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LISTS OF SPECIES

Aves, The Galapagos Islands, Ecuador

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Abstract
Although the Galapagos avifauna has been described previously, it is necessary to list, clarify, and update the previously published records of birds occurring in the archipelago, and to clarify some recent records that are erroneous or were presented with none or few details. The list of breeding (including endemic species and subspecies and non-endemic breeding species) and regular migrant species totals only 88 species, although including the 57 vagrant species, the number is 145 species. However, endemism in Galapagos is quite high, with half (50%) of the regular avifauna being endemic at the species or subspecies level. If only land birds are considered, the endemism levels are much higher, with 70% of land bird species being endemic, and 58% of the "regular" seabirds being endemic as well. It is hoped this article will stimulate other ornithologists and observers who may have additional records to come forth with their information.

Introduction
Although the Galapagos Islands were discovered in 1535, scientific ornithology cannot be said to have begun in the islands until the now-famous arrival of the *Beagle* in 1835, carrying its collectors Charles Darwin and Robert Fitzroy (Darwin 1839). Scientific expeditions which included some ornithological collecting then arrived at intervals of about a decade throughout the remainder of the 19th Century and first half of the 20th (Slevin 1959). With the establishment of the Galapagos National Park by the Ecuadorian government in 1959 and the naming of the archipelago as a World Heritage Site in 1978, collecting of live birds for taxonomic specimens largely came to an end. The avifauna of the islands has continued to grow, however, with sight records and photographs, and occasionally opportunistically available specimens.

Although Swarth (1931) and Harris (1973, 1975, 1981, 1982) published extensively on the avifauna of the islands, since Harris's work there has been no careful updating of the avifauna list. The objectives of this article, therefore, are threefold: to list and clarify the previously published records of birds occurring in the archipelago, to update and add new records to the avifauna, and to clarify some recent records that are erroneous or were presented with none or few details.

An additional potential benefit of this article may also be to stimulate others who may have additional records to come forth with their information. For example, there are about 100 naturalist guides working on any day in Galapagos; these observers must have many important observations to report, yet few are ever reported to the Charles Darwin Research Station or any other central compiler of bird records. And of course, of the roughly 100,000 visitors to Galapagos each year (according to Galapagos National Park Service data), many are birdwatchers or ornithologists who also may have useful records, yet few of these are ever reported.

Study Area
The area covered by previous avifauna lists has varied. Some, such as Harris (1973), have not explicitly defined the area included, leaving it vaguely as "Galapagos and the immediately surrounding seas" or something similar. Lévêque et al. (1966) defined the "Galapagos area" as a circular region of about 560 km radius centered north of Santiago Island, which includes more than the legally-defined territorial waters. This "Galapagos area" actually extends to within 225 km of Cocos Island, Costa Rica, the nearest land outside the archipelago. However, because Galapagos is as well a political region, the most logical unit is the politically-defined boundaries, the territorial waters. The territorial waters are defined by international maritime law as the area extending from the convex hull of the Galapagos Islands to seaward 200 nautical miles (370 km). For the purposes of the current article, the area covered will therefore include all of the

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Galapagos Islands themselves (Figure 1) and the territorial waters.

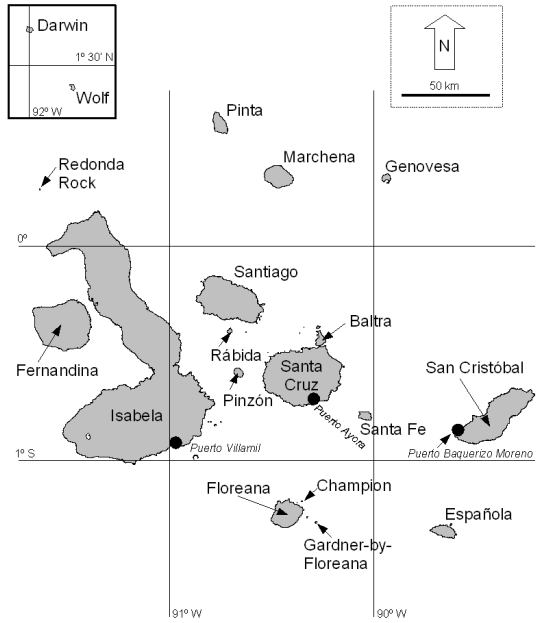

Figure 1. The Galapagos Archipelago. Darwin and Wolf islands are remote, and shown on inset at upper left. Outline map courtesy Charles Darwin Research Station.

Taxonomy

The systematics of the birds of Galapagos is beyond the scope of this article, especially for groups as complex and difficult as the Darwin's finches (for example, see Petren et al. 1999 and Zink 2002) and some seabirds (e.g. Procellariiformes, see Penhallurick and Wink 2004). Therefore, the nomenclature (scientific and common names) and order of species used in this list is based on the draft of the classification of South American bird species by the American Ornithologists' Union's South American Classification Committee (Remsen et al. 2005). I have followed that list's nomenclature for common names except for three species of mockingbirds, for which I will use the common names: Floreana Mockingbird instead of Charles Mockingbird for *Nesomimus trifasciatus*; Española Mockingbird instead of Hood Mockingbird for *N. macdonaldi*; and San Cristóbal Mockingbird instead of Chatham Mockingbird for *N. melanotis*. These names are already commonly in use (for example, see Arbogast et al. 2006, and references therein).

Subspecies have been described for a number of species; these will be listed but their validity will not be evaluated.

The status of species in this list is assigned to three different categories:

- *Breeding*: Species breeds within the Galapagos Archipelago.
- *Migrant*: Species does not breed in Galapagos, but occurs there regularly, with records at least once every three years. This also includes species in which some individuals remain in the archipelago year round, but which do not breed there.
- *Vagrant*: Species which do not breed in the archipelago and which are not recorded regularly or frequently.

In addition to these three categories, three categories of endemism are presented. Two of these are listed explicitly, endemic species and endemic subspecies, but if a species has neither of these notations, it is non-endemic.

For each species I have also listed the number of specimens now housed at the Museo de Vertebrados e Invertebrados Marinos de la Estación Científica Charles Darwin (MECCD). Many other specimens are housed in collections around the world, with known collections at the American Museum of Natural History, British Museum of Natural History, California Academy of Sciences, Field Museum of Natural History, Museo Ecuatoriano de Ciencias Naturales, Museum of Comparative Zoology (Harvard University), San Francisco State University Museum, Swedish Museum of Natural History, and U. S. National Museum.

For endemic species or subspecies, I have included the author's name and year of the taxa's description. I have not included that information for non-endemic breeding taxa, migrants, or vagrants.

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The species accounts are divided into two sections, those for species reliably known to occur or have occurred in Galapagos, and a list of hypothetical and problematic species. The latter list includes species reported from the archipelago or surrounding waters, but for which there is no clear evidence; species reported but without a specimen, photograph or other supporting material and in which correct identification may be problematic; and species reported erroneously from Galapagos or from beyond the territorial waters. Unfortunately, the hypothetical and problematic species list is long; numerous species have been reported without documentation, specimens, or even accurate descriptions of sight records.

In many cases more recent authors have reported records reported in previous publications. I do not present all citations of what is clearly the same record, but usually just the earliest.

Species Accounts

Galapagos Penguin, *Spheniscus mendiculus* Sundevall 1871. Breeding, endemic species. Although the species occurs primarily on western Isabela and Fernandina islands, it also has low populations on Santiago (the source of the type specimen) and Floreana (Vargas et al. 1997). Penguins are also seen regularly but as non-breeders on Bartolomé, Santa Cruz (including a juvenile in Academy Bay in March 2005), Rábida, Pinzón, and Española (Harris 1973); east side of North Seymour and Baltra and once at Wolf island (Snodgrass and Heller 1904); Tortuga (off Isabela Island) and Corona del Diablo (off Floreana) islands (Gifford 1913). In early 2003 a small population of about 20 birds became established at Puerto Villamil, Isabela, and had remained there through mid-2005. In El Niño years the species seems to wander outside its normal range, appearing at locations such as Rábida and southeastern Isabela islands (personal observation; H. Vargas personal communication). There are 4 skins, 11 skeletons, and one pickled specimens in MECCD.

Pied Billed Grebe, *Podilymbus podiceps*. Migrant. Records are from Isabela (Puerto Moreno, Isabela; Harris 1982) and mangroves at Elizabeth Bay on 6 September 2002 (personal observation) and 2 December 2003 (archives of CDRS); on a temporary pool inland on Floreana 3 May 1986 (Felipe and Justina Cruz), at Cormorant Point on 28 September 1984 (Mark Van Beirs) and 24 January 2005, and at an unspecified site on Floreana (Harris 1981); and Santa Cruz (mangrove lagoons on Academy Bay: March 1960, 15-19 December 1961; Lévêque et al. 1966, and 13 January to 6 February 1966; Harris 1973; on 8 August 1984 by Mark Van Beirs). There is one sighting on 17 April 2001 (Paul Coopmans) and seven sightings of two birds from 19 May to 16 November 2003 (Pam Cooke) at El Chato, Santa Cruz, and year-round sightings on San Cristóbal. Although Castro and Phillips (1996) suggest that sightings of immatures on San Cristóbal indicate that breeding may have occurred there, it seems highly unlikely. The species appears to be regular in Galapagos, although never abundant. There is apparently no specimen of this species from Galapagos.

Waved Albatross, *Phoebastria irrorata* (Salvin 1883). Breeding, near-endemic species, with fewer than 10 pairs breeding outside the archipelago at Isla de la Plata, Ecuador, just off the continent (Anderson et al. 2002). All other breeding records are from Española Island, although the species has been recorded on land on Genovesa (Anderson et al. 2002). There are three skins, six skeletons and one pickled chick in the collection of the MECCD.

Black-footed Albatross, *Phoebastria nigripes*. Vagrant. One seen in waters between the Galapagos and the mainland is listed by Harris (1982), but it is unclear whether this sighting was within the territorial waters of the Galapagos Islands. A second record is from Santa Cruz Island, 13 September 1974 and a black albatross seen on Española in 1897 could have been this species (Harris 1981). There is no specimen.

Cape Petrel, *Daption capense*. Vagrant. Harris (1973) lists 13 records, including cadavers on the coast of Santa Cruz and Isabela, during period of warm water temperatures from 23 October 1961, 7 October 1965, and July-Nov 1972. Lévêque et al. (1966) further qualify the 1961 record as having been sighted between Genovesa and

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Marchena. There was also a sighting between Floreana and Española on 10 June 1980 by W. J. Reed and Sylvia Harcourt (Harris, personal communication). Harris (1982) stated that the petrels are some years regularly seen in small numbers, although he does not further qualify the statement. Despite the mention of cadavers on the coast, there are no known specimens.

Galapagos Petrel, *Pterodroma phaeopygia* (Salvin 1876). Breeding, endemic species. Breeds on Floreana, San Cristóbal, Santa Cruz, Santiago, and Isabela (Sierra Negra Volcano; nine nests found by Jacinto Gordillo in 2002 and 2003 and Francisco Cruz in 2004; also possibly on Alcedo Volcano) islands. Until recently this species was considered conspecific with the Hawaiian Petrel (*P. sandwichensis*). For taxonomy see Banks et al. (2002). There are 12 skins, two skeletons, one pickled adult and one pickled chick in the MECCD.

Parkinson's Petrel, *Procellaria parkinsoni*. Vagrant. Specimens were collected off San Cristóbal on 14 October 1905, off Floreana on 4 May 1906, and "well south" of Isabela on 18 June 1906 (Harris 1973). Fifteen individuals were seen off Redonda Rock, 26 August 1997 by crew of MV *Polaris* (record in archives of CDRS), and one was seen not far from that site, near Cape Berkeley, Isabela, on 13 April 2001 (Paul Coopmans). One was seen by Derek Scott while voyaging between Genovesa and Fernandina on 28 August 2004.

