

# WESTERN BIRDS



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## THE BIRDS OF SAN CLEMENTE ISLAND

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**ABSTRACT:** From 1992 to 2004, we observed birds on San Clemente Island, as part of our work toward the recovery of the island's endangered species. We increased the island's bird list to 317 species, by recording many additional vagrants and seabirds. The list includes 20 regular extant breeding species, 6 species extirpated as breeders, 5 nonnative introduced species, and 9 sporadic or newly colonizing breeding species. For decades San Clemente Island had been ravaged by overgrazing, especially by goats, which were removed completely in 1993. Since then, the island's vegetation has begun recovering, and the island's avifauna will likely change again as a result. We document here the status of that avifauna during this transitional period of re-growth, between the island's being largely denuded of vegetation and a more natural state. It is still too early to evaluate the effects of the vegetation's still partial recovery on birds, but the beginnings of recovery may have enabled the recent colonization of small numbers of Grasshopper Sparrows and Lazuli Buntings. Sponsored by the U. S. Navy, efforts to restore the island's endangered species continue—among birds these are the Loggerhead Shrike and Sage Sparrow.

The avifauna of islands presents special opportunities for both birdwatchers and scientists alike. The California Channel Islands are renowned for their unique avifauna, both the islands as a whole and San Clemente Island (SCI) alone. SCI is the southernmost of the Channel Islands (32° 50' N, 118° 30' W; Figure 1). It lies 103 km west-northwest of San Diego and 92 km from the nearest point on the mainland (Palos Verdes), although Santa Catalina Island is only 34 km to the north.

Because the Channel Islands vary in their distance to the mainland, their ecologies differ. The theory of island biogeography suggests that immigrants from the mainland are more likely to reach the larger inshore islands (e.g., Santa Cruz and Santa Catalina), so these islands should have avifaunas more

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Figure 1. The California Channel Islands. San Clemente is the southernmost island, located approximately 90 km off the mainland.

like those of the nearby mainland than should the outlying islands (e.g., San Nicolas and San Clemente) (MacArthur and Wilson 1967, Brown and Gibson 1983). However, the degree of endemism on the Channel Islands is striking (Howell 1917, Diamond 1969, Johnson 1972). Of approximately 41 breeding landbirds on the Channel Islands, 32% (13 species) show effects of insular isolation. Twenty-one endemic subspecies have been described, typically characterized by coloration darker and bills larger than those of their mainland relatives, although the validity of some of these is doubtful or has been disproven (Johnson 1972; Table 1). Only one of the islands' endemic birds is currently ranked as a species, likely because the islands are continental rather than oceanic; that is, they lie too close to the mainland to have followed too independent an evolutionary path.

Of the eight Channel Islands, San Clemente has the most distinctive flora and fauna. Despite its relatively small size (148 km<sup>2</sup>, making it the fourth largest of the Channel Islands), SCI is home to a large number of species found only on the Channel Islands or nowhere else. There are or were 56 species or subspecies (19 terrestrial invertebrates, 1 reptile, 7 birds, and 29 plants) known from SCI that are endemic to the Channel Islands and 49 species or subspecies (30 terrestrial invertebrates, 3 birds, 2 mammals, and 14 plants) endemic to SCI alone. San Clemente Island's high level of endemism is likely due to its being more isolated from other land masses than are the other large Channel Islands.

**Table 1** Status of Birds Endemic and Nearly Endemic to the Channel Islands and San Clemente Island

Species	Scientific Name	Channel Islands	San Clemente Island
California Quail	<i>Callipepla californica catalinensis</i>	Common on Santa Catalina	—
Allen's Hummingbird	<i>Selasphorus sasin sedentarius</i> <sup>a</sup>	Common	Common
Pacific-slope Flycatcher	<i>Empidonax difficilis insulicola</i>	Common	Common
Loggerhead Shrike	<i>Lanius ludovicianus anthonyi</i>	Rare on Santa Catalina/Santa Cruz	—
Hutton's Vireo	<i>Lanius ludovicianus mearnsi</i>	—	Federally Endangered
Island Scrub Jay	<i>Vireo huttoni unitti</i>	Uncommon on Santa Catalina	—
Horned Lark	<i>Aphelocoma insularis</i>	Common on Santa Cruz	—
Bewick's Wren	<i>Eremophila alpestris insularis</i>	Abundant	Abundant
	<i>Thryomanes bewickii leucophrys</i>	—	Extinct <sup>c</sup>
	<i>Thryomanes bewickii catalinae</i> <sup>b</sup>	Common on Santa Catalina	—
	<i>Thryomanes bewickii nesophilus</i> <sup>b</sup>	Common on Santa Cruz/Santa Rosa	—
	<i>Vermivora celata sordida</i> <sup>a</sup>	Common	Common
Orange-crowned Warbler	<i>Pipilo maculatus clementae</i>	Common on Santa Catalina	Extirpated
Spotted Towhee	<i>Aimophila ruficeps obscura</i>	Common on Santa Rosa/Santa Cruz/Anacapa	—
Rufous-crowned Sparrow	<i>Amphispiza belli clementae</i> <sup>b</sup>	—	Federally Threatened
Sage Sparrow	<i>Melospiza melodia graminea</i>	Common on Santa Rosa	Extirpated
Song Sparrow	<i>Melospiza melodia graminea</i>	Extirpated on Santa Barbara	—
	<i>Melospiza melodia micronyx</i> <sup>b</sup>	Common on San Miguel	—
House Finch	<i>Carpodacus mexicanus clementis</i> <sup>b</sup>	Common	Common

<sup>a</sup>Breeds also on nearby mainland of southern California.

<sup>b</sup> Validity questionable (Phillips 1986, Patten 2001, Patten and Unitt 2002, Kaler and Unitt unpubl. data). Some other subspecies need critical restudy and quantification of their differences as well.

<sup>c</sup> Endemic to San Clemente Island.

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### SAN CLEMENTE ISLAND GEOLOGY AND GEOGRAPHY

San Clemente Island was formed as the result of volcanic uplifting approximately 12–16 million years ago (Olmstead 1958, Ward and Valensise 1996, Vedder and Howell 1980). Tectonic plate shifting and volcanic action formed the Channel Islands during the early Tertiary Period (Vedder and Howell 1980). It is thought that the northern islands (Anacapa, Santa Cruz, Santa Rosa, San Miguel) were once connected to the mainland, albeit briefly in the context of geologic time. The remaining four islands (Santa Barbara, San Nicolas, Santa Catalina, and San Clemente) have never been connected to another land mass, even when glaciations lowered sea levels (Vedder and Howell 1980).

San Clemente Island is composed predominantly of Miocene andesite and dacite, with some localized marine sedimentary deposits carried up with the island's emergence (Merifield et al. 1971). The island continues to rise at a rate of 20–40 cm per thousand years (Ridlon 1969).

Currently, SCI is 44 km long and 2.4–6.4 km wide, encompassing approximately 14,764 ha (Figure 2). Its elevation ranges from sea level to 599 m. Tectonic activity and climatic changes have been fundamental to the island's evolution (Yatsko 2000). The island consists of a central plateau incised by canyons along the western and eastern slopes (Yatsko 2000; Figure 3). The steep eastern escarpment is the up-thrust edge of the San Clemente Fault, which descends from the plateau to the Pacific Ocean (Figure 4). The west side consists of a series of more gentle marine terraces formed as a result of periodic uplifting and erosion from wave action (Vedder and Howell 1980). These marine terraces are some of the best examples of these features found along the southern California coast (USDoN 2001). SCI also has localized sand dunes and sandy beaches, produced by receding sea levels (Muhs 1980; Figure 5). The varied geologic features result in many habitat types, increasing the diversity of birds found there.

San Clemente is the driest of all the Channel Islands, receiving an average of 15.7 cm of rain per year (Olmstead 1958). Rainfall fluctuates dramatically with cycles of drought and El Niño. Rain falls typically from December to April. Temperatures range from 7° to 29° C, with frequent thick fog and relatively high humidity (67–85%), which may moderate the effects of low rainfall. Typical wind speeds average 6–18 km/hr. Fresh-water sources are limited with most water restricted to natural catchment basins in the bottoms of the larger canyons.

### THE FLORA OF SAN CLEMENTE ISLAND

*Contributed by Jonathan J. Dunn*

The semiarid climate of SCI supports a diverse array of plant communities from seasonally lush oak woodlands (*Quercus tomentella* and *Q. chrysolepis*) to stark stands of cholla cactus (*Opuntia prolifera*) and California boxthorn (*Lycium californicum*) (Figure 6). Aside from the island's endemic taxa, the flora of SCI is an ensemble of native and exotic plants largely similar to that found on the California mainland. There are 435 native and exotic plant species currently known from SCI. Of this total, 295 taxa are con-



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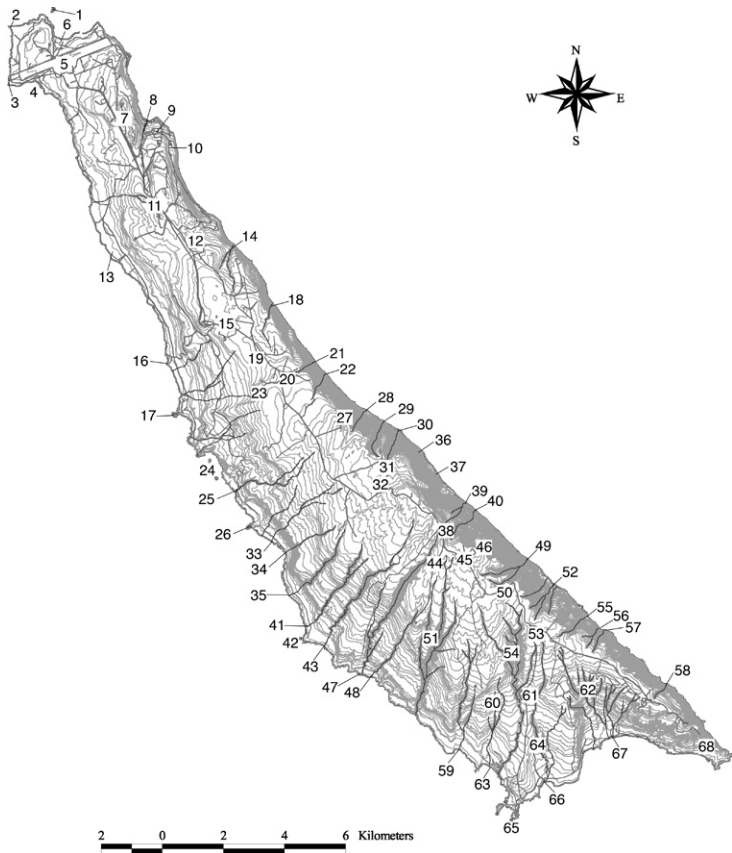


Figure 2. Detail of San Clemente Island, showing major features and sites mentioned in the text. **1**, Bird Rock; **2**, Whale Point; **3**, West Cove Point; **4**, West Cove Beach; **5**, airfield; **6**, Northwest Harbor; **7**, Chad's Bluff; **8**, Wilson Cove Canyon; **9**, Wilson Cove; **10**, Oly Locker; **11**, old nursery; **12**, eucalyptus tree; **13**, West Shore; **14**, Chamish Canyon; **15**, VC3; **16**, Fisherman's Point; **17**, Eel Point; **18**, Larkspur Canyon; **19**, Revetment; **20**, Lemon Tank; **21**, Lemon Tank Canyon; **22**, Tota Canyon; **23**, Bluff; **24**, Seal Cove; **25**, Wallrock Canyon; **26**, Mail Point; **27**, Stone Station; **28**, Burns Canyon; **29**, Horton Canyon; **30**, Twin Dams Canyon; **31**, Twin Dams ponds; **32**, Spanish Curve; **33**, Warren Canyon; **34**, Waynuck Canyon; **35**, Middle Ranch Canyon; **36**, Boulders North; **37**, Boulders South; **38**, Thirst; **39**, Thirst Canyon; **40**, Vista Canyon; **41**, Norton Canyon; **42**, Lost Point; **43**, Box Canyon; **44**, REWS Road; **45**, SHOBA gate/pond; **46**, Vista Overlook; **47**, Horse Canyon; **48**, Chukit Canyon; **49**, Eagle Canyon; **50**, Eagle Curve; **51**, Cave Canyon; **52**, Bryce Canyon; **53**, hazmat fence; **54**, China Canyon (upper); **55**, Mosquito Cove; **56**, Matriarch Canyon; **57**, Canchalagua Canyon; **58**, Knob Canyon; **59**, Kinkipar Canyon; **60**, Red Canyon; **61**, Chalk Curve; **62**, Chenetti Canyon; **63**, China Beach; **64**, Horse Beach Canyon; **65**, China Point; **66**, Horse Beach; **67**, Chenetti Beach/Cove; **68**, Pyramid Point.

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Figure 3. Horse Canyon, on San Clemente Island's southwest side; view to the east.

Photo by Jonathan J. Dunn

sidered native; the remaining 140 species are exotic, largely cosmopolitan weeds. Descriptions of the flora of SCI can be found in Trask (1904), Dunkle (1950), Raven (1963), Axelrod (1967), Philbrick (1967), Thorne (1969), Philbrick and Haller (1977), Ferguson (1979), Sward and Cohen (1980), Jorgensen and Ferguson (1984), and Kellogg and Kellogg (1994).

The current status of the flora and plant communities of SCI cannot be understood apart from the enduring effects of 150 years of grazing and agriculture (Figure 7). Exotic species such as *Bromus hordeaceus* (soft chess) and *Atriplex semibaccata* (Australian saltbush) were directly seeded for browse when the island was used for ranching. These, along with similar species, now dominate considerable areas once supporting native plant communities. Overgrazing by unchecked populations of feral goats led to severe erosion of topsoil and the destruction of most of the island's trees (Figure 8).

Six plant species on SCI are currently listed as endangered by the U. S. Fish and Wildlife Service. Several native species were extirpated from the island, such as *Dendromecon harfordii* (island tree poppy), *Senecio flaccidus* var. *douglasii* (Douglas' butterweed), and the annual grass *Dissantheium californicum*. Other species that one might expect to be common on SCI, such as *Adenostoma fasciculata* (chamise) and *Salvia mellifera* (black sage), are known today only from single localities. Entirely undescribed plant communities may have been lost during the ranching era. Reports from the late 1800s describe groves of malva rosa up to 12 feet tall that stretched for miles

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(Raven 1963). This species, the island mallow, *Lavatera assurgentiflora* ssp. *glabra*, is now known to occur naturally in only five locations, totaling fewer than 100 individuals. The ultimate removal of the feral goats in 1993 has relaxed some of the pressure on the native flora. Many species once considered at risk of extirpation, such as *Calystegia macrostegia amplissima* (island morning glory) and *Castilleja grisea* (island paintbrush), have recovered and are thriving. Thus many of the island's plant communities can be considered to be in a period of early successional development following a prolonged period of disturbance.

The plant communities formed by these native taxa are similar to the plant communities historically present along the southern California coast, where they have largely been replaced by development on the mainland. Three vegetation types, maritime desert scrub, maritime sage scrub, and grasslands, account for approximately 90% of the vegetation cover on SCI. These three communities largely typify the vegetation of SCI as low-growing scrublands and grasslands, though native trees over 18 m tall can be found in some of the deep canyons of the west side and along the eastern escarpment.

On the western side of the island, along the coast and steep coastal bluffs, maritime succulent scrub and coastal bluff scrub tend to dominate. These communities are characterized by species tolerant of the ocean spray and the limited soil available along these rocky shores. On SCI, these communities consist of several species of native *Atriplex* (saltbushes), *Bergerocactus emoryi* (snake cactus), *Dudleya virens* (green live-forever), and *Euphorbia misera* (cliff spurge), as well as exotic species such as *Mesembryanthemum crystallinum* (crystalline iceplant). Other plant communities of the immediate coast include relatively small areas of coastal strand and dunes characterized by *Abronia umbellata* and *A. maritima* (sand verbena) and two Channel Island endemic *Astragalus* species, *A. miguelensis* and *A. nevinii* (San Miguel and San Clemente Island milkvetch, respectively). These communities of the immediate coast have survived the ravages of grazing very well and form some of the most species-rich examples of these communities remaining in California.

Farther inland and at higher elevations, maritime desert scrub is the dominant vegetation type. This community occurs primarily along the open western terraces at elevations up to about 480 m. Maritime desert scrub is SCI's most extensive plant community, covering approximately 40% of the island. It is characterized by the dominance of the spiny drought-deciduous California boxthorn, *Opuntia littoralis* and *O. prolifera* (prickly pear and cholla cactuses) (Figure 9), and *Mirabilis californica* (wishbone bush). Much of this community in its mid- to high elevation range suffered considerable disturbance from grazing. In these areas, exotic species such as Australian saltbush and the exotic annual grasses *Bromus madritensis* (red brome), *B. hordeaceus* (soft chess), and *Vulpia myuros* (foxtail fescue) often dominate.

Grasslands constitute just less than 30% of the island's cover. Native grasslands are largely dominated by the perennial tussock-forming species *Nassella pulchra* and *N. cernua* (purple needlegrass and nodding needlegrass), although other native grasses such as *N. lepida* (foothill needlegrass), *Melica imperfecta* (melic), *Agrostis pallens* (bentgrass), and *Poa secunda*

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(bluegrass) are often locally common. These grasslands typically occupy the broad flat upper terraces and plateaus and upper portions of the eastern escarpment. Numerous annual and perennial wildflower species are also found in this community. During years of adequate rainfall, grand and colorful showings of lavender *Trifolium* species (clovers) and blue *Lupinus* species (lupines) are followed by oceans of orange *Amsinckia menziesii* (fiddleneck) and purple *Dichelostemma capitatum* (blue dicks) (Figure 10). Exotic annual grasses and forbs often make up a significant amount of cover in this community, most notably in the northern portion of its range. These areas are commonly dominated by *Avena barbata* (slender oat) and *Bromus* species.

Maritime sage scrub is the third most common plant community on SCI and accounts for just less than 20% of the vegetation cover. This community is typified by the presence of *Artemisia californica* (California sagebrush) or its Channel Islands variant *A. nesiotica* (island sagebrush) and a host of other low-growing shrub species including *Eriophyllum nevinii*, *Eriogonum giganteum* (San Clemente Island buckwheat), prickly pear cactus, and island paintbrush. Sometimes referred to as “soft chaparral,” this community is found primarily along the steep slopes of canyon walls and the eastern escarpment.

Although chaparral and woodlands may have once been more extensive, they currently make up less than 2% of the island’s total vegetation cover. Chaparral is characterized by drought-tolerant evergreen shrubs typically growing to a height of about 2 meters. Substantial stands of chaparral are nonexistent on SCI, but there are indications that shrub cover is increasing. Recruitment of chaparral species such as *Ceanothus megacarpus insularis* (island lilac) and *Rhamnus pirifolia* (island redberry) has been observed in west-side canyons and along the eastern escarpment. Other species common to chaparral persist on the island but have very limited distributions. These include *Malosma laurina* (laurel sumac), which is known from three locations, and *Adenostoma fasciculata* (chamise), so common on the mainland, which is currently known on SCI from a single location. Many biologists have speculated that repeated burning by ranchers to increase grass cover and prolonged overgrazing may have converted sage scrub and chaparral into grasslands. Studies elsewhere in California support this concept and show that this trend is often reversible (Zedler 1995). The dynamic nature of these communities offers the hope that these relictual populations will expand their ranges on the island.

The island’s woodlands are of three types: canyon woodlands, dominated by *Prunus lyonii* (Catalina cherry) and *Heteromeles arbutiflora* (toyon), which are found in the larger canyons and drainages; oak woodlands, dominated by *Quercus tomentella* (island oak), which is found primarily along southern portions of the eastern escarpment; and woodlands of ironwood, *Lyonothamnus floribundus asplenifolius*, also found primarily along the rocky slope and canyons of the eastern escarpment. Each of these woodland types supports a diverse assortment of native understory species such as the lily *Triteleia clementina* and the sedge *Carex tumulicola*, but these communities carry a load of exotic competitors as well. Groves of trees were refugia for grazing animals, and exotic species such as *Bromus diandrus* (ripgut

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brome) now often dominate these understories. The recovery of woodland species is mixed. Seedlings and saplings of the cherry and toyon are a common sight in most large canyons, while recruitment of the island oak is very limited, and no seedlings of the ironwood have been observed. A number of other plant communities, including coastal salt marsh and seasonal wetlands, account for a small percentage of the native plant cover on SCI and though small in total area are notable as valuable resources for wildlife.

The greatest threats to the island's existing native plant communities include the continuing loss of soil through erosion, the unnatural frequency of fire resulting from bombing by the U. S. Navy (most notable on the southwestern portion of the island), the development of new training facilities, and the invasion of exotic pest plant species. Most of these factors can be mitigated through prudent planning, but preventing the immigration of invasive plant species deserves diligent attention. The invasion of exotic pest plants can devastate islands, and several undesirable species such as *Foeniculum vulgare* (fennel), *Piptatherum miliaceum* (smilo grass), and *Ehrharta calycina* (veldt grass) have gained access to SCI. Fortunately, the navy has developed a program to monitor and treat these pest plants carefully. The goal of this program is the ultimate eradication of the existing populations and the ongoing prevention of infestation.

Although historical information is limited, the future for native plant communities on SCI can be projected to some degree. Left to successional processes, shrublands will likely continue to increase. Chaparral may eventually replace grassland and sage scrub in areas where soil and slope aspect are favorable, as attested by the natural recruitment of such species as island redberry and island lilac. This community could eventually account for as much as 10% of the native cover. Maritime desert scrub and sage scrub cover will likely increase in density as well as in range. Once rare, seedlings of the California sagebrush have become a common sight. Strong recruitment has also been noted for the Catalina cherry. Canyon woodlands and chaparral could eventually approach a closed canopy in some of the larger drainages. But little or no recruitment has been recorded for many important species, and successional changes require time. The animals that depend on these communities may not be able to wait for natural recovery. The reduction of shrub cover by feral grazers has resulted in a net loss of shelter available to animals, a decline in habitat diversity, and hastened soil erosion. To improve habitat quality and increase the rate of succession, the navy has initiated a program for restoring native habitat. This program includes collection and storage of native seeds, a greenhouse and nursery for the propagated plants, and the planting and temporary maintenance of native shrub species throughout the island.

### EFFECT OF HUMANS ON SAN CLEMENTE ISLAND'S FLORA AND FAUNA

#### Early Inhabitants

Archaeological remains on SCI represent 10,000 years of cultural change, one of the longest and best-dated sequences in North America (Meighan 2000). From present archaeological findings, it appears that there were times

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when the island was essentially uninhabited perhaps for centuries, yet there were periods when favorable conditions resulted in surges of population growth (Meighan 2000).

The earliest aboriginal inhabitants, thought to be of Chumash affinities from their tools, burial sites, and dwellings, first inhabited SCI ~10,000 years ago (Salls 1988). These people were descendants of the tribes from the northern Channel Islands and California coast (Schoenherr et al. 1999). They were good with boats and traveled easily among the islands, gaining their subsistence from the marine environment (Bruce 1994). They relied on food from tidepools, especially abalone (*Haliotis* spp.), California Sheephead (*Semicossyphus pulcher*), and pinnipeds (Yatsko 2000), although they also apparently exploited some terrestrial resources such as acorns, Catalina cherries, and nesting seabirds. The dearth of fresh water likely limited the human population to approximately 100 people.

Following the Chumash were a group known as the Gabrielinos (Yatsko 2000). These people are thought to be descendants of tribes located in the Great Basin and Mojave Desert regions (Schoenherr et al. 1999) who adapted to island life. They were the natives living on the island when the Spanish first arrived.

### European Explorers

There is some dispute over which explorer actually found and named SCI (Bruce 1994). Juan Rodriguez Cabrillo is given credit for the discovery of SCI before his landing in San Diego in 1542 (Daily 1987). It is thought that Cabrillo named the island La Victoria, then Sebastian Vizcaino renamed it San Clemente in 1602 (Daily 1987). Some scholars hypothesize that neither Cabrillo nor Vizcaino ever landed on SCI, so that the first landing by a Spaniard was by Juan Perez in 1769 (Bruce 1994).

The greatest human use of the island likely occurred between 1769 and 1829. During this period, the Gabrielinos continued to occupy the island, and Russian, Spanish, and American otter hunters also visited. These hunters not only decimated the Sea Otters (*Enhydra lutris*) around SCI, they affected the native people as well. It is believed that the Gabrielinos died out or departed the island by the late 1820s to protect themselves from the murderous assaults of the foreign hunters. Baptism records suggest that most of the Gabrielinos had left SCI for Mission San Gabriel by 1829 (Johnson 1988). SCI appears to have been uninhabited from 1829 to 1864.

SCI became property of the United States Department of Commerce after the Treaty of Guadalupe Hidalgo ending the Mexican-American War in 1848. In 1864, during the Civil War, the island was occupied by the 4<sup>th</sup> Infantry of the California Union Volunteers and used intermittently by smugglers and abalone fishermen (Raab and Salls 1991). After the 1855 "China Boy" Act, prohibiting Chinese immigration into California, the island became a staging ground for ships smuggling Chinese into California. The smuggling and abalone industries faded out in the late 1890s.

### Ranching Era

Both legal and illegal ranching occurred between 1850 and 1934, although it is believed that the Spanish missionaries brought the first sheep



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to the island. Eventually the SCI Wool Company received sole rights to graze SCI, beginning operations in 1864. SCI was considered good ranch land despite the lack of fresh water because it allowed less management of the herd and was free from predators (Andrew 1998). By the late 1800s there were between 8000 and 40,000 sheep, 3000 goats (used for herding the sheep), and 1000 cattle roaming the island (Johnson 1975). By 1906, official land leases were established, and development and overgrazing began to degrade the island's habitats severely. Between 1909 and 1922, a program to seed exotic annual grasses and saltbush began, and there is evidence that sheep ranchers burned large parts of the island to increase forage for their herds (Andrew 1998). These fires increased grass and forb cover and reduced shrub cover.

Ranching had profound effects on habitats across the island. In general, sheep and goat grazing reduced vegetative cover, plant diversity, productivity, and plant vigor (Coblentz 1980). These effects were worsened by the fact that sheep overgrazed the plateaus, while goats grazed in the canyons (Keegan et al. 1994). Thus few areas of the island were spared. The degradation of the island intensified from 1923 to 1934 when modern roads were built, providing increased access to most of the island.

Ranchers also introduced feral cats (*Felis catus*) and Black Rats (*Rattus rattus*). The effect of introduced feral cats and rats on island faunas is well documented, as they disrupt natural food chains and are predators of birds and their nests (Veitch and Clout 2002). Island wildlife is especially vulnerable to exotic invaders because islands generally have few if any mammalian predators. Species evolving on islands have few defenses against introduced predators and no natural immunities to introduced diseases (Loope et al. 1988).

### The Rise of the Navy

In 1934, under an executive order by President Franklin D. Roosevelt, the U. S. Department of the Navy took control of the island. At this time, the SCI Wool Company was ordered to remove all livestock from the island. Unfortunately, many goats were left behind, and the goat population skyrocketed to approximately 20,000 animals in the 1970s (P. D. Jorgensen pers comm.). During this time, goats foraged throughout the island and there was essentially no reproduction of woody plants. Furthering the problem with feral animals, the California Department of Fish and Game introduced pigs (*Sus scrofa*) to the island in 1951.

The navy was interested in SCI because it provided a remote location where intensive training on a large scale could be conducted. In 1935, a pier was built at Wilson Cove, and the first bombing runs were conducted. In 1937, 4700 troops landed on the shores of SCI, the first of this type of exercise. During World War II, aerial bombing training intensified, and the first airstrip was built on the central plateau. By 1951, underwater demolition training had begun. All of these activities necessitated the need for living quarters, and in 1958 barracks were built at Wilson Cove.

Subsequently, the navy has continued to operate the island as a training range. Specifically, the current mission of the navy on SCI is to support tactical training, research and development, and evaluation trials by maintaining and operating facilities and providing services, arms, and material support

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to the U. S. Pacific Fleet (USDoN 2001). SCI represents the only military range in the Pacific Ocean where sea, land, and air units can train for battle simultaneously. SCI is the primary maritime training area for battle group and ship deployment (including ship-to-shore and aerial bombardment), amphibious training for the U. S. Marine Corps, and naval special warfare training (navy Seals). For these reasons, public access to the island is limited.

### AVIFAUNAL HISTORY OF SAN CLEMENTE ISLAND

#### Prehistory

Despite the wealth of archaeological artifacts on SCI (Yatsko 1989), there are only a few documented prehistoric remains of birds. The remains that are known indicate the island's early inhabitants used birds for food, tools, and ceremony. Archaeological evidence from Eel Point suggests that early inhabitants hunted several bird species during the middle Holocene (~3700 years before present), especially during the winter when other resources such as pinnipeds were scarce (Porcasi 1999a). This site contained 1549 bird bones, of which 30% (469) were identified to family, genus, and/or species. Of the 15 species identified (Table 2), 12 were seabirds and 3 were terrestrial (Porcasi 1999a). In one deposit, 187 bones of the Short-tailed Albatross (*Phoebastria albatrus*) were found, comprising at least 8 individuals (Porcasi 1999b).

Other evidence from near Lemon Tank suggests the use of birds for ceremonies (Hale 1995). Found at this site were the skeletons of five Red-tailed Hawks (*Buteo jamaicensis*), two Peregrine Falcons (*Falco peregrinus*), and one Common Raven (*Corvus corax*) (Hale 1995). All birds were immatures buried vertically, head down, ~20–54 cm deep. Hale (1995) speculated that these birds were buried as part of death and mourning ceremonies. Raptors and ravens may have been used in a memorial ritual for chiefs, as were eagles and condors on the mainland. It is believed that people watched raptor nests, took young birds from the nest before fledging, and kept them in cages. The purpose of the death and burial of these birds was to carry messages to the dead (Hale 1995).

The only other known avian remains are from a cave at the northern tip of the island where bones of Cassin's Auklet (*Ptychoramphus aleuticus*) were found and dated to an age of about 6000 years (Foley 1987). It is unclear whether these remains were from a human food cache or a nesting location by these cavity nesters. However, the accessibility of the cave and the presence of the Island Fox (*Urocyon littoralis clementae*) make it unlikely these birds nested here. Furthermore, Foley (1987) found awls made of bird bones in this cave, the only evidence suggesting that early inhabitants also used bird bone to make tools.

#### Modern History

Early ornithologists were quite interested in the Channel Islands and SCI. During modern history, there were periods of exploration and collecting (especially of egg sets) followed by periods of little work. Because the bird populations on SCI were severely affected by human activities it is important



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**Table 2** Birds Reported in Prehistoric Osseous Remains from Eel Point, San Clemente Island<sup>a</sup>

Species	Number
Unidentified loon	3
Common Loon	7
Red-necked Grebe	2
Unidentified albatross	210
Short-tailed Albatross	8
Northern Fulmar	63
Unidentified shearwater	12
Buller's Shearwater	3
Pink-footed Shearwater	10
Short-tailed Shearwater	2
Unidentified pelican	8
Unidentified cormorant	20
Double-crested Cormorant	37
Unidentified goose	1
Red-tailed Hawk	1
Unidentified gull	33
California Gull	1
Heermann's Gull	2
Rhinoceros Auklet	2
Cassin's Auklet	34
American Crow	1
Common Raven	9
Unidentified bird	1080
Total	1549

<sup>a</sup>Source: Porcasi (1999a).

to assess the records by all ornithologists over time, so that we can piece together the bird community's change over time.

1860–1920. John G. Cooper (1870) conducted the first documented bird surveys on SCI, in 1863. Other noteworthy early visitors included C. H. Townsend in 1888 and 1889, E. A. Mearns and A. W. Anthony in 1894, Grinnell (1897a), Breninger (1904), Linton (1908, 1909), and Howell (1917). Highlights during this period include the first description of many San Clemente and Channel Island endemic subspecies. Townsend (1890) described the San Clemente Song Sparrow (*Melospiza melodia clementae*), Dusky Orange-crowned Warbler (*Vermivora celata sordida*), and Island Horned Lark (*Eremophila alpestris insularis*). Mearns (1898) described the San Clemente House Finch (*Carpodacus mexicanus clementis*) after visiting SCI in August 1894. Anthony (1895), on the same trip with Mearns, collected and described the San Clemente Bewick's Wren (*Thryomanes bewickii leucophrys*). After a collecting trip in March 1897, Grinnell (1897b) described the San Clemente Spotted Towhee (*Pipilo maculatus clementae*) as a new species, stating that this rare and elusive bird differed from mainland towhees in song as well as morphologically. On the

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basis of specimens collected by Townsend, Ridgway (1898) described the Sage Sparrow *Amphispiza belli clementeae* as larger than the mainland subspecies *A. b. belli* but soon reversed himself, saying the difference was insignificant (Ridgway 1901). Later, from specimens collected by Mearns, Ridgway (1903) described the San Clemente Island subspecies of the Loggerhead Shrike (*Lanius ludovicianus mearnsi*).

Breninger (1904) and Linton (1908, 1909) also visited the island, and Howell (1917) summarized all records up to that point, reporting 114 species from SCI.

**1921–1967.** During this period, few ornithologists surveyed SCI. Between 1928 and 1931, J. R. Pemberton and A. J. van Rossem made trips both together and separately (Pemberton 1931). In 1935, Miller (1936) explored the ocean off SCI looking for pelagic species, but he never landed on the island. Unfortunately, there are few records between 1941 and 1968, and during this period several species were apparently extirpated (Jorgensen and Ferguson 1984). Thus we have lost critical information regarding the details of extirpation on SCI.

**1968–1985.** Consistent surveys resumed in 1968, including visits by M. L. Cody and J.M. Diamond (unpubl. notes), Jones and Diamond (1976), and Jorgensen and Ferguson (1984). Many of these biologists were interested in turnover of breeding species, although they also recorded more information on migrants than had been noted previously. By 1984, 248 species had been recorded (Jorgensen and Ferguson 1984). This large increase is likely a direct result of increased frequency of visits by ornithologists and more attention paid to nonresidents.

**1985–present.** Recent bird records come primarily from visiting biologists working on the recovery of endangered species, most notably the San Clemente Loggerhead Shrike and Sage Sparrow. The data generated by these biologists represent the most intensive efforts to document new island records and changes in abundance on SCI. Year-round study enables us to describe the changes in seasonal and breeding bird communities. Diamond and Jones (1980) estimated that the turnover rate on SCI was about 2.4% per year. However, they noted that the frequency of surveys (about every 10 years) was too long to track population changes, as some species' populations might die out and recolonize between census intervals.

## CURRENT CONSERVATION EFFORTS

The Department of Defense has always had environmental policies regarding the responsible use of its resources, although how strictly they were followed is questionable. However, in response to amendments to the Sikes Act in 1997, the environmental awareness of the military was heightened. This act stipulates that the Department of Defense must manage its natural resources so that each installation complies with all environmental regulations (e.g., Clean Water, Clean Air, Endangered Species, Migratory Bird Treaty, and National Environmental Policy acts).

The U. S. Navy has a program to conserve natural and cultural resources on the island, managed by its Natural Resources Office. Some of its projects include the research and excavation of archeological sites, the preserva-

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tion and restoration of native plant communities, and the monitoring and recovery of sensitive species: the Island Fox, Island Night-Lizard (*Xantusia riversiana reticulata*), Snowy Plover, San Clemente Sage Sparrow, and San Clemente Loggerhead Shrike.

### Feral Grazer and Exotic Animal Removal Program

Feral grazers and nonnative predators released on islands often have severe detrimental effects on the island's vegetation and native wildlife. In 1972, the navy began eliminating goats and pigs from SCI, a task completed in 1993. The program resulted in the removal of ~28,000 goats and 2200 pigs (USDoN 2001).

Today, the feral cat is the largest exotic mammal remaining on the island, although the Black Rat and House Mouse (*Mus musculus*) persist also. Feral cats and rats are the targets of continuing removal programs started in 1991. Cats are removed through hunting and trapping, whereas rats are controlled with poison and trapping (USDoN 2001). The navy has a policy of no pets on SCI, but many cats are cared for by island personnel. The cats near barracks began to act as a source population replenishing the rest of the island (Cooper et al. 2003). In 2002, the navy instituted a program whereby cats currently considered "pets" were spayed and neutered to prevent uncontrolled breeding (Cooper et al. 2003); all others are subject to removal.

## BIRDING SAN CLEMENTE ISLAND

San Clemente Island's position, roughly 100 km off the coast of southern California, south and east of Point Conception, allows large numbers of landbirds to encounter the island during fall migration. This hypothesis, put forth by Miller (1936), has been supported by our observations. The island is less apt to attract landbirds in spring, when large numbers fall out under optimal conditions only.

