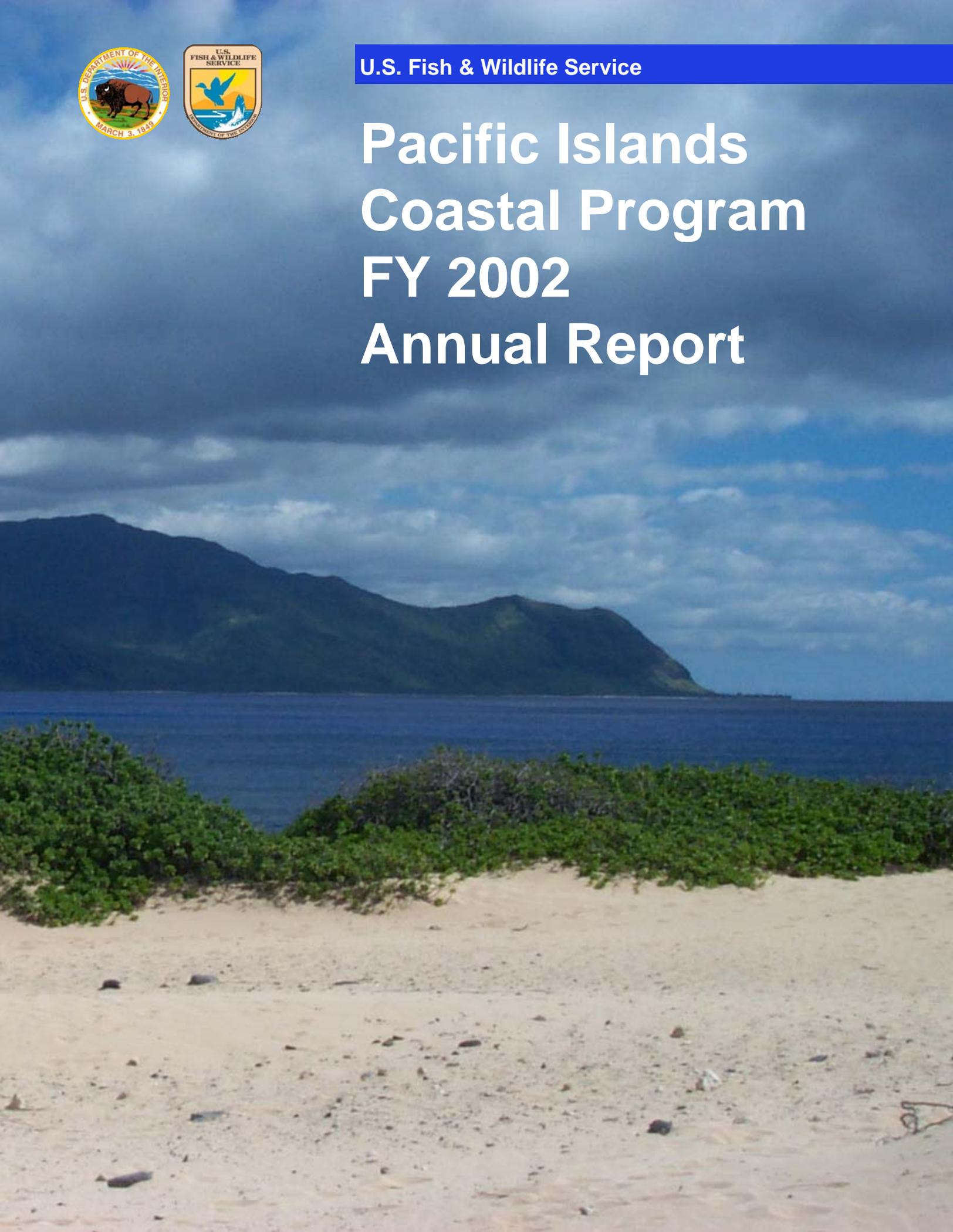


U.S. Fish & Wildlife Service

Pacific Islands Coastal Program FY 2002 Annual Report





Pacific Islands Coastal Program



*Above: Lehua, offshore islet, Kaua`i
Lehua islet, located off the coast of
Kaua`i is a state sanctuary with at
least 10 species of nesting seabirds
including Black-footed Albatross
(pictured above), Laysan Albatross,
Red-footed Boobies and Wedge-tailed
Shearwaters.*

