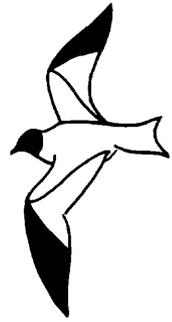


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LANDBIRD AND WATERBIRD NOTES FROM ISLA GUADALUPE, MEXICO

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ABSTRACT: We report observations of land- and waterbirds from a 2-month visit to Isla Guadalupe, Mexico, during winter 2003. Our report includes first island records of the Spotted Sandpiper (*Actitis macularius*) and Palm Warbler (*Dendroica palmarum*). We found no evidence of the persistence of any endemic taxon thought to be extinct, despite intensive and extensive searching of parts of the island typically visited infrequently. Three taxa of endemic landbirds remain on Isla Guadalupe, but each is imperiled by the continued presence of introduced cats. We update the status of species that other expeditions reported to have colonized the island recently.

Isla Guadalupe, Mexico, is an oceanic island 260 km west of Guerrero Negro, Baja California Sur, in the Pacific Ocean. The island reaches an elevation of 1295 m and is more than 37 km in length from north to south. The first written descriptions of the flora and fauna were made by naturalists Edward Palmer in 1875 (Ridgway 1876) and Walter E. Bryant in 1885 (Bryant 1887). In response to their interesting and unique observations, Guadalupe has been visited sporadically ever since by ornithologists, marine mammalogists, botanists, and collectors.

Historically the island is known to have harbored 34 endemic species of plants, including five endemic taxa of trees. Most species of native plants on the island are now greatly reduced or thought to be extinct as a result of intense grazing by the feral goats introduced in the mid-1800s (Moran 1996). In addition to a rich flora, Isla Guadalupe once had nine strongly differentiated endemic taxa of birds, six of which are now thought to be extinct (Table 1; Howell and Cade 1954, Jehl and Everett 1985). Isla Guadalupe

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Table 1 Status of Land Birds Endemic to Isla Guadalupe

Species	Current Status
Guadalupe Caracara <i>Caracara lutosa</i>	Extinct; last recorded 1903
Guadalupe Northern Flicker <i>Colaptes auratus rufipileus</i>	Extinct; last recorded 1906
Guadalupe Rock Wren <i>Salpinctes obsoletus guadaloupensis</i>	Breeder; population >1000
Guadalupe Bewick's Wren <i>Thryomanes bewickii brevicauda</i>	Extinct; last recorded 1903
Guadalupe Ruby-crowned Kinglet <i>Regulus calendula obscurus</i>	Extinct; last recorded 1953
Guadalupe Spotted Towhee <i>Pipilo maculatus consobrinus</i>	Extinct; last recorded 1897
Guadalupe Junco <i>Junco (hyemalis) insularis</i>	Breeder; population >500
Guadalupe House Finch <i>Carpodacus mexicanus amplus</i>	Breeder; population >1000

was formerly home to populations of two other species of breeding landbirds, the Red Crossbill (*Loxia curvirostra*) and the Red-breasted Nuthatch (*Sitta canadensis*), each also thought to be extirpated (Sweet et al. 2001). Possible reasons for extinctions of these populations include predation by feral cats and habitat loss inflicted by goats, perhaps in the case of the Guadalupe Caracara (*Caracara lutosa*) helped along by overcollection by ornithologists (Jehl and Everett 1985, Moran 1996). Although offshore islets provide refugia from predators and disturbance, their small size provides insufficient habitat to sustain populations of landbirds except for the Rock Wren and House Finch.

Jehl and Everett (1985) were the last to review the status and recorded history of the avifauna of Isla Guadalupe. Since their review, visiting ornithologists have reported new records of wintering, migrant, and breeding birds (Oberbauer et al. 1989, Mellink and Palacios 1990, Howell and Webb 1992, Pyle et al. 1994, Sweet et al. 2001). We report additional observations of landbirds, shorebirds, and gulls from more than two months spent on the island from 17 January to 23 March 2003. Because of the timing of our visit most of our observations of landbirds represent wintering individuals.

