

San Diego Bay  
Avian Species Surveys  
2016-2017



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*Cover photo courtesy of Timothy Burr, 2017. Bufflehead.*



Long-Billed Curlew. © Timothy Burr, 2017.

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Black Skimmers. © Timothy Burr, 2017.

## Executive Summary

This report details results from the San Diego Bay avian surveys conducted between July 2016 and June 2017. This work was jointly funded by the Port of San Diego (Port) and the U.S. Navy (Navy) Naval Bases Coronado, San Diego, and Point Loma, in San Diego, California.

The goal of this project was to: *Establish a scientifically defensible baseline and conduct a long-term trend monitoring program to census water-dependent birds (shorebirds, waterfowl, gulls, terns, and others) of San Diego Bay to assist in the protection and management of the bay and its associated species.*

The vision of the Port and Navy was to conduct a comprehensive survey of avian use of San Diego Bay that covered the entire bay in a single year, and contained focused methods to detect specific classes of birds (i.e., shorebirds, waterfowl, and seabirds), and detect their trends over time. The sampling protocol was developed through a collaborative process among biologists with expertise on local avian fauna. Finally, the survey protocol was developed collaboratively with the U.S. Fish and Wildlife Service Refuges, a landowner in south San Diego Bay. Initial surveys under this methodology were completed in 2006-07. The survey was repeated in 2009-10, and detailed here is the third iteration of this long-term monitoring project.

Shoreline surveys took place monthly between July 2016 and June 2017, conducted in the four hours before low tide. These ebbing tide surveys were designed to capture bird use of foraging habitats as mudflats and other substrates became exposed by the receding water. Quarterly peaking tide surveys were also conducted, over the crest of the tide. These surveys were designed to observe high tide refugia and congregation areas, and bird use areas which would be missed during ebbing tide surveys. Mid-water surveys to detect the presence of waterfowl occurred monthly between November 2016 and February 2017, when maximum migratory waterbird presence was expected. To complete the survey within a morning window, two boats were deployed. One started at the mouth of the bay and the other at the south end of the bay near the salt ponds, following established routes, and meeting in the bay's center. Point counts were conducted at 23 locations along the shoreline routes where specific distance of observation is recorded for a timed duration. Point counts allow for calculation of bird density that can be compared to other locations and over time at the same location due to this standardization, unlike the shoreline surveys that cover differing acreages and extend for variable survey times. These results represent an index and not a true measure of density because they do not account for bias related to probability of detection.

A total of 564,752 individual bird observations, representing 161 distinct species, were recorded during the shoreline and mid-water surveys in 2016-17. Additionally, during the point counts 102,944 individual observations were recorded during point counts (as the point counts were taken along with the shoreline survey these numbers are not independent). The point counts are a subset of the shoreline survey in that they likely counted the same birds, so are not included in total observations reported.

A total of 556,619 observations were made during the shoreline portion of the 2016-17 survey effort. Of these, 434,594 birds and 154 species were observed during the ebbing tide surveys and 122,025 birds and 154 species were observed during the peaking tide surveys. Birds were generally denser along extensive mudflat areas in the south bay, in some salt ponds, and around the bait barge in north bay. The salt ponds had the greatest density of observed birds, while the north-central and south-central regions had the lowest density.

The number of individual birds observed per month during the ebbing tide surveys varied considerably with a high of 69,752 in December 2016 followed by a low of 5,992 in May 2017 (see Table 3-2). Overall, trends were very consistent with the 2006-07 and 2009-10 surveys. For both the ebbing and peaking tide surveys, the highest numbers of birds were observed in late fall/early winter, while a considerable drop occurred in the late spring/summer period (see Table 3-3). Comparing abundance in bay subregions among the three survey periods, the numbers of birds observed in the salt works increased dramatically since 2006-07 (see Figure 3-2). The increase in numbers of birds at the salt works is likely a result of habitat restoration efforts to re-open some of the ponds to tidal flushing, providing additional foraging area.

Bird densities during the ebbing versus the peaking tide surveys were noticeably different at several locations in the bay (see Map 3-3). The bait barge at the north end of the bay, as well as several mudflat and marsh areas in the south bay, accumulated birds during the ebbing tide survey, particularly in the southeastern portion of the bay. During the peaking tide survey, the bird density was much higher in the interior salt ponds, which were a key concentration area. Additional peaking tide concentrations occurred in a few areas along the Coronado shore, near the enhancement island in the central bay, and in many of the harbors throughout San Diego Bay.