*Front and back cover: Ka`ena Point
Natural Area Reserve, O`ahu
Restoration and monitoring efforts
have increased survivorship of nesting
seabirds like the Laysan Albatross and
endangered plant species in one of the
last protected coastal dune areas on the
island of O`ahu.*

*Maps and photos courtesy of the U.S.
Fish & Wildlife Service except where
noted.*

The Pacific Islands Coastal Program is part of the Conservation Partnerships Program, a collection of voluntary habitat restoration programs with the goal of restoring native Pacific Island ecosystems through collaborative projects. The Coastal Program funds landowners, non-profit groups, government agencies and others to do habitat restoration, biological surveys, GIS mapping, applied restoration research and environmental education projects.

Pacific Islands Coastal Program

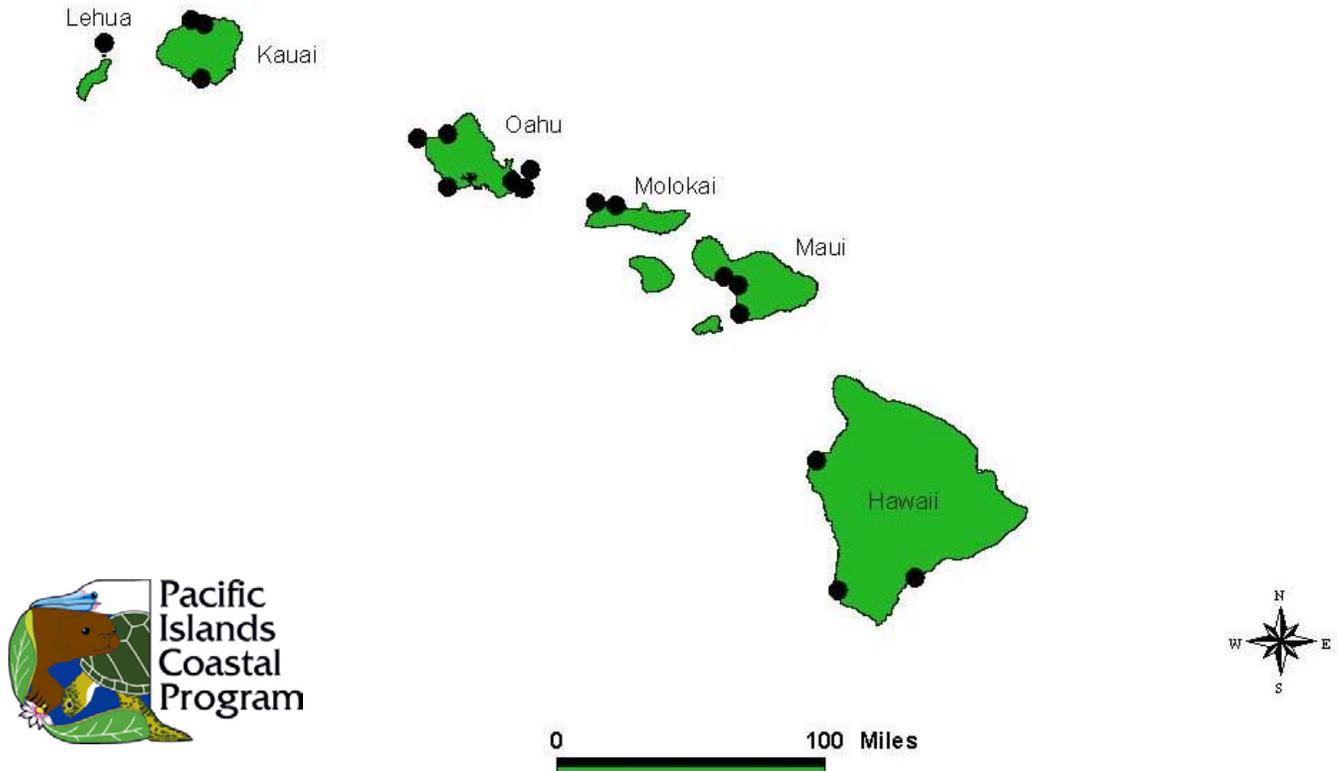
Table of Contents



Mokuluas, offshore islets, O'ahu

Table of Contents	ii
Figure 1. Ongoing Projects in the State of Hawaii	
Overview	1
FY2002 Project Funding Summary	2
FY2002 Funded Project Descriptions	3
Recent Accomplishments	10

Figure 1. Ongoing Projects in the State of Hawai`i
 (Palau, American Samoa and multi-island projects not shown)



Pacific Islands Coastal Program

Overview



Hawaiian Green Sea Turtle (*Chelonia mydas*)

The Pacific Islands have the greatest number of species at risk in the nation:

> 333 Threatened and Endangered species;

> 135 Candidate species; and

> 1,000 Species of Concern.

Threats to coastal and near-shore marine areas include sediment, runoff, invasive species, coastal development, overfishing, marine debris & pollution.

Background and Justification

The Pacific Islands Coastal Program is one of 16 such programs around the nation. Established in Fiscal Year 2000, the Pacific Islands Coastal Program funds landowners, non-profit groups, government agencies and others to do habitat restoration, biological surveys, GIS mapping, applied restoration research and environmental education projects.

