreements—The consultation and engagement activities provided an opportunity to inform, comment, present, receive feedback, and shape several plans and agreements related to the project:

- The Hyperabundant Moose Management Plan, which set out the detailed strategy to address the issue of hyperabundant moose in the North Mountain region of CBHNP as part of the project.
- The National Parks Interim Arrangement between PCA and the Mi'kmaq of Nova Scotia, which was renewed during the project in 2017. The plan encouraged PCA and the Mi'kmaq to collaborate on areas of mutual interest, including cultural and natural resources, consultation, access to the park, gathering of plants and other natural objects, and the establishment of advisory committees.

A 5-hectare exclosure constructed along the popular Skyline trail, CBHNP, Canada. Credit: PCA

Members of the Nikani Awtiken, Mi'kmaq youth camp, plant trees inside exclosure. Credit: PCA

Monitoring Boreal forest growth, Cape Breton Highlands. Credit: PCA

- The Operational Protocol for a Mi'kmaq-Led Harvest, which demonstrated how the harvests are to be conducted according to high ethical and safety practices that fully reflect both PCA and Mi'kmaq values and interests. It also reflects an interest in providing opportunities for non-Mi'kmaq communities to support and benefit from the harvest. Detailed operational protocols were developed and adjusted before each harvest season, to be considered and approved by project partners.
- A communications and consultation plan, which aimed to share stories that demonstrated the importance of having a naturally functioning boreal forest ecosystem. Communications plans specific to the moose harvest were developed jointly with Mi'kmaq partners. The project used a variety of communication platforms to reach a wide array of audiences and age groups, including social media, proactive media relations, a dedicated web page, project newsletters, short videos, and stakeholder updates.
- A formal partnership agreement informed the collaboration between Tentree and CBHNP, which included promoting the project through shared social media channels, collaborating on the purchase of seedlings and planting, and developing a clothing line specifically for the project.

Conservation—Bring Back the Boreal tested a variety of restoration techniques throughout the park, including moose-population reduction in an area comprising 2% of the park. This activity was conducted through harvests, in partnership with the Mi'kmaq of Nova Scotia and UINR. The project tested a variety of restoration and conservation techniques throughout the park that included moose exclosures, protective barrier fences to prevent moose from browsing (or eating) young trees; seedling-planting, both inside and outside

moose exclosures; and direct moose population reduction.

Under the Canada National Parks Act (S.C. 2000, c. 32), hunting is prohibited in national parks. However, the legislation has exceptions to this general rule, and population reduction is reserved for situations of absolute necessity. PCA allows limited harvesting in national parks when there is clear evidence that a population is too high and that it is having a serious impact on other plants and animals.

The Mi'kmaq have constitutionally-protected Aboriginal and Treaty rights to harvest natural resources, such as moose. They also have a constitutional priority over all other users to locations, subject to conservation and public safety, to harvest for nutritional, social, and ceremonial purposes and to gain a moderate livelihood (R. v. Marshall, 1999).

Based on the recommendations of a broad base of experts, knowledge holders, and stakeholders, who participated in facilitated workshops and through one-on-one calls, it was determined that a harvest would be the most appropriate method to reduce the moose population. This was consistent with PCA's policy directives related to the management of hyperabundant wildlife populations in Canada's national parks, which specifies that such activities should closely mimic predation and have a low impact on other species, among other things. Other options, such as relocation and predator reintroduction, were extensively researched and consulted on, but were considered inappropriate for this pilot project.

A four-year annual harvest then commenced in 2015 in a small, 20 km2 area (North Mountain) in partnership with the Mi'kmaq of Nova Scotia and the UINR. Mi'kmaq harvesters worked alongside PCA staff in a coordinated operation to perform a humane and respectful harvest, transport moose, and acquire valuable biological information.

The project brought PCA field staff and Mi'kmaq knowledge holders together in a collaborative environment that enhanced understanding and respect through personal interactions.

To measure the effectiveness of all restoration techniques tested as part of the Bring Back the Boreal project, the recovery of shrubs and trees, the regrowth of forest, and the size of the moose population were regularly monitored and evaluated using the following techniques:

- tree-and seedling-density documentation
- browse monitoring
- aerial moose population surveys
- exclosure studies
- forest bird counts
- satellite-imagery analysis

OUTCOMES

The first of four planned moose population reduction trials was held in 2015. Aerial surveys of the area four days after the harvest showed that, while the core area was somewhat depleted, the fringes and surrounding areas still had an abundance of moose. The second harvest in 2016 entailed an enhanced operational plan and greater harvest intensity. A much higher degree of coordination and operational integration between Mi'kmaq and PCA was established at both the leadership and technical levels. Based on the post-harvest

aerial survey, this harvest achieved a higher level of local moose population reduction. The third and fourth harvests in 2017 and 2018 followed the same approach as in 2016, but benefited from lessons learned during the first two harvests, and consequently, the required moose reduction was achieved in a shorter time frame.

While it is too early to tell if the reduction in moose population has had a lasting impact on vegetation on North Mountain, preliminary results show a decrease in browse impacts since the project started. Although the project has been completed, monitoring (aerial surveys, forest health protocols) will continue to see if this positive response continues.

The project brought PCA field staff and Mi'kmaq knowledge holders together in a collaborative environment that enhanced understanding and respect through personal interactions. These relationships helped develop and gain support for the Hyperabundant Moose Management Plan and Operational Protocol for a Mi'kmaq Led Harvest, and paved the way for future collaborative efforts.

The project raised awareness of resource conservation efforts in CBHNP and the importance of the role that Mi'kmaq play in protecting natural resources. It provided recognition of Mi'kmaq knowledge and respect for their knowledge system. There was significant public engagement and participation in the project (19 partners and over 4,000 volunteer hours), highlighting a deep public recognition of the importance of protecting the forest, and an expanded appreciation for the stewardship of protected areas.

All moose removed by harvesters were distributed to Mi'kmaq and non-Indigenous communities as food and materials for traditional crafts such as drums, providing a positive impact and sense of pride and accomplishment within

A Mi'kmaq of Nova Scotia-led moose population reduction, North Mountain, CBHNP, Canada. Credit: Clifford Paul

Mi'kmaq communities about their participation in the moose harvest and community distribution of meat.

This project has been important in helping PCA establish its relationship with the Mi'kmaq of Nova Scotia. It also provided the agency with insight and understanding of its role in facilitating Mi'kmaq presence in PCA-administered places and the importance of their active, ongoing role in decision-making. Since this initiative has taken place, PCA has established Mi'kmaq advisory committees to oversee park management initiatives, and doors have been opened to Mi'kmaq involvement in other aspects of the program, including visitor interpretation, art projects, tourism collaboration, cultural resource management, establishing new, regional protected area management programs as well as ongoing youth engagement opportunities.

Nikani Awtiken tree planting. Credit: PCA

LESSONS LEARNED

Although there were many successes as a result of this project, it faced a number of challenges, particularly in garnering support from some community stakeholders.

Many community stakeholders were unfamiliar with the practice of managing hyperabundant wildlife through lethal means, although it had been adopted by several parks across the country prior to 2015. Furthermore, even though the park had been an area of traditional use for the Mi'kmaq, contemporary use had been limited since its being established as a protected area in 1936, and few opportunities for relationship-building with the Mi'kmaq had taken place prior to this project.

PCA and UINR held open-door sessions with stakeholders from key adjacent communities intended to create dialogue, understand concerns, and pursue collaborative opportunities. Despite this, there were those in disagreement with the project rationale and approach. Some stakeholders expressed concerns related to the need to remove moose, the exclusivity of Mi'kmaq harvest, and the impacts of the proposed harvest on community subsistence, tourism, and economic activities (e.g., hunting/guiding businesses).

Due to different values, interests, conflicting community knowledge, past experiences with government, and the infancy of relationships, opposition was publicly expressed during the initial moose reduction harvest carried out in 2015. The Mi'kmaq and PCA faced several protests by community members in the form of confrontations and blockades, as well as some negative media attention.

Opposition decreased during the subsequent years, in part due to further communications related to project outcomes and engagement initiatives. These efforts were supported by other aspects of the larger project, such as tree planting and monitoring by the public, which contributed to the greater overall outcomes of Bring Back the Boreal.

The project brought PCA field staff and Mi'kmaq knowledge holders together in a collaborative environment that enhanced understanding and respect through personal interactions.

IN SUMMARY

In summary, best or wise practices recognized during the project include:

- Allow sufficient time for cross-cultural awareness and communication.
- Acknowledge ancestral and modern territory, knowledge, tradition, and culture.
- Involve communities in consultation from the outset.
- Show openness to new approaches.
- Recognize connections to the landscape and the need, at times, to rebuild these connections.
- Value youth as ambassadors for change.
- Be patient as respect and trust grow and forge strong relationships.
- Stay in touch and actively contribute to resolving all challenges. A challenge that affects one partner affects all.
- Draw from Indigenous knowledge as well as scientific-evidence to guide credible decision-making.

Aerial of forest, CBHNP, Canada. Credit: PCA

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- Unama'ki Institute of Natural Resources
- Nova Scotia Department of Lands and Forests
- Royal Canadian Mounted Police
- Parks Canada Unama'ki Mi'kmaq Advisory Committee

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CASE STUDY **2**

Listening to the Sea, Looking to the Future: Clam Garden Restoration Project (PCA)

BACKGROUND

The Clam Garden Restoration Project is a collaborative effort between the Parks Canada Agency (PCA) and Coast Salish First Nations to restore an eco-cultural landscape in the Gulf Islands National Park Reserve (GINPR) in British Columbia, Canada. It was developed out of expressed interests and needs of local Hul'q'umi'num and W̱SÁNEĆ Nations to return to the land to harvest and manage clams—a highly important social, cultural, and economic food—in traditional ways. The project goals included drawing from Indigenous and scientific knowledge to:

- improve the state of the intertidal ecosystem.
- provide recommendations and tools for managing and restoring intertidal ecosystems.
- reconnect Coast Salish First Nations to their ancestral lands in the GINPR.
- serve as an example of integrated, future resource management possibilities.
- examine the impacts of Coast Salish mariculture practices on intertidal ecosystems and cultural landscapes and seascapes in the GINPR.
- communicate the important role of First Nations as long-term stewards and caretakers of lands and waters.
- improve relationships between First Nations and government through active, on-the-ground collaboration.

Clam gardens—intertidal mariculture systems that were designed and managed by coastal Indigenous peoples to enhance the production of shellfish.

The Hul'q'umi'num and W̱SÁNEĆ peoples, whose traditional territories blanket the southern Gulf Islands, have managed their lands and waters for thousands of years. Evidence of their knowledge, management systems, and work is found across the Gulf Islands in many forms. One example of this complex web of interrelated management practices is "clam gardens"—intertidal mariculture systems that were designed and managed by

Nineteen First Nations have cultural and historical ties to the Gulf Islands National Park Reserve, in British Columbia, Canada, of which ten co-lead the Clam Garden Restoration Project: Stz'uminus (Chemainus) First Nation, Cowichan tribes, Halalt First Nation, Ts'uubaa-asatx Nation, Lyackson First Nation, Penelakut Tribe, W̱SIḴEM (Tseycum First Nation), BOḰEĆEN (Pauquachin First Nation), SȾÁUTW̱ (Tsawout First Nation), and W̱JOŁEŁP (Tsartlip First Nation).

coastal Indigenous peoples to enhance the production of shellfish.

Coast Salish peoples created clam gardens by building rock walls near the lowest tideline, which trap sediment against the shore and form a terrace on the landward side of the wall. The accumulation of soft sediment and broken shells provides a highly productive clam habitat. The rock wall also creates a productive, rocky reef habitat for other culturally significant species, including kelps, octopuses, sea cucumbers, whelks, chitons, and urchins. Many of these species play an important role in Coast Salish culture for nutritional, economic, and spiritual purposes.

Clam gardens and other mariculture landscapes provide other important cultural benefits. Traditionally managed primarily by entire communities or family groups including elders and children, these landscapes have been important places of learning and sharing oral stories for thousands of years. Woven through these stories are lessons about cultural values, protocol, ecology, and spirituality.

Through a combination of Indigenous knowledge and scientific information, it became clear that intertidal ecosystems, particularly clam populations, were in poor health, and that they could be improved through the application of Indigenous knowledge and practices.

Historic government policies and regulations imposed upon the Nations had hindered active tending of the clam gardens in the GINPR for at least a generation. Decades of repression and subjugation of traditional rights and practices broke intergenerational connections, which prevented Indigenous peoples from accessing these places and undertaking the required management practices to maintain their health. Consequently, the habitat, species, and ecosystems previously maintained by these practices deteriorated.

In 2006 the Hul'q'umi'num and W̱SÁNEĆ Nations began engaging with PCA and expressing their rights and responsibilities to harvest shellfish and improve the health of intertidal ecosystems. At the same time, PCA began assessing and monitoring

the condition of intertidal ecosystems, with a focus on clams. Through a combination of Indigenous knowledge and scientific information, it became clear that intertidal ecosystems, particularly clam populations, were in poor health, and that they could be improved through the application of Indigenous knowledge and practices.

In 2013 PCA started collaborating with the Hul'q'umi'num and W̱SÁNEĆ Nations to develop a project specifically designed to restore two intertidal mariculture features and document how traditional and scientific approaches could be used to improve the health of intertidal areas. In 2014 PCA started to work with the Hul'q'umi'num and W̱SÁNEĆ peoples to restore two clam gardens in the GINPR.

Together, PCA and the Nations identified key objectives, including to: preserve important places of learning for the next generation, to reinvigorate traditional mariculture systems with the goal of improving the health of the beaches, and to improve access to traditional foods.

PROJECT ACTIVITIES

Numerous meetings and conversations were held between partners and the community to build relationships and identify goals and objectives. Parks Canada and partners together engaged elders, knowledge holders, clam diggers, language experts, and youth to restore the clam garden wall features, turn over the beach, and

Restoration activities, Fulford Harbour. Credit: Allison Stocks and PCA

Students digging clams, Russell Island. Credit: Kenta Kikuch

Restoration activities, Fulford Harbour. Credit: PCA

Night restoration activities, Fulford Bay. Credit: Braeden Clark

undertake other necessary traditional management actions.

