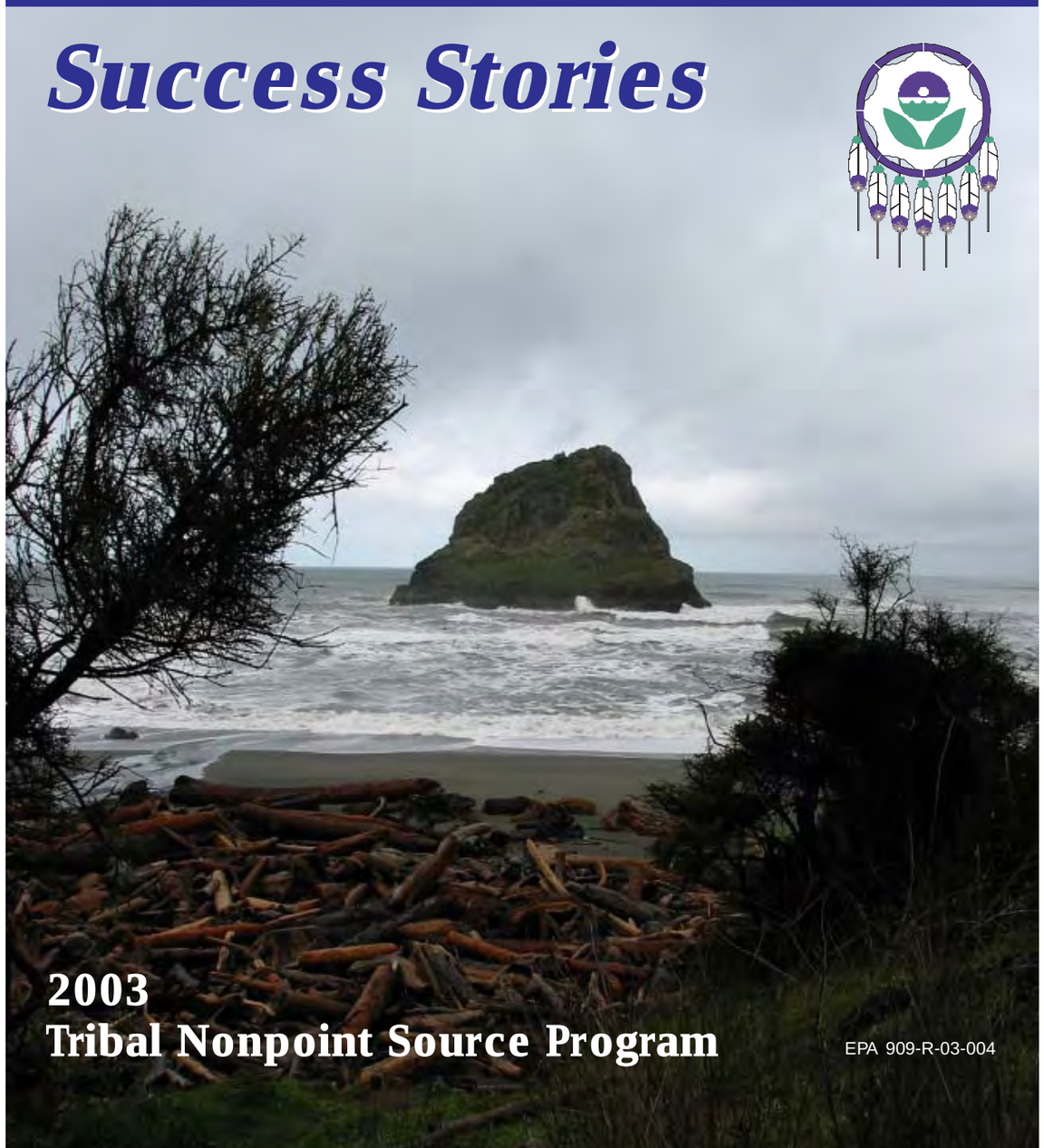
EPA United States Environmental Protection Agency

Pacific Southwest Region 9
Water Division

Success Stories



2003
Tribal Nonpoint Source Program

EPA 909-R-03-004

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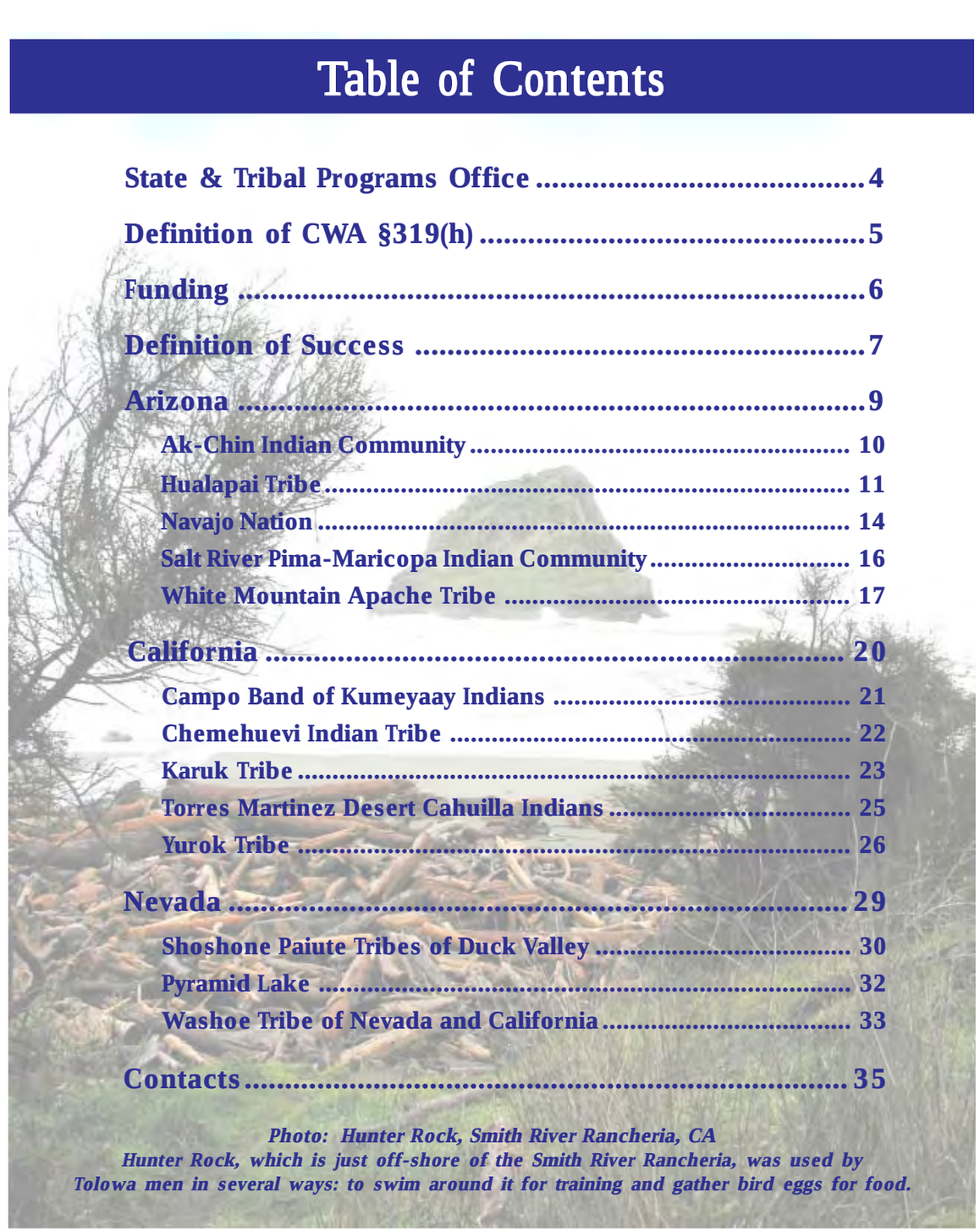


