

City and County of San Francisco Bird Species of Conservation Concern, 2023





Snowy Plover, Crissy Wildlife Protection Area Photo by Matthew Zlatunich

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FORWARD

Human beings have had a profound impact on our planet. With the exception of some early visionaries such as Alexander von Humboldt, general recognition and acknowledgement of this impact has only emerged in the last 50 years. Now the planet has reached a tipping point, threatening not only the vast richness of our flora and fauna, but the future of humankind itself. Habitat fragmentation, environmental pollution, and now climate change have contributed to extreme loss of biodiversity. The staggering loss of almost 3 billion birds across all habitat types in North America over the past 50 years (according to a 2019 study published in the journal Science) is a clear warning signal.

These are global issues, challenging the entire planet. While the situation may seem insurmountable, taking action can have an impact. Whether on a national level, such as the 30x30 Initiative to conserve 30% of U.S. lands and waters by 2030; on a state level, such as California's own 30x30 Initiative; or locally through the actions of concerned citizens, we now have opportunities to preserve and protect our biodiversity.

Golden Gate Audubon has been a leader in San Francisco Bay Area conservation efforts since its founding in 1917. The focus of the organization is the protection of birds through its mission, "To engage people to experience the wonder of birds and to translate that wonder into actions which protect native bird populations and their habitats."

One of the ways that Golden Gate Audubon achieves success is through its all-volunteer Conservation Committees. Committee members work to educate and influence decision-makers to take action to better protect native birds and their habitats. Committee activities include monitoring and commenting on public projects, networking with other local conservation groups, coordinating stewardship activities, and producing informational publications like the one you see before you.

The motivation behind this work was to raise awareness of bird species of concern and to help inform and guide local conservation efforts. The following pages are the culmination of countless hours of research by a dedicated team of volunteers — each with a unique knowledge of our local avifauna — under the leadership of long-time committee member Matt Zlatunich. The work was generously reviewed for accuracy by some of the foremost bird experts in San Francisco. I thank them all for their dedicated contributions to the local conservation effort.

Angelika Geiger
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INTRODUCTION

The City and County of San Francisco covers a very small region and is dominated by dense urban development, yet it still contains a variety of natural habitats and maintains a robust avian diversity. Located at the tip of a peninsula with an elevated spine of hills surrounded by ocean and estuary, urban San Francisco retains some wildness at its margins and among its hills and valleys. Additionally, the area includes an offshore wilderness archipelago, the Farallon Islands, which lie about 30 miles to the west.

Change happens over time and the impact that human societies have on the landscape can be dramatic. Rapid urban development, sparked by the gold rush of 1849, certainly altered the biodiversity of the San Francisco Peninsula; however, throughout the many decades, successful efforts have been made to preserve and protect some of the richest habitat areas. Now, the values of habitat restoration and stewardship have gained momentum throughout our society, and governmental and civic organizations have the abilities to bolster our local biodiversity.

The lists produced by Federal, State and non-governmental agencies that focus on species of conservation concern serve as useful tools to inform habitat management and advocacy. These lists offer legal and ideological grounds for protections of specific taxa and their habitats and can foster a coordinated stewardship effort.

Three formidable agencies that generate such lists are the United States Fish & Wildlife Service (USFWS), the California Department of Fish & Wildlife (CDFW), and the National Audubon Society. In formulating the lists, each of these organizations use criteria specific to its mission and purpose, which collectively encompass a broad spectrum of conservation concerns.

Periodically, these lists are updated and revised as some species recover and are delisted while new concerns arise over other species warranting addition to the lists.

Because updates were made to the USFWS and the Audubon lists in 2021 and to the CDFW list in 2022, it seemed appropriate to synthesize these works to generate a list of bird species of conservation concern specific to San Francisco. The purpose of this report is to inform and guide members of the local conservation community in their advocacy and stewardship efforts.

This list is intended to be a useful reference and should be revised and updated in keeping with the publications of the agencies mentioned above.

SECTION 1. Listed Species

As of May 2020, 492 bird species have been recorded in San Francisco. Of those, taxa of conservation concern listed by the USFWS, CDFW, or National Audubon have been compiled into Table 1. While some species are rarities in our county, others have a significant presence and thus warrant appropriate conservation attention.

Occurrence is described as **resident** (birds that regularly reside year-round, or over-summer*, or over-winter**), **migrant** (birds that regularly occur in transit between their summer and winter ranges), **visitor** (birds that are within their normal range but do not have a regular local presence), **vagrant** (birds far outside of their normal range), or **extirpated** (birds that had a regular presence in recent

history but are no longer present).

Over time, the occurrence of species in our county has fluctuated. Some species have declined and blinked out while others have moved in and become common. This pattern of change is to be expected into the future.

Table 1. Bird species or subspecies that have been observed and documented within San Francisco and have been listed by the US Fish & Wildlife Service (USFWS) as endangered (E), threatened (T), species of concern (C), or species to watch (W); and/or listed by the California Department of Fish & Wildlife (CDFW) as endangered (E), threatened (T), or a species of concern (SC); and/or listed by the National Audubon Society (NAS) as a species of conservation priority (P). Notable species are highlighted in BOLD and will be discussed in further detail.

TAXON	USFWS	CDFW	NAS	OCCURANCE IN SAN FRANCISCO
Tule Greater White-fronted Goose		SC		vagrant
Brant	W	SC		rare migrant / visitor
Cinnamon Teal	W			rare visitor
Ruddy Duck			P	resident
Eared Grebe			Р	winter resident
Western Grebe	С			resident
Clark's Grebe	С			resident
Yellow-billed Cuckoo (Western)	T	E		vagrant

^{*} The term *over-summer* refers to the time frame within which migratory species' arrive, nest, fledge and depart. Locally, the timeframe for this annual event is from mid-January to mid-September.

^{**} The term *over-winter* refers to the time frame within which migratory species' arrive, reside during the non-breeding season, and depart. Locally, the time frame for this annual event is from early July to mid-May.

Table 1. Continued.

