

THE BIRDS OF SAN CLEMENTE ISLAND

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Presented here is the first compilation of published and unpublished information on the birds of San Clemente Island since Howell's 1917 account of the birds of the California Channel Islands. The absence of any published synthesis of records since that time clearly invites this update. The majority of observations have been made over the past 10 years by numerous researchers who visited the Island.

The classic reasons for listing island bird faunas have been amply explained by Jehl (1977) and DeSante and Ainley (1980). But, San Clemente Island presents a special case because the status of many bird species is expected to change rapidly as feral animals are removed. The Navy's current attempts to remove all goats, pigs, cats and deer, if successful, will assuredly bring about drastic changes to the Island by reversing more than a century long trend of habitat devastation. The information presented here will be helpful in measuring the changes in the avifaunal and ecological conditions of the Island. We only wish there were more data on conditions prior to the arrival of exotic animals.

ISLAND DESCRIPTION

San Clemente Island (SCI) is the southernmost of the California Channel Islands, its center lying at about 32°50'N latitude, 118°30'W longitude (Figure 1). It is 103 km west-northwest of San Diego and 80 km south-southwest of San Pedro, the nearest mainland point. Santa Catalina Island, the closest land, is 34 km to the north.

San Clemente Island is 34 km long, ranging from 2.4 km wide near the north end, to 6.4 km wide near the south end; its long axis runs approximately northwest. The total land area of the Island is approximately 150 km² and its high point, called Mount Thirst, reaches 599 m and lies near the center of the Island. For convenience the steep northeast side of the Island is herein referred to as the "east" side and the gentler sloping southwest side as the "west" side.

Most of the San Clemente Island coastline is rugged and precipitous, especially on the east side and at Seal Cove on the west side. Sandy beaches are few, the largest occurring at the southern end of the Island at China Cove, Horse Beach Cove, and Pyramid Cove. Two large offshore rocks at the northern end of the Island are also of significance to birds. Other smaller rock islets are located along the western shore of the Island particularly between Eel Point and Lost Point.

Geologically, San Clemente Island is described as the upper part of a tilted and gently arched block with a steep east slope and a more gentle west slope (Olmstead 1958). It is principally composed of volcanic rocks of Miocene

age. The 20 distinct wavecut terraces on the west side extend up to a level of 450 m. The Island is everywhere dissected by deep, geologically young canyons, those on the east side dropping precipitously over 500 m to the sea. Apparently, the Island has never been connected to the mainland.

San Clemente Island has a distinct maritime climate with cool summers and mild winters. Based on weather records since the 1940s, the mean annual temperature is 16° C, with mean summer temperatures of 18° C, and mean winter temperatures of 14° C. The average daily temperature range is approximately 5° C. Freezing temperatures are very rare. Occasionally, when Santa Ana conditions prevail in August through October, temperatures exceeding 38° C have been recorded. Gale force winds are frequent in the higher regions of the Island, whereas at the northern airfield, the average wind speed for all months is under 10 knots. The predominant wind direction is from the west with short periods of northerly to easterly winds associated with Santa Ana conditions. Annual precipitation ranges between 13 and 20 cm. The wettest months are November through March and the driest months from June through September.

CURRENT VEGETATION

Vegetation and floral accounts of San Clemente Island and other California Channel Islands have been reviewed and discussed in several publications (Dunkle 1950, Raven 1963, Axelrod 1967, Philbrick 1967, Thorne 1969, Philbrick and Haller 1977, Ferguson 1979, Brumbaugh 1980, Power 1980, Sward and Cohen 1980). All authors mention the substantial deleterious effects that feral animals, particularly sheep or goats, have had on the distribution, abundance, and condition of the native plants. Virtually no reproduction of woody species has occurred in this century because of feral animal depredation upon their fruit and seeds.

Bunchgrass, prickly-pear, cholla, and the less common velvet-cactus are dominant native species. In addition, much of the Island is densely covered by introduced Mediterranean annual grasses, e.g., *Avena*, *Bromus*, *Hordeum*, *Vulpia*. Native shrubs and trees are essentially restricted to the precipitous eastern canyons and cliffs, but may also be found less frequently in most of the large western canyons. When compared to the shrub communities found on the northern Channel Islands, San Clemente's shrub communities are relatively depauperate.

San Clemente Island is unique among the California Channel Islands because it harbors the highest number of endemic plants—a total of 15 distinctive taxa. In addition, 41 Channel Island endemics are found there and the total known flora for San Clemente Island is 331 taxa (Ferguson unpubl. ms.). At least three species have been extirpated either by man or introduced herbivores.

Seven plant communities are found on San Clemente Island. Dominant species occurring in each community are *Avena barbata*, *Bromus* sp., *Stipa pulchra* (Grasslands); *Lycium californicum*, *Bergerocactus emoryii*, *Opuntia* sp. (Maritime Desert Scrub); *Quercus tomentella*, *Lyonothamnus floribundus* (Island Woodland); *Malva leprosa*, *Salsola iberica* (Disturbed); *Abronia* sp., *Ambrosia chamissonis*, *Astragalus miguelensis* (Coastal Strand/Dunes);

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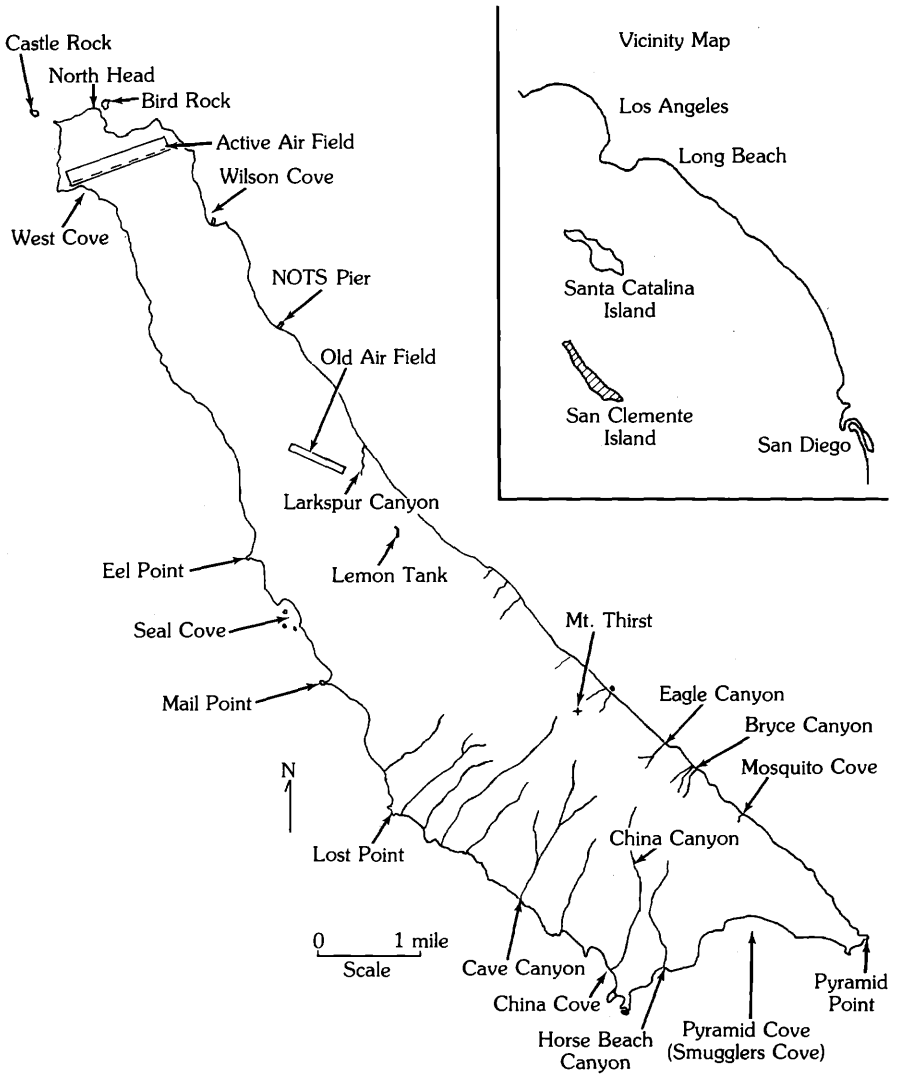


Figure 1. Map of San Clemente Island showing place names and the location of the Island on the California coast.

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Artemisia nesiotica, *A. californica*, *Opuntia* sp. (Maritime Sage Scrub); *Salicornia subterminalis*, *Frankenia grandifolia*, *Distichlis spicata* (Salt Marsh). The Grassland community, being the largest, covers approximately 45% of the Island. Maritime Desert Scrub, Island Woodland and "Disturbed" areas are next in size covering approximately 35%, 7% and 5% of the Island, respectively. Coastal Strand/Dunes, Maritime Sage Scrub, and Salt Marsh cover 4%, 3%, and 0.2% of the Island (Ferguson unpubl. notes).