The program also provides technical assistance in the form of maps, information and assistance with applications for outside grants. Unlike other Coastal Programs in the country that have a localized geographical focus, the Pacific Islands Program covers hundreds of islands scattered over thousands of square miles of ocean. Pacific coastal and near-shore environments include over 90% of the U.S. coral reefs and many other unique, tropical habitat types that support many endemic species, hundreds of which are listed as threatened or endangered species.

Funding

The Pacific Islands Coastal Program provided full or partial funding for 17 projects in FY2002. Eleven of these were new projects and 6 were continuations of multi-year projects initiated in FY 2001 or before. In addition, four other projects were administered by the Coastal Program with funds from the Hawai'i Biodiversity Joint Venture. Approximately \$202,400 of Coastal Program funds were used for projects, matched by almost \$125,000 from other Service programs and \$373,000 in non-federal funding and in-kind services provided by project partners outside the Service.

Technical assistance provided by the Coastal Program was instrumental in the acquisition and protection of a hawksbill sea turtle nesting beach by the Nature Conservancy and in the procurement of \$2,000,000 in Federal assistance to the State of Hawai'i (a National Coastal Wetland Grant and Section 6 Recovery Land Acquisition funding) for the purchase and protection of a 300-acre coastal dune and wetland ecosystem, in partnership with the Maui Coastal Land Trust.

Status of the Program

Growing interest and partnerships have greatly expanded the potential of this program. The projects funded and administered in FY2002 include the following: American Samoa Marine Alien Survey, Big Island Hawksbill Sea Turtle Volunteer Program, Hawai'i Nature Center Wetland Education Program, Kahuku Seabird Fencing Project, Kalaehoa Coastal Restoration, Lawa'i Kai Coastal Restoration, Limahuli Stream Restoration, Marine GAP Analysis, Midway Ant Eradication Study, Mo'omomi Traditional Marine Management & Education Project, Offshore Island Restoration, O'ahu Seabird Island Habitat Restoration, Palau Dugong and Crocodile Surveys, Sealife Park Seabird Rehabilitation Pool, Waipa Coastal and Riparian Restoration Project, and Wetland Plant Restoration Trials

