

1999 Partnership Award Recipients

Kenai River Peninsula Resource Protection and Education

Located 75 miles south of Anchorage, Alaska, on the Kenai Peninsula, the Kenai River drains more than 2,000 square miles of diverse landscape. The river is the state's premier chinook salmon and trout stream, and provides important rearing and spawning habitat for other valuable fish species. The area is experiencing rapid development and increased pressure from recreational groups resulting in the loss of high-value aquatic and wetland habitat. The banks of the Kenai and other south central Alaska streams have been degraded by boat wakes and foot traffic of fishermen. Important rearing habitat for juvenile salmonids has also been lost, and development has led to the filling of adjacent wetlands and the bulkheading of shorelines.

This restoration project was designed to demonstrate a number of techniques for preventing erosion and damage from the development that has occurred along 80 miles of the river. These include a vegetated cribwall as a protective structure, streambank restoration by revegetation of denuded areas with grasses and willows, and an elevated light-penetrating boardwalk that provides fishermen less damaging access to the river. The initial restoration project was completed in 1995. The ongoing educational aspects are twofold. An interpretive program at local schools teaches children and young adults the importance of protecting and managing wetland and riverine habitat and groundwater quality. Additionally, education of local land owners is being provided to help them include proven bioengineering techniques into any future residential or commercial development.

Coastal America Objectives/Regional Economic Benefits: This is an excellent example of technology transfer to the local user, in this case land owners and developers in the City of Soldotna. There is now a "one-stop shop" within the city where home and business owners can go to obtain technical information, advice and the necessary permits to apply proven bioengineering techniques.

Team Members: U.S. Department of the Interior, U.S. Army Corps of Engineers, Environmental Protection Agency, Natural Resource Conservation Service, Alaska State Government, City of Soldotna, private industry, public interest groups, and an educational facility.

The Duck Creek Advisory Group (DCAG)

Duck Creek is a small coastal stream (5 km long) that originates from small springs and drains runoff from the Mendenhall Valley, a relatively high density residential and business area in Alaska's capital city, Juneau. The stream has remnant wild populations of anadromous salmonids including coho (*Onchorynchus kisutch*) salmon, cutthroat trout (*O. clarki*), and Dolly Varden char (*Salvelinus malma*). Historically, there were runs of nearly 10,000 chum salmon (*O. keta*) in Duck Creek. In the late 1960s, the coho run numbered about 500 fish. Currently, the chum run is extinct, the coho run is less than 20 fish, and the once excellent trout fishing is closed. The anadromous fish habitat has suffered significantly from an accumulation of physical habitat alteration, poor water quality, loss of riparian vegetation, and loss of estuarine wetlands as a result of urbanization including water diversion, sedimentation of pools and riffles, channelization, inadequate stream crossings, loss of riparian habitat, and littering. Duck Creek is one of 54 surface waterbodies in Alaska that is listed as impaired by urban runoff from non-point source pollutants including sediment, heavy metals, hydrocarbons, iron floc, fecal coliform bacteria, and excessive nutrients.

The DCAG was formed in 1992 by scientists from federal and state agencies in Juneau, Alaska who were concerned about the loss of small streams and salmon habitat because of urban development. The DCAG

Team has evolved into a partnership of over 25 organizations including municipal, state and federal government, local conservation interests, such as Juneau Trout Unlimited, property owners along Duck Creek, and school and youth groups. DCAG holds monthly public meetings, publishes a newsletter, coordinates work on the stream, and helps to secure funding for restoration activities. The scientific approach being used by DCAG relies on development of a baseline of current conditions in order that the effectiveness of protective and restoration measures can be evaluated and demonstrated in the future. It is in fact a "project" that has spawned a "process" which serves as demonstration of restoration technology and management.

