

# WATERBIRDS

## JOURNAL OF THE WATERBIRD SOCIETY

VOL. 26, NO. 4

2003

PAGES 385-510

### A Potential New Colony of Ashy Storm-petrels on the Mainland Coast of California, USA

ADAM BROWN<sup>1,2</sup>, NATALIA COLLIER<sup>1</sup>, DAN ROBINETTE<sup>1</sup> AND WILLIAM J. SYDEMAN<sup>1</sup>

Point Reyes Bird Observatory, 4990 Shoreline Highway, Stinson Beach, CA 94970

<sup>2</sup>browncollier@hotmail.com

**Abstract.**—We report evidence of likely nesting of the Ashy Storm-petrel (*Oceanodroma homochroa*) on islets adjacent to Vandenberg Air Force Base in northern Santa Barbara County, California, USA. Ten storm-petrels, along with extensive suitable habitat in the area, suggest a small colony of breeding birds. Other offshore islets along California's central coast might hold small numbers of storm-petrels. In addition, there are possibly breeding storm-petrels in suitable remote mainland areas, such as at Vandenberg Air Force Base. Received 22 April 2002, accepted 8 October 2002.

**Key words.**—Ashy Storm-petrel, nesting, *Oceanodroma homochroa*, Vandenberg Air Force Base, conservation, predation.

Waterbirds 26(4): 385-388, 2003

The Ashy Storm-petrel (*Oceanodroma homochroa*) is a pelagic bird known to breed primarily on Prince Island and Santa Barbara/Sutil Island in the Channel Islands of southern California and Southeast Farallon Island (SEFI) located 42 km west of San Francisco, California, USA (Ainley *et al.* 1990; Carter *et al.* 1992). Scattered small colonies occurred in northern Baja California, offshore islets along the Monterey County coast, and on islets in northern California (Sydeman *et al.* 1998; McChesney *et al.* 2000). Over half of the Ashy Storm-petrel population breeds on SEFI (Carter *et al.* 1992; Sydeman *et al.* 1998). During winter, large rafts of Ashy Storm-petrels (ca. 7,000) have been observed in Monterey Bay, and are thought to be mostly comprised of SEFI birds (Ainley *et al.* 1990). The SEFI colony, originally estimated at 4,280 individuals, has declined by 34% since 1972 (Sydeman *et al.* 1998). Channel Islands colonies have most recently been estimated at 3,100 birds, including large colonies on Prince Island (1,150) and Santa Barbara/Sutil Island (1,460) (Carter *et al.* 1992). During 1996 and 1997, small colonies of breed-

ing Ashy Storm-petrels (<30 pairs) were discovered on offshore rocks near Castle Rock and Hurricane Point in Monterey County, California, suggesting that other colonies may occur along the central coast of California (McChesney *et al.* 2000).

The Ashy Storm-petrel is listed as a Species of Management/Special Concern by the U.S. Fish and Wildlife Service (USFWS 1994) and the California Department of Fish and Game. Ashy Storm-petrels are especially vulnerable to oil spills, due to their localized colonies. In addition, colonies are threatened by avian predators including Western Gulls (*Larus occidentalis*), which have been estimated to take hundreds of Ashy Storm-petrels each year on SEFI (Sydeman *et al.* 1998). Ashy Storm-petrels are nocturnal at breeding colonies, perhaps as a response to the threat of gull predation (Ainley *et al.* 1974). Recently, Burrowing Owls (*Athene cucularia*) have been identified as another predator on SEFI storm-petrels (PRBO unpubl. data). The House Mouse (*Mus musculus*) has also been suggested as a predator on storm-petrel eggs and chicks (Ainley *et al.*

1990). On SEFI, construction of buildings and pathways on talus slopes has led to the loss of crevice habitat for nesting storm-petrels. There are indications that productivity in the SEFI colony has decreased in the past decade (Sydeman *et al.* 2001). Because of possible reduced productivity and increased threats to Ashy Storm-petrel colony sites, documentation of the species range and its expansion is necessary for conservation and management of this species of concern.