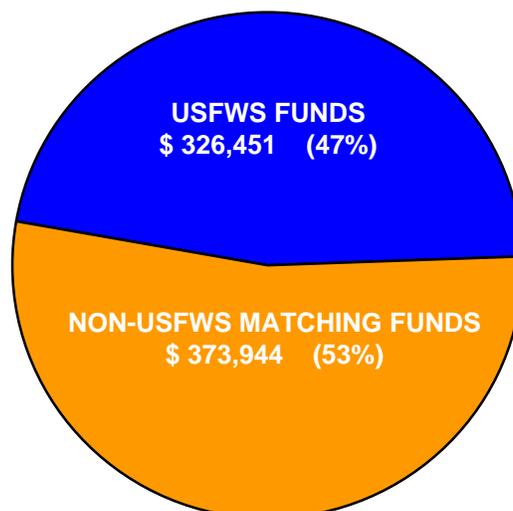
Future Plans

The program will work to add projects in Guam, Commonwealth of the Northern Mariana Islands, Palau, American Samoa, the Federated States of Micronesia and the Marshall Islands. Technical assistance will focus on helping partners to obtain outside grants for habitat restoration and planning.

Pacific Islands Coastal Program FY2002 Project Funding Summary

PROJECT	COOPERATORS / PARTNERS	USFWS FUNDS	MATCHING FUNDS
American Samoa Marine Alien Survey	Bishop Museum	\$ 30,000	\$ 45,047
Big Island Hawksbill Sea Turtle Volunteer Program	University of Hawai`i, National Park Service	\$ 40,000	\$ 40,000
Hawai`i Nature Center Wetland Education Program	Hawai`i Nature Center	\$ 5,000	\$ 0
Kahuku Wedge-tailed Shearwater Project	O`ahu National Wildlife Refuge Complex	\$ 752	\$ 500
Kalaeloa Coastal Strand Restoration	Ka`ala Farms	\$ 500	\$ 3,000
Lawa`i Kai Coastal Restoration Plan	National Tropical Botanical Garden	\$ 2,500	\$ 1,000
Limahuli Stream Monitoring	Hawai`i Stream Research Institute	\$ 17,000	\$ 5,667
Marine GAP Analysis	The Nature Conservancy	\$ 45,000	\$ 115,200
Midway Ant Eradication Study	Midway Atoll National Wildlife Refuge	\$ 834	\$ 0
Mo`omomi community-based marine management	The Nature Conservancy	\$ 20,000	\$ 5,000
Nature Conservancy: Offshore Island Restoration	The Nature Conservancy	\$ 20,000	\$ 5,000
Offshore Islet Restoration	Bishop Museum	\$ 30,000	\$ 0
O`ahu Seabird Island Habitat Restoration	State of Hawai`i: Division of Forestry and Wildlife	\$ 9,975	\$ 6,090
Palau Dugong and Crocodile Surveys	The Nature Conservancy	\$ 58,560	\$ 19,640
Sealife Park Seabird Rehab Pool	Sealife Park	\$ 4,345	\$ 8,800
Waipa Coastal and Riparian Restoration	Waipa Foundation	\$ 18,820	\$ 34,000
Wetland Plant Restoration Trials	University of Hawai`i	\$ 23,165	\$ 0
Kamehame Beach Purchase	The Nature Conservancy	\$ 0	\$ 85,000
TOTALS		\$ 326,451*	\$ 373,944

* Includes some USFWS funding from outside the Coastal Program



Pacific Islands Coastal Program FY2002 Funded Projects

Offshore Island Restoration Projects

Partners: State of Hawai`i, The Nature Conservancy, Bishop Museum, University of Hawai`i, National Park Service

Location: Statewide locations throughout Hawai`i

Description: Funding for offshore islet biological surveys and habitat restoration was provided through agreements with the Bishop Museum and the Nature Conservancy. The project is a cooperative venture with the State of Hawai`i, the University of Hawai`i, the National Park Service and others to inventory and restore high priority islets throughout the main Hawaiian Islands. Offshore islets are the last refuge for the majority of seabirds and many rare coastal plants and insects in the Hawaiian Islands. Because the islets are isolated from the main islands and access is difficult, many of these islets are less impacted by invasive alien species and human disturbance than other coastal areas. This project will document the biota, allow collection and propagation of rare plants and initiate restoration in the form of alien species removal and outplanting. Public outreach and education components will also be included.



