THE CONSERVATION AND STATUS OF SEABIRDS OF THE ECUADORIAN MAINLAND

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ABSTRACT

Nine species of seabird breed on the coast of Ecuador; three others may also occur. Further distributional work is urgently needed since the last general survey occurred in the 1920s. Isla LaPlata, with a colony of Waved Albatross, appears to be the most important site. Eggning and feral mammals are probably the major problems. Future conservation planning should take place on the national level rather than considering areas such as Galapagos separately.

INTRODUCTION

While the Galapagos Islands of Ecuador have perhaps the world's best-studied tropical seabirds, the seabirds of mainland Ecuador remain virtually unknown. Much of the literature was based on limited field work over half a century ago (e.g. Chapman 1926; Murphy 1936). The more recent literature (Marchant 1958; Lèveque 1964; Mills 1967; Owre 1975; Ridgely & Wilcove 1979) is largely anecdotal or limited to a single species. The present report is less a summary of our knowledge than a catalogue of what needs to be investigated before we can reasonably assess priorities for the conservation of seabirds in all of Ecuador, including the Galapagos.

The Ecuadorian coast contains two distinct habitats: a dry western zone caused by a northern extension of the Humboldt Current and a moister zone to the east and south characterized by mangrove shorelines. The Guayas River, emptying into the Gulf of Guayaquil (Figure 1), is the major physical feature of the coast. Most islands occur at its mouth and are mangrove-fringed. The few islands elsewhere have primarily xerophytic vegetation.
Because of the paucity of material, we discuss each species and important location separately. Figure 1 shows locations mentioned in the text.

SPECIES ACCOUNTS

**Waved Albatross (Diomedea irrorata).** Between ten and fifty pairs breed on Isla LaPlata, if one makes a liberal estimate from observations by Owre (1975). A census is urgently needed.

**Brown Pelican (Pelecanus occidentalis).** Chapman (1926) reported nesting in large numbers on Isla Santa Clara. Murphy (1936) found no birds nesting in 1925 but he believed this to be the temporary result of El Niño, an oceanographic anomaly. He also reported pelicans at Isla Pelado. Mills (1967) reported a large roost on Pelado in 1966. Colonies may occur on mangrove islands throughout the Gulf of Guayaquil.

**Blue-footed Booby (Sula nebouxi).** Chapman (1926) regarded this species as 'abundant'. He collected (breeding?) specimens on Islas Pelado, Santa Clara, and Jambeli. Murphy (1936) reported the species present but not nesting because of heavy rains in 1925 at Islas Santa Clara and Pelado. He did find them nesting on Isla LaPlata. Hurtado (1981) reported 100-200 individuals on LaPlata in 1981, some of which were nesting. Marchant (1958) thought Isla Pelado too small to support more than a small colony.

**Masked Booby (Sula dactylatra).** Murphy (1936) found this species nesting on LaPlata in 1925. Owre (1975) found it still nesting but with eggs and young being taken, presumably by fishermen. Hurtado (1981) counted 97 individuals and found the birds much shyer than in Galapagos. He reported that fishermen force birds to regurgitate to provide small fish for bait. Mills (1967) reported Masked Boobies present on Isla Pelado.

**Neotropical Cormorant (Phalacrocorax olivaceus).** Chapman (1926) found this species common about the Puna Island Group. Murphy (1936) thought it bred on Isla Santa Clara. Marchant (1958) estimated the non-breeding population on the Santa Elena peninsula at about 1000. Léveque (1964) reported a maximum count of 5000 non-breeders off Isla Puna. Murphy (1936) had earlier seen 'many thousands' in the same area. At least some of these may be migrants (Léveque 1964).

**Red-billed Tropicbird (Phaethon aethereus).** Murphy (1936) reported breeding in 1925 on Isla LaPlata. Subsequent visitors (Owre 1975; Hurtado 1981) have not reported breeding, perhaps because they did not search the appropriate nesting habitat.

**Magnificent Frigatebird (Fregata magnificens).** Chapman (1926) found this 'abundant' species nesting on 'various' islands including Santa Clara 'doubtless their most southern breeding place on the Pacific coast'. Murphy (1936) reported frigatebirds present but not nesting on Islas Pelado, Santa Clara, and LaPlata. Léveque (1964) thought there were 'thousands' in the Gulf of Guayaquil and that breeding might occur between Playas and Posorga. Most recently, Hurtado (1981) reported 100-200 individuals present but not breeding on LaPlata in April 1981.

**Gull-billed Tern (Gelochelidon nilotica).** Chapman (1926) believed this species might breed around the Gulf of Jambeli. Marchant (1958) found it breeding during June 1957 on the Santa Elena Peninsula.

**Peruvian Tern (Sterna loreta).** Chapman (1926) records this as abundant in certain
areas. Marchant (1958) reported it as a seasonal resident and Mills (1967) as present year-round. Despite the absence of breeding records, colonies should be looked for on the arid west coast. If colonies are found, the increasing development of holiday resorts may be a problem.

**Sooty Tern (Sternula fuscata).** Mills (1967) observed this species on Isla Pelado in May 1966, suggesting that it may nest at this highly improbable site.

**Black Skimmer (Rynchops niger).** Chapman (1926) and Murphy (1936) found this species common in the Gulf of Guayaquil but did not mention nesting. Breeding colonies should be looked for on sand and mudbars in the mouth of the Guayas River.

**Grey-hooded Gull (Larus cirrocephalus).** The status of this species in Ecuador has been reviewed by Ridgely & Wiley (1979). Only one colony is known at present but more should be expected in small ponds and estuaries.