Photo: Hunter Rock, Smith River Rancheria, CA
Hunter Rock, which is just off-shore of the Smith River Rancheria, was used by Tolowa men in several ways: to swim around it for training and gather bird eggs for food.

State & Tribal Programs Office

The State and Tribal Programs Office administers Clean Water Act and special appropriation grants for states, municipalities, and over 80 tribes in Region 9. The grants are used for the monitoring, assessment, cleanup, protection, and prevention of polluted runoff in waterways, as well as assistance for wastewater infrastructure.

Chemehuevi Indian Tribe

Salt River Pima Maricopa Indian Community

Washoe Tribe of Nevada and California

Definition of CWA §319(h)

Nonpoint Source Program

The Clean Water Act (CWA) §319(h), Nonpoint Source (NPS) Pollution Control Program, assists Tribes to develop and implement polluted runoff control programs that address critical water quality concerns. ***NPS pollution is defined as rainfall, snowmelt, or irrigation that runs over land or through the ground, picks up pollutants, and deposits them into rivers, lakes, oceans, or ground water.***

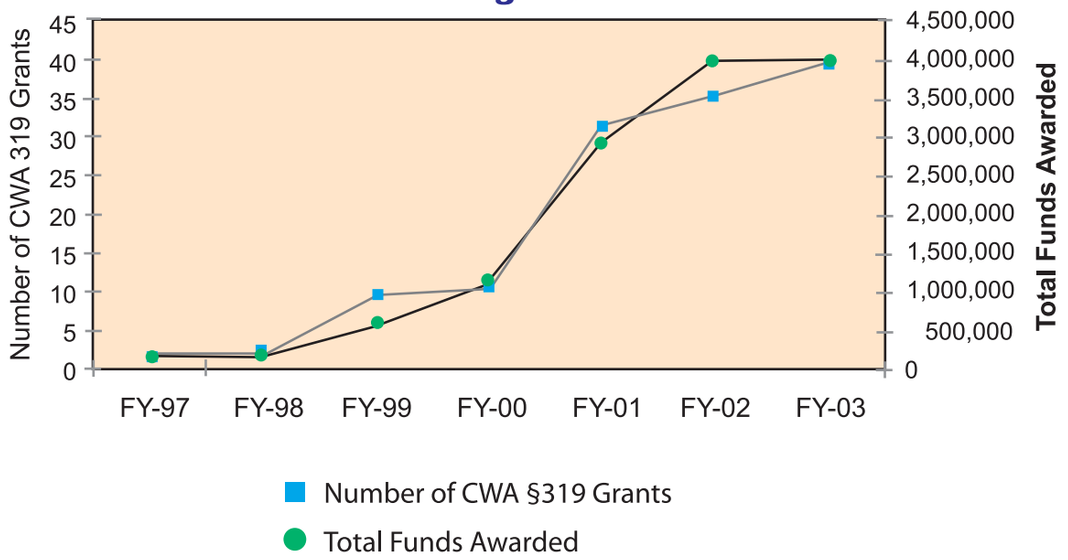
Eligible activities (but not limited to):

- Hiring qualified staff
- Implementing physical measures or best management practices that will reduce or eliminate NPS pollution in receiving water bodies, resulting in water quality benefits
- Implementing that Tribe's approved NPS management program
- Implementing "on-the-ground" watershed projects (i.e., stream restoration, revegetation, buffer strips, tree planting, and more)
- Conducting NPS education programs
- Training and travel

Funding

Nationally, approximately $6 million has been allocated to fund CWA §319(h) Tribal programs over the past several fiscal years. This allows awards of $30,000 (land base area less than 1,000 mi^2) or $50,000 (land base area more than 1,000 mi^2) in base funding to eligible Tribes. The remaining funds are awarded to eligible Tribes through a national competition to support the implementation of priority "on-the-ground" watershed projects up to $150,000 per project.

Clean Water Act Section 319 Funding
EPA Region 9



Definition of Success

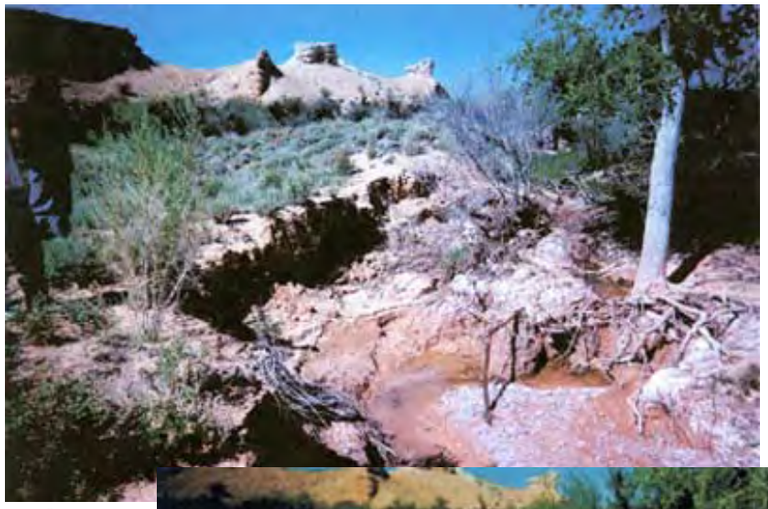
Definition of Success

- **Reduction of NPS pollution**
- **Unique projects with innovative approaches**
- **Collaboration with other agencies and local communities**

Results of Successful Projects include:

- **Protection of water bodies and water resources**
- **Restoration of water bodies and resources**
- **Community effort and involvement**
- **Improved water quality**