Throughout our account we follow the place names of Moran (1996) and Jehl and Everett (1985). During the two months we spent on the island, we lived at Campo Sur, at the south end of the island, and explored other parts of the island on single- or multiple-day trips, using Campo Sur as a base. We spent a total of 8 days actively surveying landbirds at the north end of the island, in the remaining cypress and pine trees (31 January–1 February, 7–8 February, 9–12 March). We also made several day trips to the middle of the island, including the southernmost grove of palms and the airstrip on the central plateau of the island, referred to as the *pista* (22 January, 29 January, 11 February, and during trips to the north end of the island, listed above). We visited Campo Oeste, on the west coast of the island, twice (24 and 27 January). Additionally, we visited two offshore islets: we spent 8 days on Isote Negro (3–4 February, 17–20 February, 7–8 March) and one

day on Islote Zapato (13 March). Where we believe we surveyed a species' appropriate habitats sufficiently, we report a minimum population estimate. We limit the observations reported here to those of landbirds, shorebirds, and wading birds; data on seabirds will be reported elsewhere.

RESULTS

Great Blue Heron (*Ardea herodias*). We observed one, probably wintering, at Campo Oeste 24 and 27 January. Jehl and Everett (1985) considered this species "probably a rare but regular winter visitor."

Greater White-fronted Goose (*Anser albifrons*). At least five individuals wintered at the spring to the east of the cypress grove, 31 January–10 March, with one remaining individual seen to 10 April (B. S. Keitt pers. comm.). Our record (photographic and sight) is the second for the island. The species was previously reported there in January 1885 (Bryant 1887).

American Kestrel (*Falco sparverius*). We observed this species frequently along the road between Campo Sur and Campo Pista and at the north end of the island in the vicinity of the pines. We estimate that there were >15 on the island. This species breeds and winters on Guadalupe, and Bond (1943) described the resident breeding population there as an endemic subspecies, *F. s. guadalupensis*, but subsequent authors have not recognized this taxon (Howell and Cade 1954, Jehl and Everett 1985).

Peregrine Falcon (*Falco peregrinus*). We observed and photographed at least two individuals numerous times around the south end of the island from January to March. The only other island record is of a single bird seen 19 September 1896 (Gaylord 1897). What was probably the same pair was seen in mid-May (B. S. Keitt pers. comm.). Jehl and Everett (1985) considered this species "likely to have occurred regularly during migration." We suggest that it may occur regularly during the winter as well, and it could breed on Guadalupe.

Pacific Golden-Plover (*Pluvialis fulva*). We observed up to 14 wintering on the main island west of the head of Melpomene Arroyo from January to March. Our observation furnishes the fourth island record, following records of 12 in the same area as our sighting in January 1988 (Howell and Webb 1992), up to 12 at Northeast Anchorage 23 November–16 December 1973 (E. N. Mirsky, in Jehl and Everett 1985), and 20 in the same area as our sighting 22 February 1970 (Jehl and Everett 1985).

Wandering Tattler (*Heteroscelus incanus*). From January to March we frequently saw at least three wintering at the south end of the island, and on 1 March we saw one on the beach at the mouth of Esparsa Canyon. Jehl and Everett (1985) considered the Wandering Tattler "a regular visitor to the island from fall through spring."

Spotted Sandpiper (*Actitis macularius*). We saw one in basic plumage in the rocky intertidal area at the extreme southern end of the island, 2 March. It was seen at close range by two observers, and we noted the bobbing behavior, vocalization, and long tail characteristic of the species. The Spotted Sandpiper was not recorded on the island previously.

Ruddy Turnstone (*Arenaria interpres*). We observed at least four wintering in rocky intertidal areas at the south end of the island, January–March. Jehl

and Everett (1985) reported "specific records for June, November–January, and April" and three in November 1964.

Black Turnstone (*Arenaria melanocephala*). We frequently observed this species wintering in rocky intertidal areas at the south end of the island, January–March. We saw no more than nine at a time. Jehl and Everett (1985) reported records for October–February and April.

Ring-billed Gull (*Larus delawarensis*). We saw an adult repeatedly circle our vessel 5 km east of Campo Sur 17 January and a first-winter bird at the south end of the island 15 March. Jehl and Everett (1985) questioned the identification of "a few" by Carl Hubbs in 1950 and reported the first island record as January 1970. Subsequently, Mellink and Palacios (1990) reported "a few" in November, and Howell and Webb (1992) saw a single first-winter bird at Northeast Anchorage in January. Ring-billed Gulls are generally rare offshore, so it is unusual that so many have reached Guadalupe (P. Pyle pers. comm.).