### Spring Migration

Spring migration typically starts during the last half of February, when small movements of northbound seabirds and landbirds are observed, and continues through mid- or late June, as the latest northbound landbirds and seabirds overlap with the earliest fall migrants. During spring, when light southeast winds prevail during the night, thousands of migrant landbirds moving north up the coast of Mexico may find themselves over the ocean at daybreak. Under these conditions, often accompanied by a mid-level marine layer, spectacular numbers of migrants may occur. These flights typically comprise common west-coast migrants such as Wilson's Warbler, Western Tanager, Lazuli Bunting, Black-headed Grosbeak, and Bullock's Oriole. The largest fall-outs documented on SCI have occurred in spring, typically in late April and early May.

### Fall Migration

Fall migration, less dramatic than spring migration, can best be described

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as steady and protracted. It begins in late June with southbound shorebirds and ends in late December with waterfowl and seabirds. The weather conditions that bring migrants to SCI during fall are less fickle than those of spring, and migrants can abound during a variety of weather patterns. The best weather for observing fall migrants is similar to that required during spring, except during fall the northeasterly winds of Santa Ana conditions are the best for bringing large numbers of landbirds to SCI. Some birds arrive in exhausted condition, and it is likely that many do not survive.

### Seawatching

The west shore of SCI seems more productive for seawatching than the east, although we have spent less time on the latter. Two promontories, China Point and West Cove Point, are the best locations for observing seabird migration throughout the year. In fall, West Cove Point, at the northwest tip of the island, lies in the path of southbound migrant seabirds, which round the point when they encounter the north end of the island. During spring, China Point, at the southwest tip of SCI, concentrates northbound birds.

### Landbirding

Finding migrant landbirds on SCI is relatively easy because of the sparseness of the island's vegetative cover. When birds stop on SCI, they find little hospitable vegetation and tend to concentrate at Lemon Tank (Figure 11), the only source of fresh water on the island, and in the wooded canyons where standing water may remain in pools. Isolated stands of lemonadeberry (*Rhus integrifolia*) and *Baccharis* can also concentrate migrants, even if water is not present. Some species prefer the dry upland grass and shrublands.

## METHODS

Since 1993, bird sightings reported by biologists and visiting ornithologists have been archived by PRBO Conservation Science, then transferred into an electronic database, from which we wrote the bulk of the species accounts. We consulted all major resources on the birds of San Clemente Island. Howell (1917) summarized the notes and records of all prior visiting ornithologists, and Jorgensen and Ferguson (1984) compiled ornithological data through 1983. H. Lee Jones and Paul Collins have contributed much to the SCI data set, as well as to that of all of the California Channel Islands. They graciously allowed us access to their data for all the islands, allowing us to put records of rare birds on SCI into a broader context. We searched through historic literature for records of birds on SCI and also included personal observations provided to us by birders who have visited the island.

As of 1 January 2005, 352 species of birds had been reported from SCI. Of these, 317 have been documented acceptably with specimens, photos, or written descriptions, whereas 31 species are treated as being of hypothetical occurrence (see below under Hypothetical Species). The species included as hypothetical are those that require more than a sight record for documentation, as determined by their previous occurrence in California, especially on the Channel Islands. Three species are of exotic origin, and one is known only from prehistoric remains.

## THE BIRDS OF SAN CLEMENTE ISLAND

Included among the 317 bird species documented from SCI are many records of rare and unusual birds. Documentation in the form of photos has been catalogued and maintained by Sullivan, when possible, for all records of birds on the review list of the California Bird Records Committee (CBRC), as well as for birds rare on the Channel Islands.

Observers contributing substantially to the database or cited in the species accounts are as follows: Paul A. Aigner (PAA), Lindsay A. Armer (LAA), Fred Beaudry (FB), Ashleigh V. Blackford (AVB), D. Bleitz-Sandburg (DB-S), Melissa A. Booker (MAB), Laura A. Bringhurst (LAB), John T. Brollini (JTB), Don L. Brubaker (DLB), Christopher W. Burney (CWB), Larry R. Butcher, Phillip R. Butler (PRB), Kurt F. Campbell (KFC), Eugene A. Cardiff (EAC), Heather A. Carlisle (HAC), Lilly S. Cesh, Neil A. Chartier, Henry Childs (HC), William Clow (WC), Martin L. Cody (MLC), Robert Cohen (RC), Anne M. Condon (AMC), Daniel S. Cooper, Douglass M. Cooper (DMC), Elizabeth Copper (EC), J. C. Couffer (JCC), Christina L. Couroux (CLC), Angela Coxon (AC), Clem L. Dabrowski (CLD), Ryan T. DeGaudio (RTDeG), Robert G. Dempsey (RGD), Jennifer A. Dhundale (JAD), Jared M. Diamond (JMD), Denise K. Dixon (DKD), Jonathan L. Dunn (JLD), Jonathan J. Dunn (JJD), Charles Eldermire (CE), Richard A. Erickson, William T. Everett (WTE), Wendy M. Fair (WMF), Josephine Fields Falcone (JFF), Howard L. Ferguson (HLF), Sean P. Finn (SPF), Brian Foster, David K. Garcelon (DKG), Kimball L. Garrett (KLG), Brian Gibbons (BG), Jan H. Goerissen (JHG), Ann M. Graham (AMG), William E. Haas (WEH), Tonya M. Haff (TMH), Chuck Hayes (CH), Shane Heath (SH), Carrie K. Hisaoka, David J. Hof (DJH), Jennifer N. Hoffman, Melanie Howe (MH), Ken M. Hyde (KMH), John James (JJ), Joseph R. Jehl, Jr. (JRJ), Barry Jones (BJ), H. Lee Jones (HLJ), Paul D. Jorgensen (PDJ), Frans A. Juola (FAJ), Robb S. A. Kaler (RSAK), Corey O. Kanuckel (COK), Jheremie L. Kelerman (JLK), Eric L. Kershner (ELK), Sean J. Kiffe (SJK), Cathy E. Koehler (CEK), C. Robby Kohley (CRK), Julie Lambert (JL), Jan Larson (JLr), Julian Lee (JLe), Eric Leist (EL), Tony R. Leukering (TRL), Cecilia M. Leumas (CML), Suellen Lynn (SL), Tracey R. Mader (TRM), John A. Martin (JAM), Guy McCaskie (GMcC), Jimmy M. McMorran (JMMcM), Robert D. McMorran (RDMcM), Karly J. Moore (KJM), Nicole M. Munkwitz (NMM), Samantha L. Musgrave (SLM), Zach J. Nelson (ZJN), Paul Opler (PO), William A. Ostheimer, Robert T. Patton (RTP), Mark T. Philippart (MTP), Robert L. Pitman (RLP), Jonathan H. Plissner (JHP), Chris J. Raal (CJR), Isabelle Robichaud (IR), Bruce J. Rodrigues (BJR), Jane K. Rombouts (JKR), Ryan S. Rummelhart (RSR), Thom as A. Scott (TAS), Mary K. Stapleton (MKS), Robert Stewart (RS), Khara M. Strum (KMS), Sam W. Stuart (SWS), Brian L. Sullivan (BLS), Christina L. Sulzman (CLS), Jennifer M. Turner (JMT), Philip Unitt (PU), Eric A. Urban (EAU), Kathy Wakelee (KW), Sarah E. Warner (SEW), Nils Warnock (NW), Leah H. Webb (LHW), Richard E. Webster (REW), Jeff M. Wells (JMW), Ryan D. Wilds, Thad J. Williams (TJW).

Museum collections containing specimens cited in the species accounts are the Field Museum of Natural History, Chicago (FMNH), Natural History Museum of Los Angeles County (LACNHM), Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts (MCZ), Museum of Vertebrate Zoology, University of California, Berkeley (MVZ), San Diego

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Natural History Museum (SDNHM), University of California, Los Angeles (UCLA), and National Museum of Natural History, Smithsonian Institution, Washington, D.C. (USNM).

### Status Codes and Symbols

Status codes, modified slightly from Jorgensen and Ferguson (1984), represent each species' general status on SCI. Dates and locations are listed for casual species with five or fewer records in a season. The following symbols encode the level of documentation for each species on SCI: †, supported by a specimen; \*, supported with a photograph or videotape; #, supported by written details.

The following terms designating abundance have been kept flexible so that they more accurately portray relative abundance by species:

**Abundant:** Always encountered in very large numbers (at least several hundred per day).

**Common:** Always or almost always encountered daily, usually in moderate to large numbers.

**Fairly common:** Usually encountered daily, generally not in large numbers.

**Uncommon:** Occurs in small numbers and may be missed on a substantial number of days.

**Rare:** Occurs (or probably occurs) annually in very small numbers.

**Very rare:** Averages about one record annually, but not necessarily recorded every year.

**Casual:** One or a few records, but thought to be a likely candidate to occur again within a few years.

**Accidental:** One record, and future records thought to be unlikely for many years.

## SPECIES ACCOUNTS

### Anatidae

**Greater White-fronted Goose (*Anser albifrons*).**†\* Rare fall migrant and winter visitor. Thirteen records involving at least 80 individuals, 24 Sep to 7 Feb. High counts of 14 at Boulders South 3 Oct 1996, 12 at Wilson Cove 10–21 Oct 1996 (MAB, MKS), and 12 at Lemon Tank 3 Oct to 15 Nov 2002 (BLS et al; Figure 12). Records typically involve small flocks or pairs. All records are from 1995, 1996, 2000, and 2002, suggesting that the species occurs only sporadically. Garrett and Dunn (1981) considered this species rare along the coast in southern California and suggested a decline from levels of historical occurrence on the Channel Islands and along the southern California coast. However, this species appears to have never been common or even of regular occurrence on SCI.

**Ross's Goose (*Chen rossii*).** Accidental. One record: a single emaciated bird at the missile-impact area near Lemon Tank 26 Jan 1998 (JAM, SL); it remained for several days and then likely expired, although its remains were not located. This species is found rarely but annually along the coast of southern California (Garrett and Dunn 1981, Small 1994). There are only two other records for the Channel Islands, one each for Santa Cruz and Santa Catalina (Jones and Collins unpubl. data).

**Cackling Goose (*Branta hutchinsii*).**†\* Casual fall migrant and winter visitor. Three

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records. One bird was at Oly Locker 23 Dec 1996–19 Jan 1997 (JJ). Two were at Chad's Bluff 26 Oct 2001 (JTB, BLS; Figure 13); they then presumably separated, and one was found at Lemon Tank 30 Oct–7 Nov 2001 (JTB et al.); the other was found dead in Wilson Cove 7 Nov 2001. Two were at Lemon Tank 24 Oct–15 Nov 2002 (ELK et al.). The bird found dead in Wilson Cove 7 Nov 2001 was *B. h. leucopareia* (LACNHM 111805); the remaining individuals were not identified to subspecies. There are five other records of Cackling/Canada Geese unidentified to (sub)species 14 Oct–19 Jan.

Although the Canada Goose (*Branta canadensis*) is locally common in southern California (Garrett and Dunn 1981), Cackling or Canada Geese are of only casual occurrence on the Channel Islands, where they have been recorded on all the islands except Anacapa (Jones and Collins unpubl. data).

Brant (*Branta bernicla*). Rare migrant. Recorded in spring from 27 Feb to 27 May and in fall from 4 Nov to 17 Dec. The spring high count is of 584 moving past China Point on the morning of 10 April 2004 (SWS et al.). The fall high count is of 650 migrating past West Cove Point on 4 Nov 2001 (BLS). This species' appearance on SCI is likely due to local weather patterns, as it usually occurs in large numbers when present. Garrett and Dunn (1981) suggested that the fall passage of this species occurs well offshore, as there are few records from coastal promontories during that season. Perhaps light winds, the conditions under which Brant have occurred during fall on SCI, allow the birds to drift nearer the islands. Spring migrants have been noted in numbers on SCI during southeasterly winds, suggesting a wind-borne dispersal seaward of flocks that may otherwise pass nearer the mainland coast. Most are recorded in flight off West Cove and China points. All records are of the Black Brant (*B. b. nigricans*), the first 13 Apr 1973 (PDJ).

Gadwall (*Anas strepera*). Casual spring migrant. Two records, both from Lemon Tank: a single male 28 Apr 2001 (RTP) and a male and female 13 Apr 2002 (BLS, AMC). Although this species is common in southern California (Garrett and Dunn 1981), likely it and other dabbling waterfowl do not venture far offshore. There are only 10 records for the Channel Islands, all from the southern islands (Jones and Collins unpubl. data).

American Wigeon (*Anas americana*). Very rare fall migrant. Nine fall records from 22 Sep to 15 Nov. One winter record, of a female at Lemon Tank 2–27 Dec 2004 (JMMcM). First recorded 22 Sep 1976 (HLJ). The American Wigeon is an occasional winter visitant on Santa Rosa and Santa Catalina islands and a fall transient on San Nicolas and Santa Cruz (Jones and Collins unpubl. data). Only one of the records from SCI is more recent than 1984.

Mallard (*Anas platyrhynchos*). Rare fall migrant and winter visitor; casual spring migrant and summer visitor. Recorded primarily 7 Oct–24 Feb. There are five spring records: one male at Lemon Tank 21–23 Apr 1981 (WTE), a male and female at Lemon Tank 9–13 Apr 2002 (BLS, AMC), one male in the ponds near SHOBA gate 20–29 Apr 2003 (BLS, RSAK), one female at Twin Dams 18–23 May 2003 (BLS, RSAK), and a male and female at Lemon Tank 1–22 Mar 2004 (BLS et al.). The single summer record is of a female at Lemon Tank 29 June 2004 (BLS). The three February records might pertain to migrants. Garrett and Dunn (1981) and Small (1994) both treated the Mallard as a rare migrant and winter visitor throughout the remaining Channel Islands.

Blue-winged Teal (*Anas discors*). \* Casual migrant. Five records: one male 19 Mar 1979 (PDJ), one at Lemon Tank 9 Oct 2000 (CWB), one male at the SHOBA gate pond 30 Mar 2001 (BLS, JTB), three females at Lemon Tank 29 Sep–11 Oct 2003 (RGD et al.), and one female at Lemon Tank 24 June 2004 (SWS et al., photo JMMcM). Four unidentified teal at Chenetti Beach 22 Sept 2001 were likely this species (BLS,



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JTB). Garrett and Dunn (1981) cited six records for the Channel Islands (presumably including the 19 Mar 1979 record from SCI), five of which are from spring. Jones and Collins (unpubl. data) consider the species an occasional winter visitor recorded on all the larger Channel Islands. The difficulty of distinguishing the Blue-winged from the Cinnamon Teal in fall plumage may explain the paucity of fall records. An increase in this species' numbers in coastal southern California in recent years might explain the preponderance of recent fall records (P. A. Ginsburg pers. comm.).

Cinnamon Teal (*Anas cyanoptera*).\* Rare spring migrant; casual in fall. Recorded in spring from 20 Jan to 3 May and in fall from 8 Aug to 8 Oct. The high count is of four, two males and two females, flying past China Point 3 Oct 2004 (BLS). A female reported 21 Oct 1995 lacks the details required to support such a late date. The Cinnamon Teal may be rarer than formerly, as there are only 10 records over the last 10 years. It is an uncommon to fairly common transient on the remaining Channel Islands (Garrett and Dunn 1981).

Northern Shoveler (*Anas clypeata*). Casual spring and fall migrant. Four records: two females 13 and 21 Oct 1978 (PDJ), one male at Lemon Tank 13 Apr 2002 (BLS, AMC), one male at Lemon Tank 17 Mar 2004 (SWS et al.), and one female at Lemon Tank 19 June 2004 (LAA). Small (1994) mentioned records for both Santa Cruz and Santa Rosa islands. Jones and Collins (unpubl. data) consider the species an occasional fall transient and infrequent winter visitor to Santa Catalina and San Nicolas islands.

Northern Pintail (*Anas acuta*). Rare migrant. Recorded in spring from 9 Jan to 2 Mar and in fall from 19 Aug to 12 Nov. More frequent than other dabblers on SCI, likely because of its propensity to migrate over open water. Individuals sometimes stay for long periods, such as the three that spent six weeks at Lemon Tank in autumn 2001. The high count is of 13 at the pond near REWS Road 18 Feb 1997 (SL et al.). Flocks have been noted over the other Channel Islands, as well as at sea (Garrett and Dunn 1981).

Green-winged Teal (*Anas crecca*).\* Rare fall migrant and winter visitor; casual in spring. Recorded from 19 Aug through 24 Feb, except for the single spring record, of one male in a small pond near Middle Ranch Canyon 20 Mar 2003 (BLS et al.). A male intergrade between the North American subspecies *A. c. carolinensis* and the Eurasian subspecies *A. c. crecca* was at Lemon Tank 9–24 Jan 2003 and 5–17 Oct 2003 (possibly the same individual). Two female Green-winged Teal with this apparent hybrid could not be identified to subspecies. Although this species is categorized as an uncommon winter visitant to the Channel Islands (Garrett and Dunn 1981, Small 1994), our data suggest it is perhaps rarer on SCI than on the other Channel Islands, possibly because of the dearth of fresh water and lack of estuaries.

Ring-necked Duck (*Aythya collaris*).\* Casual fall migrant. Four records: one on 8 Oct 1980 (GMcC et al.), two at Lemon Tank 9 Oct 2000 (FB, CWB), up to three at Lemon Tank 3 Oct–18 Nov 2001 (BLS et al.), and one male at Lemon Tank 13–14 Nov 2003 (JL et al.; Figure 14). This species is a rare visitant to Santa Catalina Island's Thompson Reservoir and a casual transient throughout the remaining Channel Islands (Garrett and Dunn 1981, Small 1994, Jones and Collins unpubl. data).

Lesser Scaup (*Aythya affinis*).\* Casual fall migrant. There are seven records of 14 individuals from 5 Oct to 18 Nov. The high count is of eight flying south off West Cove Point 4 Nov 2001 (BLS, AMC). The Lesser Scaup is a rare visitor to the other Channel Islands (Garrett and Dunn 1981) but is apparently encountered more frequently on Santa Catalina Island (Small 1994). It has been reported from five Channel Islands thus far (Jones and Collins unpubl. data).

Surf Scoter (*Melanitta perspicillata*). Uncommon migrant; casual winter and



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summer visitor. Recorded primarily in spring from 19 Mar to 11 Apr, exceptionally as late as 30 Apr (Jorgensen and Ferguson 1984), and in fall from 7 Oct to 27 Dec. The high count of 40 from West Cove Point was made 29 Mar 2001 during the period of peak northbound migration (BLS). Two summer records: one female at Northwest Harbor 23–24 Aug 1996 (RTP); one off Northwest Harbor 19 Jun 1997 (JHG). Three winter records: one in Wilson Cove 20 Jan 1997 (JHG, MAB), one female off Chenetti Beach 13 Jan 2002 (BLS), and one off West Cove Point 22 Feb 2004 (SWS). Although Garrett and Dunn (1981) described the Surf Scoter as common around the northern Channel Islands and less common around the southern islands, we saw it regularly during migration, though rarely a wintering bird.

Common Goldeneye (*Bucephala clangula*). Casual winter visitor. Three records: up to 12 individuals wintered in West Cove from 16 Dec 1998 to 19 Feb 1999 (JAM et al.), one male was in West Cove 4–7 Jan 2003 (BLS, JTB), and a male, possibly returning, was in West Cove 27 Jan–26 Feb 2004 (ELK et al.). This species is generally rare along the coast of southern California (Garrett and Dunn 1981), and Jones and Collins (unpubl. data) have only five other records for the Channel Islands.

Red-breasted Merganser (*Mergus serrator*). Uncommon fall migrant and winter visitor. Recorded from 4 Oct to 11 Apr. Can be found sparingly during the fall and winter months as migrants pass coastal vantage points, and as a winter resident at Pyramid Point. After the Surf Scoter, this species is the diving duck most frequently encountered around SCI. It is common along the coast of southern California (Garrett and Dunn 1981) but partial to inshore waters, perhaps explaining the relatively low numbers recorded annually around SCI.

Ruddy Duck (*Oxyura jamaicensis*). \* Rare fall migrant and winter visitor. There are 14 records involving 23 individuals between 24 Aug and 13 Apr. Spring status unclear. Five birds first discovered at Twin Dams 10 Mar 1997 stayed at least through 13 Apr, suggesting that they had spent the winter. This record also represents the island's high count. Garrett and Dunn (1981) reported this species as a common winter visitant to Santa Catalina Island and casual on the other Channel Islands.

### Phasianidae

Chukar (*Alectoris chukar*). \* Common introduced breeder and resident. Breeds on steep grassy and rocky slopes, particularly on the southern half of the island. In late spring and summer flocks of up to 50 individuals can be found along roadsides. The California Department of Fish and Game introduced 176 individuals on 22 Aug 1960 (Jorgensen and Ferguson 1984).

### Odontophoridae

California Quail (*Callipepla californica*). † Extirpated; introduced but no longer present. No recent records. Grinnell (1897a) collected six specimens and recorded 20 individuals during his stay. He was told that 12 dozen were released 10 years prior to his visit (Jorgensen and Ferguson 1984).

Gambel's Quail (*Callipepla gambelii*). † \* Common introduced breeder and resident. Ten dozen were introduced for hunting in 1912 (Huey 1932). This species is now a common resident found primarily on the southern half of SCI, typically not north of Stone Station. It prefers grassy terraces with widespread prickly pear cactus. It breeds throughout the spring, and broods (typically 8–15 birds) fledge from March through August.

### Gaviidae

Red-throated Loon (*Gavia stellata*). Casual migrant and winter visitor. Four records:

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one off Boulders South 5 Dec 2000 (JTB, RDMcM), one flying by West Cove Point 4 Mar 2002 (BLS, ELK), one off China Point 18 May 2002 (BLS et al.), and one off China Point 24 Apr 2004 (SWS et al.). This species is most likely to be found inshore, and it is the rarest of the three loons far offshore and around the Channel Islands (Garrett and Dunn 1981).

Pacific Loon (*Gavia pacifica*). Uncommon migrant; casual in winter and summer. Recorded in spring from 16 Mar to 21 May, exceptionally as late as 3 Jun (1972, 15 individuals, HLJ); 2003, two migrating off West Cove Point, BLS) and 7 Jun (2003, one migrating past China Point, BLS), and in fall from 6 Oct to 21 Dec. One winter record: three off China Point 8 Jan 2004 (HAC, JHP). One summer record: one on 25 Jul 1979 (PDJ). Fall migration peaks during November; spring migration peaks from late March through April. In fall the high count is of 63 migrating south past China Point 22 Nov 2003 (BLS); in spring it is of 358 migrating north past West Cove Point 30 Apr 2004 (SWS). The Pacific Loon is perhaps more likely to pass the island in numbers during fall, when the majority of migrants occur well offshore. In spring, migrants move north across a broad front ranging from well offshore to close to the mainland (Russell and Lehman 1994), and numbers are typically seen during light winds from the east. This species is most easily found flying by West Cove and China points, though large numbers sometimes congregate near feeding flocks of Brandt's Cormorants off the island's east side in winter and early spring. It was first recorded by Linton (1909) during the winter of 1908.

Common Loon (*Gavia immer*). Rare migrant and winter visitor. Recorded from 18 Oct to 7 Jun, exceptionally as late as 17 Jun (1995, one in breeding plumage in Northwest Harbor, RTP). In fall the high count is of three flying south past West Cove Point 4 Nov 2001 (BLS, AMC); in spring it is of seven moving north past West Cove Point 30 Apr 2004 (BLS). This species can be found in the calm waters of Pyramid, Horse Beach, and China Beach coves. Garrett and Dunn (1981) suggested the bulk of fall migrants move south well offshore, so the Common Loon's rarity around SCI is surprising. The species was first recorded 2 May 1974 (RS, WC).

### Podicipedidae

Pied-billed Grebe (*Podilymbus podiceps*).† Very rare visitor; migratory pattern unclear. Eleven records spread nearly evenly throughout the year. This species seems as likely to occur during midsummer as during migration and winter. The Pied-billed Grebe is an uncommon winter visitor only to Santa Catalina Island and a stray elsewhere in the Channel Islands (Jones and Collins unpubl. data). SCI's first record was of a female shot by Howard W. Wright on 26 Aug 1908 (Howell 1917).

Horned Grebe (*Podiceps auritus*).\* Casual migrant. One record: a single bird at West Cove Beach 18–20 Nov 2002 (RGD et al.). The Horned Grebe is a regular winter visitor to Santa Rosa Island and likely more frequent around the northern than around the southern Channel Islands (Jones and Collins unpubl. data). Small (1994) treated it as uncommon as far south as Santa Catalina Island, and it has now been recorded on all eight Channel Islands.

Eared Grebe (*Podiceps nigricollis*).† Uncommon migrant and winter visitor. Recorded primarily from 9 Oct to 13 May, exceptionally as early as 23 Aug (1996, one at West Cove, RTP) and 19 Sep (Jorgensen and Ferguson 1984). Most easily seen just off the surf at West Cove Beach, site of the high count of 20 on 16 Dec 1997 (JAM). Typical fall arrival dates are during the last half of October. This species appears to be most frequent during the winter months, especially December. It can also be seen rarely flying past West Cove Point during migration. It is regularly encountered in small flocks well out to sea (Garrett and Dunn 1981), perhaps explaining its regularity at SCI.

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Western Grebe (*Aechmophorus occidentalis*)\* Uncommon migrant; casual summer and winter visitor. Found most frequently near shore off the island's east side; rare at Lemon Tank. Recorded in spring from 25 Mar to 8 Jun, in fall from 18 Sep to 24 Nov. Seven winter records from 8 Dec to 24 Feb. Three summer records: one in West Cove 24–25 Aug 1996 (RTP), one in Wilson Cove 29 Jul 2001 (JTB, BLS), and two in Wilson Cove 20–28 Jul 2002 (JTB et al.). The Western Grebe has been recorded at SCI in every month, but summer records pertain primarily to immature birds in heavy molt. Most records are from fall migration, peaking in October and November. The high count is of 38 near West Cove 31 Mar 2004 (ELK). Jorgensen and Ferguson (1984) considered this species a rare winter visitor, although it seems unlikely that the status of this species has changed dramatically. More likely, increased observation near shore has contributed to the increase in records.

Clark's Grebe (*Aechmophorus clarkii*)\* Casual migrant. Two fall records: one off Burns Canyon 12 Oct 2001 (BLS photo; Figure 15); one at Northwest Harbor 22 Oct 2002 (JTB). One spring record: one in West Cove 8 Jun 2003 (BLS, RSAK). This species seems to be a casual visitor offshore, unlike the commonly observed Western Grebe. Small (1994) stated that Clark's Grebe is less likely to occur on exposed coastal waters than the Western Grebe, and the data from SCI bear this out. Jones and Collins (unpubl. data) have only five other records for the Channel Islands.

### Diomedidae

Laysan Albatross (*Pheobastria immutabilis*).# Casual migrant. Two records: a single bird flying past China Point 3 Jul 2001 (BLS, CWB); a single bird off Boulders South 17 Mar 2004 (SWS, JHP). This species' colonization since 1986 of several islands off Mexico may result in increasing observations around the Channel Islands in future years.

Black-footed Albatross (*Pheobastria nigripes*).† Casual migrant. Two records: one off China Point 30 Jul 2001 (BLS et al.); one off West Cove Point 13 Aug 2001 (SL). Also, J. C. Couffer collected a female 17 Jul 1949 somewhere "offshore San Clemente Island." Miller (1936) reported seven in the general region of Tanner Bank, southwest of SCI, on 2 Aug 1935. Jones and Collins (unpubl. data) have only two other records within 1 km of the Channel Islands.

### Procellariidae

Northern Fulmar (*Fulmarus glacialis*)\* Irregularly uncommon (in typical years) to common (during invasion years) as a migrant and winter visitor; casual in summer. Recorded primarily from 18 Oct to 10 Apr, exceptionally as late as 24 Apr (2004, three off China Point, SWS et al.) and 5 May (1974, one found dead, WC, RS). The fall high count is of 27 passing south off West Cove Point 26 Nov 2003 (BLS et al.). During invasion years the Northern Fulmar is seen frequently just offshore and found dead regularly on island beaches. Of those recorded to morph, 89% are dark. Three summer records: one of the light morph off China Point 2 Jul 2001 (FB et al.), one off China Point 13 Jun 2004 (SWS et al.), and one off West Cove Point 23–27 Jul 2004 (JMMcM et al.); three of these were in summer 2004 after a large winter invasion of this species along the west coast (Sullivan 2004). Though first recorded by an ornithologist at SCI 2 Dec 1972 (HLJ), this species was heavily exploited for food by early maritime hunter-gatherers (Porcasi 1999a).

Murphy's Petrel (*Pterodroma ultima*).# Accidental. One record: a single bird flying past West Cove Point with Sooty Shearwaters 19 Apr 2002 (BLS). Murphy's Petrel has been seen at least twice in May from land at San Nicolas Island (W. Wejhte pers. comm., Jones and Collins unpubl. data). It occurs with some regularity in waters well off southern California (Small 1994) but remains very unlikely to be seen from shore.

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Figure 4. View north from Horton Canyon along San Clemente Island's east side.

*Photo by Jonathan J. Dunn*



Figure 5. Horse Beach at San Clemente Island's southern tip, July 2001.

*Photo by Brian L. Sullivan*

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Pink-footed Shearwater (*Puffinus creatopus*).<sup>\*</sup> Fairly common migrant and summer visitor; casual in winter. Recorded primarily from 9 Apr to 25 Nov, exceptionally as early as 4 Mar (2002, two off West Cove Point, BLS, ELK) and 16 Mar (2003, one off West Cove Point, ELK). First recorded from shore 10 May 2001 (BLS et al.), but it has been recorded since during every month except February, likely because of an increase in observer effort rather than a true change in status. Large numbers occur during spring and fall migration, but this species becomes difficult to find in late winter and early spring when most return to the Southern Hemisphere. The spring high count is of 700 rafted with Sooty Shearwaters 3 km off Horton Canyon 9 Jun 2001 (BLS, CWB); the fall high count is of 1552 passing south off Eel Point 9 Sep 2001 (BLS, JTB). Numbers ranging from 10 to 50 are more frequently encountered during migration periods. Two winter records: five off Pyramid Point 17 Dec 2001 (BLS et al.); one off West Cove Point 16 Jan 2002 (BLS, ELK).

Flesh-footed Shearwater (*Puffinus carneipes*).<sup>#</sup> Casual fall migrant. Two records: a single bird moving south past West Cove Point 25 Oct 2002 (TRL, BLS); one just off China Point 18 Oct 2003 (BLS et al.). These are the only records of this species within 1 km of the Channel Islands. There are several reports farther offshore around the islands during fall (Jones and Collins unpubl. data).

Buller's Shearwater (*Puffinus bulleri*). Casual fall migrant. Three records: one at China Point 24 Aug 2001 (CWB); one or two off West Cove Point 6 Sep 2001 (BLS et al.); one with Sooty Shearwaters moving past China Point 28 Aug 2002 (BLS, AMC). Buller's is likely more frequent during fall than the records imply.

Sooty Shearwater (*Puffinus griseus*).<sup>†\*</sup> Fairly common spring and uncommon fall migrant; fairly common summer visitor; casual in winter. Recorded primarily from 16 Mar to 30 Sep. There are no October records, but there are six records of Sooty/Short-tailed Shearwaters 4–24 Nov. Two winter records: one off Pyramid Point 17 Dec 2001 (BLS et al. photo); one off West Cove Point 7 Jan 2004 (BLS, JHP). As of 1983, there were only three records for SCI (Jorgensen and Ferguson 1984), not including the 200 reported by Miller (1936) rafted just west of SCI 31 Jul 1935. With increased observer effort this species is now recorded regularly. It is easily seen from shore during late spring, summer, and early fall when conditions are optimal for viewing: typically calm seas and low overnight fog. Possibly it occurs in small numbers year round, being confused with the Short-tailed Shearwater, which occurs during the late fall and winter. The Sooty is most common during spring migration; the high count is of 1500 rafted with Pink-footed Shearwaters 3 km off Horton Canyon 9 Jun 2001 (BLS, CWB). It is less common during fall, when the majority are gone by mid September; the fall peak is of 337 moving past China Point 28 Aug 2002 (BLS, AMC). The year 2004 was especially poor for viewing this species from SCI, with just ten records of 57 birds.

Short-tailed Shearwater (*Puffinus tenuirostris*).<sup>#\*</sup> Casual late fall migrant and winter visitor. Six records from 22 Nov to 16 Mar. First recorded 22 Nov 2001 when two were off West Cove Point (BLS, CRK). Owing to the difficulty of distinguishing the Short-tailed from the Sooty Shearwater at any distance, most dark shearwaters seen from shore in winter are left as unidentified. Interestingly, prehistoric remains of this species have been identified from the middens of early hunter-gatherers, whereas those of the Sooty Shearwater have not (Porcasi 1999a).

Manx Shearwater (*Puffinus puffinus*).<sup>#</sup> Accidental. One record: two flying south past West Cove Point 4 Mar 2002 (BLS, ELK; Cole and McCaskie 2004).

Black-vented Shearwater (*Puffinus opisthomelas*).<sup>#</sup> Casual migrant and winter visitor. Four records: one off Eel Point 27 Mar 2001 (BLS), one off West Cove Point 29 Mar 2001 (BLS), one flying past China Point 1 Jul 2001 (BLS, AMC), and one flying south past West Cove Point 18 Dec 2002 (JHP et al.). Although this nearshore



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species occurs only casually near SCI, it ranges more regularly to waters off Santa Catalina Island in late fall and winter (BLS pers. obs.). The difficulty of distinguishing this species from other small black-and-white shearwaters obliged us to leave two birds seen in March unidentified.

### Hydrobatidae

Wilson's Storm-Petrel (*Oceanites oceanicus*).# Accidental. Two records: Miller (1936) collected a single individual rafted with Black Storm-Petrels east of SCI and 40 km off San Diego 31 Aug 1935 (UCLA 2222); one was "offshore" of SCI 5 Sep 1962 (Garrett and Dunn 1981). A bird showing features consistent with this species was seen moving north past China Point with Ashy Storm-Petrels 6 Sep 2001 (BLS et al.), but similar white-rumped species, such as Elliott's (*O. gracilis*) and Wedge-rumped Storm-Petrels (*Oceanodroma tethys*), could not be eliminated.

Leach's Storm-Petrel (*Oceanodroma leucorhoa*).† Casual migrant and visitor. Five records: one was found below a wire crossing Ridge Road above Bryce Canyon 13 Jul 2001 (BLS; Figure 16), one was 5–8 km off Horton Canyon with a large northward movement of Black Storm-Petrels 17 Aug 2001 (BLS et al.), one collided with a light fixture on the Wilson Cove pier 9 Jun 2002 and was subsequently released (AVB, DMC photo), one was found in a water tank at Wilson Cove 23 Jun 2003 (CLS), and one on the Wilson Cove pier 15 Jul 2003 recovered and was subsequently released (JMT). Of the five records for SCI, four are of injured (wrecked) birds, suggesting occurrence more frequent than is known. Although we categorize this species as casual on the basis of the number of records, away from shore it is seen regularly (Garrett and Dunn 1981). It breeds as close as San Miguel Island and Islas Los Coronados off Tijuana (Huntington et al. 1996). Three of five records are of light-rumped individuals, but those found in summer 2003 were mostly dark-rumped, resembling most of the Leach's Storm-Petrels nesting on Islas Los Coronados (Bourne and Jehl 1982).

Ashy Storm-Petrel (*Oceanodroma homochroa*).† Casual migrant and visitor. Three recent records of birds seen from China Point: one on 4 Jul 2001 (BLS), >300 in a flock 29 Jul 2001 (CWB et al.), and four on 6 Sep 2001 (BLS et al.). Like other storm-petrels, this species is difficult to see from shore, so it is likely more common near SCI than records indicate. Miller (1936) reported it attracted to his ship in Pyramid Cove 30 Aug 1935. He hypothesized that postbreeding dispersal, rather than a nearby breeding colony, was the likely explanation for this species' appearance around SCI in late summer. Ainley (1995) cited H. R. Carter as suspecting "hundreds" breeding on offshore rocks of SCI, but subsequent searches for this species have proven fruitless (BLS pers. obs.). This species' occurrence on SCI could be tested with some target mist-netting, but as of this writing this has not yet been attempted. The record of >300 suggests that concentrations of food may bring large numbers to waters off SCI.