Antarctic Prion, *Pachyptila desolata*. Vagrant. A bird was found dead on the Playa Blanca at Cormorant Point, Floreana, on 23 February 1980 by Godfrey Merlen (Harris 1982). The disposition of the specimen is unknown.

Wedge-tailed Shearwater, *Puffinus pacificus*. Vagrant. One record of a bird found depredated on Plaza Sur island in a Short-eared Owl pellet on 19 September 1966 (Harris 1973); specimen lost. Lévêque et al. (1966) report several records north and east of Galapagos but well outside the territorial waters, and mention one Rollo Beck specimen from "NW of Galapagos," but it is unclear how far.

Sooty Shearwater, *Puffinus griseus*. Vagrant. Considered a regular visitor in small numbers (Harris 1982). There are two skins and two skeletons in MECCD, from Tortuga Point, Isabela, 16 August 1971, from Espinosa Point, Fernandina, 28 November 1973, and Academy Bay, Santa Cruz, 14 May 1974. Sight records are from Puerto Villamil, Isabela, 14 January 1972; one off Redonda Rock, just north of Isabela, on 21 December 2004 by guides of the MV *Polaris* (record in archives of CDRS), and off the southern coast of Isabela in June 2005 (Mark Beaman); six observations May-June 1972 (Harris 1973), possibly including four birds seen one hour north of Española on 3 and 8 May 1972 by Brad Jacobs (Harris, personal communication); one between Española and San Cristóbal by Derek Scott in June 2003 and another in the same location by Paul Greenfield on 12 November 2005; two between Española and Floreana on 10 April 1992 by Mark Van Beirs; one off Genovesa on 31 December 1982 (Curry and Stoleson 1988); and one about 240 km east of San Cristóbal on 12 December 1960 (Lévêque et. al. 1966). Castro and Phillips (1996) report probably some of the same records plus one off Pinzón, and point out that these were in most cases associated with El Niño events.

Galapagos Shearwater, *Puffinus subalaris* Ridgway 1897. Breeding, endemic species. Recently upgraded to valid species status by Austin et al. (2004). Nests on cliffs throughout the archipelago (Harris 1973), and common at sea. Four skin and two skeletons in the MECCD.

White-bellied Storm-Petrel, *Fregetta grallaria*. Vagrant. One specimen collected southeast of Isabela 11 June 1906 by the California Academy of Science expedition (Lévêque et al. 1966), and one observed 17 July 1948 north of Pinta (Harris 1973). Harris (1982) mentions three records, including the ones mentioned above. The species is listed by Castro and Phillips (1996) as being recorded southeast of Isabela during May – August, as if there were numerous records, but with no further information; it is not clear if they had additional records or not.

Elliott's Storm-Petrel, *Oceanites gracilis galapagoensis* (Elliott 1859). Breeding, endemic

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subspecies. Common resident on almost all islands. Peculiarly, nesting of this species still has not been confirmed in the archipelago, as was mentioned as long ago as Snodgrass and Heller (1904) and more recently by Harris (1975). One skin specimen is in the MECCD.

White-faced Storm-Petrel, *Pelagodroma marina*. Vagrant. Specimens were collected by Rollo Beck 96 km due south of Isabela in 18 June 1906 and about 160 km southwest of Galapagos in September 1930 (Lévêque et al. 1966). Harris and de Vries (1968) caught one aboard a boat off San Cristóbal on 9 July 1967 and there were observations of the species in Harris (1973) off Santa Cruz in June 1968 and Santiago in February 1969. Mark Beaman reported three between North Seymour and Genovesa on 19 June 2005. Castro and Phillips (1996) reported a record "in ocean to SW," but it is unclear how far, and if this might be one of the records reported by Harris (1973).

Wedge-rumped Storm-Petrel, *Oceanodroma tethys tethys* (Bonaparte 1853). Breeding, endemic subspecies. Nests on Genovesa, Pitt Islet, and probably on Redonda Rock (Harris 1973). Six skins and one skeleton in MECCD.

Band-rumped Storm-Petrel, *Oceanodroma castro*. Breeding. Nests on various, generally small, islands in the archipelago (Harris 1973). Five skins and one skeleton in MECCD.

Leach's Storm-Petrel, *Oceanodroma leucorhoa*. Vagrant. Harris (1973) lists four records, two off Genovesa 11 February 1970, one off Española on 11 April 1970, one off Floreana on 17 May 1971, and one near Wolf on 22 February 1971. Mark Van Beirs (personal communication) reported one between Plaza Sur and Santa Fe on 15 July 1990. There is one skin specimen in the MECCD from the "high seas between Guayaquil and Galapagos" (possibly outside the territorial waters) on 11 February 1975 and one from "near Galapagos" 12 April 1932 in the British Museum of Natural History. The species may possibly be overlooked (Swash and Still 2000).

Markham's Storm-Petrel, *Oceanodroma markhami*. Vagrant. There are three records: a specimen collected by William Beebe off Fernandina on 12 July 1925 (Lévêque et al. 1966) and one from Academy Bay, Santa Cruz, 3 October 1975 (skin specimen in MECCD), and a sight record of one south of Puerto Ayora, Santa Cruz, on 20 June 1979 by Godfrey Merlen (Harris personal communication). Lévêque et al. (1966) report other potential records although none definitely attributable to this species.

Black Storm-Petrel, *Oceanodroma melania*. Vagrant. Harris (1982) mentions two records within the islands, between Pinta and Albemarle Point, Isabela, 12 December 1973 (Harris 1975), and one off Puerto Ayora , Santa Cruz, on 3 October 1975 seen by David Day. Mark Van Beirs (personal communication) reported one between Plaza Sur and Santa Fe on 8 April 1992. Swash and Still (2000) suggest that the species may overlooked.

Red-billed Tropicbird, *Phaethon aethereus*. Breeding. Nests throughout the islands, but uncommon in the cold waters in the west between Fernandina and Isabela (Harris 1975). There are 6 skin and three skeleton specimens in MECCD.

Red-tailed Tropicbird, *Phaethon rubricauda*. Vagrant. Record of one seen on 23 July 1997 on Floreana Island flying over the flamingo lagoon by Corine and Francine Vriesendorp (record in archives of CDRS). Lévêque et al. (1966) report two records on the same day at 1.75° S 89.75° W and at 2.75° S 91.00° W on 4 September 1956, both within the territorial waters.

Nazca Booby, *Sula granti*. Breeding. Formerly considered a subspecies of *Sula dactylatra* (Friesen et al. 2002). Breeds throughout the archipelago (Harris 1973). Three skins and four skeletons are in the MECCD.

Blue-footed Booby, *Sula nebouxii excisa* Todd, 1948. Breeding, endemic subspecies. The most widely distributed *Sula* in the archipelago, breeding on most islands except those north of the equator, although it breeds occasionally on Genovesa (Harris 1973), with recent records there from 2002 – 2005 (Thalia Grant, personal communication), including April 2003 (fide

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Thalia Grant). Seven skins and five skeletons are in the MECCD.

Brown Booby, *Sula leucogaster*. Vagrant. An adult was photographed close to León Dormido Islet, just off San Cristóbal, in April 1970 (Hosking 1972), and one was photographed on 23 June 2002 about 25 km south of Darwin Island (Howard and Heidi Snell, photo in archives of CDRS). One was seen flying past Daphne Major on 27 March 1997 by Thalia Grant and Peter Grant (personal communication).

Red-footed Booby, *Sula sula*. Breeding. Harris (1973) reports the species breeding on Genovesa, Wolf, Darwin, Gardner-by-Floreana, and on San Cristóbal at Pitt Point and Pitt Islet, and being seen ashore on North Seymour, Española, Gordon Rocks (just off Santa Cruz), and Redonda Rock although not breeding. Gifford (1913) also reports the species from Marchena and Santa Cruz, but it is not clear if he was referring to breeding or just occurrence; he also reports non-breeding individuals on Pinta. There are two skin and four skeleton specimens in the MECCD.

Brown Pelican, *Pelecanus occidentalis urinator* Wetmore 1945. Breeding, endemic subspecies. Breeds on all the central islands and on Española and Marchena; uncommon visitor to Genovesa and Pinta; single record of two adults and immature on Wolf on 23 February 1962; unrecorded from Darwin (Harris 1973). There are four skins and 10 partial skeletons in the MECCD.

Flightless Cormorant, *Phalacrocorax harrisi* Rothschild 1898. Breeding, endemic species. Breeds on Fernandina and the coasts of northern and western Isabela, and is unrecorded outside its breeding range (Harris 1973). There are two skins and nine skeletons in the MECCD.

Magnificent Frigatebird, *Fregata magnificens magnificens* Mathews, 1914. Breeding, endemic subspecies. Breeds on various islands throughout the archipelago (Harris 1973). There are three skins and four skeletons are in the MECCD.

Great Frigatebird, *Fregata minor*. Breeding. Breeds on scattered islands throughout the archipelago: Española, Gardner-by-Floreana, Tortuga Islet, Cuatro Hermanos, San Cristóbal (Pitt Islet and Pitt Point), Genovesa, Darwin, Wolf (Harris 1973), and Daphne Major (Thalia Grant, personal communication). Two skins and two skeletons are in the in MECCD.

Great Blue Heron, *Ardea herodias cognata* Bangs 1903. Breeding, endemic subspecies. Breeds only on the main islands; rare on Española and Genovesa; unrecorded on Darwin, Wolf, Marchena and Pinta (Harris 1973), but likely occurs on almost every island at least as a visitor from time to time. There are four skin and one anatomical specimens in MECCD collection.

Great Egret, *Ardea alba*. Breeding. Occurs on main islands (Harris 1973), and as with its congener, probably at least occasionally on almost all islands. One skin specimen in MECCD.

Snowy Egret, *Egretta thula*. Vagrant. Harris (1973) considered the species a migrant "in small numbers." It was recorded for the first time on 28 December 1965, and since then one or two irregularly in southern Santa Cruz, southern Isabela, and Cormorant Point, Floreana, with extreme dates from July to 21 April (Harris 1973), although Harris (1982) listed only dates from August to April. There are no known specimens.

Little Blue Heron, *Egretta caerulea*. Vagrant. A single bird molting from juvenal white to adult plumage was seen at the mangroves at Elizabeth Bay, Isabela (0.60° S, 91.07° W), on 10 December 1997 by Scott Henderson (archives of CDRS). A second sighting was made at roughly the same location almost a year later, on 18 November 1998 (Pugnali 1999); this is probably the record reported by Swash and Still (2000). A third sighting of this species was made by Thalia Grant and Greg Estes on 25 May 1999 at the lagoons at Barrio Estrada, Puerto Ayora, Santa Cruz.

Cattle Egret, *Bubulcus ibis*. Breeding, self-introduced species. First recorded on 2 November 1964 on Santa Cruz, but the species may have arrived sooner, with possible sightings on 16 July 1960 and other dates that month on Santa Cruz (Lévêque et al. 1966). Breeding was not proved until 1986 (Pérez and Nowak 1987; Swash and Still 2000). Breeding colonies are now scattered

through the archipelago on the main islands, and there are sightings from most islands of any size, even where the species does not breed or roost. There are two skin and two skeleton specimens in the MECCD from Santa Cruz and Floreana, with the earliest from 1998.

Striated Heron, *Butorides striatus sundevalli* (Reichenow 1877). Breeding, endemic subspecies. Although this has at times been recognized as a separate species ("Lava Heron"), as pointed out by Payne (1974) the species limits are not clear and the Galapagos populations show no reliable species-level distinctions from continental *B. striatus* by plumage or morphology. Harris (1973) mentioned that in Galapagos are found birds breeding that resemble continental versions of *B. striatus* as well as many intergrades between those forms and "Lava Heron." Further study is necessary to clarify the relationship of this subspecies and other members of the species. The Striated Heron occurs on the shores of probably every island, islet, and rock throughout the archipelago from time to time, but likely breeds on only the larger islands. There are two skin specimens in the MECCD.