Several species showed marked differences in overall abundance during the shoreline ebbing tide surveys from 2006-07 to 2016-17 (see Table 3-5). A total of 14 species were at least 20% less abundant in 2016-17, with Red-necked Phalaropes (*Phalaropus lobatus*) showing the greatest decline from 13,974 observed in 2006-07 to only 1,270 observed in 2016-17. Three other species were at least 50% less abundant in 2016-17 (Marbled Godwit [*Limosa fedoa*], Ring-billed Gull [*Larus delawarensis*], and Bufflehead [*Bucephala albeola*]). Five species were at least twice as abundant in 2016-17 (Belding's Savannah Sparrow [*Passerculus sandwichensis beldi*], Royal Tern [*Thalasseus maxima*], Least Sandpiper [*Calidris minutilla*], Brant [*Branta bernicla*], and Elegant Tern [*T. elegans*]), while seven other species increased by at least 50% (American Avocet [*Recurvirostra americana*], California Least Tern [*Sternula antillarum browni*], Northern Shoveler [*Anas chrypeata*], Brandt's Cormorant [*Phalacrocorax penicillatus*], California Gull [*Larus californicus californicus*], Eared Grebe [*Podiceps nigricollis*], Western Sandpiper [*Calidris mauri*]).

Point count surveys were conducted simultaneously with shoreline surveys and constitute a subsample of the shoreline effort with standardized survey area and timed duration. Results showed a similar pattern between the two, though all metrics were slightly lower due to the smaller area covered and time limit to the point counts. Densities are reported in Section 3.3.1 and Appendix E.

A total of 8,133 individual birds were observed during the mid-water surveys, with 32 species recorded. The number of individual birds observed during the mid-water surveys has declined with each subsequent survey since 2006-07 (see Table 3-7). Like in previous survey years, the number of individual birds observed peaked in January. Birds observed during the mid-water surveys were predominantly waterfowl (81.4% of all observations) and seabirds (18.4% of all observations) (see Table 3-9). Surf Scoters (*Melanitta perspicillata*) were the most abundant species, with over 5,600 observations, with Brants (645 birds observed) and Western Gulls (*Larus occidentalis nymanii*; 474 birds observed) the next most abundant (see Table 3-10).

A decline in the numbers of waterfowl seen during the mid-water surveys in 2009-10 compared to 2006-07 continued in 2016-17, dropping to less than half of what had been seen in 2009-10. Much of the decline was due to a halving of the Surf Scoter count. There was a slight increase in certain waterfowl (scaup [*Aythya* sp.] and Redhead [*Aythya americana*]).

It is recommended that these surveys continue every three to five years. In addition, annual or biennial point count surveys would allow for the discernment of natural variation in observer coverage and population size and would facilitate interpretation of trends in the five-year surveys. Recommendations for the future as well as a summary of issues encountered during this survey are discussed more fully in Chapter 4. While the high value of these surveys remains their long-term and comprehensive nature, much benefit could be extracted from the data sets by analyzing correlations between habitat use and types of habitat, and peaking tide versus ebbing tide use areas and movement between them. The rich data set could be used for many further analyses, including comparison to the trends along the Pacific Flyway.

Data sets are stored and delivered in three separate Microsoft Excel files for all three survey events from 2006-07, 2009-10, and the current 2016-17.

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Lesser Scaup. © Timothy Burr, 2017.

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**Acronyms and Abbreviations**

AOU	American Ornithologists' Union
CDFW	California Department of Fish and Wildlife
AKN	Avian Knowledge Network
BMDE	Bird Monitoring Data Exchange
GPS	Global Positioning System
ha	hectare(s)
INRMP	Integrated Natural Resources Management Plan
MLLW	mean lower low water
NASSCO	National Steel and Shipbuilding Company
NAVFAC	Naval Facilities Engineering Command
Navy	U.S. Department of the Navy
NRDA	Natural Resource Damage Assessment
Port	Port of San Diego
SCB	Southern California Bight
SDNHM	San Diego Natural History Museum
USFWS	U.S. Fish and Wildlife Service

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Western Snowy Plover. © Timothy Burr, 2017.