The DCAG project has helped the community become aware of the neglect of coastal resources and has helped improve municipal government, developers, and the community approaches to stream and wetland habitats. These groups are now consulting on how best to protect the environment and still accomplish their work. The project has gathered several years of baseline data that will be valuable in evaluating effectiveness and demonstrating the merits of these types of projects. A major accomplishment and satisfaction has been the bringing together of so many groups interested in protecting and restoring stream and wetland habitats. The project has provided an outdoor laboratory and opportunity for youth groups and schools to learn about conservation and participate in stream restoration activities. DCAG Team approach has demonstrated the importance of cooperation and partnering in tackling some very difficult issues and has saved the community thousands of dollars in restoration costs. The work done by the this past year by the engineering firm, Toner Nordling and Associates, in association with wetland creation and bridge construction on Duck Creek for the Nancy Street and Tongass Boulevard Reconstruction project was awarded the 1998 Southeast Alaska Engineering Project of the Year, and was runner up for the Alaska engineering project of the year. It also garnered the chief engineer on the project, (Peter Hildre), Engineer of the Year for 1998 by the American Society of Civil Engineers/American Society of Professional Engineers.

The Duck Creek Watershed project is an excellent example of the Team partnership process and community-based cooperation that epitomizes the goals of Coastal America. Coastal America provides a forum for interagency collaborative action and a mechanism to facilitate regional action plans to protect, preserve, and restore the Nation's coastal living resources. The project is serving as a "hands-on" demonstration of the benefits of protecting coastal resources and the social and economic consequences of neglecting these resources. Through education and community participation coastal habitats have been protected and restored while allowing development to be done in an environmentally sensitive manner. Contractors and businesses are now asking for guidance before projects are initiated in order to insure that aquatic habitats are adequately protected. The DCAG has recently drafted a Watershed Management Plan that proposes partnering with the Corps to implement several restoration projects to improve water quality and fish habitat on Duck Creek. The DCAG Plan and Corps Restoration Proposal will help to remove Duck Creek from the State's list of impaired waterbodies and help make the Mendenhall Valley a model for the coexistence of urban development and conservation. Coastal America believes that this partnership between the City, Corps, and the DCAG would be very beneficial is pleased to endorse the Duck Creek Project and wishes it much success in fulfilling community goals.

The DCAG project is unique to Alaska where the "Last Frontier" attitude still prevails. The effects of urban development on coastal resources is something not well understood in a state where it is perceived that there is an abundance of resources and restrictions on development are unnecessary. This project is intended to be a science-based demonstration project where the community, residents of Alaska, and the nation can learn about the importance of aquatic habitat, the need for protection, and the necessity and costs of restoration in maintaining healthy aquatic ecosystems. This is the first stream restoration within an urban watershed in Alaska, and will serve as a demonstration project for other such efforts in Alaska.

Clear Creek Wetland Restoration Team

<i>Team Leader:</i> Dr. Steven Anderson, Natural Resource Uses Team Leader Galveston Bay Estuary Program 711 West Bay Area Blvd. Webster, TX 77598 (281) 316-3006	<i>Co-Leader:</i> Mr. Bill Baker 1231 Kurland Reliant Energy Company Houston, TX 77034 (713) 945-8208
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Through the cooperative effort of the project participants, this project utilized experimental, innovative techniques for germinating and planting wetland plant materials, in its design and consultation, and in other technical expertise that made this project a success. Without this collaboration and cooperation, it would have been difficult, if not impossible, to draw together these elements and make this project successful since the partners had never worked cooperatively on wetland restoration projects. Each partner contributed different innovations and experiences to the effort in order to make the sum greater than the whole of its parts.

This project meets Coastal America's goals: it is a collaborative effort of various Federal and non-Federal interests, including the private sector; the partnership restored and protects an important coastal habitat resource; there are significant components of education/outreach and technical information transfer, both among the project's partners and to the public; and national goals of economic growth and environmental protection are being achieved.

The Clear Creek watershed experienced substantial wetland loss due to subsidence from groundwater withdrawal, erosion caused by extensive recreational boating in Clear Creek, and suburban development. Development and water-related recreation are expected to continue, although groundwater withdrawal issues have been addressed.

In response to continued wetland loss, the Clear Creek Marsh Restoration Task Force was formed as a cooperative effort to plan, coordinate, and evaluate projects in the Clear Creek Watershed. Reliant Energy Company (formerly Houston Lighting & Power), a member of the task force, proposed an innovative project to use materials dredged from one of its cooling water intake channels at its Clear Creek Power Station. Rather than disposing the materials offsite, which is its standard practice, they were used to restore marsh habitat near the power plant. The NRCS utilized this project as an opportunity to test a process, called scarification, in which cordgrass seeds are prepared in a laboratory for planting, which dramatically helped to ensure the viability and success of the seeds being planted. Also, a new planting

method was tested in which the materials were broadcast from an airboat, allowing for complete plant coverage and extensive savings in labor versus planting the materials by hand. The air boat was also used to cut shallow channels into the site, improving water exchange in the planting zone and increasing access to the wetland edge by aquatic organisms.