Black Storm-Petrel (*Oceanodroma melania*).\* Casual spring and fall migrant and summer visitor. We list the Black, like Leach's Storm-Petrel, as casual only in terms of the number of records. It likely occurs more frequently than is known. Five recent records: three or four offshore between SCI and Santa Catalina Island 17 May 2001 (SJK et al.), one off China Point 1 Jul 2001 (BLS, AMC), one photographed off Pyramid Point 31 Jul 2001 (BLS et al.), 72 moving north 4–8 km off Horton Canyon 17 Aug 2001 (BLS et al.), and one off China Point 18 May 2002 (BLS et al.). The nearest confirmed nesting locations are Santa Barbara Island and Islas Los Coronados (Ainley and Everett 2001). Black Storm-Petrels appear to be more easily seen off the east shore of SCI, particularly a few miles east of Pyramid Point. Breeding is possible in the past but unlikely currently because of terrestrial predators: Grinnell (1897a) reported hearing Black Storm-Petrels at night in Mosquito Cove 28 Mar–7 Jun 1897; Miller (1936) reported this species around his ship docked in Pyramid

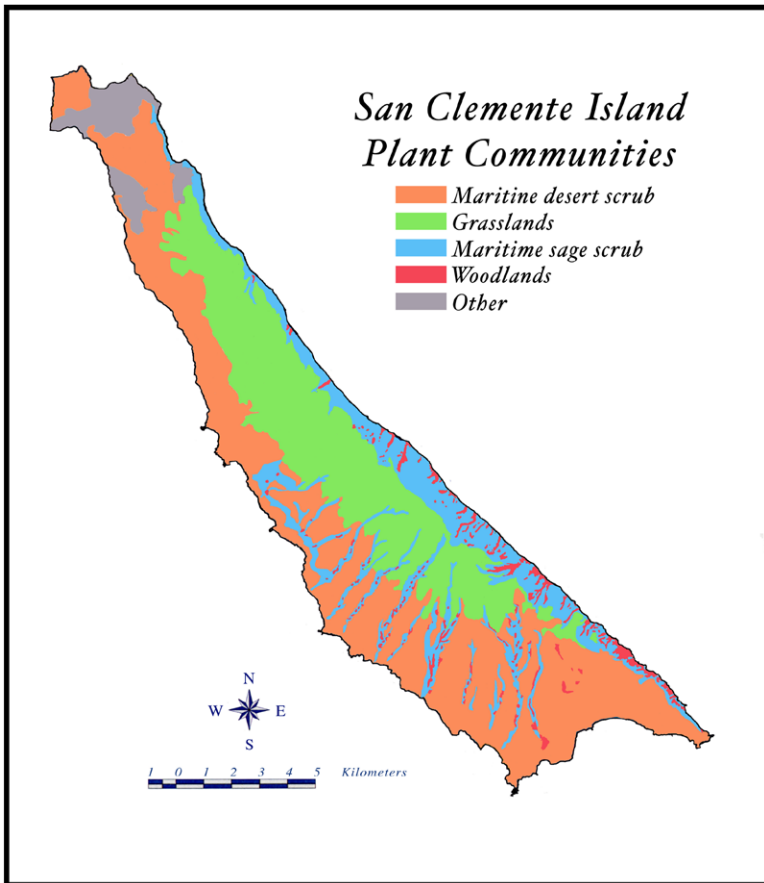


Figure 6. San Clemente Island plant communities (simplified from the U. S. Navy's integrated natural-resources-management plan).

Cove in July and August 1935. To the southeast of SCI, 45 were seen at Tanner Bank 10 Nov 1990 (JLD).

Least Storm-Petrel (*Oceanodroma microsoma*). Casual migrant. One record from shore: one flying north past China Point 1 Jul 2001 (BLS, AMC). Probably more common than records indicate during invasion years when postbreeding dispersal sends large numbers into southern California waters (G. McCaskie pers. comm.). Seen frequently on the ocean near SCI from mid-August through September (Small 1994); 41 were at Tanner Bank southeast of SCI 10 Nov 1990 (JLD). Miller (1936) reported a single individual rafted with Black Storm-Petrels east of SCI 31 Aug 1935.

Phaethontidae

Red-billed Tropicbird (*Phaethon aethereus*). †\*# Rare summer and early fall visitor. Recorded from 2 Jul to 5 Oct, dispersing from Mexican waters. Miller (1936) reported

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Figure 7. San Clemente Island circa 1970s, showing feral goats and lack of vegetation on canyon slopes.

*Photo property U.S. Navy*



Figure 8. Classic “root perching” caused by erosion on San Clemente Island.

*Photo by Jonathan J. Dunn*



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Figure 9. Cholla at Lost Point on San Clemente Island's southwest side, April 2002.

*Photo by Brian L. Sullivan*

two near SCI during summer 1935. The species is seen regularly in some years from boats 1–9 km south of China Point, and occasionally from shore during good years (2001 and 2003). Late July and August are best; the high count of 15–20 was from a boat 1–3 km off China Point 29 Jul 2001 (BLS et al.; Figure 17). The mobility of the birds made an exact count difficult, but 12 individuals were in view at once several times during the afternoon (BLS, JHP). Although this is the high count for the United States, it likely under-represents the total number of Red-billed Tropicbirds encountered that day. Garrett and Dunn (1981) and Small (1994) described Pyramid Cove as a spot favored by Red-billed Tropicbirds, and this statement still holds true today. An unidentified tropicbird was seen 10 Nov 2001 (BLS, AMC). One male was collected 27 Jul 1968 approximately 8 km south of SCI (JRJ, SDNHM 36751).

### Sulidae

Masked Booby (*Sula dactylatra*). †\*# Casual visitor. Three records, probably of the same individual: a subadult roosting on Bird Rock 17 Jan–29 Mar 2003 (JTB et al.), an adult at China Point 10 Aug–31 Dec 2003 (BLS et al.; San Miguel and McGrath 2005), and an adult photographed at China Point 13 Jul–15 Aug 2004 (BLS et al.; Figure 18). A single adult was 56 km southwest of SCI 10 Jan 1977, the first record for California (Lewis and Tyler 1978, Luther et al. 1979). Jones and Collins (unpubl. data) have just three other records for the Channel Islands: two from San Miguel Island and one from San Nicolas Island, though only one of these has been accepted by the CBRC.

Blue-footed Booby (*Sula nebouxii*). Accidental. One record: one adult flying south past West Cove Point 17 Nov 2002 (BLS; San Miguel and McGrath 2005). Two other reports have been rejected by the CBRC. A high count of 37 on Islas Los Coronados 21 Nov 1971 (Garrett and Dunn 1981) suggests that this species has perhaps been overlooked on SCI during its sporadic irruptions—of which there have been none since 1972.

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Brown Booby (*Sula leucogaster*).#\* Accidental. One record: a juvenile roosting with a Masked Booby at China Point 1–3 Nov 2003 (BLS et al.; Figure 19; San Miguel and McGrath 2005). This species has been found with increased frequency in recent years on Islas Los Coronados and Todos Santos, Mexico (Hamilton et al. 2004). Jones and Collins (unpubl. data) have reports of this species from six of the Channel Islands.

### Pelecanidae

Brown Pelican (*Pelecanus occidentalis*).†\* Common migrant and visitor. This species is present year round in good numbers, although it does not breed on SCI. Northward dispersal from Mexican breeding grounds augments numbers in summer and fall, when Briggs et al. (1981) estimated the island high count of 1800. Our high count from land is of 350 flying north past Eel Point 9 Sep 2001 (BLS, JTB).

### Phalacrocoracidae

Brandt's Cormorant (*Phalacrocorax penicillatus*).†\* Fairly common breeder and resident. The most common cormorant on SCI, this species nests on sea cliffs and offshore rocks. The two largest colonies are currently at Bird Rock (approximately 100 pairs) and Seal Cove (approximately 30 pairs). Large feeding flocks of this species form around the island during late winter and spring, when up to 4500 have been estimated (Jorgensen and Ferguson 1984). Linton (1908) first recorded nesting in 1907.

Double-crested Cormorant (*Phalacrocorax auritus*).† Uncommon breeder and resident. Breeds on SCI in numbers much smaller than those of Brandt's Cormorant, with approximately 12 pairs known from Seal Cove (2001–2003, BLS et al.). Eleven nests were active at Seal Cove 7 Jul 2003 (BLS, RSAK). During a search of Bird Rock in July 2002, none were found breeding among the Brandt's Cormorants nesting there (BLS, JTB). This species was not recorded breeding on SCI as of 1984, and its recent colonization is worthy of note.

Pelagic Cormorant (*Phalacrocorax pelagicus*). Uncommon winter visitor and migrant. Recorded 3 Nov–6 Apr, exceptionally as late as 30 Apr (2004, one off West Cove Point, SWS). No more than two recorded at any one time. Most often seen near rocky coasts or flying past with large flocks of Brandt's and Double-crested Cormorants. Breninger (1904) reported nesting, but subsequent searches of SCI's cormorant colonies have not corroborated this.

### Ardeidae

Great Blue Heron (*Ardea herodias*).† Uncommon nonbreeding visitor year round. Most records are from September through January, when fall migrants arrive and overwinter. Summer records are predominately of immature birds. Great Blue Herons are often seen fishing from atop kelp patties offshore.

Great Egret (*Ardea alba*).\* Rare migrant; casual summer visitor. Recorded in spring from 11 Mar to 12 Jun, in fall from 19 Aug to 27 Dec. One winter record: 14 Jan 1997 (FAJ). The high count is of six standing on a kelp patty off Bryce Canyon 7 Oct 2001 (JHP). The Great Egret was first recorded at SCI 27 Dec 1972 (JLa), and Garrett and Dunn (1981) cited only three records for the Channel Islands.

Snowy Egret (*Egretta thula*). Casual spring and very rare fall migrant. Recorded six times in fall from 4 Sep to 26 Oct. Two spring records: one at the airfield 28 Apr 2001 (FB, NMM); one on Bird Rock 28 May 2002 (FB, NMM). The high count is of five at Boulders South 15 Sep 2004 (HAC et al.). This egret is a casual transient throughout the Channel Islands (Garrett and Dunn 1981).

Cattle Egret (*Bubulcus ibis*).\* Rare visitor. Recorded from 2 Jul to 26 May. Since

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Figure 10. San Clemente Island wildflowers, from top right *Eschscholzia ramosa* (island poppy), *Lupinus guadalupeensis* (lupine) and *Amsinckia menziesii* (fiddleneck), *Lasthenia californica* (goldfields) and *Trifolium* sp. (clover), *Gilia nevinii* (Nevin's gilia), *Stylomecon heterophylla* (wind poppy), *Trifolium willdenovii* (clover), *Dodecatheon clevelandii insulare* (shooting star), *Phacelia floribunda* (San Clemente Island phacelia).

Photos by Jonathan J. Dunn

the 1960s the Cattle Egret has been the most common white ardeid encountered off southern California, though its frequency has decreased over the past 10 years. Since the first record for SCI 2 Nov 1973 (PDJ) it has been found essentially year round, but there are no June records. High counts are of 65 at Wilson Cove 26 Mar 1993 (WTE) and 21 on 13 Oct 1976 (HLJ). Jorgensen and Ferguson (1984) described this species as a regular fall and winter visitor, so its frequency has decreased over the past 20 years.

Green Heron (*Butorides virescens*). \* Casual fall migrant. Five records: one 12 Sep 1974 (HLJ), one at Horse Beach 3 Oct 2001 (JTB photo), two at Boulders South 15 Sep 2004 (HAC et al.), one juvenile at Lemon Tank 16 Sep 2004 (JMMcM et

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Figure 11. Lemon Tank, March 2003.

Photo by Ashleigh V. Blackford

al.), and one juvenile at Lemon Tank 7 Oct 2004 (BLS photo, JMMcM). Garrett and Dunn (1981) cited only two records for the Channel Islands, presumably including the one on 12 Sep 1974 listed above. Jones and Collins (unpubl. data) have records for all the Channel Islands except San Miguel.

Black-crowned Night-Heron (*Nycticorax nycticorax*). Casual migrant. Four records: 11 on 24 Aug 1894 (EAM unpubl. notes), one adult at the Wilson Cove pier 17 Jul 1972 (PDJ), one subadult 16 Sep 1981 (KMH), and one adult and one immature at Whale Point 26–27 May 2001 (FB et al.). Jones and Collins (unpubl. data) consider this species an occasional visitor to all the Channel Islands except Santa Catalina, where it is an uncommon winter visitor.

### Threskiornithidae

White-faced Ibis (*Plegadis chihi*).\* Accidental. One record: a flock of 10 at the Chad's Bluff ponds 19 May 2001 (JTB, BLS; Figure 20) stayed in the area and were last recorded at Whale Point 1 Jun 2001 (FB). A flock of four *Plegadis* ibises, likely this species, were seen flying north past Lost Point 4 Apr 2004 (JMMcM). A *Plegadis* ibis at Lemon Tank 6–9 Jul 2004 (CLD et al.) was well studied and photographed, but its identity is still unresolved. The bird showed several characters of the White-faced Ibis, but a hybrid with the Glossy Ibis (*P. falcinellus*) could not be ruled out. The Glossy Ibis began reaching California as a vagrant in 2000 (McKee and Erickson 2002), and hybrid ibises have been discovered in California recently (M. Iliff pers. comm.). Jones and Collins (unpubl. data) have five other Channel Islands records of the White-faced, four from fall and one from spring.



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Figure 12. Greater White-fronted Goose at Lemon Tank, October 2002.

*Photo by Brian L. Sullivan*



Figure 13. Cackling Geese, one *B. h. leucopareia*, one possibly *B. h. minima*, at Chad's Bluff 14 October 2001.

*Photo by Brian L. Sullivan*

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Figure 14. Male Ring-necked Duck at Lemon Tank 14 November 2003

Photo by Brian L. Sullivan

### Cathartidae

Turkey Vulture (*Cathartes aura*). Accidental. One record. First recorded 25 May 1968 (MLC, JMD), then noted apparently regularly until 28 Apr 1981 (PDJ, HLF). Jorgensen and Ferguson (1984) described the Turkey Vulture as an uncommon visitor from 27 Feb to 3 Nov, with no more than one individual seen at any given time, but there are no recent reports. Thus a single long-staying individual may have arrived and remained on the island year round for at least 13 years (for a parallel, see also the account of the Broad-winged Hawk). Jones and Collins (unpubl. data) have sightings on Santa Rosa, Santa Cruz, San Nicolas, and Santa Catalina islands. The vulture's occurrence on SCI may have been linked to the effort to remove feral animals resulting in large amounts of carrion.

### Accipitridae

Osprey (*Pandion haliaetus*).†\* Rare, occurring year round as a nonbreeding visitor; extirpated as a breeder. Recorded primarily as a migrant in spring and early summer from 6 Mar to 12 Jul, in fall from 4 Sep to 16 Dec. At least six records later in the summer and nine in winter, most of long-staying individuals. The high counts are of two at China Beach 13 Oct 2002 (AMC et al.) and two at West Cove Point 16 Nov 2002 (BLS). SCI formerly held the largest breeding population in the California Channel Islands with an estimated 20 active pairs in 1907 (Linton 1908). Grinnell (1897a) found the Osprey to be "quite abundant" at the south end of SCI during the spring of 1897 and stated that there was "hardly a rocky promontory or pinnacle which was not used as a nesting site." Population declines in the early 1900s led to its extirpation as a breeder, with the last nest recorded 26 Mar 1927. Shooting by fishermen likely contributed to its decline and subsequent extirpation from the Channel Islands (Kiff 1980). Kiff (1980) also suggested that some deleterious change in the Osprey's food supply may have occurred in the 1920s and 1930s, possibly contributing to the decline. By the 1970s this species was only an occasional transient on the Channel Islands (Garrett and Dunn 1981), but from 2000 through 2004 it was of

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Figure 15. Clark's Grebe off Burns Canyon 12 October 2002.

*Photo by Brian L. Sullivan*

rare but regular occurrence on SCI. It is found along both shorelines with numerous records from the north end (West Cove/Whale Point area) and from Horse Beach and Chenetti Cove in the south, a few at Lemon Tank. An increase in records over the past several years is perhaps promising for future breeding.

White-tailed Kite (*Elanus leucurus*).\* Casual breeder; rare migrant and winter visitor. Recorded year round, but most records are from October to January; migra-



Figure 16. Leach's Storm-Petrel found above Bryce Canyon 13 July 2001.

*Photo by Brian L. Sullivan*

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Figure 17. Adult Red-billed Tropicbird off China Point 29 July 2001.

*Photo by Brian L. Sullivan*

tory interval clouded by breeders and dispersing juveniles. The White-tailed Kite has nested three times on SCI, its only known breeding on the California Channel Islands (Garrett and Dunn 1981, Small 1994; Figure 21). A nest in the single eucalyptus tree contained three nestlings in May 2000 (DMC). Three young fledged and were seen with the adults 11 Jun (RTP). In 2003, in the same eucalyptus tree, the pair was incubating by February and had nestlings on 26 Mar. The nest was found empty in early April after strong west winds and possible predation by Common Ravens (BLS pers. obs.). The pair subsequently left the area, and perhaps the island, only to return and begin courting again by Nov 2003. They fledged four young on 9 Feb 2004 (BLS et al.). These birds were then seen at various locations around SCI as far south as Eagle Canyon near the south end, last seen 1 Apr 2004. Perhaps they dispersed back to the mainland after that time.

This species is also an uncommon visitor during late summer, fall, and winter to grasslands from VC3 south, particularly around Bluff and the terrace above Tota Canyon. Dispersal of this species to SCI from the mainland varies from year to year (Scott 1994). The kite's occurrence on SCI is relatively new, as this species was first recorded 9 Sep 1981 (JL). By 1983 there were only two records (Jorgensen and Ferguson 1984). The kite was observed during 4 of the 12 years from 1981 to 1992 (Scott 1994) but during 8 of the subsequent 11 years. Because this species is so conspicuous, this increase is unlikely to be a result of increased observer effort. Numbers comparable to those reported by Scott (1994) during the invasion of 1984 were seen again during 1997–98 and 1999–2000 when up to 50 roosted on the terrace above Tota Canyon (SL et al.). Other high counts, both from the terrace above Tota Canyon: 26 roosting 23 Oct–27 Nov 1984 (TAS) and 23 roosting 4 Nov 1997 (JAM et al.). Standardized raptor surveys by the Institute for Wildlife Studies yielded a daily high count of six on 8 Oct 2002 (Cooper et al. 2003).



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Figure 18. Adult Masked Booby on China Point 23 July 2004.

Photo by Brian L. Sullivan

Bald Eagle (*Haliaeetus leucocephalus*). †\* Extirpated breeder; casual year-round visitor. The Bald Eagle was last recorded nesting on SCI 26 Mar 1927, when one pair was active (Kiff 1980). The maximum number of pairs known from SCI was three in Feb 1923, though additional pairs may have been nesting in the more remote locations of the island at this time (Kiff 1980). Fifteen sets of Bald Eagle eggs were collected from SCI (Kiff 1980). Breninger (1904) rather colorfully described the taking of a Bald Eagle specimen at SCI in 1903: “My man had gone down after the eggs, and while I was giving some minor directions, in an unguarded moment, a little dog that had followed from the house ran with a pitiful whine under my legs and curled up there in mortal terror. I had sat down on the ground, perhaps on account of proximity to the edge of the abyss and at the same time to have ‘full swing’ at rapid shooting. A moment after the dog had taken refuge an eagle came within a foot of striking me in the face with its wing. My gun came to my shoulder instantly. Bang! And a fine white-headed bird lay dying at the bottom of the barranca. The female too, was secured.”

The Bald Eagle was extirpated as a breeder throughout the Channel Islands by the 1950s (Jorgensen and Ferguson 1984). The Institute for Wildlife Studies released four Bald Eagles on SCI from 1976 to 1978. Two of the four had to be recaptured and returned to captivity because of their inability to forage effectively, whereas the other two left the island soon after release (D. Garcelon pers. comm.). Most recent records are of immature birds from the Institute for Wildlife Studies’ successful reintroduction program on Santa Catalina Island. A two- or three-year-old bird lacking patagial tags (with which the Santa Catalina birds are marked) was seen at Matriarch Canyon on 30 Mar 2002 (JJJ). The Bald Eagle is found primarily along SCI’s rocky

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Figure 19. Juvenile Brown Booby at China Point 1 November 2003.

*Photo by Brian L. Sullivan*

shoreline, particularly along the east side of the island, but it can also be seen soaring high overhead.

Northern Harrier (*Circus cyaneus*).<sup>\*</sup> Uncommon fall migrant and winter visitor; rare in spring; casual in summer. Recorded in spring from 20 Feb to 25 Apr, in fall from 14 Aug to 30 Nov, and throughout the winter. Fall migrants typically show up in mid- to late Aug and continue through Nov, when it becomes difficult to separate



Figure 20. White-faced Ibises at Chad's Bluff 19 May 2001.

*Photo by John T. Brollini*

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Figure 21. White-tailed Kite near San Clemente Island's single eucalyptus tree 26 November 2003.

*Photo by Brian L. Sullivan*

migrants from wintering individuals (Figure 22). High counts of seven on 19 Nov 2002 and five on 13 Nov 2001, recorded on standardized raptor surveys (Cooper et al. 2003), substantiate this fall movement.

Breeding was suspected in 1997 but not confirmed (S. Lynn pers. comm.). That year, this species was seen until 14 Aug in the grasslands around VC3. Garrett and Dunn (1981) treated the harrier as a rare transient and winter visitor on the Channel Islands, citing just 15 records. Since being first recorded 3 Nov 1973 (HLJ), it has proven to be of regular occurrence on SCI.

Sharp-shinned Hawk (*Accipiter striatus*). †\* Rare migrant and winter visitor. Recorded from 23 Sep to 9 May. This species is typically found in wooded canyons but can also be seen soaring almost anywhere over the island during migration. Most records are of juveniles, but adults have also occurred. Of the North American accipiters, this species is the most likely to cross water (Kerlinger 1989), so its more regular occurrence on the Channel Islands is no surprise. The appearance of this species in small numbers on SCI seems to be correlated with calm or light northeasterly winds and clear skies (BLS pers. obs.). High counts during standardized raptor surveys (Cooper et al. 2003) are of three on 7 and 8 Oct 2002 and two on two dates. This species was formerly considered a vagrant, with only four records as of 1983 (Jorgensen and Ferguson 1984).

Broad-winged Hawk (*Buteo platypterus*). \* Accidental. One record: a juvenile of the light morph found at Lemon Tank 31 Oct 2001 (BLS; Figure 23) remained on SCI for almost one year, being last reported on 10 Oct 2002. Though the Broad-winged Hawk is regular during fall migration along California's mainland coast, this record is the first of this species on the Channel Islands.

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Figure 22. Immature female Northern Harrier at Lemon Tank 27 November 2003.

*Photo by Brian L. Sullivan*



Figure 23. Immature Broad-winged Hawk at Lemon Tank 31 October 2001.

*Photo by Brian L. Sullivan*

Figure 24. Red-tailed Hawk nest on a cliff ledge with two 20-day-old chicks in Box Canyon 20 April 2002.

*Photo by Nicole M. Munkwitz*



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Red-tailed Hawk (*Buteo jamaicensis*).†\* Fairly common breeder and resident. Red-tailed Hawks have been on SCI for at least 3500 years, as evidenced by remains found in ceremonial burials of the island's early human inhabitants (Hale 1995). Early ornithologists also recorded this species (Breninger 1904, Linton 1908, Howell 1917). This species' recent status on SCI is of great interest. Jones and Diamond (1976) categorized the Red-tailed Hawk as an "in and out" species on SCI, suggesting that it was not present in the late 1800s, colonized briefly in the early 1900s, and vanished again by 1968. It was not recorded between 1973 and 1976 (Jones and Diamond 1976), although a breeding pair had young in Cave Canyon 28 Jun 1980 (HLF). It seems unlikely that this species could have been missed through four years of visits to SCI in the mid-1970s, but the reason for its disappearance and subsequent successful recolonization remains a mystery. Jones and Diamond (1976) suggested this species' need for a large breeding territory as a possible reason for its fluctuating status. It is possible that the species underwent serious population fluctuations due to extensive drought, or it may have persisted throughout these times in very small numbers in less accessible areas. Red-tailed Hawk nests are often inconspicuous and located in difficult areas, so failure to detect this species does not necessarily indicate its absence from an island as large as SCI. This species is long-lived, and a few adults persisting through lean times may have been enough to allow the population to recover when conditions improved.

Like the other large raptors on SCI, the Red-tailed Hawk likely suffered from man-made mortality in the form of shooting, poisoning, egg-collecting, and electrocution on utility lines.

Currently, there are approximately 25 breeding pairs of Red-tailed Hawks on SCI (Cooper et al. 2003), a number similar to that on Socorro Island, Mexico (Walter 1990). In 2001, Cooper et al. (2002) identified 21 Red-tailed Hawk territories, in 14 of which they confirmed nests. In 2002, Cooper et al. (2003) identified 24 Red-tailed Hawk territories, in 22 of which they confirmed nests. It is likely that some nests were missed because of restricted access to parts of the island and inaccessibility of some cliffs. Jorgensen and Ferguson (1984) considered this species rare throughout the year, though they did not estimate a number of breeding pairs. Jorgensen (pers. comm.) suggests that this species' numbers on SCI have increased substantially since the early 1970s.

Perhaps a proliferation of introduced prey contributed to the increase. Cooper et al. (2003) monitored raptors on SCI during 2001 and 2002. They reported 0.46 (2001) and 0.44 (2002) Red-tailed Hawks per kilometer of road transects and 0.94 (2001) and 1.15 (2002) Red-tailed Hawks per kilometer of hiked transect. From these results they estimated a population ranging from 48 to 79 individuals. These surveys yielded high counts of 50 on 11 Aug 2001, 58 on 20 July, and 47 on 20 Sept 2001 (BLS, AMC).

Pairs remain on territory year round, with courtship beginning as early as late December, more typically in January. Incubation begins sometimes as early as mid-February, typically in early to mid-March. The average clutch size is 2 (range 1-4). Mean productivity in 2001 and 2002 was 1.8 and 1.2 fledglings per nest, respectively (Cooper et al. 2002, 2003). Both sexes build the nest, but primarily the female incubates. This species nests on the upper third of cliffs, typically with little cover above the nest (Figure 24). It uses canyon cliffs more commonly than sea cliffs, though several pairs do nest on sea cliffs, as at Seal Cove and West Cove (Cooper et al. 2002, 2003, Sullivan et al. unpubl. data). Red-tailed Hawks have not yet been found nesting in trees on SCI despite the availability of large Catalina cherry trees in canyon bottoms, so their cliff-nesting habits may be a form of specialization on SCI (Sullivan et al. unpubl. data).

Studies of prey composition at nest sites revealed high proportions of mammalian prey, typically Black Rats and Deer Mice (*Peromyscus maniculatus*). Red-tailed

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Hawks also consumed two species of lizard (*Uta* and *Xantusia*) as well as a small proportion of avian prey (e.g., Western Meadowlarks and European Starlings) (Institute for Wildlife Studies unpubl. data). Studies with marked individuals showed no emigration from SCI, and standardized raptor surveys have revealed no evidence for migration of this species from the mainland to the island (Cooper et al. 2002, 2003).

There are no records of rufous or dark-morph Red-tailed Hawks on SCI, also suggesting little or no migration to the island in fall and winter, contra Jones and Diamond (1976). Juvenile Red-tailed Hawks typically disperse away from their natal areas and congregate in parts of the island unoccupied by adults, particularly at the north end of the island (e.g., the airfield terraces and VC3 plateau). Concentrations of juveniles can also be found at the south of the island around Pyramid Point, where small groups or kettles form in late summer (BLS).

### Falconidae

American Kestrel (*Falco sparverius*).†\* Fairly common breeder and resident; migratory status uncertain. This species has colonized SCI only recently, as ornithologists visiting during the breeding season in the late 1800s did not detect it (Mearns unpubl. notes, Grinnell 1897a). Santa Cruz was the only Channel Island occupied by breeding American Kestrels in the early 1900s (Jones and Diamond 1976). By 1907 kestrels were reported as occasional on SCI by Linton (1908), who collected one on 27 Nov 1908 (Linton 1909), but they were not recorded by other ornithologists during 15 other years between 1863 and 1920 (Jones and Diamond 1976). Jones and Diamond (1976) categorized this species as a “terminal immigrant,” meaning that a population became established and has continued to breed without interruption since colonizing, which must have occurred after 1920. The American Kestrel is now the most abundant breeding raptor on SCI with 62 territories identified in 2001, 69 territories identified in 2002 (Cooper et al. 2002, 2003, Sullivan et al. 2003). Jorgensen and Ferguson (1984) counted 70 between Wilson Cove and Thirst on 2 Jan 1980. Cooper et al. (2003) reported 0.87 (2001) and 1.02 (2002) American Kestrels per kilometer of road transect, and 2.2 (2001) and 2.1 (2002) American Kestrels per kilometer of hiking transect. Resulting population estimates for this species on SCI ranged from 141 to 471 individuals (Cooper et al. 2003). Island-wide raptor surveys yielded high counts of 91 on 20 Jul 2002, 81 on 16 Jun 2001, and 66 on 9 Nov 2001 (BLS, AMC).

Numbers appear to fluctuate annually with rainfall and prey availability, with good productivity and survivorship during wet years (BLS pers. obs.). Courtship begins in late February and early March, with most birds incubating by the end of March. Clutch size is unknown, but productivity estimates range from two to six young per nest (Cooper et al. 2002, 2003). Nestlings typically fledge from late April through early June, when large numbers start to arrive at dispersal locations along Ridge Road, particularly at the island’s north end and across its spine, where large flat terraces are bisected by continuous power lines, creating miles of suitable hunting perches. Kestrels nest predominately in natural cavities in cliffs in canyons; also, several have nested in buildings and other artificial structures on SCI (Sullivan et al. 2003). On SCI, kestrels nest in cavities oriented to the southeast, away from the predominant northwest wind (Sullivan et al. 2003). Observations of foraging adults revealed a high proportion of lizards in their diet, particularly *Uta*; the birds also take aerial insects, small mammals, and arthropods (BLS pers. obs.).

The American Kestrel colonization of SCI may have been induced by the introduction of feral grazers, which opened up previously covered ground (Sullivan et al. 2003). The elimination of ground cover and shrubs may have allowed the kestrel to proliferate in an environment with little competition, perhaps only from the San Clemente Loggerhead Shrike. With the current regeneration of the island’s native vegetation, it will be interesting to see how numbers of this species change.

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Figure 25. Snowy Plover at West Cove Beach, October 2003.

Photo by Brian L. Sullivan

Merlin (*Falco columbarius*).<sup>\*</sup> Rare migrant and winter visitor. Recorded from 21 Sep to 16 Apr. First recorded 30 Mar 1915 (Howell 1917) and recorded only three times as of 1983 (Jorgensen and Ferguson 1984), the Merlin is now seen regularly during migration. Most records come from fall migration, peaking from mid October through November. There is a less noticeable peak during spring migration in March. All three North American subspecies have been recorded on SCI. The most common is nominate *F. c. columbarius* (75%), whereas *F. c. suckleyi* (25%) occurs



Figure 26. Juvenile Buff-breasted Sandpiper at Lemon Tank 19 September 2002.

Photo by Brian L. Sullivan



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Figure 27. Wilson's Phalarope at a pond along REWS Road 1 April 2004.

*Photo by Brian L. Sullivan*



Figure 28. First-winter Ring-billed Gull at China Point 4 October 2003.

*Photo by Brian L. Sullivan*

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Figure 29. Black Skimmers (one banded) at Northwest Harbor 20 September 2002.

*Photo by John T. Brollini*

less frequently (BLS pers obs). There is a single record of the Prairie Merlin (*F. c. richardsoni*): a female or immature male at Wilson Cove 16 Mar 2002 (BLS, AMC). Merlins are typically seen flying low and fast over open areas across the island, occasionally along the canyon rims.

Peregrine Falcon (*Falco peregrinus*). †\* Extripated breeder; rare migrant and winter visitor. Recorded primarily from 20 Sep to 19 Apr, exceptionally as early as 7 Sep (2001, one juvenile at Lemon Tank, BLS, AMC) and as late as 7 May (2002, one at West Cove Beach, ELK) and 10 May (2003, one at Box Canyon, RSAK). Formerly a rare resident (Breninger 1904, Mearns 1907, Linton 1908, Howell 1917). This



Figure 30. Xantus's Murrelet with downy chick off China Point 4 July 2001.

*Photo by Brian L. Sullivan*



Figure 31. Dusky Flycatcher at Spanish Curve 23 April 2004.

Photo by Brian L. Sullivan

species is reported most frequently during November and December and then again in March. The high count is of three on 7 Mar 2002 (BLS, AMC).

Although a nest site of this species has never been located on SCI, Linton (1908) reported two pairs in 1907 and stated that a pair bred that year, although he provided no details. Howell (1917) reported Peregrine Falcons during Mar and Apr 1915 but was unable to locate a nest. Kiff (1980) suggested that this species may have been overlooked and that numbers may have been higher historically than Linton's two pairs. On the Channel Islands, this species was most common near seabird colonies (Howell 1917). The introduction of nonnative mammalian predators may have depressed the abundance of prey available to this falcon. Peregrine Falcons were also shot, subjected to egg-collecting, and suffered the effects of DDE-induced eggshell thinning (Kiff 1980). Most Peregrine Falcons observed on SCI appear to be nominate *F. p. anatum*, but dark birds showing the characters of *F. p. pealei* were seen three times: one juvenile at Lemon Tank 7 Sep 2001 (BLS, AMC), one adult at West Cove Point 10 Feb 2004 (BLS, ELK), and one at Horse Canyon 6 Apr 2004 (BLS, CML). The only reported specimen is of *F. p. anatum*, taken 18 Feb 1903 (Breninger 1904).

Prairie Falcon (*Falco mexicanus*). Accidental. One record supported by multiple observers and details: one being harassed by American Kestrels in upper Horse Beach Canyon 5 May 2001 (BLS et al.). Small (1994) called this species "exceedingly rare" on the offshore islands but provided no further details. The dearth of records from SCI supports this statement.



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Figure 32. Female Vermilion Flycatcher at Horse Beach 29 September 2003.

*Photo by Brian L. Sullivan*

Rallidae

Virginia Rail (*Rallus limicola*). Casual fall migrant. Two records: one in Wilson Cove Canyon 19 Sep 1975 (HLJ); one in Chenetti Canyon 7 Oct 2001 (BLS). Garrett and Dunn (1981) cited five records for the Channel Islands, presumably including the one for 19 Sep 1975. Subsequently, the Virginia Rail has been found breeding once at Prisoner's Harbor, Santa Cruz Island, and become known as a rare



Figure 33. Adult Loggerhead Shrike at Lemon Tank, fall 2002.

*Photo by Brian L. Sullivan*

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fall transient on San Nicolas, Santa Barbara and Santa Catalina islands (Jones and Collins unpubl. data).

Sora (*Porzana carolina*).†\* Casual fall migrant; accidental in spring. Seven records from 13 Sep to 28 Mar, four of these 13–22 Sep. First recorded when Linton (1909) found one partially eaten, deep in a canyon near Mosquito Cove. The Sora is an occasional transient and winter visitor on the other Channel Islands (Garrett and Dunn 1981).

American Coot (*Fulica americana*). Very rare fall and spring migrant. Ten fall records from 19 Sep to 16 Nov; three spring records from 20 Mar to 8 May. First recorded 20 Sep 1975 (HLJ). While this species has been called a regular transient on the Channel Islands (Garrett and Dunn 1981), our data suggest it might be rarer than previously thought on SCI. It has bred intermittently on Santa Catalina and Santa Cruz islands (Garrett and Dunn 1981).

### Charadriidae

Black-bellied Plover (*Pluvialis squatarola*).†\* Uncommon migrant and winter resident; casual in summer. Recorded primarily from 18 Jul to 27 Apr, also twice in summer: one at West Cove Beach 27 May 2004 (SWS); one at Northwest Harbor 27 June 2004 (IR). This species is generally found along beaches or in the short vegetation around the airfield. The high count is of 32 at West Cove Beach on 17 Nov 2002 (BLS).

Pacific Golden-Plover (*Pluvialis fulva*).\* Rare fall migrant and winter resident. Recorded primarily from 10 Oct to 4 Mar, exceptionally as early as 3 Aug (2001, one at West Cove Point, BLS, AMC) and 11 Sep (2004, five at Horse Beach, HAC) and as late as 4 Apr (2003, two at Whale Point, NMM). A flock of 16 golden-plovers was tentatively identified as this species as it flew past West Cove 23 Apr 2003 (CWB). Typically, winter visitors show up in early November. The high count is of 25 on the airfield 5 Nov 1998 (JAM, TRM). Late-fall and winter birds are typically found on and around the airfield. It seems likely that most, if not all, of SCI's golden-plovers have been the Pacific and not the American (*P. dominica*). Like the Black-bellied Plover, this species favors the short vegetation around West Cove Point, the airstrip, and the north end of SCI, and it often associates with flocks of the Black-bellied during winter. This species was first recorded 21 Sep 1975 (HLJ).