Table 1. Continued.				
TAXON	USFWS	CDFW	NAS	OCCURANCE IN SAN FRANCISCO
Black-billed Cuckoo	С			vagrant
Black Swift	С	SC		rare migrant
Chimney Swift	С			vagrant
Vaux's Swift		SC		migrant
Calliope Hummingbird	С			rare migrant
Rufous Hummingbird	С			migrant
Allen's Hummingbird	С			summer resident
Yellow Rail	С	SC		vagrant
Black Rail (California)	E	Т		vagrant
Ridgway's Rail	E	E	P	rare resident
Sandhill Crane (Greater)		Т	Р	rare migrant
American Avocet			P	resident
American Oystercatcher			Р	vagrant
Black Oystercatcher	С		P	resident
American Golden Plover	С			rare migrant
Snowy Plover (Western)	Т		P	winter resident
Snowy Plover (Interior/Gulf Coast)	С	SC		winter visitor
Semipalmated Plover			Р	migrant
Long-billed Curlew			Р	winter resident
Bar-tailed Godwit	С			vagrant
Marbled Godwit	С		P	winter resident
Black Turnstone	С			winter resident
Red Knot (Pacific)	С		Р	rare winter visitor
Buff-breasted Sandpiper	С			vagrant
Pectoral Sandpiper	С			vagrant
Western Sandpiper			Р	winter resident
Short-billed Dowitcher	С			rare winter resident
Wilson's Phalarope			Р	rare migrant
Wandering Tattler	С			winter resident
Lesser Yellowlegs	С			rare migrant
Willet	С			winter resident
Marbled Murrelet	Т	E		pelagic visitor
Scripps's Murrelet	С	Т		pelagic visitor
Guadalupe Murrelet	С	Т		pelagic visitor
Craveri's Murrelet	С			pelagic visitor
Ancient Murrelet	С			pelagic visitor

Table 1. Continued.

Table 11 Collellaca.				
TAXON	USFWS	CDFW	NAS	OCCURANCE IN SAN FRANCISCO
Cassin's Auklet		SC		summer resident Farallon Is.
Tufted Puffin	С	SC		summer resident Farallon Is.
Franklin's Gull	С			vagrant
Heermann's Gull	С			post breeding resident
Western Gull	С			resident
Yellow-footed Gull	С			vagrant
California Gull	С			resident
Least Tern (California)	E	E	P	summer visitor Alameda Pt.
Black Tern	С			rare migrant
Elegant Tern	С			post breeding resident
Black Skimmer	С	SC		rare visitor
Yellow-billed Loon	С			vagrant
Laysan Albatross	С			pelagic visitor
Black-footed Albatross	С			pelagic visitor
Short-tailed Albatross	Е			rare pelagic visitor
Ashy Storm-Petrel	С	SC		summer resident Farallon Is.
Band-rumped Storm Petrel	Е			rare pelagic visitor
Black Storm-Petrel	С			pelagic visitor
Murphy's Petrel	С			rare pelagic visitor
Mottled Petrel	С			rare pelagic visitor
Hawaiian Petrel	Е			rare pelagic visitor
Cook's Petrel	С			rare pelagic visitor
Buller's Shearwater	С			pelagic visitor
Sooty Shearwater			Р	pelagic visitor
Pink-footed Shearwater	С			pelagic visitor
Manx Shearwater	С			rare pelagic visitor
Black-vented Shearwater	С			pelagic visitor
Brandt's Cormorant	С			resident
American White Pelican		SC		rare post breeding visitor
Least Bittern		SC		vagrant
White-faced Ibis			Р	rare migrant
Northern Harrier	С	SC		winter visitor
Northern Goshawk		SC		vagrant
Bald Eagle		E		winter visitor
Swainson's Hawk		Т		migrant
Western Screech-Owl (N. Pacific)	С			extirpated

Table 1. Continued.

TAXON	USFWS	CDFW	NAS	OCCURANCE IN SAN FRANCISCO
Burrowing Owl (Western)	С	SC		rare winter resident
Long-Eared Owl	С	SC		rare winter visitor
Short-Eared Owl	С	SC		rare winter visitor
Lewis's Woodpecker	С			vagrant
Gila Woodpecker		Е		vagrant
Nuttall's Woodpecker	С			resident
Olive-sided Flycatcher	С	SC		migrant, rare summer resident
Willow Flycatcher		Е		migrant
Willow Flycatcher (Southwestern)	E	E		vagrant
Loggerhead Shrike		SC		rare visitor
Bell's Vireo (Least)	E	E	Р	vagrant
Yellow-billed Magpie	С			vagrant
Oak Titmouse	С			rare visitor
Purple Martin		SC		migrant
Bank Swallow		Т		summer resident
Wrentit	С			resident
Wood Thrush	С		Р	vagrant
Bendire's Thrasher	С			vagrant
California Thrasher	С			rare visitor
Sprague's Pipit	С			vagrant
Evening Grosbeak	С			vagrant
Cassin's Finch	С			vagrant
Lawrence's Goldfinch	С			vagrant
Chestnut-collared Longspur	С			vagrant
Black-chinned Sparrow	С			vagrant
Baird's Sparrow	С			vagrant
Savannah Sparrow (Bryant's)		SC		resident
Grasshopper Sparrow		SC		vagrant
Song Sparrow (Alameda)	С	SC		extirpated
Yellow-breasted Chat		SC	Р	migrant
Bobolink	С		Р	vagrant
Western Meadowlark			Р	winter resident
Bullock's Ortiole	С			migrant, rare summer resident
Tricolored Blackbird	С	Т	P	winter resident
Yellow-headed Blackbird		SC		vagrant
Golden-winged Warbler	С		Р	vagrant

Table 1. Continued.

	Р	vagrant vagrant
		vagrant
		vagrant
		vagrant
SC		resident
	Р	vagrant
		vagrant
SC	P	extirpated
	Р	vagrant
	Р	vagrant
		vagrant
		vagrant
	Р	vagrant
		vagrant
	Р	vagrant
	Р	vagrant
		P P P P

SOURCES

NAS, Audubon's Priority Birds Report: 2021.

CDFW, State and Federally Listed Endangered and Threatened Animals of California, April 2022.

WFO-CDFW, California Bird Species of Special Concern, 2008. Table 5 (BCR 32 CW).

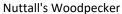
SFFO, San Francisco Breeding Bird Atlas, 2003.

sfBirds.net - San Francisco County Bird List, May 2020.

The Cornell Lab. All About Birds. www.allaboutbirds.org

USFWS, Birds of Conservation Concern 2021. Table 6 (BCR 32, MBCR 17) & Appendix 1.







Allen's Hummingbird



Heermann's Gull Photo by Angie Geiger

SECTION 2. Non-listed Species

There are a few species which are not found on any of the considered lists yet they have been - and continue to be - of local conservation concern. These are species that have a special presence particular to San Francisco and have been deemed worthy of our attention. Adjustments to this list are at the discretion of the conservation committee.



California Bicolored Blackbird, Elk Glen Lake

Table 2. Additional species of local conservation concern within San Francisco. All will be discussed in further detail.

TAXON	GGAS	OCCURANCE IN SAN FRANCISCO
California Quail	High Priority	Extirpated, candidate for reintroduction.
Caspian Tern	Priority	Limited summer resident.
Osprey	High Priority	Resident pair established since 2013.
Western Bluebird	High Priority	Resident since 2005.
White-crowned Sparrow (Nuttall's)	Priority	Resident coastal California endemic.
Red-winged Blackbird (CA Bicolored)	Priority	Resident California endemic.