MAN AND HIS IMPACT ON SCI VEGETATION

Man modified the Island vegetation before botanists had visited the Island. We can therefore only speculate on the historical or pristine condition of the Island flora. Unfortunately, goats were introduced to San Clemente Island in the 1800s (Johnson 1975). By 1883, there were 10,000 sheep on the Island (Doran 1980). Britton, in 1897, also noted the presence of cattle on the Island (Doran 1980). Sheep grazing continued until 1934 when the San Clemente Island Sheep and Wool Company lost its lease and the Island was transferred to the Navy. Apparently all of the sheep were removed at that time, but the goats remained on the Island, their population unchecked. Their numbers increased to a peak of 12,000 in the early 1970s. In 1972, the Navy initiated a feral animal removal program. By 1983 there were fewer than 1000 goats left and it is hoped that they will be removed soon. Deer and feral pigs were introduced onto the Island in the early 1950s for the sake of sport hunting. Most, if not all, of these animals have also been removed.

Naval use has had various environmental effects on the Island. Numerous roads and rifle ranges have been constructed, a new airfield was built on the northern end of the Island in the early 1950s, and ship to shore gunnery practice directly impacts about 2% of the Island.

Some idea of the Island's vegetation prior to the introduction of feral animals may be gained from the notes of early botanists. William Lyon, who visited the south end of San Clemente Island in 1885, noted great dead masses of *Dudleya (virens)* which had formerly covered the ground throughout the entire Island (Raven 1963). Today *Dudleya virens* is restricted to steep canyon walls and the lowest western terrace near Eel Point. Another report from about 1883 states that *Lavatera assurgentiflora* (California Tree-Mallow) "constituted an unbroken forest, extending for miles upon the high plateaus" (Raven 1963). Today there are only a few *Lavatera* remaining. The drastic reduction of these two species serves as a powerful reminder of what the Island once looked like. The reduction of *Lavatera* probably parallels that of many other plants, particularly woody species favored by goats, that were not adapted to life on the cliffs—the one area out of reach of the exotic animals. At least three Island endemic plants have already become extinct.

HISTORICAL REVIEW OF SAN CLEMENTE ISLAND AVIFAUNA

Early accounts of the birds of San Clemente Island began when Cooper (1870) collected several species in 1863. Major contributions since include annotated lists by Grinnell (1897a), Linton (1908, 1909), and Howell (1917). Howell gathered all available records up to 1917 and reported a total

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of 114 species. There followed brief visits by several investigators up to 1941, but during a crucial period from 1941 to 1968, when several species were apparently extirpated, there are very few records from the Island. Recent work began with Cody and Diamond documenting the presence of breeding species (unpubl. notes 1968). Johnson (1972) examined the origin and differentiation of resident land birds on all the Channel Islands. His analysis of San Clemente birds was based on existing information. Later, Jones (1975) and Jones and Diamond (1976) reported on avifaunal turnover rates for breeding species on all of the California Channel Islands. Their work was based on extensive field work, including 11 visits to San Clemente Island by Jones from 1972 to 1975. Jones was the first person to make a special effort to record migrant and transient species. Since 1972, the Navy has hosted several hundred visits by more than 25 different bird observers.

SCOPE AND METHODS

The current list includes all birds for which there are adequate records, including several tentative records as well. Although San Clemente Island has been a favorite location for pelagic birdwatching trips since the 1950s, the numerous reports of seabirds (particularly in *Audubon Field Notes* and *American Birds*) are generally not included in this present account unless they were reported within 1 km of the Island. Thus, pelagic species recorded as "off" or "near" San Clemente Island are omitted.

All records are sight records unless noted. Generally, each record for a species is listed when there are five or fewer records. Otherwise, records are summarized. Unpublished records are cited with the initials of the observer. Site locations are used sparingly and only when useful. Nomenclature follows the AOU Check-list (1983).

In cases where the existence of a specimen is known and where it may be important in documenting information on that species, the initials of the museum holding the specimen are given in the annotation: California Academy of Sciences (CAS), Los Angeles County Museum of Natural History (LACMNH), Chicago Field Museum of Natural History (FMNH), San Diego Natural History Museum (SDNHM), Western Foundation of Vertebrate Zoology (WFVZ), University of California at Los Angeles (UCLA).

The authors' work began in 1972 and has included over 150 days of field work during all seasons, with the majority of visits occurring since 1977. Most recent records are by the authors and were obtained during visits of 1 to 10 days, at which time the survey of birds was usually the primary task.

Abundance categories are assigned according to a species' occurrence on San Clemente Island and are not intended to reflect regional status.

| | |
|---------------|--|
| Abundant | 200 + per day in appropriate habitat and season |
| Very Common | 50-200 per day in appropriate habitat and season |
| Common | 20-50 per day in appropriate habitat and season |
| Fairly Common | 7-20 per day in appropriate habitat and season |
| Uncommon | 1-6 per day in appropriate habitat and season |
| Rare | 1-6 per season in appropriate habitat |

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CONTRIBUTORS

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*GM et al. = GM, EC, HF, PJ, DP, RW

SPECIES ACCOUNTS

ARCTIC LOON (*Gavia arctica*). Three records: Linton (1909) noted "a few" during winter months of 1908; about 15 on 3 Jun 1972 (LJ); one 25 Jul 1979 (PJ).

COMMON LOON (*G. immer*). Four records: one 2 May 1974 (RS, WC); one 4 Nov 1976 (PJ); two 10 Dec 1976 (LJ); one 13 May 1979 (HF, PJ).

PIED-BILLED GREBE (*Podilymbus podiceps*). Two records: Howell (1917) reported that H. Wright shot a female on 26 Aug 1908; one 12 Jul 1915 (CAS).

EARED GREBE (*Podiceps nigricollis*). Rare to uncommon winter visitor: recorded from 19 Sep to 13 May. Linton (1908) noted large flocks Dec 1907 to Mar 1908.

WESTERN GREBE (*Aechmophorus occidentalis*). Rare winter visitor: seven modern records from 8 Oct to 21 Apr. Howell (1917) reported that C.B. Linton had seen this species at different times in the winter, although Linton (1909) does not mention them.

NORTHERN FULMAR (*Fulmarus glacialis*). Three records: one 2 Dec 1972 no details (LJ); one found dead on beach at Mosquito Cove 5 May 1974 (WC, RS); one off NOTS Pier 5 Apr 1981 (HF, BJ).

SOOTY SHEARWATER (*Puffinus griseus*). Three records: Miller (1936) reported a raft of 200 just west of the Island on 31 Jul 1935; one 0.4 km offshore near Pyramid Point 10 Jul 1974 (LJ); one viewed from several meters in Seal Cove 17 May 1980 (HF, PJ).

ASHY STORM-PETREL (*Oceanodroma homochroa*). One record: Miller (1936) reported this species attracted to his ship at Pyramid Cove on 30 Aug 1935.

BLACK STORM-PETREL (*O. melania*). Two possible records: Grinnell (1897a) reported hearing storm-petrels at night in Mosquito Cove sometime between 28 Mar and 7 Jun 1897 (he listed this observation under *O. melania*); Miller (1936) reported them about the ship at night while at Pyramid Cove in Jul or Aug 1935.

RED-BILLED TROPICBIRD (*Phaethon aethereus*). Rare regular summer and fall visitor: there are at least 11 records from 27 Jul to 21 Oct, with four being the highest number observed at one time. Most sightings are from Pyramid Cove which is regularly visited by pelagic bird watchers.

BROWN PELICAN (*Pelecanus occidentalis*). Very common to abundant from Jul to Mar, common Mar to Jul. No breeding records. Highest count is roughly 1800 reported by Briggs et al. (1981) in Oct 1977 during a circumnavigational count.

DOUBLE-CRESTED CORMORANT (*Phalacrocorax auritus*). Fairly common year-round but no breeding records: 12 modern records from 17 Nov to 30 Jul. Linton (1908) reported a flock of 200 or more 5 Feb 1907 and listed them as fairly common. Possibly overlooked in large flocks of Brandt's Cormorants. Eggs collected by Babcock 3 May 1914 (WFVZ) and labeled as Double-crested cannot be positively identified (Kiff pers. coum.).

BRANDT'S CORMORANT (*P. penicillatus*). Abundant year-round, breeds in small numbers. Most numerous Jan to Apr when large feeding flocks of up to 4550 have been recorded. Nesting records: NW coast, small numbers, 1907 (Linton 1908); Seal Cove, nest with young, 9 Apr 1972 (Leatherwood and Coulombe 1972); Bird Rock, 15 nests; Castle Rock, 1 nest; Seal Cove 6 nests, all 10 Jul 1974 (LJ); Castle Rock, 1 nest 8 May 1975 (LJ); Seal Cove, 2 nests; south of Mail Pt., 4 nests; east end of the active airfield, 3 nests, all 15 May 1976 (RC); and Seal Cove, 12 nests 18 Jul 1975 (LJ).

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PELAGIC CORMORANT (*P. pelagicus*). Uncommon year-round, no breeding records. Breninger (1904) said "they were reported to have nested," but he furnished no evidence.

GREAT BLUE HERON (*Ardea herodias*). Uncommon year-round visitor. No breeding records.

GREAT EGRET (*Casmerodius albus*). Two records: one 27 Dec 1972 (JLa); one 4 Nov 1976 (PJ).