Two Traditional Knowledge Working Groups were developed—the Hul'q'umi'num-GINPR Committee and the W̱SÁNEĆ Traditional Knowledge Working Group—and led the project and provided overall guidance and management. The Hul'q'umi'num-GINPR Committee includes six Nations: Stz'uminus (Chemainus) First Nation, Cowichan tribes, Halalt First Nation, Ts'uubaa-asatx Nation, Lyackson First Nation, and Penelakut Tribe. These Nations speak Hul'q'umi'num and share similar cultural protocols and histories. The W̱SÁNEĆ Traditional Knowledge Working Group includes four Nations: W̱SIḴEM (Tseycum First Nation), BOḰEĆEN (Pauquachin First Nation), SȾÁUTW̱ (Tsawout First Nation), and W̱JOŁEŁP (Tsartlip First Nation). Like the Hul'q'umi'num-GINPR Committee, these Nations speak a shared language (SENĆOŦEN) and have similar cultural protocols and histories. Other individuals and groups from these Nations were actively involved in various aspects of the project, from planning to management and restoration of the sites, as well as teaching the youth.

Together, partners developed timelines and work plans for on-the-ground traditional management actions. According to traditional methods, most of the restoration work on the clam gardens and clam beaches can only occur during the year's lowest low tides (<0.4m). This amounts to roughly six tidal series per year, each series lasting about five days. Three of these tidal series happen in the spring and summer during daylight hours. The other three occur in the winter months at night. These restrictions, combined with logistical difficulties in accessing and working at the sites offer ongoing challenges to restoration.

The Hul'q'umi'num and W̱SÁNEĆ peoples gathered and documented traditional knowledge and information. Both communities and their

> "After all these generations of denying the fact that we had agriculture and that we had this sustainability, we now have the evidence that we had all these systems in place during pre-contact. To have a large Agency like Parks Canada designing a program, bringing Western science and traditional science together to discuss, that is the beginning of a giant unifying discussion that should have happened hundreds of years ago and I'm really happy that it is happening now and that I'm able to be a part of it." –Jared Williams, Hul'q'umi'num Knowledge Holder

representatives retain control and ownership over the information, share what they consider appropriate with PCA, and decide how the information is disseminated and managed.

PCA personnel monitored the impacts of the clam garden structure and management activities using a variety of approaches for measuring clam abundance, fish health, and changes to the shoreline. The results will eventually be compared with data from non-clam garden sites to better understand the impacts of traditional clam garden management on intertidal ecosystems.

OUTCOMES

The Clam Garden Restoration Project restored two clam gardens that are thousands of years old and identified methods and practices that improve the health of shellfish throughout British Columbia's coast in a way that respects Indigenous peoples and cultures.

Coast Salish Nations, government, researchers, and others worked together in an open, collaborative environment. This collaboration enhanced community awareness and created the following opportunities for sharing knowledge:

- **A two-day science and culture camp for Coast Salish Youth** co-hosted each spring by the Cowichan Valley School District (SD. 79), W̱SÁNEĆ School Board, and PCA. Youth gather at one of the two clam garden sites, where they learn from Hul'q'umi'num and W̱SÁNEĆ elders and knowledge holders, PCA scientists, and guest researchers. Recent events saw over 200 students, from kindergartens to adults visit the site and participate in a wide range of educational activities.
- **The first underwater archaeological excavation of a clam garden** conducted by the PCA Underwater Archaeology Team, a Clam Garden Network archaeologist, and Hul'q'umi'num and W̱SÁNEĆ cultural workers.
- **Creation of the *Stutu'na'mut Report: Caring for our Beaches*** prepared by the Hul'q'umi'num GINPR Committee (publication in progress).
- **Partnerships with outside organizations**—such as Royal Roads University,

Western Washington University, Northwest Indian College, Simon Fraser University, and University of Victoria, in addition to many volunteers—contributed to the science and culture camps, active management of the project, and ecological monitoring.

- **University research projects** including four graduate master's theses (Royal Roads University and Simon Fraser University), two undergraduate capstone projects (Northwest Indian College), and one undergraduate honors thesis (University of Victoria).
- **Outreach and education** through partnerships with British Columbia Ferries, the Shaw Centre for the Salish Sea, the Vancouver Aquarium, and the Telus World of Science. Over 8,000 people annually have learned about clam gardens through outreach initiatives.

Meaningful relationships were established through the project that provided opportunities for difficult conversations to occur safely and respectfully and for more culturally inclusive methods to be adopted. It provided many lessons on improving relationships with local First Nations and approaching resource management holistically, as recommended by the elders, for the greater benefit of people, culture, and ecosystems.

PCA expanded its ecological monitoring program to include algae and invertebrate studies. A growing recognition of the ecological and cultural significance of rock associated communities inspired expanding research on the use and design of clam gardens.

Clam garden, Russell Island. Credit Tobin Seagel

Finally, PCA was honored to learn from and work with Coast Salish Peoples, and to have the opportunity to support them as they engage with their traditional territories and practice their constitutional rights within the GINPR. This project serves as an example of how government and First Nations can work together to restore ecosystems.

There are three aspects of this project which could be used as models for others working on similar projects:

- The project is guided by traditional knowledge and informed by science. Elders and knowledge holders guide the work, while Parks Canada scientists monitor changes to the intertidal ecosystem. Having both knowledge systems work together provides opportunities for shared learning and growth among partners.
- The project was built in collaboration with Indigenous partners right from concept development through to execution, and at all levels. A key reason for the success of the project is because it originated from the local First Nations, with whom Parks Canada worked collaboratively from the outset. The continued involvement of Indigenous peoples at all levels has ensured their ongoing leadership of the project and resulted in its increased reach and effectiveness within First Nations communities. The development of the traditional knowledge working groups played a key role in ensuring continued engagement and guidance and kept the project on a respectful course.
- The project engaged youth in meaningful ways. While not all ten First Nations leading the project have agreed on all matters, reconnecting youth to traditional territories and providing them with skills and training was a high priority for all. Hul'q'umi'num, W̱SÁNEĆ, and Parks Canada have worked hard to ensure that many aspects of the project involve Elders and youth to provide them with opportunities to engage. Not only does this allow for cultural traditions to continue, but it also helps to build relationships.

LESSONS LEARNED

If participating parties and agencies are not accustomed to dealing with innovation, care must be taken to be flexible and willing to change approaches, targets, and outcomes; provide additional resources as needed; and work collaboratively with Nations to develop new tools and approaches to undertaking and managing projects.

Sensitivity to differing timelines is essential. During the summer months, when the bulk of restoration and active management occurs, many members of the traditional knowledge working groups had conflicting commitments. Other important events occurred in July and August, such as Tribal Journeys, canoe races, and the openings for Food, Social, and Ceremonial fisheries. In the winter, the same low tides set aside for active management work sometimes coincided with commercial and community harvesting events and seasonal cultural activities.

To build effective personal relationships with Indigenous partners, it is crucial to work hard—and always respectfully—to overcome their historical mistrust of institutional authorities stemming from a legacy of injustices and to maintain contact through regular, culturally appropriate communication. Over time, these personal relationships became operative at the organizational level, enhancing the project delivery and effectiveness.

Maintaining communication through regular meetings was essential to the project's success, and encouraging and responding to questions ensured an open, transparent, and collaborative relationship.

Collaboratively identifying a clear set of objectives and outcomes with partners at the outset helps manage and maintain project focus. As the project grew multiple opportunities emerged and many different groups and organizations were interested in contributing. Clearly defined project objectives and outcomes allowed separate entities to understand and identify ways to assist, such as pursuing other questions or research.

Partners felt that the biggest challenge is miscommunication. Making assumptions, not clearly explaining one's actions, or not asking respectful questions can easily result in miscommunication, which can impact relationships and the project outcomes. Maintaining communication through regular meetings was essential to the project's success, and encouraging and responding to questions ensured an open, transparent, and collaborative relationship.

The clam-garden sites in this project are the first to be restored in modern times, which means that the team had to navigate many "firsts." Being the first to do something comes with its own set of obstacles, as the project team navigates appropriate legislation and policies, and sometimes contributes to establishing new guidelines. It is important to be aware of, and prepared for, the legislative and regulatory implications of testing novel approaches as well as the additional resources needed to break new ground. Projects should therefore be planned in small, manageable stages to ensure ultimate success.

Concerns arose that cultural knowledge and practices might be taken from their holders, disrespecting the people involved. If knowledge is taken or presented out of context, inaccuracies and misunderstanding can arise. As a result, it is important to jointly agree on clear parameters with regards to speakers and representatives of places and cultural knowledge, and to properly recognize them as the authorities on this knowledge.

Clam harvest, Russell Island. Credit: Iain Robert Reid

IN SUMMARY

In summary, best or wise practices recognized during the project include:

- Use traditional knowledge and science to guide and inform a project.
- Be respectful of others' timelines and processes to allow for meaningful participation.
- Stay focused on clearly defined, achievable objectives and outcomes.
- Be aware of and prepared for the legislative implications of testing novel approaches, and plan the project accordingly, in small, manageable stages.
- Engage youth in meaningful ways.
- Work collaboratively and respectfully by relinquishing absolute control and accepting new approaches.
- Build personal relationships in order to develop fruitful organizational relationships.
- Maintain open communication channels to avoid misunderstandings.
- Recognize connections to the landscape and the need, at times, to rebuild these connections.
- Establish parameters with partners for information sharing and curating.
- Respect the rights of recognized authorities on traditional knowledge, whose participation is crucial for ongoing engagement.

Clam harvest, Russell Island. Credit: Iain Robert Reid

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CASE STUDY **3**

Criollo Maize Conservation Program (CONANP)

BACKGROUND

The National Commission of Natural Protected Areas (CONANP) worked together with farmers, including Indigenous and local communities, to improve people's livelihoods and the conservation of resources within Protected Areas (PAs) by promoting the conservation and recovery of different varieties of criollo maize and its wild relatives in their natural environments.

Maize (Zea mays mays) is the most diverse agricultural species and one of the most important crops in the world. Much of the Mexican territory is part of its center of origin and is one of its current centers of diversity. Therefore, the conservation of the genetic diversity of the Zea gene is Mexico's historical responsibility to humanity's present and future.

Maize is a native Mexican crop, a descendant of *Teocintle*—wild relatives of corn—which was farmed and improved by the inhabitants of Mesoamerica for more than 7,000 years. Currently, the conservation of this important genetic resource is carried out by farmers, mainly through traditional cultivation systems.

Traditionally, maize has been essential as part of the diet and culture of Mexico. One of the most important uses of maize is in the Mexican diet, whether eaten as *tortillas, pozole, atole, esquites*, or *tamales* or converted into oil, alcohol, and other products.

There are many improved varieties of maize, traditional or creole (criollo), and wild relatives that are cultivated in various regions. The germplasm bank of the International Center for Improvement of Maize and Wheat of Mexico conserves around 150 different species of creole Mexican maize. This diversity, which rural and indigenous communities have achieved over time, represents a legacy for humanity. Thus it is essential to support traditional farmers, Indigenous people, and local communities whose hard work is key to the conservation and recovery of creole maize and its wild relatives.

The promotion and inclusion of Indigenous peoples and local communities is a crucial working element at CONANP, achieving the institution's goal largely depends on their involvement to ensure the long-term permanence of efforts. Their contribution in the protection and management of natural resources and sustainable traditional knowledge is invaluable.

PROJECT ACTIVITIES

The Criollo Maize Conservation Program (PROMAC) was implemented uninterruptedly from 2009 to 2016 as an initiative to promote the conservation and recovery of varieties of native maize and their wild relatives in their natural environments, considering the different farming systems, regions, and customs by:

- supporting *in situ conservation*, meaning "conservation, protection, management and restoration of ecosystems and natural habitats, as well as the maintenance and recovery of viable populations of species in their natural habitats and, in the case of domesticated and cultivated species, in the habitats in which they develop their distinctive properties".
- strengthening the capacities of the population and communities.
- promoting productive projects.

The program created opportunities for a shared stewardship with the communities within priority areas, dedicated to traditional use of crops, traditional farming, and conservation and recovery of the different genetic diversity of native maize and their wild relatives. PROMAC also initiated and strengthened opportunities for dialogues between the local communities and CONANP, to spark and increase interest for the conservation of natural resources as well as strengthening social cohesion.

PROMAC funded both in situ conservation projects and culturally sensitive farming community projects, like agrobiodiversity, and development programs that focused on native criollo maize farming. In doing so, it fostered the traditional practices of maize cultivation and use as well as community building in biodiverse, rural farming regions across Mexico.

The program focused on agricultural areas within PAs already in sustainable use by the local population under the auspices of its Management Program and did not encourage opening more land to farming cultivation within PAs.

The program created opportunities for a shared stewardship with the communities within priority areas, dedicated to traditional use of crops, traditional farming, and conservation and recovery of the different genetic diversity of native maize and their wild relatives.

The following are some of the approximately 3,848 activities funded by PROMAC from 2009 to 2016.

1. **In situ conservation**—3,064 activities to support the cultivation of native criollo maize in more than 125,000 hectares as well as to conserve about 45 primary breeds. To respect conservation and traditional practices, the beneficiaries of the program exchanged, crossed, and improved the species as had been done since ancient times.
2. **Strengthening communities**—693 activities to promote and strengthen the cultural, agronomic, and biological recognition of criollo maize, including:
    a. **exchange of community experiences** among producers, whose main activity was the harvest and collection of criollo maize. Expositions were organized

Zea mays. Credit: CONABIO

for seed exchange and to highlight the nutritional and cultural importance of native criollo maize conservation in communities as well as the methods and systems implemented as conservation strategies

b. **organization of community or regional native criollo maize fairs** in which the local population and visitors from other communities shared farmers' best practices and exchanged germplasm, as well as promoted traditions and customs
c. **presentation of capacity building workshops**—trainings in organic agriculture, implementation of agroecological practices, conservation and control of species variety of native maize in the region, use of organic fertilizers, and pest control—given to around 9,256 people, around 32% of whom were women and 66%, Indigenous peoples
d. **creation of seed banks** to manage and care for native criollo maize, provide community storage, and reduce pest attack

3. **Productive projects**—around 91 activities related to the collection, transformation, and commercialization of native criollo maize and its derivatives, including:
   a. **acquiring nixtamal mills** and manual "tortilladoras" (tortilla-making-machines) for the production of criollo maize foods, such as tortillas, pinole, and atole
   b. **procuring equipment** for the transformation and packaging of native maize and its derivatives and for building production centers and packing houses
   c. **supporting certification** of organic production

Maiz product, Santiago de Anaya, Hidalgo, Mexico.
Credit: CONABIO

Zea mays. Credit: CONABIO

OUTCOMES

PROMAC was implemented in eight of the nine administrative regions managed by CONANP, impacting 28 of the 32 sub-national states, 296 municipalities, and 1,099 localities in the country. It included the participation of farmers from 23 of the 65 Indigenous groups officially recognized in Mexico, including Zoque, Zapoteco, Tsotsil, Tseltal, Tojolabal, Tlahuica, Tarahumara, Popoluca, Pame, Náhuatl, Mixteco, Mixe, Mazateco, Mazahua, Mayo, Maya, Mam, Lacandon, Ixcateco, Chol, Chinanteco, Chichimeco jonaz and Chatino.

