APPENDIX B:
CUMULATIVE PROJECT LIST

Appendix B: Cumulative Project List

List of Projects in the Channel Islands Area

The Channel Islands National Park is managed by the National Park Service (NPS), which has the goal of preserving and protecting the islands' cultural and natural resources while providing for visitor enjoyment of the park. NPS undertakes a variety of projects to maintain and enhance the park. The sections below list the recent, present, and future planned projects for the park.

COMPLETED PROJECTS

Anacapa Island Restoration

Anacapa Island provides critically important habitat for seabirds, pinnipeds, and endemic plants and animals. The island's steep lava rock cliffs have numerous caves and crevices that are particularly important for the increasingly rare seabird species, Xantus's murrelet and ashy storm-petrel. The largest breeding colony of the California brown pelican in the United States is on Anacapa Island, and a unique subspecies of deer mouse occurs here exclusively as well.

The Anacapa Island ecosystem, however, has been degraded by the presence of nonnative black rats (*Rattus rattus*). Rats were introduced on the island prior to 1940, most likely as stowaways on ships that sailed to the island. They have had large impacts on nesting seabirds, preying heavily on eggs and chicks as a food source. Approximately 40 percent of Xantus's murrelet nests on Anacapa Island have shown evidence of egg predation. Rats also prey directly on the native island deer mouse.

In the mid-1990s, the park teamed with the Island Conservation and Ecology Group (ICEG) to determine if and how rats could be eradicated from Anacapa Island.

Anacapa Island presented special challenges. The island has extensive steep cliffs, making placement of bait in the territory of every rat difficult. Additionally, the endemic deer mice would feed on any bait that was attractive to rats. Furthermore, the endangered California brown pelican, extremely sensitive to disturbance, breeds and nests on a large portion of the island during eight months of the year.

Following extensive consultation with experts, NPS and ICEG determined that rats could be eradicated through the distribution of bait pellets with brodifacoum, the anticoagulant used in the majority of successful rat eradications. This product contains half the amount of rodenticide that is found in products that homeowners commonly purchase in the local grocery store and it would not accumulate in the environment because it breaks down into harmless carbon dioxide in water.

The bait application (from a hopper suspended under a helicopter) was scheduled for the fall of 2001, the end of the dry season, when rats were very hungry and both visitation and bird populations were low. Native deer mice were protected during bait application by: a) holding a

small population of mice in captivity, and b) maintaining deer mice in the wild by treating East Anacapa Island one year prior to treating Middle and West Anacapa Islands.

Phase I, application of bait to East Anacapa Island, was completed in December 2001 and Phase II, treatment of Middle and West Anacapa Islands, was completed in fall 2002. Extensive ecological monitoring pre- and post-rat eradication was conducted to determine the environmental impacts of the project. This monitoring has found substantial recovery of rare seabirds and other native wildlife on Anacapa Island following eradication of the rats. Mouse populations have returned to normal and they are breeding abundantly in the wild, and juvenile side-blotched lizards and slender salamanders are thriving in the absence of rats.

Scientists have recorded a dramatic and positive response by Xantus's murrelets. Nest surveys by researchers from Humboldt State University have found 14 murrelet nests, including the first documented on Cat Rock since 1927 (NPS 2009a).

Santa Cruz Island Restoration

Santa Cruz Island is home to 70 endemic plant and animal species that are found nowhere else on Earth, including the island scrub jay. This isolation has also made these species vulnerable to extinction. The destruction of these species' habitats by nonnative, exotic plants and animals has caused the extinction of the Santa Barbara Island song sparrow and the Santa Cruz Island monkey flower, along with eight other rare and unique island species.

To save ten other island species, including the island fox, from the brink of extinction, as well as protect 3,000 internationally significant archaeological sites, NPS and The Nature Conservancy (TNC) embarked on a multi-year program to restore Santa Cruz Island. This restoration program is part of the NPS mission, as mandated by Congress, to preserve 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 Problem

NPS, TNC, and natural and cultural resource experts identified nonnative feral pigs and nonnative fennel (an invasive weed) as the most significant disturbances to the island's sensitive resources. Both pigs and fennel cause major impacts to native plant communities, rare plant species, and archaeological sites.

In addition, feral pigs have played a pivotal role in the catastrophic decline of island foxes. Piglets provide a year-round food source for golden eagles, allowing these former rare or occasional visitors to expand their range and establish resident populations on the island and prey on island foxes. Golden eagle predation has placed the fox on the brink of extinction on Santa Cruz, Santa Rosa, and San Miguel Islands.

The Solution

Scientists agreed that the eradication of feral pigs is the most important action that could be taken to protect and restore Santa Cruz Island. Feral pigs have been eradicated from Santa Rosa Island by employing a similar program.

Wildlife experts advised that pigs can be eradicated from Santa Cruz Island if NPS acted aggressively and persistently. However, significant resources could be lost if the pigs were not removed from the island as soon as possible. Therefore, pig eradication along with control of dense stands of fennel began in 2004 and has since been completed.

Other management actions to initiate recovery of the island ecosystem have also begun. Golden eagles have been captured and relocated to northeast California. A captive breeding program for island foxes has been established as insurance against losses due to golden eagles. Also, native bald eagles have been reintroduced to the island. Bald eagles disappeared in the 1950s due to DDT poisoning. Bald eagles eat fish, seabirds, and animal carcasses, not live foxes, and are very territorial. It is hoped that once they mature, they will establish territories and drive off any newly arriving golden eagles. In 2006, for the first time in more than 50 years, two bald eagle chicks were hatched unaided from two separate nests on Santa Cruz Island.