SNOWY EGRET (*Egretta thula*). One record: three 9 Sep 1972 (LJ); two the next day (JL) at the opposite end of the Island.

TRICOLORED HERON (*E. tricolor*). One record: one 20 May 1981 (WE).

CATTLE EGRET (*Bubulcus ibis*). Regular fall-winter visitor: recorded from 13 Oct to 19 Mar. First recorded 2 Nov 1973 (PJ). Highest single count, 21 on 13 Oct 1976 (LJ).

GREEN-BACKED HERON (*Butorides striatus*). One record: one 12 Sep 1974 (LJ).

BLACK-CROWNED NIGHT-HERON (*Nycticorax nycticorax*). Three records: 11 on 24 Aug 1894 (Mearns unpubl. notes); one adult 17 Jul 1972 at Wilson Cove Pier (PJ); one subadult 16 Sep 1981 (KH).

[FLAMINGO (*Phoenicopterus?*). One tentative record: one near Mosquito Cove 17 Nov 1976 (DG). No other details but no doubt an escapee.

BRANT (*Branta bernicla*). One record: two 13 Apr 1973 (PJ).

GREEN-WINGED TEAL (*A. crecca*). Two records: one collected 13 Feb 1903 by Breninger (FMNH); one 24 Aug 1979 (HF, PJ).

MALLARD (*A. platyrhynchos*). Two records: one male 15 Nov. 1978 (LJo); one male 21 and 23 April 1981 (WE).

NORTHERN PINTAIL (*A. acuta*). Ten fall records from 5 Sep to 1 Nov and one spring record on 4 Apr 1915 (Howell 1917). Highest count 32 on 21 Oct 1978 (PJ).

BLUE-WINGED TEAL (*A. discors*). One record: one male 19 Mar 1979 (PJ).

CINNAMON TEAL (*A. cyanoptera*). Rare to uncommon migrant: recorded in the fall from 8 Aug to 22 Sep and in the spring from 14 Feb to 3 May.

NORTHERN SHOVELER (*A. clypeata*). One record: two females 13 and 21 Oct 1978 (PJ).

AMERICAN WIGEON (*A. americana*). Eight fall records from 22 Sep to 15 Nov. First recorded 22 Sep 1976 (LJ).

REDHEAD (*Aythya americana*). One record: one 1-4 Jun 1981 (HF, BJ). This is the second Channel Islands record.

RINGED-NECKED DUCK (*A. collaris*). One record: one 8 Oct 1980 (GM et al.).

LESSER SCAUP (*A. affinis*). One record: one female 21 Oct 1978 (PJ).

SURF SCOTER (*Melanitta perspicillata*). Irregularly recorded winter-spring visitor: recorded from 2 Nov to 30 Apr. Recorded by Linton (1909) in 1908 (no date).

WHITE-WINGED SCOTER (*M. fusca*). One record: four on 16 Sep 1979 near shore (PJ).

RED-BREASTED MERGANSER (*Mergus serrator*). Rare winter-spring visitor: six records from 25 Nov to 11 Apr.

RUDDY DUCK (*Oxyura jamaicensis*). Four records: three 12 Oct 1978 (PJ); one 24 Aug 1979 (HF); one 8 Oct 1980 (GM et al.); one 17 Sep 1981 (KH).

TURKEY VULTURE (*Cathartes aura*). Uncommon visitor: 18 records from 27 Feb to 3 Nov but never more than 1 individual seen at once. First recorded 25 May 1968 (MC, JD). Not recorded on the other Channel Islands.

OSPREY (*Pandion haliaetus*). Formerly a common breeder (Grinnell 1897a; Breninger 1904; Linton 1908; Howell 1917; Willett 1912, 1933), now a rare visitor. Two modern records: one 13-20 Oct 1975 (RC); one 13 Jun 1978 remained 3 weeks (JLa). SCI had the largest breeding population off the coast of California with 20 active nests found in 1907 (Linton 1908). Kiff (1980) reported that the last nest record was for 26 Mar 1927 and that the species was declining and may have ceased to breed by 1930. Persecution by humans, particularly shooting by fishermen, appears to have led to their decline, although Kiff (1980) speculated that "some deleterious change in food supply" could also have contributed to the Osprey's extirpation as a nester on the Channel Islands.

BLACK-SHOULDERED KITE (*Elanus caeruleus*). Two records: two 9 Sep 1981 (JL); the original two were apparently still present on 5 Nov 1981 when a total of four were seen (KH).

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BALD EAGLE (*Haliaeetus leucocephalus*). Once a fairly common resident but now extirpated (Grinnell 1897, Linton 1908, Howell 1917). The last record was for 26 Mar 1927 when three or more pairs were reported to be on the Island (Kiff 1980). The species certainly did not survive through the 1950s on the Channel Islands, but the date of its demise on SCI is not documented. Between 1 Nov 1976 and 24 Aug 1978 one adult male, two adult females and one immature were released on the Island by Dave Garcelon in an attempt to reestablish them on SCI. The adult male and one of the adult females were recaptured and removed because they did not forage on their own. The other two birds left the Island soon after release and were not seen again.

NORTHERN HARRIER (*Circus cyaneus*). Rare fall-winter visitor: recorded from 21 Oct to 14 Apr. First recorded 3 Nov 1973 (LJ). Highest count was four on 31 Oct 1981 (KH).

SHARP-SHINNED HAWK (*Accipiter striatus*). Four records: several in canyons near Mosquito Cove Dec 1908 (Linton 1909); one collected by Sefton 13 Dec 1925 (SDNHM 10183); one 9 May 1974 (WC, RS); one 17 Jan 1979 (PJ, JLa).

COOPER'S HAWK (*A. cooperii*). One record: one 8 Apr 1979 (PJ).

RED-TAILED HAWK (*Buteo jamaicensis*). Rare throughout the year, two breeding occurrences: Linton (1908) noted that several pairs were nesting on the Island in 1907, but gave no details; an adult was observed feeding a recently fledged immature bird (determined by plumage) in Cave Canyon 28 Jun 1980 (HF).

[**GOLDEN EAGLE** (*Aquila chrysaetos*)]. Two tentative records: Mearns (unpubl. notes 1894) lists this species in his SCI notes for 23-28 Aug 1894, but did not include it in his published account of 1907 or give any details; a Navy research team, working with falcons, reported seeing a subadult on 6 Nov 1974 but gave no conclusive description.

AMERICAN KESTREL (*Falco sparverius*). Common resident. Apparently much more numerous at present since they were not recorded by Grinnell (1897a) or Mearns (unpubl. notes) and were reported as occasional by Linton (1908). Fledglings seen as early as 29 Apr (PJ). An index of the current population was obtained on 2 Jan 1980 when 70 were counted during a census along all maintained roads from Mt. Thirst to the north end of the Island.

MERLIN (*F. columbarius*). Three records: two seen together 30 Mar to 11 Apr 1915 (Howell 1917); one 19 Sep 1978 (PJ); one 4 Dec 1979 (KH).

PEREGRINE FALCON (*F. peregrinus*). Formerly a rare resident (Grinnell 1897, Breninger 1904, Mearns 1907, Linton 1908, Howell 1917), now a rare migrant. Five modern records: one 13 Nov 1979 (PJ); one 4 Dec 1979 (KH); one adult 17 Oct 1980 (KH); one 22 Apr 1981 (WE, HF, PJ); a different individual 23 Apr 1981, (EC, WE). There are no specific nest records, however, reports indicate that one or two pairs were nesting prior to 1915 when the last known observation of resident peregrines was recorded (Kiff 1980). Kiff attributes the decline to pesticide DDE.

CHUKAR (*Alectoris chukar*). Fairly common introduced resident since 22 Aug 1960 when the California Department of Fish and Game released 176.

GAMBEL'S QUAIL (*Callipepla gambelii*). Common introduced resident. Probably brought to the Island from Banning, California, about 1912, when 10 dozen were released (Huey 1932).

CALIFORNIA QUAIL (*C. californica*). Introduced, but no longer present. Grinnell (1897a) saw 20 and took 6 specimens. He was told that 12 dozen were released 10 years prior to his visit. No other records.

VIRGINIA RAIL (*Rallus limicola*). One record: one 19 Sep 1975 at Wilson Cove Canyon (LJ).

SORA (*Porzana carolina*). Four records: one partially eaten remains 1908 (Linton 1908); one immature 21 Sep 1975 (LJ, JLa); one adult 24 Jan 1979 (PJ); one immature 22 Sep 1981 (WE, HF, BJ).

AMERICAN COOT (*Fulica americana*). Rare fall, spring visitor: four fall records from 19 Sep to 16 Nov and two spring records 20 Mar 1979 and 8 May 1981. First recorded 20 Sep 1975 (LJ).

BLACK-BELLIED PLOVER (*Pluvialis squatarola*). Fairly common to common migrant and winter visitor. Numbers reduced in May and June, but a few are present all year.

LESSER GOLDEN-PLOVER (*P. dominica*). Nine records: recorded from 21 Sep to 4 Mar. First recorded 21 Sep 1975 when 11 were seen (LJ). Highest count 18 on 18 Feb 1981 (HF, BJ).