Yellow-crowned Night Heron, *Nyctanassa violacea pauper* (Sclater and Salvin 1870). Breeding, endemic subspecies. Breeds on all the main islands with the possible exceptions of Darwin and Wolf (Harris 1973). There are three skin and three anatomical specimens in the MECCD.

Greater Flamingo, *Phoenicopterus ruber*. Breeding. Sometimes considered an endemic subspecies *Phoenicopterus ruber glyphorhynchus* Gray 1869, although Ridgway (1896) and Rothschild et al. (1899) doubted the validity of the subspecies. Breeds on Isabela, Santiago, Bainbridge Rocks, Rábida, Santa Cruz, and Floreana (Harris 1973). There are six partial skeletons in the MECCD.

Black-bellied Whistling-Duck, *Dendrocygna autumnalis*. Vagrant. There are two sight records, one at Puerto Villamil, Isabela, on 2 July 1960 (Lévêque et al. 1966) and a second on 25 October 1999 at Puerto Ayora, Santa Cruz (Tye and West 2000), but no specimens.

Blue-winged Teal, *Anas discors*. Migrant. Regular migrant in small numbers; most common October - March, but the species has been recorded in most months (Harris 1973). Most frequently recorded from the lagoons on Isabela, San Cristóbal, and Santa Cruz, and in the highlands of Santa Cruz (Castro and Phillips 1996). Sight records include two birds at Tortuga Negra Beach, Isabela, between 6-16 February 1997 by Hernán Vargas; three at Sardina Bay, San Cristóbal, on 15 April 1996 (records in archives of CDRS); birds seen on 8 February 1906 (San Cristóbal), 9 March 1906 and 22 August 1906 at Puerto Villamil, Isabela, and one collected there on 23 August 1906 (Gifford 1913). On Santa Cruz there were sightings of two birds 23 February 1961, four birds on 1 April 1961, two birds on 13 and 15 December 1961 and one on 27 December 1961, four on 29 January 1962, and four on 27 October 1964 (Lévêque et al. 1966), and four on 10 January 2004 (El Chato, seen by Pam Cooke; records in CDRS archives). Specimens were collected on 15 December 1961 at Tortuga Bay, Santa Cruz and in October 1964 on Santa Cruz. A female specimen was collected on 15 December 1961 (Lévêque et al. 1966).

Cinnamon Teal, *Anas cyanoptera*. Vagrant. Kostecke and Kostecke (2006) report photographing a single male at Punta Moreno, Isabela, on 15 October 2004, and a pair of this species at the same site about three weeks later, on 2 November 2004.

White-cheeked Pintail, *Anas bahamensis galapagensis* (Gould 1837). Breeding, endemic subspecies. Occurs on lagoons and ponds, both ephemeral and permanent, on most islands in the archipelago. There are three skin specimens in the MECCD collection.

Masked Duck, *Nomonyx dominicus*. Vagrant. Swash and Still (2000) mention "one record of a pair with a duckling on El Junco Lake, San Cristóbal in December 1994," with no supporting details. One sight record by Pam Cooke and others, 22 August 2003, at El Chato lagoon, Santa Cruz.

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Osprey, *Pandion haliaetus*. Migrant. Regular, in very low numbers (Lévêque et al. 1966). Occasionally an individual over-summers in Galapagos (Harris 1973). Sightings include records from Isabela, Fernandina, San Cristóbal, and Santa Cruz (Castro and Phillips 1996), including Isabela at Elizabeth Bay, 28 May 1996 and Puerto Villamil 23 January 2003. On Santa Cruz two were seen on 23 October 1983 and one on 29 November 1983 (Mark Van Beirs), on 16 November and 9 December 2003, and 30 January 2005 (records in archives of CDRS). One was seen at Cevallos Point, Española, on 15 Nov 1996 (archives of CDRS). Gifford (1919) reported the species on 1 November and 25 August 1905 at Puerto Villamil, and 14 February 1906 on San Cristóbal. Individuals were recorded on Floreana in November 1996 (Thalia Grant), at Buccaneer Cove, Santiago on 28 August 1983 and on Bartolomé on 12 December 1983 (Mark Van Beirs). Castro and Phillips (1996) suggest most records are from June to January. Gifford (1913) collected one specimen at Puerto Villamil on 1 November 1905.

Galapagos Hawk, *Buteo galapagoensis* (Gould 1837). Breeding, endemic species. "Previously common on all main islands except Darwin, Wolf, and Genovesa; now extinct on Floreana and San Cristóbal, very reduced numbers on Santa Cruz; visits but does not breed on Rábida" (Harris 1973). There are three skin and one pickled adult and one partial skeleton in MECCD.

Peregrine Falcon, *Falco peregrinus*. Migrant. Recorded regularly in small numbers, mainly in the boreal winter, November – March, but with a record from 16 May 1970 and one from 20 June 1967 (Harris 1973). Harris (1973) reported a total of 16 records, which probably include Lévêque et al.'s (1966) records on 21 November 1952 near Darwin, 8 November 1961 on Santa Cruz, 30 January 1964 on Plaza Sur, and 27-28 November 1964 at Daphne Major. There is a record from 9 December 2003 at Canal Itabaca between Santa Cruz and Baltra (archives of CDRS). Castro and Phillips (1996) add localities on Baltra, Isabela, and Española; Paul Greenfield (personal communication) reports one at Gardner Bay, Española, on 12 November 2005, and Mark Van Beirs reported one at Suárez Point, Española, on 17 November 1983. Millington and Price (1982) report three records from March and February 1979-1981 on Daphne Major. There are apparently no specimens.

Domestic Chicken *Gallus gallus*. Introduced species. The species is apparently feral (Gottdenker et al. 2005) and breeding on Santa Cruz, and therefore should be considered a part of the avifauna.

Galapagos Rail, *Laterallus spilonotus* (Gould, 1841). Breeding, endemic species. Recorded from Baltra, where it was "scarce" (Gifford 1913), Santiago, Santa Cruz, and San Cristóbal. Less common on Pinta; also on Floreana, and Fernandina (Harris 1973), Alcedo Volcano (C. Márquez, personal communication), and in the mangroves at Tortuga Negra Beach, Isabela, and Genovesa (bird video-recorded 24-26 March and 8-11 April 2004 by Thalia Grant and Greg Estes). The species has not been recorded on Floreana since 1983 (Castro and Phillips 1996), and is very rare now on San Cristóbal. There are no recent records from Baltra. Gifford (1913) reported the species at sea level in mangroves, as well as at high altitudes, but all recent records are from the highlands, except for an individual photographed in the mangroves on Fernandina on 3 July 2003 at Espinosa Point, Fernandina (archives of CDRS), the birds at Tortuga Negra Beach, and the individual on Genovesa, which was also in mangroves. There are three skin and one pickled specimens in the MECCD.

Sora, *Porzana carolina*. Vagrant. Harris (1982) reported three records, all of dead birds, from Marchena, Santiago, and Genovesa. The Marchena record is the same mentioned by Harris (1981) on 11 December 1975, the remains of bird eaten by a hawk, with the specimen now in the British Museum. Harris (1981) also gives details for the Genovesa record, which was of a dead bird found on 6 November 1978. There is a partial specimen in the MECCD from Santiago on 4 October 1979, which substantiates the record from Santiago mentioned in Harris (1982).

Paint-billed Crake, *Neocrex erythrops*. Breeding. Recorded in the archipelago since 1953 (Bowman 1960) but possibly overlooked previously.

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Known to nest on Santa Cruz (personal observation) and Floreana. One dead bird was found on Genovesa in December 1972 (Harris 1981), and the species has been seen on that island in April 1980, in 1986, and in August 2002 (Thalia Grant, personal communication). The species may occur on San Cristóbal and Isabela (Harris 1973). There are seven skins and two anatomical specimens in the MECCD.

Purple Gallinule, *Porphyrula martinica*. Vagrant, although with long periods of residence, bordering on being a permanent resident in recent years. Lévêque et al. (1966) reported an adult recently dead found off Santa Cruz on 13 February 1964, and Harris (1973) reported one bird captured live and photographed at Suárez Point, Española, in February 1972. Castro and Phillips (1996) reported records from El Junco and La Toma lakes, both on San Cristóbal, with no supporting information, while Curry and Stoleson (1988) reported the species as being seen repeatedly at El Junco crater, San Cristóbal, in March 1984. El Chato, on Santa Cruz, has numerous sightings beginning on 1 June 1999 and 17 April 2001 (Paul Coopmans, personal communication). At least two birds (up to eight individuals, according to Derek Scott) were seen repeatedly and one photographed at El Chato during the period 17 May 2003 – 10 January 2004 (Bateman and Cooke 2004) and one was seen by the author ~ 1 km south of Bellavista on 2 October 2004. A bird has apparently lived at El Manzanillo marsh near Puerto Villamil, Isabela, since 2001, and was seen by the author on 5 July 2004. An immature (skin in the MECCD collection) was collected aboard a boat between the islands and continent at about 1.46° S, 85.14° W, about 80 km outside the territorial waters, on 20 February 1968 (Harris 1973).

Common Moorhen, *Gallinula chloropus*. Breeding. Common on lagoons, even temporary ones, throughout the archipelago (Harris 1973).

American Coot, *Fulica americana*. Vagrant. Two observers recorded a single coot at La Lobería, San Cristóbal, on 22 November 1997 (archives of CDRS). Janni (1999) reported two coots at a small lagoon (Manzanillo Lagoon?) about 3 km NW of Puerto Villamil, Isabela, on 27 and 28 February 1999. This is probably the record reported by Swash and Still (2000). There is no specimen.

Black-bellied Plover, *Pluvialis squatarola*. Migrant. Regular migrant in small numbers, recorded in all months, most common during northern winter (Lévêque et al. 1966), and present every year. Seen on most islands with an extensive beach. Two skin specimens in MECCD.

Tawny-throated Dotterel, *Oreopholus ruficollis*. Vagrant. An adult individual photographed on Española on 23 June 1991 by R. Harshaw and B. Leigh (Ridgely and Greenfield 2001).

Semipalmated Plover, *Charadrius semipalmatus*. Migrant. Common migrant, always present in small numbers, but most numerous August - April (Harris 1973), and among the most common shorebirds year-round in the archipelago. Two skin specimens in MECCD.

Wilson's Plover, *Charadrius wilsonia*. Vagrant. Three birds recorded at Cormorant Point, Floreana, on 10 May 1969 (Harris 1973).

Killdeer, *Charadrius vociferus*. Vagrant. Harris (1973) reports one bird photographed at Tortuga Point, Isabela, on 8 February 1971, and one was seen on Floreana on 29 August 1979 by G. R. Gilbert (Harris, personal communication). These are probably the "few records" mentioned by Harris (1982). Thalia Grant and Greg Estes report one seen on the Steven Devine farm in the highlands of Santa Cruz on 15 November 1999.

American Oystercatcher, *Haematopus palliatus galapagensis* (Ridgway 1886). Breeding, endemic subspecies. Nowhere common, as reported by Snodgrass and Heller (1904), and generally found on the coasts of main islands (Harris 1973). One skin specimen in the MECCD.

Black-necked Stilt, *Himantopus mexicanus*. Breeding. On lagoons throughout the archipelago. One skin specimen in MECCD.

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Short-billed Dowitcher, *Limnodromus griseus*. Migrant. Sixteen records from 1 September (record from Thalia Grant and Greg Estes) through May, with most records from November-February (Lévêque et al. 1966; Harris 1973; CDRS archives), on Isabela (Puerto Villamil), Santiago, Floreana, San Cristóbal (Tortuga Cove), Santa Cruz (Tortuga Bay and Puerto Ayora), and Genovesa (Darwin Bay). Probably occurs most years somewhere in the archipelago. Specimens were collected on Santiago on 26 October 1961, and on Floreana on 24 November 1961 (Lévêque et al. 1966).