California Gull (*Larus californicus*). We observed one adult 3 km east of Campo Sur 17 January; one adult and one immature were seen sporadically at the south end of the island February–March. Previous visitors to the island have reported this species regularly (Jehl and Everett 1985, Howell and Webb 1992).

Herring Gull (*Larus argentatus*). We observed this species frequently at the south end of the island but never saw more than two at once. We found one dead adult in poor condition in Melpomene Arroyo 22 February but did not collect it. We saw two at Esparsa Canyon 1 March. Jehl and Everett (1985) described this species as a "common winter visitor from November–April" and stated that during the winter this species congregates at the elephant seal rookeries. In contrast, we saw no large congregations anywhere on the island.

Western Gull (*Larus occidentalis*). We saw this species frequently along the shores of the island, with maximum counts of 23 at the south end of the island (15 March), nine at Islote Negro (18 February), 30 at Islote Zapato (13 March), and 11 at the mouth of Esparsa Canyon (1 March). This species has been confirmed as a local breeder and an island resident (Jehl and Everett 1985). Resident fishermen reported it to us as breeding on a point known as "La Ventana," between Campo Oeste and Islote Negro. We were unable to visit this area to determine whether the species was nesting during our stay on the island. We estimate that the wintering population of Western Gulls was <200 birds.

Glaucous-winged Gull (*Larus glaucescens*). We saw small numbers (≤ 3) frequently at the south end of the island and two at the mouth of Esparsa Canyon 2 March. All birds were immature. This species is a regular winter visitor and has been reported November–May (Jehl and Everett 1985).

Rock Pigeon (*Columba livia*). We saw two frequently at the south end of the island January–March; we saw this species nowhere else. It may have been intentionally introduced by island residents in 1956 (C. L. Hubbs, as cited by Jehl and Everett 1985), and it has been reported regularly since.

Mourning Dove (*Zenaida macroura*). This species was abundant throughout terrestrial habitats on the island, from the cypress forest in the north to Campo Sur in the south. The first evidence of a breeding population was a

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Figure 1. Guadalupe Junco, *Junco (hyemalis) insularis*, northern cypress grove, Isla Guadalupe, 10 March 2003.



Figure 2. Guadalupe Junco, *Junco (hyemalis) insularis*, northern cypress grove, Isla Guadalupe, 10 March 2003.

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Figure 3. Guadalupe House Finch, *Carpodacus mexicanus amplus*, Campo Sur, Isla Guadalupe, 23 January 2003.



Figure 4. Guadalupe House Finch, *Carpodacus mexicanus amplus*, Campo Sur, Isla Guadalupe, 6 February 2003.

record of 24 birds in 1967, before which only single birds were seen sporadically (Jehl and Everett 1985). We estimate that the current population numbers >2000 individuals.

Burrowing Owl (*Athene cucularia*). We observed this species frequently from Upper Circus at the north end of the island to Melpomene Arroyo at the south end and saw birds standing at the entrances of burrows twice. We found numerous carcasses of Leach's Storm-Petrel (*Oceanodroma leucorhoa*) at the entrances to burrows on both Isote Negro and Isote Zapato, evidence that the Burrowing Owl is present there and that it preys upon storm-petrels. We saw one owl on Isote Zapato (13 March). Predation of Leach's Storm-Petrel by the Burrowing Owl at Guadalupe Island has not been reported previously.

Anna's Hummingbird (*Calypte anna*). We saw this hummingbird frequently in the stand of nonnative tree tobacco (*Nicotiana glauca*) in the northeastern region of the island and once each at the northern pines (1 February), Campo Sur (5 March), Isote Negro (19 February), and Isote Zapato (13 March). The Isla Guadalupe population of this species sounds markedly different from mainland birds (Mirsky 1976), and males may lack the complete throat gorget typical of mainland populations of the species (Howell and Webb 1992). We observed two individuals with complete gorgets 1 March at the mouth of Esparsa Canyon, but all other males we observed lacked a complete gorget. This situation could indicate either a difference in plumage or a difference in the timing of breeding; most mainland Anna's Hummingbirds fledge in the early spring and molt a complete gorget by December (P. Pyle pers. comm.).

Belted Kingfisher (*Ceryle alcyon*). We saw one at Isote Negro 5 March. Jehl and Everett (1985) reported the Belted Kingfisher as regular in winter.