SNOWY PLOVER (*Charadrius alexandrinus*). Fairly common: recorded from 10 Jul to 8 Apr. No breeding records. Highest count 23 on 6 Dec 1980 at West Cove (PJ).

SEMIPALMATED PLOVER (*C. semipalmatus*). Uncommon migrant: two spring records 4 May 1974 and 16 Apr 1981 and eight fall records from 24 Jul to 20 Sep.

KILLDEER (*C. vociferus*). Rare visitor: recorded from 9 Sep to 25 Mar. Highest count eight on 5 Dec 1978 (PJ).

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MOUNTAIN PLOVER (*C. montanus*). Status unclear: Breninger (1904) took the only specimen he saw (FMNH) and said a member of the SCI Wool Co. told him that they wintered in "incredible numbers." No other records.

AMERICAN BLACK OYSTERCATCHER (*Haematopus bachmani*). Rare year-round resident. Apparently breeds near Seal Cove where a pair was seen repeatedly entering and leaving a crevice on the rocky shore on 27 Apr 1975 (RC, JLa). Highest count five on 10 Apr 1981 at Eel Point (HF).

BLACK-NECKED STILT (*Himantopus mexicanus*). One record: one 6 Apr 1979, photo on file (PJ). The second record for the Channel Islands.

AMERICAN AVOCET (*Recurvirostra americana*). Three records: one 19 Sep 1975 (LJ); one 11 Sep 1980 (EC, HF, PJ); six 23 Oct 1981 (WE).

GREATER YELLOWLEGS (*Tringa melanoleuca*). Four records: apparently the same bird 12, 17, 18 Oct 1979 (HF); two 1 Oct 1980 (EC, HF, PJ); one 21 Apr 1981 (WE, HF); one 13 May 1981 (HF, BJ).

LESSER YELLOWLEGS (*T. flavipes*). Two records: apparently the same individual 19, 22, 26 Sep 1978 (PJ); one 16 Aug 1980 (PJ).

SOLITARY SANDPIPER (*Actitis solitaria*). Four records: one collected 22-29 Aug 1894 (Mearns 1907); one 10-12 Sep 1975 (PO); two 5 Sep 1979 (HF); two 12 Aug 1981 (HF).

WILLET (*Catoptrophorus semipalmatus*). Uncommon visitor: recorded from 23 Jul to 18 May.

WANDERING TATTLER (*Heteroscelus incanus*). Fairly common most of the year, numbers reduced in Jun and Jul.

SPOTTED SANDPIPER (*Actitis macularia*). Uncommon visitor: recorded from 28 Jul to 14 May. Also a specimen (LACMNH) collected 6 Jul 1939 by J. Von Bloeker.

WHIMBREL (*Numenius phaeopus*). Fairly common from Jul to Apr and rare in May and Jun.

LONG-BILLED CURLEW (*N. americanus*). Rare migrant: six fall records from 24 Jul to 28 Sep and three spring records 18 Feb to 30 Mar. First recorded 9 Sep 1972 (LJ). Highest count, 14 on 18 Feb 1981 (HF, BJ).

MARbled GODWIT (*Limosa fedoa*). Rare visitor: 12 records from 11 Sep to 8 Oct.

RUDDY TURNSTONE (*Arenaria interpres*). Fairly common visitor: recorded from 23 Jul through 20 Jun.

BLACK TURNSTONE (*A. melanocephala*). Common visitor: recorded from 14 Jul through 17 Apr.

RED KNOT (*Calidris canutus*). Two records: one 28 Jul 1973 (LJ); one 4 May 1974 (WC, RS).

SANDERLING (*C. alba*). Common to very common visitor: recorded from 26 Jul to 15 Apr.

WESTERN SANDPIPER (*C. mauri*). Rare to uncommon migrant: eight fall records 14 Jul to 19 Sep; one spring record 15 Apr 1973 (LJ); and one winter record Dec. 1908 (Linton 1909).

LEAST SANDPIPER (*C. minutilla*). Rare to uncommon migrant: ten fall records from 19 Jul to 20 Oct and one winter record in Dec 1908 (Linton 1909).

BAIRD'S SANDPIPER (*C. bairdii*). Rare fall migrant: recorded from 4 Aug to 11 Sep.

PECTORAL SANDPIPER (*C. melanotos*). Rare fall migrant: eight records from 11 Sep to 8 Oct.

DUNLIN (*C. alpina*). Four records: two 29 Dec 1975 (RC); seven 20 Oct 1976 (LJ); seven 8 Dec 1976 (PJ); one 28 Nov 1980 (PJ).

SHORT-BILLED DOWITCHER (*Limnodromus griseus*). Seven fall records from 24 Aug to 20 Oct.

LONG-BILLED DOWITCHER (*L. scolopaceus*). Five records: one flock seen and one collected by Mearns 27 Aug 1894 (unpubl. notes); feather remains found 2 Nov 1975 (LJ); one 5 Dec 1978 (PJ); one 8 Oct 1980 (GM et al.); one 21 Oct 1981 (HF, PJ).

COMMON SNIPE (*Gallinago gallinago*). Four records: one 26 May 1979 (PJ); three 27 Aug 1980 (EC, HF); one 11 Sep 1980 (EC, HF, PJ); one 8 Oct 1980 (GM et al.).

WILSON'S PHALAROPE (*Phalaropus tricolor*). Two records: one 28 Jul 1973 (LJ); one 11 Sep 1980 (EC, HF, PJ).

RED PHALAROPE (*P. fulicarius*). One or two records: collected 22-29 Aug 1894 (Mearns 1907); two phalaropes seen at a distance 8 Dec 1976 were thought to most likely be *P. fulicarius* because of the date (LJ).

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POMARINE JAEGER (*Stercorarius pomarinus*). Two records: one adult 18 Feb 1981 (EC, WE); one 24 Sep 1981 (WE).

PARASITIC JAEGER (*S. parasiticus*). Three records: one 9 Sep 1976 (LJ); one adult light phase 13 Oct 1976 (LJ); one imm. 20 Oct 1976 (LJ).

[LAUGHING GULL (*Larus atricilla*)]. Two tentative records: one 31 Jul 1980 and one 16 Aug 1980 (PJ). Both appeared to be adults with solid dark wing tips, solid black head and all white tail. The possibility exists that they were Franklin's Gulls as bill and body size were not noted and Franklin's are more numerous off the southern California coast.

BONAPARTE'S GULL (*L. philadelphia*). Five records: a wing was found 5 May 1974 (WC, RS); one adult 19 Dec 1976 (LJ); one adult 20 Apr 1981 (BJ); four 4 Dec 1981 (BJ); another wing found 19 Feb 1982 (HF).

HEERMANN'S GULL (*L. heermanni*). Very common visitor Jul through Feb. Numbers reduced Mar through May. No Jun records.

MEW GULL (*L. canus*). One record: nine 10 Dec 1976 including four subadults (LJ).

RING-BILLED GULL (*L. delawarensis*). Three records: one immature 26 Mar 1915 (Howell unpubl. notes); five 1 Nov 1975 including adults and subadults (LJ); one 8 Oct 1980 (RW).

CALIFORNIA GULL (*L. californicus*). Abundant in winter: recorded from 27 Nov to 1 Apr. Highest count was an estimated 7000 along 3 km of east shore 2 Mar 1979 (PJ).

HERRING GULL (*L. argentatus*). Six records: two 5 Apr 1915 (Howell 1917); one 10-12 Sep 1975 (PO); 40 on 9 Nov 1975 (PJ); five 30 Dec 1975 (RC); one 4 Nov 1976 (PJ); two 15 Nov 1978 (PJ).

THAYER'S GULL (*L. thayeri*). One record: one first-year plumaged bird 10 Dec 1976 (LJ).

WESTERN GULL (*L. occidentalis*). Very common to abundant resident. Nests at: Mail Point (23 nests on 13 Jun 1979, PJ); Seal Cove (estimate 20 nests 14 Jun 1980, PJ); Coast NW of Cave Canyon (1 nest 9 Jun 1973, LJ); Bird Rock (38 nests 17 May 1980, HF, PJ). Highest single day count was 350 birds during circumnavigation 18 Jul 1975 (LJ).

GLAUCOUS-WINGED GULL (*L. glaucescens*). Rare winter-spring visitor: six records from 18 Feb to 11 Apr.

BLACK-LEGGED KITTIWAKE (*Rissa tridactyla*). Five records: one 4 May 1974 found oiled and dead on the beach at China Canyon (WC, RS); three immature 28 May 1975 (LJ); one immature 1 Apr 1977 (GK, LS); one immature 17 Apr 1977 (GK, LS); one 14 Feb 1978 (PK).

CASPIAN TERN (*Sterna caspia*). Three records: possibly the same individual on 9 Aug 1980 and 27 Aug 1980 at same location (HF); two 20 Jun 1981 (KH, BJ); two 28 Jul 1981 (HF).

ROYAL TERN (*S. maxima*). Fairly common visitor: recorded from 25 Jul to 28 Mar. Most numerous in fall.