This multi-year program to remove golden eagles, reintroduce bald eagles, breed island foxes, eradicate pigs, and control fennel will help restore the balance to Santa Cruz Island's naturally functioning ecosystem. Once restored, the island will offer one of the last opportunities to experience the nationally significant natural and cultural heritage of coastal southern California (NPS 2009b).

Santa Rosa Island Pier Reconstruction

The approximately 700-foot-long pier at Bechers Bay on Santa Rosa Island has deteriorated. NPS is currently rehabilitating the failing pier to allow continued boat access to Santa Rosa Island (NPS 2009c). The pier was built in the 1870s to serve ranching needs on the island and has been rebuilt several times. Major repairs or reconstruction of the pier occurred in 1913 and again during World War II in 1945. NPS repaired and strengthened the structure in 1987 to provide access to the island for visitors and safe operations for researchers and employees.

The repairs made by NPS in 1987 were temporary in nature and not intended to last for more than 20 years. Currently, the pier is the only viable access for supplies and materials to support all island operations including visitor services, resource management, research, and maintenance. It also provides essential visitor access via concession boats and private vessels for the 53,000-acre island. At present, the pier is servicing approximately 700 vessel landings per year. Since 1987, the pier has suffered heavy corrosion from the marine environment and deterioration from storms and overall use. Emergency repairs were conducted in 2002, 2004, and 2006 to replace corroded pier pilings.

NPS is in the process of replacing the pier within its current footprint. The height of the new pier would be increased to approximately 23 feet above mean low water to situate it out of the storm surge. The pier would connect to the shore at an elevation matching the original pier elevation. Disturbance of the existing road to the pier would be largely confined to the 15 feet immediately adjacent to where the pier connects to the land. Impacts would be minimal beyond this area. A new trench drain would be installed on the land side of the pier structure. The staging area for construction would be located on the bluff above the pier in a previously disturbed area that has served as the staging area for past pier maintenance and island operations.

NPS completed construction on the new pier in December 2009.

CURRENT PROJECTS

Santa Cruz Island Coastal Wetland Restoration

Prisoners Harbor on Santa Cruz Island is the principal gateway to the largest of the Channel Islands. The harbor sits at the mouth of Cañada del Puerto, an ephemeral creek that drains 13 square miles of the island's interior, including the island's central valley. Historically, the Prisoners Harbor area was one of the largest backbarrier coastal wetlands on the Channel Islands. This rare habitat, which consists of a freshwater stream, coastal lagoon/wetland, and riparian woodland, provided respite from the long dry summers for a diverse array of species including the island fox and bald eagle. The wetland most likely served as a resting and feeding stop for migratory birds traveling the Pacific flyway, as well as nesting and foraging habitat for resident waterfowl.

Prisoners Harbor also has an extensive legacy of human occupation. Chumash people occupied a village at the harbor for at least 5,000 years. Nineteenth- and twentieth-century landowners constructed a pier, buildings, and other structures at Prisoners Harbor. Ranchers channelized the creek and filled in the adjacent wetland with gravel from the surrounding hills and creek bed to facilitate island ranching operations and protect their investments at the harbor. These changes effectively eliminated the ecological value of the coastal wetland system, its floodplain functions, and much of its biological diversity.

The alternatives proposed by NPS include three options for protecting and restoring the many resources at Prisoners Harbor with consideration of all significant natural and cultural features, ecological systems, historical and archaeological resources, and the visitor experience (NPS 2009d). The "action" alternatives contain a varying mix of four main components:

1. Restoring ecological resources, including removing fill and controlling invasive species;
2. Restoring hydraulic function of the wetland by reconnecting the creek to the floodplain;
3. Protecting sensitive archaeological resources; and
4. Improving the visitor experience.

The preferred alternative includes:

- Removal of about 17,000 cubic yards of fill and eight historical cattle corrals;
- Relocation of a historical scale house to its former location;
- Removal of eucalyptus from 20 acres in the lower Cañada del Puerto;
- Control of invasive fennel and kikuyu grass;
- Removal of 250 feet of berm to reconnect the creek with its floodplain;
- Construction of a protective barrier around a portion of an archeological site; and
- Improvements to the visitor experience.

An Environmental Impact Statement has been prepared for this project and was circulated for public review in June 2009. Work on the Santa Cruz Island Coastal Wetland Restoration project began in spring 2010 and is partially completed.

FUTURE PROJECTS

Channel Islands National Park General Management Plan

The current General Management Plan (GMP) for the park was completed in 1985 and has been the guiding document for management of the park by NPS. Since the 1985 approval of the current GMP, much has occurred at the park, including the completion of the park's major land acquisition effort, expansion of park operations and visitor facilities, and an increase in the number of resource issues faced by NPS.

A new GMP is being prepared that will provide a vision for the park's future, as well as guidance in resource preservation, protection, and management that will help achieve that vision. The GMP will also help identify how NPS may best protect cultural and natural resources while providing for visitor enjoyment of the park. The new GMP will guide management of the park for the next 15 to 20 years. The new GMP is currently in the draft stage and NPS is soliciting comments and input on the GMP from the public (NPS 2009e).

References

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