

PERUVIAN DIVING PETRELS *PELECANOIDES GARNOTII* ON LOBOS DE AFUERA ISLANDS, PERU

JUDITH FIGUEROA & MARCELO STUCCHI

AICB Asociación para la Investigación y Conservación de la Biodiversidad, Av. Vicús 538, Lima, 33, Perú
(aicb.peru@gmail.com)

Received 20 March 2007, accepted 10 November 2007

The Peruvian Diving Petrel *Pelecanoides garnotii* is a species endemic to the Peruvian Current, with a distribution restricted to some islands in the area between Lobos de Tierra Island (6°28'S, 80°50'W), Peru, and Coronel (37°02'S, 73°10'W), Chile, and occasionally further south, in Corral (39°52'S, 73°25'W) and Ancud (41°52'S, 73°50'W), Chile (Murphy 1936, pp. 774–775).

In the past, populations of the Peruvian Diving Petrel were very abundant along the coast of Peru. In the mid-1800s, George Washington Peck (cited by Murphy 1925) and Antonio Raimondi (1874) called it “abundant.” The latter even considered that this species produced the biggest amount of guano in the Chincha Islands: “The Puffinurias in my opinion are the birds producing the biggest amount of guano in both, quantity each one deposits an incalculable amount of them habiting the island” (Raimondi 1874). At the beginning of the 20th century, Robert Coker, who was in Peru between 1907 and 1908, still considered the Peruvian Diving Petrel an important guano producing species; however, he mentioned that its numbers had been reduced considerably because of human activity (Coker 1910, 1919).

Historically, breeding has been reported in the Ballestas Norte Islands (13°44'S, 76°24'W) and San Gallán (13°15'S, 76°28'W) (Coker 1919); Lobos de Tierra (06°28'S, 80°50'W), Macabí (7°47'S, 79°30'W), Guañape (8°32'S, 78°58'W), and Pescadores (11°47'S, 77°26'W) (Murphy 1936); Lobos de Afuera (6°57'S, 80°41'W), Mongón and Mongoncillo (9°36'S, 78°22'W), Mazorca (11°23'S, 77°45'W), and La Vieja (14°17'S, 76°11'W) (Tovar 1968); and Chincha (13°39'S, 76°24'W) (Raimondi 1874). Moreover, its presence has been observed in the San Lorenzo Islands (12°04'S, 77°15'W) and El Frontón (12°06'S, 77°10'W) (Murphy 1936).

Since the 1930s, populations have dropped dramatically, and the Peruvian Diving Petrel is now considered to be Critically Endangered in the Peru (INRENA 2004) and Endangered according to the International Union for Conservation of Nature and Natural Resources (IUCN 2006). Raimondi (1874), Forbes (1914), Coker (1910, 1919) and Murphy (1925) considered that the main cause of this decrease was the taking of birds and eggs by guano workers and fishermen and the exploitation itself of guano, which eliminated the substrate in which this species nests. The same factors, as well as the collapse of the Anchovy *Engraulis ringens* in the decade of 1970 and the anchovy fishery (Hays 1989, García-Godos & Goya 2006), have contributed to a continued decline in the population.

In recent years, the presence and reproduction of the Peruvian Diving Petrel in Peru has been recorded only in the San Gallán and La Vieja Islands, with a maximum estimated population of 13 270

breeding pairs (Jahncke & Goya 1998). Recently, Valverde (2006) reported a new nesting area for the species on Corcovado Island (8°56'S, 78°42'W), with a minimum of 20 individuals.

In September 2003 and November 2004, we visited the islands of Lobos de Afuera. These islands are situated 93 km off the coast of Lambayeque and are formed by several islets and rocks around the islets of Independencia and Cachimbo, totaling 2.36 km² in area (Stucchi & Figueroa 2006). Two Peruvian Diving Petrels were observed on Independencia Islet in September 2003 and November 2004, one on each occasion. Both were found close to the Peruvian naval base and apparently were non-breeding adults, judging by the lack of an incubation patch. No nests were found during searches of the island at the time of the research.

Jahncke and Goya visited the Lobos de Afuera Islands in February 1995, without finding evidence of the species (Jahncke & Goya 1998), and so the last report of the presence and reproduction of the Peruvian Diving Petrel at the islands occurred between the years 1962 and 1965 (Tovar 1968). Our observations are the first report of the species after approximately 40 years.