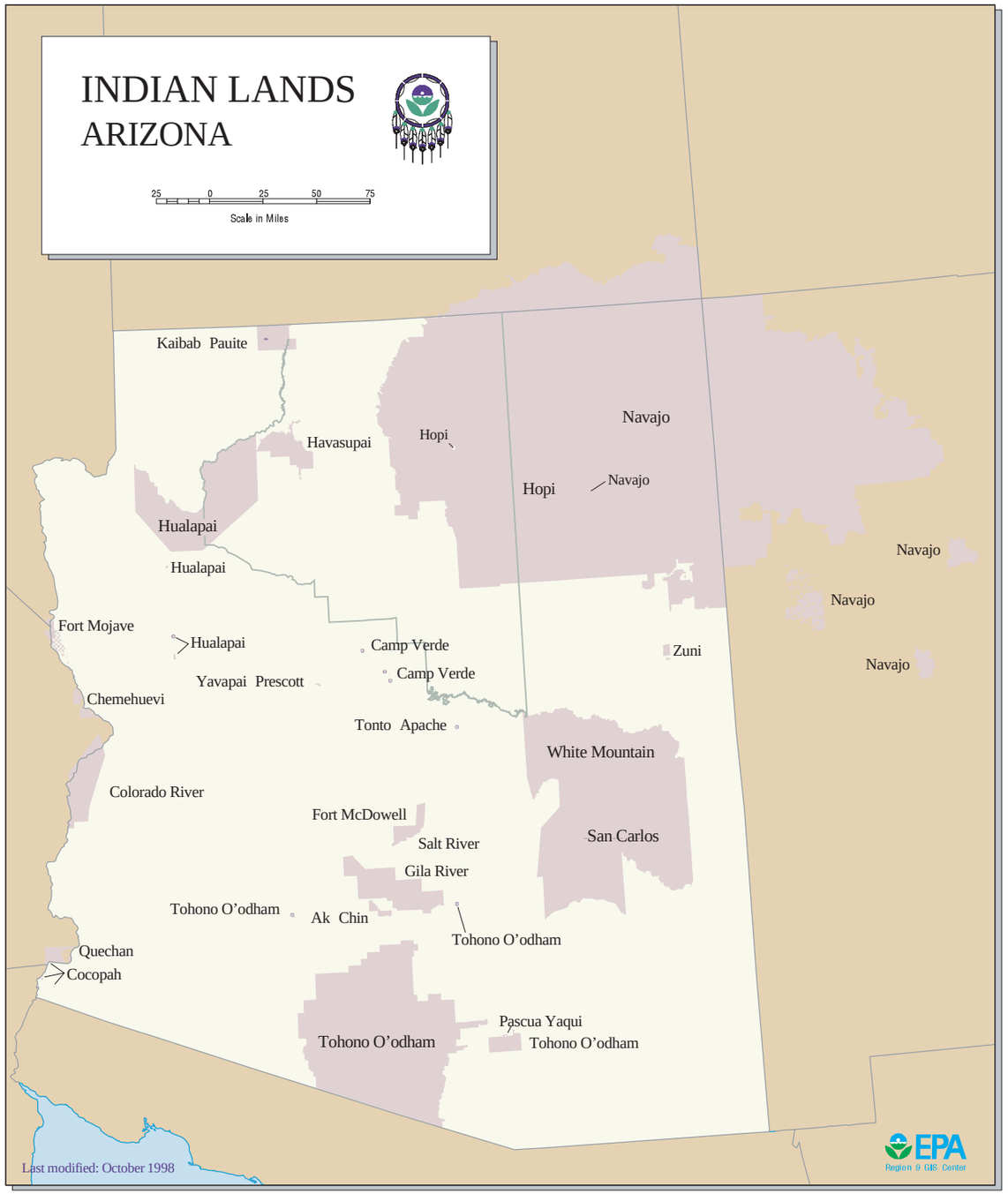
Success Stories



Before

After - Moapa Band of Paiutes, NV

Restoration of eroded streambanks caused by cattle along a drainage channel in the Hogan Springs Wetlands area.



Ak-Chin Indian Community

Removal of Tamarisk and Planting of Native Species Project

Introduction

The 47,600 acre Ak-Chin Indian Community and Reservation was established by Executive Order 1538 by President Taft on May 28, 1912. The Reservation lands are located in the northwest part of Pinal County, Arizona. The Ak-Chin people refer to themselves as a community and not a tribe because they are descendants of Tohono O'odham (Papago) and Akimel O'odham (Pima) peoples who lived with the Ak-Chin people for more than a century. The Ak-Chin village is located just south of Phoenix, Arizona and is one of four Papago villages in Arizona.

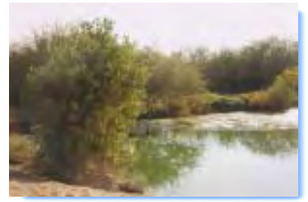
The Ak-Chin Community proposed to eradicate non-native Tamarisk trees and replace them with native vegetation. With large root systems and large water requirements, Tamarisk trees lower the ground water table and increase the salinity of the topsoil, making it almost impossible for the remaining natives species to survive. The Ak-Chin Community hired contractors to remove the Tamarisk, and approximately 240 Tamarisk trees were cut and placed into a wood chipper. Chip pieces were taken to a nearby tree farm to be used as mulch. The work was completed in approximately three weeks.

Description of Project

The community conducted soil suitability tests and qualitative water testing with nitrate strips within the project area with the assistance from USDA Natural Resource Conservation Service (NRCS). These tests were carried out in several sample locations to evaluate suitability for native species. Native species, both cottonwood and willow trees, were planted in the riparian zone. About 93 cottonwood trees and ten willow trees were planted, and the trees were protected by augured holes with gopher protection baskets. The community will continue to monitor and take control measures as needed over the next five years to ensure the growth and development of the native species.

Funding

The Ak-Chin Community received $30,000 in FY 2002 from EPA Region 9 for this project.



Hualapai Tribe

Abatement of Nonpoint Source Pollution at Spencer Beach Project

Introduction

The word, Hualapai, means "People of Tall Pines," and they are descendants of the Pai people. The first contact with Europeans was in 1776 when Padre Garces encountered the Hualapai people. Later, in the 1880's, Anglo-American ranchers and miners moved into the region, displacing the Hualapai people. The Hualapai Indian Reservation was established by a Presidential Executive Order in 1883 and now includes about 1,562 square miles in northwestern Arizona. The main body of the reservation is located on the south rim of the Grand Canyon with its northernmost boundary being 108.6 miles along the Colorado River. About 2,300 tribal members now live on the reservation.