Snowy Plover (*Charadrius alexandrinus*).†\* Casual breeder; fairly common migrant and winter visitor (Figure 25). The Western Snowy Plover (*C. a. nivosus*) was listed as threatened along the Pacific coast by the USFWS in 1993 (Page et al. 1995). Snowy Plovers have nested three times on SCI: 22 Apr 1989 at West Cove, one chick, outcome unknown (Winchell 1990), 29 Mar 1996 at Horse Beach, three eggs depredated (Foster 1998, USDoN 2001), and 9 Mar 1997 at Horse Beach, three eggs, followed by three fledglings there 21 Apr 1997 (JHG) and two fledglings at nearby Pyramid Cove 31 May 1997 (Foster and Copper 2001, USDoN 2001). More commonly, this species is found as a migrant and winter resident on sandy beaches (5 Jul–8 Apr). The high count of 51 resulted from an islandwide survey on 23 Oct 2004 (PRBO unpubl. data). Snowy Plovers have also bred on San Miguel, Santa Rosa, and San Nicolas islands (Garrett and Dunn 1981) and are recorded commonly on sandy beaches during winter throughout the Channel Islands (Jones and Collins unpubl. data).

Semipalmated Plover (*Charadrius semipalmatus*).†\* Rare spring and uncommon fall migrant. Recorded in fall from 12 Jul to 22 Nov and 10 times in spring from 28 Mar to 4 May. There is one questionable winter record for 18 Jan 1994. The Semipalmated Plover has been recorded five times in winter elsewhere on the

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Channel Islands (Jones and Collins unpubl. data, Garrett and Dunn 1981), so the winter record for SCI record has some precedent.

Killdeer (*Charadrius vociferus*). †\* Casual spring and rare fall migrant; casual winter visitor. Recorded primarily in fall from 27 Aug to 29 Oct, exceptionally as late as 17 Nov (2002, two on West Cove Beach, AMC) and 23 Nov (1995, one at Northwest Harbor, BJR). Three spring records: one at Pyramid Point 12 June 1994 (WTE), one at Lemon Tank 5 June 2003 (RSAK), and one at VC3 8 June 2004 (SWS). Six winter records from 1 Dec to 20 Feb, exceptionally as late as 25 Mar (Jorgensen and Ferguson 1984). The high count of eight was recorded on 5 Dec 1978 (PDJ). This species breeds locally on the Channel Islands (Garrett and Dunn 1981), although there are no breeding records for SCI.

Mountain Plover (*Charadrius montanus*). † Formerly a fairly common winter visitor; no recent records. Apparently occurred regularly during the ranching years, when Breninger (1904) collected a specimen 16 Feb 1903. An employee of the SCI Wool Company told Breninger that this species wintered "in incredible numbers," and this report seems plausible given the Mountain Plover's historic status as a common winter visitor on the coastal plain of southern California (Willett 1912) and on San Miguel Island (Jones and Collins unpubl. data). It is now seen rarely on San Nicolas and Santa Rosa islands (Jones and Collins unpubl. data). Historic grazing undoubtedly enhanced the habitat from the Mountain Plover's point of view.

### Haematopodidae

Black Oystercatcher (*Haematopus bachmani*). \* Rare breeder and resident. Breeds at least at two locations on SCI, Seal Cove and Bird Rock, though to date no more than three pairs (one pair including a hybrid American × Black) have bred in any one season. First suspected breeding 27 Apr 1975 (RC, JLa); first nestlings observed at Seal Cove 30 May 2001 (BLS, AMC) and spring 2002 (NMM, BLS), at Bird Rock 28 May 2002 (JTB et al.). Present year round on rocky coastlines, mainly on the west shore. At least two hybrid oystercatchers have been found year round as well, including the one that bred (apparently unsuccessfully) in 2002 (see below under Hypothetical Species for further discussion of hybrids). The high count is of seven at Seal Cove 1 Aug 2001 (CWB). This species is a regular breeder on the northern Channel Islands and has also bred recently on Santa Catalina Island (Jones and Collins unpubl. data).

### Recurvirostridae

Black-necked Stilt (*Himantopus mexicanus*). \* Casual spring migrant; accidental in winter. Five records: one on 6 Apr 1979 (the second for the Channel Islands; PDJ photo), one at Horse Beach 4–9 Jun 2000 (RDMcM), one at Chad's Bluff 27–28 Apr 2001 (SJK et al.), one at Lemon Tank 12–14 Jun 2003 (COK et al., BLS photo), and one at West Cove Beach 28–31 Dec 2004 (JMMcM photo). Although common on the mainland of coastal southern California, the stilt is just an occasional spring transient in the Channel Islands, with only two records each for fall and winter (Jones and Collins unpubl. data).

American Avocet (*Recurvirostra americana*). \* Casual spring and fall migrant. Three spring records: one at Northwest Harbor 18 May 2002 (JTB photo) and presumably the same bird at China Beach 19–24 May 2002 (NMM et al.), two at Horse Beach 13 Mar 2004 (HAC, NW), and one at Northwest Harbor 13 Apr 2004 (HAC). Three fall records: one on 19 Sep 1975 (HLJ), one on 11 Sep 1980 (EC et al.), and six on 23 Oct 1981 (WTE). The avocet is a rare transient on the Channel Islands (Garrett and Dunn 1981), recorded from four of them (Jones and Collins unpubl. data).

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### Scolopacidae

Greater Yellowlegs (*Tringa melanoleuca*).<sup>\*</sup> Rare spring and uncommon fall migrant; casual winter visitor. Recorded in fall from 9 Jul to 3 Nov, in spring from 3 Mar to 13 May. There is only one winter record: 11 Jan 1997 (JHG). Although recorded only four times as of 1983 (Jorgensen and Ferguson 1984), this species is now found annually, much more often than the Lesser Yellowlegs. Many reports of the Lesser Yellowlegs have been in error.

Lesser Yellowlegs (*Tringa flavipes*).<sup>\*</sup> Casual migrant. Seven fall records from 4 Aug to 12 Nov. One spring record: one at Twin Dams 22 Mar 2004 (BLS). First recorded on SCI 19–26 Sep 1978 (PDJ). Elsewhere on the Channel Islands the Lesser Yellowlegs is an occasional fall transient with only one possible spring record (Jones and Collins unpubl. data).

Solitary Sandpiper (*Tringa solitaria*).<sup>†\*</sup> Very rare fall migrant. Thirteen records from 12 Aug to 23 Sep. Mearns (1907) collected one between 22 and 29 Aug 1894. The high count is of two on four dates. This species is a rare fall transient on the other Channel Islands except Santa Barbara, where it remains unrecorded (Small 1994, Jones and Collins unpubl. data).

Willet (*Catoptrophorus semipalmatus*).<sup>\*</sup> Very rare fall migrant; casual in spring. Recorded in fall from 19 Jun to 17 Dec. Two recent spring records: one at Horse Beach 3 Apr 1994 (JKR); one at Lemon Tank 17 Mar 2004 (SWS et al., photo). The status of the species as we observed it on SCI differs from that described by Jorgensen and Ferguson (1984), who called it an uncommon visitor from 23 Jul to 18 May, and from that described by Garrett and Dunn (1981), who considered the Willet common to abundant through most of the year on the Channel Islands. It has been recorded from four islands (Jones and Collins unpubl. data). Although it may be common on the northern Channel Islands, this species is at best a rare visitor to SCI.

Wandering Tattler (*Heteroscelus incanus*).<sup>†\*</sup> Uncommon migrant and visitor recorded in every month except June. The onset of spring migration is difficult to detect because of lingering wintering birds, but the species typically increases in early April and occurs primarily to 5 May, exceptionally as late as 19 May (2002, one at Cave Canyon, NMM). Fall migrants arrive from 19 July, exceptionally as early as 7 July (2002, one in Wilson Cove, JTB). The high count is of 32 on China Beach 4 Aug 2002 (BLS, AMC).

Spotted Sandpiper (*Actitis macularius*).<sup>†\*</sup> Uncommon migrant and winter visitor. Recorded in all months, but most numerous along rocky shorelines during fall, particularly on the east side and at the south end of SCI. Found rarely at Lemon Tank during migration. The onset of spring migration is difficult to detect, but spring migrants occur primarily from 14 Mar to 14 May, exceptionally as late as 12 June (2001, one at Lemon Tank, JTB). Fall migrants are recorded from 23 Jul to 30 Nov. The high count is of 25 on beaches along the island's east side 19 Oct 2003 (JAM et al.).

Whimbrel (*Numenius phaeopus*).<sup>\*</sup> Fairly common migrant and winter visitor; casual in summer. Recorded in spring as late as 1 May, in fall as early as 27 Jun. One summer record: three at West Cove Beach 12 Jun 1997 (JHG). Exact intervals of migration are difficult to define, but fall migrants are typically evident from mid-July through mid-October, and spring migrants appear to peak in late March and early April but are often gone by late April. This species is found primarily around the north end of the island, where it forages in the iceplant and short vegetation on the dunes at the airfield. It is less common on beaches during migration, although it sometimes occurs on China and Chenetti beaches at the south end of the island. Wintering birds typically gather in a single flock along the north coast. The high count is of 50 on five dates (1 Mar to 1 May).



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Long-billed Curlew (*Numenius americanus*).<sup>\*</sup> Very rare fall migrant; casual spring migrant and winter visitor. Nine fall records of single individuals from 24 Jul to 30 Oct. Three spring records from 18 Feb to 30 Apr, none of them recent. One winter record: one around West Cove Beach and the airfield 15 Nov 2001–16 Mar 2002 (CWB et al., photo). A report of 14 on 18 Feb 1981 lacks details and perhaps pertains to the more common Whimbrel. First recorded 9 Sep 1972 (HLJ), the Long-billed Curlew often associates with Whimbrels on dunes and sandy beaches. It is a rare year-round visitor on the remaining Channel Islands (Garrett and Dunn 1981).

Marbled Godwit (*Limosa fedoa*).<sup>\*</sup> Rare fall migrant; casual at other seasons. Recorded in fall from 24 Jul to 28 Nov. Two spring records: one at Pyramid Point 26 Apr 1996 (RTP); one at Bird Rock 27–28 May 2002 (NMM, FB). One summer record: one at Northwest Harbor 18 Jun 1996 (RTP). One winter record: two at West Cove Beach 23 Dec 1998 (DMC). The high count is of 18 flying south past West Cove Point 29 Aug 2002 (BLS, AMC). Garrett and Dunn (1981) called the Marbled Godwit “less numerous” on the Channel Islands than on the southern California coast, and our data suggest that this is perhaps an understatement.

Ruddy Turnstone (*Arenaria interpres*).<sup>†\*</sup> Uncommon migrant and winter visitor; casual in summer. Recorded in all months. Recorded primarily in spring from 2 Mar to 11 May, exceptionally as late as 12 Jun (1997, five on West Cove Beach, JHG) and 20 Jun (Jorgensen and Ferguson 1984), in fall from 18 Jul to 24 Nov, exceptionally as early as 9 Jul (1997, nine on West Cove Beach, JHG). The high count is of 25 near West Shore 24 Apr 1996 (PAA). Garrett and Dunn (1981) described the Ruddy Turnstone’s season of occurrence on the Channel Islands as August to April; summer records from SCI pertain to oversummering nonbreeders.

Black Turnstone (*Arenaria melanocephala*).<sup>†\*</sup> Fairly common migrant and winter resident recorded from 12 Jul through 26 Apr. The high count is of 75 on West Cove Beach 17 Nov 2002 (BLS). In contrast to the Ruddy Turnstone, no Black Turnstones have remained through the summer on SCI.

Surfbird (*Aphriza virgata*).<sup>\*</sup> Casual migrant. Five fall records: one at China Cove 21 Oct 1995 (RTP), one at China Cove 8 Dec 2000 (RTP), a flock of eight videotaped at Mail Point 15 Nov 2001 (EAU), one at the China Point gull roost 25 Jul 2003 (BLS, RSAK), and two at West Cove Point 28 Jul 2004 (BLS et al.). One spring record: two at Eel Point 2 Apr 2002 (BLS, AMC). The dearth of records for this species on an island surrounded by rocky shoreline suggests a purely coastal distribution, with little migration likely this far offshore. Garrett and Dunn (1981) and Small (1994) described the Surfbird as an uncommon transient on the Channel Islands; Jones and Collins (unpubl. data) consider it an occasional to fairly common transient. It may be more common on the northern Channel Islands than on SCI.

Red Knot (*Calidris canutus*). Casual migrant. Four fall records: one on 28 Jul 1973 (HLJ), one on China Beach 7 Dec 1996 (RTDeG), one on China Beach 4 Aug 2001 (BLS, ELK), and one on Chenetti Beach 12 Aug 2001 (BLS). One spring record: one on 4 May 1974 (WC, RS). Garrett and Dunn (1981) reported five records for the Channel Islands, presumably including the first two from SCI. Jones and Collins (unpubl. data) consider the species an occasional spring and fall transient with only two winter records for the Channel Islands.

Sanderling (*Calidris alba*).<sup>†\*</sup> Fairly common migrant and winter resident. Recorded in fall from 22 Jul, exceptionally as early as 5 Jul (2002, 15 at Northwest Harbor, JTB); spring departure is typically by 26 Apr, exceptionally as late as 11 May (2000, 10 on West Cove Beach, KJM, RSR). The high count is of 100 on China Beach 30 Jan 1997 (JAM). Although the Sanderling is uncommon as an oversummering nonbreeder on the beaches of southern California (Garrett and Dunn 1981), we have no summer records as of yet for SCI.

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Western Sandpiper (*Calidris mauri*). †\* Uncommon fall and very rare spring migrant. Recorded in fall from 29 Jun to 12 Oct, exceptionally as early as 16 Jun (2004, one at West Cove Beach, SWS). In spring, only nine records from 2 to 29 Apr, exceptionally as early as 13 Mar (2004, three on West Cove Beach, HAC). Two possible winter records: Dec 1908 (Linton 1909) and one at Cave Beach 16 Feb 2004 (SWS). The high count is of 15 at Lemon Tank 27 Aug 2004 (HAC). Jorgensen and Ferguson (1984) categorized this species as rare to uncommon, and while it is certainly no longer considered rare, its status has likely changed because of increased observer effort. The Western Sandpiper is the most commonly encountered “peep” on SCI, particularly on sandy beaches, where it drastically outnumbers the Least Sandpiper.

Least Sandpiper (*Calidris minutilla*). †\* Casual spring and uncommon fall migrant. Recorded in fall primarily from 8 Jul to 3 Oct, exceptionally as late as 25 Oct (2003, one at Lemon Tank, BLS). Two spring records: four at Eagle Canyon 14 Mar 2004 (SWS); one at West Cove Beach 11 Apr 2004 (SWS). One winter record: two collected by Linton (1909) on 12 Dec 1908. The high count is of six at Lemon Tank 2 Sep 2004 (JMMcM, SEW). In migration, this species is found regularly at Lemon Tank and, during wet years, in vernal and cattle ponds. It is uncommon on sandy beaches, where it is outnumbered by the Western Sandpiper.

Baird's Sandpiper (*Calidris bairdii*). \* Very rare fall migrant. Fifteen fall records from 4 Aug to 10 Oct. Typically found at Lemon Tank or (in wet years) ephemeral ponds, occasionally on beaches. The high count is of four at Lemon Tank 20–22 Oct 2004 (JMMcM et al.). All birds identified to age have been juveniles.

Pectoral Sandpiper (*Calidris melanotos*). \* Very rare fall migrant. Recorded from 23 Aug to 30 Oct. The high count is of three at Lemon Tank 4 Sep 2001 (JTB). All individuals have been juveniles. Found at Lemon Tank and ephemeral ponds, decidedly more frequently during wet years, when cattle ponds provide good stopover habitat in late summer.

Dunlin (*Calidris alpina*). \* Rare fall migrant; very rare spring migrant; casual winter visitor. Recorded in fall from 18 Sep to 29 Dec. Three spring records: one on West Cove Beach 2 Mar 1993 (WTE), one on West Cove Beach 15 May 2001 (CWB), and the high count of 200 migrating past China Point 24 Apr 2004 (BLS et al.). One winter record: one at West Cove Beach 3 Feb 2004 (BLS, SWS). The large number observed migrating past the island in spring suggests that this species typically bypasses SCI, rarely stopping during migration.

Buff-breasted Sandpiper (*Tryngites subruficollis*). \* Casual fall migrant. Three records, all of juveniles: one at Lemon Tank 2–7 Sep 2001 (BLS et al.), one at Lemon Tank 4–25 Sep 2002 (BLS et al.; Figure 26), and one at Horse Beach 13–29 Sep 2003 (HAC et al.). The latter record might pertain to two individuals, as the birds were seen nearly two weeks apart at the same location. There are just four other records for the Channel Island (Jones and Collins unpubl. data).

Short-billed Dowitcher (*Limnodromus griseus*). \* Very rare fall migrant; casual in spring. Seven recent fall records from 12 to 29 Jul. Jorgensen and Ferguson (1984) reported seven sightings from 24 Aug to 20 Oct; because of the difficulty of identifying dowitchers, some of those may have been of misidentified Long-billed. Two spring records: four on 28 Apr 2001 at Horse Beach (RTP); one photographed at the SHOBA pond 13 Mar 2003 (BLS, SL). The high count is of five at Northwest Harbor 19 Jul 2002 (JTB). Our data reflect the assessment of this species over the remaining Channel Islands as a very rare transient with the majority of records from fall (Dunn and Garrett 1981).

Long-billed Dowitcher (*Limnodromus scolopaceus*). \* Casual spring and rare fall

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migrant. Recorded in fall from 21 Jul to 25 Oct. One winter record: 5 Dec 1978 (PDJ). One spring record: one at Lemon Tank 17–18 Mar 2004 (SWS et al.). The Long-billed is encountered more frequently than the Short-billed Dowitcher, often along the freshwater shores of Lemon Tank and at vernal ponds during wet years. The high count is of 20 flying south overland near the eucalyptus tree 4 Oct 2002 (BLS, RGD).

Wilson's Snipe (*Gallinago delicata*).†\* Very rare fall migrant; casual in spring. Twelve fall records from 17 Aug to 5 Nov; two spring records: one on 26 May 1979 (PDJ); one at Twin Dams 7 Apr 2004 (JMMcM et al.). The high count is of two on three dates. Garrett and Dunn (1981) reported this species as wintering on Santa Catalina Island, but it remains very rare on SCI, possibly because of the lack of suitable habitat in most years.

Wilson's Phalarope (*Phalaropus tricolor*).\* Casual migrant. Four records: 28 Jul 1973 (HLJ), 11 Sep 1980 (EC et al.), one at the pond near REWS Road 1 Apr 2004 (JL et al.; Figure 27), and one female at Lemon Tank 25 June 2004 (BLS, WMF). This species is an occasional fall and rare spring migrant recorded from five of the Channel Islands (Jones and Collins unpubl. data).

Red-necked Phalarope (*Phalaropus lobatus*).\* Rare fall migrant. Recorded from 10 Jul through 9 Sep. Sometimes easily seen from shore at China Point and West Cove Point as tight flocks fly past, heading south. The high count is of 129 migrating past West Cove Point 20 Jul 2003 (BLS). Phalaropes tentatively identified as this species were migrating far off China Point 9–24 Apr 2004 (BLS et al.). Garrett and Dunn (1981) described the Red-necked Phalarope as a numerous spring migrant "offshore," but the lack of spring records from SCI might suggest that much of this species' migration takes place between SCI and the mainland and perhaps not very far offshore.

Red Phalarope (*Phalaropus fulicaria*).†\* Very rare migrant and winter visitor. Recorded from 10 Aug to 17 May, exceptionally as early as 25 Jul (2003, six off China Point, BLS). The high count is of 10 moving past West Cove Point 24 Nov 2002 (BLS, ELK). This species is identified less frequently than the Red-necked Phalarope, but its true status around SCI may be confounded by difficult identification at a distance. During invasion years large concentrations have been noted around the other Channel Islands, such as the 30,000 off Santa Cruz Island 28 May 1980 (Garrett and Dunn 1981), suggesting that in some years this species is likely very common.

### Laridae

South Polar Skua (*Stercorarius maccormicki*).# Casual migrant. Three records: one immature flying north past West Cove Point 8 Sep 2002 (BLS), one molting dark-morph adult flying past West Cove Point 17 Jun 2003 (ELK et al.), and one flying north past China Point 7 Sep 2003 (BLS). This species is uncommon to rare around the Channel Islands, with no other land-based observations (Jones and Collins unpubl. data).

Pomarine Jaeger (*Stercorarius pomarinus*).\* Uncommon fall migrant and winter resident. Recorded primarily from 28 Aug to 30 Apr, exceptionally as early as 4 Aug (2002, one light-morph adult off China Point, BLS, AMC) and 10 Aug (2003, one adult off China Point, RSAK) and as late as 23 May (one dark morph off West Cove Point, CRK). The Pomarine Jaeger was first recorded 18 Feb 1981 (EC, WTE), and as of 1983 there were only two records (Jorgensen and Ferguson 1984). More recently, however, we have seen it regularly from shore during migration, especially during large movements of gulls. The high count is of 72 flying past West Cove Point 4 Nov 2001 (BLS, AMC). Most records are of light-morph adults, but the dark morph occurs regularly. Juveniles and subadults are relatively rare, typically occurring from 29 Sep

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to Dec, exceptionally as early as 7 Sep (2003, one juvenile with 15 adults off China Point, BLS). Small flights of juveniles and subadults have been noted in November.

Parasitic Jaeger (*Stercorarius parasiticus*).<sup>\*</sup> Uncommon fall migrant and rare winter visitor. Recorded primarily from 27 Sep to 31 Mar, exceptionally as early as 4 Sep (2001, two off China Point, BLS). Although it was first recorded on 9 Sep 1976 (HLJ), and Jorgensen and Ferguson (1984) listed only three records, we have seen the Parasitic Jaeger from shore regularly during migration, though in numbers far fewer than those of the Pomarine Jaeger. The high count is of 23 flying past West Cove Point on 4 Nov 2001 (BLS, AMC). One juvenile was chasing a Royal Tern and vocalizing over land at Chenetti Beach on 9 Nov 2001 (BLS). Like the Pomarine Jaeger, the Parasitic is often seen moving offshore with large flights of gulls. Most records pertain to adults of the light morph; the dark morph is relatively rare. Juveniles and subadults are also rare, but small flights of them have been noted in November.

Long-tailed Jaeger (*Stercorarius longicaudus*). Very rare fall migrant. Five records of adults migrating south off West Cove Point and other coastal promontories from 30 Aug to 18 Oct. Three records of immatures: one juvenile off Eel Point 8 Sep 2001 (BLS, AMC), one immature off West Cove Point 19 Sep 2002 (BLS, AMC), and the wings and tail of a juvenile found at West Cove Point 30 Sep 2002 (BLS). A probable immature Long-tailed Jaeger was with a large southerly movement of 126 jaegers off West Cove Point 4 Nov 2001 (BLS, AMC), 30 of which were unidentified. First recorded 30 Aug 2001 (BLS et al.). Garrett and Dunn (1981) described this species' propensity for associating with flocks of Arctic Terns. The Arctic Tern is casual off SCI, perhaps moving farther offshore and perhaps explaining the rarity of the Long-tailed Jaeger. There are single reports "near" Santa Rosa and Anacapa islands, but there are no other land-based observations from the Channel Islands (Jones and Collins unpubl. data).

Laughing Gull (*Larus atricilla*).<sup>\*</sup> Accidental. One record: an adult flying north past Wilson Cove 3 Jun 2001 (BLS, JTB). Two hypothetical records of single adults on 31 Jul 1980 (PDJ) and 16 Aug 1980 (PDJ). Jorgensen and Ferguson (1984) reported that the birds had dark wingtips but recognized that confusion with Franklin's Gull (*L. pipixcan*) was possible. Garrett and Dunn (1981) mentioned a juvenile that followed a boat from San Diego roughly 50 km toward SCI on 9 Sep 1972. There are but nine records for the Channel Islands (Jones and Collins unpubl. data).

Bonaparte's Gull (*Larus philadelphia*).<sup>\*</sup> Very rare migrant and winter visitor. Five fall records: one adult 19 Dec 1976 (HLJ), one on 4 Dec 1981 (BJ; wing found 19 Feb 1982, HLF), one adult foraging in Wilson Cove 8 Nov 2001 (BLS photo, AMC), one immature at West Cove Beach 13–17 Nov 2002 (JHP et al.), and one adult off West Cove Point 18 Nov 2002 (BLS). Four spring records: a wing found 5 May 1974 (WC, RS), one adult 20 Apr 1981 (BJ), one adult near Wilson Cove 27 Mar 2001 (JTB), and one adult at West Cove Beach 4–8 Apr 2004 (SWS, BLS photo). Although Garrett and Dunn (1981) reported this species as irregular around the Channel Islands, our data suggest it perhaps occurs more rarely than previously indicated, at least around SCI. Jones and Collins (unpubl. data) find this species absent in some years around the Channel Islands but common in others. Further observations are required to determine Bonaparte's Gull's true status on SCI.

Heermann's Gull (*Larus heermanni*).<sup>†\*</sup> Common year-round visitor. Numbers increase by late June and decrease in late winter when many return to Mexican breeding colonies. Flocks of northbound birds can be seen from West Cove Point throughout the summer. Numbers typically remain high into the winter but thin out by February. Immature birds can be found year round. Breeding on SCI is not suspected. The high count is of 200 on Chenetti Beach 12 Aug 2001 (BLS).

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Ring-billed Gull (*Larus delawarensis*).<sup>\*</sup> Casual migrant and winter visitor. Only two well-documented records: one first-winter bird at China Point 4 Oct 2003 (BLS; Figure 28) and likely the same individual seen the next day off West Cove Point (BLS); one first-winter bird at West Cove Beach 17–18 Oct 2004 (BLS, JMMcM). Four other reports are likely correct, though not supported with adequate documentation: one immature 26 Mar 1915 (A. B. Howell unpubl. notes), five including both adults and subadults 1 Nov 1975 (HLJ), one 8 Oct 1980 (REW), and one adult on West Cove Beach 14 May 1999 (DMC). Other reports of up to 40 on SCI are clearly erroneous. Confusion with the similar California Gull is likely the source of many misidentifications. Jones and Collins (unpubl. data) have only 10 records for the Channel Islands.

California Gull (*Larus californicus*).<sup>†\*</sup> Common migrant and winter visitor. Recorded primarily from 31 Aug to 3 Apr, exceptionally as late as 24 Apr (2004, three at China Point, SWS et al.). Numbers fluctuate substantially from year to year, with high counts of up to 7000 along 3 km of shoreline 2 Mar 1979 (PDJ) and 5000 migrating past West Cove Point 4 Mar 2002 (BLS, ELK).

Herring Gull (*Larus argentatus*). Rare to uncommon fall migrant and winter visitor; casual in summer. Recorded primarily from 28 Oct to 17 Feb, exceptionally as early as 10 Sep (1975, one remained until 12 Sep, PO). One summer record: an adult at West Cove Beach 23–25 Jul 2004 (BLS et al.). One hypothetical spring record: two adults on 5 Apr 1915 (Howell 1917); given the lack of knowledge regarding gull plumages at that time, and the lack of recent spring records, it seems likely that the birds were misidentified. The high count is of 40 on 9 Nov 1975 (PDJ). Herring Gulls are typically found among Western Gulls when they loaf in large flocks on SCI's beaches. Large numbers occasionally recorded from the northern Channel Islands, such as the 300–500 adults counted on San Miguel Island 24 Mar 1973 (Garrett and Dunn 1981), suggest this species may be of more regular occurrence farther north.

Thayer's Gull (*Larus thayeri*). Casual migrant and winter visitor. Four records, all of single first-winter birds: 10 Dec 1976 (HLJ), 25 Mar 2001 (BLS), West Cove Point 5 Mar 2002 (BLS, JHP), and Seal Cove 21 Mar 2002 (BLS, ELK). Thayer's Gull might occur more often during invasion years, especially on the northern Channel Islands, where it is a rare winter visitant (Garrett and Dunn 1981, Jones and Collins unpubl. data).

Western Gull (*Larus occidentalis*).<sup>†\*</sup> Common breeder and resident. Nests in small numbers at Seal Cove, Bird Rock, and on scattered ledges around the island. Since 2002 Western Gulls have nested on rooftops of navy barracks at Wilson Cove. Numbers of nests found at various SCI colonies include one near the mouth of Cave Canyon 9 Jun 1973 (HLJ), 23 at Mail Point 13 Jun 1979 (PDJ), 38 on Bird Rock 17 May 1980 (HLF, PDJ), 20 at Seal Cove 14 Jun 1980 (PDJ), 30 at Bird Rock 15 Jun 2002 (BLS, JTB), and 13 at Seal Cove 7 Jul 2003 (BLS, RSAK). Winter numbers fluctuate, presumably with the abundance of food, and the resident population may be augmented by northern birds. Reports of color-banded individuals in winter are common, presumably moving into the area from the Farallones (P. Pyle pers. comm.). The high count is an estimated 1000 individuals feeding off China Point 8 Feb 2002 (BLS).

Glaucous-winged Gull (*Larus glaucescens*).<sup>\*</sup> Uncommon migrant and winter visitor. Recorded from 18 Nov to 30 May. Numbers fluctuate from year to year, but the species is never common. All birds identified to age have been in their first winter. The high count is of five on Chenetti Beach 13 Jan 2002 (BLS).

Sabine's Gull (*Xema sabini*). Casual migrant. One record: three (two adults and one juvenile) flying south past China Point 30 Sep 2003 (BLS, RSAK). Likely occurs



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more frequently than known on the basis of observations from shore because the species occurs regularly in the channel between SCI and the mainland (M. Iliff and G. McCaskie pers. comm.). Garrett and Dunn (1981) considered Sabine's Gull a fairly common spring transient and an uncommon fall transient off southern California. This species' rarity on SCI suggests it may migrate farther offshore during fall or closer to the mainland during spring.

Black-legged Kittiwake (*Rissa tridactyla*).†\* Rare migrant and winter visitor; in some years a fairly common winter visitor and spring migrant. Recorded primarily from 14 Dec to 12 May, exceptionally as late as 28 May (1975, three immatures, HLJ). The kittiwake was first recorded on the basis of a specimen taken 18 Jan 1969 (EAC), and as of 1983, there were only five records for SCI (Jorgensen and Ferguson 1984). During invasion years, however, this species can be seen easily from shore. Most records are of first-winter birds, but adults are also observed. During influxes, kittiwakes often roost with other gulls on offshore rocks at China Point. The high count is of 37 migrating past West Cove Point 11 Feb 2002 (BLS).

Caspian Tern (*Sterna caspia*).# Casual migrant and visitor. We accept nine records from 8 May to 27 Aug; five of these are from August. The first was 9–27 Aug 1980 (HLF). Also, a tern seen briefly from West Cove Point 31 Mar 2001 was likely a Caspian (BLS). Other reports may be of misidentified Royal Terns. The high count is of two at Box Canyon 1 Aug 1997 (JAM, SL). The Caspian is seen rarely, if at all, over the open ocean (Garrett and Dunn 1981). Jones and Collins (unpubl. data) consider it a casual transient on the Channel Islands. An interesting influx of this species occurred on Santa Catalina Island during the late spring and summer of 2004 when up to 15 were at Cat Harbor (L. S. Cesh pers. comm., photo).

Royal Tern (*Sterna maxima*).†\* Common migrant and visitor. Present year round as a nonbreeder. This species shares a pattern with Heermann's Gull, of birds arriving in early summer during postbreeding dispersal from Mexican breeding colonies. Peak counts are typically during the winter; the highest is of 75 at Northwest Harbor 17 Dec 1997 (JAM, SL). The Royal Tern is scarcest during late spring, when most birds present are immature.

Elegant Tern (*Sterna elegans*).# Casual fall migrant. Seven records from 12 Aug to 15 Oct, the first 16 Aug 1969 (HLJ). The high counts are of 19 on 12 Aug 1981 (HLF) and of five adults feeding in the kelp line off West Cove Point 2 Oct 2004 (BLS et al.). Careful scrutiny of feeding flocks of Royal Terns during fall migration in recent years has rarely produced the Elegant. Garrett and Dunn (1981) considered it casual only around Pyramid Cove on SCI. Jones and Collins (unpubl. data) consider it an uncommon to rare postbreeding visitor to the Channel Islands, perhaps an understatement considering its casual status on SCI.

Common Tern (*Sterna hirundo*).\* Casual fall migrant. Five records: one 13 Sep 1975 (Garrett and Dunn 1981), three at Northwest Harbor 15 Sep 2002 (JTB photo), 31 moving south past West Cove Point 28 Sep 2003 (BLS et al.), two immatures feeding in the kelp line at West Cove Point 2 Oct 2004 (BLS), and one immature off West Cove Point 5 Oct 2004 (BLS, JMMcM). This species is not encountered with any frequency around the Channel Islands but is often found inshore over the same waters frequented by the Elegant Tern (Garrett and Dunn 1981). Interestingly, the Common has occurred with the Elegant Tern at SCI on several occasions, perhaps suggesting that local weather or food availability affect these species similarly.

Arctic Tern (*Sterna paradisaea*).# Casual fall migrant. Two records: one adult feeding along the kelp line at West Cove Point 30 Aug 2001 (BLS et al.); two adults migrating south past West Cove Point 19 Sep 2002 (BLS, AMC). Garrett and Dunn (1981) considered this species a common fall transient and uncommon late spring transient well off

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the coast of southern California. The paucity of records from SCI's coastal promontories suggest that the Arctic Tern avoids landmasses on migration, that its typical migratory route is outside or inside a path intersecting SCI, or that the population has decreased or shifted its migratory route over the past 25 years. The Arctic Tern has been recorded at or near five of the Channel Islands (Jones and Collins unpubl. data).

Forster's Tern (*Sterna forsteri*). Casual migrant and visitor. Four records: one on 28 Mar 1975 (HLJ), one at Northwest Harbor 13 Oct 1995 (MAB), one off the east side of the airstrip 20 Oct 1997 (JHG), and one adult flying past West Cove Point 31 Mar 2001 (BLS). Forster's Tern is rare around the Channel Islands in general (Garrett and Dunn 1981).

Black Tern (*Chlidonias niger*).# Accidental. One record: a molting adult feeding along the kelp line at West Cove Point 5 Sep 2001 (BLS, ELK). At least formerly this species migrated over the open ocean; Garrett and Dunn (1981), however, cited no specific records for the Channel Islands. Jones and Collins (unpubl. data) have only one other Channel Islands record, near San Miguel Island.

Black Skimmer (*Rynchops niger*).\* Casual migrant and visitor. Four records: three flying north off the east side 22 May 2001 (BLS et al.), one adult off China Point 30 Jul 2001 (BLS et al.), three adults (one banded) at Northwest Harbor 20 Sep 2002 (JTB; Figure 29), and one adult at Wilson Cove 30 Sep 2004 (LAA). This species was unrecorded on the Channel Islands as of 1994 (Small 1994), but there have been eight records since (Jones and Collins unpubl. data).

### Alcidae

Common Murre (*Uria aalge*).# Casual visitor. Two records: one found dead on the beach 5 Aug 1981 (PDJ); two at Bird Rock 17 Feb 2002 (JTB). This species formerly bred on islets off San Miguel Island and is found sporadically in southern California's coastal waters (Garrett and Dunn 1981).

Pigeon Guillemot (*Cephus columba*).\* Casual visitor. Four records: one adult in breeding plumage off China Point 2 Jul 2001 (BLS), one photographed near Bird Rock 26–27 May 2002 (JTB), one off West Shore 15 May 2003 (CWB), and likely the same bird off Whale Point 12 Jun 2003 (FB). Although this species is a fairly common resident around the northern Channel Islands (Garrett and Dunn 1981), it is casual farther south.

Xantus's Murrelet (*Synthliboramphus hypoleucus*).†\* Very rare migrant and visitor; current breeding status unknown. The northern subspecies *S. h. scrippsi* likely breeds sporadically in small numbers on offshore rocks at Seal Cove and possibly on Bird Rock and on Castle Rock near West Cove Point (Drost and Lewis 1995, Jorgensen and Ferguson 1984). It breeds regularly on Santa Barbara Island (Garrett and Dunn 1981). The history of this species on SCI is interesting. Linton (1909) collected a specimen in Dec 1908, and H. Wright reported the species again in summer 1912, but the early naturalists noted no breeding (Willett 1912). On 27 Jul 1968, off China Point, two adults were seen with a downy chick (GMcC). Subsequently, another pair was seen with a chick north of Wilson Cove on an unspecified date (HLJ). Greg Kunz and Larry Sward searched unsuccessfully for nests on 2 and 15 Apr 1977, although they heard this species' twitter calls around Seal Cove. Hunt et al. (1980) reported the first definite breeding, confirmed by an eggshell at Seal Cove 11 Jun 1977. In 1992, Carter et al. (1992) found 125 individuals during the breeding season. Hunt et al. (1980) called SCI's murrelet population "almost insignificant" and likely held in check by the abundant terrestrial predators and dearth of offshore rocks.