In the course of these years, guano extraction in these islands has diminished considerably. The extraction of guano has turned into a sporadic practice; according to information obtained from Proabonos (guano extraction company) only two guano extractions have occurred in the last 25 years: 1989 (7185 tons) and 1997 (840 tons) (M. Valverde 2005, pers. comm.). It is probable that Peruvian Diving Petrels have found adequate burrowing substrate to breed on these islands again because of the diminished impact of guano extraction in recent decades.

ACKNOWLEDGEMENTS

To Proabonos (guano extraction company), for the entry permit to the islands and for logistics support from Mariano Valverde, Pedro Sotelo, Osmar Navarro, Walter Cano and Gustavo Macurí. To the Dirección de Hidrografía de la Marina de Guerra del Perú (Hydrography Department of the Peruvian Navy) for the use of their facilities and transfer to the islands, specially Wanner Puicón, Eduardo Mendoza, Oscar Marcoz, José Cholán, Dennis Huanca, Jaime Gamboa, Abel Martínez and Felipe Portugal. To Ismael Ignacio, José Yarlequé, Esteban Ezequiel, Gregorio García and the crew of their boats, for their support in the transfer to the islands and their collaboration and to Idea Wild for the donation of field equipment. We are grateful to Tatiana Cavero for her help in translating the manuscript.

REFERENCES

- COKER, R. 1910. Estudio sobre la pesca en el Perú: producción del guano. *Boletín del Ministerio de Fomento Año VIII* 4: 8–16.
- COKER, R. 1919. Habits and economic relations of the guano birds of Peru. *Proceedings of the US National Museum* 56: 449–511.
- FORBES, H. 1914. Puntos principales del Informe presentado al Supremo Gobierno por el ornitólogo Dr. H.O. Forbes sobre el estado de las islas guaneras. Traducido del inglés. Compañía Administradora del Guano. 5º Memoria del Directorio. Lima, Peru: Librería e Imprenta Gil. pp. 57–105.
- GARCÍA-GODOS, I. & GOYA, E. 2006. Diet of the Peruvian Diving Petrel *Pelecanoides garnotii* at La Vieja Island, Peru, 1997–2000: potential fishery interactions and conservation implications. *Marine Ornithology* 34: 33–41.
- HAYS, C. 1989. The Peruvian Diving-Petrel in Peru. *Oryx* 23: 102–105.
- Instituto Nacional de Recursos Naturales (INRENA). 2004. Categorización de especies amenazadas de fauna silvestre. Aprobado por DS 034-2004-AG. [Available on line at: http://www.inrena.gob.pe/iffs/biodiv/catego_fauna_amenazada.pdf. Revised in October 2007]
- International Union for Conservation of Nature and Natural Resources (IUCN). 2006. Red list of threatened species. 2006: IUCN. [Current version available online at: www.iucnredlist.org; revised in October 2007]
- JAHNCKE, J. & GOYA, E. 1998. The status of the Peruvian Diving-Petrel at its main breeding areas along the coast of Peru. *Colonial Waterbirds* 21: 94–97.
- MURPHY, R.C. 1925. Bird islands of Peru: the record of a sojourn on the west coast. New York, NY & London UK. G.P. Putnam's Sons. 362 pp.
- MURPHY, R.C. 1936. Oceanic birds of South America: a study of species of the related coasts and seas, including the American quadrant of Antarctica, based upon the Brewster-Sanford collection in the American Museum of Natural History. [2 vols.] New York, NY: American Museum of Natural History. 1245 pp.
- RAIMONDI, A. 1874. Apuntes sobre el huano y las aves que lo producen. Lima, Peru: El Siglo, Año 1 (1): 10–11, (2): 21–22.
- STUCCHI, M. & FIGUEROA, J. 2006. La avifauna de las islas Lobos de Afuera y algunos alcances sobre su biodiversidad. Reporte de Investigación No. 2. Asociación Ucumari. Lima, Perú. 88 pp.
- TOVAR, H. 1968. Áreas de reproducción y distribución de las aves marinas en el litoral peruano. *Boletín del Instituto del Mar del Perú* 1: 523–546.
- VALVERDE, M. 2006. First record of the endangered Peruvian Diving Petrel *Pelecanoides garnotii*, breeding on Corcovado Island, Peru. *Marine Ornithology* 34: 75–76.