Historically, the Hualapai Tribe has maintained a society based on hunting, gathering, and farming. In recent years, the economic base of the tribe has shifted to forestry, recreation, tourism, wildlife, and livestock. Most of the businesses and infrastructure is located in the principal city of the reservation, Peach Springs, Arizona. Since 1995, the tribe has hosted about 30,000 visitors per month at its Grand Canyon West facilities during the summer. The tribe also operates a river-rafting business on the Colorado River from Diamond Creek to Pierce Ferry.

Description of Project

Spencer Beach is a popular spot for picnicking on the Colorado River for rafters and power boaters vacationing at Lake Mead. Unfortunately, both the rafters' guides and the power boaters do not have the necessary equipment to dispose of human waste properly and the waste is usually deposited along Spencer Beach. Between 1995 and 1999, the water levels of Lake Mead rose so dramatically that most of the beach was covered with water and

waste, and contaminates were swept into the Colorado River and Lake Mead.

The Hualapai Tribe worked with the Arizona Department of Environmental Quality (AZ DEQ) to find a solution to this nonpoint source pollution problem. The Hualapai Tribe proposed to remove the human waste by constructing a composting toilet and monitoring the water quality in and around Spencer Beach. Once the Hualapai Tribe received funding for the project, they bought a carousel unit from Jade Mountain Inc. The carousel contains four chambers, and once one chamber is filled, the next chamber is automatically rotated into place. When one chamber is filled, all the humus from that chamber is removed as mulch. The Hualapai Tribe constructed a wooden building around the carousel, that contained an opaque plexiglass on one side (facing the sun) to facilitate heating and composting of the material.

The Hualapai Tribe also sampled the waters that inundated Spencer Beach and the mouth of Spencer Creek on a quarterly basis. With the results of the water testing, the tribe began to see a pattern: the background fecal coliform impairments of the Colorado River exist regardless of any additional inputs from Spencer Beach. The results showed that when Lake Mead's water level was high, there was a high fecal coliform count. During subsequent sampling, the level of fecal coliform was lowered, probably due to the contaminants leaching away. Once the Lake's water levels dropped, the presence of fecal coliform remained high.

The composting toilet facility was completed on April 29, 2000.

Funding

The Hualapai Tribe received $45,650 in FY 1998 from EPA Region 9 and AZ DEQ for their project.

Hualapai Tribe

Milkweed Springs Riparian Restoration Project

Description of Project

The Milkweed Springs Riparian Restoration Project is a cooperative venture between the Hualapai Tribe and the Arizona Department of Environmental Quality (AZ DEQ). The project is designed to mitigate sedimentation entering Milkweed Springs and improve water quality in the spring. The project area is important to the Hualapai Tribe culturally, historically, and for recreational purposes. The spring area had been used for centuries by the tribe, and currently tribal members enjoy relaxing and swimming in the spring.

Sedimentation in Milkweed Springs is caused by two major activitiies: the improvement and realignment work at nearby Buck and Doe Roads and the flagstone mining operation upstream. The Hualapai Tribe proposed reducing the sediment influx by constructing sediment control structures on the dam to prevent negative environmental impacts.

Sedimentation is a primary source of nonpoint source pollution and the associated economic costs are considerable. Permanent and temporary sediment control structures were constructed utilizing natural stone, steel re-enforcing bar, and wire mesh. Stones (both cobble and boulder sized) were used to fill the wire mesh and the structures were tied to the bedrock. The permanent structures had steel rods drilled in them and were cemented in the bedrock, while the temporary structures were tied with rope and were replaced after a large flood.

In July of 1999, a flash flood demonstrated that the structures had done what they were constructed to do -- decreased the amount of sedimentation along the stream banks. The permanent structures held in place and the temporary structures were rebuilt after the flood. The project was completed in June of 2000.

Funding

The Hualapai Tribe received $42,592 in FY 1999 by EPA Region 9 for their project.

Navajo Nation
Assayi Lake Project

Introduction

The Navajo Nation Reservation, established in 1868, was enlarged by several Executive Orders and is now one of the largest reservations in the United States. The Navajo Nation covers parts of Utah, Arizona, and New Mexico, and is approximately 27,000 square miles. The Navajo population is approximately 175,000 people.

Description of Project

The Assayi Lake Project is focused on achieving two goals: stabilizing and closing former forest logging roads and re-enforcing highly eroded drainage areas that are contributing to high sediment loads into Assayi Lake. The Assayi Lake is used by tribal members and others for recreation, especially fishing, and as an irrigation water source. To date, tribal staff have completed about half of the project during the summers of 2001 and 2002. During those two summers, workers implemented mitigation methods such as waterbars, check dams, low water crossings, and other practices to reduce the erosion near the former logging roads. These roads were closed off to vehicular traffic with boulders or other materials. In order to complete the project, more work will be done during the summer of 2003, including regrading slopes, installing more control check measures, and re-vegetating the area with native trees and grasses.

Partnerships

The Navajo Nation collaborated with USDA Natural Resource Conservation Service's engineering staff and U.S. EPA.

Funding

The Navajo Nation received $165,000 in FY 2000 from EPA Region 9 for this project.

Navajo Nation
Ganado/Indian Wells Stream Bank Stabilization Project

Description of Project

The Ganado/Indian Wells Stream Bank Stabilization Project is focused on reducing nonpoint source pollution along the Pueblo Colorado Wash by removing potentially hazardous household and commercial wastes, installing fencing along the stream to keep out livestock and vehicular traffic, implementing soil and slope stabilization measures, establishing turf reinforcement mats, and planting native vegetation, including willow and cottonwood trees and native grasses.

In preparation for the bank stabilization project, the Navajo Nation removed a variety of pollutant laden wastes (motor oil, coolants, vehicles, paint, paint thinner, and other yard, household, and commercial wastes) that had the potential to leak heavy metals and organic pollutants into the waterway, degrade water quality, and destroy the natural stream and wildlife habitat. Once the site was cleaned of these hazardous materials, the Nation completed the following bank stabilization measures: installed soil stabilization structures, installed 1,600 feet of fencing, and planted 400 willow cuttings and 100 cottonwood poles. The Nation hired a contractor to assist with the bank stabilization, slope grading, and erosion control measures.

In addition, the Navajo Nation provided educational outreach to tribal members regarding the importance of water quality and how each person's activities can negatively impact tribal waters.

The project is slated for completion in the summer of 2003, when the slope stabilization work will be completed, turf reinforcement mats will be installed, and native grasses planted.

Partnerships

The Navajo Nation worked in cooperation with the National Park Service and the U.S. EPA on this project.

Funding

The Navajo Nation received $102,500 in FY 2001 from EPA Region 9 for this project.