Sanderling, Ocean Beach

SECTION 3. Notable Species

Drawing from Tables 1 and 2, the following section gives a brief account for each species that has a notable presence within San Francisco. Each account aims to describe the species relative presence, particular conservation concerns, and the potential need for conservation attention. Each account indicates the ratings given by the USFWS, CDFW, and National Audubon. Additionally, each species has been assigned a rating to indicate the degree of local conservation concern as follows:

SF High Priority - Actively advocate to improve/increase habitat and reduce harmful impacts.

SF Priority - Generally advocate to maintain habitat and reduce harmful impacts.

SF Watch - Monitor population and habitat conditions. Be prepared to elevate status if necessary.

Ruddy Duck

Oxyura jamaicensis
SF Priority

Audubon Priority Bird

Found year-round on local lakes and bay waters, most commonly in the winter. A few breeding pairs nest at Lake Merced and Mountain Lake. Their breeding habitat is freshwater lakes and ponds, where they nest in dense marsh vegetation near water. Efforts could be made to better document and understand their nesting habits and frequency in San Francisco.

California Quail

Callipepla californica
SF High Priority

The California Quail is San Francisco's official City bird. Once common in the Presidio, Golden Gate Park, McLaren Park, the greater Lake Merced area, and other local parks, the quail population steadily declined despite conservation efforts and is now considered to be extirpated. Efforts continue towards improving habitat and establishing connective corridors with the hopes of reintroduction in the years to come. This work will certainly benefit other local species.

Western Grebe

Federal Species of Concern

Aechmophorus occidentalis SF Priority

These birds are common winter residents of San Francisco's coastal waters and also Lake Merced, but they generally use larger inland lakes to breed. While occuring in modest numbers at Lake Merced, rafts of these black-and-white floaters - numbering sometimes in the 100s - are regularly seen at bayside hotspots as well as in the Gate. They are of federal concern as their aquatic habitats are vulnerable to destruction and climate change. Lake Merced offers suitable breeding habitat where nesting occurs in most years.

Clark's Grebe

Federal Species of Concern

Aechmophorus clarkii SF Priority

Similar in appearance to the Western Grebe and with a similar occurrence in San Francisco, the only noticeable difference in population is that Clark's Grebes winter here in smaller numbers. Both Western and Clark's Grebes usually build their nests among rushes or reeds at the waters edge where they are sheltered from wave action. Efforts could be made to better document and understand their nesting habits and frequency in San Francisco.

Allen's Hummingbird

Federal Species of Concern

*Selasphorus sasin sasin*SF Priority

A neotropical migrant that over-winters in central Mexico, the Allen's Hummingbird's breeding range is limited to coastal California. Small population size and limited range make this species more susceptible to natural disasters, diseases, or detrimental land use changes. Though rangewide population declines have been documented over the past several decades, the Allen's Hummingbird remains fairly common in San Francisco and it is likely that the species will benefit from continued habitat restoration. Efforts could be made to ensure population stability and to support conservation of the species' wintering habitats in Mexico.

Ridgway's RailRallus obsoletus obsoletus

SF Priority

Federal Endangered State Endangered Audubon Priority Bird

This species inhabits coastal saltmarshes of western North America where they forage along the ecotone between mudflats and higher vegetated zones dominated by cordgrass and pickleweed. Populations are thought to be moderately small and decreasing. A rare resident along San Francisco's eastern coastline, possibly extirpated. Threats include urban development and degradation of wetlands, invasive exotic vegetation, and rising sea levels and storm surge due to climate change. Actions to assist recovery include enhancement, restoration, and protection of wetland habitats.

American Avocet

Audubon Priority Bird

Recurvirostra americana SF Priority

An inhabitant of fresh and saltwater wetlands, the American Avocet ranges throughout much of coastal and interior North America. The Bay Area is home to year-round resident populations, and American Avocets regularly nest at Heron's Head Park and India Basin Shoreline Park in San Francisco. Threats to this species have included wetland degradation and loss, toxic contaminants, and predation. Active monitoring and advocacy could further benefit this species.

Black Oystercatcher *Haematopus bachmani*SF Priority

Federal Species of Concern Audubon Priority Bird

A resident of rocky, coastal marine habitat, the Black Oystercatcher can be found year-round in San Francisco, though always in small numbers. Occuring from Alaska to Baja, the entire species population is estimated to be about 10,000 individuals. They forage exclusively on intertidal invertebrates, and thus can be good indicators of the overall health of the rocky intertidal community. Small population size, low reproductive rate and specific habitat requirements make them vulnerable to disturbance, pollution and climate change. The *Black Oystercatcher Conservation Action Plan* was published in 2010, and some local monitoring has been done.

Snowy Plover (Western)
Charadrius nivosus nivosus
SF High Priority

Federal Threatened Audubon Priority Bird

Resident on coastal beaches from Washington to Baja, the Western Snowy Plover has been impacted by habitat degradation, human recreational activities, and predation. Sea level rise is another potential threat. In San Francisco, overwintering populations reside at Ocean Beach and at the Crissy Field Wildlife Protection Area. Advocacy and habitat maintenance activities (following recommendations of the *USFWS Snowy Plover Recovery Plan*) have been ongoing for many years. Vigilant advocacy is necessary to maintain and bolster protections.

Marbled Godwit Limosa fedoa SF Priority Federal Species of Concern Audubon Priority Bird

The Marbled Godwit is a conservation concern in large part because of the significant historic loss of shortgrass prairie breeding habitat to the agricultural industry, as well as degradation of the tidal mudflats and estuaries of their coastal wintering grounds. Habitat loss remains a threat along with the effects of climate change, environmental pollution and excessive disturbance. In San Francisco, Marbled Godwits can be found in modest numbers throughout the fall and winter as they forage and roost on tidal flats and sandy beaches.

Black Turnstone

Federal Species of Concern

Arenaria melanocephala SF Watch

Black Turnstones breed in remote arctic Alaska and overwinter along the rocky surfzones of the Pacific coast from southern Alaska to Baja where they forage intertidally on exposed rocks and beach wrack. This restricted range makes them vulnerable to the effects of climate change as well as pollutants, such as oil and microplastics. These sensitivities make them good indicators of the health of their interdidal habitat. In San Francisco, Black Turnstones share similar habitat and lifestyle with Black Oystercatcher, Surfbird and Wandering Tattler.

Wandering Tattler

Federal Species of Concern

Tringa incana SF Watch

The least occurring of the winter residents of San Francisco's rocky intertidal zones and the most solitary. Due to their cryptic coloration and penchant for "traveling solo," Wandering Tattlers are one of the least studied shorebirds, making conservation decision-making a challenge. The species is of federal concern for its limited breeding range in parts far north. A potential positive, they appear adaptable to human influence, sometimes breeding in areas using spent mining material.