More recently, this species has been found with increasing regularity near SCI. We photographed two adults with a downy chick 3 km off China Point 4 Jul 2001 (Figure 30), but this species' propensity for traveling long distances over water with downy

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young makes it uncertain whether this chick hatched at SCI. High counts of six off China Point 10 Apr 2004 (BLS et al.) and five seen from shore at China Point 2 Jul 2001 (BLS et al.) are exceptional, as this species is usually seen as scattered pairs. Confusion with the more common Cassin's Auklet casts doubt on some land-based records. One specimen of the southerly breeding subspecies, *S. h. hypoleucus*, was found on a road near Wilson Cove 29 Jul 1976 (RLP; SDNHM 39944).

Craveri's Murrelet (*Synthliboramphus craveri*).# Casual migrant. Two records, both of single birds off West Cove Point: 25 Jul 2003 (BLS, IR) and 27 Jul 2004 (SWS). The one in 2003 was seen both on the water and in flight and showed the dark gray underwing typical of this species. Craveri's Murrelet likely occurs more regularly, as it disperses regularly in late summer from its Mexican breeding colonies to southern California waters, where it is casual near shore (Garrett and Dunn 1981).

Ancient Murrelet (*Synthliboramphus antiquus*).† Casual migrant and winter visitor. Two recent records: one adult in breeding plumage flying north past China Point 25 Mar 2001 (BLS); one off West Cove Point 26 Nov 2003 (BLS, IR). Perhaps more common historically, as Howell (1917) reported the Ancient Murrelet as regular near shore, and Linton (1909) collected two specimens near SCI in Nov and Dec 1908. This species is perhaps more common near the mainland of southern California than it is far offshore. Such a difference may explain recent records for SCI being so few in comparison to those from mainland observation points, such as La Jolla Cove, San Diego, where the species is seen with some regularity in some years during late fall migration (Unitt 2004). Elsewhere around the Channel Islands the Ancient Murrelet is an irregular transient and winter visitant (Jones and Collins unpubl. data).

Cassin's Auklet (*Ptychoramphus aleuticus*).+\* Rare migrant and visitor. Generally rare near shore though locally uncommon during spring and fall migration. Records of presumed spring migrants range from 9 Apr to 28 May, when flocks of this species are moving north past the island. Those of fall migrants range primarily from 28 Sep to 14 Nov, exceptionally as late as 21 Dec (2002, 16 flying past West Cove Point, BLS, AMC), when large numbers move south. The high count is of 125 passing by China Point 18 May 2002 (BLS et al.). Cassin's Auklet has been recorded at SCI in all months. Local movements of a few individuals are noted throughout summer, and in winter the species is seen regularly from shore. It breeds abundantly on the northern Channel Islands but not on SCI. Breninger (1904) reported a large die-off of this species, stating, "along the shores and water dead auklets were everywhere"; he did not speculate on the cause. Remains of this species were found in prehistoric middens near Whale Point, suggesting some use of the birds for food and possible historic breeding (Porcasi 1999a). A juvenile was found inside a water tank at Wilson Cove 16 Aug 2004 (HAC et al., photo).

Rhinoceros Auklet (*Cerorhinca monocerata*).†\* Very rare migrant and winter visitor. Six winter records from 12 Dec to 13 Feb; one spring record: a single bird flying past China Point 11 Apr 2004 (BLS et al.); one fall record: one off China Point 29 Sep 2003 (BLS, RSAK). Unlike Cassin's, the Rhinoceros Auklet is not seen regularly as a fly-by from shore; rather, it is more likely to be encountered on near-shore boat trips. The high count is of two off China Point 18 Nov 2001 (BLS et al.) and off Pyramid Point 17 Dec 2001 (BLS et al.). The Rhinoceros Auklet is likely much more common offshore than recent records indicate, and its abundance perhaps fluctuates from year to year. Earlier, Linton (1908, 1909) collected three and found skeletons along the beach in 1907 and 1908. Garrett and Dunn (1981) considered the Rhinoceros Auklet a common visitor to waters around the northern Channel Islands and fairly common from there south to the Mexican border. Briggs et al. (1987) found a sharp increase in its numbers in southern California waters in January, February, and March.

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Tufted Puffin (*Lunda cirrhata*).# Accidental. One record: one off SCI 1 June 1971 (Garrett and Dunn 1981). Although this species bred through the 1940s on the northern Channel Islands and possibly on Santa Barbara and San Nicolas islands, it subsequently vanished. A recent increase in records around five of the Channel Islands, especially San Miguel, suggests the possibility that it is once again breeding on Prince Islet near San Miguel (Jones and Collins unpubl. data).

### Columbidae

Rock Pigeon (*Columba livia*).\* Fairly common resident. This species is common only in Wilson Cove, where it likely breeds, but it is not seen elsewhere on the island. The current total population is perhaps less than 50 individuals. The Rock Pigeon was first recorded on 28 Jul 1973 (PDJ); Jorgensen and Ferguson (1984) described it as "rare throughout the year."

Band-tailed Pigeon (*Patagioenas fasciata*). Rare spring and very rare fall migrant; casual in summer. Eighteen spring records from 9 Apr to 30 Jun. Two summer records: one in China Canyon 12 Jul 1997 (FAJ); one at Lemon Tank 31 Jul 1997 (JAM, SL). Two recent fall records: one at Chad's Bluff 19 Sep 1995 (CEK); one at Chamish Canyon 8 Oct 2002 (AMC). Jorgensen and Ferguson (1984) reported three occurrences in fall from 9 Sep to 18 Oct. First recorded on SCI in May 1968 (MLC, JMD), this species reportedly winters on the larger Channel Islands (Garrett and Dunn 1981), although there are no winter records from SCI.

Eurasian Collared-Dove (*Streptopelia decaocto*).\* Casual visitor. Two records: one at Northwest Harbor 5 Jul 2002 (JTB); one near Stone Station 4–8 Jul 2003 (KMS et al., BLS photo). This species' appearance on SCI is not surprising given its well-documented vagrancy and aggressive spread (Romagosa and McEneaney 1999). Elsewhere on the islands, there is one unsubstantiated report from San Nicolas Island (Jones and Collins unpubl. data).

White-winged Dove (*Zenaida asiatica*).\* Uncommon late summer and fall migrant; very rare in spring. Approximately 102 fall records from 28 Jun to 24 Nov; 12 spring records from 11 May to 2 Jun. The peak counts are of 16 at Wilson Cove 21 Sep 2004 (BLS, HAC) and 15 at Lemon Tank 8 Sep 2001 (CWB et al.). The White-winged Dove was first recorded on SCI 9 Sep 1972 (HLJ). Garrett and Dunn (1981) considered it a rare fall transient both along the coast of southern California and on the Channel Islands, so the large numbers encountered recently on SCI suggest an increase.

Mourning Dove (*Zenaida macroura*).† Common breeder and resident. All visiting ornithologists have described the Mourning Dove as common, though they have reported few nests. One dove was building a nest on a cliff wall in Norton Canyon 1 Aug 2003 (AMG, RSAK). In summer numbers appear to decrease, likely because of flocks breaking up to breed. It is unknown whether migrants augment local populations or if the local breeders leave the island. Counts of >100 are easily achieved during late winter, early spring, and fall in the fields of *Encelia* near Horse Beach (BLS pers. obs.).

### Cuculidae

Yellow-billed Cuckoo (*Coccyzus americanus*). Casual migrant. Two records: one in upper Horse Beach Canyon 18 Jun 2001 (CWB); one at Boulders North 1 Sep 2001 (HAC). In southern California this species is exceptionally rare away from its few remaining breeding sites (Garrett and Dunn 1981). Jones and Collins (unpubl. data) have just five other records for the Channel Islands.

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### Tytonidae

Barn Owl (*Tyto alba*).†\* Uncommon breeder and resident. Found in canyon caves by day and hunting upland terraces by night (Cooper et al. 2003, Condon et al. 2005). Condon et al. (2005) conducted nocturnal spot-lighting surveys for owls on SCI from Oct 2001 to Oct 2002. Of the 734 owls detected, 561 were Barn Owls, occurring year round. For hunting, Barn Owls avoid areas of extensive cactus. They have been noted nesting in an old barn at VC3 by Cody and Diamond (unpubl. data) and at VC3 from 1994 to 1999 by navy public-works personnel. On 20 Jul 2001, a dependent juvenile was with an adult in Wallrock Canyon (BLS, SPF). In years when numbers of rats and deer mice are reduced, Barn Owls die off, and adults are seen foraging throughout the day in the island's grasslands. The Barn Owl is a common resident on all the Channel Islands except San Nicolas (Garrett and Dunn 1981). The high count is of 70 from 2 to 4 Oct 2001 (BLS, AMC).

### Strigidae

Burrowing Owl (*Athene cunicularia*).† Uncommon migrant and winter visitor. This species typically arrives on SCI in early October and remains through late March (range 5 Sep–14 Apr; Cooper et al. 2003, Condon et al. 2005). At this season it can be found fairly easily along dirt roads, where it forages for rodents. Charles H. Townsend collected SCI's first two recorded Burrowing Owls 22 Jan 1889 (USNM 117628, 117629). Howell (1917) called the species a resident, but breeding has since been reported only once on SCI, when young were found in a burrow in Larkspur Canyon during summer 1975 (Jorgensen and Ferguson 1984). Subsequent nest searching has proven fruitless (BLS, AMC). The Burrowing Owl has been considered resident on Santa Barbara and Santa Catalina islands and an occasional breeder on SCI (Garrett and Dunn 1981, Small 1994). Standardized owl surveys from Oct 2001 to Oct 2002 yielded Burrowing Owls on 47 of 104 surveys and produced the high count of 33 from 2 to 4 Oct 2001 (Condon et al. 2005).

Long-eared Owl (*Asio otus*).†\* Casual visitor. Four recent records: one roosting in oaks at Vista Overlook 30 Mar 2001 (BLS, JTB), one hunting at Horse Beach 29 Nov 2001 (TJW, JTB), one foraging in the dunes near the airfield 4 Mar 2002 (BLS, AMC), and one foraging around the buildings at Wilson Cove 20 Jul 2002 (BLS, AMC). Possibly a more common migrant on SCI than records indicate. This species' strictly nocturnal habits and the difficulty of distinguishing it in flight from the more frequently encountered Short-eared Owl (*A. flammeus*) may account for the paucity of records. Earlier, Linton (1909) collected a single individual 20 Nov 1908 (MCZ 57662) and reported several more in wooded canyons. This species has nested once on Santa Catalina Island and occurs as a rare transient and winter visitor on the other islands (Garrett and Dunn 1981).

Short-eared Owl (*Asio flammeus*).† Rare migrant and winter visitor. Recorded primarily from 20 Oct to 9 Feb, exceptionally as early as 4 Oct (2001, one at Horse Beach Canyon, BLS et al.) and as late as 28 Mar (1993, one near Horse Canyon, DKD). There is a distinct peak in late fall and early winter. The Short-eared Owl was first recorded on SCI 3 Mar 1979 (PDJ, JLa), and as of 1983 there were only two records for the island, but currently the species occurs regularly, in numbers varying cyclically. The high count is of 13 between Stone Station and Wilson Cove 13 Nov 1997 (JAM et al.). There are anecdotal reports of >25 foraging between Stone Station and Wilson Cove during some winters (SL, JAM pers. comm.).

### Caprimulgidae

Common Poorwill (*Phalaenoptilus nuttallii*). Uncommon migrant and casual winter visitor. Recorded from 30 Sep to 2 May. Two winter records: one bird heard



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calling at Wilson Cove 1 Jan 1997 (BJR); one on Ridge Road 1 Jan 1999 (TRM). There were only three records as of 1983 (Jorgensen and Ferguson 1984), but during migration this species is now seen regularly on dirt roads, likely a result of increased predator-control efforts that include spot-lighting surveys. The high count is of 13 on 15 Mar 2003 (RGD). As a breeder this species is absent from the Channel Islands; it occurs primarily as a fall migrant and winter visitor on the larger islands (Garrett and Dunn 1981).

### Apodidae

Vaux's Swift (*Chaetura vauxi*).\* Very rare fall migrant; casual spring migrant. Eight fall records from 6 Sep to 21 Oct. Two spring records: one photographed at Northwest Harbor 25 May 2002 (JTB); one near West Shore 25 Apr 2003 (CWB). The high count is of three on 22 Sep 1978 (PDJ, JLa). Vaux's Swift probably occurs more regularly than records suggest, particularly in fall when it may go unnoticed with large flocks of White-throated Swifts. Confusion with the Chimney Swift (*C. pelagica*) is possible, and in lack of a specimen from SCI these birds might be better recorded as unidentified *Chaetura* swifts.

White-throated Swift (*Aeronautes saxatalis*).\* Fairly common breeder and resident. Found foraging over steep cliff faces along interior canyons as well as around sea-cliffs. Apparent copulation and regular visits to presumed nest sites have been observed at Seal Cove during the spring (BLS, AMC). Grinnell (1897a) reported swifts entering and leaving crevices at Pyramid Cove, a site the birds still use (BLS). Linton (1908) reported this species entering crevices at Wilson Cove 7 Mar 1907, but nesting activity has not been reported there since. Other observations of breeding behavior are of copulating pairs near Eagle Canyon 2 May 1974 (WC, JLa, RS) and at Seal Cove 30 Apr 1980 (PDJ). Residents can be difficult to find during winter, but whether this species leaves the island to some degree at this season is unclear. The high count is of 88 over lower Bryce Canyon 8 Nov 1998 (TRM).

### Trochilidae

Black-chinned Hummingbird (*Archilochus alexandri*). Casual migrant. Two records of adult males: one in Chamish Canyon 20 May 2001 (BLS); one at Lemon Tank 4 Sep 2002 (BLS, CRK). Three other reports of female or immature *Archilochus* hummingbirds likely pertain to this species: one at Lemon Tank 12 Aug 2001 (BLS, AMC), one in Wallrock Canyon 31 Aug 2001 (BLS, SPF), and one at Lemon Tank 9 Oct 2003 (BLS, ELK). There were no other records for the Channel Islands as of 1994 (Garrett and Dunn 1981, Small 1994); Jones and Collins (unpubl. data) have reviewed dozens of Channel Island reports, finding only one to be acceptable.

Anna's Hummingbird (*Calypte anna*).\* Uncommon migrant and winter visitor; breeding status unclear. Reported primarily from 4 Oct to 29 May, exceptionally as early as 31 Aug (2001, one female in Wallrock Canyon, BLS). In winter, Anna's Hummingbird is the most common hummingbird on SCI, and it can be found regularly during late fall and early spring. Howell (1917) reported one collecting cotton from his skinning table 15 Mar 1915, indicating a possible breeding attempt. A male was defending a territory around a patch of *Baccharis* 29 Apr 2004 (SWS). Anna's Hummingbird is resident on Santa Cruz and Santa Catalina islands and was considered an occasional transient on the other Channel Islands by Garrett and Dunn (1981). Our data, however, suggest it is now of more common occurrence on SCI.

Costa's Hummingbird (*Calypte costae*).\* Casual migrant. Seven spring records of adult males from 2 Mar to 27 May. Two fall records, both of females at Lemon Tank: 30 Sep 2003 (BLS, RSAK) and 6 Aug 2004 (BLS et al. photo). First recorded 30 Mar 1897 (Grinnell 1897). Confusion with the immature and female plumages of the

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Anna's and Black-chinned hummingbirds might account for the relative scarcity of records. Costa's Hummingbird has bred once on Santa Barbara Island; otherwise it occurs on the Channel Islands as an uncommon transient (Garrett and Dunn 1981).

Calliope Hummingbird (*Stellula calliope*). \* Accidental. One record: one adult male netted and released 3 May 1974 (WC, RS). There are only five other records for the Channel Islands (Jones and Collins unpubl. data).

Rufous Hummingbird (*Selasphorus rufus*). Rare spring and casual fall migrant. Fourteen spring records from 16 Mar to 20 May, exceptionally as early as 12 Feb (1981, one male, EC, WTE), with migrants peaking in April. One fall record: one adult male in Chamish Canyon 11 Jul 2002 (JHP). As of 1983, there were only two records (Jorgensen and Ferguson 1984). Fall migrants are likely overlooked because of the difficulty of distinguishing immatures and females from the resident Allen's Hummingbird.

Allen's Hummingbird (*Selasphorus sasin*). †\* Contributed by Robb S. A. Kaler. Common breeder; year-round status unclear. Subspecies *S. s. sedentarius* is a common resident on all of the Channel Islands except San Nicolas and Santa Barbara, which it visits occasionally. The type specimen is an adult male collected on SCI at Chenetti (Smuggler's) Cove 2 Apr 1889 (Grinnell 1929; MVZ 33018). The principal difference between *S. s. sedentarius* and *S. s. sasin* is the larger size of *sedentarius*, especially of the bill. Pyle (1997) reported the rectrices of adult male *sasin* to average blacker in the tip than in *sedentarius* and those of female and juvenile *sasin* to average more orange, with less green and white, than in *sedentarius*.

The movements of this species on SCI are poorly understood and are complicated by its apparent occurrence year round. Interestingly, we have no records for July and August, perhaps simply a lack of consistent reporting but possibly an indication that this species emigrates from SCI in summer. Records resume in mid fall, primarily from late September and early October, and continue through early June. Jorgensen and Ferguson (1984) considered Allen's Hummingbird a year-round resident but commented on the dearth of winter records. Garrett and Dunn (1981) acknowledged the seasonal movements of this species on some Channel Islands and suggested that it is possible that some birds make small-scale movements to the mainland in winter. On the mainland, eucalyptus groves and other winter-blooming ornamental plants provide an ample supply of nectar when native nectar supplies are most limiting.

Allen's Hummingbird breeds from late February through May. Our earliest nesting record is of two nests with eggs in Horse Canyon 25 Feb 1997 (JAM). The dearth of nesting records is surprising given the abundance of this species on SCI.

Several hummingbird-pollinated flowers are found on SCI, including the island mal-low, island snapdragon (*Galvesia speciosa*), island monkeyflower (*Mimulus flemingii*), and island paintbrush. These plants rely on Allen's Hummingbird to some degree, as other hummingbirds are uncommon.

### Alcedinidae

Belted Kingfisher (*Ceryle alcyon*). †\* Uncommon migrant and winter visitor; casual in summer. Recorded singly from 25 Jul to 4 Apr. A female spent the summer of 2003 in Wilson Cove (BLS). Numbers increase during fall with the arrival of migrants and continue through the winter. The Belted Kingfisher is frequently found fishing from the rocky cliffs on the east side of SCI.

### Picidae

Lewis's Woodpecker (*Melanerpes lewis*). Casual migrant. Five fall records of single birds: in China Canyon 14 October 1997 (JHG), at Wilson Cove then at the old nursery 13–15 October 2001 (CRK, JTB), at Chukit Canyon 13 Oct 2004 (JFF), at

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Eagle Canyon 13 Oct 2004 (CLD), and at Chalk Curve 30 Oct 2004 (BLS, LAA). One spring record: one on 8 Apr 1972 (Leatherwood and Coulombe 1972). Lewis's Woodpecker is an irregular winter visitor to Santa Cruz and Santa Catalina islands and known from the other Channel Islands from scattered sightings only (Garrett and Dunn 1981, Jones and Collins unpubl. data).

Acorn Woodpecker (*Melanerpes formicivorus*).<sup>\*</sup> Very rare migrant and visitor. First noted 19 Sep 1978 (PDJ), this species had been recorded only three times as of 1983 (Jorgensen and Ferguson 1984). Currently the Acorn Woodpecker is a rare migrant to SCI, possibly dispersing from Santa Catalina Island where it is resident. It is decidedly more frequent in fall, though records extend from 19 Sep to 4 May. It is typically found in oak groves in east-side canyons, particularly at Vista Overlook and in Burns Canyon. The high count is of four on 21 Oct 1978 (PDJ). In 2003, a pair was in Vista Canyon year round though not confirmed breeding; by 2004 it was gone. The Acorn Woodpecker invaded Santa Cruz Island between 1927 and 1930 (Hoffman 1931), became a widespread breeder there, and subsequently colonized Santa Catalina Island in 1955 (Miller 1955). Its increased frequency on SCI suggests a coming attempt at colonization, although there may not be enough oaks to support a resident population.

Red-naped Sapsucker (*Sphyrapicus nuchalis*).<sup>†</sup> Casual migrant. Three records: two collected above Mosquito Cove 11 Oct 1907 (Linton 1908; MCZ 316653, 316654; reported in error as *S. ruber* by Jorgensen and Ferguson 1984), one female in Cave Canyon 16 Nov 1996 (JHG), and one male in China Canyon 15 Oct 1997 (JHG, JAM). The Red-naped Sapsucker has been reported on three other of the Channel Islands as an occasional winter visitor (Jones and Collins unpubl. data).

Red-breasted Sapsucker (*Sphyrapicus ruber*). Casual migrant and winter visitor. Five records of single birds: in Chenetti Canyon 7 Oct 1998 (TRM), at Lemon Tank 20 Oct 2001 (JHP, HAC), at Lemon Tank 10–13 Oct 2003 (BLS et al.), in Cave Canyon 7–27 Mar 2004 (BLS et al.), and in Box Canyon 28 Apr 2004 (JMMcM, LHW). Garrett and Dunn (1981) treated this species as an uncommon transient and winter visitor on the larger Channel Islands, and Small (1994) called it fairly common during winter on Santa Catalina Island, but it has not proven to be of regular occurrence on SCI. It is possible that many sapsuckers go undetected on SCI; in some of the island's heavily wooded canyons, such as Eagle Canyon, trees often show the characteristic drillings of sapsuckers (BLS pers. obs.).

Northern Flicker (*Colaptes auratus*).<sup>†\*</sup> Uncommon migrant and fairly common winter visitor. The Red-shafted Flicker (*C. a. canescens* and/or *collaris*) is recorded primarily from 20 Sep to 12 Apr, exceptionally as late as 6 May (2001, one at Boulders South, BLS). The high count is of 30 on 18 Oct 2003 (JAM et al.). There are 13 records of the Yellow-shafted Flicker (*C. a. luteus*) 18 Oct–14 Jan, six of them during a remarkable flight of Northern Flickers during fall 2003.

### Tyrannidae

Olive-sided Flycatcher (*Contopus cooperi*).<sup>\*</sup> Rare spring migrant and very rare fall migrant. Recorded in spring from 24 Apr to 6 Jun; six fall records from 30 Aug to 14 Oct. First recorded 2 May 1974 (WC, RS), and only three records before 1984 (Jorgensen and Ferguson 1984). The high counts are of three in Wilson Cove Canyon 20 May 2001 (FB et al.) and four islandwide 10–12 Sep 1975 (PO).

Western Wood-Pewee (*Contopus sordidulus*).<sup>\*</sup> Uncommon migrant. Recorded in spring primarily from 24 Apr to 14 Jun, exceptionally as early as 9 Apr (Jorgensen and Ferguson 1984), and in fall primarily from 22 Aug to 8 Oct, exceptionally as early as 15 Jul (Jorgensen and Ferguson 1984). One summer record of a pair occupying a heavily wooded area in Norton Canyon 1 Jul 2002 suggests possible breeding

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(BLS, AMC). The high counts are of three in Eagle Canyon 15 Sep 1996 (MAB), in Wilson Cove Canyon 21 May 2001 (BLS et al.), and at the oaks near Stone Station 26 Apr 2004 (BLS, JMMcM).

Willow Flycatcher (*Empidonax traillii*).<sup>\*</sup> Very rare migrant. Sixteen spring records primarily from 22 May to 14 Jun, exceptionally as late as 20 Jun (2002, one at Lemon Tank that arrived 10 Jun, BLS et al.); nine fall records from 1 Sep to 3 Oct. Jorgensen and Ferguson (1984) reported three spring sightings from 2 to 13 May, but these fall outside the spring interval evident in our data. Classified as a common transient on the Channel Islands by Garrett and Dunn (1981), this species has proven to be of rare occurrence on SCI.

Least Flycatcher (*Empidonax minimus*).<sup>#</sup> Accidental. One record: one seen and heard calling near Northwest Harbor 6 Oct 2002 (BLS). There are only five other records for the Channel Islands (Jones and Collins unpubl. data).

Hammond's Flycatcher (*Empidonax hammondii*).<sup>+\*</sup> Rare spring and casual fall migrant. Recorded in spring from 9 Apr to 1 May. Four fall records of single birds: 11 Sep 1974 (HLJ), 12 Sep 1974 (HLJ), 1 Oct 1980 (EC et al.), and Lemon Tank 5 Oct 2000 (CWB). Difficult identification makes for few confirmed records, only nine prior to 2004. Laurence M. Huey collected one on 9 Apr 1915 (UCLA 427). During spring 2004, a remarkable fallout of *Empidonax* flycatchers occurred from 23 to 27 Apr, resulting in identification of 47 Hammond's Flycatchers. The peak count of 19 on 25 April 2004 (BLS et al. photo) is exceptional for the Channel Islands. An additional 154 unidentified *Empidonax* flycatchers, most of them likely Hammond's, were also seen during this time.

Gray Flycatcher (*Empidonax wrightii*).<sup>\*</sup> Rare spring migrant with 22 records from 19 Apr to 12 May. Owing to its distinctive tail motion, the Gray Flycatcher is more readily identified during migration than the other species of *Empidonax*. First recorded 8 May 1974 (WC, RS). The high count is of four on 25 Apr 2004 (BLS), with nine from 23 to 27 Apr 2004 (BLS et al.).

Dusky Flycatcher (*Empidonax oberholseri*).<sup>\*</sup> Very rare spring migrant with 17 records from 14 Apr to 4 June. Four fall reports from 6 Sep to 10 Oct lack documentation. During the remarkable fallout of *Empidonax* flycatchers on SCI 23–27 April 2004, an amazing 27 were identified, with a high count of 12 on 25 Apr 2004 (BLS et al.; Figure 31). The difficulty of distinguishing the Dusky Flycatcher from other migrant *Empidonax* flycatchers, particularly the more common Hammond's, and the Dusky's rarity along the southern California coast (Garrett and Dunn 1981), mean that it should be identified with great caution on SCI. There are only 21 records to date for the Channel Islands (Jones and Collins unpubl. data).

Pacific-slope Flycatcher (*Empidonax difficilis*).<sup>†\*</sup> Contributed by Robb S. A. Kaler. Uncommon breeder and migrant. Recorded primarily from 1 Apr to 21 Oct, exceptionally as early as 17 Mar (2004, one singing in Horton Canyon, JMMcM). The breeding population is augmented by migrants during spring and fall. The high count is of 25 in Middle Ranch Canyon 13 Apr 2002 (BLS, AMC). The Pacific-slope Flycatcher also breeds on Santa Cruz, Santa Rosa, Anacapa, and Santa Catalina islands (Johnson 1972, Diamond and Jones 1980, Garrett and Dunn 1981, Small 1994).

Pacific-slope Flycatchers nest primarily in canyon bottoms and typically raise two broods each season. Nest are placed in a variety of situations: rock walls, banks, cavities or cracks of living or dead trees, forks of trees, or niches in large trunks (Howell 1917, Grinnell and Miller 1944). Our recent records of breeding behavior are of a pair building a nest in Norton Canyon 4 May 1997 (JAM), an adult feeding two fledglings in Cave Canyon 12 Jul 2003 (HAC), two pairs building nests on undercuts of rocky cliffs in Horse Canyon 2 May 2004 (BLS, SWS), and one pair on a nest in a lemonadeberry shrub overhanging a cliff face in Horse Canyon 2 May 2004 (BLS, SWS).

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H. C. Oberholser (1897) described the Channel Islands flycatchers as the subspecies *E. d. insulicola* on the basis of their larger size, longer tail, and brighter breast, with the type specimen taken on Santa Rosa Island 3 Jul 1892 (USNM 140078). The validity of *insulicola* has been debated. The early literature described *insulicola* as differing from nominate *difficilis* of the mainland in being darker brown above, especially on the head, and paler below, especially anteriorly (Grinnell 1905, 1906, Howell 1917). Individual and seasonal variation and probably confusion of migrants with the locally breeding population caused many authors to question the subspecies and led to the A. O. U. committee's rejection of *insulicola* in 1908. Brodtkorb (1949) resurrected the subspecies. Johnson (1980) studied the differences among the insular, coastal, and interior populations. The A. O. U. (1989), in splitting *E. difficilis* and *E. occidentalis*, noted that with additional research *insulicola* may merit species status. Johnson and Marten (1988) demonstrated its genetic differences and reduced gene flow with mainland populations. *Empidonax d. insulicola* is unique in being the only migratory endemic subspecies of bird on the Channel Islands.

Black Phoebe (*Sayornis nigricans*).†\* Casual breeder; rare migrant and winter visitor. The Black Phoebe is recorded in all months but is most frequent from late summer through autumn, with peak numbers in October. It can be found in canyon bottoms and around man-made structures during fall and winter. The high count is of six in lower Bryce Canyon 8 Nov 1998 (TRM). The species was first recorded 12 Feb 1903 (Breninger 1904). The only nesting records are of an unfinished nest in a cave at an unspecified location on SCI 20 Mar 1907 (Linton 1908) and of one adult feeding two fledglings near an abandoned water tank at VC3 28 Jun 2002 (BLS, JTB photo). This species' scarcity as a nesting bird on SCI may be due to the lack of flowing or standing water in some years. Garrett and Dunn (1981) reported it as nesting commonly on most of the larger Channel Islands.

Say's Phoebe (*Sayornis saya*).†\* Common migrant and winter visitor; casual in summer. Recorded primarily from 5 Sep to 11 Apr, exceptionally as early as 10 Aug (2004, one juvenile at Wilson Cove, BLS). One summer record: one at Wilson Cove 16 June 2004 (SWS et al.). The high count is of 25 in the shore bombardment area (SHOBA) covering the southern third of SCI 2 Oct 2001 (BLS, AMC). This species is most common during fall migration, with numbers peaking in September and early October. Numbers decrease during late fall and early winter, but many individuals overwinter.

Vermilion Flycatcher (*Pyrocephalus rubinus*).\* Casual fall migrant. One record: a female at Horse Beach 29–30 Sep 2003 (RSAK, BLS; Figure 32). One was on San Nicolas Island 29 Sep 1974 (Garrett and Dunn 1981), one of only three other records for the Channel Islands (Jones and Collins unpubl. data).

Ash-throated Flycatcher (*Myiarchus cinerascens*).\* Rare migrant. Recorded in spring primarily from 1 Apr to 4 Jun, exceptionally as late as 16 Jun (2001, two in Horse Beach Canyon, CWB); in fall primarily from 17 Jul to 11 Sep, exceptionally as early as 9 July (2004, one at VC3, WMF, CML) and as late as 15 Oct (2001, one juvenile at Lemon Tank, BLS photo). This species is usually found singly; the high count is of two in Horse Beach Canyon 16 Jun 2001 (CWB) and in Wilson Cove Canyon 19 May 2002 (BLS). It can be found in canyon bottoms as well as on *Baccharis*-covered terraces. There are 10 records of *Myiarchus* flycatchers from 15 Sep to 26 Nov identified as the Ash-throated but possibly representing vagrant species of *Myiarchus*. A *Myiarchus* on 3 Jan 1980 was thought to be an Ash-throated (PDJ).

Tropical Kingbird (*Tyrannus melancholicus*).# Casual in fall. One record: one on 13 Oct 1976 (HLJ). There is only one other record for the Channel Islands, also in October (Jones and Collins unpubl. data).

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Cassin's Kingbird (*Tyrannus vociferans*).†\* Rare migrant; casual winter visitor. Recorded in spring from 28 Mar to 13 May, in fall from 26 Jun to 3 Nov. Less frequent than the Western Kingbird during both spring and fall migration. In contrast to its status in coastal mainland southern California, Cassin's Kingbird rarely overwinters on SCI, where there are only two winter records: one on 1 Jan 1999 (TRM); one in Cave Canyon 26 Feb 1995 (CEK). The high count is of two on four dates. The species was first recorded 5 Apr 1907 (Linton 1908).

Western Kingbird (*Tyrannus verticalis*).\* Uncommon migrant; casual in summer. Recorded in spring primarily from 20 Mar to 16 May, exceptionally as early as 10 Mar (1997, one at Stone Station, JHG, SL) and as late as 29 May (2001, one at Boulders South, BLS), in fall primarily from 16 Jul to 11 Oct, exceptionally as early as 4 Jul (2003, one in Mosquito Cove, BLS) and as late as 19 Oct (2001, one at Oly Locker, JHP, ZJN). Three June records: one at Thirst 14 Jun 2003 (BLS), one in SHOBA 18 Jun 2001 (CWB), and one at Stone Station 26 June 2003 (BLS). This species is the most frequent kingbird during both spring and fall migration; it is markedly more frequent in spring than in fall. During fallouts it often lines the wires near the high points of the island (e.g., Thirst, and Stone Station). The high count is of 50 islandwide 14 Apr 1999. A stationary count of 46 was made from Stone Station during a flight of spring migrants 26 Apr 2004 (BLS, JMMcM).

Eastern Kingbird (*Tyrannus tyrannus*).\* Casual migrant. Four spring records of single birds: 13 May 1979 (PDJ), 24–26 May 1980 (JLa), at West Shore 5–7 Jun 2003 (IR, NMM), and Horse Beach 7 Jun 2003 (BLS, RSAK). Four fall records of single birds: 22 Sep 1976 (HLJ), Lemon Tank 27 Jul 2001 (BLS et al.), Northwest Harbor 20–21 Jul 2002 (JTB, BLS photo), and Lemon Tank 2 Sep 2002 (BLS photo, JHP). This species has been recorded on all the Channel Islands, with nearly half of the occurrences in June and early July (Jones and Collins unpubl. data).

Scissor-tailed Flycatcher (*Tyrannus forficatus*).# Casual migrant. Three records of single birds: 2 Jun 1986 (Langham 1991), Larkspur Canyon 29 Apr 1997 (JAM, JHG; Rottenborn and Morlan 2000), and 29 May 1999 (CE), reportedly chased by a Loggerhead Shrike. There are 16 Channel Island records to date from 29 April to late July or early August (Jones and Collins unpubl. data).

### Laniidae

Loggerhead Shrike (*Lanius ludovicianus*).†\* Contributed by Suellen Lynn and Jonathan H. Plissner. Rare breeder and resident. San Clemente Island's endemic subspecies of the Loggerhead Shrike, *L. l. mearnsi*, has a unique combination of features: upperparts darker than in other subspecies, except *anthonyi* of the other Channel Islands, but pale underparts (including flanks), white rump and scapulars, and short bill, wings, and tail (Ridgway 1903, Miller 1931; Figures 33, 34). In *anthonyi* the underparts, flanks and rump are all dark in comparison to *gambeli* of the nearby mainland. In his revision of the shrike, Miller (1931) considered *mearnsi* the most distinctive of all its subspecies. Mundy et al. (1997a, b) found a certain mitochondrial DNA haplotype (designated A) to predominate more in San Clemente Loggerhead Shrikes than in three other shrike subspecies. They also found significantly lower genetic variation in the San Clemente shrike than in mainland subspecies. Genetic data suggest that the SCI population was founded within the last 350 years (Mundy et al. 1997b, Eggert and Woodruff 1999, Eggert et al. 2004). On the basis of plumage characteristics Patten and Campbell (2000) suggested that the current population is closer to *anthonyi*, although this conclusion was based on only four specimens collected in the early 1990s (the only four recent adults whose plumage was preserved). Eggert et al. (2004) confirmed that the shrike population in the late 1990s had a unique frequency of mitochondrial DNA haplotypes, although there was doubtless



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some intergradation from neighboring shrike populations. Johnson (1972) also suggested that the subspecies *mearnsi* originated from immigrants from the other islands rather than directly from the mainland.

In the late 1800s and early 1900s Mearns (1898) and Linton (1908) described the Loggerhead Shrike as fairly common and widely distributed on SCI. No estimates of the population were made prior to the 1980s, but numbers were as low as "a few individuals" in the early 1970s (P. D. Jorgensen pers. comm.), and in 1977 *L. l. mearnsi* was formally listed as endangered under the U.S. Endangered Species Act. Scott and Morrison (1990) initiated intensive research in the mid-1980s and from partial surveys of the island estimated the population to be between 17 and 30 individuals. The population reached a low of 14 adults in 1998 (Juola et al. 1997a, b, Mader and Warnock 1999, Mader et al. 2000). Besides the damage to the nesting habitat by the goats, predation by introduced cats and rodents may have contributed to the shrike's decline (Scott 1987), and predation of fledglings has hindered recovery (Scott and Morrison 1990).

Following the island's denudation, nesting habitat for the shrike remained only in the canyons of the southern third of SCI, mainly in the form of the large Catalina cherry trees that survived through the years of heavy grazing. Upper China Canyon was the core of the breeding distribution through the period when the population remained critically low, although pairs also appeared irregularly in Twin Dams, Boulders South, Vista, and Bryce canyons of the steep eastern escarpment.