The site continues to be successful habitat for a rich diversity of fish, shellfish, and birds (22 species including several endangered species, such as bald eagles). The plant materials are well established and even thrived during the harsh conditions which occurred last summer. Reliant Energy is completing the installation of interpretive walkways, instructive signs, and camouflaged viewing stations surrounding the project area to educate the public about the project.

This project had numerous accomplishments. First, it demonstrated that materials that would be normally discarded could be used to improve the environment, and great cost savings could result. Second, a rich, useful habitat was created by restoring this site. Third, and, most importantly, the partnership provided an opportunity to test experimental methods and transfer them among the collaborators.

This project illustrates how environmental preservation and restoration efforts can coincide with economic activity and result in significant cost savings. A small but important habitat was improved for both resident and migratory species in an area surrounded by a great deal of human activity. This power plant is important to Reliant Energy's network; it is located in one of the fastest growing areas around Houston. The plant provides power during peak demand, and its operations were unaffected by the project. Reliant Energy demonstrated corporate environmental stewardship by restoring these wetlands, gaining recognition for its actions while achieving significant cost savings by using the dredged materials beneficially rather than disposing of them. The work on this project broke down barriers among the partners and built trust among them. Future projects are now being considered by these partners with local municipalities and the Port of Houston.

Shamrock Island Protection and Restoration Team Summary

Shamrock Island in Corpus Christi Bay is an ecologically important island that was facing severe erosion. The 100-acre island which is now owned by the Nature Conservancy and managed by the Texas General Land Office is a nesting area for two endangered species and over 20 colonial water birds. The project effectively restored and protected the island through a combination of strategies including marsh creation, establishment of a feeder beach and placement of a geotube breakwater. Virtually every aspect of this project—from the concept and design to permitting, construction, and even financing—was the result of innovative partnerships and cooperative efforts. The U.S. Corps of Engineers and the Fish and Wildlife Service, along with Texas state offices, private conservation groups, businesses and Texas A & M University, formed the Shamrock Island Protection and Restoration Team to make the project an environmental and economic success. Public interest in the fate of the island and in the success of the project was very high. To make things more challenging, the work had to be completed during winter weather conditions to avoid disturbing the birds during their spring nesting season. Daily oversight by team members resulted in the project being completed in record time and under budget.

Nominated by: David Dewherst, Texas Land Commissioner, Texas General Land Office

Endorsed by: Glenn Martin, Mayor of the City of Port Arkansas

Federal Partners: USFWS, COE

State Partners: Texas General Land Office and Texas Parks and Wildlife Dept

Business Partners: King Fisher Marine Services and Shiner, Moseley, and Assoc.

Other Partners: Nature Conservancy of Texas, Texas Audubon Society, Coastal Bays Foundation

University Partner: Texas A & M

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Galilee Bird Sanctuary

The restoration involved work at two locations. Twin 6 x 10-foot box culverts, 200 feet long, were installed on the west side of the Galilee Bird Sanctuary. These culverts, which feature self-regulating tide gates, and a network of reconstructed channels allow renewed tidal flushing to an estimated 50 acres of the marsh. The second project, at the east side of the sanctuary, also involved twin 6 x 10-foot box culverts and a reconstructed channel network to improve 33 acres of salt marsh habitat. The restoration work began in 1997 and was completed in 1998 at a cost of \$1.8 million. Funding was provided by the Rhode Island Department of Transportation and Department of Environmental Management and the U.S. Army Corps of Engineers, and the project marked the first salt marsh restoration effort in the New England region by the Corps.

Historically, the 128-acre Galilee Bird Sanctuary was mostly salt marsh. However, the disposal and placement of fill material from navigation and road construction projects significantly restricted tidal flow to the marsh. In 1955, the area was acquired for use as a bird sanctuary by the Rhode Island Division of Fish and Wildlife. Before the restoration, less than 20 acres of salt marsh and open water existed in the sanctuary, of which about nine acres was vegetated salt marsh supported by tidal flow.