#### STUDY AREA AND METHODS

Vandenberg Air Force Base (VAFB) is located in Northern Santa Barbara County, central California, an area dominated by offshore islets and sea cliffs (Fig. 1). The shoreline along the southern portion of the base is part of a Protected Marine Reserve managed jointly by Vandenberg Air Force Base and California Department of Fish and Game. Six species of seabird breed on VAFB: Brandt's Cormorant (*Phalacrocorax penicillatus*), Pelagic Cormorant (*P. pelagicus*), Black Oystercatcher (*Haematopus bachmani*), Western Gull (*Larus occidentalis*), Least Tern (*Sterna antillarum*), and Pigeon Guillemot (*Cephus columba*) (Robinette *et al.* 2000). In this paper, we refer to the colonies by the names as reported by Robinette *et al.* (2000).

Surveys for Ashy Storm-petrels were conducted as part of a multi-species seabird monitoring study at VAFB during 2000 and 2001. Ashy Storm-Petrels breed in talus slopes, under boulders, and in cavities created by rock walls (Ainley 1995). We searched the entire coastline of VAFB for Ashy Storm-Petrel breeding habitat. Appropriate breeding habitats were located on approximately two ha of coastline along the Point Pedernales margin of the base, within the Protected Marine Reserve. In addition, Destroyer Rock, a 0.4-ha islet near Point Pedernales, was found to have suitable crevices for breeding. Finally, suitable habitat was located along a 4-ha margin surrounding Point Arguello, as well as on a 0.2 ha, unnamed offshore islet near Point Arguello.

During 2000, we conducted surveys for Ashy Storm-Petrels at night on Point Pedernales on 2 July and at Point Arguello on 24 July and 1 August. Surveys were done during moonless and windless nights. These surveys consisted of playing recordings of Ashy Storm-petrel vocalizations in presumed petrel habitat. We recorded observations of petrels that were attracted to the broadcasts. In addition, we used mist-netting at night on 10 July and 4 August at Point Pedernales. A four-tier, 2.1 m × 12 m, net was strung north to south along rubble habitat, while calls of Ashy Storm-Petrels were broadcast using a portable tape player. All birds caught were banded using numbered incoloy bands, examined for a brood patch, checked for body, wing, and tail molt, and weighed. Wing cord was also measured, to separate Ashy Storm-petrels from the dark morph of the Leach's Storm-petrels (*Oceanodroma leucorhoa*), commonly found in southern and central California (Ainley *et al.* 1990). Birds were often observed flying around the mist-nets without getting caught. In this case, we recorded sightings of petrels flying in proximity to the net. Storm-

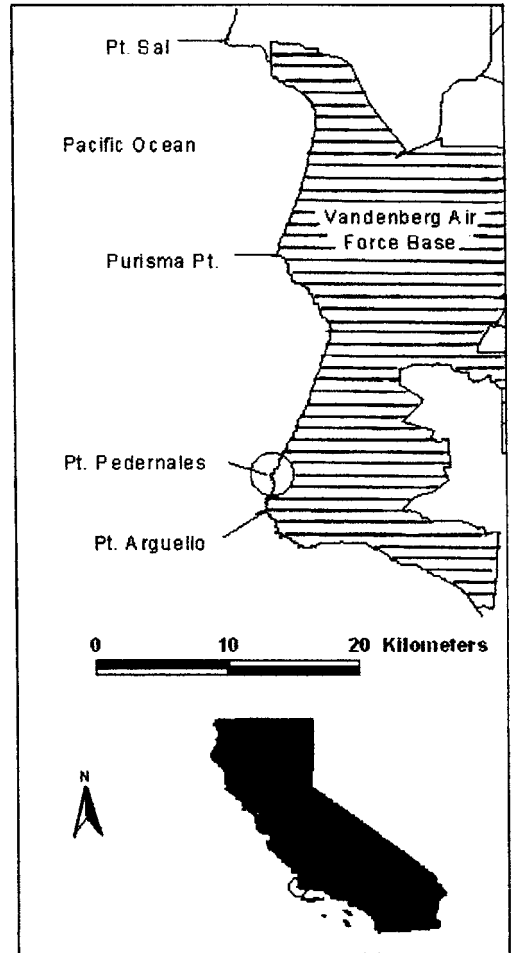


Figure 1. Map of Vandenberg Air Force Base showing location of potential Ashy Storm-Petrel colony. Inset map showing location of Vandenberg Air Force Base in the state of California.

petrels could not be identified as individuals on the wing, therefore, we recorded individuals if seen more than 15 minutes apart.