Intensive management of the shrike on SCI began in 1992 with birds raised in captivity. From 1992 to 1996, eggs were gathered from nests on the island, incubated at the San Diego Zoo, and the chicks were reared in captivity. Forty of these young were released on the island, but none of them survived beyond eight months. From 1999 through 2004, 207 captive-bred juveniles and adults were released according to "soft release" techniques developed by the Institute for Wildlife Studies, and 43 of these (21%) were still alive at the end of 2004. As a part of this program, all released shrikes and many descendants of released shrikes receive a supplemental diet of insects and mice. All wild and released shrikes are banded with a unique combination of three color bands and one Fish and Wildlife Service aluminum identification band; they are monitored year-round by PRBO Conservation Science.

Recent releases of captive-reared individuals have focused on canyons north of SHOBA and have resulted in establishment of breeding pairs in Horse, Box, Norton, and Middle Ranch canyons. As the island's vegetation has recovered, shrikes have also nested commonly in shrubs such as lemonadeberry, sagebrush, and coyote brush (*Baccharis pilularis*). Since 2001, a few pairs have established nesting territories in the recovering grassland and scrub of the upper plateaus, and it seems likely that this trend will continue.

During the breeding season from February through July, the shrike's distribution centers around its nests, though some nonbreeders wander widely. Currently, both wild and captive-reared released shrikes nest primarily in west-draining canyons and in the lower half of the eastern escarpment of the southern two-thirds of SCI, areas of most native trees and shrubs (Blackford et al. 2003).

During the winter, males and females typically occupy separate territories, and then begin pairing in January (exceptionally as early as 13 Nov). Pairs form or reestablish themselves in breeding territories when winter territorial aggression subsides and females begin to beg toward and are fed by males. The earliest recorded date of nest-building is 21 Jan. Males and females both build, and the first nest attempts are well underway by the end of March. The shrikes build cup nests between 0.4 and 9.3 m above the ground in trees and shrubs with relatively dense foliage. Females lay one to six eggs per nest and are the primary incubators. They begin incubating before laying the last egg of the clutch and remain on the nest for approximately two weeks, seldom leaving it even to feed, as males continue to deliver food to their incubating

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mates. Both parents provide food to nestlings, which fledge approximately 17 days after hatching. The percentage of nests fledging young each year varies between 12.5 and 61%. Reproductive success correlates weakly with the preceding winter's rainfall. Nests fail because of depredation (primarily by black rats) and abandonment during inclement weather.

Parental provisioning of young continues after fledging and may last several weeks, although juveniles are capable of foraging independently by the time they are 40 days old. Pairs may renest following successful or unsuccessful rearing of their first broods. The latest recorded fledging date is 25 Jul, for the second brood of a pair that nested in 2001. In 2002, home ranges during the breeding season averaged 26 ha (range 1.3–271.1 ha).

During the nonbreeding season, August–January, shrikes are more widely distributed across island habitats as pairs separate, young disperse, and foraging areas increase in size. Individuals often forage on the island's plateaus, around buildings, and along both the eastern and western shorelines. Since 1999, some individuals have established wintering home ranges at Lemon Tank, VC3, and Wilson Cove, although these typically were juveniles released from captivity. Established males typically remain near their breeding territories, although they often forage over a greater area. Females sometimes remain on their breeding territories as well, although when not encouraged to stay at their breeding site by the provisioning of supplemental food, both members of a pair do not share a nonbreeding territory. The overwintering locations of many individuals, particularly adult females, remain a mystery to researchers who have been monitoring the population intensively since the 1980s.

Only two shrikes banded on SCI have been recovered elsewhere. Remains of one were found at a Peregrine Falcon aerie at a Least Tern (*Sterna antillarum*) nesting colony near Coronado, California, in 1994 (Everett et al. 1996); as Peregrine Falcons



Figure 34. Adult male Loggerhead Shrike at China Canyon showing plumage features typical of *Lanius ludovicianus mearnsi*, March 2003.

Photo by Brian L. Sullivan

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are known to transport prey items long distances, possibly the falcon carried the shrike from the island to the mainland. On 14 July 2002 a captive-reared juvenile died shortly after appearing at Middle Ranch on Santa Catalina Island, 12 days after its release on SCI.

In 1997 a comprehensive predator-management program was adopted to enhance the shrikes' survival. Nonnative predators (feral cats and black rats) are removed via trapping and spot-lighting (Cooper et al. 2002, 2003, Kershner and Cooper 2004). Native predators such as the Island Fox, Common Raven, Red-tailed Hawk, and American Kestrel have also been controlled. Other efforts to aid the shrike include habitat restoration, spearheaded by the Soil Ecology and Recovery Group (SERG) from San Diego State University. Habitat restoration by SERG, guided by results from research conducted by the Institute for Wildlife Studies, has involved installing temporary supplemental hunting perches for the shrikes, removing nonnative ground cover, propagating native plants, and planting native trees and shrubs throughout SCI.

While controversial at times, the navy's shrike-recovery program has demonstrated some modest success with a population that had dwindled to fewer than five breeding pairs as recently as 1991. In 2004 the breeding population was approximately 41 pairs (Lynn et al. 2005). An estimate of the island's carrying capacity (and thus a reasonable recovery goal) is difficult to make because of the paucity of data on the distributions of habitats and shrikes prior to grazing and other human effects on SCI. If the population continues to recover, the population bottleneck will likely be reflected in lowered genetic diversity and possibly in the effects of inbreeding. Reintroduction of captive-reared birds may also have long-term effects, as these birds develop, persist, and breed in an environment requiring greater tolerance of both neighboring shrikes and people. Historically, San Clemente shrikes were described as notably wary of human observers, but the recent release of captive-reared individuals has resulted in significant numbers of birds that are indifferent or even attracted to human activity.

Migratory Loggerhead Shrikes (likely *L. l. gambeli*) have been recorded rarely on SCI, typically one to three per spring and fall. Presumed migrants typically appear in March or early April and late September or October, but the interval is clouded by confusion with immature residents. The paler plumage of *gambeli* facilitates the migrants' identification. Furthermore, PRBO Conservation Science bands all Loggerhead Shrikes on SCI, and banded birds that are apparently *gambeli* disappear from the island by mid-March.

### Vireonidae

Bell's Vireo (*Vireo bellii*). Accidental. Two records of apparent Least Bell's Vireos (*V. b. pusillus*): one at Lemon Tank 7 Oct 2001 (BLS); one at Wilson Cove 2 Oct 2004 (JMMcM, BLS). Although this subspecies breeds primarily in coastal southern California, it is rarely recorded during migration (Garrett and Dunn 1981, G. McCaskie pers. comm.), so it should be identified with caution on the Channel Islands. Elsewhere on the Channel Islands, Jones and Collins (unpubl. data) consider only one other report to be adequately documented.

Yellow-throated Vireo (*Vireo flavifrons*).# Casual spring migrant. One record: a single bird in the oak grove in upper Burns Canyon 27 May 2003 (DJH; San Miguel and McGrath 2005). There is but one other Channel Islands record, of a single bird on Santa Catalina Island 27 Oct 1974 (Small 1994).

Cassin's Vireo (*Vireo cassinii*).\* Rare spring and very rare fall migrant. Recorded in spring from 30 Mar to 12 May and in fall from 5 Sep to 14 Oct. It is more frequent during spring migration, and most records are from late April. Most birds occur in the oak groves on the east side. The high count is of 14 on 25 Apr 2004 (BLS et al.).

Hutton's Vireo (*Vireo huttoni*).#\* Casual visitor. Two records: one singing in an oak grove near Stone Station 16 Mar–2 Apr 2002 (JHP, CRK); one singing in Cancha-

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lagua Canyon 12–13 Jun 2004 (BLS et al.; Figure 35). Although this species breeds on Santa Rosa, Santa Cruz, and Santa Catalina islands (Garrett and Dunn 1981), it is largely sedentary, occurring only as a vagrant on SCI. It has also been recorded as a vagrant on San Miguel and San Nicolas islands (Jones and Collins unpubl. data).

Warbling Vireo (*Vireo gilvus*).+\* Fairly common migrant. Recorded in spring primarily from 4 Apr to 30 May, exceptionally as early as 20 Mar (2002, one at Stone Station, JHP), and in fall primarily from 21 Aug to 15 Oct, exceptionally as early as 10 Aug (1996, east shore, PAA, BJR). In spring the high counts are of 378 on 25 Apr 2004 (BLS et al.) and 323 on 26 Apr 2004 (BLS et al.), during the spectacular fallout of spring 2004. The fall high count is of 18 on 21 Sep 2004 (BLS, JMMcM). This species is one of the most common migrant passerines on the island, found in about equal abundance during spring and fall. It was first recorded 19 May 1914 (H. H. Kimball).

Philadelphia Vireo (*Vireo philadelphicus*).# Casual fall migrant. Two records, both of single birds at Lemon Tank: 4 Oct 2001 (BLS et al.) and 3 Oct 2002 (BLS). Both birds were in bright plumage, likely immatures. Garrett and Dunn (1981) listed two other records for the Channel Islands.

Red-eyed Vireo (*Vireo olivaceus*).#\* Casual fall migrant. Two records, both of single birds: Lemon Tank 17 Oct 2001 (BLS et al.); along the road to Stone Station 14 Oct 2003 (BLS photo, RSAK). Garrett and Dunn (1981) considered this species a casual vagrant to the Channel Islands.

Yellow-green Vireo (*Vireo flavoviridis*).+\* Casual fall migrant. One record: a bird in fresh plumage at Lemon Tank 18 Sep 2002 (BLS et al., Figure 36; Cole and McCaskie 2004).



Figure 35. Hutton's Vireo in Canchalagua Canyon 13 June 2004.

Photo by Brian L. Sullivan

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### Corvidae

Common Raven (*Corvus corax*).†\* Common breeder and resident. This species nests along sea cliffs and canyons, typically in pothole caves but also occasionally on ledges. At present, fewer than 20 pairs are known to breed on the island (Cooper et al. 2002, 2003), but throughout the 1970s numbers were considerably higher with frequent counts of nearly 200 birds together near China Point (P. D. Jorgensen pers. comm.). In 2001, Cooper et al. (2002) identified 18 raven territories, 16 of which had confirmed nests, and in 2002, Cooper et al. (2003) identified 12 raven territories, 11 of which had confirmed nests. During road surveys in 2001 and 2002, Cooper et al. (2003) reported 0.40 and 0.62 ravens per kilometer, respectively; during hiking transects in 2001 and 2002, they reported 1.10 and 1.41 ravens per kilometer, respectively. From these they estimated a population of 80–132 individuals. These standardized surveys yielded high counts of 84 on 6 Mar 2002, 68 on 12 Feb 2002, and 63 on 9 Apr 2002 (BLS, AMC).

Nesting typically occurs from mid-March through mid-June (Cooper et al. 2003). The clutch size is typically one to four but occasionally as large as six. The mean number of fledglings per nest in 2001 and 2002 was 2.4 and 2.2, respectively (Cooper et al. 2002, 2003). Large “bachelor” flocks, often of 30–50 individuals, wander the island year round and consist largely of two-year-old birds. The high count is of 193 on 8 Sep 1976 (HLJ), along 4 km of road. A more recent high count is of 46 near Box Canyon 26 Oct 2004 (JMMcM, LHW). The raven was first recorded on SCI by a naturalist (A. W. Anthony) 23 Aug 1894, although prehistoric remains have been found in early hunter-gatherer middens, confirming this species' presence on the island as long as 3500 years ago (Porcasi 1999a).

### Alaudidae

Horned Lark (*Eremophila alpestris*).†\* Contributed by Robb S. A. Kaler. Common breeder and resident. An endemic subspecies of the Horned Lark, *E. a. insularis*, is resident on all the Channel Islands except Anacapa, where it has bred and occasionally winters (Garrett and Dunn 1981, Small 1994). The original description by Townsend (1890) was of an adult male taken on SCI on 25 Jan 1889 (USNM 117674). This race differs from *E. a. actia* of the nearby mainland by its darker upperparts and heavily streaked breast (Dwight 1890, Oberholser 1902).

Breeding typically begins in late February and ends in late July, with at least two (possibly more) clutches reared each year. Nests described by early visitors were at the edge of iceplant (*Carpobrotus* sp., *Mesembryanthemum* sp.), below cactus, or concealed in the lee of a bunch of grass (Grinnell 1897a, Howell 1917, Bent 1942).

Early visitors to the island described the lark as abundant on the island's open uplands (Breninger 1904, Linton 1908, Howell 1917). This habitat type was perpetuated by introduced grazers for most of the 1900s. Horned Lark populations have probably declined since the removal of goats and sheep but continue to thrive in the open, exposed portions of the island. *Eremophila a. insularis* has occurred on the adjacent mainland in winter, but it is unclear whether individuals remain to breed there (Grinnell and Miller 1944, Johnson 1972). The status of migrant races on SCI is uncertain (Jorgensen and Ferguson 1984), although occasional individuals appear to be of a paler subspecies, suggesting some influx of migrants (BLS pers. obs.).

### Hirundinidae

Purple Martin (*Progne subis*). \* Casual migrant. Three records: two immature birds foraging at Lemon Tank 15 Sep 2002 (BLS, JMMcM videotape), two adult males in lower Burns Canyon 1 May 2004 (SH), and one immature or female at Lemon Tank



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photographed 24 Aug 2004 (JMMcM). The spring record falls within the interval expected for spring migrants along the mainland coast and the Channel Islands (Garrett and Dunn 1981). This species is rare as a fall migrant in coastal southern California (Garrett and Dunn 1981), so the two SCI records are quite unusual. There are only 8–10 reports for the Channel Islands, all but the two in fall for SCI from spring (Jones and Collins unpubl. data).

Tree Swallow (*Tachycineta bicolor*).<sup>\*</sup> Rare spring and fall migrant; casual in summer. Recorded in spring primarily from 28 Feb to 14 Apr, exceptionally as early as 5 Feb 1997, two at Lemon Tank, WTE, MAB), and in fall from 20 Aug to 8 Nov. One summer record: one near West Shore 29 Jun 2004 (IR). First recorded 30 Aug 1978 (PDJ); only three records as of 1983 (Jorgensen and Ferguson 1984). The Tree Swallow is usually found in small flocks, and the high counts are of 40 foraging over Oly Locker during a storm on 4 Apr 2001 (BLS) and 35 on 26 Sep 1978 (PDJ).

Violet-green Swallow (*Tachycineta thalassina*). Very rare spring migrant; casual at other times of the year. Recorded in spring primarily from 25 Feb to 14 Apr, exceptionally as early as early as 10 Feb (1996, one along the road near Middle Ranch Canyon, BJR) and as late as 15 May (2004, one in Norton Canyon, BLS, WMF). One summer record: one at Wilson Cove 29 June 2000 (JTB). Four fall records: one at Lemon Tank 17 Nov 1992 (WTE), two in China Canyon 27 Oct 1998 (TRM), one near Wilson Cove 21 Oct 2000 (CWB), and one at Lemon Tank 12 Nov 2004 (JMMcM). One winter record: one at Wilson Cove 11 Dec 2004 (JMMcM, SRH). The high count is of five over Vista Overlook 2 Apr 2002 (BLS, AMC). Garrett and Dunn (1981) suggested that during the spring this species rarely migrates over the Channel Islands, and our data generally corroborate this hypothesis.

Northern Rough-winged Swallow (*Stelgidopteryx serripennis*). Very rare migrant. Recorded in spring primarily from 24 Mar to 1 May, exceptionally as early as 9 Mar (2004, one at VC3, JMMcM, JLK), in fall from 10 Jul to 8 Oct. As of 1983, there was only one record for SCI (Jorgensen and Ferguson 1984), though Garrett and Dunn (1981) considered the species a rare transient on the Channel Islands. The high counts are of two near Chamish Canyon 24 Mar 2001 (BLS) and two at China Point 10 Aug 2003 (RSAK).

Bank Swallow (*Riparia riparia*). Casual migrant. Four records of single birds: 2 May 1974 (WC, RS), at SHOBA Pond 21 Oct 1995 (RTP, PAA), over Pyramid Point 18 May 2002 (BLS), and in China Canyon 28 May 2004 (CML). The Bank Swallow's rarity on SCI is in line with its current rarity along the mainland southern California's coast.

Cliff Swallow (*Petrochelidon pyrrhonota*).<sup>\*</sup> Rare migrant and summer visitor. Recorded from 9 Apr to 2 Oct. First recorded 10 Jun 1973 (HLJ), and only two records as of 1983 (Jorgensen and Ferguson 1984), but more frequent than other migrant swallows on SCI. In spite of the occasional occurrence through the summer, breeding has not been documented. The high count is of 10 on 25 Sep 1978 (PDJ).

Barn Swallow (*Hirundo rustica*).<sup>\*</sup> Fairly common breeder and migrant. Recorded from 20 Feb to 15 Oct, exceptionally as late as 31 Oct (2001, one at Lemon Tank, BLS) and 15 Nov (Jorgensen and Ferguson 1984). Jones and Diamond (1976) suggested that this species colonized SCI after 1968; the first recorded nest was an unattended one found in 1974 (HLJ). The Barn Swallow was first recorded on SCI in 1915. Barn Swallows currently nest in a variety of man-made structures islandwide and on sea cliffs. The high count is of 30 nesting in an abandoned water tank at VC3 28 June 2002 (BLS, AMC). The species is now abundant enough on SCI that it is often ignored in daily records, so the high count underrepresents what is often seen in a typical summer day.



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### Sittidae

Red-breasted Nuthatch (*Sitta canadensis*).<sup>\*</sup> Very rare fall migrant; casual in spring. Irruptive; absent most years. Recorded in fall from 7 Sep to 10 Nov. There are two spring records: one 31 May 1980 (JLa); one in Larkspur Canyon 6 May 1997 (JHG). Invasion years on record are 1996 (26 individuals), 1998 (7 individuals), and 2004 (18 individuals). The high count is of eight in Cave Canyon 14 Oct 1996 (FAJ). First recorded 22 Sep 1975 (HLJ). This species breeds occasionally on Santa Cruz Island (Garrett and Dunn 1981), where it is not recorded in every year and may be absent for extended periods.

### Troglodytidae

Rock Wren (*Salpinctes obsoletus*).<sup>†\*</sup> Common breeder and resident; migratory status uncertain. The Rock Wren is found in rocky canyons and around man-made structures islandwide, but despite its being one of the most common breeding birds on SCI it is poorly known. Possibly its numbers have increased since the early 1900s, when it was reported by various authors as "fairly common." An albino was in Chenetti Canyon 6 July 1996 (BJR).

Grinnell (1898) described the Rock Wrens of San Nicolas Island as *S. o. pulverius* on the basis of their reportedly larger bill and feet and paler, buffier coloration in comparison to nominate *obsoletus* of the mainland. Four years later, without further comment, he included SCI in the range of *pulverius* (Grinnell 1902). Swarth (1914), however, found the only difference to be the bill, averaging slightly longer in *pulverius*, and he recommended that the name *pulverius* be restricted to the Rock Wrens of San Nicolas Island only. Willett (1912) and Dawson (1923) questioned its validity, and finally Grinnell himself (1927) renounced *pulverius*, acknowledging that the supposed color difference resulted from discoloration by dust and that the extent of overlap in bill length was too much for the subspecies to be recognized. *S. o. pulverius* lay forgotten until Phillips (1986) tentatively resurrected it on the basis of a possibly browner back and wider and heavier bill. He included SCI as well as San Nicolas Island in its range. A quantitative analysis of these possible differences remains to be done.

Bewick's Wren (*Thryomanes bewickii*).<sup>†</sup> Contributed by Robb S. A. Kaler. Extinct breeder; accidental migrant. The San Clemente Bewick's Wren (*T. b. leucophrys*) is now extinct, most likely because of habitat destruction by fire and introduced grazers. A. W. Anthony (1895) described the subspecies, designating as the type specimen a male collected 27 Aug 1894. The San Clemente insular race differed from the mainland race *charienturus* by its paler, grayer upperparts, shorter tail, and thicker bill (Swarth 1916, Phillips 1986).

Early visitors (Grinnell 1897a, Linton 1908, Howell 1917) described this former resident as "very common" to "abundant." Despite a search by Martin Cody in 1968 (unpubl. notes), no records exist since George Willett collected a male in Middle Ranch Canyon 17 Feb 1941 (Jorgensen and Ferguson 1984). This wren probably met its requirements for subsistence in the brush- and cactus-covered hillsides, those for nesting by cavities and crevices in canyon walls (Breninger 1904, Howell 1917). Additional nesting sites were suspected in the center of dense cactus patches (Anthony 1895, Breninger 1904).

There are three observations of presumed migrant Bewick's Wrens on SCI since the extinction of *leucophrys*: a singing male in Horse Canyon 15 Apr 1973 (HLJ) was subsequently captured 4 May 1973 and photographed by Stewart et al. (1974). One was in lower Bryce Canyon 11 Oct 1996 (BJR), and one was in Cave Canyon 24–25 Sep 1999 (JAM, SL).

House Wren (*Troglodytes aedon*).<sup>†</sup> Rare migrant and winter visitor; casual in summer. Recorded primarily from 7 Aug to 25 Mar. Decidedly more numerous during fall,

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with the majority of records coming from September through November. The high count is of 15 in Box Canyon 21 Sep 1996 (BJR, FAJ). Three summer records: 15 Jul 1972 (PDJ; first record for SCI), one in Horse Canyon 8 July 2004 (SWS, WMF), and one singing in Cave Canyon 8 Jul–14 Aug 2004 (SWS et al.). The last raised the possibility of breeding, although there was no further evidence of this.

Marsh Wren (*Cistothorus palustris*).+\* Very rare migrant; casual winter visitor. Eleven fall records from 23 Sep to 16 Dec. One winter record: three (high count) at Horse Beach 11 Jan 2004 (BLS et al. photo). A specimen collected 13 Nov 1939 (G. Willett; LACNHM 19635) is *C. p. clarkae* and the only specimen of this subspecies collected away from its breeding range in coastal mainland southern California (Unitt et al. 1996). The marshy areas around Chenetti and Horse beaches most suitable for the species are currently inaccessible to biologists.

### Regulidae

Golden-crowned Kinglet (*Regulus satrapa*). Casual migrant. Recorded in fall primarily from 13 Oct to 12 Nov, exceptionally as early as 11 Sep (1980, EC, HLF). One spring record: one in Middle Ranch Canyon 16 Mar 2001 (CWB). First recorded 2 Nov 1975 (HLJ). Occurs sporadically; the year 2000 accounts for four of the eight island records and the high count of 12 in Eagle Canyon 12 Nov 2000 (CWB). Although Garrett and Dunn (1981) considered the Golden-crowned Kinglet an uncommon transient on the Channel Islands, our data suggest it may be of more limited occurrence on the southern islands.

Ruby-crowned Kinglet (*Regulus calendula*).\* Fairly common migrant; rare winter visitor. Recorded from 21 Sep to 9 May, most frequently in October. The high fall count is of 18 in China Canyon 10 Nov 1996 (MTP); the high spring count is of 15 in Middle Ranch Canyon 13 Apr 2002 (BLS, AMC). First recorded 14 Apr 1973 (HLJ), the Ruby-crowned Kinglet is one of the most numerous migrant passerines on SCI, typically found in mixed flocks with other passerines.

### Sylviidae

Blue-gray Gnatcatcher (*Poliotilta caerulea*).\* Uncommon migrant and winter visitor. Recorded primarily from 21 Aug to 14 Apr, exceptionally as late as 29 Apr (2004, two in Horton Canyon, BLS, WMF). Most frequent during fall migration from September to November; the high count is of four in Horse Canyon 5 Oct 1995 (CLC, MKS). Just three records as of 1983 (Jorgensen and Ferguson 1984). This species breeds on Santa Cruz Island (Garrett and Dunn 1981).

### Turdidae

Stonechat (*Saxicola torquatus*).\*# Accidental. One record, the first for California of this Old World species: one photographed at the Chad's Bluff ponds 20–21 Oct 1995 (RTP; San Miguel and McGrath 2005; Figure 37). The Stonechat has been reported in North America just nine times (Sullivan and Patton unpubl. data), only one of them outside of Alaska: one photographed at Grand Manan I., New Brunswick, 1 Oct 1983 (Wilson 1986).

Mountain Bluebird (*Sialia currucoides*).+\* Rare migrant and winter visitor. Recorded primarily from 18 Oct to 17 Mar, exceptionally as late as 30 Mar (2001, two at SHOBA gate, BLS, JTB) and 6 Apr (1996, one male at Horse Beach Canyon, BJR). Irregular and rather irruptive, recorded most frequently during fall migration from mid-October to late November. In some years, large foraging flocks form and remain through the winter. The high count is of 76 on 28 Dec 2004 (JMMcM), and 30–50 have been recorded on several dates. No spring migration of this species is known from SCI.

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Townsend's Solitaire (*Myadestes townsendi*). \* Very rare migrant; casual in winter. Recorded 11 times in fall from 23 Sep to 19 Nov and seven times in spring from 2 May to 30 May, exceptionally as early as 18 Apr (1997, one in China Canyon, JAM) and as late as 10 Jun (2002, one at Lemon Tank, BLS, AMC) and 12 Jun (1994, one at the old nursery, WTE). Three winter records: one in Norton Canyon 2 Dec 2000 (HAC), one at VC3 15 Dec 1996 (MH), and one at Lemon Tank 26 Jan 2002 (BLS photo); the bird did not remain through the winter. First recorded 2 May 1974 (WC, RS).

Swainson's Thrush (*Catharus ustulatus*). †\* Uncommon spring migrant; fairly common fall migrant. Recorded in spring from 25 Apr to 10 Jun, in fall primarily from 1 Sep to 14 Oct, exceptionally as late as 21 Oct (2004, three at VC3 and Lemon Tank, JMMcM). More commonly heard than seen, particularly during fall migration from mid-September to mid-October, when the pre-dawn hours can be filled with the sounds of this species flying overhead. The birds are found in numbers by day in canyon bottoms, typically resting in the crowns of large Catalina cherry trees. The high count is of 40 in Cave Canyon 29 Sep 2003 (BLS, RSAK), though numbers certainly in the hundreds regularly pass overhead before dawn. Evidently large numbers of the species cross SCI, migrating over the ocean on their way south, possibly leaving Point Conception and angling southeast toward Mexico.

Hermit Thrush (*Catharus guttatus*). †\* Uncommon migrant and winter visitor. Recorded from 21 Sep to 27 Apr, exceptionally as late as 15 May (Jorgensen and Ferguson 1984). The high fall count is of 18 at Horse Canyon 9 Oct 1996 (JAM); the high spring count is of 15 at Vista Overlook 13 Apr 2002 (BLS, AMC).

American Robin (*Turdus migratorius*). \* Uncommon migrant and winter visitor. Recorded primarily from 8 Oct to 16 May, exceptionally as early as 27 Aug (2002, one at Lemon Tank, BLS, AMC), 10 Sep (2004, one at Northwest Harbor, HAC), and 25 Sep (1997, two at Wilson Cove, WTE) and as late as 7 Jun (2002, one at Wilson Cove, AMC). Usually seen in groups of up to five, but the high count is of 50 at Twin Dams 15 Dec 1998 (JAM, KW). The robin is suspected to have bred once on Santa Cruz Island. Its movements and occurrence in southern California are somewhat erratic (Garrett and Dunn 1981).

Varied Thrush (*Ixoreus naevius*). †\* Rare fall migrant; casual in winter and spring. Recorded in fall primarily from 8 Oct to 21 Nov, exceptionally as late as 13–16 Dec (2001, one male at Wilson Cove, JTB photo). Two winter records: one male 25 Jan 1907 (C.B. Linton; MCZ 57621); one in Cave Canyon 2 Jan 1999 (SL). Three spring records: two collected 5 Apr 1907 (Linton 1908; FMNH 145634, MCZ 316651), one in Burns Canyon 16 May 2001 (JHP), and one male at Lemon Tank 18 May 2003 (IR).

### Mimidae

Gray Catbird (*Dumetella carolinensis*). Casual fall migrant. Two records: one in Horse Canyon 9 Oct 1996 (JAM); one in Warren Canyon 4 Nov 2000 (CLC). There are only 10 records for the Channel Islands; six in fall, one in winter, and three in spring (Jones and Collins unpubl. data).

Northern Mockingbird (*Mimus polyglottos*). †\* Fairly common breeding resident. Breeds throughout the island, mainly in large prickly pear patches. Young fledge from mid-April to mid-July. More common in the southern half of SCI, the mockingbird does not appear to be very dense in any one location. The Northern Mockingbird is one of the few passerines to compete directly with the San Clemente Loggerhead Shrike, and aggressive interactions between the two are common. There is no evidence of outside migration to the island; the species is thought to be sedentary.

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Sage Thrasher (*Oreoscoptes montanus*).<sup>\*</sup> Uncommon fall migrant; rare winter visitor; rare spring migrant. Recorded primarily from 22 Aug to 31 Mar, exceptionally as early as 11 Aug (2004, one at Lemon Tank, JMMcM) and as late as 13 Apr (2003, one at West Shore, CWB), 30 Apr (1996, one in Horse Beach Canyon, PAA), and 3 May (1974, one, WC, RS). During fall migration, several can be found daily with little effort from September through November (Figure 38). In some years the Sage Thrasher is fairly common during fall migration, in sharp contrast to its rarity along the coast of the nearby mainland. It was first recorded 9 Sep 1972 (JLe, JLa). Recent fall counts, with numbers of individuals counted or estimated in parentheses: 1995 (15), 1996 (7), 1997 (11), 1998 (12), 1999 (0), 2000 (11), 2001 (33–51), 2002 (11–14), 2003 (15), 2004 (37–74). This species is found islandwide during migration but seems to settle onto flat terraces, typically with many *Baccharis* shrubs. The high count is of eight at Lemon Tank and three at VC3 on 7 Oct 2004 (BLS et al.). The Sage Thrasher's abundance on SCI is one of the most interesting divergences between the island and mainland coast in the status of any migratory bird.

Brown Thrasher (*Toxostoma rufum*).<sup>†</sup> Accidental. One specimen found road-killed near the old nursery 14 Jul 1996 (DB-S; LACNHM 103415); identification verified by K. L. Garrett. This species is a vagrant to southern California primarily from September through May (Garrett and Dunn 1981), so SCI's single record from mid-July is quite unusual. There are only four other records for the Channel Islands (Jones and Collins unpubl. data).

Bendire's Thrasher (*Toxostoma bendirei*). Casual migrant. Two records: one 15 Sep 1979 (HLF); one 17 Aug 1980 (PDJ). Garrett and Dunn (1981) treated this species as a rare but regular fall vagrant on the coast and the Channel Islands, but Jones and Collins (unpubl. data) have only eight records for the islands.

### Sturnidae

European Starling (*Sturnus vulgaris*).<sup>\*</sup> Common breeder and year-round resident. Nests primarily at Wilson Cove and in structures in the surrounding area. There are also colonies in natural cavities in rock cliffs in many canyons, notably in middle Horse Canyon and at the mouth of Norton Canyon. Small numbers breed sporadically in most canyons. First recorded on SCI 5 Jun 1966 (HC), the starling was common there by 1968 (Jorgensen and Ferguson 1984).

### Motacillidae

Red-throated Pipit (*Anthus cervinus*).<sup>\*</sup> Very rare or casual fall migrant. Recorded from 29 Sep to 14 Nov, with a distinct peak during the first two weeks of October. There are 19 records representing approximately 19–23 individuals. The first was 30 Sep–1 Oct 2002, with one at Lemon Tank (BLS, JTB; Figure 39). Seventeen of the 19 records are from fall 2003, and at least eight of the birds were photographed. The high count is of four on 3 Oct 2003 (BLS et al.). The year 2003 was exceptional for Red-throated Pipits elsewhere in California (Sullivan 2004), and this species is likely not as regular as the number of records may suggest. It appears sporadically along the coast of mainland southern California. The Red-throated Pipit has been found rarely on the other Channel Islands with five records from Santa Catalina, San Nicolas, San Miguel and Santa Cruz islands (Small 1994, Jones and Collins unpubl. data).

American Pipit (*Anthus rubescens*).<sup>†\*</sup> Uncommon fall migrant and winter visitor; rare spring migrant. Recorded from 30 Sep to 25 Apr, most frequently in October and November. Usually found in small flocks, which occasionally winter on flat uplands. The high count is of 31 above Twin Dams 24 Jan 2003 (BLS). First recorded on the basis of a specimen collected 18 Oct 1907 (Linton 1908; MVZ 316374).

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### Bombycillidae

Cedar Waxwing (*Bombycilla cedrorum*).<sup>\*</sup> Fairly common migrant; rare winter visitor. Recorded during migration in fall from 28 Sep to 29 Nov, exceptionally as early as 9 Sep (2001, three at Lemon Tank, BLS), in spring from 13 May to 12 Jun. The extent of fall migration is confounded by small numbers wintering, with records from 5 Dec to 22 Feb, but there is a distinct fall peak during October and November. The waxwing typically occurs in small flocks; the high count is of 40 near the airfield 26 May 2001 (JAD). There were only 11 records as of 1983 (Jorgensen and Ferguson 1984).

### Ptilonotidae

Phainopepla (*Phainopepla nitens*).<sup>†\*</sup> Rare migrant and summer visitor. Recorded primarily from 20 May to 20 Oct, exceptionally as early as 15 Apr (1973, PDJ) and as late as 8 Nov (1996, one at Pyramid Point, SL) and 20 Nov (1995, one in Bryce Canyon, MKS). Peak numbers typically occur from late August through September; the high count is of nine at Lemon Tank 9 Sep 2001 (CWB et al.). The Phainopepla reaches SCI largely during postbreeding dispersal. Although the first record was 15 Apr 1973 (PDJ) and there were only six records as of 1983 (Jorgensen and Ferguson 1984), this species is now regular on SCI during late summer and early fall. Adult males are more frequent in late spring than in fall, when only two have been recorded. Immatures constitute the majority of summer and early fall records. The Phainopepla bred on Santa Catalina Island in 1977 (Garrett and Dunn 1981) and is an occasional spring and fall transient elsewhere on the Channel Islands (Jones and Collins unpubl. data).

### Parulidae

Tennessee Warbler (*Vermivora peregrina*).<sup>\*</sup> Very rare fall migrant; casual spring migrant. Twenty fall records from 3 Sep to 17 Oct, exceptionally as late as 3–7 Nov (2001, one at Lemon Tank, JHP et al.). One spring record: one in Norton Canyon 5–12 May 2000 (SLM, CLC). The high count is of five, two at Lemon Tank and three at Wilson Cove, 11 Oct 2003 (BLS et al.).

Orange-crowned Warbler (*Vermivora celata*).<sup>†\*</sup> Contributed by Robb S. A. Kaler. Fairly common breeder; also occurs to uncertain extent as a migrant from the mainland. The Orange-crowned Warbler, subspecies *V. c. sordida*, breeds commonly on all of the Channel Islands except Santa Barbara and San Nicolas (Small 1994), as well as locally on the coast of mainland southern California (Willett 1933). The type specimen of this subspecies is an adult male collected on SCI 25 Jan 1889 by C. H. Townsend (1890; USNM 117606). *V. c. sordida* is the darkest of the Orange-crowned Warbler's four races (Oberholser 1905) with dusky olive streaks on the breast and flanks (Unitt 1984), and dusky centers on the undertail coverts (Pyle 1997, Dunn and Garrett 1997).

Insular *V. c. sordida* is partially migratory, with some birds leaving the islands in the fall, as early as mid-July, and dispersing over the mainland as far north as the San Francisco Bay region (Grinnell and Miller 1944). *V. c. sordida* begins to return to the islands as early as December and January (Grinnell and Miller 1944, Sogge et al. 1994). Surprisingly, the only records of nests are by Howard (1906), who found six in 1905, but no effort has been dedicated to the study of this common breeder on SCI.

Migrants from the mainland also reach the island; gray-headed birds apparently of the interior subspecies *orestera* and bright individuals presumably of subspecies *lutescens* are occasionally noted during both fall and spring migration. The high count is of 41 on 21 Sep 2004 (BLS et al.).



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Nashville Warbler (*Vermivora ruficapilla*).\* Fairly common migrant. Recorded in spring from 30 Mar to 19 May and in fall from 30 Aug to 8 Nov, exceptionally as late as 15 Nov (2004, one at Lemon Tank, JMMcM), and 21 Nov (2002, one at Lemon Tank, RDMcM). Although the Nashville Warbler is one of the regularly occurring migrant western warblers on SCI, it is not recorded in large numbers. The high count is of nine on 23 Apr 2004 (BLS et al.).