Offshore islet, Moloka`i

Species that Benefit: Multiple species of nesting seabirds (including Black-footed Albatross, Laysan Albatross, Wedged-tailed Shearwater, Christmas Shearwater, Sooty Tern, Brown Noddy) and rare coastal plants and arthropods will benefit. Several listed plant species are being considered for outplanting.



Goat Island, offshore islet, O`ahu

Accomplishments 2002: Funding was provided and biological surveys and rare seed collections on several islets were initiated. An Offshore Islet Restoration Committee, composed of all project partners, was established. Working groups within this committee are addressing monitoring and restoration protocols, funding, education and outreach.

Significance: The project will provide data on islets that have not been surveyed for many years, or in some cases, never surveyed. This will allow managers to prioritize actions and to use the data as a baseline for future monitoring. Propagating genetic material collected from rare and listed coastal plants will aid in their recovery. Seabird nesting success will be increased by removing alien predators and weeds. The public will also benefit from learning about coastal resources and the need for habitat restoration.



View from Mokulua, offshore islet, O`ahu

Pacific Islands Coastal Program FY2002 Funded Projects

Palau Dugong and Saltwater Crocodile Surveys

Partners: The Nature Conservancy, Palau Bureau of Marine Resources, Palau Conservation Society, Palau International Coral Reef Center

Location: Republic of Palau

Description: The Nature Conservancy will oversee surveys in Palau for both dugongs and saltwater crocodiles. A system will be developed for collecting and recording incidental sightings (live animals) and reporting (carcasses, poaching, etc) and sighting/reporting cards will be prepared and distributed throughout Palau.



Palau Saltwater Crocodile (*Crocodylus porosus*)
Photo courtesy of Bonnie Pelnar, Underwater Colors

The Saltwater Crocodile project entails monitoring the status and distribution of crocodiles in Palau, characterizing the population and determining linkages through DNA analysis. The project will provide support to the Palau government to develop a management plan and a response strategy to re-locate nuisance crocodiles away from areas of high human occupation.

The Dugong Project will include aerial surveys and mapping of the seagrass beds will be conducted. The surveys, combined with local knowledge, past aerial photographs, remote sensing images, and the distribution patterns of dugong sightings, will be used to identify potential areas of dugong habitat. A sightings database will be developed. After identifying likely areas of dugong feeding habitat, extensive ground-truthing will be conducted by diving these areas to determine the extent of the seagrass beds and the basic species composition. The results will be mapped and incorporated into Palau's national GIS system. The government will use this data to help design a network of marine sanctuaries.

Species that Benefit: Palau Dugong (*Dugong dugon*), Palau Saltwater Crocodile (*Crocodylus porosus*)

Accomplishments 2002: Funding was provided in Fiscal Year 2002 to accomplish these tasks.

Significance: Dugong and saltwater crocodile populations are low and declining due to habitat loss and hunting. The dugong (*Dugong dugon*) population in Palau is the most isolated in the world, and it is unlikely that the Palauan population is receiving any recruitment from other areas. After a 1991 survey, the total dugong population for Palau was considered to be a few hundred animals. The saltwater crocodile (*Crocodylus porosus*) population in Palau may be as few as 150 individuals in the wild. The Palau government intends to create a nationwide system of marine and terrestrial conservation areas to protect these and other aquatic resources. Data from these surveys will provide Palau with the information needed to create conservation areas protective of key habitats for dugongs and crocodiles. The information will assist The Palau government in maintaining a viable population of dugongs and crocodiles in Palau.