Marbled Godwit, *Limosa fedoa*. Vagrant. The records are sparse, and mainly between October and March: 9 November 1957, Academy Bay (Lévêque et al. 1966); one at Puerto Villamil, Isabela, from 6 January to end of March and in the beginning of August 1971 (Harris 1973); one at Tortuga Bay, Santa Cruz, 28 October 1997 seen by Josefina Arévalo (CDRS archives); one in October 2002 on Genovesa (Thalia Grant); and one record given as "San Cristóbal" with no further details by Castro and Phillips (1996).

Hudsonian Godwit, *Limosa haemastica*. Vagrant. Harris (1975) reports one seen at Academy Bay, Santa Cruz, for several days beginning 26 November 1973, and Chartier (2001) photographed one at Puerto Villamil, Isabela, on 29 June 1999.

Whimbrel, *Numenius phaeopus*. Migrant. Recorded in fair numbers in all months, but less common in boreal summer (April to mid-July; Harris 1973). There are two skins and one partial skeleton in the MECCD.

Greater Yellowlegs, *Tringa melanoleuca*. Migrant. Known from Santiago, Isabela, Santa Cruz, and Floreana (Castro and Phillips 1996). Lévêque et al. (1966) reported six records, Harris (1973) reported six more, and Thalia Grant and Greg Estes report three more. Most records are from April (five of 12), but there are records from all months except May, June, and August.

Lesser Yellowlegs, *Tringa flavipes*. Migrant. Uncommon, and most records are from 8 October – 9 May (Harris 1973). Recorded from Isabela, Floreana, Santa Cruz, Genovesa, and the highlands of San Cristóbal "frequently" (Castro and Phillips 1996). Three skin specimens in MECCD.

Solitary Sandpiper, *Tringa solitaria*. Vagrant. Recorded mostly from the highlands of Santa Cruz and San Cristóbal, and all eight records, some of which cover a span of months, are from September to April (seven records from Harris 1973 and one from Mark Van Beirs, at Espinosa Point, Fernandina, on 12 October 1983). Rothschild et al. (1899) collected two specimens.

Willet, *Catoptrophorus semipalmatus*. Migrant. As Harris (1973) reported, it is a regular migrant in small numbers, recorded in all months but rare from May-July, on sandy beaches throughout the archipelago. Lévêque et al. (1966), reported on five specimens.

Wandering Tattler, *Heteroscelus incanus*. Migrant. Recorded all year, but fewer during northern summer (Harris 1973). Among the most common migrants in Galapagos except for the phalaropes, which winter at sea, and Semipalmated Plover. Galapagos is probably one of the major wintering grounds for the species (Lévêque et al. 1966). There is one skin in the MECCD.

Spotted Sandpiper, *Actitis macularia*. Migrant. A regular migrant in small numbers, but not recorded in all years, with extreme dates from 23 August to 2 May (Harris 1973). Most frequently reported from Santa Cruz (Castro and Phillips 1996), but this may be a result of the greater number of observers on that island. Also reported on Floreana, Marchena, and Isabela (Castro and Phillips 1996), and Fernandina and Genovesa in August 2002 (Thalia Grant). Snodgrass and Heller (1904) reported one taken in January.

Ruddy Turnstone, *Arenaria interpres*. Migrant. Harris (1973) described the turnstones as a very common migrant, always present but most common from August to March. There are two skin specimens in the MECCD.

Black Turnstone, *Arenaria melanocephala*. Vagrant. Harris (1982) reports two records

without details, but he lists one record, 29 September 1968, in the highlands of San Cristóbal, in his previous publication (Harris 1973). Castro and Phillips (1996) mention one record from the highlands of San Cristóbal, which may refer to the 1968 sighting.

Surfbird, *Aphriza virgata*. Vagrant. Lévêque et al. (1966) reported one collected on Santiago, 25-26 October 1961, now in Museum National D'Histoire Naturelle, Paris. Harris (1973) listed the species as a "migrant in very small numbers," with additional dates of 6 November 1961 (Santa Cruz); 21 October 1966 on Plaza (Sur?), 20 March 1970 (Puerto Villamil, Isabela), and 7 Sept 1971, and April 1972. The small number of sightings however, suggest it is not a regular migrant. Sightings are mainly during northern winter.

Red Knot, *Calidris canutus*. Vagrant. Harris (1973) reported one bird at Cormorant Point, Floreana, on 10 May 1969, and one was recorded at Poza de las Diablas, just west of Puerto Villamil, Isabela, on 2 November 1976 by Robert Tindle (Harris, personal communication). These are presumably the two records mentioned in Harris (1982). Probably one bird was seen repeatedly on five dates at Espinosa Point, Fernandina, from 26 October 1983 to 29 February 1984, and during this same time period one (same bird?) was seen on Rábida, on 11 December 1983 (Mark Van Beirs). A sighting was made on Plaza Sur on 29 October 1997 of a bird in winter plumage by Josefina Arévalo, and the same year a month later, on 24 November 1997, at Cormorant Point, Floreana, three birds were seen by J. H. Hansen and D. G. Christiansen (records in CDRS archives). Two were seen among other shorebirds on Fernandina on 12 April 2001 (Paul Coopmans, personal communication).

Sanderling, *Calidris alba*. Migrant. As pointed out by Harris (1973), this is a common migrant in flocks of up to 100, although more commonly in smaller flocks (personal observation). Although it is most common in northern winter (Swash and Still 2000), like the Whimbrel and some other shorebirds, it is found throughout the year. It is recorded from all islands except Pinzón, Genovesa, Wolf, and Darwin, none of which has a beach (Castro and Phillips 1996). There are three skin specimens in the MECCD.

Semipalmated Sandpiper, *Calidris pusilla*. Vagrant. As with other migratory species, it has been recorded occasionally during northern winter. Three were collected on Floreana on 24 November 1961 (Lévêque et al. 1966). Sightings include two seen on Floreana on 14 March 1971 (Harris 1973), and one at Cormorant Point, Floreana, on 30 November 1978 by J. W. de Roever (Harris, personal communication); eight were seen at that same location on 23 December 1983, five a week later on 30 December 1983, and two on 9 April 1992 (Mark Van Beirs); observations at James Bay, Santiago, on 28 October 1972, and at Academy Bay, Santa Cruz, on 18 November 1972 (Harris 1973), and one at La Lobería, San Cristóbal on 22 November 1997 (CDRS archives).

Western Sandpiper, *Calidris mauri*. Vagrant. Lévêque et al. (1966) reported one bird Santiago bird collected on 26 October 1961 (in Museum National D'Histoire Naturelle, Paris). Harris (1982) reported small numbers in most years. Specific sightings include Santiago (20 September 1968 and 28 October 1972); Floreana (24 November 1961 and 2 December 1972); Santa Fe (30 October 1970; Harris 1973); Tortuga Bay (4 December 1997; CDRS archives) Garrapatero Beach (2 January 2004; personal observation) and Barrio Estrada, Puerto Ayora, Santa Cruz (6 March 2004; Thalia Grant and Greg Estes). Mark Van Beirs reported one, two, or three birds (same individuals?) at Cormorant Point, Floreana, throughout 1984: 28 January 1984, 2 April 1984, 13 April 1984, 29 July 1984, and 28 September 1984. There are apparently no specimens.

Least Sandpiper, *Calidris minutilla*. Migrant. The species occurs in small numbers each year, with the majority, though not all, records from September to 9 May (Harris 1973), but most common October - April (Swash and Still 2000). Records include Floreana, San Cristóbal, Santa Cruz, and Santiago (Castro and Phillips 1996). There are four skin specimens in the MECCD, including one collected on Santa Cruz on 29 July 1962, a late boreal summer date although perhaps an early migrant.

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White-rumped Sandpiper, *Calidris fuscicollis*. Vagrant. One bird was seen at Cape Hammond, Fernandina, on 1 November 1972, two were photographed at Cormorant Point, Floreana, on 2 December 1972 (Harris 1973) and another one was seen at the same location on 30 November 1978 (J. W. Roever; Harris personal communication), and two were recorded at La Lobería, San Cristóbal, on 22 November 1997 (CDRS archives).

Baird's Sandpiper, *Calidris bairdii*. Vagrant. Lévêque et al. (1966) report birds collected on Santa Fe on 6 October 1897 and on Española on 23 September 1957. Two were found dead at James Bay, Santiago, on 28 October 1972 (Harris 1973). Mark Van Beirs reported one at Espinosa Point, Fernandina, on 12 October 1983, and two at Suárez Point, Española on 11 August 1984. Swash and Still (2000) report that the species is "seen occasionally during migration."

Pectoral Sandpiper, *Calidris melanotos*. Vagrant. Lévêque et al. (1966) reported one collected in the highlands of Santa Cruz in October 1964. Harris (1973) mentioned an additional record in the highlands of Santa Cruz on 1 October 1967. Castro and Phillips (1996) added that these records were from the *Miconia* zone of the island. Harris (1982) included a record from coastal Isabela at Puerto Villamil, and one was recorded on 25 February 2003 in the lagoons at Puerto Villamil (CDRS archives). One was recorded at Suárez Point, Española, on 11 April 1992 (Mark Van Beirs). Two were recorded at La Lobería, San Cristóbal on 22 November 1997 (CDRS archives). Although Harris (1982) gave no date for his Isabela sighting, Swash and Still (2000) suggested it was during northern winter.

Stilt Sandpiper, *Calidris himantopus*. Vagrant. Lévêque et al. (1966) reported a Harry S. Swarth record from Puerto Villamil, Isabela, 27-28 April 1932 and a specimen by André Brosset on 8 October 1962 at Academy Bay, Santa Cruz. Harris (1973) reported an additional sighting at Puerto Villamil on 22 February 1966.

Wilson's Phalarope, *Phalaropus tricolor*. Migrant. Usually seen on lagoons on Isabela, Floreana, Santiago, Santa Cruz, and Genovesa (Castro and Phillips 1996) in small numbers and usually between August and December (Harris 1973). Two skin specimens taken on 15 October 1962, are now in MECCD, and Lévêque et al. (1966) reported four specimens collected on Floreana and two from Isabela at Puerto Villamil.

Red-necked Phalarope, *Phalaropus lobatus*. Migrant. Harris (1973) said that this is a common migrant, numerous from 1 August to 20 April, but most abundant in December and January. They form large flotillas from hundreds to thousands of individuals often far out at sea, although Harris (1973) reported small numbers on salt lagoons. Jens H. Hansen and Ditte G. Christiansen reported a flock on a lagoon at La Lobería, San Cristóbal, on 22 November 1997. The two specimens in the MECCD collection are from land at Tortuga Bay, Santa Cruz, 18 September 1962 and one from 14-March 1975. See also Red Phalarope, below.

Red Phalarope, *Phalaropus fulicaria*. Migrant. Often encountered in mixed flocks with Red-necked Phalaropes at sea, and regularly seen in northern winter, as is that species. Although rarely seen at lagoons on land and not at sea, one was recorded mixed in with the flock of Red-necked Phalaropes at La Lobería, San Cristóbal, on 22 November 1997. Specimens include one collected off Fernandina on 25 August 1929 (Lévêque et al. 1966) and one skin in MECCD from 3 March 1984 off Genovesa. Lévêque et al. (1966) also mentioned one collected on 14 September 1928 at 3.52° N, 86.92° W, but this is far out of the territorial waters, 470 km northeast of Genovesa.

Pomarine Jaeger, *Stercorarius pomarinus*. Vagrant. An immature female (Rothschild et al. 1899) was collected on 15 December 1897 off northern Isabela (Gifford 1913). Three were seen between Española and Floreana on 8 December 1971 (Harris 1973). One was seen chasing a Blue-footed Booby in Banks Bay, Isabela, on 13 January 1981 by David Duffy (Harris personal communication). Mark Van Beirs reported one in the same area, off Vicente Roca Point, Isabela, on 5 February 1984; a little further south, near Tagus Cove, Isabela, on 4 November 1988; and near Espinosa Point, Fernandina, in April 1992. He

also reported one northwest of Española on 11 November 1983. Castro and Phillips (1996) list a record from Elizabeth Bay, western Isabela, but with no date or year.