ELEGANT TERN (*S. elegans*). Three records: three 16 Aug 1969 (LJ); one 9 Sep 1972 (LJ); nineteen 12 Aug 1981 (HF).

COMMON TERN (*S. hirundo*). One record: one 13 Sep 1975 (Garrett and Dunn 1981).

FORSTER'S TERN (*S. forsteri*). One record: one 28 Mar 1975 (LJ).

COMMON MURRE (*Uria aalge*). One found beached 5 Aug 1981 which had died much earlier (PJ).

XANTUS' MURRELET (*Synthliboramphus hypoleucus*). Rare breeder. Six records: one specimen secured in Dec 1908 by Linton (1909); seen in the summer 1912 by H. Wright (Willett 1912); two adults with two downy young just off China Point 27 Jul 1968 (GM); two adults with one chick north of Wilson Cove (LJ); twitter calls, possibly of this species, heard at Seal Cove on 2 and 15 April 1977 and unsuccessful nest search made of China Point and Seal Cove (GK, LS). One found dead on beach at Pyramid Cove 17 May 1980 (HF, PJ). The only definite breeding record is by Hunt, Pitman and Jones (1980: 462) who reported finding an egg shell of a Xantus' Murrelet on 11 Jun 1977 that had hatched earlier in the season. The egg was in a crevice in Seal Cove. They further stated that "the almost insignificant Murrelet population on SCI is probably held in check by the abundant terrestrial predators and the lack of offshore rocks."

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ANCIENT MURRELET (*S. antiquus*). One record: several seen and two collected Nov and Dec 1908 (Linton 1909).

CASSIN'S AUKLET (*Ptychoramphus aleuticus*). Four historical records: one or more specimens taken (Cooper 1870); one specimen taken 25 Jan 1889 (Townsend 1890); Breninger (1904) reports that "along the shores and on the water, dead Auklets were everywhere" (he could not account for the mortality among *P. aleuticus*); seen frequently in 1907 near shore, especially common that year on the West Coast (Linton 1908).

RHINOCEROS AUKLET (*Cerorhinca monocerata*). One record: Linton (1909) collected two specimens and found several skeletons on beach in 1908.

ROCK DOVE (*Columba livia*). Rare throughout the year. First recorded 28 Jul 1973 (PJ).

BAND-TAILED PIGEON (*C. fasciata*). Rare spring migrant, casual in fall: eight spring records 9 Apr to 8 Jun and three fall records 9 Sep to 18 Oct. First recorded May 1968 (MC, JD).

WHITE-WINGED DOVE (*Zenaidura asiatica*). Rare migrant: 10 fall records from 28 Aug to 8 Nov; two seen 17 May 1980 (TO). First recorded 9 Sep 1972 (LJ).

MOURNING DOVE (*Z. macroura*). Common breeding resident.

COMMON BARN-OWL (*Tyto alba*). Uncommon year-round, probably breeds. Cody and Diamond (unpubl. notes) reported that "Bob DeLong found them nesting in a barn at the old air strip" but gave no other details.

BURROWING OWL (*Athene cunicularia*). Uncommon fall-winter resident, one breeding record. Recorded from 28 Sep to 10 Mar and several young reported in a burrow in Larkspur Canyon during summer, 1975 (RB).

LONG-EARED OWL (*Asio otus*). In Dec 1908, Linton (1909) secured one specimen and saw three more in wooded canyons.

SHORT-EARED OWL (*A. flammeus*). Two records: one 3 Mar 1979 (PJ, JLa); one 28 Nov 1980 (PJ).

COMMON POORWILL (*Phalaenoptilus nuttallii*). Three records: Grinnell (1897) reported hearing poorwills each evening 30 Mar to 2 Apr at Pyramid Cove, with one female specimen secured on 31 Mar; one 14 Mar 1974 (JL); one 24 Mar 1981 (PJ).

VAUX'S SWIFT (*Chaetura vauxi*). Two records: three 22 Sep 1978 (PJ, JLa); one 21 Oct 1981 (HF, PJ).

WHITE-THROATED SWIFT (*Aeronautes saxatalis*). Fairly common: recorded from 19 Feb to 29 Nov, probably breeds. Grinnell (1897a) observed swifts entering crevices west of Pyramid Cove, and said they probably nested there. Linton (1908) observed birds entering crevices in the cliffs near Wilson Cove on 7 Mar 1907. More recent indications of breeding are: 2 May 1974, mating activity observed near Eagle Canyon (WC, JLa, RS); two seen copulating near Seal Cove 30 Apr 1980 (PJ).

ANNA'S HUMMINGBIRD (*Calypte anna*). Ten records from 15 Mar to 12 Feb. No breeding records, but Howell (1917) observed one at his skinning table collecting bits of cotton on 15 Mar 1915.

COSTA'S HUMMINGBIRD (*C. costae*). Four spring records: one adult male 30 Mar 1897 (Grinnell 1897); one 24-27 May 1968 (MC, JD); one male mist netted 3 May 1974 (WC, RS); one adult male 29 Apr 1981 (PJ).

CALLIOPE HUMMINGBIRD (*Stellula calliope*). One record: one adult male 3 May 1974, netted and released 5 May 1974, photo on file (WC, RS).

RUFIOUS HUMMINGBIRD (*Selasphorus rufus*). Two records: one adult male 1 May 1974 (WC, RS); one male 12 Feb 1981 (EC, WE).

ALLEN'S HUMMINGBIRD (*S. sasin*). Fairly common resident. Nesting records range from 28 Mar to 10 May. The race *sedentarius* is reportedly present year-round but only one winter record is known: five 10 Dec 1976 (LJ). Either it is very inconspicuous in winter and/or a portion of the population departs.

BELTED KINGFISHER (*Ceryle alcyon*). Uncommon fall, winter resident: recorded from 25 Jul to 21 Apr.

LEWIS' WOODPECKER (*Melanerpes lewis*). One record: one 8 Apr 1972 (Leatherwood and Coulombe 1972).

ACORN WOODPECKER (*M. formicivorus*). Three records: two 19 Sep 1978 (PJ); four 21 Oct 1978 (PJ); one 24 Oct 1981 (WE).

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RED-BREASTED SAPSUCKER (*Sphyrapicus ruber*). One record: two imm. apparently collected above Mosquito Cove 11 Oct 1907 (Linton 1908). The numerous drilling holes currently found on oak and cherry trees indicate that sapsuckers may visit the Island more regularly than records reflect.

NORTHERN FLICKER (*Colaptes auratus*). Uncommon visitor: red-shafted type recorded regularly from 20 Sep to 22 Apr; one yellow-shafted seen 18 Oct to 3 Nov 1976 (RM).

OLIVE-SIDED FLYCATCHER (*Contopus borealis*). Three records: one 2 May 1974 (WC, RS); four 10-12 Sep 1975 (PO); one 14 Sep 1980 (KH).

WESTERN WOOD-PEWEE (*C. sordidulus*). Uncommon migrant: recorded from 9 Apr to 4 Jun in spring and 15 Jul to 22 Sep in fall.

WILLOW FLYCATCHER (*Empidonax traillii*). Six records: three fall records 8 to 19 Sep and three spring records 2 to 13 May. First recorded 2 May 1975 (WC, RS).

HAMMOND'S FLYCATCHER (*E. hammondi*). Five records: one collected 9 Apr 1915 by L. Huey (specimen UCLA); one 14 Apr 1973 (LJ); one each on 11 and 12 Sep 1974 (LJ); one 1 Oct 1980 (EC, HF, PJ).

DUSKY FLYCATCHER (*E. oberholseri*). One record: one 23 Apr 1981 (EC, WE).

GRAY FLYCATCHER (*E. wrightii*). Eight spring records from 19 Apr to 12 May. First recorded 8 May 1974 (WC, RS).

WESTERN FLYCATCHER (*E. difficilis*). Fairly common migrant and summer resident: recorded from 1 Apr to 1 Oct. Most numerous in eastern wooded canyons where up to 20 have been counted in Eagle Canyon in one day (10 Jun 1973, LJ). Breeding behavior has been reported by Grinnell (1897a), Linton (1908) and Jones (1975) but no nests or young have been reported. Once thought to be a separate species (*E. insulicola*) on the California Channel Islands (Oberholser 1897), it was soon rejected (Grinnell 1905) and relegated to the subspecific status *E. d. insulicola* (Brodkorb 1949).

BLACK PHOEBE (*Sayornis nigricans*). Uncommon in fall, rare in spring and winter: recorded from 11 Sep to 28 Apr. Breeding status uncertain. The only evidence of nesting was an unfinished nest fastened to the side of a cave on 20 Mar 1907 (Linton 1908).

SAY'S PHOEBE (*S. saya*). Fairly common Oct through Nov, uncommon in winter and spring: recorded from 14 Sep to 11 Apr and collected 6 Jul 1939 by G. Willett (LACMNH).

ASH-THROATED FLYCATCHER (*Myiarchus cinerascens*). Uncommon in fall from 9 Jul to 12 Sep; rare in spring from 29 Apr to 9 May. One *Myiarchus* flycatcher, thought to be an Ash-throated, was seen 3 Jan 1980 (PJ).