Virginia's Warbler (*Vermivora virginiae*). Very rare fall migrant. Twelve records from 8 Sep to 10 Oct, exceptionally as early as 18 Aug (2004, one at Lemon Tank, BLS et al.). The high count is of four from 11 to 13 Sep 1974 (HLJ). No adult males have been noted. Seven of the 12 records are from Lemon Tank.

Lucy's Warbler (*Vermivora luciae*).\* Casual fall migrant. Three records: an immature/female at Lemon Tank 2–7 Nov 2001 (BLS et al.; Figure 40), a male in Box Canyon 18 Sep 2003 (HAC), and an immature/female in Horse Beach Canyon 4 Oct 2003 (BLS, RSAK). There are three other records for the Channel Islands, from Santa Catalina, San Nicolas and Santa Cruz islands (Small 1994, Jones and Collins unpubl. data).

Northern Parula (*Parula americana*). Casual fall migrant. Two records: a single bird 2 Nov 1983 (SW); a male at Wilson Cove 3 Oct 2003 (RSAK et al.). There are nine other records for the Channel Islands, one in fall, eight in spring (Jones and Collins unpubl. data).

Yellow Warbler (*Dendroica petechia*).†\* Uncommon migrant. Recorded in spring from 17 Apr to 1 Jun, in fall from 21 Aug to 26 Oct, exceptionally as early as 27 Jul (1997, one at the old nursery, JHG) and 9 Aug (2004, one at Lemon Tank, JMMcM) and as late as 16 Nov (1995, one at West Shore, CLC et al.). This species is sometimes seen flying overhead in small flocks on early May mornings. It was first recorded 27 Sep 1972 (HLJ). The high count is of 30 on 18 May 2002 (BLS).

Chestnut-sided Warbler (*Dendroica pensylvanica*).†\* Casual fall migrant. Two records: one at the old nursery 4–5 Oct 2001 (BLS et al.) (BLS photo, JTB); one immature female at Wilson Cove 11–15 Oct 2003, found dead on the latter date (BLS et al.; SDNHM 50826). Surprisingly, there are only 11 other records for the Channel Islands, seven in fall, four in spring (Small 1994, Jones and Collins unpubl. data).

Magnolia Warbler (*Dendroica magnolia*).\* Casual fall migrant. Ten fall records from 11 Sep to 13 Oct. One was collected at sea approximately 45 miles off San Diego near SCI 19 Sep 1969 (M. Manzo and M. Behrend; SDNHM 37270).

Cape May Warbler (*Dendroica tigrina*).\* Accidental. One record: a female at Lemon Tank 20–27 Oct 2001 (JHP et al.; Figure 41). There are five other records for the Channel Islands, three in fall, two in spring (Small 1994, Jones and Collins unpubl. data).

Black-throated Blue Warbler (*Dendroica caerulescens*). Casual fall migrant. Two records: one male in Horse Canyon 8 Oct 2000 (SLM); one male in upper Burns Canyon 16 Oct 2002 (AVB, JL). Small (1994) considered the species exceedingly rare on the Channel Islands.

Yellow-rumped Warbler (*Dendroica coronata*).†\* Common migrant; very rare winter visitor. Recorded in fall primarily from 19 Sep to 14 Nov, exceptionally as early as 11 Sep (Jorgensen and Ferguson 1984) and 12 Sep (1997, one at Stone Station, MAB) and as late as 27 Nov (2003, one at Lemon Tank, BLS). Recorded in spring primarily from 20 Mar to 15 May, exceptionally as early as 7 Mar (2004, one at Wilson Cove, SWS). Four winter records: one in Wallrock Canyon 10 Dec 1997 (SL), 12 in Eagle Canyon 21 Dec 1998 (DMC), 10 at Lemon Tank 28 Dec 1998 (DMC), and one at Lemon Tank 6 Jan 1995 (CEK). The western Audubon's

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Warbler (*D. c. auduboni*) is the principal subspecies, but the eastern Myrtle Warbler (presumably *D. c. hooveri*) also occurs rarely during migration in fall from 3 to 20 Oct and in spring from 31 Mar to 15 May. Numbers of this species peak sharply in October. The fall high counts are of 114 islandwide 11 Oct 2003 (BLS, RSAK) and 50 in Cave Canyon 7 Oct 2000 (CLC, CWB); fall counts of 10–30 individuals are more typical. The spring high counts are of 100 islandwide 8 Apr 2002 (BLS) and 30 islandwide 24 Mar 2001 (BLS).

Black-throated Gray Warbler (*Dendroica nigrescens*).<sup>\*</sup> Uncommon migrant. Recorded in fall primarily from 18 Aug to 30 Oct, exceptionally as early as 10 Aug (1996, one on the east shore, PAA, BJR), in spring primarily from 26 Mar to 13 May, exceptionally as early as 22 Mar (2004, one male at Stone Station, BLS). The high fall count is of seven islandwide on 11 Oct 2003 (BLS, RSAK); the high spring count is of 13 on 23 Apr 2004 (BLS et al.). During migration, this species is a regular component of mixed warbler flocks, although Jorgensen and Ferguson (1984) had only 10 records as of 1983.

Black-throated Green Warbler (*Dendroica virens*).<sup>\*</sup> Casual migrant. One record: one immature/female at Wilson Cove 27–30 Oct 2003 (HAC et al., Figure 42). There are eight other Channel Islands records, two in spring, six in fall (Jones and Collins unpubl. data).

Townsend's Warbler (*Dendroica townsendi*).<sup>†\*</sup> Uncommon fall migrant; very rare winter visitor; fairly common spring migrant. Recorded in fall from 17 Aug to 30 Nov, in spring from 11 Apr to 2 Jun. Eleven winter records from 6 Dec to 19 Mar. The fall high count is of seven in Norton Canyon 9 Nov 1996 (JHG). The spring high counts are of 269 islandwide 25 Apr 2004 (BLS et al.; multiparty count), 134 islandwide 26 Apr 2004 (BLS et al.; multiparty count), and 50 islandwide 18 May 2002 (BLS et al.). This species occurs more frequently in spring than fall migration, though the disparity is not as great as in the Hermit Warbler.

Hermit Warbler (*Dendroica occidentalis*).<sup>\*</sup> Rare fall and fairly common spring migrant. Recorded in fall from 18 Aug to 18 Oct, exceptionally as late as 7 Nov (2002, one in Burns Canyon, AMC), in spring from 13 Apr to 22 May, exceptionally as late as 2 Jun (2002, one at Boulders South, HAC). In fall high counts are of two birds each at Box Canyon 22 Aug 1997 (SL) and at Vista Overlook 24 Aug 2002 (JL, JJD). Spring high counts are of 64 islandwide 26 Apr 2004 (BLS et al.; multiparty count), 51 on 25 Apr 2004 (BLS et al.; multiparty count; Figure 43), and 25 on 18 May 2002 (BLS). The Hermit Warbler's status on SCI is similar to that along the nearby mainland coast (Garrett and Dunn 1981). Like Townsend's Warbler, the Hermit is attracted to the oak groves on the upper east side of SCI. A Hermit × Townsend's hybrid was at Vista Overlook 25 Apr 2004 (SWS et al.).

Blackburnian Warbler (*Dendroica fusca*).<sup>\*</sup> Casual fall migrant. Nine fall records from 21 Sep to 15 Oct; five records of six individuals in 2003 alone (photo front cover of this issue). First recorded 21 Sept 1981 (HLF, BJ). The high count is of three, one near Thirst and two at Wilson Cove, 11 Oct 2003 (BLS, RSAK). There are only five other records for the Channel Islands, two in spring, three in fall (Jones and Collins unpubl. data).

Yellow-throated Warbler (*Dendroica dominica*).<sup>#</sup> Accidental. One record: a bird of the subspecies *D. d. albilora* was well seen and described from the mouth of Wilson Cove Canyon 3 May 2002 (JTB; Cole and McCaskie 2004). There are only four other reports for the Channel Islands (Jones and Collins unpubl. data).

Prairie Warbler (*Dendroica discolor*).<sup>\*</sup> Casual fall migrant. Five records: 22 Sep 1981 (the first for the Channel Islands, WTE et al.), one male in Horse Canyon 2 Oct 2001 (HAC), one female at Lemon Tank 17 Oct–18 Nov 2001, joined by a

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Figure 36. Yellow-green Vireo at Lemon Tank 18 September 2002.

*Photo by Brian L. Sullivan*



Figure 37. Stonechat at the Chad's Bluff ponds, 20–21 October 1995.

*Photo by Robert T. Patton*



Figure 38. Sage Thrasher at Horse Beach 1 November 2003.

*Photo by Brian L. Sullivan*

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Figure 39. Red-throated Pipit at Lemon Tank 1 October 2002.

Photo by Brian L. Sullivan

second female for only one day, 6 Nov 2001 (BLS et al.), and one immature male at Northwest Harbor 15 Sep 2002 (JTB; Figure 44). There are only four other records for the Channel Islands (Jones and Collins unpubl. data).

Palm Warbler (*Dendroica palmarum*). †\* Very rare fall migrant; casual in winter and spring. Recorded in fall from 3 Oct to 23 Nov. Two winter records: two at Lemon Tank 18 Feb–7 Mar 1994 (JMW); one at West Shore 9 Feb 2002 (BLS). Two spring records: one 26 Mar 1975 (HLJ); one at West Cove Beach 15 Apr 2002 (NMM). Although represented by only three records as of 1983 (Jorgensen and Ferguson 1984), this species is now a rare but annual migrant. It is the most frequent “eastern” warbler on SCI with no fewer than 40 records of 47 individuals. One was found dead near Lemon Tank 23 Nov 2002 (BLS; SDNHM 50678). The high count is of five on 1 Nov 2004 (JMMcM). All records are of the western nominate race.

Bay-breasted Warbler (*Dendroica castanea*). # Casual fall migrant; accidental in summer. Three records: one male 9 Jul 1975 (KLG), one immature at Lemon Tank 4 Oct 2002 (BLS et al.), and one male at Lemon Tank 22 Oct 2004 (HAC). The first of this species ever collected in California came aboard a boat 39 km southeast of SCI 6 Oct 1956 (Arvey 1957, MVZ 134974). There are 11 other records for the Channel Islands, two in spring, nine in fall (Jones and Collins unpubl. data).

Blackpoll Warbler (*Dendroica striata*). \* Very rare fall migrant. Sixteen records of 23 individuals from 2 to 22 Oct, exceptionally as early as 22 Sep (1981, two, WTE et al.) and as late as 31 Oct (2004, one at Wilson Cove, BLS photo). The high count is of eight, one at VC3, four at Lemon Tank, and three at Wilson Cove, on 11 Oct 2003 (BLS et al.).

Black-and-white Warbler (*Mniotilta varia*). Casual migrant. Recorded eight times in fall from 10 Sep to 31 Oct, exceptionally as late as 23 Nov (1996, one in Horse Beach Canyon, RTP), and nine times in spring from 10 May to 27 Jun.

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Figure 40. Lucy's Warbler at Lemon Tank 2 November 2001.

Photo by John T. Brollini

American Redstart (*Setophaga ruticilla*).<sup>\*</sup> Very rare fall and casual spring migrant. Sixteen fall records of 24 individuals from 6 Sep to 18 Oct, exceptionally as late as 2 Nov (2001, one at Lemon Tank, BLS photo, JTB). Three spring records: one female in Wilson Cove Canyon 28 May 2000 (CLC et al.), one female in Wilson Cove Canyon 27 May 2001 (BLS, ELK), and one at Wilson Cove 21 Jun 2002 (DLB). Only three of the 17 records of aged and sexed birds pertain to adult males, all of which were in October. The high count is of six from 10 to 12 Sep 1975 (PO).

Prothonotary Warbler (*Protonotaria citrea*).<sup>#</sup> Accidental. One record: one at Lemon Tank 9 Oct 2000 (CWB). There are only six other records for the Channel Islands (Jones and Collins unpubl. data).

Ovenbird (*Seiurus aurocapillus*).<sup>†\*</sup> Casual migrant. Three fall records: one at Lemon Tank 16–20 Oct 2001 (BLS et al.), one at Wilson Cove 11 Oct 2003 (RSAK, BLS photo), and one at Spanish Curve 3 Oct 2004 (BLS photo). Three spring records: one found dead at Stone Station 26 May 2003 (KMS, DJH; SDNHM 50782), one at Wilson Cove 8 Jun 2004 (JMMcM et al. photo), and one in Middle Ranch Canyon 17 Jun 2004 (CML). Among the other Channel Islands this species has been recorded from San Nicolas, San Miguel and Santa Barbara (Small 1994, Jones and Collins unpubl. data).

Northern Waterthrush (*Seiurus noveboracensis*). Casual fall migrant. Recorded from 11 Sep to 8 Oct, with none since 1995. The single spring report 1 Apr 1977 (Jorgensen and Ferguson 1984) falls outside the species' season of spring migration in California so is likely erroneous, unless it pertains to an overwintering bird.

MacGillivray's Warbler (*Oporornis tolmiei*). Rare spring and fall migrant. Recorded in fall from 20 Aug to 15 Oct, exceptionally as late as 6 Nov (2001, one at VC3, JTB), in spring from 22 Apr to 31 May. First recorded 24–27 May 1968 (MLC, JMD). This species' skulking habits may explain its apparent rarity.

Common Yellowthroat (*Geothlypis trichas*). Fairly common fall and uncommon spring migrant. Recorded in fall from 1 Sep to 16 Dec (Dec records may pertain to



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Figure 41. Female Cape May Warbler at Lemon Tank 20 October 2001.

*Photo by Brian L. Sullivan*



Figure 42. Black-throated Green Warbler at Wilson Cove 28 October 2003.

*Photo by Brian L. Sullivan*

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Figure 43. Hermit Warbler near Lemon Tank 25 April 2004.

*Photo by Brian L. Sullivan*



Figure 44. Prairie Warbler at Northwest Harbor 15 September 2002.

*Photo by John T. Brollini*

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overwintering birds), in spring from 16 Mar to 26 Apr, exceptionally as late as 19 May (2002, one at Whale Point, TMH, FB) and 10 June (2003, one heard and seen near Norton Canyon, BLS). Occurs less frequently on SCI than one would think given its abundance on the nearby mainland; though the species was first recorded 23 Mar 1915, as of 1983 there were only five records (Jorgensen and Ferguson 1984). The high fall count is of eight at Lemon Tank 10–11 Oct 2003 (BLS); the high spring count is of four at Lemon Tank 16 Mar 2004 (SWS et al.).

Wilson's Warbler (*Wilsonia pusilla*).†\* Uncommon fall and fairly common spring migrant. Recorded in fall from 19 Aug to 21 Oct, exceptionally as early as 7 Aug (2004, one in China Canyon, BLS), in spring from 24 Mar to 8 Jun. The high counts are of 244 on 25 Apr 2004 (BLS et al.; multiparty count), 189 on 26 Apr 2004 (BLS et al.; multiparty count), and about 250 on 12 and 18 May 2002 (BLS). During the occasional large fallouts of this species in spring, it seems as if every small patch of vegetation or roadside grass contains a few birds. During such events, it is difficult to estimate numbers, but it is likely that many hundreds of Wilson's Warblers are on the island at such times. The species was first recorded 19 May 1914 (H. H. Kimball).

Canada Warbler (*Wilsonia canadensis*).\* Casual fall migrant. Three records: one male 20 Oct 1974 (JLA; Luther et al. 1979), one male 3 Nov 1976 (PDJ), and one male at Lemon Tank 7 Oct 2001 (SL et al., Figure 45). There is but one other Channel Islands record, of one collected on Santa Rosa Island 14 Sep 1976 (SBMNH 3621).

Yellow-breasted Chat (*Icteria virens*). Casual migrant. Four fall records: one 10–12 Sep 1975 (PO), one 19 Sep 1975 (HLJ), one in Horse Beach Canyon 7 Oct 2001 (BLS), and one at Lemon Tank 7 Sep 2004 (ELK, JMMcM). Five spring records: one 21 Apr 1981 (WTE et al.), one in China Canyon 23 Apr 1995 (CEK), one in Wallrock Canyon 24 Apr 2001 (HAC, CWB), one at Eel Point 18 May 2001 (NMM), and one at Wilson Cove 5 May 2002 (BLS et al.). There are 15 other records for the Channel Islands (Jones and Collins unpubl. data).

### Thraupidae

Summer Tanager (*Piranga rubra*).†\* Casual migrant. Five fall records: one female of the eastern subspecies *rubra* collected 11 Oct 1907 (Linton 1908; MCZ 316660) was originally misidentified as the western subspecies *cooperi* (Rea 1972), one male at Wilson Cove 6 Oct 2001 (BLS photo, DMC), one female at Lemon Tank 11 Nov 2001 (BLS photo, AMC), one male at Lemon Tank 3 Oct 2002 (BLS; Figure 46), and one male at Wilson Cove 12 Oct 2003 (BLS). Four spring records: one male at Wilson Cove 5 May 2002 (WEH, TMH), one male at Boulders South 8 June 2002 (AMC), one female at Lemon Tank 11–12 June 2002 (BLS, AMC), and one male at Lemon Tank 27 Apr 2004 (SWS).

Scarlet Tanager (*Piranga olivacea*).# Casual migrant. Two records: one at Lemon Tank 17 Oct 1996 (RTP; McCaskie and San Miguel 1999); one female at Lemon Tank 26 Oct 2001 (BLS, AMC; Garrett and Wilson 2003). A female reported in Chukit Canyon 7 Nov 2001 was not reviewed by the CBRC but on the basis of the observer's description was likely identified correctly. This species has been recorded four other times on the Channel Islands (Jones and Collins unpubl. data).

Western Tanager (*Piranga ludoviciana*).†\* Fairly common migrant in both fall and spring; often more numerous in spring. Recorded in fall from 20 Jul to 26 Oct, exceptionally as early as 8 July (2002, one male in Middle Ranch Canyon, AVB) and as late as 6 Nov (1995, one in Box Canyon, CH). Recorded in spring from 13 Apr to 8 Jun, exceptionally as early as 23 Mar (1915, Howell 1917) and as late as 30 June (2004, one in Warren Canyon, LHW, JLK). The high counts in spring are of 172 on 26 Apr 2004 (BLS et al.; multiparty count), 96 on 25 Apr 2004 (BLS et al.;





Figure 45. Canada Warbler at Lemon Tank 7 October 2001.

*Photo by Brian L. Sullivan*

multiparty count), 40 on 27 Apr 2004 (JMMcM et al.), and 13 in Wallrock Canyon 24 Apr 2001 (HAC, CWB). The high count in fall is of 23 on 21 Sep 2004 (BLS, JMMcM).

#### Emberizidae

Green-tailed Towhee (*Pipilo chlorurus*). Rare fall and casual spring migrant. Recorded in fall from 6 Sep to 10 Nov. Five spring records: one on 23 Apr 1981 (EC, WTE), one in Box Canyon 17 Apr 1999 (DLB), one at West Shore 8 Apr 2002 (CJR), one at Vista Overlook 13 Apr 2002 (BLS, AMC), and one in Norton Canyon 30 Apr 2004 (SWS, BLS). First recorded 30 Sep 1973 (JLa), the Green-tailed Towhee is typically encountered singly on SCI, though often with other sparrows at migrant traps. The high count of three is at Lemon Tank 14 Sep 2004 (JMMcM et al.).

Spotted Towhee (*Pipilo maculatus*).<sup>†</sup> *Contributed by Robb S. A. Kaler*. Formerly resident; extirpated by 1976, as a result of habitat destruction by feral herbivores (Jones and Diamond 1976, Jorgensen and Ferguson 1984). Currently a rare migrant and winter visitor.

The island subspecies, *P. m. clementae*, remains common on Santa Catalina Island. Grinnell (1897b) described it, designating as the type specimen a male collected 31 Mar 1897 at Chenetti (Smuggler's) Cove, SCI (MVZ 36398). The insular *clementae* differs from *megalonyx* of the southern California mainland by its larger bill, longer tarsus, and paler, grayer rump in the male, paler head, back, and rump in the female (Grinnell 1897b, Ridgway 1901, Swarth 1913).

Early visitors to SCI described this towhee as a common resident (Howell 1917, Willet 1933). A three-week visit by Howell (1917) led him to believe that the birds "practically do not occur on the western end of the island." Linton (1908) found *clementae* to be "very common" near Mosquito Harbor, on the island's east side, and

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Figure 46. Male Summer Tanager at Lemon Tank 3 October 2002.

*Photo by Brian L. Sullivan*



Figure 47. Cassin's Sparrow feeding on *Atriplex* seed near the airfield 2 November 2001.

*Photo by Brian L. Sullivan*



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reported none within 12 km of the northwest coast. The early literature documents no nests or young (Jorgensen and Ferguson 1984). The habitat preferred was "fairly tall chaparral," particularly along the dry canyons, and often associated with the groves of Catalina cherry trees (Grinnell and Miller 1944). Jorgensen and Ferguson (1984) summarized the last sightings of *clementae*: two males in Bryce Canyon 9 Apr 1972 (Leatherwood and Coulombe 1972), one male in Horse Beach Canyon on 15 Apr 1973, and one report without details 9–11 Jul 1975.

More recent records of presumed migrants range from 21 Sep to 14 Apr, peaking in October and November. The high count is of three on six dates ranging from October to December. On 4 Dec 1908, Linton (1909) collected one *P. m. oregonus*, by far the southernmost specimen of this Pacific Northwest subspecies ever collected (MVZ 21273). On 29 Sep 1990, W. T. Everett collected one female *P. m. megalonyx*, the subspecies resident in mainland southern California (SDNHM 46949).

Cassin's Sparrow (*Aimophila cassinii*).<sup>\*</sup> Accidental. One record: a single bird along the airfield perimeter road 2 Nov 2001 (BLS et al.; Figure 47). This is one of only ten fall records of the Cassin's Sparrow for California, eight of which are for Southeast Farallon Island (Garrett and Wilson 2003). There are no other records for the Channel Islands.

American Tree Sparrow (*Spizella arborea*). Casual fall migrant. Two records: one on 2 Nov 1975 (HLJ); one near Chalk Curve, China Road, 27 Oct 2000 (CWB). These represent two of only four records for the Channel Islands.

Chipping Sparrow (*Spizella passerina*).<sup>†\*</sup> Rare breeder; fairly common migrant; casual winter visitor. Recorded in spring from 8 Mar to 6 May, in fall from 26 Aug to 29 Nov. Four winter records: two specimens (whereabouts unknown) taken 2 Dec 1908 (Linton 1909), one in Box Canyon 15 Jan 1996 (BJR), one in Red Canyon 22 Jan 1996 (BJR), and four at Boulders South 17 Dec 1998 (TRM). Interval of migration possibly clouded by breeders and dispersing young. The high count is of 15 at Lemon Tank 3 Oct 2002 (BLS). The Chipping Sparrow breeds in very small numbers, primarily at the southeastern end of the island. Breeding behavior and fledglings have been observed (Jorgensen and Ferguson 1984); one nest with four nestlings was in upper Canchalagua Canyon 12–13 Jun 2004 (BLS, WMF; Figure 48). Searches of Canchalagua Canyon in May and July 2003 revealed many singing males but no nesting activity (BLS, RSAK). The first specimen was collected 30 Mar 1897 (J. Grinnell; MVZ 35357).

Clay-colored Sparrow (*Spizella pallida*).<sup>\*</sup> Very rare fall and casual spring migrant. Recorded 18 times in fall migration from 12 Sep (1974, first for SCI, HLJ) to 31 Oct. One spring record: one at China Beach 1 Jun 2002 (NMM). An apparent hybrid Clay-colored × Chipping Sparrow was at VC3 29 Sep–1 Oct 2004 (JMMcM, BLS; Figure 49). The high count is of two on four dates (30 Sep–21 Oct).

Brewer's Sparrow (*Spizella breweri*).<sup>\*</sup> Very rare fall and casual spring migrant. Recorded in fall from 19 Aug to 17 Oct. One spring record: one at Lemon Tank 26 Apr 2004 (BLS photo, JMMcM). First recorded 11 Sep 1974 (HLJ).

Black-chinned Sparrow (*Spizella atrogularis*).<sup>†\*</sup> Casual migrant. Five records: a female collected 5 Dec 1908 (Linton 1909; MCZ 317168), one heard 2 May 1974 (RS, WC), one on 23 Sep 1976 (HLJ), one on 23 Aug 1979 (PDJ), and a male singing in Box Canyon 18 Apr 1999 (DLB).

Vesper Sparrow (*Pooecetes gramineus*).<sup>\*</sup> Uncommon migrant and winter visitor. Recorded from 6 Sep to 13 May, most frequently during fall migration (to 5 Nov). First recorded 26 Mar 1975 (HLJ). In fall the high count is of 20 islandwide 30 Oct 2004 (BLS, LAA), in winter it is of 50 at Lemon Tank 22 Dec 1998 (JAM), and in spring it is of four in China Canyon 24 Mar 1997 (SL).

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Lark Sparrow (*Chondestes grammacus*).<sup>\*</sup> Uncommon fall and casual spring migrant; casual in summer. Recorded in fall from 12 Aug to 25 Nov, exceptionally as late as 5 Dec (2001, one at Boulders South, AMC). First recorded 11 Sep 1972 (JLe). Reported as rare from 21 Apr to 13 May by Jorgensen and Ferguson (1984), but there are only two recent spring records: one at Northwest Harbor 11 Mar 1996 (BJR) and one along the road near Norton Canyon 6 Apr 2002 (BLS, AMC). The single summer record perhaps represents an early fall migrant: one in Chamish Canyon 11 Jul 2002 (JHP). The high count is of six at Lemon Tank 17 Aug 2004 (BLS).

Black-throated Sparrow (*Amphispiza bilineata*).<sup>\*</sup> Casual migrant and winter visitor. Five fall records: one on 9 Nov 1980 (BJ), one at Lemon Tank 21 Sep 2000 (CWB), one at Lemon Tank 3 Oct 2001 (JTB photo), one at Lemon Tank 1 Sep 2002 (BLS photo, CRK), and one at VC3 13 Oct 2004 (JMMcM). Two winter records: one in Chenetti Canyon 29 Jan 1994 (KFC); one in Horse Beach Canyon 31 Jan 1997 (SL, JHG). Three spring records: one in Thirst Canyon 23 Feb 2004 (JMW), two in Box Canyon 26 Mar 1994 (TRM), and one at Whale Point 6 Mar 2004 (IR).

Sage Sparrow (*Amphispiza belli*).<sup>†\*</sup> Contributed by Nicole M. Munkwitz. Fairly common breeder and resident; casual as a migrant from the mainland. Listed by the U.S. Fish and Wildlife Service (1977) as threatened, the Sage Sparrow on San Clemente Island is resident year round, mainly in maritime desert scrub dominated by California boxthorn (Figure 50). This habitat is found mainly on the island's north-west-facing marine terraces at low elevations. The highest densities of breeding Sage Sparrows are found at lower elevations along the west shore between the sand dunes and Eel Point. In late summer and early fall juveniles wander widely and can be found at higher elevations and locations far from breeding sites (BLS pers. obs.).

Grinnell (1897a) and Breninger (1904) described the San Clemente Sage Sparrow as "common on hillsides and lower mesas" during their visits to the island in 1897 and 1903. In 1907 Linton (1908) also found it common and specified that it occurred in the northwestern half of the island. The sparrow's habitat was greatly damaged by grazing of goats and sheep. In 1967, the population was limited to 93 individuals on only 74 ha (Byers 1976). Between 1979 and 1985 the population fluctuated between an estimated high of 316 in 1981 and a low of 38 in 1984 (Hyde 1985). More recent estimates of the population are 578 individuals in 1999 and up to 1519 individuals in 2002, with approximately 2100 ha recognized as suitable habitat (Beaudry et al. 2003).

Breeding typically begins between mid-February and early March, following winter rains, and ends between mid-June and early July. Pairs are monogamous for life except for uncommon cases of polygyny. The birds can raise multiple broods (up to four) each breeding season, with an average clutch size of 3.5 eggs (range 1–5). Annual estimates of nesting success are very high, between 65% and 97% (Willey 1990, Munkwitz et al. 2002). The main nesting substrate is California boxthorn, although over a dozen other plant species, including shrubs, grasses, and cacti, have been used for nesting (Figure 51). On SCI the Sage Sparrow builds grass nest cups between 5 and 50 cm from the ground (Willey 1997, Munkwitz et al. 2002). Numbers of nests found on SCI fluctuate from year to year, possibly because of variation in annual rainfall: 1999 (40 nests); 2000 (80 nests); 2001 (143 nests); 2002 (4 nests, drought year); 2003 (148 nests) (Beaudry et al. 2004).

Ridgway (1898) described the Sage Sparrow of San Clemente Island as the subspecies *A. b. clementeae* on the basis of its larger size, but he soon reversed himself, writing that "the difference proves too slight to warrant recognition of the alleged subspecies" (Ridgway 1901:268). Van Rossem (1932) resurrected *A. b. clementeae* on the basis of its longer bill and paler plumage. It was recognized in the fifth edition of the *A. O. U.* (1957), but Patten and Unitt (2002) questioned it. They found the difference in bill length to be insignificant and the difference in plumage color to be significant but inadequate for the subspecies to be defined on the basis of the 75% rule.

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Figure 48. Chipping Sparrow nest in Canchalagua Canyon 13 June 2004.

Photo by Brian L. Sullivan

An individual of the subspecies *A. b. nevadensis* was collected 25 Nov 1939 (G. Willett; LACNHM 19703), the only evidence of migratory Sage Sparrows from the mainland reaching SCI.

Lark Bunting (*Calamospiza melanocorys*).<sup>\*</sup> Very rare fall migrant; casual in spring. Recorded in fall from 16 Aug to 11 Oct, exceptionally as late as 2 Nov (1998, one at China Canyon, JAM). Three spring records: one male 10 Jun 1973 (first for SCI; HLJ), one male at the overlook near Red Canyon 28 April 2000 (KJM), and one male at Northwest Harbor 24 May 2002 (JTB; Figure 52). The high count is of five along Ridge Road 20 Sep 2000 (CWB).

Savannah Sparrow (*Passerculus sandwichensis*).<sup>†\*</sup> Common migrant and winter visitor. Recorded from 13 Aug to 1 May. Occurs primarily on terraces covered with grassland, whether native or nonnative. The high count is of 40 at Lemon Tank 21 Sep 2004 (BLS, JMMcM). Almost all Savannah Sparrows reaching SCI are migrants from the north; specimens in museum collections have been labeled as *P. s. brooksi*, *nevadensis*, and *anthinus*—all three subspecies expected as migrants in southern California. The Large-billed Sparrow, *P. s. rostratus*, is known from two specimens taken 28 Nov 1939 (O. A. Willett; LACNHM 19686, 19687) and one bird photographed at West Cove Point 7 Oct 2002 (BLS et al.; Figure 53).

Grasshopper Sparrow (*Ammodramus savannarum*).<sup>\*</sup> Very rare breeder; migratory status uncertain. Recorded in spring (local breeders?) from 27 Mar to 8 Jun, in fall from 22 Sep to 1 Nov. The first island record is also the only winter record: a single bird in Chenetti Canyon 27 Jan 1997 (JAM). The Grasshopper Sparrow began occurring during the breeding season in 2001 with a singing male at Bluff 27 Mar (BLS); the species returned in 2003 and 2004. Definite indications of breeding are one juvenile with adults near Horse Canyon 24 Jun 2003 (BLS) and one adult carrying food at the same location 13 Apr 2004 (SWS). SCI is the Grasshopper Sparrow's only known breeding location on the Channel Islands.

Fox Sparrow (*Passerella iliaca*).<sup>†\*</sup> Uncommon migrant and winter resident. Recorded primarily from 20 Sep to 31 Mar, exceptionally as early as 8 Sep (2001,

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Figure 49. Probable hybrid Chipping x Clay-colored Sparrow at VC3 1 October 2004.

Photo by Brian L. Sullivan

one in Norton Canyon, CWB, CRK) and as late as 18 Apr (Jorgensen and Ferguson 1984). The high count is of three at Boulders South 16 Oct 2001 (JHP). Collected specimens have been labeled as *P. i. insularis* (6), *unalaschcensis* (3), *altivagans* (2), and *monoensis* (1), but the accuracy of these identifications requires further review. Recent sightings of Fox Sparrows identified to subspecies are primarily of the Slate-colored Fox Sparrow (*schistacea* group), but two are of the Sooty Fox Sparrow (*unalaschcensis* group): one at Wilson Cove 27 Oct 2003 (BLS photo, RSAK) and one at Lemon Tank 13 Nov 2003 (BLS, RSAK).

Song Sparrow (*Melospiza melodia*).†\* Contributed by Robb S. A. Kaler. Extirpated breeder; accidental migrant. The Song Sparrow was formerly resident but was extirpated from the island by 1973 because of destruction of habitat by feral herbivores (Jones and Diamond 1976, Power 1994) and possibly predation by feral cats. Townsend (1890) described the Song Sparrows of SCI as the subspecies *M. m. clementae*, designating as the type specimen an adult male collected 25 Jan 1889 (USNM 117620). Three subspecies of Song Sparrows have been described from the Channel Islands, *clementae* from San Clemente and Santa Rosa (where still common, Small 1994), *graminea* from Santa Barbara, and *micronyx* from San Miguel. Patten (2001) found these, plus *coronatorum* of Los Coronados Islands, to overlap extensively in both measurements and color; he recommended merging all four under the name *graminea*. *M. m. graminea* differs from the Song Sparrows of coastal mainland southern California in its grayer upperparts; the back feathers have black centers and silver-gray edges, lacking the olive-brown between the black and gray characteristic of the mainland subspecies *cooperi* and *heermanni* (these synonymized under the latter name by Patten 2001). The population on Santa Cruz Island is intermediate between *graminea* and *heermanni* (Patten 2001).

Early visitors to SCI (Grinnell 1897a, Linton 1908, Howell 1917) described the Song Sparrow as “common” to “abundant.” Despite a search in 1974 by Stewart et

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al. (1974), there have been no definite records of the local population since George Willett collected a breeding female 17 Feb 1941 (LACNHM 19913). Jorgensen and Ferguson (1984) summarized 10 sight records from 1941 to 1980, which may or may not represent *clementae*; all were of single birds except for two 24–27 May 1968. Since 1984 single Song Sparrows have been encountered five times in fall and winter: at Wilson Cove 1 Feb 1992 (PAA), at Mail Point 29 Nov 1995 (CLC), at Lemon Tank 25 Sep 1997 (JHG), at West Cove Beach 4 Oct 2001 (JHP), and at West Cove Beach 31 Mar 2002 (BLS). There is one recent summer record: a molting bird not identifiable to subspecies near West Shore 4 Jul 2001 (BLS, AMC).

This sparrow met its requirements for subsistence on brush- and shrub-covered hillsides, where Breninger (1904) found it feeding and nesting side by side with the Sage Sparrow. In arid environments, Song Sparrows typically breed near fresh water (Arcese et al. 2003), but this restriction did not apply to *graminea* (including *clementae*). Its needs for breeding on SCI were met in the patches of grasses growing below *Opuntia* cactus (Linton 1908). Howell (1917) suspected that at least three broods were possible each breeding season.

Lincoln's Sparrow (*Melospiza lincolnii*). †\* Uncommon fall and rare spring migrant; very rare winter visitor. Recorded in fall from 9 Sep to 29 Nov and in spring from 7 Mar to 4 May. Nine winter records from 3 Dec to 19 Feb. Peak fall movement occurs throughout October; peak spring movement occurs during late March and the first half of April. The high fall counts are of 10 at SHOBA Pond 21 Oct 1995 (PAA), and nine, six at Lemon Tank and three at the old nursery, 7 Oct 2001 (BLS); the high spring count is of three in China Canyon 13 Apr 1997 (SL).

White-throated Sparrow (*Zonotrichia albicollis*). \* Casual migrant. Two records: one at Wilson Cove 15 Nov 2000 (CWB, HAC); one immature at Lemon Tank 14 Nov 2003 (BLS photo). Given this species' frequency in southern California it is surprising that more have not been found on SCI.

Harris's Sparrow (*Zonotrichia querula*). † Casual fall migrant and winter visitor. Five records: one collected 15 Oct 1907 (Linton 1908; MVZ 21272), one seen 9 Dec 1976 (HLJ), one in Horse Beach Canyon 30 Jan 1994 (KFC), one at the hazmat fence 13 Oct 1997 (JAM, SL), and one immature at VC3 13 Oct 2004 (JMMcM).

White-crowned Sparrow (*Zonotrichia leucophrys*). †\* Common fall migrant and winter visitor; uncommon spring migrant; casual in summer. Recorded primarily from 17 Sep to 26 Apr, exceptionally as late as 16 May (Jorgensen and Ferguson 1984). Occurs islandwide, most densely in scrub of California boxthorn, in company with the Sage Sparrow. The high count in fall is of 95, 75 at Lemon Tank and 20 at VC3, 18 Oct 2004 (JMMcM); the high count in spring is of 25 at Lemon Tank 23 Apr 2004 (BLS, JMMcM). Two summer records of single birds: 23 Jun 2002 (AVB) and 22 Jun 2004 (SWS); neither was identified to subspecies. The subspecies *Z. l. gambeli* is a common migrant and winter resident, and all extant specimens are of it. One immature of a dark-lored subspecies, most likely *Z. l. oriantha*, was at Lemon Tank 28 Nov 2002 (BLS, JHP).