During the course of the program, 209 million pesos (more than 10 million dollars) was granted to carry out the various activities—96% of the budget funding actions such as conservation activities in situ, while the remaining 4% of the budget funded technical assistance from 2009 to 2013.

Overall, PROMAC provided knowledge about the varieties of maize used by farmers, the dates of harvest, and the duration of specific maize crop cycles. Communities had the opportunity to exchange experiences through community or regional fairs, learn about others' traditions and customs, participate in training courses or workshops, and exchange germplasm and

Zea mays. Credit: CONABIO

gastronomic practices. The program focused on farmers' ability to embrace organic agriculture through the application of agroecological practices, the management and use of organic fertilizers, pest control, the development of alternative ways of producing criollo maize foods, and the creation of seed banks.

The program provided economic support that strengthened the protection of native criollo maize. The support was respectful of the local cultures of each region, the breeds of criollo maize they cultivated, the local agroecological knowledge and, above all, the uses and practices of different communities.

Communities maintained the in-situ conservation of native criollo maize while also meeting their own subsistence requirements through genetic diversity of crops able to withstand adverse climatic conditions.

Community security and participation as well as social relations among individual communities improved, and relationships among the criollo maize farming communities of Mexico were strengthened.

Farmers shared their extensive knowledge of the cultivation of each type of native criollo maize and learned from scientific perspectives. This exchange enhanced both Mexico's ability to preserve native criollo maize and the farming communities' ability to become economically solvent.

Stewardship practices designed to address the cultivation requirements of many of the complex varieties of native criollo maize were devised. These practices were adapted to species of criollo native to many different elevations, climate types, soil specifics and water requirements. Understanding these complex cultivation requirements enables maize to remain a key staple in the diet of Mexicans across different regions of the country and in all seasons.

The support was respectful of the local cultures of each region, the breeds of criollo maize they cultivated, the local agroecological knowledge and, above all, the uses and practices of different communities.

LESSONS LEARNED

While CONANP focuses on environmental conservation, it recognizes that the preservation, restoration, and sustainable use of ecosystems and the biodiversity they support—such as preserving native criollo maize varieties—requires input from political, economic, and social proponents, along with environmentalists. The work thus far achieved in the protection of native criollo maize is valuable, but its usefulness could be improved with a larger budget, more employees, and cross-sector engagement with non-environmental, personnel and projects.

Women played a fundamental role both in the cultural conservation of the uses of maize (preserving gastronomical heritage, as well as traditional knowledge used for medicinal and spiritual purposes) and in the selection of types of maize species.

While CONANP focuses on environmental conservation, it recognizes that the preservation, restoration, and sustainable use of ecosystems and the biodiversity they support—such as preserving native criollo maize varieties—requires input from political, economic, and social proponents, along with environmentalists.

IN SUMMARY

In summary, best or wise practices recognized during the project include:

- Involve women, especially Indigenous women at all levels of a project.
- Include Indigenous groups and local communities in decision-making and monitoring processes.
- Encourage adaptive management throughout the implementation of a project, allowing space for learning and adjusting.
- Increase and strengthen empowerment efforts by involving other stakeholders, including beneficiaries, communities, authorities, and other relevant actors.
- Acknowledge the importance of the preservation of criollo maize as an opportunity to cover human needs and prepare for future challenges, such as climate change.

Maiz Criollo, Reserva de la Biosfera Tehuacán Cuicatlán – Biosphere Reserve. Credit: Socorro Garcia Mendez

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- The technical and operational staff of the Mexican Criollo Maize Conservation Program of the National Commission of Natural Protected Areas

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CASE STUDY **4**

Hopi Waters For Life Project, Kaibab National Forest (USFS)

BACKGROUND

In Arizona the United States Forest Service (USFS), Hopi Tribe, and Kaibab Band of Paiute Indians have been working together to manage sacred places in Arizona since the 1990s. In recent years the project has expanded to include the Tonto Apache Tribe, the Yavapai-Apache Nation, the Coconino and Tonto National Forests, the Phoenix Zoo and the Springs Stewardship Institute of the Museum of Northern Arizona.

The project started when the Hopi Cultural Preservation Office, tribal cultural advisors, tribal youth (from the Hopi Workforce Innovation and Opportunity Act program), and the Kaibab National Forest worked together to restore two natural spring sites. This spring's restoration project was the first tribal–USFS collaborative project to be implemented in alignment with the new plan for the Kaibab National Forest. The concept of shared stewardship is a commitment that the USFS and the Hopi and Kaibab-Paiute tribes continue to develop further over time.

The Kaibab National Forest borders both the north and south rims of the Grand Canyon in north-central Arizona just west of the Hopi Tribe Reservation. USFS personnel routinely consult with regional tribes, who have lived in the area for thousands of years. During meetings between the USFS National Forest and the Hopi Tribe, it became evident that the management of natural waters as sacred sites was very important to the Hopi as well as all the regional tribes.

The springs' sources and their surroundings have been trampled by grazing animals, leaving banks bare and spring flow limited.

In 2006 the Kaibab National Forest began revising its Land and Resource Management Plan, a document that provides guidance and direction to USFS staff to help them best fulfill stewardship responsibilities and meet the needs of the American people, now and in the future. The new plan was published in 2014 with the restoration of natural springs being one of four priorities.

Big Springs. Credit: USFS

Big Springs trail restoration. Credit: USFS

Springs—where groundwater reaches the Earth's surface—provide habitat for 20% of endangered species in the U.S. as well as untold thousands of rare or highly restricted species. Springs are sacred to indigenous cultures that use them for water supplies, medicinal, ceremonial, and other purposes. Given the interactions between temperature, precipitation, infiltration, and aquifer dynamics, springs are also sensitive indicators of global climate change. Springs are also some of the most threatened systems in the region, vulnerable to overuse and degradation. The springs' sources and their surroundings have been trampled by grazing animals, leaving banks bare and spring flow limited.

PROJECT ACTIVITIES

Technical specialists from the Kaibab National Forest, Hopi Tribe, and Springs Stewardship Institute collected baseline data at both springs locations prior to implementing restoration treatments. They developed a plan to conduct long-term monitoring at the sites to assess the potential ecological benefits of incorporating Indigenous Traditional Ecological Knowledge (ITEK) techniques into other restoration efforts in the forest.

Hopi elders, along with the USFS and Hopi youth, spent a week working together to restore the hydrological function and vegetation on two springs of importance to the Hopi and Kaibab-Paiute tribes, located in the North Kaibab Ranger District. Although the springs are on USFS lands, they have been sacred locations to the Hopi for centuries. Having been historically used and having known place names in the Tribe's language. Tribal elders directed the methods used for the project and shared ITEK and techniques to be integrated into future USFS spring management protocols.

Partners removed graffiti at Castle Springs and eliminated a decaying corral, rusted barbed wire fence, and trash in the area. They also removed

> **“This work is important in many ways, such as bringing our youth and elders together to promote teaching and understanding; cultural identity and survival; preserving our environment encompassing land, air, and water; strong partnerships and sharing of resources between the entities involved; education and employment pathways for our youth; and understanding better the importance of the spiritual value surrounding all these things.”** –Everett Gomez, Reed/Bamboo Clan, Paaqavi Village, case manager for the Hopi Workforce Innovation and Opportunity Act program

invasive vegetation encroaching on an adjacent meadow, constructed water catchments using traditional techniques for both wildlife and cattle, and built a fence to protect the spring. At Big Springs a more visible path was constructed to deter visitors from making their own paths, alleviating the spider-web effect of footpaths that was damaging fragile soils.

According to Everett Gomez, Reed/Bamboo Clan, Paaqavi Village, a case manager for the Hopi Workforce Innovation and Opportunity Act program, “This work is important in many ways, such as bringing our youth and elders together to promote teaching and understanding; cultural identity and survival; preserving our environment encompassing land, air, and water; strong partnerships and sharing of resources between the entities involved; education and employment pathways for our youth; and understanding better the importance of the spiritual value surrounding all these things.”

“The Hopi Tribe and the Kaibab National Forest have been working together for over 20 years, but I feel the work that’s taking place through this partnership sets a new precedent for collaborative management of the forest,” said Mike Lyndon, Tribal Liaison for the Kaibab. “These projects are

Cleaning graffiti off of rocks that contain petroglyphs near the spring. Credit: USFS

USFS member building fence for a protection barrier at Castle Springs. Credit: USFS

greatly increasing the exchange of technical and traditional knowledge between the Forest and the Tribe, while accomplishing critical restoration projects in places that are culturally important to Native people. This has been, and continues to be, a valuable learning process for all of us."

In recent years the project has expanded to include the Coconino and Tonto National Forests. Project activities have grown to include other land restoration activities. On the Tonto National Forest Hopi youth released endangered Chiricahua leopard frogs restoring them to natural habitats, removed trash from Fossil Creek canyon, monitored various springs, and removed brush from the Shoofly Archaeological Site in Payson, AZ. Elders from the Yavapai Apache Nation and Tonto Apache tribes participated to provide local ITEK with tribal youth and Forest Service staff to further their appreciation of ancestral lands.

On the Coconino National Forest Hopi youth assisted the Spring Stewardship Institute to collect spring health information in order to prioritize springs for restoration. Seven springs were located and tribal youth participated in the collection of geomorphology, water quality, and flow data.

OUTCOMES

Throughout the project area, Hopi ancestral sites have been restored and protected against potential impacts from recreation and public use. This project helped Hopi and Kaibab-Paiute youth understand and employ ITEK techniques and educated them about career opportunities in natural and cultural resources management. The Hopi Tribe and Kaibab National Forest, who started the project, were honored with a 2015 Rise to the Future award for this collaborative project.

Restored water catchment at Castle Springs. Credit: USFS

Tribal Crewmembers shared that getting to work outdoors and connect with nature on lands sacred to their People were some of the highlights of working on this project. Working with their own hands to create a lasting impact was central to the crew's experience and has created lifelong memories.

"I feel humbled and grateful that the partnership would be recognized for its merits, and acknowledge that it is but a starting point for continued collaborative efforts in the future," said Everett Gomez.

Since then, additional phased restoration work has been accomplished and annual projects are planned for the coming years.

LESSONS LEARNED

All or part of every national forest and grassland is carved out of the ancestral lands of American Indian and Alaska Native peoples. Indigenous communities across the country still maintain strong historical and spiritual connections to the land, connections that have not been extinguished despite the impacts of colonialism and changes in land ownership. Indigenous input and consultation is vital to land management planning, especially early in the planning process. The relationship between the federal government and tribal Governments is unique and important. The USFS recognizes the importance of these indelible tribal ties to the Nation's forests and grasslands, as well as the millennia of knowledge accumulated, which is an integral part of current knowledge, perspectives, and resources that guide the USFS in its future mission.

The majority of government land managers do not have the experience or knowledge to recognize Native sacred places on the landscape. Consequently, it is important to work with Indigenous Nations early and often in the planning and implementation of restoration projects. When Indigenous Nations and peoples offer traditional knowledge about the lands now managed by the federal government, it is vital that the government treat that knowledge with respect and confidentiality.

Tribal elders directed the methods used for the project and shared ITEK and techniques to be integrated into future USFS spring management protocols.

IN SUMMARY

In summary, best or wise practices recognized during the project include:

- Coordinate and consult with tribal partners at the outset and at every step of the project.
- Acknowledge tribal ties to the lands and waters, as well as millennia of Indigenous knowledge, and educate government land managers accordingly.
- Respect and honor traditional knowledge and confidentiality.

Hopi members building water catchment at Castle Springs. Credit USFS

CONTACTS

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ACKNOWLEDGEMENTS

Numerous partners and stakeholders were engaged in the Hopi Springs Restoration Project. In particular, thanks to the following key Tribal Nations or organizations:

- Hopi Tribe
- Hopi Workforce Innovation
- Opportunity Act program
- Kaibab Band of Paiute Indians
- Kaibab National Forest
- Tonto Apache Tribe
- Yavapai-Apache Nation

ADDITIONAL MATERIAL

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CASE STUDY **5**

Karuk Tribe and Six Rivers National Forest Partner to Return Fire to the Landscape (USFS)

BACKGROUND

The Karuk Tribe, indigenous to the Six Rivers National Forest area, and the United States Forest Service (USFS) collaborated on integrating Indigenous Traditional Ecological Knowledge (ITEK) and Western science to achieve resilient landscapes, fire-adapted communities, and safe and effective wildfire response.

The ongoing wildfires in the western United States have highlighted the flaws of strict fire suppression policy and drawn attention to the efforts to restore fire to the landscape, as practiced by Indigenous peoples since time immemorial. The USFS, Six Rivers and Klamath National Forests, and the Karuk Tribe are collaborating through the Western Klamath Restoration Partnership to design and implement projects that revitalize the Karuk Tribe's culture and sovereignty on their aboriginal territory.

The ongoing wildfires in the western United States have highlighted the flaws of strict fire suppression policy and drawn attention to the efforts to restore fire to the landscape, as practiced by Indigenous peoples since time immemorial.

Fire is foundational to the Karuk Tribe, who live and manage 1.048 million acres of their aboriginal lands along the Klamath and Salmon Rivers in northern California. By removing accumulated fuels, fire makes room for new growth and change. This renewal helps ensure the quality of traditional foods and cultural materials and serves as a medium of cultural education. Ceremonies surrounding fire strengthen the Tribe's social networks and enhance its members' physical and mental health. The Tribe's proactive cultural use of fire also protects the Klamath River basin by reducing the availability of forest fuels—and thus reducing the risk of high-severity wildfire that can threaten people, their homes and businesses, and natural systems such

The Karuk Tribe has been part of the lands in the area of the Six Rivers National Forest for millennia. Their sense of "place" is tied to every part of their lives and to all of their cultural traditions. Spiritual ceremonies connect them to specific pieces of land, including the tops of mountain peaks and the valleys below. This makes tribal life near or on the Six Rivers National Forest Lands an integral feature of every aspect of the USFS's management of this land.