TROPICAL KINGBIRD (*Tyrannus melancholicus*). One record: one imm. 13 Oct 1976 (LJ).

CASSIN'S KINGBIRD (*T. vociferans*). Five records: two 27 Jul 1973 (LJ); one 10 Aug 1973 (PJ); two 12 May 1979 (PJ); one 13 May 1979 25 km from preceding record (HF); one 29 Jul 1981 (HF).

WESTERN KINGBIRD (*T. verticalis*). Uncommon fall, spring migrant: four records 27 Jul to 9 Sep and seven records 3 Apr to 14 May.

EASTERN KINGBIRD (*T. tyrannus*). Three records: one 22 Sep 1976 (LJ); one 13 May 1979 (PJ); one 24-26 May 1980 (JLa).

HORNED LARK (*Eremophila alpestris*). Abundant resident. The resident race, *insularis*, is endemic to the Channel Islands. It is probably the most numerous breeding bird on SCI. The status of migrant races on the Island is not clear.

TREE SWALLOW (*Tachycineta bicolor*). Three records: three 30 Aug 1978 (PJ); 35 on 26 Sep 1978 (PJ); one 12 Mar 1981 (HF).

VIOLET-GREEN SWALLOW (*T. thalassina*). Rare migrant: six records from 25 Feb to 9 Apr.

NORTHERN ROUGH-WINGED SWALLOW (*Stelgidopteryx serripennis*). One record: One 20 Sep 1976 (LJ).

BANK SWALLOW (*Riparia riparia*). One record: one 2 May 1974 (WC, RS).

CLIFF SWALLOW (*Hirundo pyrrhonota*). Two records: two 10 Jun 1973 (LJ); ten 25 Sep 1978 (PJ).

BARN SWALLOW (*H. rustica*). Fairly common summer resident: recorded from 26 Mar to 8 Nov. Apparently breeds but the only nesting records have been one unattended nest found in 1974

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(Jones 1975) and one empty, recently-active nest found 24 Mar 1981 (BJ). Six fledglings were seen being fed by adults 9 Jun 1981 (PJ).

COMMON RAVEN (*Corvus corax*). Very common resident. Nests are frequently found in rock crevices along the coast and in canyons. Highest single count to date was 193 on 8 Sep 1976 along a 4 km stretch of road (LJ).

RED-BREASTED NUTHATCH (*Sitta canadensis*). Four records: one 22 Sep 1975 (LJ); one 7 Sep 1979 (HF, PJ); one 17 Oct 1979 (HF); one 31 May 1980 (JLa).

[**CACTUS WREN** (*Campylorhynchus brunneicapillus*)]. One tentative record: Mailliard (1918) reported that a Dr. Everman was positive that he saw several near Wilson Cove. No specimen was obtained.

ROCK WREN (*Salpinctes obsoletus*). Very common resident. There has been an apparent increase in the population since the early 1900s. Early observers (Grinnell 1897, Linton 1908, Howell 1917) all reported the Rock Wren as fairly common. Since 1972, all reports list them as common or abundant.

BEWICK'S WREN (*Thryomanes bewickii leucophrys*). Formerly very common, now extinct. Reported as a "very common" or "abundant" resident by Grinnell (1897), Linton (1908) and Howell (1917). Pacific Coast races were described by Swarth (1916). There is no record of the endemic race since George Willett collected a male at Middle Ranch on 17 Feb 1941 (LACMNH). Cody (unpubl. notes) searched and found none in 1968. A Bewick's Wren was found in Horse Beach Canyon 15 Apr 1973 (LJ). A singing male, assumed to be the same individual, was found 4 May 1974 in the same location and was mist netted, measured and photographed by R. Stewart (Stewart et al. 1974). He concluded that the bird was not the endemic race, but possibly *T. b. catalinae* from neighboring Santa Catalina Island.

HOUSE WREN (*Troglodytes aedon*). Uncommon fall-winter visitor: recorded from 15 Jul to 3 Jan. First recorded 15 Jul 1972 (PJ).

MARSH WREN (*Cistothorus palustris*). Three records: one collected 13 Nov 1939 by G. Willett (LACMNH); one 23 Sep 1976 (LJ); one 28 Sep 1978 (PJ).

GOLDEN-CROWNED KINGLET (*Regulus satrapa*). Two records: one 2 Nov 1975 (LJ); one 11 Sep 1980 (EC, HF).

RUBY-CROWNED KINGLET (*R. calendula*). Uncommon visitor: recorded from 23 Aug to 9 May; only one winter record 10 Dec 1976 (LJ). First recorded 14 Apr 1973 (LJ).

BLUE-GRAY GNATCATCHER (*Poliophtila caerulea*). Five records: one 10-12 Sep 1975 (PO); single birds on 14 Apr 1973, 23 Sep 1976, 13 Oct 1976 (LJ), and 27 Aug 1980 (EC, HF).

WESTERN BLUEBIRD (*Sialia mexicana*). One record: adult male collected Dec 1908 (Linton 1909). Unfortunately, we cannot locate this specimen.

MOUNTAIN BLUEBIRD (*S. currucoides*). Irregular winter visitor: recorded from 19 Nov to 2 Mar. Flocks of up to 50 individuals have been reported.

TOWNSEND'S SOLITAIRE (*Myadestes townsendi*). Two records: one 2 May 1974 (WC, RS); one 24 Oct 1981 (WE).

SWAINSON'S THRUSH (*Catharus ustulatus*). Rare fall, spring migrant: four spring records 9 May to 10 Jun and six fall records 9 Sep to 21 Oct.

HERMIT THRUSH (*C. guttatus*). Uncommon visitor: recorded from 8 Oct to 15 May.

AMERICAN ROBIN (*Turdus migratorius*). Rare to uncommon migrant: recorded from 21 Oct to 16 May.

VARIED THRUSH (*Ixoreus naevius*). One record: several were collected in Jan-Apr 1907 (Linton 1908).

NORTHERN MOCKINGBIRD (*Mimus polyglottos*). Fairly common resident.

SAGE THRASHER (*Oreoscoptes montanus*). Uncommon migrant: seen regularly in the fall since 1974, occasionally overwinters; one spring record 3 May 1974 (WC, RS). First recorded 9 Sep 1972 (JL, JLa).

BENDIRE'S THRASHER (*Toxostoma bendirei*). Two records: one 15 Sep 1979 (HF); one 17 Aug 1980 (PJ).

WATER PIPIT (*Anthus spinoletta*). Uncommon visitor: recorded from 6 Oct to 16 Apr.

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CEDAR WAXWING (*Bombycilla cedrorum*). Rare irregular visitor: eleven records scattered throughout the seasons.

PHAINOPEPLA (*Phainopepla nitens*). Six records: one 15 Apr 1973 (PJ); one 10-12 Sep 1975 (PO); one 13 Oct 1976 (LJ); two 25-27 Sep 1978 (PJ); one 20 Oct 1978 (PJ); two 19 Aug 1981 (BJ).

LOGGERHEAD SHRIKE (*Lanius ludovicianus mearnsi*). Uncommon resident and SCI endemic race. The Secretary of the Interior has listed this subspecies as endangered because of its low numbers and continued destruction of habitat by feral herbivores. Early nesting accounts are found in Grinnell (1897a), Linton (1908) and Howell (1917). Howell reported "young strong on the wing" by 23 Mar 1915. The population levels prior to 1973 are not well documented but have apparently declined. Howell (1917) commented that "no matter which birds we shot there always seemed to be others that came in to take their places." The current estimate of the population is 12-15 pairs (Hyde 1981).

EUROPEAN STARLING (*Sturnus vulgaris*). Abundant resident: reported as common by 1968 (MC, JC) and abundant thereafter. First sighted 5 Jun 1966 (HC).

GRAY VIREO (*Vireo vicinior*). One record: one 23 Sep 1976 (LJ).

SOLITARY VIREO (*V. solitarius*). Rare fall, spring migrant: recorded from 5 to 16 Sep and 21 Apr to 5 May. First recorded 1 May 1974 (WC, RS).

WARBLING VIREO (*V. gilvus*). Fairly common fall, spring migrant: recorded from 31 Aug to 8 Oct and 9 Apr to 15 May. First recorded 9 Sep 1972 (LJ).

TENNESSEE WARBLER (*Vermivora peregrina*). Three records: one each 12 Sep 1974, 22 Sep 1976, and 13 Oct 1976 (LJ).

ORANGE-CROWNED WARBLER (*V. celata*). Fairly common to common resident. The race *sordida* is found on the Channel Islands, Palos Verdes Peninsula and Point Loma, California, while other races are thought to reach the islands in migration. There are several reports of breeding activity but the only records of nests from SCI are by Howard (1906) who found six in 1905.

NASHVILLE WARBLER (*V. ruficapilla*). Rare fall, spring migrant: recorded from 16 Jul to 2 Nov and 14 Apr to 16 May.

VIRGINIA'S WARBLER (*V. virginiae*). Two records: four 11-13 Sep 1974 (LJ); one 16 Sep 1979 (PJ).

NORTHERN PARULA (*Parula americana*). One record: one 2 Nov 1983 (SW).