Ring-billed Gull *Larus delawarensis*. Vagrant. An adult was photographed on Plaza Sur on 30 June 1983 by C. V. Peterson and M. D. F. Udvardy (Harris personal communication). Harris also says there are several undocumented records including one in the 1950s (Robert Bowman).

Kelp Gull, *Larus dominicanus*. Vagrant. One adult was seen at Tagus Cove, Isabela, on 15 December 1973 (Harris 1975). One was photographed at Cerro Colorado, Santa Cruz, on 26 December 1996 by Hernán Vargas (CDRS archives). This location is within sight of Plaza Sur Island, where two birds have been seen repeatedly since 1999 (Howard and Heidi Snell). A bird was seen on 8 August 2000 by Juan Freile, one was photographed on Plaza Sur in May 2003 (CDRS archives), and probably the same bird was seen by the author on Plaza Sur on 22 June 2003 and three times in 2004, on 11 May, 6 June, and 15 July 2004, and the species was seen there on 19 June 2005 by Mark Beaman. Although the bird(s) have been seen carrying nesting material, there has been no evidence of reproduction.

Gray-headed Gull, *Larus cirrocephalus*. Vagrant. An adult was photographed on 9 August 1978 on San Cristóbal, presumably at Puerto Baquerizo Moreno (Jones 2000). Mark Van Beirs reported one in breeding plumage at Puerto Baquerizo Moreno on 30 July 1991. Godfrey Merlen reported one at Puerto Villamil, Isabela, on 28 December 1983, and presumably the same bird was seen on 18 January 1984. Local residents reported that this, or several, birds had visited the area for two years (Harris, personal communication).

Lava Gull, *Larus fuliginosus* Gould 1841. Breeding, endemic species. Snodgrass and Heller (1904) and Salvin (1876) reported the species to be "common" throughout the archipelago, but absent from Darwin and Wolf. Gifford (1913), however, seemed to indicate that the gulls were nowhere abundant. Although still widely distributed, the gulls are certainly scarce now, with no more than the 800 individuals estimated by Snow and Snow (1969). The population centers are the towns of Puerto Ayora (Santa Cruz), Puerto Baquerizo Moreno (San Cristóbal), and Puerto Villamil (Isabela). A survey lead by Diógenes Aguirre in April 2005 produced an estimate of 40 individuals on southern Santa Cruz, from Garrapatero Beach to Tortuga Beach, an area which includes Puerto Ayora. There are four skin and one anatomical specimens in the MECCD.

Laughing Gull, *Larus atricilla*. Migrant. There are a number of records, mostly October May, with sightings from Isabela, San Cristóbal (Castro and Phillips 1996), Santa Cruz, and Genovesa. One adult was collected off Santa Cruz on 19 February 1962 (Lévêque et al. 1966), and Lévêque (1966) also reports one off southwestern Isabela on 12 March 1960. Harris (1973) reported several seen and photographed at various places at the end of 1972. A flock of about 35 was recorded on Genovesa in 1983 (Curry and Stoleson 1988). Mark Van Beirs reported a number of sightings of between one and 40 individuals from 8 January to 22 August 1984 at Suárez Point (Española), Cormorant Point (Floreana), Bartolomé, and Espinosa Point (Fernandina). Hernán Vargas reported a flock of 12 subadults in mixed flock with Franklin's and Lava gulls at Pampas Coloradas soccer field in Puerto Ayora, Santa Cruz on 30 January 1998 (archives of CDRS). There are five skull-only specimens in the MECCD.

Frankin's Gull, *Larus pipixcan*. Migrant. This is among the most common winter visitors to Galapagos, mostly October-May, and is seen throughout the archipelago. Harris (1973) pointed out that the majority are immatures. Flocks usually seem to number less than ten, but Hernán Vargas reported a flock of 84 at Pampas Coloradas soccer field in Puerto Ayora, Santa Cruz on 30 January 1998 (archives of CDRS), and a flock of 50 to 70 individuals (possibly the same birds?) was seen on Rábida on 18 February 1998 by Josefina Arévalo (CDRS archives). In addition to the report above, large flocks were also reported by Vargas from November 1997 at Post Office Bay, Floreana, and Puerto Ayora in December 1997 – January 1998, also possibly the

same individuals. Vargas suggested that large numbers of Franklin's Gulls were usually seen in El Niño years. There is one skin and two skeleton specimens in the MECCD, and one was collected in March at Mangle Point, Fernandina (Snodgrass and Heller 1904).

Swallow-tailed Gull, *Creagrus furcatus* (Néboux 1840). Breeding, near-endemic; the only population outside Galapagos is on Malpelo Island, Colombia (Harris 1973). Nests throughout the archipelago (Harris 1973). There are two skin and three skeletons in the MECCD.

Elegant Tern, *Thalasseus elegans*. Ben Haase photographed a single bird on 9 February 2005 at Puerto Baquerizo Moreno, San Cristóbal (CDRS archives). A single bird was sighted previously at Puerto Ayora, Santa Cruz, in December 1995 by Godfrey Merlen (Harris, personal communication), but without further details.

Royal Tern, *Thalasseus maximus*. Migrant. Usually in low numbers, and the majority of records are from January-March (Harris 1973), but also recorded from all other months except April and May (Castro and Phillips 1996), including two birds seen 14-17 July 2003 at Puerto Villamil, Isabela (personal observation). The majority of records seem to be from southern Isabela, at Puerto Villamil and Quinta Playa, but other locations include Santa Cruz (Castro and Phillips 1996).

Common Tern, *Sterna hirundo*. Migrant. Occurs regularly in very low numbers. One immature was collected on Española on 26 November 1961 (Lévêque et al. 1966). Two were photographed at Puerto Villamil, Isabela, in March 1970 (Harris 1973), and the species was observed on 29-30 January 1983 on Genovesa by Curry and Stoleson (1988). It has also been recorded off Santa Cruz and San Cristóbal (Castro and Phillips 1996), Daphne Major (Thalia Grant), and Fernandina (personal observation). Harris (1973) listed the extreme dates as August to March, although the bird was seen off Daphne Major in April 1980.

Sooty Tern, *Sterna fuscata crissalis*. Breeding. The species breeds on Darwin Island but is rarely seen elsewhere in the archipelago (Harris 1973). Gifford (1913) reported them as far south as Los Cuatro Hermanos islets on 19 August 1906.

Black Tern, *Chlidonias niger*. Vagrant. One immature was found dead at James Bay, Santiago, on 17 November 1973 (Harris 1975), but the specimen has been apparently lost. Curry and Stoleson (1988) reported the species from Genovesa on 29 and 30 January 1983, and Paul Coopmans (personal communication) photographed four at Espinosa Point, Fernandina, on 1 December 1993.

Brown Noddy, *Anous stolidus galapagensis* (Sharpe 1879). Breeding, endemic subspecies. Occurs throughout the archipelago (Harris 1973). There is one skin specimen in the MECCD.

White Tern, *Gygis alba*. Vagrant. One was recorded off Genovesa on 14 September 1906 (Gifford 1913, Harris 1981). Swash and Still (2000) stated that there are "very few records," as if there were more than one, but with no details. The record reported by Castro and Phillips (1996) was at sea 480 km southwest of the islands, which is outside the territorial waters.

Rock Pigeon, *Columba livia*. Breeding, introduced species. The species was introduced and feral populations established on Santa Cruz, San Cristóbal, and Isabela, primarily around the towns and in the agricultural zone. Eradication efforts have eliminated Rock Pigeons from Santa Cruz (2002), and likely on San Cristóbal in 2004 and Isabela in July 2005. If the eradication on the latter two islands is confirmed, the species would be eradicated from the archipelago. The species was apparently once established on Floreana, but was extinguished there naturally (Felipe Cruz, personal communication), possibly one of the few instances worldwide of natural extinction in the species. There are seven skin specimens in the MECCD.

Eared Dove, *Zenaida auriculata*. Vagrant. Recorded on Champion Island by B. Rosemary and Peter R. Grant in August 1980 (archives of CDRS). One was observed at Los Gemelos, Santa Cruz, on 13 September 1983, by P. Delacretaz (Harris, personal communication). Other records include one bird on 29 January

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1984 at the Charles Darwin Research Station, Puerto Ayora, Santa Cruz (archives of CDRS), and one recorded at CDRS on 10 August 1985 by Curry and Stoleson (1988), who speculated that it was the same bird as seen in 1984.

Galapagos Dove, *Zenaida galapagoensis*. Breeding, endemic species. There are two subspecies described: *Z. g. galapagoensis* Gould 1841, found throughout most of the archipelago, and *Z. g. exsul* Rothschild and Hartert 1896, occurring on Darwin and Wolf islands. The species is most common on islands where there are no feral cats (Harris 1973). There are seven skin and five skeletons in the MECCD.

Red-masked Parakeet, *Aratinga erythrogenys*. Introduced. Vargas (1996b) reported seeing one on 21 April 1996 on San Cristóbal. This would have been most likely an escaped pet. The species has not become established on the islands, and the bird most likely perished.

Black-billed Cuckoo, *Coccyzus erythropthalmus*. Vagrant. An immature was found dead on Española 16 May 1970 (Harris 1973); skeleton specimen in the MECCD.

Dark-billed Cuckoo, *Coccyzus melacoryphus*. Breeding. Although the species is common on most of the larger islands and even found on some of the smaller ones such as Plaza Sur (personal observation), Harris (1973) noted that it is rare on Santiago, where it was not recorded before 1966, and there is only a single record on Santa Fe on 10 July 1906. There are 17 skins, five skeletons, one pickled adult, and one pickled chick in the MECCD.

Smooth-billed Ani, *Crotophaga ani*. Breeding, introduced species. See the account for Groove-billed Ani in the section on Problematic and Hypothetical Species. The species was apparently introduced intentionally in the early 1960s either on Isabela or Santa Cruz islands, although the first published records (Harris 1973) of anis were on Isabela in April 1962. It was apparently thought to be a biological control to remove ticks from cattle, following the local belief that when the birds perch on cattle they are feeding on the ticks; hence the local name "garrapatero" for anis. There exists the possibility, however, that the species is self-introduced as was Cattle Egret, arriving on its own to take advantage of a human-altered landscape.

Early sight records for anis include ones seen in the interior of Isabela in April 1962, on Santa Cruz 29 March 1966, and on Santiago in March 1967 (Harris 1973). Harris (1982) reported Smooth-billed Anis seen in the farmland of Santa Cruz in 1980 – 1981.

There are nine skin and two skeletons in the MECCD, with the earliest dated August 1985, but three with earlier accession numbers are undated. The species is now very common on the larger islands and many smaller ones (recorded on Champion, Gardner-by-Floreana, and Plaza Sur). It has not apparently yet become established on Fernandina. Although recorded from Genovesa following the 1997-1998 El Niño event, it did not become established. It is not clear yet if eradication efforts have eliminated the small population on Marchena, although it is most likely.

Barn Owl, *Tyto alba punctatissima* (Gray 1841). Breeding, endemic subspecies. Occurs on most of the larger islands, possibly extinct on Floreana (Harris 1973). There are 11 skin and one skeleton specimens in the MECCD.

Short-eared Owl, *Asio flammeus galapagoensis* (Gould 1837). Breeding, endemic subspecies. Known from all the main islands except Wolf, although (Harris 1973) reported only two records from Fernandina (specimen collected 9 January 1929 and a sight record on 3 July 1971). It also occurs regularly on smaller islands, for example Gardner-by-Floreana (Rothschild et al. 1899), Rábida, Champion, and Plaza Sur (personal observation). On these smaller islands it is usually seen with nesting seabirds, but not known to nest in those areas (Harris 1973). The MECCD has five skins and eight skeletons.