Northern Flicker (*Colaptes auratus*). We observed two individuals around the northern cypress grove 10 March. The endemic subspecies *C. a. rufipileus* probably died out after 1906 (Jehl and Everett 1985), but small numbers of the mainland subspecies *C. a. collaris* have now colonized (Sweet et al. 2001).

Say's Phoebe (*Sayornis saya*). We observed and photographed one, probably wintering, at the mouth of Esparsa Canyon 28 February. It was the second recorded on the island, following seven reported by E. N. Mirsky in 1973 (Jehl and Everett 1985).

Guadalupe Rock Wren (*Salpinctes obsoletus guadaloupensis*). This subspecies endemic to Guadalupe is abundant throughout the island and occurs on both Isote Negro and Isote Zapato. We located nests on the road south of the airstrip 30 January and at Campo Sur 27 February, and we saw recently fledged young on the road near the pista 9 March, around the pines at the north end of the island 10 March, and at Campo Sur 15 March. We saw a pair with nesting material on Isote Negro 20 February. The nest at Campo Sur failed following a heavy rainstorm. Almost every published account of Guadalupe contains a report of the Guadalupe Rock Wren, and it has typically been described as common. We estimate the population at >1000 individuals.

Ruby-crowned Kinglet (*Regulus calendula*). We saw ≥ 5 in the northern cypress grove 31 January and 10 March. We were unable to identify the subspecies of the individuals we saw, but the endemic *R. c. obscurus* is

considered extinct: no individuals of this species have been observed in summer in 50 years (Jehl and Everett 1985, Sweet et al. 2001). Small numbers have been reported in winter since 1973 (Jehl and Everett 1985, Howell and Webb 1992). It is likely that individuals now observed on Guadalupe are wintering birds and migrants.

Mountain Bluebird (*Sialia currucoides*). We saw and photographed two males wintering at the spring 31 January and two males again near the northern cypress grove 1 February. The only previous island record was of three in winter 1885–86, one of which was collected (Bryant 1887).

American Robin (*Turdus migratorius*). We found and photographed one desiccated carcass beneath the southernmost pines at the north end of the island 1 February, but we did not collect it. It provided the third island record, following sight records of a few in December 1886–January 1887 (Bryant 1887) and one at Northeast Anchorage 5 December 1973 (Jehl and Everett 1985).

Sage Thrasher (*Oreoscoptes montanus*). Three times from 29 January to 10 February we saw and photographed one around Campo Pista. The only previous island record is of a bird collected 7 January 1886 (Bryant 1887).

European Starling (*Sturnus vulgaris*). We saw 45 individuals near the spring and two near Campo Pista. This species was first reported on the island in 1971 (Jehl and Everett 1985). It is a suspected breeder, but we saw no signs of breeding during our stay. Howell and Webb (1992) reported at least 130 birds during January 1988 and suggested that the species may be only a winter visitor.

Yellow-rumped Warbler (*Dendroica coronata*). We saw six Audubon's Warblers (*D. c. auduboni*) and six Myrtle Warblers (*D. c. hooveri*, presumably) at various locations throughout the island, January–March. We agree with Jehl and Everett's (1985) suggestion that the species is "probably a regular winter visitor."

Palm Warbler (*Dendroica palmarum*). We saw and photographed one pale individual wintering at Campo Sur January–March, and we saw one bright-plumaged individual at Campo Pista 10 February. These records represent the first and second for the island. Both individuals were seen by multiple observers, and both individuals were positively identified by their characteristic tail-bobbing behavior and yellow undertail coverts.

Chipping Sparrow (*Spizella passerina*). We found one desiccated carcass under the southernmost pines at the north end of the island 1 February but did not collect it. There are only two prior records for the island, of one collected 6 January 1886 by Bryant (1887) and several seen in November–December 1973 (Jehl and Everett 1985).

White-crowned Sparrow (*Zonotrichia leucophrys*). We saw and photographed one at Campo Sur 28 January and five in a flock with 17 Oregon Juncos in the cypress grove at the north end of the island 11 March. One was in the pines at the north end of the island 9 April (B. S. Keitt pers. comm.). Two were seen at the south end of the island 10 April 1970 (Jehl and Everett 1985), three were reported during January 1988 (Howell and Webb 1992), and several were seen in November 1989 (Mellink and Palacios 1990). This species probably occurs in small numbers regularly during both winter and migration.