YELLOW WARBLER (*Dendroica petechia*). Uncommon fall, spring migrant: recorded from 27 Aug to 6 Oct and 28 Apr to 12 May. First recorded 29 Sep 1972 (LJ).

MAGNOLIA WARBLER (*D. magnolia*). Two records: one 11 Sep 1980 (EC, HF, PJ); one 8 Oct 1980 (GM et al.).

YELLOW-RUMPED WARBLER (*D. coronata*). The "Audubon's" type is a fairly common migrant and uncommon winter resident: recorded from 11 Sep to 2 May but most numerous in the fall. The "Myrtle" type was reported as fairly common in the winter of 1908 (Linton 1909).

BLACK-THROATED GRAY WARBLER (*D. nigrescens*). Ten fall records 9 Sep to 8 Oct and three spring records 11 to 16 Apr. First recorded 9 Sep 1972 (JL, JLa).

TOWNSEND'S WARBLER (*D. townsendi*). Uncommon fall, spring migrant: recorded from 23 Aug to 10 Nov and 14 Apr to 15 May. One winter record, Dec 1908 (Linton 1909).

HERMIT WARBLER (*D. occidentalis*). Uncommon fall, spring migrant: recorded from 7 to 22 Sep and 16 Apr to 14 May. First recorded 10 Sep 1972 (JL, JLa).

BLACKBURNIAN WARBLER (*D. fusca*). One record: one 21 Sep 1981 (HF, BJ).

PRAIRIE WARBLER (*D. discolor*). One record: one 22 Sep 1981 (WE, HF, BJ). No other Channel Island record.

PALM WARBLER (*D. palmarum*). Three records: one 26 Mar 1975 (LJ); one 31 Oct to 3 Nov 1975 (LJ); one 8 Oct 1980 (GM et al.).

BAY-BREASTED WARBLER (*D. castanea*). One record: one 9-11 Jul 1975 (KG).

BLACKPOLL WARBLER (*D. striata*). Four records: one 22 and one 23 Sep 1976 (LJ); two 22 Sep 1981 (WE, HF, BJ); one 6 Oct 1981 (HF, BJ).

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BLACK-AND-WHITE WARBLER (*Mniotilta varia*). Four records: one 10-12 Sep 1975 (PO); one female 22 Apr 1981 (WE, PJ); one male 1 Jun 1981 (BJ); one male 31 Oct 1981 (KH).

AMERICAN REDSTART (*Setophaga ruticilla*). Five records: two 11, 12 Sep 1974 (LJ); six 10-12 Sep 1975 (PO); two 19-22 Sep 1975 (LJ); two 22-Sep 1976 (LJ); one 11 Sep 1980 (EC, HF, PJ).

NORTHERN WATERTHRUSH (*Seiurus noveboracensis*). Rare fall, spring migrant: recorded six times in the fall from 11 Sep to 8 Oct and once in the spring, 1 Apr 1977.

MACGILLIVRAY'S WARBLER (*Oporornis tolmiei*). Rare fall, spring migrant: recorded from 22 Apr to 24 May and 12 to 27 Sep. First recorded sometime during 24-27 May 1968 (MC, JD).

COMMON YELLOWTHROAT (*Geothlypis trichas*). Five records: one 23 Mar 1915 (Howell 1917); one 11-13 Sep 1974 (LJ); two 22 Sep 1976 (LJ); one 8 Oct 1980 (GM et al.); three 22 Sep 1981 (WE, HF, BJ).

WILSON'S WARBLER (*Wilsonia pusilla*). Fairly common fall, spring migrant: recorded from 20 Aug to 22 Sep and 14 Apr to 20 May. The first record was 20 May 1972 (PJ).

CANADA WARBLER (*W. canadensis*). Two records: one male 20 Oct 1974 (JLa); one male 3 Nov 1976 (PJ).

YELLOW-BREASTED CHAT (*Icteria virens*). Three records: one 10-12 Sep 1975 (PO); one 19 Sep 1975 (LJ); one 21 Apr 1981 (WE, HF, BJ).

SUMMER TANAGER (*Piranga rubra*). One record: one female collected 11 Oct 1907 (Linton 1908).

WESTERN TANAGER (*P. ludoviciana*). Fairly common fall, spring migrant: modern records range from 29 Jul to 20 Oct and 21 Apr to 9 Jun. Also recorded 23 Mar 1915 (Howell 1917).

ROSE-BREASTED GROSBEAK (*Pheucticus ludovicianus*). Two records: one singing male 9 Jun 1973 (LJ); one imm. 27 Aug 1980 (EC, HF).

BLACK-HEADED GROSBEAK (*P. melanocephalus*). Uncommon fall, spring migrant: recorded from 29 Jul to 27 Sep and 21 Apr to 11 Jun. First recorded 9 Sep 1972 (JL).

BLUE GROSBEAK (*Guiraca caerulea*). Four records: two 21 Apr 1914 (Kimball 1922); one 13 Sep 1974 (LJ); and two 23 Sep 1976 (LJ); one female 8 Oct 1980 (GM et al.).

LAZULI BUNTING (*Passerina amoena*). Rare to uncommon fall, spring migrant: recorded from 6 Sep to 13 Oct and 14 Apr to 9 Jun. First recorded 14 Apr 1973 (LJ).

INDIGO BUNTING (*P. cyanea*). Four records: one 3, 5 May 1974 (WC, RS); one 15 May 1976 (PU); two 16 Sep 1979 (HF); one 8 Oct 1980 (GM et al.).

[DICKCISSEL (*Spiza americana*)]. Two tentative records: one seen at a distance and heard 19 Sep 1975 and three heard 23 Sep 1976 "but no positive I.D." (LJ).

GREEN-TAILED TOWHEE (*Pipilo chlorurus*). Rare migrant: eight fall records from 8 Sep to 9 Nov and one spring record 27 Apr 1981 (EC, WE). First recorded 30 Sep 1973 (JLa).

RUFIOUS-SIDED TOWHEE (*P. erythrophthalmus*). The Channel Islands endemic race, *clemenciae*, was formerly a resident but apparently is now extirpated from SCI. Grinnell (1897a) collected 16 specimens from 28 Mar to 7 Jun 1897 and considered it "not uncommon." He later reported on their taxonomic status (Grinnell 1897b). Others collected specimens but no nests or young were reported. Documentation of the demise of the resident race is unavailable because of the lack of observers from 1915 to 1968 and because of the occurrence of migrant subspecies on SCI. One bird collected by Linton in 1908 was of the race *P. e. oregonus*; presumably most of the 12 modern records, observed mainly in the fall, are also of this migrant race. Possible modern sightings of the endemic race are: 2 males in Bryce Canyon 9 Apr 1972 (Leatherwood and Coulombe 1972); one singing male 15 Apr 1973 in Horse Beach Canyon (LJ); and one 9-11 Jul 1975 (KG, no details). As with the Bewick's Wren and Song Sparrow, the most likely reason for the towhee's absence is the widespread destruction of the island's shrub habitat by feral herbivores.

AMERICAN TREE SPARROW (*Spizella arborea*). One record: one 2 Nov 1975 (LJ).

CHIPPING SPARROW (*S. passerina*). Uncommon summer resident: recorded from 27 Mar to 29 Nov. One winter record: two specimens taken 2 Dec 1908 (Linton 1909). Most numerous in wooded canyons where breeding behavior and fledglings have been observed but no nests found.

CLAY-COLORED SPARROW (*S. pallida*). One record: one 12 Sep 1974 (LJ).

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BREWER'S SPARROW (*S. breweri*). Three records: two 11 Sep 1974 (LJ); fifteen 10-12 Sep 1975 (PO); four imm. 1 Oct 1980 (EC, HF).

BLACK-CHINNED SPARROW (*S. atrogularis*). Four records: one female collected 5 Dec 1908 (Linton 1909); one heard 2 May 1974 (RS, WC); one 23 Sep 1976 (LJ); one 23 Aug 1979 (PJ).

VESPER SPARROW (*Poocetes gramineus*). Rare to fairly common visitor: recorded from 1 Oct to 9 Apr. First recorded 26 Mar 1975 (LJ).

LARK SPARROW (*Chondestes grammacus*). Rare fall, spring migrant: recorded from 11 to 25 Nov and 21 Apr to 13 May. First recorded 11 Sep 1972 (JL).

BLACK-THROATED SPARROW (*Amphispiza bilineata*). One record: one 9 Nov 1980 (BJ).

SAGE SPARROW (*A. belli*). The endemic race, *clementae*, is an uncommon Island resident, restricted primarily to the boxthorn-cactus covered lower western terraces of SCI. The Secretary of the Interior has listed it as threatened because of habitat destruction by feral herbivores. Early accounts (Grinnell 1897, Howell 1917) describe them as common. Hyde (1981) estimated the population at 250-300 individuals. One female of the Great Basin race, *A. b. nevadensis*, was collected by G. Willett on 25 Nov 1939 (LACMNH).

LARK BUNTING (*Calamospiza melanocorys*). Two records: one male 10 Jun 1973; one 8 Sep 1976 (LJ).