Rock Islands, Palau



Rock Islands, Palau

Pacific Islands Coastal Program FY2002 Funded Projects

Kalaeloa Coastal Strand Restoration



Partners: Ka`ala Farms

Location: Island of O`ahu

Description: Tools and equipment were purchased for volunteer workers. The volunteers, including students, will remove alien weeds and re-plant native coastal plants in the Kalaeloa Unit of the O`ahu National Wildlife Refuge Complex. Plant species will include rare species and contribute to the recovery of listed plant species.

Significance: The project will aid recovery of *Achyranthes splendens* and several other rare plants, as well as educate the public about coastal conservation issues.

Hawai`i Nature Center Outdoor Education Program



Partners: Hawai`i Nature Center

Location: Island of Maui

Description: The Pacific Islands Coastal Program provided binoculars, spotting scopes, bird models and tents for the Hawai`i Nature Center's (HNC) Outdoor Education Program for elementary school children at Keālia Pond National Wildlife Refuge.

Significance: The Hawai`i Nature Center is the only environmental education organization in Hawaii with the staff, training and infrastructure to be able to offer long-term, coastal education programs to large numbers of elementary school students on O`ahu and Maui. The HNC Program provides students an opportunity to learn and appreciate the migratory birds as well as endangered, native waterfowl such as the Hawaiian stilt and the Hawaiian coot.

American Samoa- Marine Alien Species Survey



Partners: Bishop Museum

Location: American Samoa

Description: A rapid underwater assessment of alien marine species in American Samoa will catalog and describe the location and type of alien threats to native marine species.

Significance: Marine surveys will focus on Pago Pago Harbor, the main point of entry for marine alien species brought into American Samoa on boat hulls or in ballast water. The report will be used as a baseline for future monitoring and to prioritize alien species prevention and control measures.

Pacific Islands Coastal Program FY2002 Funded Projects

Big Island Hawksbill Sea Turtle Volunteer Program



Hawksbill Sea Turtle Hatchlings (*Eretmochelys imbricata*)

Partners: University of Hawai`i, National Park Service

Location: Island of Hawai`i

Description: The purpose of this project is to protect and monitor nesting hawksbill sea turtles (*Eretmochelys imbricata*) on the beaches of the island of Hawai`i. Hatchling survival will be increased by controlling nest predators and human activities on nesting beaches. Life history information and tagging data will be collected.

Significance: The hawksbill turtle is a listed endangered species that nests primarily on the Big Island. The University of Hawai`i, by carrying out this project, will help the Service to fulfill its responsibilities under the Endangered Species Act to recover hawksbill sea turtles.

Kahuku Wedge-tailed Shearwater Project



Wedge-tailed Shearwater (*Puffinus pacificus*)

Partners: O`ahu National Wildlife Refuge (NWR) Complex, James Campbell Unit

Location: Island of O`ahu

Description: Refuge staff from the O`ahu NWR Complex, in cooperation with the Kahuku Golf Course, constructed a predator exclusion fence around a colony of burrowing seabirds; Wedge-tailed Shearwater (*Puffinus pacificus*) that had suffered predation from semi-feral cats and dogs. Educational signs were posted to inform the public about the project.

Significance: Breeding success of the seabird colony should increase in future years due to the prevention of nest predation. This success will also educate the public on the importance of controlling free roaming cats and dogs.

Lawa`i Kai Coastal Restoration Plan



Partners: National Tropical Botanical Garden (NTBG)

Location: Island of Kaua`i

Description: This is the planning phase of a project to outplant multiple rare and listed species of coastal plants that have disappeared from much of their natural range. The goal will be to remove alien weeds and restore the original coastal strand community.

Significance: Many rare and listed species now cultivated primarily in greenhouses will be re-introduced into their natural habitat. The project will also improve nesting habitat for green sea turtles.