During 2001, we used mist-netting at night on 24 May, 19 June, 18 July, 20 July, and 13 August. In addition, crevice searches were made on mainland sites at Point Arguello and Point Pedernales. Crevice searches included locating all potential crevices within appropriate breeding habitat and searching them with a flashlight. A total of 500 crevices were searched. No offshore islets were searched due to potential disturbance of roosting seabirds and pinnipeds.

#### RESULTS

On 7 July 2000, two Ashy Storm-Petrels were seen and heard flying together at Point Pedernales. The birds were identified by their response calls to the recorded Ashy

Storm-petrel vocalizations. On 10 July 2000, one Ashy Storm-petrel was caught in a net and two others were observed flying together, around the net. No other birds were trapped during 2000. On 8 August 2000, at Point Pedernales, up to six birds were recorded in proximity to the net. Surveys at Point Arguello resulted in no Ashy Storm-petrel sightings (Fig. 1).

During 2001, a total of nine birds were trapped and banded at Point Pedernales. On 24 May, one storm-petrel was trapped and four others were seen. On 19 June, three storm-petrels were trapped and 13 were seen. On 18 July, one storm-petrel was trapped and seven were seen. On 20 July, two storm-petrels were trapped and seven were seen. Finally, on 13 August we trapped two storm-petrels and had twelve sightings. During both the 2000 and 2001 trapping efforts, no storm-petrels were recaptured. All trapped birds had bare brood patches. No attempts were made to survey for or capture storm-petrels at Point Arguello during 2001. Crevice searching on the mainland at Point Pedernales occurred once a month from June through August. A total of 500 crevices were searched over a 1-ha area, constituting a small fraction of available habitat. No storm-petrels were found in crevices.

#### DISCUSSION

The observations and subsequent trapping of Ashy Storm-petrels along the coast of Vandenberg Air Force Base in central California suggest a likely new colony location for the species. Brood patches on procellariids are a topic of much debate as non-breeding and some immature procellariids develop incubation patches (Warham 1990). It is believed, however, that birds with downy incubation patches are non-breeders, bare patches usually indicate incubating birds, and re-feathering patches indicate chick-rearing birds (Ainley *et al.* 1990). There is the possibility that the Ashy Storm-Petrels observed and trapped on Vandenberg Air Force Base were not breeding birds at this location. These storm-petrels could have been from another colony within California, as Ashy

Storm-petrels have been documented to travel long distances during the incubation period (Ainley 1995). In Europe, on the Isles of Scilly, England, Leach's Storm-petrels have been trapped in mist-nets on islands where no storm-petrel nests have been found (Seabird Group 2000). Additionally, Swinhoe's Petrel (*Oceanodroma monorhis*), a species that breeds in the northwest Pacific and migrates throughout the Indian Ocean, have been trapped on multiple occasions in northeast England in mist-nets (Cubitt 1995).

The suspected colony of Ashy Storm-Petrels at VAFB, if present, is small. No active nests were located. Islets off the base have yet to be searched. Habitat on the mainland was searched, yet much more suitable habitat remains uninvestigated, leaving the possibility of a mainland colony unresolved. Areas between the Channel Islands and the Farallon Islands have been surveyed well for diurnal surface nesting breeding seabirds (Sowls *et al.* 1980; Carter *et al.* 1992), but not for nocturnal crevice nesting seabirds. The areas of the suspected VAFB colony and Castle/Hurricane Complex colonies were located with relatively small nighttime survey effort. Future surveys should be directed towards the extensive undeveloped areas of the central coast of California. Many offshore islets, as well as remote mainland sites, may provide suitable breeding habitat for the Ashy Storm-petrel. This report is preliminary, and subsequent efforts should be made to locate nests, eggs, and unfledged young at the Vandenberg Air Force Base locations. The conservation of the Ashy Storm-petrel is partly dependent on identifying the number and size of all breeding colonies. However, these colonies are small, and unlikely to offset apparent population declines on SEFI and elsewhere. We recommend that this species should be afforded additional protection as threatened under federal and state endangered species acts (Sydeman *et al.* 1998; Nur *et al.* 1999).