The Karuk have used fire regularly to consume live and dead forest woody debris (including shrubs and small trees) as a tool to regulate vegetative growth and composition, decrease fuels, and promote cultural natural resources. After a hundred years or more of fire suppression, much of the land that regularly saw low-intensity fire became overly dense and has crowded out those trees and plants that tribal people used for medicinal and spiritual purposes, as well as for sacred sites. As a result the land now sees more regular, severe wildfires, often with catastrophic consequences.

as forests and wetlands near rivers and streams. Wildland systems in the Klamath River range have evolved alongside Karuk management practices for thousands of years. Tribal families continue to use traditional forest management techniques—including low-intensity prescribed burns—to cultivate the forest to become a more productive resource for food and cultural materials and to reduce the availability of forest fuels. Tribal programs support and expand upon their work.

PROJECT ACTIVITIES

Since 2010 Western Klamath Restoration Partnership has worked to reach consensus and integrate the shared goals of the Karuk Tribe, the National Forests, and partners, including the Mid Klamath Watershed Council, local fire safe councils, and environmental organizations. Their collaborative planning efforts became reality in 2018 with the Somes Bar Integrated Fire Project. Tree thinning and prescribed burning help meet the mutual goal of mitigating severe wildfires. The Karuk Tribe's traditional knowledge drives this strategy, intentionally favoring culturally important species and patterns of trees. For example, workers are removing conifers and retaining black oaks and tanoaks, which can then take advantage of the light and produce acorns that feed animals and people. Further monitoring will track the project's effects on important species such as elk (*íshyuux*) and Pacific giant salamanders (*púfpuuf*), and on the vulnerability of the newly managed areas to damage from wildfires, which, it is hoped, will decrease.

Fire personnel on the Six Rivers National Forest in California condu
to improve opportunities for future wildland fire respons

Restoration of the landscape that includes thinning and prescribed burns helps preclude severe, catastrophic wildfire by creating a landscape where more low-intensity beneficial fire can occur; similar to the burns that kept forests healthy over a century ago. These restoration activities will:

- enable beneficial low-severity fire on the landscape and a safer environment for firefighting.
- improve the landscape for use by Native peoples for their cultural practices.
- restore native plants such as (hazel, Bear grass, Princess Pine) for medicinal uses.
- encourage more Native people to use the forests.
- provide defensible space.
- improve terrestrial and aquatic habitat.
- restore fisheries.
- create jobs (for tribal and non-tribal people) through timber, service work and planning on public and private lands. (e.g., botany, wildlife, and archaeology)

OUTCOMES

Full implementation of the Western Klamath Restoration Partnership—from collaborative planning to fuels treatments and prescribed fires—helped increase the pace and scale of ecological-restoration efforts and improve forest health across all landownerships. “As we embark on restoring these landscapes, we need to look at this partnership as a model of how all of our projects should be done,” said Six Rivers National Forest Supervisor Merv George. “We need to do this ‘left-side planning’—collaborating with our partners and stakeholders

ucting a prescribed cultural burn on a strategic ridge along a road
e and Tribal gathering access. Photo: Frank K. Lake, USFS

before we even begin the formal NEPA process on a project." Leaf Hillman, director of the Karuk Tribe Department of Natural Resources, echoed the importance of the partnership, "This is truly a historic opportunity—an opportunity to embark on a process that is based on honesty, an opportunity that begins to acknowledge the mistakes of the past, an opportunity to recognize that the Indigenous peoples of this land are still here, and most importantly, an opportunity to work together, along with our community partners, to build a better future for our children and our children's children."

The Somes Bar Project restored cultural burning to *Ikxariyatuuyship*, the mountain from which Karuk practitioners lit fires each year until the federal government enforced total fire suppression in 1911. The severity of the 2020 fire season has underscored the significance of collaborations between tribes and the USFS in mitigating wildfire risk. Former Six Rivers Tribal Liaison Devin McMahon says, "It's been exciting to work with a group that is doing so much to restore relationships between governments, people, fire, and the land."

The Somes Bar Project demonstrates how prescribed fire restores and maintains resilient ecosystems, communities, and economies and revives balanced human relationships with our dynamic landscape. The project revives ITEK of fire, integrated with emergent restorative fire practices at the landscape scale, in order to:

- re-establish frequent fire cycles, behavior, and patterns that stimulate resilient, spatially heterogeneous forest and riparian habitats and self-sustaining populations of culturally important Karuk focal species and traditions.
- promote shared values and encourage widespread personal ownership and local technical skills, leading to healthy communities and economies capable of well-coordinated land stewardship irrespective of ownership or administrative boundaries.

Horn Group Burners. Credit: USFS

The severity of the 2020 fire season has underscored the significance of collaborations between tribes and the USFS in mitigating wildfire risk.

LESSONS LEARNED

Fire and fire management have had polarizing effects on federal, state, tribal, and community interactions in the Western Klamath Mountains for many generations. The Karuk people once burned these lands—frequently and for many reasons still not fully understood by fire managers and the general public today.

Indigenous burning is increasingly recognized as a component of the ecosystem and a restoration technique. Fire is important for restoring grasslands for elk, managing for food sources such as tan oak and black oak acorns, and maintaining quality basketry materials. Karuk fire regimes generate what is known as "pyrodiversity" —the biodiversity consequences of fire management—on the landscape by extending the burning season and shortening the intervals of fire return.

The multitude of foods, materials, and other products that are harvested from Karuk lands requires the sensitive management of a complex and diverse network of fire regimes in order to maintain relationships with the landscape. The Somes Bar Project serves the broader vision of restoring cultural burning practices for those living along the Klamath River, its tributaries, and other ancestral landscapes. It is time to deliver on our cultural responsibilities to this ancient environment by blending the tenets of ITEK, as an Indigenous science, with Euro-American models of science to protect the Karuk people from further loss of cultural identity. This project provides a rare opportunity for us, as collaborators, to become responsible stewards of the land, enhancing focal species, integrating ITEK, and fostering strong relationships with other tribal groups. There are already informal discussions underway to expand the collaborative processes and considerations of the Somes Bar Project to the regional, national, and international levels. As we continue to build a social license, increasing the scope and scale of fire use for a more resilient landscape, we are also moving closer to a revitalized cultural environment, one in which ceremonial burning is fully restored.

Credit: USFS

> “This is truly a historic opportunity—an opportunity to embark on a process that is based on honesty, an opportunity that begins to acknowledge the mistakes of the past, an opportunity to recognize that the Indigenous peoples of this land are still here, and most importantly, an opportunity to work together, along with our community partners, to build a better future for our children and our children’s children.” – Leaf Hillman, director of the Karuk Tribe Department of Natural Resources, echoed the importance of the partnership

IN SUMMARY

In summary, best or wise practices recognized during the project include:

- Respect and protect Indigenous knowledge and practices.
- Honor tribal fire regimes.
- Foster collaborative management practices, be respectful and acknowledge ancestral knowledge, and connection to the land.

This is a reprint of a previous article on the Karuk Tribe’s forest management practices. For current information on the tribe’s activities refer to contacts on page 59.

Somes Project MOU Signing, Camp Creek. Credit: USFS

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Numerous partners and stakeholders were engaged in the Somes Bar Project. In particular, thanks to the following key Tribal Nations or organizations:

- Karuk Tribe
- Six Rivers National Forest

ADDITIONAL MATERIAL

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CASE STUDY **6**

Modeling a Cooperative Relationship through a Memorandum of Understanding: Eleven Ojibwe Tribes and the USDA Forest Service (USFS)

BACKGROUND

Approximately 56 million acres of land are held in trust by the United States for various Indian tribes and tribal individuals. Much of the land managed by the United State Forest Service (USFS) and other federal agencies was ceded to the United States by tribes. Although they no longer reside on these lands, many tribes retain rights and interests in National Forests and Grasslands by treaty. National Forests have important historical, spiritual, and cultural significance for tribes. These lands often serve as a source of traditional medicines, food, firewood, basketry and construction materials, and other resources that meet tribal needs.

Eleven Ojibwe tribes retain off-reservation treaty rights to hunt, fish, and gather through treaties with the United States federal government, included in four separate treaties (1836, 1837, 1842, and 1854) which cover much of northern Wisconsin, northern and lower Michigan, and eastern Minnesota. GLIFWC was formed to assist its member tribes in implementing off-reservation treaty seasons and protecting treaty rights and natural resources.

In December 1998, these Ojibwe tribes and USFS officials signed a Memorandum of Understanding (MOU) pertaining to four U. S. National Forests (Chequamegon-Nicolet, Hiawatha, Huron-Manistee, and Ottawa National Forests) within the USFS Eastern Region, the Eastern Region's Law Enforcement and Investigations Branch, and the USFS Northern Research Station. Tribal and USFS officials shared goals to re-affirm tribal sovereignty, strengthen relationships, and improve consistency with the exercise of treaty rights on ceded lands within U.S. National Forests. This MOU was last updated in 2012.

Consultation with tribes provides an invaluable means of obtaining expert advice, ideas, information, and diverse opinions from Native Americans.

Eleven Ojibwe Nations in Minnesota, Wisconsin, and Michigan maintain reserved off-reservation hunting, fishing and gathering rights in territories ceded (or sold) to the U.S. through treaties in the mid-1800s. The Great Lakes Indian Fish and Wildlife Commission (GLIFWC) is an intertribal natural resource agency, under the federal Indian Self-Determination and Education Assistance Act that exercises delegated authority from its eleven member tribes and is actively involved in a broad spectrum of activities to protect and enhance natural resources and habitat in the treaty-ceded territories while also infusing an Ojibwe perspective into its work. Member tribes include: Misi-zaaga'iganiing (Mille Lacs), Nagaajiwanaang (Fond du Lac), Bikoganoogan (St. Croix), Gaa-miskwaabikaang (Red Cliff), Mashkiigong-ziibiing (Bad River); Ginoozhekaaning (Bay Mills), Waaswaaganing (Lac du Flambeau), Gete-gitigaaning (Lac Vieux Desert), Zaka'aaganing (Mole Lake/Sokaogon), Gakiiwe'onaning (Keweenaw Bay), and Odaawaa-zaaga'iganiing (Lac Courte Oreilles).

Chequamegon-Nicolet National Forest, Wisconsin, USA. Credit: USFS

Whitetail deer, species of traditional and cultural importance. Credit: USFS

The intent of the MOU was to provide clarity for how tribes would exercise their treaty rights to gather wild plants/plant beings on National Forest lands within the areas ceded in those treaties, to outline the process for meaningful consultation and collaboration between the tribes and the agency, and to reiterate the fact that the tribes themselves have the right and responsibility to enforce regulations that govern their members' conduct on National Forests.

The MOU codifies a true government-to-government relationship wherein the tribes and the USFS come together as governmental equals. It provides a broad framework for discussions, relationship building, and a consensus-based consultation process wherein tribes have input into decisions affecting the abundance, distribution of, and access to National Forest resources. The MOU fosters coordination efforts to meet tribal needs, on larger policy concerns such as Forest Plan Revisions, or about individual projects proposed for Forest lands.

Under the MOU's consultative process, GLIFWC member tribes have input into all decisions

River, Chequamegon-Nicolet National Forest. Credit: USFS

affecting the abundance, distribution of, and access to National Forest resources. Consultation with tribes provides an invaluable means of obtaining expert advice, ideas, information, and diverse opinions from Native Americans, and such collaborative working practices can achieve positive outcomes for ecosystem health and respect for cultural values.

Throughout the development of the MOU, the USFS and representatives from the GLIFWC member tribes met regularly to collaborate on a wide range of issues.

PROJECT ACTIVITIES

Over the nearly 25 years of implementing the MOU, the USFS and representatives from the GLIFWC-member tribes have collaborated on a wide range of issues, including access for hunting, fishing, and plant gathering; native plant and wildlife habitat improvement; campsite use; youth education; and law enforcement.

Hundreds of species of plants that have been gathered by tribes over the past centuries are important to sustain the lifeway and culture of Ojibwe Nations in this area. Special forest products included in the MOU agreement are plants traditionally gathered for food, medicine, and other purposes by Indian people in the region. The most commonly gathered products for which a permit is needed include maple sap, birch bark, and fir boughs. Accomplishments pertaining to gathering rights include tribal harvest of wild plants, establishment of maple tree sugarbushes, and increasing opportunities for the harvest of paper birch bark from National Forests located in treaty-ceded territories.

The USFS continues work with tribes to provide timber for domestic, traditional, and other cultural purposes pursuant to provisions in the 2008 Farm Bill. This is realized through Appendix C of the MOU called the Tribal Timber Harvest Framework. Tribes implement a prescribed silvicultural treatment to a timber stand and keep the timber for fuelwood for tribal members. Further, the MOU also provides for limited harvest of live trees for cultural purposes.

The USFS collaborates with the tribes and GLIFWC to foster collaboration for resilient ecosystems and habitat restoration. Other accomplishments of the agreement include coordinated efforts to improve “Manoomin” or wild rice re-seeding, habitat improvement, and increased tribal access to wild rice lakes. The USFS has also been collaborating with the tribes and GLIFWC to improve elk habitat and provide space for tribal cultural activities pertaining to elk.

Tribes have lived within the Great Lakes landscape, that the USFS now manages, since time immemorial. Recently, there has been a steady increase of camping permits for Forest-managed sites issued to tribal members. Another accomplishment of the MOU ensures the tribes’ use of National Forest campgrounds without paying a fee, in the exercise of their treaty rights.

The Ottawa National Forest sponsors Camp Onji-Akiing (“from the Earth”), a natural-resource cultural camp on the Ottawa National Forest. Camp Onji-Akiing is a cooperative effort to explore opportunities for connecting children with their natural world. The camp program addresses physical, emotional, mental, and spiritual aspects of

adventure-based learning workshops. Tribal children explore natural resource careers and Native American Treaty rights, while building leadership skills and environmental stewardship. This week-long residential camp hosts 45 students (10-12 years old) each summer and celebrated its 10th anniversary in 2019.

Eastern Region's Law Enforcement and Investigations Branch (LEI) also acknowledges Tribal sovereignty and as part of the MOU, the LEI entered into a self-regulation agreement with the eleven Ojibwe Tribes, and a Cooperative Law Enforcement Agreement with GLIFWC to document the cooperative effort to enhance state, tribal, and local law enforcement in connection with activities on national Forest lands. The Cooperative Agreement provides for support and reimbursement to GLIFWC wardens and law enforcement on National Forest lands for tribes exercising their treaty rights activities on USFS lands.

Additionally, the relationships that started with the development of the MOU resulted in a number of collaborative partnerships supported by GLIFWC that have benefited both the tribes and the USFS. A few examples include:

- The USFS continues to work with the GLIFWC to support a phenology study on the USFS's Chequamegon-Nicolet National

Birch Grove. Credit: USFS

Forest in Wisconsin to learn about the shifting seasonal patterns of several culturally important plant species. This information is combined with traditional knowledge from the GLIFWC member tribes to determine if treaty resource gathering will be impacted by climate shifts.

