

# FIRST RECORD OF BREEDING BY THE NAZCA BOOBY *SULA GRANTI* ON LOBOS DE AFUERA ISLANDS, PERU

J. FIGUEROA

*Jr. Agrólogos 2002, Urb. Las Acacias, Lima 12, Perú  
(asociacion\_ucumari@yahoo.com)*

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The Masked Booby *Sula dactylatra* has a wide distribution range, breeding on most tropical islands around the world (Nelson 1978, Pitman & Jehl 1998). In the eastern Pacific Ocean, Masked Boobies nest on Alijos and Revillagigedos (Mexico), Clipperton (France, off south-western Mexico), Galapagos (Ecuador) and Juan Fernandez (Chile) islands. The recently described Nazca Booby *S. granti* has a smaller distribution range, breeding only on Revillagigedos, Clipperton, Malpelo (Colombia), Galapagos and La Plata (Ecuador) islands (Pitman & Jehl 1998, Fig. 1). The identification of these two similar-looking boobies is based on bill and leg colour. The Masked Booby has a yellow bill and light-olive-coloured legs; the Nazca Booby has an orange (male) or coral-red (female) bill and khaki-grey-coloured legs (Pitman & Jehl 1998, D.J. Anderson pers. comm.).

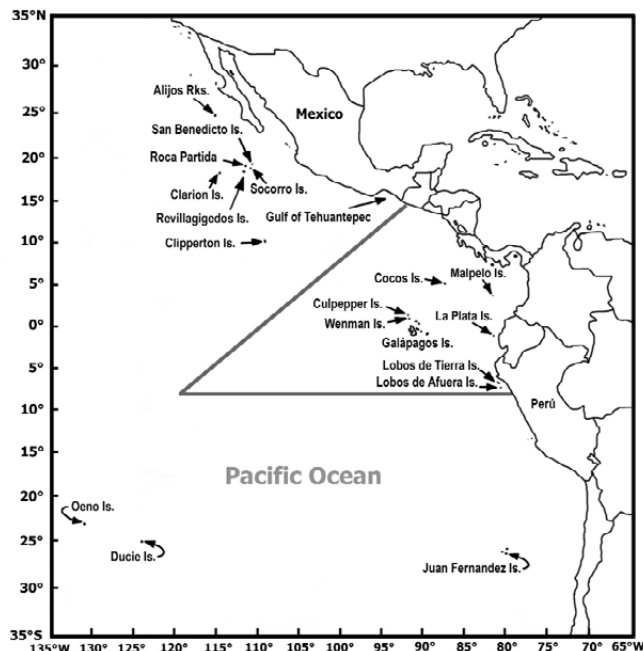
Pitman & Jehl (1998) included the northern coast of Peru as the probable overlap area between Masked and Nazca Boobies. Jahncke & Goya (1997) reported the presence of breeding Masked Boobies on Lobos de Tierra Island (6°28'S, 80°50'W) in northern Peru. However, that report was published before the Nazca Booby

was recognized as a full species (Pitman & Jehl 1998). The morphologic characteristics of the boobies found breeding on Lobos de Tierra Island are more similar to those of Nazca than of Masked Boobies (J. Jahncke pers. comm.).

During late March 2000, I visited the Peruvian Lobos de Afuera Islands to assess the diversity of the sulid species present. The islands are located in an ecotone area, where cold water from the Peruvian Current meets warm water from the El Niño Current. Roberson (1998) mentioned that breeding sites of these species are related to this type of ecosystem. The Lobos de Afuera Islands (6°56'S, 80°42'W) are located 93 km off the coast from Lambayeque. The locality consists of two islands with a total area of 235 ha (Carbajal *et al.* 2001).

During this investigation, four species of the genus *Sula* were observed. The previously reported Blue-footed Booby *S. nebouxii* (Tovar 1968) and Peruvian Booby *S. variegata* (Nelson 1978) were both observed incubating eggs. Masked and Nazca Boobies were also both observed on the island for the first time. I observed three adult Masked Boobies and nine Nazca Boobies (three incubating pairs, one pair attending an empty nest and a single adult). I did not find chicks or juveniles of either Masked or Nazca Boobies. Both species were found in the same general rocky area used by Blue-footed Boobies.

According to Nelson (1978), interspecific competition between *Sulidae* is uncommon. Competition for territory has previously been reported among Masked, Brown and Red-footed Boobies.



**Fig. 1.** Location of breeding colonies of Masked and Nazca Boobies in the eastern Pacific Ocean. The islands inside the triangle, including the Lobos de Afuera Islands, support colonies of the Nazca Booby. [After Pitman & Jehl (1998).]



**Fig. 2.** Territorial interaction between a pair of Blue-footed and Nazca Boobies, Lobos de Afuera Islands, Peru, March 2000.

However, Townsend *et al.* (2002) reported the occurrence of competition for territory among Nazca and Blue-footed Boobies in the Galapagos Islands. I observed a territorial interaction between Nazca and Blue-footed Boobies on one occasion on Lobos de Afuera (Fig. 2).

It is possible that the Nazca Booby has recently established itself as a breeding species on the Lobos de Afuera Islands because of the currently low level of human disturbance, but perhaps mainly because of the abundant and diverse range of prey species within the Peruvian Upwelling System. In this regard, Jahncke & Goya (2000) found that the Masked Booby on Lobos de Tierra Island changed its feeding strategy depending on the availability of food resources. In normal years, Masked Boobies (now known to be Nazca Boobies) fed mainly on Peruvian Anchovy *Engraulis ringens*, together with other species such as South Pacific Saury *Scomberesox saurus scombroides*, flying fish (*Exocoetidae*) and Flathead Grey Mullet *Mugil cephalus*. During El Niño years, Masked Boobies utilized other prey such as Chub Mackerel *Scomber japonicus*, Nosey Anchovy *Anchoa nasus*, Skipjack Tuna *Katsuwonus pelamis* and Peruvian Pacific Sardine *Sardinops sagax sagax*.

Hitherto, Ecuadorian La Plata Island was the southernmost breeding locality known for the Nazca Booby (Pitman & Jehl 1998). The present study shows that the Peruvian Lobos de Afuera Islands, located 635 km farther south, are now the southernmost breeding locality known (Fig. 1) and confirms the Nazca Booby as a breeding seabird for Peru.

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