

Appendix D8
Restore Ashy Storm-Petrels to Anacapa Island

D8.1 GOALS AND NEXUS TO INJURY

This goal of this action is to establish a breeding population of ashy storm-petrels on Anacapa Island. Eggshell thinning and elevated levels of DDT have been documented in ashy storm-petrel eggs in the Southern California Bight (SCB) (Kiff 1994, Fry 1994). Section 5.1.1 provides a detailed description of seabird nexus to the injuries of the Montrose case.

D8.2 BACKGROUND

Anacapa Island is located within the Channel Islands National Park and is managed by the National Park Service (NPS). Anacapa Island consists of three separate islets (West, Middle, and East Anacapa) that together are approximately 9 kilometers (km) (6 miles) in length and 2.9 square kilometers (km²) (1 square mile) in area. All of the islets are bordered by steep slopes that rise 50 to 250 meters (160 to 820 feet) above the sea. East Anacapa Island supports a lighthouse, dock, and several buildings. Middle and West Anacapa Islands have no permanent structures and receive little human visitation.

Island ecosystems such as Anacapa Island are key areas for conservation because they are critical habitat for seabirds and pinnipeds, species that use thousands of square kilometers of open ocean, but depend on a limited number of islands for breeding and resting. Islands represent about 3 percent of the world's surface, but support approximately 15 to 20 percent of all birds, reptiles and plants (Whittaker 1998). Unfortunately, vertebrate predators have been introduced onto islands worldwide, resulting in profound effects on the distribution and abundance of native flora and fauna (e.g., Crafford 1990, Copson 1986). Black rats were introduced onto Anacapa Island in the mid-1800s and early 1900s, and their detrimental effects on the ecosystem of Anacapa Island have been well documented (Collins 1979, Erickson 1990, Erickson and Halvorson 1990).

In an effort to restore nesting habitat for seabirds impacted by the American Trader oil spill in 1990, the American Trader Trustee Council funded a program to eradicate the black rat from Anacapa Island. Crevice-nesting seabirds, such as alcids and storm-petrels, were target species for restoration because they are particularly susceptible to predation from rats. Black rats were known to occupy prime nesting habitat on Anacapa Island and likely prevented the ashy storm-petrels from breeding over large portions of suitable habitat (ATTC 2001). Ashy storm-petrels were mist-netted on Anacapa Island in 1994, but to date no active nests have been found (Whitworth et al. 2003). Ashy storm-petrels are known to nest on adjacent Santa Cruz Island (Carter et al. 1992).

The black rat eradication program was successfully completed in 2003, and Anacapa Island has been declared rat-free. The recent removal of the rat provides an excellent opportunity for ashy storm-petrels to colonize the island, as the amount of suitable habitat for nesting seabirds has increased substantially. Anacapa Island is a high-quality nesting site for the ashy storm-petrel for multiple reasons, including lack of other non-native predators, the presence of suitable burrow habitat, such as talus slopes, native vegetative cover, and restricted human access.

The ashy storm-petrel is a globally rare seabird species that is endemic to the California islands. The ashy storm-petrel is currently listed by the International Union for Conservation of Nature and Natural Resources as "near threatened" (Bird Life International 2000), has been designated as a Category 2 Candidate Species under the Endangered Species Act (USFWS 1994), and is

considered a Species of Management Concern by the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG).

D8.3 PROJECT DESCRIPTIONS AND METHODS

The goal of this 5-year action is to establish breeding ashy storm-petrels on Anacapa Island. This action would facilitate the colonization of the island by ashy storm-petrels by attracting them to suitable nesting areas using vocalization playback systems and olfactory cues.

The conspicuous calls of nocturnal petrels, shearwaters, and storm-petrels are generally considered to promote pair establishment through sexual advertisement (Brooke 1978, Storey 1984, James 1985). The use of vocalizations has been used successfully in the past to attract ashy storm-petrels (Brown et al. 2003). A minimum of two areas would be targeted for recolonization on Anacapa Island. Optimal habitat areas would be determined based on seabird monitoring data and in consultation with seabird experts. Artificial nest boxes would also be installed in each area targeted for recolonization to provide a stable nesting area and assist in monitoring efforts.

A monitoring plan would be developed to evaluate the success of the action. Monitoring may include inspection of nesting burrows, evaluation of overhead flights, and capture. Monitoring would likely occur during every year of the action, although the intensity of the effort may vary from year to year. Reporting requirements would include annual reports that discuss data collected, data analysis, and recommendations for subsequent years.