Golden-crowned Sparrow (*Zonotrichia atricapilla*). †\* Uncommon migrant and winter visitor. Recorded primarily from 3 Oct to 26 Apr, exceptionally as late as 4 May (2003, one at West Shore, FB) and 9 May (Jorgensen and Ferguson 1984). The high count in fall is of 12 at Lemon Tank 30 Oct 2004 (BLS, JMMcM); the high count in spring is of 50 in Cave Canyon 6 Apr 1997 (JAM). Normally flocks of 5–20 occur during winter. This species is rarely found in the boxthorn scrub favored by the White-crowned Sparrow; rather, it is found more often on canyon slopes typically vegetated with sagebrush. Fall arrivals are almost entirely of immature birds, perhaps because of SCI's lying near the southern end of the species' winter range.



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Dark-eyed Junco (*Junco hyemalis*).†\* Uncommon migrant and winter visitor. Recorded primarily from 20 Sep to 14 Apr, exceptionally as early as 11 Sep (Jorgensen and Ferguson 1984) and as late as 20 May (2001, one male in Chamish Canyon, BLS). The high counts are of 100 in Eagle Canyon 2 Mar 2002 (ELK) and 23 at Pyramid Point 18 Nov 2001 (JTB et al.). Most of the birds are Oregon Juncos, at least *J. h. thurberi*, collected 13 Oct 1907 (Linton 1908), with probably a minority of subspecies *shufeldti* and *montanus* as well. Also, the Pink-sided Junco (*J. h. mearnsi*) has been recorded four times: one at Stone Station 17 Dec 1996 (TMH), one male at Lemon Tank 20 Sep 2002 (BLS, AMC), one male at VC3 17 Nov 2002 (BLS), and one male at Wilson Cove 15 Oct 2004 (JMMcM, BLS). The Slate-colored Junco (*J. h. hyemalis* and/or *cismontanus*) has been recorded four times: one in Cave Canyon 11 Nov 1996 (JMW), one in China Canyon 8 Dec 1996 (TMH), one male at Lemon Tank 25 Oct 2002 (BLS, ELK), and one male at Lemon Tank 15 Nov 2002 (BLS, AMC). The Gray-headed Junco (*J. h. caniceps*) has been recorded seven times from 6 Oct to 27 Mar.

McCown's Longspur (*Calcarius mccownii*).\* Casual fall migrant. Four records, all from Lemon Tank: one female 8 Oct 2002 (BLS), one male 24 Oct 2002 (BLS et al. photo), one female 11 Oct 2003 (BLS, RSAK), and one male 22–23 Nov 2003 (BLS; Figure 54).

Lapland Longspur (*Calcarius lapponicus*).\* Rare fall migrant. There are 20 records from 2 Oct to 9 Dec (Figure 55). The high count is of eight, five near the eucalyptus tree and three at China Point, 31 Oct 2004 (JMMcM, BLS). First recorded on 23 Oct 2000, one along Ridge Road (CWB, HAC). Jones and Collins (unpubl. data) consider the Lapland Longspur an uncommon fall and rare spring transient on the Channel Islands in general, recorded on three of the islands besides San Clemente.

Chestnut-collared Longspur (*Calcarius ornatus*).\* Very rare fall migrant; casual in winter and spring. Recorded in fall 11 times, primarily from 2 Oct to 2 Nov, exceptionally as late as 22–23 Nov (2003, two at Lemon Tank, BLS photo) and 16 Dec (1980, first island record, HLF). One winter record: three at the airfield 6 Feb 2002 (BLS et al.). One spring record: one 15–22 Apr 1981 (EC, WTE). The high count is of four at Lemon Tank 26 Oct 2003 (BLS). Jones and Collins (unpubl. data) have only 9 or 10 total records for the Channel Islands through 2002.

Snow Bunting (*Plectrophenax nivalis*).#\* Accidental. Two records: one at Lemon Tank 15–27 Nov 2003, found again near VC3 11–21 Feb 2004 (BLS et al.; San Miguel and McGrath 2005; Figure 56); one, perhaps the same individual returning, photographed near Wilson Cove 3–14 Nov 2004 (JMMcM et al.; CBRC in review). These are the southernmost records of the Snow Bunting along the Pacific coast and the only records of it for the Channel Islands.

### Cardinalidae

Rose-breasted Grosbeak (*Pheucticus ludovicianus*).\* Very rare migrant. Twenty spring records from 19 May to 25 Jun; 20 fall records from 9 Sep to 20 Oct, exceptionally as early as 16 Aug (2004, one male at Chad's Bluff; Figure 57) and 27 Aug (1980, one immature, EC, HLF) and as late as 2 Nov (2003, one immature male at Thirst, BLS et al. photo) and 25 Nov (1996, one male in Eagle Canyon, JMW). Although the Rose-breasted Grosbeak was first recorded on SCI 9 Jun 1973 (HLJ), and there were only two records as of 1983 (Jorgensen and Ferguson 1984), it has since proven to be a nearly annual spring and fall migrant. The high count is of three at Wilson Cove 4 Jun 2001 (BLS, DMC).

Black-headed Grosbeak (*Pheucticus melanocephalus*).\* Fairly common migrant; casual in summer. Recorded primarily in spring from 28 Mar to 25 May, exceptionally as late as 11 Jun (Jorgensen and Ferguson 1984), and in fall from 19 Jul to 12

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Oct. Two summer records: one male in China Canyon 21 Jun 1997 (SL); one male in Chamish Canyon 8 Jul 2002 (BLS, AMC). The Black-headed Grosbeak was first recorded on SCI 9 Sep 1972 (HLJ). It is more numerous in spring than in fall. In spring the high counts are of 26 on 25 Apr 2004 (JMMcM et al.) and 16 on 26 Apr 2004 (SWS et al.); in fall the high count is of six in Eagle Canyon 27 Sep 1997 (JHG).

Blue Grosbeak (*Passerina caerulea*). \* Rare spring and very rare fall migrant. Fifteen spring records primarily from 13 Apr to 31 May, exceptionally as early as 9 Apr (2004, one male at Wilson Cove, SWS); 10 fall records from 25 Aug to 11 Oct. The high counts are of three, two at Vista Overlook and one at VC3, 25 Apr 2004 (BLS, JMMcM) and two on the terrace above Tota Canyon 13 Apr 2002 (HAC).

Lazuli Bunting (*Passerina amoena*). †\* Very rare breeder; fairly common migrant. Recorded in spring from 5 Apr to 27 May, exceptionally as early as 19 Mar (2004, one male at Wilson Cove, LAA) and as late as 9 Jun (Jorgensen and Ferguson 1984); in fall from 20 Aug to 27 Sep, exceptionally as early as 3 Aug (2002, one female at Lemon Tank, BLS, AMC) and 6 Aug (1997, one at Wilson Cove, FAJ). Jorgensen and Ferguson (1984) reported the fall interval as extending through 13 Oct, but our data do not support this. The high counts are of 77 on 25 Apr 2004 (BLS et al.), 33 on 26 Apr 2004 (JMMcM et al.), and 15 in Wallrock Canyon 24 Apr 2001 (HAC, CWB). The Lazuli Bunting was first recorded on SCI 14 Apr 1973 (HLJ); its breeding has been suspected since 1995 and is likely regular in the island's southeast canyons. Two nests have been found: one with eggs was photographed in Box Canyon spring 1998 (JAM, SL) and one at Wilson Cove to which a female was delivering a food item 27 May 2001 (BLS, ELK). Attempts to locate breeding pairs in June 2003 found only males singing territorially in many canyons of the southeast corner of the island (BLS, RSAK).

Indigo Bunting (*Passerina cyanea*). \* Very rare migrant. Fifteen spring records from 28 Apr to 12 Jun, exceptionally as late as 30 Jun (2002, one female at Lemon Tank, BLS, AMC); eight fall records from 16 Sep to 13 Oct. The high count is a remarkable 10 (six males) in Wilson Cove Canyon 19–21 May 2001 (CWB).

Painted Bunting (*Passerina ciris*). †\* Casual migrant. One record: a female found in the cache of a Loggerhead Shrike at Wilson Cove 22 Aug 2003 (HAC; SDNHM 50815; San Miguel and McGrath 2005). The remains of this individual represent the first record of a probable natural vagrant Painted Bunting for Los Angeles County and the only record for the Channel Islands.

Dickcissel (*Spiza americana*). Casual fall migrant. Nine fall records from 15 Sep to 17 Oct; four of these from fall 2003. Most Dickcissels are detected by call, but several have been found with mixed sparrow flocks at Lemon Tank. The high count is of two at Lemon Tank 4 Oct 2003 (BLS, RSAK). The Dickcissel was first definitively recorded on SCI 29–30 Sep 1997, with one at VC3 (JHG et al.). Jorgensen and Ferguson (1984) reported two tentative identifications: one heard and seen at a distance 19 Sep 1975 and three heard 23 Sep 1976 (HLJ).

### Icteridae

Bobolink (*Dolichonyx oryzivorus*). \* Rare fall migrant; casual in spring and summer (Figure 58). Twenty-four records from 5 Sep to 29 Oct. One spring record: a male in China Canyon 8 June 2004 (BLS photo, WMF). The high count is of nine on 29 Sep 2003, eight together at Lemon Tank and one at Vista Overlook (BLS, RSAK). One summer record of a male 22 Jul 1979 (HLF, PDJ), perhaps an early fall migrant. First recorded 12 Sep 1974 (HLJ).

Red-winged Blackbird (*Agelaius phoeniceus*). \* Rare fall and casual spring migrant; casual in winter and summer. Recorded in fall from 14 Oct to 16 Nov, exceptionally

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as late as 30 Nov (1980, one, PDJ). One winter record: a flock of up to 14 (the high count for the island) at Lemon Tank 11 Dec 1995–2 Jan 1996 (MKS et al.). Four spring records: one on 26 Mar 1975 (Jorgensen and Ferguson 1984), eight near Bluff 7 Mar 1997 (JHG), eight at Lemon Tank 26 Apr 1997 (JHG), and one at Lemon Tank 4 Apr 2003 (BLS). Two summer records: one on 10 Jun 1973 (Jorgensen and Ferguson 1984); one female at Lemon Tank 3 Aug 2002 (BLS, AMC). First recorded 10 Jun 1973 (HLJ).

Tricolored Blackbird (*Agelaius tricolor*). \* Casual visitor. Two records: one male at Lemon Tank 27 Jun 2003 (BLS et al. photo); one male at the airfield 9 June 2004 (JMMcM, ELK). There are only 10 other records for the Channel Islands (Jones and Collins unpubl. data).

Western Meadowlark (*Sturnella neglecta*). †\* Abundant breeder and permanent resident of grasslands islandwide. Currently perhaps the most common passerine on SCI, though Linton (1908) also considered it “common.” The population is unknown, but we estimate thousands of breeding pairs. A drive down Ridge Road in late May can produce counts of several hundred within 25 m of the road. The meadowlark breeds from March to June, but because of its high frequency little attention has been paid to its breeding biology on SCI, and few nests have been found. One nest with young was on the terrace above Bryce Canyon 15 Mar 2003 (BLS).

Yellow-headed Blackbird (*Xanthocephalus xanthocephalus*). \* Rare fall and casual spring migrant; casual in summer. About 50 fall records from 25 Aug to 25 Oct; six spring records from 8 Apr to 13 May. Two summer records: one on 14 Jul 1972 (first for SCI; HLJ); one male at Twin Dams 15 Jul 2001 (EAU). The high count is of five along Ridge Road near Lemon Tank 17 Sep 1997 (JHG).

Rusty Blackbird (*Euphagus carolinus*). †\* Casual fall migrant and winter visitor. Five records: one specimen taken 20 Nov 1908 (Linton 1909; MVZ 21271), two on 1 and 2 Nov 1975 (HLJ), one at Northwest Harbor 15 Nov 1996 (WTE), one female at VC3 14–28 Feb 2002 (BLS et al. photo), and one male at Lemon Tank 24 Oct 2002 (SL et al., Figure 59).

Brewer's Blackbird (*Euphagus cyanocephalus*). \* Uncommon fall and rare spring migrant; casual winter visitor. Recorded in fall from 10 Sep to 23 Nov, exceptionally as early as 31 Jul–15 Aug (2000, one near Lemon Tank, KJM, CLC), in spring from 14 Apr to 13 May. Peak numbers occur from mid-October through November, and the high count is 11 at the airfield 20 Oct 2004 (JMMcM). There are approximately seven winter records from 3 Dec to 14 Feb. The winter high count is of 15 at Lemon Tank 11 Jan 1993 (CEK). The species was first recorded on SCI 15 Dec 1972 (PDJ).

Brown-headed Cowbird (*Molothrus ater*). \* Uncommon migrant; rare in summer and winter. Recorded in spring from 27 Mar to 4 Jun and in fall from 17 Jul to 22 Nov, most frequently during September and October. The high count is of 57 at Northwest Harbor 22 Oct 2002 (JTB). Several flocks passed over Wilson Cove in the evening on 15 and 16 Oct 2004 (TRL, BG). The Brown-headed Cowbird is recorded in winter from 8 Dec to 16 Feb. It is the most frequent migrant icterid on SCI, recorded in every month. As of yet, no parasitism of local passerines has been documented. Though this species was first recorded on SCI as recently as 17 Jul 1972 (HLJ), it was reportedly more common when livestock were present (Jorgensen and Ferguson 1984).

Bronzed Cowbird (*Molothrus aeneus*). # Accidental. One record, the only one of the Bronzed Cowbird for the Channel Islands: a juvenile of the western subspecies *loyei* was seen at close range and heard vocalizing at the mouth of Horse Beach Canyon 31 Aug 2003 (BLS, RSAK).

Orchard Oriole (*Icterus spurius*). Casual fall migrant. Three records, all of single fe-

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Figure 50. Adult Sage Sparrow, July 2000.

*Photo by Fred Beaudry*



Figure 51. Sage Sparrow nest in *Senecio* at West Shore, March 2003.

*Photo by Nicole M. Munkwitz*



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Figure 52. Male Lark Bunting at Northwest Harbor 24 May 2002.

Photo by John T. Brollini

male or immature birds: at Lemon Tank 20 Sep 2002 (BLS, AMC), in Kinkipar Canyon 30 Sep 2003 (BLS, RSAK), and at VC3 25 Aug 2004 (JMMcM). There are only two other records for the Channel Islands, both in fall (Jones and Collins unpubl. data).

Hooded Oriole (*Icterus cucullatus*).<sup>\*</sup> Uncommon migrant. Recorded in spring from 16 Mar to 5 May, exceptionally as late as 19 May (2002, one at Whale Point, TMH, FB), and in fall from 21 Jul to 21 Sep, exceptionally as late as 6 Oct (2002, one female at Lemon Tank, BLS, RDMcM), 8 Oct (2003, one female at Lemon Tank, BLS), and 20 Oct (Jorgensen and Ferguson 1984). The high count is of seven at VC3 and Lemon Tank 18 Sep 2004 (BLS). The species was first recorded on SCI 11 Sep 1974 (HLJ).

Bullock's Oriole (*Icterus bullockii*).<sup>\*</sup> Uncommon migrant. Recorded in spring from 14 Mar to 4 Jun, in fall from 7 Aug to 23 Oct, exceptionally as early as 21 Jul (1992, one in Wallrock Canyon, PAA) and 27 Jul (1997, one each at three locations, JHG) and as late as 8 Nov (2001, two at Wilson Cove, JTB). During spring migration peak numbers occur from early April through early May; during fall migration they occur from mid-August to mid-September. In spring the high counts are of nine on 23 Apr 2004 (BLS et al.) and eight on 10 Apr 2004 (BLS et al.); in fall they are of six at Lemon Tank 24 Aug 2004 (HAC), and five, three at VC3 and two at Wilson Cove, 21 Aug 2004 (JMMcM). Bullock's Oriole was first recorded on SCI 31 Mar 1907 (Linton 1908).

Baltimore Oriole (*Icterus galbula*).<sup>\*</sup> Casual migrant. Six spring records from 16 May to 2 Jun. Three fall records: one male in Bryce Canyon 13 Oct 1997 (MAB), one male at the old nursery 7 Oct 2001 (BLS, DMC), and one immature male at the overlook near Chenetti Canyon 14 Sep 2002 (BLS, JMMcM). The high count is of three (two males, one female) in Wilson Cove Canyon 20 May 2001 (FB et al.). Seven of nine sexed individuals have been males.



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Figure 53. Large-billed Savannah Sparrow on West Cove Point 7 October 2002.

Photo by Brian L. Sullivan

Scott's Oriole (*Icterus parisorum*).\* Casual migrant and winter visitor. Four fall records: one in Horse Canyon 31 Oct 1993 (CEK), one in Box Canyon 7 Oct 2001 (SL, LAB), one in Box Canyon 17 Nov 2001 (NW), and one at Thirst 4 Oct 2003 (BLS photo). One winter record: up to five in Horse Canyon 4–8 Dec 1998 (TRM, DMC). Four spring records: one female in Horse Beach Canyon 6 Apr 1996 (BJR), two in China Canyon 30 Mar 1997 (SL), one in Cave Canyon 6 Apr 1997 (SL), and one male in Vista Canyon 26 May 2004 (WMF). There are 24 total records for the Channel Islands (Jones and Collins unpubl. data).

### Fringillidae

Purple Finch (*Carpodacus purpureus*). Casual migrant. Four fall records: one on 8 Nov 1975 (PDJ), one in Norton Canyon 19–27 Nov 1995 (BJR, CLC), one in Box Canyon 9 Oct 1996 (PRB), and eight near Horse Canyon 27 Oct 2002 (SL). Two spring records: one on 15 Apr 1973 (HLJ); one on 3 May 1974 (WC, RS).

House Finch (*Carpodacus mexicanus*).+\* Contributed by Robb S. A. Kaler. Common breeder and resident. The House Finch is resident on all the Channel Islands, although it does not breed annually on Santa Barbara Island (Garrett and Dunn 1981). Mearns (1898) described the island birds as the subspecies *C. m. clementis*, designating as the type specimen an adult male collected on SCI 25 Aug 1894 (USNM 134784). The primary difference between *clementis* and the mainland subspecies *C. m. frontalis* is the longer and thicker bill of *clementis* (van Rossem 1925, Power 1971). However, there is considerable overlap, too much for recognition of *clementis* as a subspecies under the criterion of 75% nonoverlap, whether bill length, width, or depth is considered separately or all three are combined (Kaler and Unitt unpubl. data). Howell (1917), Dawson (1923), and Willett (1933) had all questioned the validity of *clementis*.

Grinnell (1897a) reported the House Finch to be "the most abundant bird on San

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Figure 54. Male McCown's Longspur at Lemon Tank 23 November 2003.

*Photo by Brian L. Sullivan*



Figure 55. Lapland Longspur at VC3 21 November 2003.

*Photo by Brian L. Sullivan*

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Figure 56. Snow Bunting at Lemon Tank 22 November 2003.

*Photo by Brian L. Sullivan*



Figure 57. Male Rose-breasted Grosbeak on San Clemente Island 16 August 2004.

*Photo by Brian L. Sullivan*

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Clemente Island,” and Linton (1908) described it as an “abundant resident everywhere.” The nesting season is protracted, typically beginning in early February and possibly continuing into August. Howell (1917) speculated that the birds raise at least three clutches each year. Nests are protected in the arms of a cactus, typically cholla, or in the niches of the canyon walls (Grinnell 1897a, Breninger 1904, Howell 1917). Grinnell and Miller (1944:454) noted the importance of cacti “in the economy of this race, serving as a source of fruit, affording secure nest emplacements, and probably meeting needs for water where springs are absent and vegetation otherwise is dry.”

Pine Siskin (*Carduelis pinus*).\* Very rare fall migrant. Recorded from 8 Oct to 27 Nov. The high count is of 22 on 8 and 9 Nov 1975 (PDJ). The Pine Siskin was first recorded on SCI 31 Oct 1975 (HLJ), and there were just four records before fall 2004, but we encountered the species regularly during that year’s invasion. It is irruptive (Garrett and Dunn 1981) and likely reaches SCI whenever it invades southern California.

Lesser Goldfinch (*Carduelis psaltria*).\* Fairly common migrant; rare in summer and winter. Recorded in spring from 8 Mar to 26 Apr, exceptionally as late as 7 May (2002, one at West Cove Beach, ELK) and 20 May (2001, one in Chamish Canyon, BLS), in fall from 12 Aug to 19 Nov, exceptionally as early as 1–2 Aug (2001, 20 at Stone Station, highest count for SCI, JTB photo). Numbers are highest from late August to October. The Lesser Goldfinch is less common but still regular during spring with peak numbers in late March and April. Six winter records from 5 Dec to 19 Feb. Two summer records: two at Stone Station 20 June 2000 (CLC); two in Burns Canyon 1 July 1997 (BJR). First recorded on SCI 11 Sep 1974 (HLJ), the Lesser Goldfinch has been noted there in every month, although breeding is not suspected.

Lawrence’s Goldfinch (*Carduelis lawrencei*).\* Very rare fall migrant; casual in spring and summer. Nine fall records from 20 Sep to 24 Oct, exceptionally as late as 14 Nov (2004, one male at Spanish Curve JMMcM, LAA). The high count is of seven at Lemon Tank 10 Oct 2002 (BLS, RDMcM). Three spring records: two on 14 May 1976 (PU), one in Horse Canyon 4 Apr 1997 (JHG), and one in China Canyon 30 Mar 2002 (BLS). One summer record: one on 10 Jul 1975 (KLG).

American Goldfinch (*Carduelis tristis*). Rare fall and casual spring migrant. Recorded in fall from 10 Aug to 9 Nov, when the high count is of five in China Canyon 5 Oct 1996 (MAB). Five spring records: two about 10 km apart on 12 May 1980 (HLF), one in Norton Canyon 31 Mar 2002 (BLS, AMC), one female at Lemon Tank 14 Jun 2002 (BLS et al.), six at Lemon Tank 13 May 1997 (JHG et al.), and one in Warren Canyon 13 Mar 2004 (SWS).

### Passeridae

House Sparrow (*Passer domesticus*).\* Common breeder and resident. So far, the House Sparrow occurs only near man-made structures and breeds primarily at Wilson Cove, VC3, the airport, and Bud’s Camp (Northwest Harbor). It was first recorded on SCI 30 Mar 1915 (Howell 1917).

### HYPOTHETICAL SPECIES

Redhead (*Aythya americana*). The identification of a single bird reported 1–4 Jun 1981 is likely correct, but the lack of supporting details warrants listing the species as hypothetical. Jones and Collins (unpubl. data) know of only one acceptable record for the Channel Islands (from Thompson Reservoir, Santa Catalina Island, Garrett and Dunn 1981) plus three hypothetical reports.

Canvasback (*Aythya valisineria*). A single male was reported at Lemon Tank 16



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Oct 1996. Jones and Collins (unpubl. data) know of only two other records for the Channel Islands, one each for Anacapa and Santa Catalina, underscoring this species' rarity offshore.

Barrow's Goldeneye (*Bucephala islandica*). The report of a male off Boulders South 14 Jan 1999 is not supported by details. There are no well-supported records for Los Angeles County. This species is casual in coastal southern California (Garrett and Dunn 1981) and easily confused with the more likely Common Goldeneye.

White-winged Scoter (*Melanitta fusca*). Two reports: four on 16 Sep 1979; one off Boulders South 17 Dec 1996. The date of 16 Sep is over one month earlier than the species' normal arrival in southern California; the 17 Dec report lacks details. The lack of records for SCI underscores Garrett and Dunn's (1981) assessment of the species as "quite scarce" around the southern Channel Islands. Jones and Collins (unpubl. data) have only two records for San Nicolas Island, two for Santa Barbara Island, and "several" old records for Santa Catalina Island.

Black Scoter (*Melanitta nigra*). A report without details of one at Northwest Harbor 4 Oct 1997 must be considered hypothetical.

Common Merganser (*Mergus merganser*). A female or immature was reported without details from 19 Jan through 19 Feb 2001, first in West Cove, and then in Wilson Cove. Although this species occurs regularly on deep freshwater lakes in southern California, it is rare on the ocean where the Red-breasted Merganser is common (Garrett and Dunn 1981). We can find no other record of this species on the Channel Islands.

Red-necked Grebe (*Podiceps grisegena*). Reported only on the basis of bones found in hunter-gatherer middens approximately 3500 years old (Porcasi 1999a). This species is a rare visitor to the coast of southern California with scattered records inland (Garrett and Dunn 1981). The remains found on SCI should be reexamined, as there is no other record of the Red-necked Grebe for the Channel Islands.

Streaked Shearwater (*Calonectris leucomelas*). The report of one moving south past West Cove Point with Pink-footed and Sooty Shearwaters 24 Nov 2002 was rejected by the CBRC on the basis of the description's failing to eliminate a light-morph Wedge-tailed Shearwater (*Puffinus pacificus*) and Cory's Shearwater (*C. diomedea*) (San Miguel and McGrath 2005). The year 2002 was exceptional for the Streaked Shearwater in North America with no fewer than five recorded in California waters (McCaskie and Garrett 2003, Terrill et al. 2003).

American White Pelican (*Pelecanus erythrorhynchos*). Two reports: likely the same individual seen off Thirst Canyon 9 May 2001 and again off Lost Point 11 June 2001. The occurrence at Southeast Farallon Island during fall 2001 of a Pink-backed Pelican (*P. rufescens*), a species that at a distance closely resembles the American White Pelican, confounds the identification of this individual (J. Teitz pers. comm.).

Cooper's Hawk (*Accipiter cooperii*). Adequate documentation for this species on SCI is still lacking. Several birds initially identified as Cooper's Hawks later proved to be the more common Sharp-shinned Hawk. Of the 11 reports from 8 Nov to 8 Apr, none is well documented. This species was unrecorded during two years of standardized raptor surveys, on which the Sharp-shinned Hawk was encountered regularly (Cooper et al. 2003). Although Small (1994) suggested that Cooper's Hawk is uncommon to rare on all the larger Channel Islands, and Jones and Collins (unpubl. data) consider it an occasional winter visitor there, the lack of records from SCI indicates otherwise. This species has nested at least once on Santa Cruz Island (Jones and Collins unpubl. data).

Swainson's Hawk (*Buteo swainsoni*). One report not supported by details of age



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Figure 58. Bobolinks at Lemon Tank 19 September 2004.

*Photo by Brian L. Sullivan*



Figure 59. Rusty Blackbird at Lemon Tank 24 October 2002.

*Photo by Tony R. Leukering*

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or morph: one on the plateau above Tota Canyon 1 Dec 1995. Given the species' rarity on the Channel Islands—just two records early in the 20<sup>th</sup> century for Santa Catalina and Santa Cruz (Small 1994)—the identification is not acceptable without further supporting details.

Ferruginous Hawk (*Buteo regalis*). Two reports lack adequate documentation: one immature near Bluff 7 Jan 1997; one immature over Wilson Cove 6 Mar 2002, seen disappearing over the water toward Santa Catalina Island as it was chased by adult Red-tailed Hawks. There is one record from Anacapa Island (Jones and Collins unpubl. data).

Golden Eagle (*Aquila chrysaetos*). Two reports: Mearns (unpubl. notes) listed this species 23–28 August 1894 but did not include it in his subsequent account (Mearns 1907), raising doubt as to the validity of the record. A navy research team reported a subadult 6 Nov 1974 but provided no further details. The species' colonization of Santa Cruz and Santa Rosa islands suggests that Golden Eagles may wander among the Channel Islands, and the date of the latter SCI report falls within the interval expected for a fall migrant. The Golden Eagle has apparently been recorded from Santa Catalina Island (Jones and Collins unpubl. data). That said, this species is unrecorded on Point Loma, emphasizing its rarity as a migrant in coastal southern California (G. McCaskie pers. comm.).

American Oystercatcher (*Haematopus palliatus*). Three records of oystercatchers resembling the American likely pertain to hybrids; none has been adequately documented as a pure American: three on China Beach 18 Dec 1995 were not submitted to the CBRC for review, one on 4 and 5 Aug 1999 was not supported by the CBRC (Rogers and Jaramillo 2002), and on the basis of written details one at Eel Point 24 Apr 2001 could not be safely called a pure American Oystercatcher (Garrett and Wilson 2003). A hybrid nested successfully with a Black Oystercatcher at Seal Cove in spring 2002 (RGD photo). *Haematopus p. frazari* can show considerable black flecking below and often a blurry demarcation between white and black on the upper chest, confounding the identification. Hybrid oystercatchers on SCI have been identified primarily on the basis of their mottled blackish undertail coverts, typically pure white in *H. p. frazari*.

Semipalmated Sandpiper (*Calidris pusilla*). Two reports lacking sufficient details: one at Northwest Harbor 13 Oct 1995; one on West Cove Beach 13 Sep 2000. The one for October falls outside the main period of occurrence (early July to early September) for fall migrants in California (G. McCaskie pers. comm.).

Mew Gull (*Larus canus*). Three reports: nine birds together, including four subadults, 10 Dec 1976, one at West Cove Beach 6 Jan 1994, and one at Wilson Cove 3 Nov 1995. Although the Mew Gull is a fairly common to locally common winter visitor on the northern Channel Islands (Garrett and Dunn 1981, Jones and Collins unpubl. data), the lack of substantiated records for SCI underscores this species' rarity on the southern Channel Islands.

Iceland Gull (*Larus glaucooides*). A report of a first-winter bird of subspecies *L. g. kumleini* from West Cove Beach 21 Mar 1997 was rejected by the CBRC as identification not established (Rottenborn and Morlan 2000). The extreme difficulty of distinguishing this species from the similar Thayer's Gull makes any record without a photograph or specimen difficult to accept.

Glaucous Gull (*Larus hyperboreus*). A first-winter bird was reported at Wilson Cove 5 Feb 2002. Garrett and Dunn (1981) cited two other records for the Channel Islands, both from San Miguel Island in March.

Spotted Dove (*Streptopelia chinensis*). One was reported in China Canyon 1 April 2001. Given this species' sedentary habits and declining population in California, this record requires further documentation to be acceptable.

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Lesser Nighthawk (*Chordeiles acutipennis*). A nighthawk thought to be this species was seen on China Beach 24 May 2003; however, the bird was not vocal, and the identification, based solely on flight characteristics, was left as probable. A nighthawk hit by a vehicle on the road at Thirst in spring 1999 was also thought to be this species, but the specimen was not preserved, and the identification is tentative. A reported Common Nighthawk in Cave Canyon 29 Apr 1993, if correctly identified to genus, pertains to this species. The Lesser Nighthawk has been recorded as a transient on the other Channel Islands (Garrett and Dunn 1981, Jones and Collins unpubl. data), and a conclusive identification from SCI seems only a matter of time.

Common Nighthawk (*Chordeiles minor*). One was well seen but not heard near the airstrip 20 June 2003. Other nighthawks thought to be the Common were seen at the mouth of Norton Canyon 30 Jun 2002 and in Horse Canyon 19 Jul 2003. Given this species' rarity in coastal southern California (Garrett and Dunn 1981), sight records without vocalizations are not acceptable, although the dates are within the interval when the Common Nighthawk is plausible. The only record for the Channel Islands is of one on Santa Barbara Island 21 Jun 1992 (Small 1994).

Ruby-throated Hummingbird (*Archilochus colubris*). One report rejected as identification not established: an immature male at Lemon Tank 8 Oct 2003 (San Miguel and McGrath 2005). The observers were not able to note the shape of the outer primaries, a key feature in distinguishing the Ruby-throated from the Black-chinned Hummingbird and from hummingbirds of the genus *Calypte*.

Eastern Phoebe (*Sayornis phoebe*). A report of one in upper China Canyon 6 Oct 2001 lacks details and falls outside the species' typical interval of occurrence in California. The Eastern Phoebe is a rare fall transient and winter visitor on the Channel Islands in general (Jones and Collins unpubl. data).

Sulphur-bellied Flycatcher (*Myiodynastes luteiventris*). A flycatcher showing field marks consistent with a Sulphur-bellied Flycatcher was seen in lower Box Canyon on 10 June 2001. Unfortunately, several other species of similar flycatchers unrecorded in California could not be definitively ruled out, and there are no spring records of the Sulphur-bellied from mainland California. The observer's original description: "On my arrival, a Loggerhead Shrike was chasing a flycatcher in the vicinity of the zipline. It chased the bird up the canyon directly below me, where I was able to clearly see a bright rusty tail, streaked upper parts and sides, and a large striped head. The flycatcher ducked into a low *Rhus* below the OP and the shrike followed, landing on the ground and soon flushing the flycatcher from the bush. The shrike continued to chase the flycatcher up and down the canyon until it finally flew around the bend up canyon from the nest."

Gray Vireo (*Vireo vicinior*). Even more so than the Bell's Vireo, this species is rarely recorded away from breeding areas in southern California. There are three reports of single birds for SCI, all falling within a span of three days in late September: one 23 Sep 1976, one in Bryce Canyon 21 Sep 2000, and one at Vista Overlook 21 Sep 2001. There are eight reports for the Channel Islands, none supported with a specimen or photograph (Jones and Collins unpubl. data).

American Crow (*Corvus brachyrhynchos*). Reported only on the basis of a prehistoric bone found in the middens of early maritime hunter-gatherers (Porcasi 1999a). The identification should be verified independently, as this would constitute the only record for SCI. Possibly this species was killed on the mainland and brought to SCI as food. The crow has recently colonized Avalon, Santa Catalina Island (BLS pers. obs.), and its eventual dispersal to SCI seems likely. There are at best three or four other records for the Channel Islands, and any American Crow sightings for the islands should be thoroughly documented (Jones and Collins unpubl. data).

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Canyon Wren (*Catherpes mexicanus*). One was reported in China Canyon 22 Nov 1997. While this species is primarily sedentary in coastal California, vagrants have been reported. The report of this species as resident in small numbers on Santa Cruz Island (Garrett and Dunn 1981) may be based on only a single individual (Jones and Collins unpubl. data). There are no other records for the Channel Islands.

Cactus Wren (*Campylorhynchus brunneicapillus*). Mailliard (1918) reported that Barton W. Evermann saw several near Wilson Cove, but he collected no specimens. Given this species' sedentary habits it seems likely that the report was in error.

Western Bluebird (*Sialia mexicana*). Linton (1909) reported collecting a male in Dec 1908, but we have been unable to find the specimen with Linton's others and so consider the record hypothetical. Also, a male was reported at Northwest Harbor 15 Nov 2002. These reports likely pertain to Mountain Bluebirds. Garrett and Dunn (1981) reported two other occurrences of the Western on the Channel Islands, both from Santa Cruz Island.

Blue-winged Warbler (*Vermivora pinus*). One reported in Norton Canyon 5 Oct 2000 was not reviewed by CBRC; the report of two on 15 Apr 1972 was rejected (Rottenborn and Morlan 2000).

Mourning Warbler (*Oporornis philadelphia*).#\* One report rejected by the CBRC, of an immature male at Wilson Cove 13 Oct 2003. There are just two Channel Island records, both from San Nicolas Island in September (Jones and Collins unpubl. data).

### SPECIES OF EXOTIC ORIGIN

Flamingo (*Phoenicopterus* sp.). One record: an individual not identified to species was seen during a Bald Eagle reintroduction at Mosquito Cove 17 Nov 1976 (DKG).

Diamond Dove (*Geopelia cuneata*). One record: a single bird was seen near the airfield 18 Oct 2003 (AC).

European Goldfinch (*Carduelis carduelis*). One record: a male photographed at Stone Station with Lesser Goldfinches 1 August 2001 (JTB et al.). The species is common as a cage bird.

### SPECIES KNOWN ONLY FROM PREHISTORIC REMAINS

Short-tailed Albatross (*Pheobastris albatrus*). Although there are no recent records of this species from SCI, Howell (1917) described it as occurring more frequently than the Black-footed Albatross on the ocean between SCI and San Nicolas Island, Santa Catalina Island, and the mainland. Bones of this species found in the middens of early islanders indicate its former status as a regular visitor around SCI (Porcasi 1999a). Porcasi (1999b) described two large deposits of albatross bones at two sites on SCI, implying that the early maritime hunter-gatherers occupying SCI exploited albatrosses for food. Formerly a common visitor to North American waters, this species was nearly extirpated from its breeding grounds on Torishima in the early 1930s (Palmer 1962). One photograph near Santa Barbara Island 19 Feb–22 Mar 2002 (Cole and McCaskie 2004) as well as multiple recent records elsewhere off California give hope for this species' return.

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