Common Nighthawk, *Chordeiles minor*. Migrant. The species appears to be a fairly regular transient. Records are from Española, Isabela, Fernandina, and Santa Cruz (Castro and Phillips 1996). Two birds were seen at Suárez Point, Española, 22-24 November 1963, but the identification of these birds is not certain

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(Lévêque et al. 1966). One was recorded at Cevallos Point, Española, 12 December 1970, and one was heard calling in crater of Alcedo Volcano, Isabela, during night of 23 April 1971 (Harris 1973). Curry and Stoleson (1988) also heard one on Genovesa in March 1983. Puerto Ayora, Santa Cruz, records include December 1975 by Walter Cruz, who mentioned that he had seen the species several times before (Harris, personal communication), and one on 12 November 2002 (personal observation). There are no specimens.

Chimney Swift, *Chaetura pelagica*. Vagrant. Three sight records, all from the same island: a single bird at Gardner Bay, Española, on 28 October 1977 by K. K. Malmstrom (Harris 1981), one at Suárez Point, Española, on 17 November 1983 (Mark Van Beirs), and at least one individual by Lelis Navarrete on 25 November 2005 at Suárez Point, Española (CDRS archives).

Belted Kingfisher, *Megaceryle alcyon*. Migrant. Occurs in small numbers and apparently not every year. Recorded during seven northern winters in the years from 1961-1971, and most other years since, with extreme dates of 20 October to 20 March. Most of these records were at Academy Bay, Santa Cruz, but also from the north side of Santa Cruz, Daphne (Major?), Genovesa, Española, Isabela (Puerto Villamil, lagoon at Elizabeth Bay), and Floreana (Harris 1973). Apparently no specimens have been taken.

Vermilion Flycatcher, *Pyrocephalus rubinus*. Breeding, endemic subspecies. Breeds on most main islands except Santa Fe (where five specimens were taken; last seen there in 1929), Rábida (seven specimens taken; last in 1906), Wolf Island (single specimen, 24 September 1906), and Española (single sight record December 1970); the species is unrecorded on Darwin and Genovesa islands (Harris 1973). Although reported by Gifford (1919) on Baltra, there are no recent records.

The taxonomy of this species has been very confusing. Ridgway (1896) mentions *five* "species" (considered even by most other authors of the time as subspecies): *nanus*, *dubius*, *intercedens*, *carolensis*, and *abingdoni* (the latter three of which he himself described). Two subspecies could be recognized: *P. r. nanus* (Gould 1841), occurring on most islands, and *P. r. dubius* (Gould 1841), from San Cristóbal. Salvin (1876), however, suggested that specimens of *P. r. dubius* were instead juvenile males of *P. r. nanus*. There are three skin specimens in the MECCD, all from Bellavista, Santa Cruz, in 1962.

Although once quite common, the species has become uncommon to rare. A hint of its previous abundance is given by Rothschild et al. (1899), who mentioned the numbers of specimens collected during the expedition: 24 on Santiago, 36 on Santa Cruz, 16 on Isabela, 19 on Pinzón, 42 on Floreana, six on Pinta and three on Marchena. The species is now probably the rarest breeding species on Santa Cruz, with possibly a total population now on the island no more than the 36 individuals collected during the Rothschild expedition. The Vermilion Flycatcher has been extirpated from San Cristóbal, with the last sight record in the 1980s (Bob Curry, personal communication), although Snodgrass and Heller (1904) had reported it as "fairly common" on the island. It seems to be at best uncommon on most islands where it does still occur.

The reasons for the species's decline and disappearance are unknown. It seems unrelated to introduced cats or rats. It has disappeared from islands with no introduced rats or cats (e.g., Santa Fe, which has an endemic rat), never occurred in any numbers on islands without cats or introduced or endemic rats (Española), and persists on islands with introduced and endemic rats (Santiago). Possible causes for the decline should consider these factors, but also introduced diseases and parasites as well.

Galapagos Flycatcher, *Myiarchus magnirostris* (Gray 1841). Breeding, endemic species. Frequently called "Large-billed Flycatcher." The species is found on all of the main islands and many smaller ones except, as pointed out by Snodgrass and Heller (1904) on Wolf, Darwin, and Genovesa islands. However, Harris (1973) reported a record from Genovesa (14 September 1906), three birds on Wolf (24 September 1906), and a bird caught at sea near Darwin Island on 25 July 1897. There are ten skin, one skeleton, and one pickled specimens in the MECCD.

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Eastern Kingbird, *Tyrannus tyrannus*. Vagrant. A sighting by M. Jones on Genovesa in May 1983 (Curry and Stoleson 1988), and a single bird seen on the northern end of Santa Fe on 9 June 1995 by Coopmans (1996) constitute the only records of the species in Galapagos. There are apparently no specimens.

Red-eyed Vireo, *Vireo olivaceus*. Vagrant. There are apparently only two records, one very vague: "on Wolf during 1982-83 El Niño" (Castro and Phillips 1996). The second is of a sight record from Cormorant Point on 26 September 2002 (CDRS archives). There are no known specimens.

Purple Martin, *Progne subis*. Vagrant. The species has been recorded only a few times in Galapagos. Harris (1973) gave the first record as October 1964, and mentioned females or immatures recorded on various dates on Española (including two males at Española on 17 October 1972) and Santa Cruz, further stating that between June and December 1970 at least four were seen regularly at Suárez Point, Española. There are two skin specimens in the MECCD, from Española 17 December 1970, and from Pinta in September 1985.

Galapagos Martin, *Progne modesta* (Gould 1839). Breeding, endemic species. The species occurs in very small numbers throughout the archipelago except the five most northern islands and Rábida; very rare on Española and not resident there (Harris 1973). Snodgrass and Heller (1904) reported it as "very abundant at some places [on Isabela], especially Elizabeth Bay." Gifford (1919) reported the species on Isabela, Santa Fe, Floreana, San Cristóbal, Daphne (Major?), Pinzón, Edén, Santa Cruz, Santiago, and Baltra, although the birds seen at Daphne and Edén may be visitors from the nearby populations on Santa Cruz and Baltra. It is nowadays quite scarce, generally seen around mangroves or at the summits of the large volcanoes, and recent records include Isabela (near Puerto Villamil; Sierra Negra volcano; mangroves at Elizabeth Bay, mangroves at Albemarle Point), southeastern Baltra, Santa Cruz (Puerto Ayora, Los Gemelos, Media Luna).

Bank Swallow, *Riparia riparia*. Vagrant. There are few records: 19 April 1932 on Española by Harry S. Swarth, and two birds were seen at Suárez Point, on the same island on both 22 September and 6 November 1980 by Godfrey Merlen (Harris, personal communication). Mark Van Beirs also recorded the swallow at Suárez Point, Española, with two on 11 November 1983 and one on 9 December 1983. The swallow was recorded on 20-21 October 1961 on Genovesa (Lévêque et al. 1966). Castro and Phillips (1996) cited a record from San Cristóbal without date or further information. Harris (1973) stated that the species had been recorded on 12 dates dispersed through the year, but did not give those dates. There is one skin specimen in the MECCD, from Española on 10 March 1968.

Cliff Swallow, *Petrochelidon pyrrhonota*. Vagrant. There are apparently only four records and no specimens. One was seen 100 km north of Darwin Island on 13 April 1932 (Lévêque et al. 1966). The species was recorded at Suárez Point, Española, in April 1977 by M. Burns and on 4 June 1979 by R. Tomkins (Harris 1981), and by Paul Coopmans at Gardner Bay, Española, on 11 August 1990.

Barn Swallow, *Hirundo rustica*. Migrant. Seen most years during the northern winter (Harris 1973), and most specific sightings are in the boreal fall, between September and November, although Snodgrass and Heller (1904) include several individuals flying over Española in May. Other specific sightings include one on Santa Fe on 21 September 1980 (Godfrey Merlen; Harris personal communication), 11 and 12 October 1905 (Gifford 1919) and 5 and 12 October 1925 on Floreana (with five specimens collected; Lévêque et al. 1966), and an additional five specimens from October and November 1897 on Floreana (Rothschild et al. 1899), one on 2 November 2002 at the entrance to Galapagos National Park headquarters, Puerto Ayora, Santa Cruz, and one on southern Marchena on 16 October 2004 (personal observation). Mark Van Beirs reported two at Suárez Point, Española, on 11 November 1983. Harris (1973) states that non-breeding individuals may pass the northern summer in the islands, as is the case with some of the shorebirds.

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Galapagos Mockingbird, *Nesomimus parvulus* (Gould 1837). Breeding, endemic species. Six subspecies have been described: *N. p. parvulus* (Fernandina, Isabela, Santa Cruz, Seymour, Daphne); *N. p. barringtoni* (Santa Fe); *N. p. bauri* (Genovesa); *N. p. hulli* (Darwin); *N. p. personatus* (Pinta, Marchena, Santiago, Rábida); *N. p. wenmani* (Wolf), but see Arbogast et al. (2006) for an alternative taxonomy within this species. The species is common on all the main islands except those with other mockingbirds and Pinzón, which has only two records (14 August 1906 and 6 December 1968; Harris 1973). There are eight skins and one skeleton in the MECCD.

Floreana Mockingbird, *Nesomimus trifasciatus* (Gould 1837). Breeding, endemic species. Although the species was recorded as being common on the island of Floreana by Charles Darwin in 1835, the last specimen collected on Floreana itself was in 1852 (Sundevall 1871). The species was last reported seen on Floreana by Simeon Habel in 1868 (Salvin 1876). The mockingbird was probably extinct on Floreana island by 1888, when it was searched for and not found (Grant et al. 2000). There are populations of the Floreana Mockingbird remaining only on Gardner-by-Floreana (79 ha) and Champion (9 ha). After collecting on the latter islet, Gifford (1919) wrote "I think that two more days of hunting on Champion would have made the species extinct there." The 2005 total population estimate is 177 individuals (Wiedenfeld 2005). There is one partial skeleton from a cave on Floreana and one skin from Gardner-by-Floreana in the MECCD.

Española Mockingbird, *Nesomimus macdonaldi* Ridgway 1890. Breeding, endemic species. Occurs only on Española and Gardner-by-Española, where common (Harris 1973). There are four skin and five skeleton specimens in the MECCD.

San Cristóbal Mockingbird, *Nesomimus melanotis* (Gould 1837). Breeding, endemic species. Only occurs on San Cristóbal, where fairly common, although possibly declining.

Cedar Waxwing, *Bombycilla cedrorum*. Vagrant. There are two reports of this species, with few details, both of birds on Genovesa. Castro and Phillips (1996) reported that the waxwing was seen there during the 1982-83 El Niño, and Curry and Stoleson (1988) mentioned that it was sighted on Genovesa in late January 1987, and attributed the record to Peter R. Grant. There are no specimens.

Yellow Warbler, *Dendroica petechia aureola* (Gould 1841). Breeding, near-endemic subspecies (also occurs on Cocos Island, Costa Rica). As pointed out by Harris (1973), this species is common on all of the main islands and present, if not common on most of the smaller ones that have vegetation. There are 47 skins and one skeleton in the MECCD.

Blackpoll Warbler, *Dendroica striata*. Vagrant. There is a single record of a male bird netted on 16 May 1976 on Daphne Major (Boag and Ratcliffe 1979). The bird was photographed and measured, information which was deposited in the AMNH (Boag and Ratcliffe 1979). No specimens.

Summer Tanager, *Piranga rubra*. Vagrant. There are several sightings and, peculiarly, several specimen records of birds found dead, usually mummified. A mummified adult male was found on Española on 30 August 1963 (Lévêque et al. 1966). Millington and Price (1982) report one immature found dead on Daphne Major. There is a skin specimen in the MECCD from Bartolomé on 17 October 1973, and photos of a female-plumaged bird in the CDRS archives from Baltra on 19 October 2003. Castro and Phillips (1996) reported one on Wolf Island, but it is unclear whether they are referring to a specimen or a sighting, and they give no further information. Harris (1973) reported one or possibly two female-plumage birds seen in agricultural zone of Santa Cruz in October and November 1964. As pointed out by Swash and Still (2000), most other tanagers that have been seen but not specifically identified were likely to have been this species.