- It was in this forum that the tribes and the USFS discussed investigating the status of paper birch within the Ceded Territories. When tribal gatherers in the Great Lakes region started noticing declines in ideal paper birch trees, they began to express concern. GLIFWC worked closely with tribal gatherers and with the USFS Northern Research Station staff to combine Indigenous knowledge with modern scientific inventory techniques to design a paper birch-specific field inventory guide. Projects like this can serve as a model for forest restoration and inventory efforts that incorporate both Indigenous knowledge and Western science, and will hopefully inspire future cooperative efforts. Paper birch is an extremely important species to the Ojibwe tribes in the Great Lakes region. The tribes use many parts of the tree; for example, the bark known as “wiigwaas” is used to craft canoes, baskets, and paper on which stories and images are etched. The fungus that grows on birch is also used in lighting fires. Knowledge about the paper birch tree and its uses is part of the oral tradition passed through the generations.

The MOU articulates the USFS’s recognition of tribal treaty rights, tribal sovereignty, and the capacity for tribes to self-regulate their activities on these National Forests.

OUTCOMES

The MOU articulates the USFS’s recognition of tribal treaty rights, tribal sovereignty, and the capacity for tribes to self-regulate their activities on these National Forests. It acknowledges the USFS role in fulfilling the United States federal government’s trust responsibilities and treaty obligations.

It establishes a framework for collaboration based on consistent and timely communication and tribal participation in National Forest decision-making. It outlines shared goals of protecting, managing, and enhancing ecosystems that support natural and culturally relevant forest resources. Additionally, the USFS and tribes agreed to establish working groups to monitor and implement the provisions of the agreement following its ratification.

The tribes and the USFS officials meet annually, and as needed, to discuss the implementation of the MOU. This includes reporting about the progress of ongoing projects, addressing concerns and questions, general discussions about forest conditions, and opportunities to collaborate on needs or challenges. The MOU also contains provisions for resolving disputes, and for modifying or withdrawing from the agreement.

This agreement has helped both groups leverage resources to accomplish projects involving restoration, sacred sites, and youth education. These relationships allow the parties to better effectuate tribal treaty rights on the national forests. Strengthened relations have prompted GLIFWC and USFS to explore opportunities to blend Indigenous Traditional Ecological Knowledge (ITEK) with scientific knowledge about climate impacts and strategies for adaptation.

LESSONS LEARNED

Although Tribal governments signatory to the MOU and the USFS do not always agree, it has been instrumental in providing a forum in which they can interact as co-stewards in order to resolve disagreements and coordinate activities. The MOU codifies a government-to-government relationship wherein the tribes and the USFS come together as governmental equals. Under the MOU's consultative process, the signatory tribes have input into all decisions affecting the abundance, distribution of, and access to National Forest resources.

Implementation of the MOU has been successful because of the shared dedication and commitment of the tribes and the USFS. A benefit of this collaborative relationship is that it adds content and specificity to the federal trust responsibility and to the federal government's treaty obligations. The MOU requires the USFS to consider the effects of its decisions on treaty resources and the tribes' ability to exercise their gathering rights. In all decision and analysis documents, the USFS must show how tribal information and involvement was taken into account. Representatives of the USFS note that the MOU has prompted the Service to undertake its most comprehensive review to date concerning its trust responsibilities. No other MOU signed by the USFS is as extensive regarding tribal rights and regulatory powers on federal lands.

The relationships that started with the development of the MOU resulted in a number of collaborative partnerships that have benefited both the tribes and the USFS.

GLIFWC MOU Meeting. Credit: USFS

Hundreds of species of plants that have been gathered by tribes over the past centuries are important to sustain the lifeway and culture of Ojibwe tribes in this area.

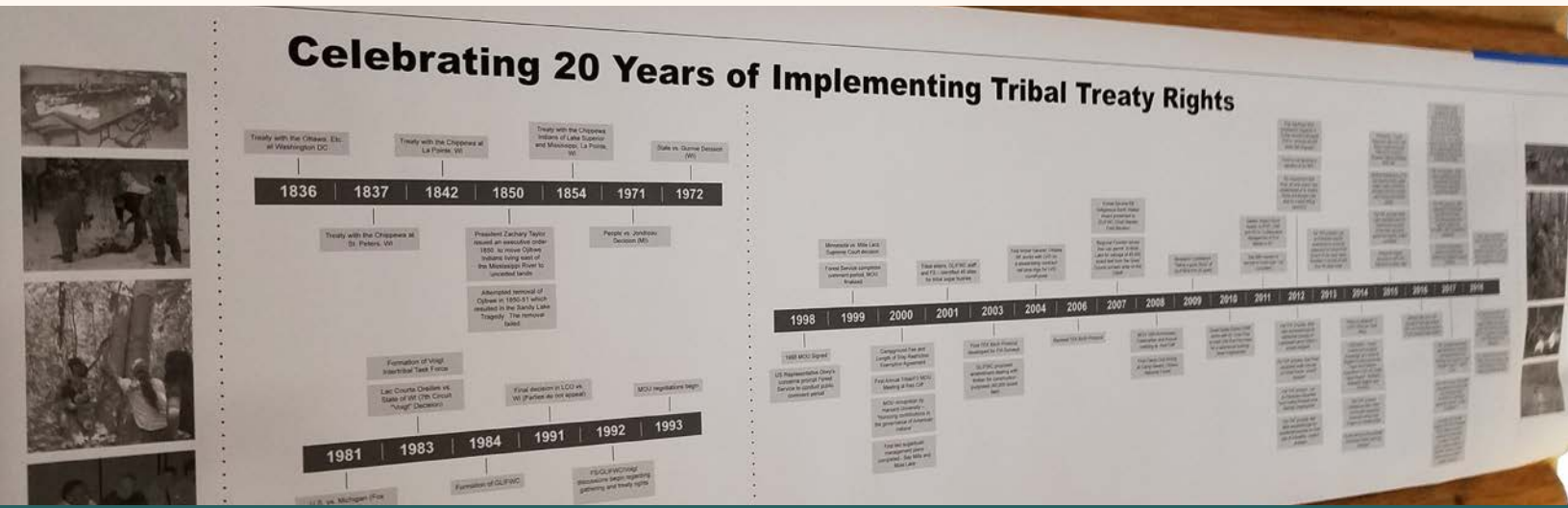
IN SUMMARY

American Indian tribes are sovereign nations that have inherent and reserved rights on USFS system lands as codified in treaties, the U.S. Constitution, statutes, case law, Presidential Executive Orders, and USDA and USFS Regulations. These rights include, but are not limited to, harvesting materials for cultural activities, hunting and fishing, spiritual and religious ceremonies, and access to sacred sites. Along with mandated consultation, the USFS seeks to create opportunities to work in collaboration and partnership to manage land, whether this be through an exchange of Western knowledge and incorporating ITEK, environmental education and outreach programs, or joint research projects for mutual benefit.

In summary, best or wise practices recognized during the project include:

- Develop and sustain long term relationships with tribes.
- Establish a framework for a collaborative government-to-government relationship based on consistent and timely communication.
- Ensure that when decisions are made government-to-government relationships are respected and consensus is reached where possible.
- Draw from Indigenous knowledge as well as scientific-evidence to guide credible decision-making.

As the MOU enters its third decade, the parties to the MOU look forward to following a similarly successful path. In addition to pursuing ongoing collaborative work, they will address new issues such as developing a shared vision for water resources, as well as incorporating ITEK into management, planning, and decision-making on National Forest system lands.



Timeline summarizing the collaboration and MOU efforts between the eleven Ojibwe tribes and the USFS Eastern Region. Credit: USFS

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- The eleven signatory Ojibwe tribes
- Great Lakes Indian Fish and Wildlife Commission
- USDA Forest Service, Region 9
- Chequamegon-Nicolet National Forest
- Hiawatha National Forest
- Huron-Manistee National Forest
- Ottawa National Forest

ADDITIONAL MATERIAL

Celebrating 20th Anniversary of Tribal Memorandum of Understanding. USDA Forest Service. https://www.fs.usda.gov/detail/r9/home/?cid=FSEPRD602188

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CASE STUDY **7**

Cahuilla Tewanet Vista Point Revitalization, Santa Rosa & San Jacinto Mountains National Monument (BLM and USFS)

BACKGROUND

The Cahuilla Tewanet Vista Point Revitalization Project involved the coordination, development, design, fabrication, and installation of 21 interpretive panels and an audio box at a popular wayside nature walk and vista point in the Santa Rosa and San Jacinto Mountains National Monument (Monument), California, United States. Led by the Bureau of Land Management (BLM), the joint BLM–United States Forest Service (USFS) effort to replace the site's sun-damaged and decade-old interpretive panels was initiated in 2010 and completed in late 2016. The new panels educate Monument visitors on traditional Cahuilla culture; the historic and current relationship of the Cahuilla people with the land; Cahuilla language terms, facts, and stories about native animals; and identification and traditional uses of plants found within the Monument.

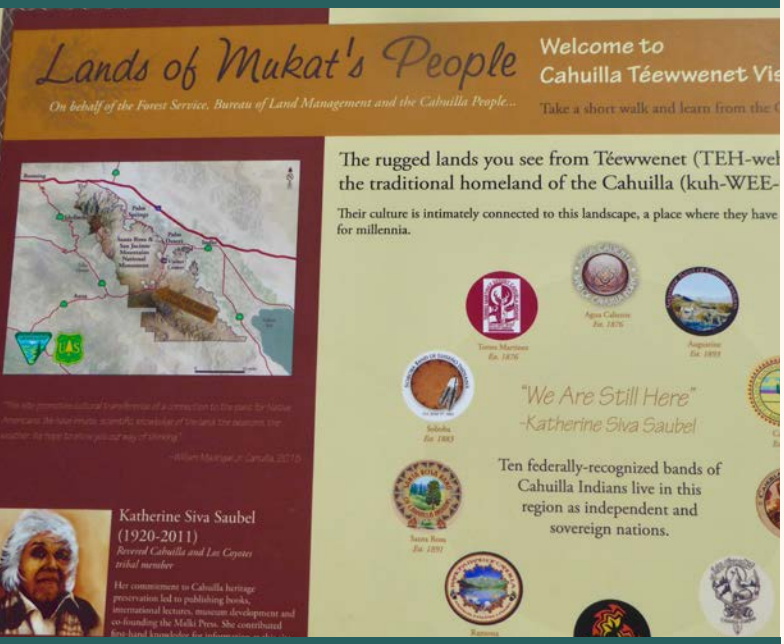
The two primary goals of the project were to provide accurate and culturally appropriate interpretive information about Cahuilla knowledge, traditions, and culture and to ensure that the interpretive content was guided and provided by the local Cahuilla people and presented from the Cahuilla perspective. Additional goals included: uphold the Monument's enabling legislation to recognize the cultural value of the Monument's natural and cultural landscape to the Cahuilla people, both historically and today; foster collaborative tribal stewardship and educational efforts with the Agua Caliente Band of Cahuilla Indians (ACBCI) as well as all federally recognized Cahuilla bands; continue to strengthen tribal relationships; and promote information sharing to enhance land stewardship and conservation.

The ACBCI continues to exercise its long-standing tradition as a land-use manager and steward of the natural resources in and around the ACBCI Reservation.

The Cahuilla, also known as ʔívilʔuqaletem or Ivilyuqaletem, are an American Indian people of interior southern California. Cahuilla language and cultural traditions encompass the people of the area bounded on the north by the San Bernardino Mountains, the middle of the Colorado Desert to the east, the Anza-Borrego Desert and the Santa Rosa Mountains to the south, and the San Jacinto Mountains and portions of the San Jacinto and San Bernardino valleys to the west, an area of approximately 2,400 square miles (6,200 km2). The Cahuilla are a Shoshonean-speaking people whose historical relationship connects them with the Hopi of Arizona, the Gabrielino on the Pacific Coast, the Luiseño in the interior basin, the Diegueño to the south, and many desert-oriented groups of southern California, including the Serrano, Kamia, Chemehuevi, and Paiute (Bean and Siva-Saubel, 1972).

A Cahuilla Welcome. Credit: Joanna Stark Productions

The Monument is important habitat for the endangered Peninsular Bighorn Sheep.



Cahuilla Teewwenet Vista Point Interpretive Panel. Credit: Joanna Stark Productions

There are nine federally recognized bands of Cahuilla people: Agua Caliente, Los Coyotes, Ramona, Cahuilla, Santa Rosa, Torres-Martinez, Augustine, Morongo, and Cabazon. Soboba are Luiseno, with inclusion of Cahuilla. Although all bands contributed interpretive content for the project, the ACBCI was one of the primary partners and is the only band with tribal reservation land within the Monument boundary.

As a sovereign Indian nation, the ACBCI has protected and managed the areas and resources within its jurisdictional territory for hundreds of years. The ACBCI continues to exercise its long-standing tradition as a land-use manager and steward of the natural resources in and around the ACBCI Reservation. In 2010 the ACBCI adopted their Tribal Habitat Conservation Plan to provide the means to protect and contribute to the conservation of federally listed species or those deemed by the Tribe and U.S. Fish and Wildlife Service to be sensitive and potentially in need of listing in the future. Among other purposes, the Habitat Conservation Plan also serves as an adaptive tool to allow the Tribe to update and/or revise baseline biological resource information, manage conservation goals and priorities, and complement other existing and planned conservation efforts in the region (Agua Caliente Band of Cahuilla Indians, 2010). Additionally, many tribal members continue to use the land in traditional cultural ways, such as collecting acorns, pinyon nuts, and native grasses for baskets.

Other partners included the Agua Caliente Cultural Museum, the Malki Museum (the oldest non-profit museum founded and operated by Native Americans on a California Indian reservation), the Cabazon Indian Museum, The Living Desert, the Coachella Valley Archeological Society, the Natural Science Collaborative, the San Bernardino National Forest (USFS), Idyllwild Nature Center,

Linguist Dr. Eric Elliot, and Friends of the Desert Mountains.

The Monument was designated by Congress on October 24, 2000, through Public Law 106-351, Santa Rosa and San Jacinto Mountains National Monument Act of 2000. The designation explicitly recognized the cultural value of the Santa Rosa Mountains and the San Jacinto Mountains, as well as the Coachella Valley, to the ACBCI and the significant cultural sites the mountains contain, including village sites, trails, petroglyphs, and other evidence of their habitation. The Monument is co-managed as one unit by the BLM and the USFS.

Cahuilla Tewanet Vista Point interpretive site is a popular roadside destination that encompasses an accessible 200-meter trail leading visitors to a viewpoint deck overlooking the Monument's Santa Rosa Wilderness. The vista point serves as a primary interpretive location for the Monument and is one of the few sites that can reach a broad spectrum of Monument visitors.