Willet

Federal Species of Concern

Tringa semipalmata SF Watch

The global Willet population is reportedly stable, though numbers apparently declined between 1966 and 2014 according to the *North American Breeding Bird Survey*. San Francisco Bay and Bolinas Lagoon are considered two of the western Willet's most important wintering sites. As it is for many of our nonbreeding shorebird species, coastal and bay shore development are primary concerns affecting roosting and feeding grounds. These effects are compounded by significant losses in breeding habitat from agricultural development in inland areas of the continent.

Cassin's Auklet

State Species of Concern

Ptychoramphus aleuticus SF Priority

This seabird of eastern Pacific continental shelf waters is thinly distributed along its range from the Aleutians to Baja. Most populations are migratory; however, the Farallones' population is not. Like those for most seabirds, major factors affecting population health include food and habitat availability. Researchers of the Cassin's Auklet have proposed two theories for food shortages, one being El Niño/La Niña related, the other trophic competition with recovering whale populations.

Tufted Puffin *Fratercula cirrhata*SF Priority

Federal Species of Concern State Species of Concern

This burrow-nester breeds on Pacific coastal islands from the Bering Strait to Southern California. Global numbers appear healthy; however, populations southeast of the Gulf of Alaska have trended downward in recent decades. The population on Southeast Farallon Island, California's largest colony, is no exception. Factors that have contributed to the Farallon's population decline in the last century include introduced predators and environmental pollution.

Heermann's Gull

Federal Species of Concern

Larus heermanni SF Priority

Almost all Heermann's Gulls breed on Isla Rasa in Mexico's Gulf of California, then migrate northward to spend late summer and fall along the Pacific Coast on beaches and associated coastal areas. In San Francisco, flocks roost on Ocean Beach and other coastal locations, often along with terns and other gull species. Nests at Alcatraz Island in 1979, 1980 and 1981, though unsuccessful, are the northernmost documented. A restricted range makes Heermann's Gulls vulnerable to habitat loss, predation and climate change, and the species' resilience may be tested in the coming decades.

Western Gull
Larus occidentalis
SF Priority

Federal Species of Concern

San Francisco's most common gull, the majority of the Western Gull's global population nests at the Farallon and Alcatraz Islands. They are found throughout the City on or near almost any body of water as well as at refuse dumps, ballparks and schoolyards. Western Gulls are of concern due to their restricted coastal range from southern British Columbia to the tip of Baja, with populations declining in recent decades. Like many other San Francisco marine birds, they are susceptible to oil spills and climate patterns such as El Niño. Perhaps ironically, Western Gulls are a concerning predator for other species in this report.

California Gull

Federal Species of Concern

Larus californicus
SF Priority

Although declines have been noted in some portions of their range, California Gulls are common and widespread, breeding along inland lakes and rivers throughout much of western North America and wintering along the Pacific coast from Washington to central Mexico. Breeding colonies have been increasing in salt ponds throughout the Bay Area. In San Francisco, though still predominantly a post-breeding resident, they have been nesting in small numbers at Alcatraz Island in recent decades.

Least Tern (California)

Sterna antillarum browni SF Watch Federal Endangered State Endangered Audubon Priority Bird

After significant population declines, the California Least Tern was federally listed in 1969. They over-winter in South America and breed on the Pacific coasts of California and Baja where they nest on open, sparsely vegetated ground of bays, estuaries and beaches. Golden Gate Audubon has participated in monitoring and stewardship of a nesting colony at Alameda Point (Alameda County), which is directly adjacent to San Francisco County bay waters where the terns forage for fish. Though populations have modestly increased, detrimental threats now include environmental contamination and climate change.

Caspian Tern

*Hydroprogne caspia*SF Watch

A regular visitor and potential summer resident in San Francisco, Caspian Terns can be found along the coasts and wetlands. They nest in colonies, typically on flat, open areas with little vegetation, though they have been known to use artificial nesting rafts. A collaborative monitoring and habitat maintenance project with the SF Port Authority has been established along San Francisco's eastern shore without much success. The use of decoys and vocalizations to attract birds to safe areas away from disturbances may be helpful toward establishing and maintaining a resident population.

Elegant Tern

Federal Species of Concern

Thalasseus elegans SF Priority

Though Elegant Terns range widely along the Pacific coasts of North and South America, their limited breeding distribution (mostly on two islands in the Sea of Cortez and a few lesser sites in California) makes the species highly vulnerable. A colonial ground nester, the Elegant Tern has typically been known to roost in large numbers during the post-breeding season at Ocean Beach, Crissy Lagoon and elsewhere. Nesting has, however, been documented in recent years at Alameda Point, along the far eastern edge of San Francisco.

Black Skimmer

Rynchops niger SF Watch Federal Species of Concern State Species of Concern

Black Skimmers are colonial, ground-nesting waterbirds that require expanses of bare earth sufficiently isolated from disturbance for roosting and nesting. In winter, flocks are known to roost on urban beaches. First recorded in southern California in 1962, the Black Skimmer has expanded its range and established breeding colonies as far north as San Mateo County. Individuals and small groups have been documented as visitors to San Francisco in recent years and perhaps Black Skimmers may someday establish an over-wintering or a breeding presence within the City.

Ashy Storm-Petrel *Hydrobates homochroa*

SF High Priority

Federal Species of Concern State Species of Concern

It is estimated that half of this seabird's global population nests on the Farallon Islands. Threats include increases in Western Gull numbers (predation and crowding) and secondary predation by overwintering Burrowing Owls (attracted to the island by the presence of exotic mice). Additionally, to demonstrate the complexity around conservation management decisions, removal of the invasive European Hare in the 1970's has led to weedy growth that limits nesting habitat. A positive tool for the conservation effort is the use of artificial nest boxes.

Brandt's Cormorant

Federal Species of Concern

*Urile penicillatus*SF Priority

Of the two commonly seen San Francisco cormorants, Brandt's are by far the most populous on our local islands (many thousand nest on the Farallones), its birding hotspot "rocks" such as those at Land's End, and in its ocean waters. Since their diet consists primarily of fish and squid, their breeding success may be affected by food shortages during El Niño pattern years. Other threats include environmental pollution, disturbance, and predation. However, as a positive, the Alcatraz population has been quite resilient in the face of busy tourism.

American White Pelican

State Species of Concern

Pelecanus erythrorhynchos SF Watch

Though their range-wide population is now stable, impacts of human disturbance and habitat degradation remain as causes for concern within California. After breeding in the northeast corner of the state, they tend to disperse south and west, favoring coastal bays, estuaries and sloughs. Unlike the Brown Pelican, which is ubiquitous along the coast nearly year-round, the American White Pelican is an exciting rarity for SF birders. In recent years a few individuals have been visiting Crissy Lagoon where they indulge in the abundance of small fish and loaf in the safety of the lagoon.