Scarlet Tanager, *Piranga olivacea*. Vagrant. One female-plumaged bird found partially mummified

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on Marchena (Latitude 0.30800° S, Longitude 90.90501° W) on 27 October 2002 by Dorsey Burger, probably dead less than a week, specimen in the MECCD. Lévêque et al. (1966) reported a sighting by Miguel Castro on 28 October 1964 of a female-plumaged tanager "of uncertain identity" in the agricultural area of southwestern Santa Cruz, that was olive-green with dark wings. M. Harris (personal communication) mentioned another possible record of a male being photographed on Floreana on 23 October 1987 by B. Gadsby, but there is no confirmation and the photograph cannot be located.

Warbler Finch, *Certhidea olivacea* Gould 1837. Breeding, endemic species. Occurs on all of the main islands. Eight subspecies have been described: *C. o. olivacea* (Fernandina, Isabela, Seymour, Santa Cruz, Pinzón, Rábida, Santiago); *C. o. becki* (Darwin and Wolf islands); *C. o. bifasciata* (Santa Fe); *C. o. cinerascens* (Española); *C. o. fusca* (Marchena, Pinta), *C. o. luteola* (San Cristóbal); *C. o. mentalis* (Genovesa); and *C. o. ridgwayi* (Floreana). One skin specimen is in the MECCD collection.

Vegetarian Finch, *Platyspiza crassirostris* Gould 1837. Breeding, endemic species. The species occurs on all main islands except Santa Fe, Darwin, Wolf, Genovesa, and Española. There are five skin specimens from Pinzón in 1897 and 1899, but the species has not been seen there since (Harris 1973). There are five specimens in the MECCD.

Woodpecker Finch, *Camarhynchus pallidus* (Sclater and Salvin 1870). Breeding, endemic species. This is the famous tool-using finch of Galapagos. Harris (1973) listed the species as breeding on Isabela, Fernandina (probably), Santa Cruz, Santiago, San Cristóbal, and Pinzón (rarely). It has also been recorded on Rábida (specimens 1897 and 1905), Floreana (specimen taken on 11 October 1905) and Santa Fe (two sight records 15 September 1968), and a sight record on Pinta 24 August 1968 (Harris 1973). Three subspecies have been described: *C. p. pallidus* (Santiago, Rábida, Pinzón, Santa Cruz, Baltra); *C. p. productus* (Fernandina and Isabela); and *C. p. striatipectus* (San Cristóbal). There are three skins and one pickled adult and three pickled chicks in the MECCD collection.

Large Tree-Finch, *Camarhynchus psittacula* Gould 1837. Breeding, endemic species. The species is found on all main islands except Española, Genovesa, Wolf and Darwin. It does not now breed on Santa Fe, although specimens were collected there on 20 October 1906, three specimens 6-7 October 1897, and sight records May 1966 and 16 September 1968. It is extinct on Pinzón, where it was last seen in 1906 (Harris 1973). Three subspecies have been described: *C. p. psittacula* (Baltra, Santa Fe, Santa Cruz, Floreana, Pinzón, Rábida, Santiago, and possibly San Cristóbal); *C. p. affinis* (Isabela, Fernandina); and *C. p. habeli* (Pinta, Marchena). There is one skin in the MECCD.

Medium Tree-Finch, *Camarhynchus pauper* Ridgway 1889. Breeding, endemic species. The species occurs only on Floreana. There is one skin and four pickled specimens in the MECCD.

Small Tree-Finch, *Camarhynchus parvulus* (Gould, 1837). Breeding, endemic species. Occurs on all main islands except Darwin, Wolf, Marchena, Genovesa, Española, although there are two specimens from Wolf Island from 24 September 1906 (Harris 1973). Two subspecies have been described: *C. p. parvulus* and *C. p. salvini* (only San Cristóbal). There are six skins and one pickled specimens in the MECCD.

Mangrove Finch, *Camarhynchus heliobates* Snodgrass and Heller 1901. Breeding, endemic species. The species now occurs only at two locations 2 km apart on western Isabela (Dvorak et al. 2004), although it was once more widely distributed on Isabela and Fernandina. Harris (1973) reported it from the dense mangroves of eastern Fernandina (seen at Mangle Point in 1971 but not for many years previously at Espinosa Point) and the west coast of Isabela between Tortuga Point and Moreno Point, and mentioned specimens from southeastern Isabela in the early 1900s and one from August 1971 at Cartago Bay, Isabela (Harris 1973). Snodgrass and Heller (1904) reported it being found at Tagus Cove, Isabela, (specimen 4186 at Stanford University Museum), and collected seven on Fernandina and

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19 on Isabela, apparently at Tagus Cove, Tortuga Negra Beach, the mangroves at the corner of Elizabeth Bay; and on Isabela "a few miles west of Elizabeth Bay." They also reported birds taken by others in 1900 and 1901 from southeastern Isabela, abreast of Los Cuatro Hermanos islets and from "the eastern side of the mountain south of the Perry Isthmus," a location that would be near Cartago Bay. Very small populations may persist at Cartago Bay or elsewhere on southeastern Isabela (Dvorak et al. 2004), but recent visits (2003) have located no birds.

Small Ground-Finch, *Geospiza fuliginosa* Gould 1837. Breeding, endemic species. Possibly the most abundant land bird in Galapagos. Harris (1973) listed the species as common on all the main islands except Darwin, Genovesa, and Wolf, although six individuals were collected there on 24 September 1906. There are 27 skins, three skeletons, and ten pickled specimens in the MECCD.

Large Ground-Finch, *Geospiza magnirostris* Gould 1837. Breeding, endemic species. Harris (1973) listed the species from all the main islands except San Cristóbal, Darwin, and Española, and said that three specimens from Fernandina (January and April 1899) and two from Santa Fe (October 1897 and October 1905) could refer to stragglers or extinct populations. Harris (1975) mentioned another record from Fernandina on 13 December 1973, and that the species was seen on Daphne Major by Peter R. and B. Rosemary Grant at the same time, implying that there may have been general inter-island movements that year. The status of the species on Floreana is not clear. It is thought to be extinct there, but one specimen from 20 September 1957 may be this species (Harris 1973). There are four skins, six skeletons, and one pickled specimens in the MECCD.

Sharp-beaked Ground-Finch, *Geospiza difficilis* Sharpe 1888. Breeding, endemic species. Occurs on Santiago, Fernandina, Pinta, Genovesa, Wolf, and Darwin islands (Harris 1973). Previously recorded on Santa Cruz, but disappeared some time between 1932 and 1939 (Lack 1945). Although there are old specimens, the species is probably extinct on Floreana and San Cristóbal (Harris 1973). There are two skin specimens in the MECCD.

Common Cactus-Finch, *Geospiza scandens* (Gould 1837). Breeding, endemic species. This species is found on the main islands except Fernandina and islands which have *Geospiza conirostris* (see below). It is extinct on Pinzón (Harris 1973). Four subspecies have been described: *G. s. scandens* (Santiago and Rábida); *G. s. abingdoni* (Pinta); *G. s. intermedia* (Santa Fe, Floreana, Santa Cruz, Isabela, Pinzón; and *G. s. rothschildi* (Marchena). There are 13 skin and four pickled specimens in the MECCD.

Medium Ground-Finch, *Geospiza fortis* Gould, 1837. Breeding, endemic species. Harris (1973) said the species is "widespread on all main islands except Darwin, Genovesa, and Wolf (where one collected 24 September 1906)…in 1905-1906 fifteen non-breeding birds were collected on Española, but they may be stragglers or part of a now-extinct population; an early record from Genovesa was a mislabeled specimen." There are 59 skins, 13 skeletons, and seven pickled specimens in the MECCD.

Large Cactus-Finch, *Geospiza conirostris* Ridgway 1890. Breeding, endemic species. According to Harris (1973), the species is common on Española and Genovesa. It bred in 1966 on Wolf Island, but otherwise there is only one other specimen from the island, collected 8 January 1963. The status on Darwin Island is confusing, with some specimens referred to this species, but other authors considering them *G. magnirostris*. These may have been stragglers or an extinct population of either species. There is one specimen from Pinta, 27 March 1963, and one specimen perhaps from Gardner-by-Floreana on 31 October 1897, although it may have been a straggler or mislabeled (Harris 1973). Three subspecies have been named: *G. c. conirostris* (Española); *G. c. darwinii* (Darwin and Wolf islands); and *G. c. propinqua* (Genovesa). Two skins and two skeletons are in the MECCD, all from Española.

Rose-breasted Grosbeak, *Pheucticus ludovicianus*. Vagrant. Curry and Stoleson (1988) reported that at least two were observed on Genovesa on 12

April 1983, on four occasions between 15-19 April 1983, and on 25 and 27 April 1983. During these sightings two individuals were seen at once, and they suggest there may have been three individuals. Curry and Stoleson (1988) also cited a personal communication from Tui de Roy of one on seen on Fernandina early in the same year, 1983. J. C. Broyles (writing as Anonymous 1989) recorded a bird on Genovesa on 22 June 1989 (photo in the CDRS archives labeled "June 1989, Al Spears"). There are no specimens.

Indigo Bunting, *Passerina cyanea*. Vagrant. Millington and Price (1982) documented an adult male seen on Daphne Major on 2 May 1979.

Bobolink, *Dolichonyx oryzivorus*. Migrant. Harris (1973) reported that this species is most commonly seen between October and December, but occasionally in other months, and numbers vary greatly from year to year. Castro and Phillips (1996) mentioned records from July and August, and listed locations on the islands of Genovesa, and Española. Snodgrass and Heller (1904) gave localities on Santiago, Floreana, and San Cristóbal. Bowman (1960) mentioned that one immature was given to him that was obtained 8 km north of Academy Bay, Santa Cruz, and he observed some adult birds in August and September of 1957. Lévêque et al. (1966) stated that the species is more common in fall than spring, and reported a bird captured alive on Genovesa on 25 July 1963; specimen in Alexander Koenig Museum, Bonn. One was seen at Suárez Point, Española on 27 April 1980 (Gayle Davis; Harris personal communication), three were seen at the same site on 17 November 1983 and one on 9 December 1983 (Mark Van Beirs), and two more were reported there on 22 April 2004 (CDRS archives). A. de Roy reported one on Pinta on 26 September 1980 (Harris, personal communication), and Mark Van Beirs and David Wolf reported that one landed on board the ship halfway between Bartolomé and Genovesa on 11 October 1983. The suggestion by Swash and Still (2000) that records from San Cristóbal indicate the species may be resident there and could be breeding are erroneous. There are two specimens in the MECCD, a skin on 20 November 1970 from Marchena and a skeleton on 26 November 1978 from Gardner-by-Española. Lévêque et al. (1966) pointed out that the Bobolink occurs in numbers around Lima, Peru, and that the Galapagos Islands are along a straight-line route between California and Peru.

Problematic and Hypothetical Species

Black-browed Albatross, *Thalassarche melanophris*. Listed by Castro and Phillips (1996) as "vagrant, one record." Apparently no specimen was taken. The origin of this record is undocumented.

Wandering Albatross *Diomedea exulans* / Royal Albatross *Diomedea epomophora*. There are two records of *Diomedea* albatrosses from the archipelago according to Harris (1973), but he identified only one of those specifically as the record reported by Fleming (1950) of one albatross seen off Pinta Island on 17 July 1948. Simeon Habel and Theodore Wolf reported the species to be very abundant on Española (Ridgway 1896) but they were surely in error and referring to *Phoebastria irrorata* (Rothschild et al. 1899). With no specimens or much better details of sightings, the identification as either *D. exulans* or *D. epomophora* is not now possible.

Southern Fulmar, *Fulmarus glacialoides*. Unattributed record with no date, location, or any other details by Castro and Phillips (1996).