Salt River Pima-Maricopa Indian Community

Salt River Corridor Water Quality Protection and Wetland Demonstration Project

Introduction

The Salt River Pima-Maricopa Indian Community (Community) is comprised of two tribes: the Pima, "Akimel Au-Authm" (River People) and the Maricopa, "Xalychidom Piipaash" (People Who Live Toward the Water). The Maricopa Tribe lived in small communities along the lower Gila and Colorado Rivers and eventually established a relationship with the Pima Tribe when the Maricopa people migrated toward the Pima Tribe's villages in the early 1800's. The Pima people believe they are descendants of the "Hohokam" (Those Who Have Gone Before) who lived in Arizona for nearly 2,000 years.

The Salt River Pima-Maricopa Indian Community's lands were established by Executive Order on June 14, 1879 by President Rutherford Hayes. The Reservation lands are located in Maricopa County, near the city boundaries of Tempe, Scottsdale, and Fountain Hills, in the Phoenix metropolitan area. The Reservation lands consist of 53,500 acres and sustains 19,000 acres as a natural preserve. About 12,000 acres are utilized as agricultural land, producing cotton, melons, potatoes, onions, broccoli, and carrots. There are about 7,000 tribal members who reside on Community lands.

Description of Project

The Salt River lies along the southern boundary of Reservation lands for about 17 miles and is dry downstream of the Granite Reef Diversion Dam. Vegetation is minimal since river flow was diverted and rainfall is low in this desert climate. Even though little water reaches this area on the river, stormwater flows into the area via irrigation ditches, direct runoff into river, and storm drains. Suspended solids, nitrogen, phosphorous, and E. coli are contained in this untreated water that flows into the Salt River.

To reduce this nonpoint source pollution problem, the Community has assessed the sources of nonpoint source pollutants from agricultural and urban areas that discharge onto Reservation lands; investigated the water quality of the agricultural tail water discharge; and constructed a wetland demonstration site to improve the water quality of the untreated tail water that discharges into the river. The wetland demonstration site includes planting native vegetation (ground cover and native grasses, cottonwood trees, and willow trees) that acts as buffers to slow down the flow of the discharged water into the river and dissipates and filters out the pollutants. The wetland demonstration site is also monitored to ensure that pollutants are being removed from the water. The Community has taken some initial water samples of the discharge (at inlet and outlet locations from the wetlands site) to determine water quality of the untreated tail waters.

Funding

The Salt River Pima-Maricopa Indian Community received $130,000 in FY 2001 from EPA Region 9 for this project.

White Mountain Apache Tribe

Cibecue Creek Restoration Project

Introduction

The White Mountain Apache Tribe formally received their Reservation lands by an Act of Congress on June 7, 1897. The Reservation lands, totaling 1.6 million acres, are located in east-central Arizona. Currently, there are about 13,000 tribal members living on the reservation.

Description of Project

The purpose of the Cibecue Creek Restoration Project was to improve critically impaired areas along the creek. In the summer of 2002, a huge wild fire blasted through forested lands adjacent to and on the reservation, burning about 200,000 acres. Since then, most of the nonpoint source pollution activities have been greatly affected by the fire. Currently, tribal staff are working to assess the fire damage and salvage any timber wood from the fire area.

The tribe's Best Management Practice (BMPs) plans will be modified to address the extensive fire damage and water quality problems resulting from the fire. The tribe experienced huge flooding problems in the streams after the fire, causing erosion and wiping away newly planted vegetation. Some nonpoint source pollution control activities described below were modified or put on hold due to other pressing community needs (for example, protection of homes, bridges, etc.) which took first priority and required tribal members' time and effort.

The tribe implemented gully control projects in the Red Dust Community Area and at Martinez Ranch. Tribal members constructed 16 gully structures before the fire utilizing three different designs to meet the needs of controlling eroded areas. Tribal members re-contoured the eroded areas, edged rocks along the ditches, and planted new seeds to prevent further erosion. Tribal members also brought high school science classes to the activity site to educate them about the importance of identifying nonpoint source pollution problems and potential solutions. All gully structures were reconstructed and vegetation was replanted after the fire.

Next, tribal members worked with the Bureau of Indian Affairs (BIA) Forestry to identify roads that could be closed around upper Cibecue Creek. These roads were identified as significant contributors of sediment in the watershed. Several roads are expected to be closed in summer of 2003 and eventually, tribal members will work to reseed these road areas and conduct other erosion control measures. Also, there are other roads that tribal members hope to close in the near future once the fire assessment work is complete.

To protect their drinking water source, tribal members completed restoration work at White Springs and Martinez Ranch. Before the fire, completed restoration work at White Springs included transplanting sedges, cattails, bulrushes and reed, upgrading rock structures, and mending fences. After the fire, tribal members rebuilt the fencing and replanted native vegetation. At Martinez Ranch, before the fire, tribal members upgraded gully structures and planted vegetation to prevent further erosion in the area. After the fire, tribal members reconstructed gully structures and replanted vegetation.

Tribal members worked with teachers and students in conducting various watershed activities. Students assisted in identifying nonpoint source pollution in their community and in the collection of stream assessment data. For example, at Martinez Ranch, students learned to identify plants and learned how nonpoint source pollution affects the local environment.

The tribe has proposed to reconstruct channels along the creek's banks that were eroding. The two sites: Cibecue Creek along Rose Thompson's cornfields, an area on south end of the community, and Cibecue Creek along the Z-19 irrigation diversion. Work on this activity has been delayed due to fire damage in the area, but tribal members plan to reconstruct the channels at both sites in the near future.

Lastly, tribal members talked with landowners along project boundaries to explain future plans at the Red Dust Housing Area, Z-19 area, and along Rose Thompson's cornfields. Some landowners showed interest in the restoration project and were pleased with the work. Work on this activity was delayed due to fire damage in the area, but it will be completed in the near future.

The tribe also received funding from EPA Region 9 in FY 2002 to reassess their Nonpoint Source Pollution (NPS) Program and Watershed Program in terms of their needs after the fire. The tribe's goals in reassessing their NPS and Watershed Programs include: sampling sediments in streams, creating a database of all nonpoint source pollution projects and watershed projects, analyzing data from turbidity sampling and surface substrate sampling, developing a method for analyzing impact of forest roads on the watershed, and providing input on local activities (such as timber sales, dump site closures, road closures, housing construction, etc.).

Funding

The White Mountain Apache Tribe received $50,000 from EPA Region 9 in FY 2002 for this project and supplemental FY 2002 funding totaling $91,787.

Campo Band of Kumeyaay Indians

Diabold Creek Wetland Restoration Project

Introduction

The Campo Indian Reservation is located approximately 65 miles east of San Diego, California; elevations range from 2,800 feet to 4,600 feet. The vegetation includes mountain chaparral with chamise and scrub oaks, tracts of oak forests, riparian areas of willows and cottonwood trees, and small wetland areas. The reservation is comprised of two separate sections, totaling 25 square miles. About four square miles of the reservation drains into the Colorado River basin, while the other 21 square miles drain into the Tijuana River basin.