Osprey

Pandion haliaetus SF High Priority

The breeding population of this cosmopolitan species has been growing locally, and there are now dozens of nesting sites, quite often on man-made structures, throughout the San Francisco Bay Area. Nesting attempts at Hunters Point in San Francisco have been documented since 2013, but none have been successful. Threats include conflicts with urban development, human disturbance and predation. To support pairs attempting to breed in San Francisco, active monitoring and advocacy should continue. The installation of dedicated nesting platforms is an ongoing pursuit.

Burrowing Owl (Western)Athene cunicularia hypugaea SF Priority

Federal Species of Concern State Species of Concern

Of concern primarily due to grassland habitat loss, Burrowing Owls are put at risk by human constructs like roads, where they may stage to hunt, and pesticides used to control rodent populations. They can suffer direct harm from the toxins but also from rodent eradication, being reliant on mammal burrows for suitable nesting sites. Overwintering individuals have been documented at Candlestick Point SRA, Twin Peaks, Lands End, and elsewhere. Inconspicuous, safe artificial burrows have been proposed and used by some local agencies. A coordinated monitoring effort is recommended.

Nuttall's Woodpecker

Federal Species of Concern

Dryobates nuttallii SF Priority

A species that is strongly associated with oak woodlands, the Nuttall's Woodpecker is a near endemic to California, ranging throughout the coast ranges and central valley and extending into northern Baja, Mexico. Though the current population is thought to be stable and healthy, habitat vulnerabilities such as oak diseases and climate change could have negative population impacts. An irregular visitor in San Francisco at the turn of the 21st century, Nuttall's Woodpeckers began to establish breeding territories about a decade ago and are now quite common in suitable habitat throughout the City.

Olive-sided Flycatcher Contopus cooperi SF Watch

Federal Species of Concern State Species of Concern

A bird of boreal and coniferous forest edges, this member of the peewee family is seen flycatching at the tops of tall trees in San Francisco during migration. It is a species of concern due to population decline caused by habitat loss in its Central and South American wintering grounds. According to the *San Francisco Breeding Bird Atlas*, breeding was still occurring in many areas of the City in the early 90s but has since become rare with only a handful of records from Mount Davidson and Mount Sutro in recent years, perhaps due to habitat modification and/or predation.

Bank Swallow State Threatened

Riparia riparia SF High Priority

Bank Swallows have been returning annually to forage over Lake Merced and nest in the sand cliffs at Fort Funston since at least 1905. Monitoring data from the National Park Service indicate that the colony size has drastically declined in recent years. Factors that impact the nesting colony include predation, environmental events and human activities. Fort Funston is within the Golden Gate National Recreation Area and is under the jurisdiction of the National Park Service. Greater efforts could be made to understand the causes of decline and to take mitigative actions.

Wrentit *Chamaea fasciata*

SF Priority

Federal Species of Concern

A year-round resident in dense coastal scrub, chaparral, and shrubland habitats of far western North America from Oregon to Baja, the Wrentit is known to be a very sedentary species occupying intact native plant communities. Low dispersal ability makes this species vulnerable to habitat loss, habitat fragmentation and predation, and their population has declined in recent decades. Still common in the Marin headlands and on San Bruno Mountain, a small population persists in the Presidio, and Wrentits are occasionally seen in other areas of San Francisco. Native habitat and connective

Western Bluebird

corridor restoration could benefit this species.

Sialia mexicana SF High Priority

After a prolonged absence, the Western Bluebird returned to San Francisco and successfully nested in the Presidio in 2005. Subsequent years have seen an increase in population and distribution within the City. The installation and maintenance of nest boxes has been helpful to the local success of this species which now nests in the Presidio, Golden Gate Park, Fort Mason and elsewhere. Continued monitoring and nest box maintenance can help to stabilize and sustain a healthy population.

White-crowned Sparrow (Nuttall's)

Zonotrichia leucophrys nuttalli SF Priority

Endemic to the coastal fog belt from northwestern California south to Point Conception, *Z. l. nuttalli* (the only non-migratory subspecies of White-crowned Sparrow) reside in patchy landscapes with grass, open ground, and sufficiently dense coastal chaparral shrubbery. Threats include natural predators and habitat disruption. Seemingly well suited to the urban interface, Nuttall's White-crowned Sparrows are still fairly common throughout San Francisco. Closer analysis of local populations could better inform management decisions.

Savannah Sparrow (Bryant's)

State Species of Concern

Passerculus sandwichensis alaudinus SF Priority

A non-migratory subspecies, the Bryant's Savannah Sparrow resides in tidal marshes and grasslands of the coastal California fog belt from Humboldt County to Point Conception. Habitat degradation and loss throughout their range has led to population decline and local extirpations. In San Francisco, habitat restoration along the southern waterfront (Heron's Head Park, Candlestick Point SRA, and elsewhere) may benefit this species. Continued monitoring and advocacy will lead to a better understanding of the presence of the Bryant's Savannah Sparrow and its particular habitat needs.

Song Sparrow (Alameda)

*Melospiza melodia pusillula*SF Priority

Federal Species of Concern State Species of Concern

Endemic to the south arm of San Francisco Bay, this non-migratory subspecies is restricted to tidal salt marsh habitats of suitable quality. Once abundant, the Alameda Song Sparrow has been severely impacted by habitat fragmentation and loss due to urban and industrial development since the 19th century. Other threats include invasive non-native plants, cowbird parasitism and climate change. Though the Alameda Song Sparrow does not currently have a presence in San Francisco, habitat restoration here and throught its range could benefit this species.

Bullock's Oriole

Federal Species of Concern

Icterus bullockii SF Watch

Though a widespread summer resident of riparian and open woodland throughout much of the western United States, the Bullock's Oriole is known to be a fairly common transient and an uncommon summer visitor in San Francisco. While breeding has been documented within the City, these occurrences are irregular and in very low numbers. It is unknown what effects habitat restoration, climate change, and other factors will have on the future presence of the Bullock's Oriole in San Francisco. For now, we can only remain watchfull.

Red-winged Blackbird (California Bicolored)

Agelaius phoeniceus californicus/mailliardorum SF Priority

In San Francisco, medium-sized flocks are found in open grassy areas, including picnic areas and golf courses, with Brewers Blackbirds and Brown-headed Cowbirds during the non-breeding season. During the breeding season, smaller numbers can be found nesting colonially throughout San Francisco's freshwater and saltwater marsh areas, including man-made lakes in Golden Gate Park. The species makes our special list of local concern because of past breeding habitat loss from development as well as incidences where vegetation management threatened nesting birds.