Mottled Petrel, *Pterodroma inexpectata*. Francisco Cruz (personal communication) reported an exhausted bird which may have been this species grounded on Cerro San Joaquín, San Cristóbal in July 2002; the bird later flew away. Lévêque et al. (1966) gave a record by Palmer on 6 September 1956, but says it was reported well outside the Galapagos area. There are no specimens.

White-winged Petrel, *Pterodroma leucoptera*. Unattributed records are given by Swash and Still (2000) and Castro and Phillips (1996). Paul Greenfield (personal communication) saw a bird possibly of this species between Española and San Cristóbal on 12 November 2005. Lévêque et al. (1966) gave as the only specimen records birds collected by Rollo Beck at approximately 4° S latitude, 93° W longitude, about 375 km

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southwest of the nearest island, just at or beyond the 200 nm territorial limit.

Macronectes sp. (either Southern Giant-Petrel, *Macronectes giganteus*, or Northern Giant-Petrel, *Macronectes halli*). One carcass, dead for a long time, found in April 1978 on Pinta Island, and not identified to species (Harris 1981), skeleton specimen now in MECCD.

Pink-footed Shearwater, *Puffinus creatopus*. Because the taxonomy of this and the following species (*P. carneipes*) is confusing, with the two being considered one species by various authors, the identity of the birds recorded is difficult to discern and verify. Because of the confusion, it seems best not to refer records to either species, but rather to the *Puffinus creatopus* / *carneipes* complex.
Two records of *Puffinus creatopus* were reported in 1972 (Harris 1982). These probably are two of the three records reported by Harris (1973) for the species *P. carneipes* (see below), most likely the first two (Puerto Villamil, Isabela, and Pinzón), and are apparently the records referred to by Swash and Still (2000) as being recorded at sea off Isabela and Pinzón from October to January.

Flesh-footed Shearwater, *Puffinus carneipes*. Apparently confounded with *Puffinus creatopus* by Castro and Phillips (1996), who reported the apparently same records as Swash and Still (2000) and (Harris 1982), but for *P. creatopus* (see previous account). Harris (1973) reported one live bird of this species on the coast of Puerto Villamil, Isabela, 15 January 1972; one observed near Pinzón on 28 October 1972; and three seen 22 November 1972 off Albemarle Point, Isabela. This latter record does not appear to be included by Harris (1982) for the species *P. creatopus* (see previous entry), so did Harris (1982) consider the Albemarle Point records to be *P. carneipes*?

Ringed Storm-Petrel *Oceanodroma hornbyi*. Harris (personal communication) mentioned two birds he saw on 28 April 1967 at the eastern fringe of the study area, but with no further details they should remain as hypothetical.

Tricolored Heron, *Egretta tricolor*. Swash and Still (2000) reported the species as "recorded once," but with no details. Sight identification is probably reliable, but with no further information the species must remain on the hypothetical list.

Green Heron, *Butorides virescens*. Vargas (1996a) reported seeing and photographing one on 28 March 1996 at the lake "Pozo de Claudio Cruz" at 400 m elevation on Floreana. Because of the difficulty of identifying *Butorides* herons (for example, see Striated Heron), without further information or being able to locate or examine the photograph this species should remain on the hypothetical list.

Black-crowned Night-Heron, *Nycticorax nycticorax*. Harris (1973) reported one subadult seen at Tortuga Bay, Santa Cruz, on 1 April 1971. Because of possible identification confusion of non-adults with *Nyctanassa violacea* and lack of documentation, this record must remain hypothetical.

Silver Teal, *Anas versicolor*. The species appears in a list of birds from the expedition of the Swedish frigate *Eugenie*, led by Carl Sundevall, having been collected by the crew member Dr. Kinberg, in May 1852 (Gifford 1913). Swarth (1931) doubted that the specimen was correctly attributed to Galapagos, and suggested that it was probably collected elsewhere. This species should not be considered a part of the Galapagos avifauna.

American Golden-Plover, *Pluvialis dominica* / Pacific Golden-Plover, *Pluvialis fulva*. Vagrant. There are only sight records. Hatch and Hailman (1967) reported two birds at Tortuga Bay, Santa Cruz, on 18 November 1962, and there is a record of one bird of either of these species at the same site on 4 December 1997 (CDRS archives). Harris (1982) reported three records. It is not clear whether these records refer to *P. dominica* or *P. fulva*, because most of them date from before the species was split and observers such as Hatch and Hailman (1967) did not distinguished the forms. Hayman et al. (1986) list Galapagos for records of the Pacific Golden-Plover, but the source of the record is not clear. Swash and Still (2000) reported one record of Pacific Golden-Plover, but with no supporting details; therefore, it is not possible to determine to which species this

record refers. Paul Coopmans reported a Pacific / American Golden-Plover at Espinosa Point, Fernandina, in April 2001. Although Mark Van Beirs reported one as an American Golden-Plover on Genovesa on 2 April 1992, without further evidence it seems best not to refer records to either species, but rather to the *Pluvialis dominica* / *Pluvialis fulva* complex.

Eskimo Curlew, *Numenius borealis*. Ridgway (1896) reported this species as "Casual in the Galapagos Archipelago: [Floreana] Island (Markham)," apparently citing a record in Salvin (1876). Rothschild et al. (1899) examined the Markham specimen and wrote that Salvin's listing of *N. borealis* from Floreana was apparently a "slip of the pen," because the specimen was *N. phaeopus*. There is no evidence that Eskimo Curlew ever occurred in the Galapagos, and the species should not be considered a part of the Galapagos avifauna.

Buff-breasted Sandpiper, *Tryngites subruficollis*. Swash and Still (2000) listed one record, but with no details. Although the record may be valid, with no further information the species must remain on the hypothetical list.

Great Skua, *Stercorarius skua*. Because the taxonomy of this and the following species (*S. maccormicki*) is confusing, the identity of the birds recorded is difficult to discern and verify. Because of the confusion, it seems best not to refer records to either species, but rather to the *Stercorarius skua* / *maccormicki* complex. Harris (1973) reported one *S. skua* seen off Cape Berkeley, Isabela, 12 March 1966, one "probable" off Floreana on 17 January 1971, and Harris (personal communication) reported one at Mosquera Islet on 15 May 1978. See also account for *Stercorarius maccormicki*, below.

South Polar Skua, *Stercorarius maccormicki*. Castro and Phillips (1996) reported a single sighting off Cape Berkeley, Isabela, which probably is the same sighting referred to by Harris (1973) as *Stercorarius skua*. Harris (1982) also reported "one record," which again may be the same record, as he did not separate this from Great Skua. Swash and Still (2000) suggested that this species is possibly overlooked, because it migrates trans-equatorially, but the few number of records for any skua suggest that they do not pass close to the Galapagos archipelago.

Parasitic Jaeger, *Stercorarius parasticus*. As pointed out by Castro and Phillips (1996), there are no confirmed records. The species was "probably" seen off Isabela on 3 December 1978 by J. W. de Roever (Harris 1981). Harris (1982) cited "several 'probable' records." With no further information the species must remain on the hypothetical list.

Long-tailed Jaeger, *Stercorarius longicaudus*. As with *Stercorarius parasiticus*, there are no confirmed records. Harris (1981) wrote that the species was "probably" seen in February 1979 by R. J. Tomkins.

Groove-billed Ani, *Crotophaga sulcirostris*. Despite many published references (Harris 1973, Harris 1981, Harris 1982, Swash and Still 2000) to this species occurring in Galapagos, there are no specimens, photographs, or written descriptions of sight records as evidence. Harris (1981) was still reporting this species, but not reporting Smooth-billed Ani (*Crotophaga ani*), although Harris (1982) reported both species.
It is certainly true that all anis in Galapagos now are Smooth-billed Anis, and all specimens dating back to at least 1985 are that species (see entry for Smooth-billed Ani, above). Although it is possible that Groove-billed Anis were introduced to the Galapagos and later became extinct, with a subsequent introduction of Smooth-billed Anis which became established, this seems unlikely. "Groove-billed Anis" were reported from Isabela, Santa Cruz, and Santiago from 1962 to 1967 (Harris 1973). It seems unlikely that a species that had become so widespread and had persisted for at least five years would become extinct only to be replaced by a second introduction. Therefore, in agreement with Castro and Phillips (1996), I consider that all records of Groove-billed Ani are most likely to have been Smooth-billed Ani. Groove-billed Ani probably never occurred in Galapagos.

Gray-capped Cuckoo, *Coccyzus lansbergi*. Ridgely and Greenfield (2001) state that "the

species also has been recorded as a vagrant in the Galapagos Islands" with no further information.

Bananaquit, *Coereba flaveola*. Vagrant. Swash and Still (2000) list "one record" but with no further information or attribution.

Discussion

The Galapagos Islands form an archipelago straddling the equator about 1,000 km west of South America. As seen by a bird looking from the continent, at that distance the islands must seem very small indeed, for few of them have ever made it. Especially the land bird avifauna of the islands is quite small in comparison with a South American continental avifauna for an area with the same surface extent as the islands, just under 8000 km^2. Counting only the breeding (including endemic species and subspecies and non-endemic breeding species) and regular migrant species, the total only comes to 88 (Table 1). Adding in the 57 vagrant species, the number only jumps to 145 species.

Table 1. Number of species of Galapagos birds by categories, not including the three species erroneously attributed to the islands (Silver Teal, Eskimo Curlew, and Groove-billed Ani). Note that for the purposes of this analysis the Red-necked Phalarope and Red Phalarope are considered marine species, because they are rarely seen ashore during their months in Galapagos.

Status	Coast and lagoon	Marine	Terrestrial	Total
Breeding	5	5	2	12
Endemic species	2	5	22	29
Endemic subspecies	5	6	4	15
Introduced	0	0	5	5
Migrant	20	3	4	27
Vagrant	28	15	14	57
Hypothetical	5	11	2	18
Total	65	45	53	163

However, as with other oceanic archipelagos, endemism in Galapagos is quite high, with half (50%) of the regular avifauna being endemic at either the species or subspecies level. If only land birds are considered, the endemism levels are extraordinary, with 26 of the 37 (70%) of land bird species being endemic, although 11 of 19 (58%) of the "regular" seabirds are endemic as well.

This high level of endemism within a restricted area such as the Galapagos archipelago of course means that many of the endemic species have small populations, which in turn leads to conservation concerns, as the birds face threats from introduced species and human activities. This is indeed reflected in the naming of the majority of the Galapagos Islands and surrounding waters as Important Bird Areas (Freile and Santander 2005).

One notable pattern within the records reported above is that vagrants tend to show up in Galapagos in clusters. For example, Parkinson's Petrel, Little Blue Heron, American Coot, Marbled Godwit, Red Knot, Semipalmated Sandpiper, Western Sandpiper, White-rumped Sandpiper, Pectoral Sandpiper, an American / Pacific Golden-Plover, and unusually large flocks of Franklin's Gulls were recorded by a variety of observers during the last half of 1997. This period also corresponds to a very strong El Niño event (1997-1998). As the number of observers in the archipelago in the years since 1997 has been as high or higher but the high number of unusual sightings has not been repeated, it seems likely

that the unusual birds recorded that year were related to the El Niño event. A large number of unusual sightings also correspond to the 1982-1983 El Niño event, with most of these appearing near the end of the event, in late 1983 or into 1984. El Niño years seem therefore to be likely times to look in Galapagos for unusual bird sightings.

Despite the tremendous ornithological and birdwatching community interest in Galapagos, few records of bird sightings have been published. In fact, this paper relies very heavily on a fairly small number of publications and recordings of sightings. As mentioned above, perhaps this article will stimulate others to come forth with records they already have, or to report future records and sightings.

Nearly 200 years of ornithological collecting and observing in the Galapagos Islands has produced a comprehensive listing of the birds that breed and regularly occur in the archipelago. The list of species that occur irregularly is much less clear, with many species among the vagrant and hypothetical lists not only being represented by no specimens but having poorly-documented or completely undocumented reports. It is hoped that future observers will take care to more carefully qualify their records of unusual birds in the Galapagos Islands.

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