### IMPORTANT SITES

Three islands (LaPlata, Pelado, and Santa Clara) and one widely distributed habitat (mangrove) appear to contain most of the breeding seabirds. This may, however, be misleading. So little exploration has occurred on the Ecuadorian coast that other important sites may exist, especially in the apparently unexplored northern half of the coastline.

**Isla LaPlata.** LaPlata appears to be the most important island, primarily because it is the only other breeding site of the Waved Albatross beside Isla Española, Galapagos. Blue-footed and Masked Boobies, Magnificent Frigatebird and Red-billed Tropicbird also breed in unknown numbers. The island was declared part of Machalilla National Park in 1979, but as of 1981 was still being administered as a private fishing club.

Murphy (1936) mentioned cattle, burros, and 'apparently hundreds' of goats. Owre (1975) mentioned rats, feral cats, and vegetation damage by a large population of goats. Hurtado (1981) found that shooting by fishermen and tourists had reduced the goats to a small population. Cattle had also apparently been extirpated. A check of scats showed no evidence of predation by feral cats on seabirds but Hurtado (1981) urges further work. Egging and poaching of young probably still occur, in addition to the inducing of regurgitations of seabirds for the collection of fishing bait.

**Isla Pelado.** Pelado has apparently never been landed upon by an ornithologist because of frequent rough seas. The island may have breeding populations of Blue-footed and Masked Booby, Neotropical Cormorant and most surprisingly Sooty Tern. Murphy (1936) and Mills (1967) report heavy erosion visible from the sea. Egging and poaching are likely to be problems since poachers appear to be less inhibited by heavy seas than are ornithologists.

**Isla Santa Clara.** This is the most isolated of the islands, lying in the approaches to the Gulf of Guayaquil. Murphy (1936) appears to have been the last ornithologist to visit the island. His trip came after heavy rains had apparently disrupted the nesting of any resident seabirds.

**Coastal mangrove.** Mangroves occur along the shore of most of the Gulf of Guayaquil. Colonies of Neotropical Cormorant, Magnificent Frigatebird, and Brown Pelican may still exist, perhaps even containing large numbers of breeders. Chapman (1926) appears to have undertaken the last ornithological survey, in 1922.

### THREATS

**Human disturbance.** Egging and poaching of young probably occur at all the islands and mangrove colonies. The extent and effect on the birds are unknown. Mainland colonies of Gull-billed Tern and Grey-hooded Gull may be disturbed by grazing and salt-gathering but the extent and effect of these activities is unknown.

**Feral animals.** Goats appear to be under control on LaPlata but the Park Service should be encouraged to ensure their eradication. The effects of rats and cats on LaPlata are unknown but unlikely to prove benign. Other islands should be visited to determine which feral animals are present.

**Petroleum.** Exploratory and production platforms are present in the southwestern part of the Gulf of Guayaquil (Ramirez 1982). A major blow-out at a platform would be difficult to clean out of mangrove areas. The frequency and effects of chronic smaller spills remain unstudied.

**Persistent pollutants.** Pesticides are heavily used in the Guayas River drainage basin. The possibility exists that breeding seabirds have accumulated high levels of these pollutants but no studies have been published presenting pollutant levels.

### RECOMMENDATIONS

These are ranked in order of importance from 1 (urgent) to 3 (desireable). Many of these, particularly the scientific projects, could be undertaken by Ecuadorian university students.

**Scientific**

1. An inventory of Islas LaPlata, Pelado, and Santa Clara, recording nesting seabirds at different seasons; feral animals; extent of human disturbance; and management possibilities.
2. An ornithological survey of the Gulf of Guayaquil, as above.
3. An ornithological survey of the other west coast islands, as above.
4. A one-time survey of persistent pollutant levels in resident seabirds.
5. A regular monitoring program of inshore-foraging, resident seabirds to detect changes in pollutant levels.
6. A ringing program for the Waved Albatross on Isla LaPlata to determine population size, dynamics, and interchange, if any, with the Galapagos population.
7. A study of the extent of egging and its economic and nutritional effects on coastal humans.

**Management**

1. Establish effective park jurisdiction and protection for Isla LaPlata.
2. Complete the eradication of goats from LaPlata.
4. Regulate egging, perhaps with franchises of specific colonies to certain villages or individuals. Quotas could then be set.
Education

1. The protected status of LaPlata should be publicized to the local people, especially fishermen.
2. Expertise from Galapagos should be made available to encourage, if feasible, a local tourist industry with local fishing boats providing transportation.
3. Seabirds should be added to the list of protected species in Ecuador (see Figueroa 1980) and the reasons for such protection included in the curricula of Ecuadorian schools.

DISCUSSION

Populations of Ecuadorian seabirds do not appear to be large. Future surveys may find many more birds in the Gulf of Guayaquil and in the unexplored northern half of the coastline. Isla LaPlata is of obvious importance as the only other colony of Waved Albatross beside Isla Española in the Galapagos Islands. Rats, cats, and goats constitute a continuing menace to all the birds of LaPlata. Ecuadorian expertise in predator removal gained in Galapagos should be applied on LaPlata. Islas Santa Clara and Pelado must rank among the least known of the world's seabird islands. Their faunas need to be surveyed and given protection as national parks, if anything is left.

The discrepancy between conservation in Galapagos and on the Ecuadorian coast must not be allowed to grow any greater or national pressures may push for the diversion of finances and personnel from essential programs on Galapagos to critical ones on the mainland. The needs of both areas can be reconciled and more effectively met if conservation planning is at the national rather than regional level and if expertise from Galapagos is used to solve similar problems on the mainland.

REFERENCES