Tricolored Blackbird *Agelaius tricolor*SF Watch

Federal Species of Concern State Threatened Audubon Priority Bird

Trikes are year-round western residents, almost entirely in California, with the great majority of those in the central valley. A California threatened species being considered for endangered status, these mega-colony nesters originally bred in wetlands but, with wetland losses, had to adapt to breeding in agricultural fields. Populations have declined tenfold since the 1930s due to habitat conversion and other agriculture conflicts. A modest-sized wintering flock has roosted in the "Western Sunset" on and off since 2016.

Common Yellowthroat (San Francisco) Geothlypis trichas sinuosa

Federal Species of Concern State Species of Concern

The San Francisco Common Yellowthroat is one of two non-migratory subspecies of Yellowthroat and is a species of conservation concern whereas its migratory cousins are not. Endemic to the San Francisco Bay Area, the population has declined over 80% in the last century due to significant loss of its preferred habitat, marshes and other areas of dense vegetation near water. For breeding individuals within San Francisco, most, if not all, rely on Lake Merced for sufficient habitat space to be successful.

Yellow Warbler Setophaga petechia SF Watch

SF Priority

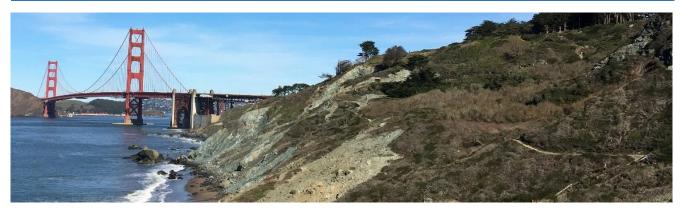
State Species of Concern Audubon Priority Bird

Once considered to be a common summer resident, the Yellow Warbler is now seemingly extirpated as a breeding species from San Francisco. Population declines throughout much of California have been attributed to human landscape modification and nest parasitism by Brown-headed Cowbirds. Restoration of native woodland and willow riparian habitat of sufficient quality may avail future repopulation. Any detection of this species in June should be carefully investigated.



Mixed shorebird flock, Ocean Beach

SECTION 4. Habitat Areas



Coastal Bluffs, Presidio Photo by Matthew Zlatunich

San Francisco harbors a wide variety of natural areas and parklands which range in size and quality, from the raw wilderness of the Farallon Islands to the rooftop gardens amongst the downtown skyscrapers. Table 3 includes habitat areas that are specifically managed, in full or in part, to benefit native flora and fauna. A few areas are well preserved

and support largely intact ecosystems; many are works in progress that have benefitted from restoration efforts and hold promising opportunities; some are mere remnants that meagerly persist. Each listing includes the jurisdictional authority and select habitats and species of conservation focus.

Table 3. San Francisco habitat areas of conservation concern.

LOCALITY (JURISDICTIONAL AUTHORITY)	CONSERVATION FOCUS
Alameda Point (US Navy)	HABITAT: open ground, grassland, wetland, open water. SPECIES: Least Tern, Elegant Tern, Caspian Tern.
Alcatraz Island (National Park Service)	HABITAT: bay island, rocky shoreline, marine terrace. SPECIES: Black Oystercatcher, Western Gull, California Gull, Brandt's Cormorant, Burrowing Owl.
Balboa Natural Area (SF Recreation & Parks Dept.)	HABITAT: coastal dune scrub. SPECIES: Nuttall's White-crowned Sparrow.
Bayview Park (SF Recreation & Parks Dept.)	HABITAT: coastal scrub, oak woodland. SPECIES: Nuttall's Woodpecker, Wrentit.

Table 3. Continued.

LOCALITY (JURISDICTIONAL AUTHORITY)	CONSERVATION FOCUS
Bernal Heights Park (SF Recreation & Parks Dept.)	HABITAT: grassland, coastal scrub, oak woodland. SPECIES: Allen's Hummingbird, Burrowing Owl, Nuttall's Woodpecker, Nuttall's White-crowned Sparrow.
Billy Goat Hill (SF Recreation & Parks Dept.)	HABITAT: grassland, coastal scrub. SPECIES: Allen's Hummingbird, Nuttall's White-crowned Sparrow.
Bison Paddock, GG Park (SF Recreation & Parks Dept.)	HABITAT: grassland, coastal scrub. SPECIES: Western Bluebird, Nuttall's White-crowned Sparrow.
Brooks Park (SF Recreation & Parks Dept.)	HABITAT: grassland. SPECIES: Allen's Hummingbird, Nuttall's White-crowned Sparrow.
Buena Vista Park (SF Recreation & Parks Dept.)	HABITAT: oak woodland, coastal scrub. SPECIES: Allen's Hummingbird, Nuttall's Woodpecker, Western Bluebird.
Candlestick Point SRA (CA Dept. of Parks & Recreation)	HABITAT: coastal scrub, grassland, salt marsh. SPECIES: Allen's Hummingbird, American Avocet, Black Oystercatcher, Burrowing Owl, Bryant's Savannah Sparrow.
Chain of Lakes (SF Recreation & Parks Dept.)	HABITAT: freshwater lake, freshwater marsh, willow riparian, oak woodland. SPECIES: Allen's Hummingbird, Nuttall's Woodpecker, California Bicolored Blackbird.
Corona Heights Park (SF Recreation & Parks Dept.)	HABITAT: grassland, coastal scrub, oak woodland. SPECIES: Nuttall's Woodpecker, Nuttall's White-crowned Sparrow.
Dorothy Erskine Park (SF Recreation & Parks Dept.)	HABITAT: grassland, coastal scrub. SPECIES: Nuttall's White-crowned Sparrow.
Duncan-Castro (SF Recreation & Parks Dept.)	HABITAT: grassland, coastal scrub. SPECIES: Nuttall's White-crowned Sparrow.
Edgehill Mountain (SF Recreation & Parks Dept.)	HABITAT: coastal scrub, oak woodland. SPECIES: Nuttall's Woodpecker, Nuttall's White-crowned Sparrow.

Table 3. Continued.