SAVANNAH SPARROW (*Passerculus sandwichensis*). Fairly common migrant and winter visitor: recorded from 13 Aug to 23 Apr.

FOX SPARROW (*Passerella ilica*). Uncommon visitor: recorded from 23 Sep to 18 Apr.

SONG SPARROW (*Melospiza melodia*). The race *clementae*, endemic to the Channel Islands, is now extirpated from SCI, apparently due to the loss of shrub vegetation. This race was once reported as a common or even abundant resident (Mearns unpubl. notes, Grinnell 1897, Howell 1917). Several modern records which may or may not be of the endemic race: 9-10 Jun 1962 no details (HK); two 24-27 May 1968 (MC, JD); one 9 Apr 1972 (GC); one singing male 14 Apr 1972 (LJ); one 9 Nov 1975, one 5 Nov 1976, one Sep 1978, one 19 Mar 1979, one 12 Mar 1980 (PJ); one 27 Aug 1980 (EC, HF). Two birds observed singing, one by Cody and Diamond in 1968 and the other by Lee Jones in 1973, could be individuals of the resident *clementae* race. However, Stewart and Clow, during their May 1974 visit, conducted a fairly extensive search and failed to detect any Song Sparrows. The last definite record of the resident race is a breeding female collected on 17 Feb 1941 by George Willett (LACMNH).

LINCOLN'S SPARROW (*M. lincolni*). Rare fall and spring migrant: recorded from 13 Sep to 9 Nov and 23 Mar to 4 May. Two winter records: one collected by J. C. Von Bloeker 19 Feb 1941 (LACMNH) and one 9 Dec 1976 (LJ).

GOLDEN-CROWNED SPARROW (*Zonotrichia atricapilla*). Uncommon winter visitor: recorded from 5 Oct to 9 May.

WHITE-CROWNED SPARROW (*Z. leucophrys*). Common to very common visitor: recorded from 22 Sep to 16 May.

HARRIS' SPARROW (*Z. querula*). Two records: one collected 15 Oct 1907 (Linton 1908) and one 9 Dec 1976 (LJ).

DARK-EYED JUNCO (*Junco hyemalis*). Uncommon visitor: "Oregon" Junco (subspecies group *oreganus*) recorded from 11 Sep to 14 Apr; subspecies *caniceps* recorded once on 27 Mar 1975 (LJ).

CHESTNUT-COLLARED LONGSPUR (*Calcarius ornatus*). Two records: one 16 Dec 1980 (HF); one 15, 22 Apr 1981 (EC, WE).

BOBOLINK (*Dolichonyx oryzivorus*). Six records: one 12 Sep 1974 (LJ); one 10-12 Sep 1975 (PO); one 19 Sep 1975 perhaps the same one (LJ); one 13 Oct and 20 Oct 1976 (LJ); one male 22 Jul 1979 (HF, PJ); one 11 Sep 1980 (EC).

RED-WINGED BLACKBIRD (*Agelaius phoeniceus*). Six records: one male 10 Jun 1973; one 26 Mar 1975; 65 on 2 Nov 1975 and one 22 Sep 1976 (LJ); one 11 Sep 1980 (EC, HF, PJ); one male 30 Nov 1980 (PJ).

WESTERN MEADOWLARK (*Sturnella neglecta*). Very common resident.

YELLOW-HEADED BLACKBIRD (*Xanthocephalus xanthocephalus*). Rare migrant: recorded from 14 Jul to 2 Nov. One spring record, 28, 29 Apr 1981 (HF, PJ). First recorded 14 Jul 1972 (LJ).

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RUSTY BLACKBIRD (*Euphagus carolinus*). Two records: one collected 20 Nov 1908 (Linton 1909); two 1-2 Nov 1975 (LJ).

BREWER'S BLACKBIRD (*E. cyanocephalus*). Rare to common: recorded from 10 Sep to 2 May. Recorded annually in fluctuating numbers since first being reported on 15 Dec 1972 (PJ).

BROWN-HEADED COWBIRD (*Molothrus ater*). Fairly common to common in fall especially when livestock are present, numbers reduced the rest of the year. Breeding status unknown. First recorded 17 Jul 1972 (LJ).

HOODED ORIOLE (*Icterus cucullatus*). Rare migrant: recorded from 11 Sep to 20 Oct and from 16 to 28 Apr. First recorded 11 Sep 1974 (LJ).

NORTHERN ORIOLE (*I. galbula*). Rare to uncommon migrant: recorded from 9 Aug to 19 Sep and 24 Mar to 13 May. First recorded 31 Mar 1907 (Linton 1908).

PURPLE FINCH (*Carpodacus purpureus*). Three records: one 15 Apr 1973 (LJ); one 3 May 1974 (WC, RS); one 8 Nov 1975 (PJ).

HOUSE FINCH (*C. mexicanus*). Common resident. California Channel Island birds were classified as a separate race (*clementis*) by Mearns (1898) and have been examined in some detail (Power 1979). Nevertheless, their taxonomic status remains unclear.

PINE SISKIN (*Carduelis pinus*). Two records: 22 on 8-9 Nov 1975 (PJ); eight 31 Oct to 1 Nov 1975 (LJ).

LESSER GOLDFINCH (*C. psaltria*). Uncommon migrant: ten fall records from 5 Sep to 9 Nov and two spring records 27 Mar 1975 and 11 Apr 1980. First recorded 11 Sep 1974 (LJ).

LAWRENCE'S GOLDFINCH (*C. lawrencei*). Three records: one 9-11 Jul 1975 (KG); two 14 May 1976 (PU); three 23 Sep 1976 (LJ).

AMERICAN GOLDFINCH (*C. tristis*). Two records: one 12 May 1980 and two 10 km away 13 May 1980 (HF).

HOUSE SPARROW (*Passer domesticus*). Fairly common resident of inhabited areas. First recorded 30 Mar 1915 (Howell 1917).

DISCUSSION

On San Clemente Island 248 species have been recorded, including five tentative records. There is substantial evidence to show that 31 species have bred on the island; however six of these—Bald Eagle, Peregrine Falcon, Osprey, Bewick's Wren, Rufous-sided Towhee and Song Sparrow—no longer nest on San Clemente Island. Three additional species—Barn Owl, Anna's Hummingbird and Black Phoebe—may have bred or do breed, but direct evidence is lacking. There are no major seabird colonies (see Xantus' Murrelet account for a possible explanation), but there are small numbers of nesting Brandt's Cormorant, Western Gull and Xantus' Murrelet. The only nesting shorebird is the American Black Oystercatcher.

Of the 248 taxa recorded, seven are California endemics while three others, Bewick's Wren, Loggerhead Shrike and Sage Sparrow, are endemic to San Clemente Island. The once common Island race of Bewick's Wren (*T.b. leucophrys*) is now extinct, whereas the Rufous-sided Towhee (*P.e. clementae*) and Song Sparrow (*M.m. clementae*) are still present on other California Channel Islands, but have been extirpated from San Clemente Island.

The most compelling explanation for the loss of these terrestrial species is the reduction of brushy vegetation by introduced herbivores. One only needs

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to read Grinnell's or Mearns' unpublished accounts of how abundant the Loggerhead Shrike, Rufous-sided Towhee and Song Sparrow were during their early island visits in order to appreciate how much more common woody vegetation was at that time. Mearns reported that the Song Sparrow was "the most abundant land bird of Clemente."

In addition to the loss of six resident species, significant changes in status have apparently occurred for several other species since Howell's 1917 list. The arrival of Cattle Egret, European Starling and House Sparrow is consistent with regional trends, but increases in American Kestrel and Rock Wren may be attributable to Island habitat changes. Mountain Plover, if as abundant as once reported (Breninger 1904), may have been attracted to the Island during the brief time prior to 1920 when cultivated fields were present. The arrival and dramatic rise in the starling population will assuredly affect the Island avifauna. Within an hour's time it is common to see flocks of a hundred or more starlings in the grasslands, along the rocky shore and in inhabited areas.

The proliferation of records of migrant and vagrant species beginning in 1972 is a direct result of the dramatic increase in observers and the recent attention focused on non-resident birds. This new information is particularly enlightening because over 220 of the recorded species are migratory or wintering birds, including subspecies of several resident species. Even with the increased coverage of the Island, many water birds and vagrant land birds are probably more common than this report reflects.

The Navy has undertaken measures aimed at protecting plant and animal species at San Clemente Island since the first Natural Resources Management Plan was written in 1975. The principal effort has been a continuing program to remove feral animals.

Preservation of bird species and their habitats has focused on SCI's federally-listed endangered Loggerhead Shrike and threatened Sage Sparrow. Efforts to protect and stabilize the populations of these two species have recently been formalized by R.M. Beauchamp, K. Hyde and W. Mautz in a U.S. Fish and Wildlife Service draft recovery plan for San Clemente Island endangered, threatened and candidate species. The plan calls for the following: continue research and monitoring programs to delineate critical habitat, establish distribution information, determine habitat requirements and establish baseline population level counts for both listed bird species. The plan also emphasizes the need for removal of all feral herbivores, a goal which the Navy is actively pursuing.

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