The NPS would complete additional project planning, review, and environmental compliance before implementation of this action.

D8.4 ENVIRONMENTAL BENEFITS AND IMPACTS

D8.4.1 Biological

Benefits

The Channel Islands are critical nesting habitat for the ashy storm-petrel. With the recent removal of rats from Anacapa Island, high-quality breeding habitat is again available to crevice-nesting seabirds such as the ashy storm-petrel. The combination of social attraction and nest boxes would provide a favorable environment for the establishment of ashy storm-petrels. Although social attraction may only be used for a short amount of time, the colonization of Anacapa Island would provide long-term benefits to the ashy storm-petrel in the SCB, as the established presence of a colony of birds would likely serve as an ongoing natural attractant over the long term.

This action seeks to aid in the recovery of the ashy storm-petrel. Given the limited range and overall small population size of this species, the establishment of additional secure breeding sites would be a significant benefit. For seabirds that are restricted in distribution, additional breeding sites buffer the potential catastrophic effects from oil spills, non-native species, and other environmental factors.

Impacts

This action would have minimal, short-term biological impacts. Playback of tape-recorded vocalizations causes little disturbance or trauma to birds. Researcher activity in the vicinity of nesting areas would be minimized to avoid destruction of the local habitat and disturbance (Johnson et al. 1981, Baptista and Gaunt 1997). Storm-petrels are sensitive to disturbance, including that generated by researchers, especially during the incubation period (Ainley et al. 1974). The action would be implemented in a manner that avoids impacts to nesting seabirds on Anacapa Island, especially the California brown pelican.

D8.4.2 Physical

Benefits

There are no known benefits to the physical environment.

Impacts

This action would have no known impacts to the physical environment.

D8.4.3 Human Use

Benefits

Ashy storm-petrel adults are nocturnal and are difficult to observe. Therefore, it is unlikely that the public would benefit from viewing ashy storm-petrels on Anacapa Island.

Impacts

This action would have no known impacts to human uses. Cultural resources on the island would be avoided during the action. A slight increase in human use might occur during the implementation of the action. However, this use would be expected to have minimal, short-term impacts.

D8.5 LIKELIHOOD OF SUCCESS/FEASIBILITY

Social attraction efforts, including the use of playback systems, have been successfully used for a variety of seabirds. For ashy storm-petrels (Brown et al. 2003), playback systems have been used successfully to capture birds in mist nests. The use of playback systems has also been used to attract dark-rumped petrels (Podolsky and Kress 1992) and Leach's storm-petrels (Podolsky and Kress 1989) to nest in new habitat. Nesting ashy storm-petrels on adjacent Santa Cruz Island could be attracted to the new nesting sites on Anacapa Island. The use of artificial nests has also proven to be successful for seabirds such as the ashy storm-petrel, Leach's storm-petrel, and Cassin's auklet. Because petrels typically show a high degree of tenacity to the same nest from year to year, once pairs are established, they would likely continue to breed at the same sites. The attraction of prebreeding petrels may be a useful tool to influence the nest-site selection process by encouraging first-breeding petrels to concentrate their breeding in new areas. Experts in the

field of social attraction would be consulted during project planning and implementation to ensure that playback systems and artificial nests are designed in a manner that maximizes the success of the action.

D8.6 PERFORMANCE CRITERIA AND MONITORING

The ultimate success of this action would be the colonization and successful breeding of ashy storm-petrels on Anacapa Island. A monitoring plan would be developed to evaluate the success of the restoration effort using standardized protocols for seabird monitoring.

D8.7 EVALUATION

The Natural Resource Trustees for the Montrose case (Trustees) have evaluated this action against all screening and evaluation criteria developed to select restoration actions and have concluded that this action is consistent with these selection factors. The Trustees determined that the establishment of a breeding population of ashy storm-petrels on Anacapa Island would provide significant benefits to this rare seabird, which is endemic to the California islands.

D8.8 BUDGET

Year 1 costs:

- Labor\$91,000
- Supplies.....\$38,000
- Transportation.....\$13,000
- **Estimated total, year 1.....\$142,000**

Years 2-5 costs:

- Labor\$410,000
- Supplies.....\$6,000
- Transportation.....\$51,000
- Estimated total, years 2-5\$467,000
- **Estimated total costs, years 1-5\$609,000**