The goal of the Diabold Creek Wetland Restoration Project was to block and reverse continual erosion of the Diabold Creek channel, restore the wetland area, and recharge the aquifer. The main causes of these nonpoint source pollution problems include long-term cattle grazing and nearby agricultural operations. Diabold Creek meanders through the central part of the Reservation lands near Church Road. The Tribe utilized heavy equipment to re-grade the creek bed and creek banks and installed geotextile material as a foundation for the layering of 200 tons of rock riprap. In addition, the Tribe:

- Planted barley seed to control erosion;
- Planted about 100 native cottonwood and willow trees in the project area; and
- Sampled water quality in the wetland area on a quarterly basis.

The tribe's water well is located less than a half mile from the project site and the aquifer feeds the well with some of the tribe's drinking water.

At the completion of the project, storm water runoff will trap sediment behind the rock structure, increasing stability of stream banks and reducing stream erosion. This restoration technique will also help raise stream flows during periods of drought and increase the water table.

Similar to this method of installing rock structures in the creek bed, the Tribe has traditionally implemented

similar methods of erosion control, placing rocks and other debris across creek channels to form wetlands for fish species and wildlife to live.

Partnerships

The tribe also worked with USDA Natural Resource Conservation Service on this project for technical assistance.

Funding

Campo Band of Kumeyaay Indians received $29,700 in FY 2002 from EPA Region 9 for their project.

Chemehuevi Indian Tribe

Lake Havasu Beach Non-Native Species Removal Project

Introduction

The Chemehuevi Indian Reservation is located in San Bernardino County, California, on approximately 32,000 acres, and lies directly across Lake Havasu from Lake Havasu City, Arizona. The Chemehuevi Indian Reservation is located along 30 miles of the Colorado River.

The Chemehuevi (which means “Those Who Play With Fish” in Mohave) people are related to the Southern Paiute people and have resided in the southwestern desert area for generations. In 1853, the Chemehuevi people lost their lands to white settlers.

Description of Project

The Chemehuevi Indian Tribe proposed to clear non-native species, Tamarisk and Giant Cane, using hand methods in order to selectively remove unwanted non-native species and leave the natives species undisturbed. The native species included mesquite, cottonwood, willow, and native herbs and grasses. Cleared vegetation was burned on site and herbicides were applied to non-native species to ensure eradication and control. Tribal staff

noticed that once the non-native vegetation was cleared, there was more native vegetation in the project area than originally assumed and the removal of the invasive species allowed the native vegetation to grow.

The Chemehuevi Indian Tribe used the presence of native willow and cottonwood trees at the project site as guides to plant new native vegetation. Tribal staff planted approximately 100 saplings, mostly cottonwood and willow trees, which had a reasonably high survival rate. The project area has been monitored and protected from re-growths of non-native species. Tribal members reported that some wildlife has returned, including beaver, bobcat, and possibly deer, to the project area.

Partnerships

Partnerships in the Non-Native Species Removal and Re-vegetation Project include: U.S. Fish and Wildlife Service, U.S. Bureau of Reclamation, U.S. Bureau of Land Management, U.S. Bureau of Indian Affairs, and US EPA.

Funding

The Chemehuevi Indian Tribe received $60,000 during FY 2000 and FY 2001 from EPA Region 9 for their project.

Karuk Tribe

Decommissioning of Former Forest Roads Projects

Introduction

The Karuk Tribe is located in Northern California near the Oregon state line and has approximately 430 miles of roads located throughout the tribal lands that were used for timber harvesting and mining gold, gravel, and quartz. These unpaved and deteriorating roads are depositing soils into the streams on the tribe’s ancestral lands, threatening the habitat of Coho, Chinook Salmon, and Steelhead Trout. Anadromous fish species are economically and culturally valuable to the tribe, and the restoration of riparian and aquatic habitat is crucial for the protection and survival of these important fish species.

The Karuk Tribe and the U.S. Forest Service came together to form a partnership and developed the Karuk Ecosystem Restoration Program to achieve their mutual ecosystem management goals and watershed restoration objectives. The Karuk Tribe hired TerraWave Systems, Inc. to provide program management services and to train tribal personnel basic watershed restoration techniques to complete the job. Sixteen tribal members were trained and learned skills needed for operation of heavy equipment, prescription planning and surveying, and supervision of project sites.

Description of Project

Decommissioning of Steinacher Road

As part of the Karuk Ecosystem Restoration Program, the Karuk Tribe and the U.S. Forest Service decided to first focus their attention on decommissioning Steinacher Road. Steinacher Road was a main contributor of sediment load entering into both Steinacher and Wooley Creeks which eventually lead to the Lower Salmon River. Approximately 10,600 cubic yards of sediment has entered stream channels from these roads since 1971.

In 1996, the Klammath National Forest decommissioned the upper two miles of the 7.2 miles of Steinacher Road. The remaining 5.2 miles of this road were decommissioned by the Karuk Tribe. Tribal members removed about 94,800 cubic yards of sediment from the streams and re-established the natural drainage for five major streams that cross the abandoned Steinacher Road. The decommission project on Steinacher Road was completed on November 1, 2002.

Decommissioning of East Ishi Pishi Road

Once Steinacher Road was complete, the Karuk Ecosystem Restoration Program outlined the restoration efforts on two other important roads to decommission, East Ishi Pishi Road and Thompson Road. The Tribe saw how successful their project was and sought more funding from EPA Region 9 in FY 2002 to decommission East Ishi Pishi Road. Currently, this project is in the design and planning stage. The actual construction stage should begin in spring 2003 and the decommissioning of East Ishi Pishi Road will take about five work seasons. East Ishi Pishi Road is 26.3 miles long and to complete the project, the Tribe plans to decommission the entire length of the road.

Funding

The Karuk Tribe received approximately $500,000 between FY 2000 and FY 2002 from EPA Region 9 for this project.

Torres Martinez Desert Cahuilla Indians

Salton Sea Wetlands Demonstration Project

Introduction

The Torres Martinez Indian Reservation is located in the agricultural-intensive Coachella Valley in south-central Riverside County and northwestern Imperial County. The reservation contains approximately 24,800 acres, with over 11,000 acres beneath the Salton Sea, which was flooded in 1904 by an accidental levee break along the Colorado River. This accident provided the tribe with over 12 miles of Salton Sea shoreline.