Pacific Islands Coastal Program FY2002 Funded Projects

O`ahu Seabird Island Habitat Restoration



Brown Noddy (Anous stolidus pileatus)

Partners: Department of Land and Natural Resources-Division of Forestry and Wildlife

Location: Island of O`ahu

Description: This project was started in FY2001 to assist the State of Hawai`i to restore seabird nesting islets located off the windward coast of O`ahu. Actions include stabilizing eroding soils with native plants and removal of alien plant species that preclude establishment of native plant and interfere with seabird nesting.

Significance: In the past, heavy rains on the eroded islands resulted in mudslides that buried and killed hundreds of burrowing seabirds. Seabird nesting success will increase due to the stabilization of soils and the removal of weeds that hinder nesting.

Wetland Plant Restoration Trials



Hawaiian Stilt (Himantopus mexicanus knudseni)

Partners: University of Hawai`i

Location: Island of O`ahu

Description: Field trials in the Honouliuli Unit of the O`ahu National Wildlife Refuge Complex will determine methods for restoring native wetland vegetation in brackish wetlands. Hawai`i's wetlands are dominated by alien weeds and vegetation control is a major component of management. Increased use of native wetland species would reduce this problem. A variety of native wetland plants will be outplanted under different conditions and the results will be documented in a M.S. thesis.

Significance: Data from this study will assist resource managers to outplant and sustain native wetland plant species. Increased use of native plants in managed wetlands decreases weed control problems and also provides cover, nest material and food for endangered wetland birds.

Waipa Coastal and Riparian Restoration and Monitoring Project



Partners: Waipa Foundation, Kamehameha Schools

Location: Island of Kaua`i

Description: The project helps implement the Waipa Foundation's community-based, watershed restoration plan. Habitat restoration includes removal of invasive plant species, outplanting of rare native plant species, implementing recovery actions outlined in multiple ESA plant recovery plans. One major project component is providing cultural and environmental education opportunities to local children and students.

Significance: The project will restore native plants at a riparian and a coastal site at Waipa. In addition, it will build local knowledge and foster community stewardship of natural resources; factors that are critical to the successful long-term management of the Waipa watershed.

Pacific Islands Coastal Program FY2002 Funded Projects

Limahuli Stream Restoration and Monitoring



Partners: Hawai`i Stream Research Institute, National Tropical Botanical Garden

Location: Island of Kaua`i

Description: The project examines the effects of restoring native riparian vegetation on primary productivity (measured as biomass & species composition of native algae) and any subsequent effects on native fish and invertebrate populations.

Significance: The study will test the hypothesis that alien riparian vegetation, which currently dominates all of Hawai`i's stream systems, creates a more dense canopy than the lower growing native species, reducing light reaching the stream, in turn reducing the biomass of native algae available to native species. Results from the study will be used to determine riparian restoration strategies statewide.

Marine GAP Analysis



Chub (Kyphosidae spp.)

Partners: The Nature Conservancy, Hawai`i Natural Heritage Program, Hawai`i Division of Aquatic Resources, University of Hawai`i, National Oceanic & Atmospheric Administration

Location: Islands of Maui, Lana`i, Moloka`i and Kaho`olawe

Description: This agreement will create an electronic database and GIS system that covers important marine and coastal species and ecosystems in Maui County. A GIS data layer of nearshore marine and coastal resources around the islands of Maui, Moloka`i, Lana`i and Kaho`olawe will include data on species locations, habitat types, traditional Hawaiian knowledge of species and habitats, land ownership, and threats to species and habitats.

Significance

This data management tool will be used to identify areas where conservation projects are needed and to assist the State of Hawai`i to identify potential areas for establishing new marine protected areas.

Sealife Park Seabird Rehabilitation Pool



Partners: Sealife Park

Location: Island of O`ahu

Description: Sealife Park is the only seabird rehabilitation facility in Hawai`i. The construction of a saltwater pool within the rehabilitation area for long-term care of injured seabirds is a necessary component of this program.