LOCALITY (JURISDICTIONAL AUTHORITY)	CONSERVATION FOCUS
Fairmount Park (SF Recreation & Parks Dept.)	HABITAT: grassland, oak woodland. SPECIES: Allen's Hummingbird, Nuttall's Woodpecker, Nuttall's White-crowned Sparrow.
Farallon Islands (US Fish & Wildlife Service)	HABITAT: oceanic island, rocky shoreline, marine terrace. SPECIES: Black Oystercatcher, Cassin's Auklet, Tufted Puffin, Western Gull, Ashy Storm-Petrel, Brandt's Cormorant, Burrowing Owl.
Fort Funston (National Park Service)	HABITAT: sandstone cliffs, coastal dune scrub. SPECIES: California Quail, Allen's Hummingbird, Bank Swallow, Burrowing Owl, Nuttall's White-crowned Sparrow.
Glen Canyon Park (SF Recreation & Parks Dept.)	HABITAT: willow riparian, coastal scrub, grassland. SPECIES: Allen's Hummingbird, Nuttall's Woodpecker, Wrentit, Nuttall's White-crowned Sparrow.
Golden Gate Heights, Grandview Park, Hawk Hill, Rocky Outcrop (SF Recreation & Parks Dept.)	HABITAT: dune scrub, grassland, oak woodland. SPECIES: Allen's Hummingbird, Nuttall's White-crowned Sparrow.
Golden Gate Park (Oak Woodland, Lily Pond, Whiskey Hill, Strawberry Hill) (SF Recreation & Parks Dept.)	HABITAT: freshwater lakes, freshwater marsh, willow riparian, coastal scrub, oak woodland. SPECIES: California Quail, Allen's Hummingbird, Nuttall's Woodpecker, Nuttall's White-crowned Sparrow.
Great Highway (SF Recreation & Parks Dept.)	HABITAT: connective corridor, coastal dune scrub. SPECIES: Nuttall's White-crowned Sparrow.
Heron's Head Park (Port of San Francisco)	HABITAT: salt marsh, coastal scrub. SPECIES: Ridgway's Rail, American Avocet, Black Oystercatcher, Bryant's Savannah Sparrow, Alameda Song Sparrow, California Bicolored Blackbird.
Hunters Point (US Navy/SF-OCII)	HABITAT: salt marsh, coastal scrub. SPECIES: Ridgway's Rail, American Avocet, Osprey, Bryant's Savannah Sparrow, Alameda Song Sparrow.

Table 3. Continued.

LOCALITY (JURISDICTIONAL AUTHORITY)	CONSERVATION FOCUS
India Basin Shoreline Park (SF Recreation & Parks Dept.)	HABITAT: salt marsh, coastal scrub. SPECIES: Ridgway's Rail, American Avocet, Bryant's Savannah Sparrow, Alameda Song Sparrow.
Interior Greenbelt (SF Recreation & Parks Dept.)	HABITAT: coastal scrub, oak woodland, willow riparian. SPECIES: Allen's Hummingbird, Wrentit, Nuttall's White-crowned Sparrow.
Kite Hill (SF Recreation & Parks Dept.)	HABITAT: grassland, coastal scrub. SPECIES: Nuttall's White-crowned Sparrow.
Laguna Honda Reservoir (SF Public Utilities Commission)	HABITAT: freshwater lake, willow riparian, coastal scrub, oak woodland. SPECIES: California Quail, Allen's Hummingbird, Nuttall's White-crowned Sparrow.
Lake Merced (SF Public Utilities Commission/SF Recreation & Parks Dept.)	HABITAT: freshwater lake, freshwater marsh, willow riparian, coastal scrub, oak woodland. SPECIES: Ruddy Duck, California Quail, Western Grebe, Clark's Grebe, Allen's Hummingbird, Nuttall's Woodpecker, Bank Swallow, Wrentit, San Francisco Common Yellowthroat.
Lands End/Sutro Heights Park (National Park Service)	HABITAT: oceanic rocky shoreline, oceanic sand beach, sea cliffs, coastal scrub. SPECIES: Allen's Hummingbird, Black Oystercatcher, Brandt's Cormorant, Burrowing Owl, Nuttall's Woodpecker, Wrentit, Western Bluebird, Nuttall's White-crowned Sparrow.
McLaren Park (SF Recreation & Parks Dept.)	HABITAT: grassland, willow riparian, coastal scrub, oak woodland. SPECIES: California Quail, Nuttall's Woodpecker, Wrentit, Western Bluebird, Nuttall's White-crowned Sparrow.
Mount Davidson Park (SF Recreation & Parks Dept.)	HABITAT: coastal scrub, grassland. SPECIES: Allen's Hummingbird, Wrentit, Nuttall's White-crowned Sparrow.

Table 3. Continued.

LOCALITY (JURISDICTIONAL AUTHORITY)	CONSERVATION FOCUS
Mount Sutro Open Space Reserve (UCSF)	HABITAT: coastal scrub, oak woodland, willow riparian. SPECIES: Allen's Hummingbird, Nuttall's Woodpecker, Nuttall's White-crowned Sparrow.
Ocean Beach (National Park Service)	HABITAT: oceanic sand beach, coastal dunes. SPECIES: Snowy Plover, Marbled Godwit, Heermann's Gull, California Gull, Elegant Tern.
Palou-Phelps (SF Recreation & Parks Dept.)	HABITAT: grassland, coastal scrub. SPECIES: Nuttal's White-crowned Sparrow.
Park Presidio Boulevard (SF Recreation & Parks Dept.)	HABITAT: connective corridor, oak woodland, coastal scrub. SPECIES: California Quail, Nuttall's White-crowned Sparrow.
Pier 94 Wetlands (Port of San Francisco)	HABITAT: salt marsh, coastal scrub. SPECIES: Ridgeway's Rail, American Avocet, Black Oystercatcher, Bryant's Savannah Sparrow, Alameda Song Sparrow, California Bicolored Blackbird.
Pine Lake Park (SF Recreation & Parks Dept.)	HABITAT: freshwater lake, willow riparian, coastal scrub. SPECIES: Nuttall's White-crowned Sparrow, California Bicolored Blackbird.
Presidio Area A (National Park Service)	HABITAT: bayshore beach, coastal dunes, coastal lagoon, tidal marsh, willow riparian, rocky shoreline, oceanic sandy beach, coastal scrub. SPECIES: California Quail, Allen's Hummingbird, Black Oystercatcher, Snowy Plover, Marbled Godwit, Elegant Tern, Burrowing Owl, Wrentit, Western Bluebird, Nuttall's White-crowned Sparrow.
Presidio Area B (Presidio Trust)	HABITAT: willow riparian, brackish marsh, freshwater lake, freshwater marsh, coastal scrub, oak woodland, serpentine grassland, coastal redwood. SPECIES: Ruddy Duck, California Quail, Allen's Hummingbird, Nuttall's Woodpecker, Western Bluebird, Nuttall's White-crowned Sparrow, California Bicolored Blackbird.

Table 3. Continued.