The new interpretive panels replaced those installed at Cahuilla Tewanet Vista Point in 2000. The quotes by Cahuilla elder and author Katherine Siva-Saubel served as content on the original panels, and Cahuilla elders in the Agua Caliente and Los Coyotes bands of Cahuilla Indians approved panel drawings and a map of the Coachella Valley area reservations. However, by 2010 the original interpretive panels were outdated. The panels did not address the Cahuilla as a thriving culture and people of today, and instead presented the Cahuilla from an archaeological perspective, as if they were an extinct culture. In addition, the designs and graphics were outdated, and some panels were barely legible due to long-term exposure to extreme temperatures and the desert sun.

Although the Cahuilla Tewanet Vista Point is on USFS land, the USFS and the BLM both recognized the significant value of replacing the interpretive panels with updated panels that better represented the historic and contemporary Cahuilla perspective, culture, and traditions. The Monument's interpretive specialist, a BLM employee, took the lead to replace and update the old interpretive panels at the site. Both the interpretive specialist and the federal agencies believed that it was imperative to collaborate with the ACBCI and the other federally recognized Cahuilla bands to directly and fully involve the Cahuilla people in the content development and design of the interpretive panels and interactive elements to ensure a truly meaningful, appropriate, and accurate interpretive site.

The vista point serves as a primary interpretive location for the Monument and is one of the few sites that can reach a broad spectrum of Monument visitors.

PROJECT ACTIVITIES

A contractor was hired through a listing on FedBizOpps.gov and a statement of work created by the BLM interpretive staff. Proposals were reviewed and rated by a team of three including the BLM Interpretive Specialist, ACBCI Cultural Heritage Officer and the Director of the Natural Science Collective. Experience working with Native American

themes was an important selection criteria. With assistance from the contractor, BLM staff sent invitations to participate in the revision of interpretive panels to all federally recognized bands of Cahuilla People, and the office of each band of Cahuilla was contacted individually via phone and email to determine the most appropriate representatives to work with on the project. This served as an opportunity for BLM staff to develop a positive relationship with tribal representatives that continued to grow through the life of the project.

Once a tribal representative was designated, most communication was conducted through phone calls, emails, and meetings with individuals or family groups. Personal interaction was a priority and agency members were flexible about meeting with representatives in places and formats preferred by the Cahuilla Bands, and willing to call or meet in person at places convenient for the tribal members. Tribal member choices were respected and included their tribal office, their homes, the interpretive site, and a restaurant. The agency held traditional and formal meetings with tribal representatives to coordinate schedules, share ideas, share traditional stories, and past and current ethnobotanical information.

A charrette organized by the contractor was held at the onset of the project and included tribal representatives, education professionals, archeologists, a USFS tribal liaison, a linguist of the Cahuilla language, BLM interpretive staff, the Monument Manager, and museum directors.

At the completion of the project in January 2017, a celebration was held to unveil the interpretive panels. It included participation from tribal members, tribal government, federal agency and other project partners, and featured Bird Songs sung by Cahuilla Bird Singers. The celebration served as a catalyst for Bird Singers from multiple Cahuilla tribes to sing together, a special occurrence. Larry N. Olinger, Vice Chairman of Agua Caliente Band of Cahuilla Indians, was a speaker at the event and children from the tribe helped to remove a

Images of Cahuilla people past and present, Interpretive Panel. Credit: Tracy Albrecht

decorative covering of the entry signs to kick off the unveiling.

Personal interaction was a priority and agency members were flexible about meeting with representatives in places and formats preferred by the Cahuilla Bands.

OUTCOMES

The project developed new interpretive panels and updated the interactive wayside at the Cahuilla Tewanet Vista Point interpretive site. The initiative gathered and curated stories, traditional knowledge, and pictures directly from the primary source of tribal elders (some of whom have passed away since the project was initiated) and tribal members of all ages. The new material provides both current and historic Cahuilla cultural traditions and knowledge as well as a land stewardship and conservation message to better educate and connect visitors to the Monument's cultural heritage. The initial stages of the project were underway by 2010, the final stages were completed in late fall of 2016, and the interpretive panels were officially unveiled in the January 2017 celebration.

All federally recognized Cahuilla bands participated and were acknowledged in the welcome panel. The ACBCI was the most significant tribal partner in the project. Tribal members from all bands were closely involved in content development. Education professionals in the region also contributed to the project through the editing process and the *charrette* held at the onset of the project. Final panel content was based on academic journals, books, lectures, and primary source interviews and photographs, with external editing provided by scholars, and young and elder Cahuilla People.

Relations were developed and/or strengthened between agency and tribal representatives from all bands including tribal elders, tribal members, tribal cultural heritage staff, and tribal government members. Tribal participation increased throughout this collaborative and intergovernmental process.

The project resulted in a greater cultural awareness between the agencies and tribes, including increased sensitivity to the landscape and recognition that the Cahuilla Indian cultural traditions and connections to this landscape are not confined to the past but are ongoing, living, growing, and evolving, today and into the future. When interacting with elder members of tribes it was reassuring to hear their verbal support of the project and their appreciation of the site's messaging in helping even their own youth better understand Cahuilla ways. The project also increased federal agency awareness of different cultural perspectives on stewardship and improved understanding and acceptance of tribal approaches to conservation.

The Cahuilla Tewanet Vista Point interpretive site project upheld not only the letter of the legislation designating the Monument, but stayed true to the spirit and intent of the legislation to have the federal agencies work collaboratively and respectfully with the Cahuilla People to recognize and share the cultural value of the Santa Rosa Mountains and the San Jacinto Mountains, as well as the Coachella Valley, to the Cahuilla People.

To facilitate convenient viewing and a broader audience for the 21 interpretive panels, a plan has been submitted to make the panel graphics of the Cahuilla Tewenet site available on the BLM's website for the Santa Rosa and San Jacinto Mountains National Monument.

LESSONS LEARNED

A key lesson learned was to allow plenty of time to build new relationships with tribal groups. Agency members found it challenging to establish and build relationships with Cahuilla bands and their tribal members where there was no previous, established collaborative relationship.

For example, it took time for the BLM to learn who to reach out to for the right tribal contacts. Often the best initial contact was the tribal government administrative assistant. The administrative assistant could then direct the federal agency project coordinator to the best person within the tribal government to inquire about interest in collaboration. The most frequent contact was the tribe's cultural heritage staff, although not always.

Time and persistence were also needed for outreach efforts to bear results. The first or second outreach effort might not result in an interested response. Even a third or fourth outreach effort might not. However, ongoing, continued efforts by the BLM to engage with the tribes often did progress into a collaborative relationship.

Incorporating a variety of communication techniques throughout the project helped identify the

Unveiling celebration. Credit: ACBCI

most effective way to communicate. Phone calls and meetings with individuals or family groups were the most productive modes for communication. Email was effective with some individuals. Formal meetings and written letters were not as effective, with a negligible response rate.

Working side by side, face to face, was invaluable, especially when inquiring about traditional and contemporary practices because it enabled additional communication through observation. When a topic such as gathering acorns as a family was shared, volume, intonation, and physical expression were often highly animated. Besides hearing from the Cahuilla tribal members about an important tradition still in practice today, the importance was greatly reinforced by animation and current examples, such as being shown a burlap bag of acorns in the laundry room. These meetings also helped individuals express knowledge. In open spaces with native plants, such as at the interpretive site, the explanation of acorn uses came more naturally. Although highly worthwhile, the individual, in-person communication required greater agency and contractor staff time.

With the historically oral Cahuilla language, an interesting challenge came about when trying to determine how to spell different words in the Cahuilla language, as many words had multiple spelling variations. It took significant work with Cahuilla elders and linguistics specialists to determine the 'best' spelling, the spelling with the greatest consensus as well as cultural approval.

The Cahuilla Tewanet Vista Point interpretive site project upheld not only the letter of the legislation designating the Monument, but stayed true to the spirit and intent of the legislation.

Finally, when choosing a contractor, it is important to select a company that has experience working directly with tribes as opposed to just developing interpretive material about indigenous people. Working directly with the tribes requires greater time for relationship building, distilling and finding consensus on content, and sensitivity to communication styles and cultural perspectives. Contractors must be prepared for and amenable to the timeframe and nuances necessary to achieve a desired and culturally appropriate product.

Working side by side, face to face, was invaluable, especially when inquiring about traditional and contemporary practices because it enabled additional communication through observation. When a topic such as gathering acorns as a family was shared, volume, intonation, and physical expression were often highly animated.

IN SUMMARY

In summary, best practices and lessons learned include:

- Allow sufficient time to build relationships
- Be proactive and persistent in outreach efforts
- Incorporate a variety of communication techniques
- Meet in-person, and respect meeting location and structure preferences
- Remember that Indigenous languages and traditions may not fit neatly in a European-based structure; be flexible and take the time to find the best, culturally appropriate solution
- Make sure your partners and/or contractors are also willing and able to follow best practices

Agua Caliente Band Vice Chair Speaking at unveiling celebration. Credit: ACBCI

Unveiling of interpretive panel. Credit: ACBCI

Cahuilla Tribal Members and staff review panel. Credit: Joanna Stark Productions

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Biff Baird, Director, Exhibits By Design
Lala Andreas, Member, Cahuilla Indian
Dr. Ernest Siva, Member, Los Coyotes Band of Cahuilla Indians
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Denisa Torres, Cultural Dir, Morongo Band of Cahuilla Indians
Steven Estrada, Member, Santa Rosa Band of Cahuilla Indians
William Madrigal, Member, Morongo Band of Cahuilla Indians
Judy Stapp, Director, Cabazon Indian Museum
Mary Belardo, Torres Martinez Band of Cahuilla Indians
Carrie G, Secretary, Soboba Band of Cahuilla Indians
H. Haines, Member, Augustine Band of Cahuilla Indians
Cultural Director, Los Coyotes Band of Cahuilla Indians
Sean Milanovich, Member, Agua Caliente Band of Cahuilla Indians
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Mara Costo, Cahuilla Band of Cahuilla Indians
Sunshine Edwards, Cahuilla Band of Cahuilla Indians
Sean Bogner, Member, Cahuilla Band of Cahuilla Indians
Joe Hamilton Family, Ramona Band of Cahuilla Indians
Ray Huaute, Heritage Director, Morongo Band of Cahuilla Indians
Ruth Watling, Botanist
Sue Adams, Artist

ADDITIONAL MATERIAL

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CASE STUDY **8**

Native Youth Community Adaptation and Leadership Congress (USFWS)

BACKGROUND

The Native Youth Community Adaptation and Leadership Congress (NYCALC) is a federal and non-governmental collaborative program that invites Native communities to work together to address conservation challenges in a changing environment (*Native* is defined here as a person of Native American, Alaska Native, Native Hawaiian, or Indigenous peoples of U.S. territories descent). The one-week, on-site Congress initiated in 2015 is held at the United States Fish and Wildlife Service (USFWS) National Conservation Training Center. As a lead organizer, the USFWS works closely with tribal communities and NYCALC collaborative members to develop future conservation leaders with the skills, knowledge, and tools to address environmental change and conservation challenges to better serve their schools and home communities.

NYCALC is a federal and non-governmental collaborative program that invites Native communities to work together to address conservation challenges in a changing environment

The Congress expanded since 2015 to include Native college-aged junior faculty so they could attend a leadership development track and practice mentoring skills with high school students. The Congress also includes a Native relations training component for federal professionals who attend the Congress, to improve their communication skills, understanding of regional tribes, and awareness and sensitivity to different cultural beliefs.

The Department of the Interior and USFWS collaborates with American Indian tribes in the management of natural resource issues through consultation, part of the federal trust responsibility.

The U.S. government and tribal communities have a complex and conflict-filled history. Historical policies did not live up to the federal trust responsibility. To address this history and improve relationships, the USFWS needed to acknowledge that its work did not always reflect Native priorities and practices and to recognize the value that these practices and cultural traditions bring to the table. The Congress was envisioned as a way to help build long-term relationships that improve trust.

By sharing the missions and conservation goals of federal agencies with these students, recruitment of members of these communities can be increased, the employment prospects and representation of Native youth can be improved, and resultant benefits can be seen in terms of the enhanced integration of tribal and federal partners in the management of federal lands. Students receive guidance and motivation about furthering their education at a technical school, university, and professional level that will benefit them and their community long-term.

PROJECT ACTIVITIES

Partners established a working committee of approximately 40 people, which included federal professionals and representatives from several tribal communities (junior faculty and adult mentors—youth leaders or educators who live in the Native youths' communities) to develop a business plan and structure for the Congress. The committee held one-hour conference calls once a week for six months to build relationships; develop a plan, application process, and outreach strategy; and design a Native relations training component, mentorship program, and interactive learning opportunities.

To ensure a broad representation of Native communities across the country, participants are selected through a competitive application process. An Outreach Strategy includes sharing information about the application process with personal and professional contacts and posting it on numerous social-media outlets by all the participating agencies. The Bureau of Indian Affairs and USFWS also works with partner organizations to distribute application forms to their respective networks of tribal school principals, teachers, and youth program leaders (some of whom served as adult mentors for teams of three to five students) who pass the application materials on to other potential mentors. Mentors identify potential student applicants and provide guidance in completing applications.

To ensure a broad representation of Native communities across the country, participants are selected through a competitive application process.

The Congress includes mini-group presentations, motivational and inspirational speakers, service projects, workshops, a career fair, and one-on-one interactions. Through these activities, students explore one Big Question, for example: "What can you do to cultivate/nurture adaptation to make your community resilient in a changing world?"

The Congress utilizes open-space technology to encourage a student-led agenda and provide students the opportunity to focus on the environmental-related topic areas that they are most passionate about and to champion strategies that are the best for their home communities. It supports an actions-based approach to discussions by creating a working-conference environment that builds on the principle of going with what works, driven by the students through relationship building and active listening. At the beginning of the conference, students meet in a big, open circle, and are encouraged to express their interests in relation to the overall theme. Participants with similar passions are grouped into smaller circles to have a more in-depth discussion led by faculty and junior faculty.

For the community-service component of the Congress, the USFWS and Bureau of Indian Affairs work with partner Native American organizations to provide seed money for post-Congress, student-led projects that will address community-based social change and conservation priorities. For many of the high school students, the environmental conservation and resilience message is already well integrated with their traditional community values and cultural practices, so their communities are supportive of their service projects. Students submit their draft project proposals with their applications for the Congress. Throughout the Congress, students work with their mentors to refine their projects. Projects are approved by consensus of the collaborative. This "mini-grant opportunity" enables the participants to apply the knowledge and experiences they acquired throughout the Congress in real situations. Adult mentors support the students in their home communities as they implement the projects to address resiliency and adaptation, and related natural resource conservation issues.