Oregon Junco (*Junco hyemalis* subsp.). We saw 17 in a flock that also contained five White-crowned Sparrows in the cypress grove 11 March. These birds were probably migrating, as we saw no Oregon Juncos during our other visits to this area or surrounding areas. We observed agonistic interactions between the Oregon Juncos and the resident Guadalupe Junco. The only other island record of an Oregon Junco is of a bird—being attacked by a resident Guadalupe Junco—collected 6 January 1886 by Bryant (1887).

Guadalupe Junco [*Junco (hyemalis) insularis*]. We saw this Guadalupe endemic frequently in the cypresses, pines, Esparsa Canyon, and surrounding areas throughout our stay (Figure 1, 2). Its distribution appears to be limited to these areas alone. We saw adults carrying food near the pines and the spring 10–11 March. Of nine individuals mist-netted 11–12 March, eight were in reproductive condition (e.g., brood patch or cloacal protuberance). We estimate the population to be >500 individuals. The size of this population may change rapidly, as expeditions since 1988 have variously reported its numbers as “very low” (Howell and Webb 1992) and “common within the cypress grove” (Sweet et al. 2001). This (sub)species is the most distinctive taxon of bird remaining on Isla Guadalupe (Mirsky 1976).

Western Meadowlark (*Sturnella neglecta*). We observed this species throughout the island. It was first reported as a suspected breeder in 1988 near Campo Pista and the airstrip (Howell and Webb 1992) and has been reported as a likely breeder on all subsequent expeditions to the island. We suggest that the species' population has grown greatly since 1988 and that there are now >500 individuals on the island.

Guadalupe House Finch (*Carpodacus mexicanus amplus*). We saw this finch frequently, sometimes in large numbers, throughout the island (Figure 3, 4). We also saw birds on islots Negro and Zapato. The highest count at the south end of the island was 31 individuals on 7 February. A flock of more than 110 individuals was seen on the east slope of El Picacho 16 February. Large numbers of birds (50–100) also frequented the spring at the north end of the island. We estimate the population to be >1000 individuals. Seventeen birds captured in February and March were not in breeding condition.

House Sparrow (*Passer domesticus*). We saw two males at the south end of the island, January–March. Howell and Webb (1992) reported the first island record of this species, in 1988, and subsequent visitors to the south end of the island have also reported it. However, we observed no females during our two months at the south end of the island, suggesting that Guadalupe may not support a viable breeding population.

DISCUSSION

Extended winter field work on Isla Guadalupe has been rare since Bryant (1887) spent four months on the island in 1885. We report on 36 species of birds, mostly wintering birds and early migrants, observed during our visit, and minimum population estimates for five breeding residents. Although we have provided estimates, they amount to educated guesses, so further work to estimate the size and viability of populations of endemic landbirds on Isla Guadalupe and other Baja California islands would be valuable to conservation efforts. Two species (Spotted Sandpiper, Palm Warbler) pro-

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vided first island records; four added second or third island records (Greater White-fronted Goose, Peregrine Falcon, Sage Thrasher, Mountain Bluebird). Sadly, we added no new evidence that any of the endemic taxa thought to be extinct might actually persist.

The avifauna of Isla Guadalupe has undergone massive change in the 130 years since its discovery by western naturalists. Since the initial observations and collections on the island (Ridgway 1876, Bryant 1887), ornithologists have documented the loss of eight breeding taxa, six of them endemic. Researchers have also observed the colonization or probable colonization by six taxa new to the island's avifauna. Massive, broad-scale habitat loss and alteration on the island by feral goats (Moran 1996) and predation by feral cats (Howell and Cade 1954) have resulted in permanent change to the island's avifauna.

After our visit, eradication of the feral goats began in earnest, with the population reduced to an estimated 500 by the end of 2004. Final eradication is planned for 2005. Regeneration of the native vegetation has already begun (Aguirre et al. 2004). Additionally, removal of cats would represent significant progress in protecting the remaining endemics from extinction. With the current removal of feral goats and potential future removal of cats, the avifauna of Isla Guadalupe will embark on a new and unpredictable trajectory, but the outlook of the remaining endemic taxa is now much brighter.

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