Significance: The rehabilitation pool helps the veterinary staff provide rehabilitation and long-term care for recovering seabirds. The pool promotes proper preening and feeding behavior of the seabirds.

Pacific Islands Coastal Program FY2002 Funded Projects

Mo`omomi Traditional Marine Management & Education Project



Partners: The Nature Conservancy

Location: Island of Moloka`i

Project Description: This project will document traditional Hawaiian marine conservation practices at a community-managed marine area on the north shore of Moloka`i and establish ways to share this information with other communities around the state through exchange programs. Conservation and fisheries management practices at Mo`omomi are based on traditional methods of regulating harvest according to the ancient Hawaiian moon calendar, with the goal of insuring a healthy and sustainable nearshore ecosystem and fishery. This knowledge will be recorded, incorporated into educational materials and made available to other communities interested in learning how to manage their nearshore resources traditionally.

Significance: Traditional fisheries for many species of fish, invertebrates and algae have declined or disappeared due to overharvest. This project will help to record and revive the means for gathering the ecological knowledge that can serve as the foundation for traditional fisheries management. While not appropriate for all areas of the state, it will help small, cohesive coastal communities learn to re-create and use ancient Hawaiian resource management strategies, in partnership with the existing state regulatory and management structure.

Midway Atoll National Wildlife Refuge: Ant Eradication Study



Partners: Midway Atoll National Wildlife Refuge

Location: Midway Atoll

Project Description: Granular ant bait was spread over a 10 acre islet at Midway Atoll National Wildlife Refuge to assess the feasibility of controlling or eradicating ants, all species of which are alien to the Hawaiian Archipelago. Ants are documented to attack seabird chicks and to feed on seeds of native plants and their reduction will improve habitat for native terrestrial species on atolls. Before and after sampling of ant populations and non-target arthropods was conducted for a year. Initial results indicate an almost complete knockdown of the target ant species for one year, followed by a slow recovery of ant populations.

Significance: The findings of this study will be used to assess the feasibility of controlling or eradicating alien ants in small island ecosystems. Results will be used by natural resource managers to improve habitat for seabirds and native plants. If successful, this technique will be tried on other Pacific atoll islets with ant problems.

Pacific Islands Coastal Program Recent Accomplishments



Laysan Albatross at Ka`ena Point, O`ahu

Seabird populations at the Ka`ena Point Natural Area Reserve have rebounded following a predator control program initiated with Coastal Program funds. Laysan Albatross are successfully nesting for the first time in many years and reproductive success of burrowing seabirds, like the Wedged-tailed Shearwater has increased dramatically.



Goat Island, O`ahu

Surveys of native coastal vegetation were completed on several coastlines and offshore islets in Hawai`i.

Seeds and genetic material were collected for propagation from several rare and listed plants on offshore islets.

Black-footed Albatross, listed as a vulnerable species by the IUCN, were discovered nesting on Lehua after a recent seabird survey.



Kamehame Beach, Hawai`i

Endangered hawksbill sea turtles are successfully nesting in a predator free environment at Kamehame Beach on the Big Island (Hawai`i). The Big Island hawksbill turtle volunteer program is in it's 9th year of protecting and monitoring nesting hawksbill sea turtles. Moreover, the Pacific Islands Coastal Program technical assistance facilitated the purchase of Kamehame Beach by The Nature Conservancy to further protect it as a permanent preserve.



Hamakua Marsh, O`ahu

Alien vegetation was removed and native wetland plants are coming back at Hamakua Marsh on O`ahu. Hamakua Marsh is one of few natural wetlands that are home to four endangered waterbirds and several migratory birds.

Alien vegetation was cleared along Limahuli Stream and native plants are being prepared for outplanting.



Waimanalo Watershed, O`ahu

A watershed restoration plan was completed for the Waimanalo watershed on O`ahu, based on input and priorities of the Waimanalo community. The plan outlines several strategies and specific projects for restoring streams and nearshore marine areas.

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