Congress activities seek to:

- identify key environmental issues facing Native communities.
- describe how various federal agencies and partners are addressing these environmental issues.
- motivate and inspire ownership and empowerment of the future well-being of tribal communities.
- cultivate and nurture emerging youth leaders.
- expand youth networks within and around tribal communities.
- encourage the continuation of ongoing conservation projects by providing mini-grants.
- train Native youth, junior faculty, adult community mentors, and agency conservation professionals in leadership principles, foundational concepts and practical applications

Federal agency personnel share information on careers with Federal agencies at NYCALC. Credit: USFWS

Native youth from NYCALC learn about native plants and insects on the conservation campus. Credit: USFWS

Native youth tie protective layers on a young tree during NYCALC field activities. Credit: USFWS

Traditional hoop dancers sharing their journey to Native youth and how images from their past can be inspiration for their future. Credit: USFWS

Hopi hoop dance as part of cultural night. Credit: USFWS

of science, technology, engineering, mathematics, conservation, and outdoor skills.
- empower communities to implement and/or continue existing programs via mini-grant opportunities.
- broaden awareness of the roles and responsibilities of conservation agencies and organizations.
- develop future leaders who will help ensure a healthy natural environment for their communities, many of which are heavily dependent on wildlife, fish, and plant populations for their traditional lifeways and subsistence.

OUTCOMES

From 2015 to 2019, members of more than 70 tribal communities attended the Congress.

The participants:

- demonstrated leadership and communication skills to engage with their peers and home community members about conservation.
- actively participated in the larger network of like-minded people addressing issues related to environmental change and natural resource conservation.
- worked together as a team and learned from each other.
- made personal and professional connections and relationships.
- improved cultural competencies and relationships between federal employees and Native leadership.
- learned about conservation-based college programs and opportunities for pursuing federal conservation jobs.
- developed a strong foundation enabling them to help engage, motivate, inspire, and empower the next generation and the generations that follow.

Upon return to their communities, Congress participants served as informed voices for building environmental change awareness and resiliency within Native communities.

The NYCALC-awarded community mini-grants supported projects such as greenhouses, local and sustainable food-sourcing, aquaponics, adaptation strategies workshops and training, regional training on community adaptation, soil science, and science, technology, engineering, and mathematics training activities.

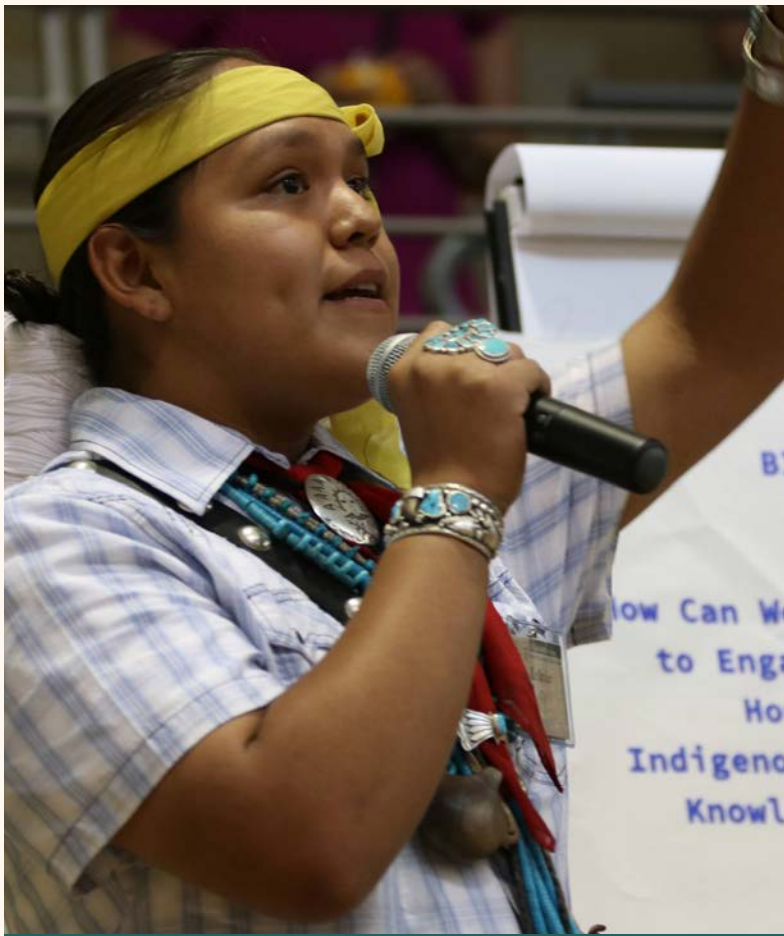
Open-space technology and opportunities to design community-service projects and participate in fun, outdoor, group activities helped remove cultural barriers, allowing participants to effectively address common environmental change concerns.

Upon return to their communities, Congress participants served as informed voices for building environmental change awareness and resiliency within Native communities. Participants shared with their community and leaders the experiences they had, what they learned about environmental change engagement, and how federal agencies, other communities, and related organizations can assist Native communities in building civil capacity.

LESSONS LEARNED

The Congress was structured as a full-week, residential, on-site gathering held at the USFWS National Conservation Training Center, and as such, was a significant commitment for some of the student participants. Project organizers must be able to identify, elicit, and respond to the concerns of student participants in a supportive and sensitive manner. And they should provide pastoral care to help students who might suffer from homesickness and other unmet needs while away from home.

In establishing the terms of any such Congress or discursive, collaborative meeting, consider adopting the Law of Two Feet. Under this guiding principle, if at any time during a meeting or an event, participants who find that they are not personally contributing or adding value, they are encouraged to use their two feet to move to a place where they are able to contribute more actively and meaningfully. In this way, the responsibility for a successful outcome in a group event lies with the participants, who are enabled to maximize their own learning and contribution, which only they can judge and control.



Native youth addresses peers at NYCALC. Credit: USFWS

IN SUMMARY

In summary, best or wise practices recognized during the project include:

- Coordinate with tribal partners at the start and at every step of the project.
- Timelines must include sufficient time for cross-cultural awareness and communication.
- Build ongoing, personal relationships in order to develop productive organizational relationships.
- Be respectful and acknowledge ancestral knowledge, and connection to the land.
- Engage youth in meaningful ways for they can be effective ambassadors for change.
- Provide a variety of program components and maximize interactive learning opportunities so students can learn in ways that work best for them.

Native Youth Community Adaptation Leadership Congress. Credit: USFWS

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- South Central Climate Science Center
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CASE STUDY **9**

Technical Assistance with Fish Health Issues on Tribal Reserved Lands (USFWS)

BACKGROUND

In 2016 this collaborative initiative between the United States Fish and Wildlife Service (USFWS) and Southwest Tribal Fisheries Commission (SWTFC) was organized in New Mexico to help tribal partners identify and manage an outbreak of bacterial kidney disease in tribal hatcheries that supply fish to tribes in the region, and to address other emerging fish health issues. The initiative was also intended to further strengthen government-to-government communications with Southwest tribes at the national level and lay the groundwork to assist regional USFWS staff in mustering and deploying USFWS resources from across all USFWS regions. The project convened USFWS fish health experts from several National Fish Health Centers and training staff from the National Conservation Training Center (NCTC) to provide hands-on training to members of the Southwest tribes.

The Fisheries Program of the USFWS has a long history of working with Native Americans in cooperative co-management of aquatic resources that take place both on and outside of tribal lands. USFWS Fisheries staff represent USFWS through membership of the SWTFC Board of Directors, which provides a programmatic link with tribal leadership, consistent with USFWS policy to fulfill tribal trust and subsistence responsibilities.

Tribal fish hatcheries in the Southwest United States detected bacterial kidney disease, a chronic disease that has been challenging fisheries since the 1930s.

The SWTFC is a nonprofit coalition of tribes, Pueblos, and Nations established to promote self-determination through the development of sustainable recreational and native fisheries programs. They provide technical skills and support to tribal fisheries programs and projects by assisting tribes with creating and facilitating intergovernmental and nongovernmental

The Department of the Interior and USFWS collaborates with American Indian tribes in the management of natural resource issues through consultation, part of the federal trust responsibility.

The USFWS National Fish Hatchery System works collaboratively with tribes, states, landowners, partners, and stakeholders to promote and maintain healthy, self-sustaining populations of fish and other aquatic species. Fulfillment of tribal partnerships and trust responsibilities is a top priority. By closely monitoring the health, status, and trends of aquatic populations, we can limit the outbreak and spread of invasive species and disease-causing pathogens. NFHS has responded to fisheries conservation challenges since 1871 and the Service maintains a cadre of experts in fish health who support national, state, and tribal hatcheries through cutting-edge science and technology that helps improve conservation techniques and methods.

partnerships; providing advocacy needed to obtain funding and support; and providing tangible services in the form of technical assistance, training, education, and equipment

In 2016 tribal fish hatcheries in the Southwest United States detected bacterial kidney disease, a chronic disease that has been challenging fisheries since the 1930s. It is a serious disease of cultured and wild salmonids and is frequently lethal. Although bacterial kidney disease has been present in the United States for over 80 years, the 2016 outbreak was the first the Southwest tribes experienced, and this gave rise to complications in the co-management of the affected fisheries. In particular the outbreak raised financial concerns for the tribes in their restoration and recovery programs of native and recreationally important species on tribal lands, which would severely impact tribal self-sufficiency through their recreational fisheries.

Owing to the extensive expertise and experience of the National Fish Hatchery System in restoring fisheries, and its long-standing relationships with tribal partners, the SWTFC reached out to USFWS for assistance in determining the appropriate response to the serious impact of bacterial kidney disease on tribal economies and cultural resources.

PROJECT ACTIVITIES

During their annual meeting in 2016, the SWTFC discussed with the USFWS National Native American Programs Coordinator the possibility of jointly developing a hands-on workshop for tribes that manage fish hatcheries affected by the bacterial kidney disease. In accordance with the USFWS's Native American policy, eight Southwest tribes and the USFWS worked together to develop a proposal. The USFWS Fish and Aquatic Conservation Fish Health Centers, the Bureau of Indian Affairs, the National Native American Coordinator

Adult rainbow trout (Oncorhynchus mykiss) in the raceways at Mescalero Tribal Fish Hatchery. The trout are close together in this photo because they are preparing to be fed. Credit Matthew Patterson/USFWS

office, the regional Native American Liaison, and the Native American Fish and Wildlife Society provided extensive coordination and funding support.

The workshop was conducted on-site at the Mescalero Tribal Fish Hatchery in New Mexico, United States, where the outbreak was detected. Workshop participants included representatives and members from the natural resource's offices of the Navajo Nation, Pueblos of Sandia, Laguna, and Zuni, Mescalero Apache, White Mountain Apache, Jicarilla Apache, and Southern Ute Tribes. Other stakeholders included the Bureau of Indian Affairs, Trout Unlimited, SWTFC, USFWS HQ, USFWS Fish and Aquatic Conservation HQ, Midwest Regional External Affairs (Native American Liaison), training staff from the USFWS NCTC, and fish-health experts from the Bozeman Fish Health Center (Montana), Lacrosse Fish Health Center (Wisconsin), Lower Columbia River Fish Health Center (Washington), and the Dexter Fish Health Unit (New Mexico).

The workshop structure was derived from a wild-fish-health-training-course model developed by the NCTC. The model was chosen due to ongoing successes accomplished by the training staff at NCTC, which works directly with tribal natural-resources professionals on other related aquatic-resources training. Participating Fisheries Program staff from Regional Fish Health Centers modified the model as needed to update it with current information on bacterial kidney disease tailored to the experiences of the tribal partners. The training included classroom lectures, hands-on necropsies in a laboratory setting, and one-on-one interaction with fish-health experts to provide immediate answers to questions of concern for tribal members.

The Fisheries Program engaged the National Native American Programs Coordinator and

Fish Biologist with New Mexico Fish and Wildlife Conservation Office explains proper necropsy technique to tribal workshop participants. Credit: Matthew Patterson/USFWS

Preparing a rainbow trout for necropsy. In a standard necropsy, fish health biologists look for skin lesions and other external abnormalities and take samples of various organs to look for bacteria and viral pathogens. Credit Matthew Patterson/USFWS

regional Native American Liaison to assist in interactions between USFWS and the tribes to assure consistency with USFWS's revised Native American Policy and consultation guidelines. The Regional Native American Liaison and SWTFC provided essential checks and balances with tribal leaders, providing culturally sensitive assessments of impacts to the tribes and appropriate communications protocols.

OUTCOMES

This project was successful on a number of levels, not least in the restoration of a population of healthy fish in tribal hatcheries that supply fish to tribes in the region within a matter of weeks of the workshop ending.

One notable achievement was the strengthened relationship between USFWS and Southwest tribes that came about as a result of the project. The project demonstrated to Native tribes that USFWS was committed to working collaboratively, and was able to offer valuable expertise and technical assistance to the tribes to address conservation needs on tribal lands.

By addressing tribal members' concerns through one-on-one interaction with fish health experts, the project built trust and served to develop long-term relationships in the co-management of nationally important species.

As a result of the project, all participants acquired a better understanding of bacterial kidney disease and its effect on fisheries, both through the classroom lectures and by conducting hands-on necropsies in a laboratory setting. By addressing tribal members' concerns through one-on-one interaction with fish health experts, the project built trust and served to develop long-term relationships in the co-management of nationally important species.

A longer-term benefit that emerged from the project was the development of a successful template for future workshops that can be conducted with tribes to address disease issues, as well as similar emerging conservation challenges.

Tribal members explaining the fish health issues faced at the

Lastly, the project created opportunities for USFWS and Indigenous communities to work together in shared stewardship to improve both people's livelihoods and the conservation of resources within priority areas.

LESSONS LEARNED

- Pre-planning and coordination among all parties was crucial to the success of this project.
- Preliminary coordination within the Fisheries Program with national and regional leadership allowed USFWS staff to muster required personnel and project resources, and to determine the appropriate model.
- The three-month lead time was sufficient, owing to the strong relationships that pre-existed between the Fisheries Program and Southwest tribes, as well as the work of the dedicated programmatic tribal liaison person within the Fisheries program.
- Funding shortages for tribal members to attend the workshop can be a major challenge. Such attendance costs should be budgeted for at the outset of any such program to ensure wide and unrestricted participation.
- Staff shortages among the local USFWS Fish and Aquatic Conservation field staff created coordination difficulties, so human resources should also be carefully considered and augmented as possible to cope with the additional work demanded by such programs.