The Salton Sea is listed on the Clean Water Act §303(d) - Impaired Water Bodies List by the State of California. In addition, it is projected that the Salton Sea will start to reduce in size in the next few years. The Sea's reduction in size creates several problems, including:

- Dust (PM10) filled with sediments from agricultural runoff over tribal lands;
- Flow of contaminated effluent, irrigation, and urban runoff entering the Sea;
- High algae blooms occuring year round; and
- Super-saline condition in the Salton Sea caused by high level of nutrients and pesticides.

Compounding the problem, three water cooled-power plants in the Mexicali Valley are due to begin operations within five years and a new wastewater facility is proposed near the project area. There are numerous pollutants currently flowing into the Salton Sea, including: cadmium, chromium, zinc, aluminum, iron, nitrate, selenium, and lead. None of these pollutants dissipate, biodegrade, or decay.

Torres Martinez proposes to construct a wetland area that will remediate both the point and nonpoint sources of pollution to address the wastewater, agricultural and urban runoff flowing into the Salton Sea. By constructing a wetland, cleanup of the area will be possible by having the water flow through the wetland before it is discharged into the Salton Sea.

This wetland project will be a pilot project to address the water quality problems on the north side of Salton Sea. Surrounding the wetland, "hyperaccumulating" vegetation will be planted that is capable of absorbing up to 400 times the soil concentrations of salt. Also, the inlet to the Salton Sea will be planted with native vegetation to enhance sea bird and fish habitat.

Partnerships

Partners in this project include: Bureau of Reclamation, Regional Water Quality Control Board, Salton Sea Authority and Scientific Committee, Coachella Valley Water District, Army Corps of Engineers, USDA Natural Resource Conservation Service, and US EPA.

Funding

Torres Martinez Desert Cahuilla Indians received $180,000 from EPA Region 9 in FY 2002 for their project.

Yurok Tribe

Tectah Creek Watershed Restoration Project

Introduction

The Yurok Tribe, with a total of 4,200 enrolled members, is among the few aboriginal people of California with tribal land located within the tribe's ancestral lands. The Yurok Tribe's ancestral lands are made up of about 320,000 acres and the Yurok Tribe's Reservation landscare approximately 56,000 acres.

The central focus of Yurok tribal life is the Klamath River through cultural practices, spiritual ceremonies, subsistence food, and commerce. Over the past few decades, the fish populations (especially those of eulachon, lamprey, steelhead, coho, and chinook salmon) have declined rapidly, causing concern for the overall health of the Klamath River basin ecosystem.

Description of Project

The Yurok Tribe proposed the Tectah Watershed Restoration Project (Tectah Creek is a tributary of the Klamath River) and divided the project into two aspects: the training of tribal members, including learning watershed protection techniques, operating heavy equipment, and acquiring basic skills to decommission roads along the Tectah Creek Watershed. These roads are owned by Simpson Timber Company and are located within the Yurok Reservation and ancestral lands.

There are three long-term objectives regarding the revitalization of the Tectah Creek Watershed including: improving in-stream water flows, restoring aquatic and wildlife habitat, and stabilizing river bank slopes. When the stream assessment survey was completed and it identified which roads should be decommissioned, the tribal staff selected qualified tribal members to begin the training program. Trainees learned several techniques to perform watershed restoration treatments. To date, the Tribe has completed the following:

- Decommissioned 3.64 miles of roads along the Tectah Creek watershed;
- Removed about 84,184 cubic yards of soil and prevented the soil from entering the waterways;
- Trained tribal members in different watershed protection techniques and basic skills, including heavy equipment operation, Standard First Aid, CPR, and Safety Operations.

Funding

The Yurok Tribe received $130,000 in FY 2002 from EPA Region 9 for their project.

Yurok Tribe

Abandoned Vehicle Riparian Cleanup and Riparian Planting Project

Description of Project

The Yurok Tribe identified the abatement and cleanup of abandoned vehicles in waterways as a priority in their nonpoint pollution source (NPS) program. These vehicles have the potential to leak gasoline and other pollutants into the surface and ground waters on tribal lands. By the end of the project, 59 vehicles were removed from the

lower portion of Reservation lands and 72 cars were taken away from the upper part of tribal lands. Contractors removed the vehicles from the riparian area and hauled the cars to be crushed at a steel mill for recycling. All of the fluids in the vehicles were contained during the operation.

In removing about 131 vehicles from the riparian area, it is estimated that about 592 gallons of toxic pollutants were prevented from being released into nearby surface or ground waters (assuming that the average vehicle contained about 4 quarts of oil and about 4 quarts of other fluids). Also, other vehicle parts, such as corrosive metals, batteries, tires, and upholsteries did not pollute the waterways on tribal lands.

Once the removal of the vehicles was complete, the tribe planted about 7,400 native tree species to help restore the riparian area.

- The tribe does not have an abandoned vehicle ordinance in place yet (an ordinance is in draft form and is going through the review process). However, at this point, removing more vehicles is a challenge because it is a voluntary process.
- The Reservation lands are isolated and remote to any vehicle crushing companies and scrap metal refurbishing companies so it can be costly to pay these companies to bring in their equipment to remove vehicles, crush them, and then haul it to a place to sell the parts.
- It is a challenge to locate an appropriate site (about two to three acres in size) to be utilized for crushing the abandoned vehicles. The location must be flat, contained, and gated.

Funding

The Yurok Tribe received $30,000 in FY 2002 from EPA Region 9 for their project.

Shoshone Paiute Tribes of Duck Valley

Skull Creek Stream Crossing Restoration Project
Owyhee River Streambank Protection and Restoration

Introduction

Reservation lands for the Shoshone Paiute Tribes of Duck Valley were established in 1877 and enlarged in 1886. The lands are located in southwestern Idaho and north central Nevada with approximately half of the land area in each state. The Shoshone Paiute Tribes have retained all of the 289,820 acre land area as tribal trust land governed by the tribal council.

Agriculture is the economic mainstay of the Shoshone Paiute Tribes. A short growing season affects production on the approximately 87,000 acres that are suitable for farming and irrigation. The majority of the land serves as grazing land for cattle and horses owned by tribal members.

Description of Project

Skull Creek Stream Crossing Restoration Project

The purpose of the Stream Crossing Restoration Project at Skull Creek was to reduce nonpoint source pollution including the reduction of sediment loadings from unimproved back country roads and pollution associated with water contact with vehicles during stream crossings. Completed activities include:

1. Created stream crossings for cattle and other domestic animals over Skull Creek.
2. Constructed twelve drainage dips.
3. Conducted surface water sampling and assessment of water quality impacts for the Owyhee River Streambanks Restoration Project.
4. Conducted outreach to schools through presentations and development of a slide show regarding the importance of stream restoration.

Construction of unimproved back country dirt roads adjacent to or within a stream or flood plain often results in increased sedimentation and pollution from the vehicles. Skull Creek is such a stream that is located along the unimproved Skull Creek Road. This road crosses Skull Creek five times and remains within fifty feet of the stream for most of its length. Three of the five crossings were modified to minimize pollution associated with vehicles crossing the stream. At each of the three crossings, the creek flowed along the road from 80 to 100 feet.