#### ACKNOWLEDGMENTS

Fieldwork and data analysis was funded by The U.S. Air Force. Logistical support was provided by Nancy Read of Vandenberg Air Force Base, without whom this research would not have taken place. Valuable com-

ments on the manuscript were provided by R. D. Burnett, P. Warzybok, and R. Bradley. This is PRBO contribution no.1027.

## LITERATURE CITED

- Ainley, D. G., S. Morrel, T. J. Lewis. 1974. Patterns in the life histories of storm-petrels on the Farallon Islands. *Living Bird* 13: 295-312.
- Ainley, D. G., R. P. Henderson, and C. S. Strong. 1990. Leach's and Ashy Storm-Petrel, p. 128-162. *In* D. G. Ainley and R. J. Boekelheide [Eds.], *Seabirds of the Farallon Islands*. Stanford Univ. Press, Palo Alto.
- Ainley, D. G. 1995. Ashy Storm-Petrel (*Oceanodroma homochroa*), *in* A. Poole and F. Gill [Eds.], *The Birds of North America*, No. 185. The Academy of Natural Sciences, Philadelphia, and the American Ornithologists' Union, Washington, DC.
- Carter, H. R., G. J. McChesney, D. L. Jaques, C. S. Strong, M. W. Parker, J. E. Takekawa, D. L. Jory and D. L. Whitworth. 1992. Breeding populations of seabirds in California, 1989-1991. Unpubl. Report, U.S. Fish and Wildlife Service, Northern Prairie Wildlife Research Center, Dixon, CA.
- Cubitt, M. G. 1995. Swinhoe's Storm-Petrels at Tynemouth: New to Brittain and Ireland. *Brittish Birds* 88: 342-390.
- McChesney, G. J., H. R. Carter and M. W. Parker. 2000. Nesting of Ashy Storm-Petrels and Cassin's Auklets in Monterey County, California. *Western Birds* 31: 178-183.
- Nur, N., W. J. Sydeman, D. Girman, T. B. Smith and D. Gilmer. 1999. Population status, prospects, and Risks faced by tow seabirds of the California Current: The Ashy Storm-Petrel, *Oceanodroma Homochroa*, and Xantus' Murrelet, *Synthliboramphus hypoleucus*. Unpublished Final Report to the U.S. Geological Survey, Biological Resources Division, Species at Risk Program.
- Robinette, D., A. C. Brown, N. S. Collier, W. J. Sydeman. 2000. Seabird populations and reproductive performance on Vandenberg Air Force Base, Santa Barbara County, California. Unpubl. Report, Point Reyes Bird Observatory, Stinson Beach, CA.
- Seabird Group. 2000. Seabird 2000: October. Newsletter 86: 1-2. Unpublished Newsletter.
- Sowls, A. L., A. R. DeGrange, J. W. Nelson and G. S. Lester. 1980. Catalog of California seabird colonies. U.S. Dept. Interior, Fish and Wildlife Service, Biological Services Program. FWS/OBS-80/37. Unpublished Report.
- Sydeman, W. J., N. Nur, E. B. McLaren and G. J. McChesney. 1998. Status and Trends of the Ashy Storm-Petrel on Southeast Farallon Island, California, based upon capture-recapture analysis. *Condor* 100: 438-447.
- Sydeman, W. J., M. M. Hester, J. A. Thayer, F. Gress, P. Martin and J. Buffa. 2001. Climate change, reproductive performance, and diet composition of marine birds in the southern California Current system, 1969-1997. *Progress in Oceanography* 49: 309-329.
- U.S. Fish and Wildlife Service. 1994. Endangered and threatened wildlife and plants: animal candidate review for listing as endangered or threatened. Federal Register 59: 58981-59028. Unpublished Report.
- Warham, J. 1990. *The Petrels: Their Ecology and Breeding Systems*. Academic Press, London.