LOCALITY (JURISDICTIONAL AUTHORITY)	CONSERVATION FOCUS
Sunset Boulevard (SF Dept. of Public Works)	HABITAT: connective corridor, oak woodland, coastal scrub. SPECIES: California Quail, Western Bluebird.
Tank Hill (SF Recreation & Parks Dept.)	HABITAT: coastal scrub, grassland, oak woodland. SPECIES: Nuttall's White-crowned Sparrow.
Treasure Is./Yerba Buena Is. (Treasure Is. Dev. Authority)	HABITAT: coastal scrub, oak woodland, willow riparian, salt marsh. SPECIES: Allen's Hummingbird, Osprey, Nuttall's White-crowned Sparrow.
Twin Peaks (SF Recreation & Parks Dept.)	HABITAT: grassland, coastal scrub. SPECIES: Burrowing Owl, Nuttall's White-crowned Sparrow.
Yosemite Slough (CA Dept. of Parks & Recreation)	HABITAT: salt marsh, coastal scrub. SPECIES: Ridgway's Rail, American Avocet, Bryant's Savannah Sparrow, Alameda Song Sparrow.
15th Avenue Steps (SF Recreation & Parks Dept.)	HABITAT: coastal scrub, oak woodland. SPECIES: Nuttall's White-crowned Sparrow.



Southeast Farallon Island, with Black-footed Albatross

RESOURCES

- Audubon Guide to North American Birds. www.audubon.org/bird-guide
- Bangert, Richard. New Terns Nesting at Alameda Point: Caspian Terns and Elegant Terns join struggling Least Terns, Alameda Post, May 16, 2022.
- Bartley, E.; M. Chambers, A. Hopkins, N. Weeden, M. Zlatunich. *A Field Guide to 100 Birds of Heron's Head.* Port of San Francisco et al. 2006.
- BirdLife International Data Zone. datazone.birdlife.org/home
- BirdNote. September 11, 2017. "Where Do Ospreys Go in the Winter?", National Audubon Society, www.audubon.org/news/where-do-ospreys-go-winter
- California Natural Diversity Database (CNDDB). April 2022. State and Federally Listed

 Endangered and Threatened Animals of California. California Department of Fish
 and Wildlife. Sacramento, CA.
- DeBare, Ilana. "Welcoming Ospreys to the San Francisco Bay," in *The Gull*, Volume 99 Number 4, Golden Gate Audubon Society, Fall 2014.
- eBird, The Cornell Lab of Ornithology. www.ebird.org
- Environmental Science Associates. "Yerba Buena Island: Habitat Management Plan". Prepared for Treasure Island Community Development. 2011.
- Fischer, Chris C, and Joseph Morlan. *Birds of San Francisco and the Bay Area*. Lone Pine Publishing, 1996.
- Fuller, Harry G. San Francisco's Natural History: Sand Dunes to Streetcars. Nebulosa Press, 2017.
- Geupel, G.R., G. Ballard, M.K. Chase. 2002. "Wrentit (*Chamaea fasciata*)". *In The Coastal Scrub and Chaparral Bird Conservation Plan: a strategy for protecting and managing coastal scrub and chaparral habitats and associated birds in California*.

 California Partners in Flight. http://www.prbo.org/calpif/htmldocs/scrub.html

- Graham, A. and N. Thorngate. 2005. "Nuttall's White-crowned Sparrow (Zonotrichia leucophrys nuttalli)". In The Coastal Scrub and Chaparral Bird Conservation Plan: a strategy for protecting and managing coastal scrub and chaparral habitats and associated birds in California. California Partners in Flight. http://www.prbo.org/calpif/htmldocs/scrub.html
- Howell, J.A., D. LaClergue, S. Paris, W.I. Boarman, A.R. DeGange, and L.C. Binford, 1983. First Nests of Heermann's Gull in the United States. Western Birds 14:39-46.
- iNaturalist, biological database. www.inaturalist.org
- Mailliard, Joseph. *Handbook of the Birds of Golden Gate Park, San Francisco.* California Academy of Sciences, 1930.
- Michel, N.L., S.P. Saunders, T.D. Meehan, and C.B. Wilsey. 2021. *Audubon's Priority Birds Report: 2021.* National Audubon Society, New York, NY.
- National Park Service. "Bank Swallow Monitoring at Fort Funston, Golden Gate National Recreation Area 1993-2006." NPS-GGNRA, 2007.
- Port of San Francisco. Draft Waterfront Plan Southern Waterfront . June 2019.
- San Francisco Estuary Institute. 2022. *Native Habitat and Biodiversity Long-Term Monitoring*Study 2021. A SFEI Resilient Landscapes Program report developed for The Presidio

 Trust. San Francisco Estuary Institute-Aquatic Science Center, Richmond, CA
- San Francisco Recreation & Parks Department. "Significant Natural Resource Areas Management Plan, February, 2006." SFRPD, 2006.
- SF Bay Ospreys. www.sfbayospreys.org
- sfBirds.net San Francisco County Bird List, May 2020.
- SF Planning. San Francisco General Plan Recreation and Open Space Element. April 2014. Updated January 2019.
- SF Planning, et al. Islais Creek Southeast Mobility Adaptation Strategy. June 30, 2021.

- Shuford, W.D., and T. Gardali, editors. 2008. *California Bird Species of Special Concern: A ranked assesment of species, subspecies, and distinct populations of birds of immediate conservation concern in California*. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Wildlife, Sacramento.
- Singer, Dan, and Mark Eaton, editors. San Francisco Breeding Bird Atlas. San Francisco Field Ornithologists, www.sffo.org, 2003. Unpublished draft.
- Tessler, D.F., J.A. Johnson, B.A. Andres, S. Thomas, and R.B. Lanctot. 2010. *Black Oystercatcher (Haematopus bachmani) Conservation Action Plan.* Version 1.1. International Black Oystercatcher Working Group, Alaska Department of Fish and Game, Anchorage, Alaska, U.S. Fish and Wildlife Service, Anchorage, Alaska, and Manomet Center for Conservation Sciences, Manomet, Massachusetts. 115 pp. http://www.whsrn.org/conservation-plan

The Cornell Lab. All About Birds. www.allaboutbirds.org

The Cornell Lab, Birds of the World, www.birdsoftheworld.org

- U.S. Fish and Wildlife Service. 2007. *Recovery Plan for the Pacific Coast Population of the Western Snowy Plover (Charadrius alexandrinus nivosus)*. In 2 volumes. Sacramento, California. xiv + 751 pages.
- U.S. Fish and Wildlife Service. 2020. *California least tern (Sternula antillarum browni)*5-year Review: 2020 Summary and Evaluation . Carlsbad Fish and Wildlife Office,
 Carlsbad, CA. 120 pp.
- U.S. Fish and Wildlife Service. 2021. *Birds of Conservation Concern 2021*. United States

 Department of the Interior, U.S. Fish and Wildlife Service, Migratory Birds, Falls

 Church, Virginia. http://www.fws.gov/birds/management/ managed-species/birds-of-conservation-concern.php