Mescalero Tribal Fish Hatchery to USFWS staff and tribal members from other fish hatcheries in the Region. Credit Matthew Patterson/USFWS

The project created opportunities for USFWS and Indigenous communities to work together in shared stewardship to improve both people's livelihoods and the conservation of resources within priority areas.

IN SUMMARY

In summary, best or wise practices recognized during the project include:

- Allow sufficient lead time to coordinate between technical staff and tribal participants.
- Secure commitments from regional staff who are available to devote sufficient time to focus on the project.
- Identify and muster the participation and expertise of other relevant stakeholders, such as State Department of Natural Resources staff and interested industry personnel.

Tribal hatchery staff performing a necropsy on a rainbow trout looking for both external and internal abnormalities. Credit Matthew Patterson/USFWS

Anesthetized rainbow trout sitting on ice awaiting necropsy. Credit Matthew Patterson/USFWS

Mescalero Tribal Fish Hatchery Manager leading a tour of the facility and explaining the fish health issues on station. Credit Matthew Patterson/USFWS

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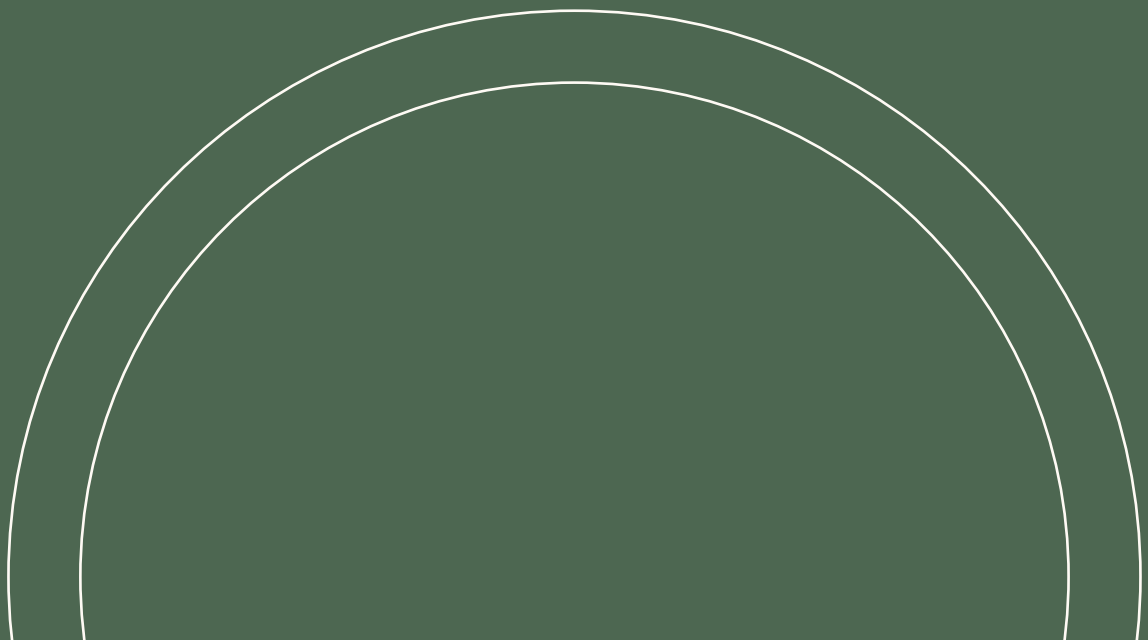
CASE STUDY **10**

Restoring California Condors to the Pacific Northwest, United States (NPS)



BACKGROUND

Restoring California Condors to the Pacific Northwest is a collaborative initiative among the Yurok Tribe, National Park Service (NPS), United States Fish and Wildlife Service (USFWS), and others to aid recovery of the California condor by establishing a thriving population in their historical range via a restoration program centered at Redwood National Park and within Yurok Ancestral Territory, located in the Pacific Northwest of the United States.

This work is rooted in an equal partnership in which all parties collaborate and work together on a plan that promotes successful recovery of the species. The effort began when, in 2003, a committee of Yurok elders identified condor restoration as the number one terrestrial wildlife need in Yurok Ancestral Territory. The Yurok Tribe approached the NPS in 2007 with the idea, which was warmly embraced in recognition of the potential cultural and ecological benefits for the park.

Extirpated from Yurok Tribal lands over a century ago, the condor is listed as an endangered species.

The California condor, Prey-go-neesh in the Yurok language, was among the first peoples of the world, and, as such, plays an integral role in the Yurok Tribe's worldview as a powerful symbol to the Tribe. Extirpated from Yurok Tribal lands over a century ago, the condor is listed as an endangered species. Through this collaborative project, the Tribe works to simultaneously restore an important component of their culture and contribute to recovery of the condor population. Restoring populations of California condor, a cultural and biological keystone, is one piece of ongoing restoration efforts by the Tribe to recover the Yurok cultural and physical landscape within Yurok Ancestral Territory.

The Yurok Tribe is currently the largest tribe in California, with more than 6,000 enrolled members. The Tribe, with more than 300 employees, provides numerous services to the local community and membership. The Tribe's major initiatives include: the Hoopa-Yurok Settlement Act, Klamath River dam removal, natural resource protection, sustainable economic development enterprises, and ancestral land reacquisition, in addition to condor restoration.

Through this collaborative project, the Tribe works to simultaneously restore an important component of their culture and contribute to recovery of the condor population.

The Constitution of the Yurok Tribe mandates the Tribe to preserve their culture and religious beliefs, as well as to restore, enhance, and manage natural resources that are vital to the survival of their heritage. The Constitution declares that "in times past and now Yurok people bless the deep river, the tall redwood trees, the rocks, the mounds, and the trails. We pray for the health of all the animals . . . . [Condor] feathers are used and its songs are sung in the World Renewal ceremony, in which Yuroks pray and fast to balance the world. The condor is also critical for a flourishing ecosystem." The condor is considered a sacred animal for the Yurok Tribe, spiritually linked to the Tribe's ceremonies since time immemorial.

The Redwood National and State Parks' Foundation Document also provided support for the goals of the project. The Foundation Document recognizes the fundamental importance of incorporating the traditional cultural knowledge and practices of local Chilula, Tolowa, and Yurok people as part of any park ecosystem management and restoration activities that occur within tribal ancestral lands. The Foundation Document describes how federally recognized tribes seek greater roles in park management and decision-making as part of their own foundational goals for self-determination and self-governance, stewardship of ancestral lands, and access to places for the continuance of cultural and traditional practices.

For the past decade, the Yurok Tribe has spearheaded efforts to reintroduce condors to Yurok Ancestral Territory. In 2007, the Yurok Tribal Council passed a resolution to develop a California condor reintroduction site. The Tribe secured funds to initiate feasibility studies in 2008, and Redwood National Park assisted the Tribe—both with funding and staff time—beginning in 2009. This partnership formalized in 2014 with the signing of a Memorandum of Understanding (MOU) among the USFWS and NPS, California Department of Parks and Recreation, Ventana Wildlife Society,

Condor 63 (Hoi

and the Yurok Tribe, targeting California condor conservation in the historical condor range of Northern California. In 2016 the Yurok Tribal Council passed a resolution stating that recommendations from a formal National Environmental Policy Act process would satisfy a pre-decisional environmental assessment requirement for the Yurok Tribe to support further condor reintroduction actions.

A general agreement among the NPS, Yurok Tribe, and California Department of Parks and Recreation, Prairie Creek Redwoods State Park was renewed in 2016. This agreement outlines the issues important to the Tribe and the Redwood National and State Parks. The Tribe and park managers recognize the benefits of formalizing the communication process for land and resource management, education, planning, and other governmental relations. The Tribe and park managers further recognize that a strong working relationship—one that supports Yurok involvement in the management of the parks and recruitment of tribal members by park managers—is the best path forward to achieve the common goals of education and the preservation and management of natural and cultural resources within the parks.

hewut “Hoi”) on the cliffs of Bitter Creek Canyon. Credit: Chris West, Yurok Tribe Wildlife Program

Senior Wildlife Biologist extracts a condor from a hoop capture-net in preparation for transfer to a field release site.
Credit: Matt Mais, Yurok Tribe

PROJECT ACTIVITIES

The NPS has been able to transfer funds to the Yurok Tribe to support research important to the success of condor restoration. Research activities include determining the presence or absence of environmental contaminants along the park coastline, primarily persistent organic pollutants such as pesticides, and work on outreach and education related to the use of non-lead ammunition for hunting in the local community. Lead poisoning is the greatest threat to condors, occurring when they ingest whole or fragments of lead bullets when foraging on the remains of animals that have been shot with lead ammunition. Lead poisoning is also a threat to human safety, and education activities are therefore beneficial for both the condors and the local community. The NPS has provided an operational center for the restoration project and support to develop a condor management plan to help guide restoration operations. The Condor Treatment MOU brings together a diversity of partners to ensure the health and well-being of free-flying condors.

Instructors teaching condor trapping techniques, Bitter Creek National Wildlife Refuge, California, USA.
Credit: Chris West, Yurok Tribe Wildlife Program Creek National Wildlife Refuge

The NPS, USFWS, and Yurok Tribe participated in joint presentations to the public for scoping purposes, and about 4,000 comments were received during the public comment process. About 70 other federally recognized tribes in northern California, Oregon, Washington, and Nevada also were consulted about the project. The component of the project that was most integral to its future success was the collaborative work that took place at the earliest stages to shape the goals and desired outcomes. Park managers acknowledge and recognize that this work could not have been successful without the knowledge and experience of the Yurok Tribe.

The partnership helped strengthen ongoing relationships among NPS, USFWS, and the Yurok Tribe through continued joint discussions and decisions related to condor recovery.

OUTCOMES

There was no precedent for a tribe working as co-lead on an environmental planning process with the NPS and USFWS. However, the Yurok Tribe—as initiators of the project, drafters of the initial MOU, and solicitors of NPS and USFWS participation—met all requirements in the National Environmental Policy Act guidelines to be a primary lead. NPS expertise and USFWS direction on condor recovery resulted in a three-way co-lead and organic partnership.

The partnership helped strengthen ongoing relationships among NPS, USFWS, and the Yurok Tribe through continued joint discussions and decisions related to condor recovery. Many years of relationship building eventually led to a model that encouraged tribes and demonstrated their intrinsic capacity as leads in projects that directly affect tribal cultural preservation and conservation efforts. This, in turn, developed trust and mutual capacity for success in partnership.

The NPS, USFWS, and Yurok Tribe completed an Environmental Assessment process for the project which resulted in a Finding of No Significant Impact, published in March 2021. The Yurok Tribe ensured that the MOU goals and objectives were met, which in turn, helped build relationships, trust, and capacity for success. The partnership supported unique funding mechanisms, made possible by the joint ecological and cultural restoration benefits of the return of condors to the region. Using the authority of the Indian Self-Determination and Education Assistance Act, also known as Public Law 93-638, the NPS was able to:

- fund restoration activities, cultural resources inventories, interpretation, and scientific studies through annual funding agreements with the Yurok Tribe.
- transfer funds to the Yurok Tribe to research the prevalence of marine contaminants, such as pesticides, along the park coastline.
- work with the Tribe on outreach and education related to the use of non-lead ammunition for hunting in the local community.

The environmental review process was funded through the USFWS Tribal Liaison's office. Although unique funding mechanisms have provided piecemeal opportunities, the NPS, USFWS, and Yurok Tribe still face the challenge of securing a sustainable source of funding for the condor restoration program.

The NPS and the Tribe developed a new Cooperative Agreement to further solidify and clarify their dual role as co-management partners. This agreement supports the Northern California Condor Restoration Program effort to establish a new self-sustaining population of California condors in the Pacific Northwest by releasing condors in Redwood National Park. Achieving this may take decades or longer, depending on the quantity, age, and fitness of birds available for release; adult survival and reproduction; prevalence of lead poisoning; and other factors. The Yurok Tribe and the NPS agreed to continue to jointly administer this restoration program and co-manage the condor population from project facilities in Redwood National Park, with the help and assistance of other stakeholder agencies.

LESSONS LEARNED

Close coordination, tribal and federal co-management, and the cooperation of a constellation of stakeholders, are defining aspects of this project. Allowing sufficient time for inter-agency communication and understanding, as well as coordinating with the tribal partner at every step, was significant. The development of the inter-agency MOU took years and provided the foundation from which the co-lead status of the Tribe, NPS and USFWS could be established.

The Yurok Tribe had already conducted years of research, data collection, networking, and outreach for this program. It was imperative that they have as much say in the decision-making process to restore California condors as possible through legal means. The Tribe's involvement increased the strength and legitimacy of the project, and their status as co-lead in the planning process gives weight to the cultural and ecological significance of the restoration of this species.

One issue that arose during the project was the need to ensure that government-to-government communication among the NPS, USFWS, and other federally recognized tribes was respected throughout the planning process. In some cases, other tribes requested that Yurok tribal representatives not be present during their face-to-face meetings with government officials to maintain confidentiality in the government-to-government relationship.

Others looking to undertake similar cultural restoration projects should know that planning for conservation projects that deal with culturally significant or sensitive species, landscapes, or actions should involve pertinent tribes at the outset. Ownership of such projects by tribes places restoration actions in their hands and demonstrates that federal agencies value tribal partnerships and the perpetuation of tribal culture.

California condor biannual physical exam, Bitter Creek National Wildlife Refuge. Credit: Chris West, Yurok Tribe Wildlife Program

Releasing a condor. Credit: Chris West, Yurok Tribe Wildlife Program

Wild hatched condor 444 (Ventana), soaring over Big Sur, California. Credit: Chris West, Yurok Tribe Wildlife Program

IN SUMMARY

In summary, best or wise practices recognized during the project include:

- Build relationships in a way that promotes tribal leadership in projects that directly affect their cultural preservation and conservation efforts.
- Allow sufficient time for inter-agency communication and understanding.
- Coordinate with tribal partners at the outset and at every step of the project.
- Acknowledge ancestral and modern tribal territory.
- Understand that ecological restoration projects often parallel cultural preservation projects.
- Respect government-to-government communication in the planning process.
- Accept that collaborative partnerships require continuous relationship-building.
- Realize that tribal involvement in projects taps into specialized knowledge and expertise that can immeasurably strengthen the project and its outcomes.

World Renewal. Credit: Lyn Risling, Acknowledgment Karuk Tribe's People's Center

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- Oregon Zoo
- Sequoia Park Zoo
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- Pacific Power Company
- Green Diamond Resource Company
- Hells Canyon Preservation Council

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