To remedy this problem, a bankfull dam was installed at two crossings, and at the third crossing, the old crossing was blocked and reclaimed and a new crossing was constructed. Goeweb base was used to stabilize the crossings, and at one crossing, a new meander was constructed to prevent road bank erosion upstream of the crossing. Project elements will be checked during late spring once roads are passable for potential failure or damage, and repairs will be completed as necessary. The Stream Crossing Restoration Project at Skull Creek was completed in September, 2002. The project will be evaluated over the next three years.

Owyhee River Streambank Protection and Restoration

After observing that the Stream Crossing Restoration Project at Skull Creek Project had successfully reduced nonpoint sources of pollution, the Shoshone Paiute Tribes of Duck Valley continued to address these issues by implementing the Livestock Pollution Reduction Plan for the Upper Owyhee River and Three Springs Project. This project is aimed at reducing pollution caused by livestock and encompasses ten miles of the East Fork Owyhee River and its tributaries. It will establish seven sites for remediation measures (four sites along the river and three sites at springs located at a tributary of the river). Proposed Best Management Practices (BMPs) include: constructing alternate watering sources for livestock, restoring damaged riparian and spring areas, fencing damaged and sensitive areas, and prevention of livestock access.

In 2002, the tribe received funding for the Owyhee River Streambank and Channel Restoration Project. This project proposes to complete riparian restoration along the Owyhee River using fluvial geomorphology as the basis for the restoration. The project also included restoration and improvements to additional springs and water sources on the reservation using range management practices. The tribe also explored development of a grazing and nutrient management plan for the reservation.

Funding

EPA Region 9 helped fund three projects described above: Stream Crossing Restoration Project at Skull Creek (for $280,000 from FY 2001 through FY 2002), Livestock Pollution Reduction Plan for the Upper Owyhee River and Three Springs Project (for $100,000 in FY 2001), and Owyhee River Streambanks Restoration and the Spring (for $130,000 in FY 2002).

Pyramid Lake

Lower Truckee River Riparian Vegetation Protection and Restoration Project

Introduction

The Pyramid Lake Indian Reservation encompasses about 477,000 acres and is located in western Nevada, about 30 miles northeast of Reno. The Truckee River is an important water resource to the people of Pyramid Lake and is home to the endangered Cui-ui and the threatened Lahontan Cutthroat Trout.

Description of Project

The Pyramid Lake Tribe's long-term goals include: improving water quality and natural habitat by decreasing turbidity from soil erosion, decreasing nutrient loads, creating vegetation cover along streams, and stabilizing stream banks.

The Tribe's Lower Truckee River Riparian Vegetation Protection and Restoration Project consisted of the following activities:

1. Installed 60 miles of fencing on both sides of the lower Truckee River corridor to control access of livestock to watering areas.
2. Developed and restored spring, stream, and wetland areas.
3. Installed solar powered wells to keep livestock out of critical fish and wildlife habitat areas.
4. Gathered and removed excess wild horses.
5. Built fencing around parts of Pyramid Lake to keep livestock out of the lake.
6. Employed range riders to maintain fences and livestock compliance.

The Pyramid Lake Tribe has effectively decreased nonpoint sources of pollution on their tribal lands and demonstrated the importance of addressing grazing management techniques to reduce polluted runoff and erosion.

Funding

The Pyramid Lake Tribe received several grants since FY 1999, totaling approximately $400,000, from EPA Region 9 for their project.

Washoe Tribe of Nevada and California

Riverbank and Land Restoration Project On Carson River

Introduction

The Washoe Tribe's ancestral lands include areas near Lake Tahoe and lands from Honey Lake in the north, to Mono Lake in the south. The tribe uses surface waters for drinking, cooking, fish and plant harvesting, and ceremonial purposes.

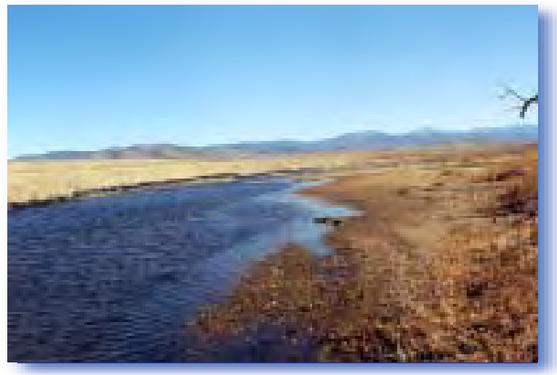
The Washoe Tribe's surface and groundwater resources have been impacted by nonpoint source pollutants from upstream developments, agriculture, mining, golf courses, urban runoff, landfills, and septic and sewer systems. Historically, the river water quality has been high in phosphates as is typical of rivers throughout the Great Basin. However, the Carson River has historically exceeded state standards for total nitrogen, fecal coliform, and turbidity. The river was significantly impacted by a 150-year flood event in January 1997. After that flood, much of the riverbanks were severely eroded and its course was altered.

The Washoe Tribe has taken efforts to restore the Carson riverbanks. Sediments are eroding from the riverbanks, causing a decrease in water quality, which has degraded the overall condition of the watershed, and reduced the aquatic and riparian habitats.

Description of Project

The restoration project began in August 2000, and the overall goals of the restoration project are to reduce sedimentation, restore native vegetation, implement new irrigation systems to improve the vegetation's chances for survival, and remedy the grazing and agricultural impacts on the water quality and the condition of the watershed. In order to achieve these goals, the Washoe Tribe first conducted a reconnaissance survey of the defined project area along the Carson River. The reconnaissance survey included: range analysis, soil inventory, cottonwoods inventory, riparian vegetation inventory, fisheries inventory, and riparian evaluation. To date, the Tribe has completed:

- A reconnaissance survey, including a survey of birds and vegetation plots;
- Stabilized, irrigated, and vegetated a 2,500-foot section on tribal lands along the Carson River;
- Conducted a total of seven water quality sampling events;
- Planted approximately 100 cotton woods, buffalo berries, and other native species along riverbank;
- Installed new fencing for grazing and agricultural areas along the riverbank;
- Identified sites for watering holes and solar bumps in project area; and
- Established a Watering Care Group and a schedule for monitoring.



Partnerships

Partners in this project include: USDA Natural Resource Conservation Service (NRCS), Western Nevada Resource Conservation Council, Carson Valley Conservation District, Upper Carson River Management Group, Ducks Unlimited, local agencies, and educational institutions.

Funding

Since FY 2001, the Washoe Tribe received a grand total of $590,000 from EPA Region 9 for this project.

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