## 1.0 Introduction

This report details results from the San Diego Bay avian surveys conducted between July 2016 and June 2017, in support of the 2013 San Diego Bay Integrated Natural Resources Management Plan (INRMP) (Port of San Diego [Port] and U.S. Department of the Navy [Navy] 2013). This work was jointly funded by the Port and the Navy in San Diego, California. Surveys under this long-term program were initially completed in 2006-07, then repeated in 2009-10. Those detailed herein represent the third iteration of this long-term monitoring project.

The vision of the Port and Navy was to develop the first comprehensive survey of avian species in a single year that covered the entire bay, utilizing focused methods to detect multiple classes of bay-dependent birds (i.e., shorebirds, waterfowl, and seabirds). The methods in this survey are intended for future long-term monitoring as well as for comparing these results to those of other major survey efforts regionally. For this reason, the sampling protocol was developed through a collaborative process among biologists with expertise on local avian fauna, with the San Diego Natural History Museum (SDNHM), and with the U.S. Fish and Wildlife Service (USFWS) Refuges, a landowner in south San Diego Bay. Refuge personnel surveyed the salt ponds, using this protocol, concurrently with the Navy and Port sponsored bay-wide surveys.



Photo 1-1. View of tidal marshlands across from Pepper Park in 2016.

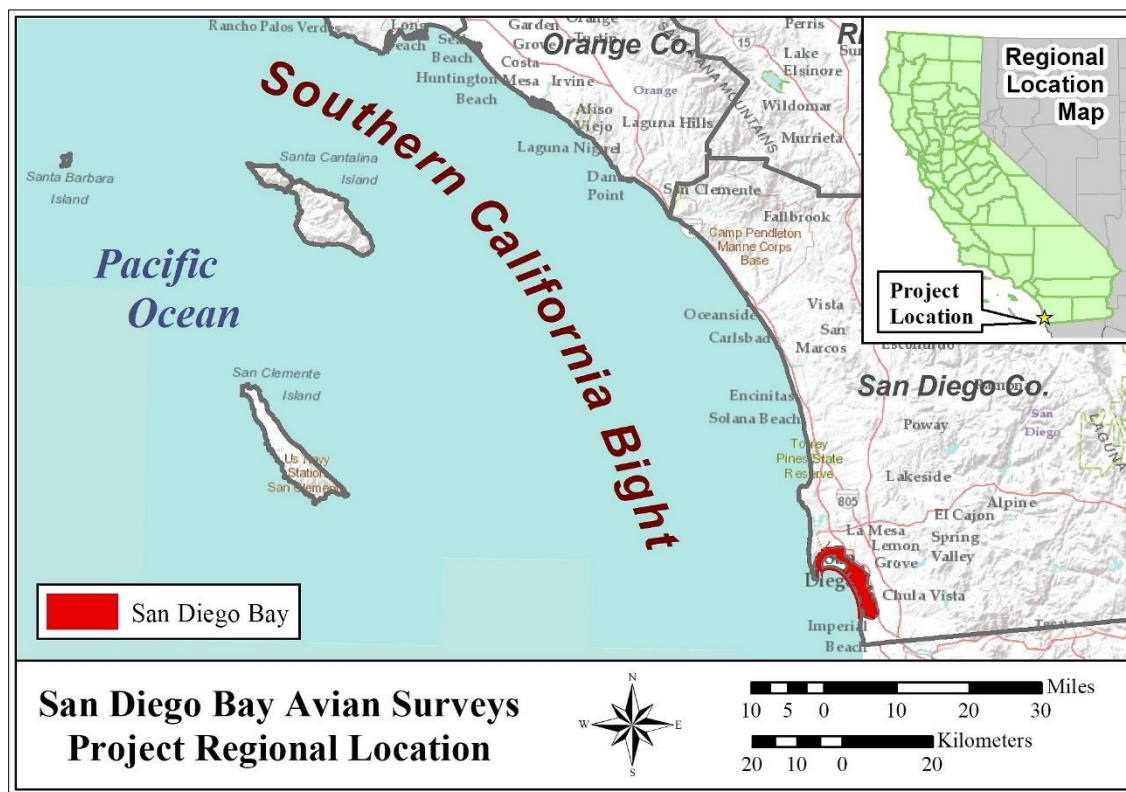
## 1.1 Project Goals and Objectives

The goal of this project was to: *Establish a scientifically defensible baseline and conduct a long-term trend monitoring program to census water-dependent birds (shorebirds, waterfowl, gulls, terns, and others) of San Diego Bay to assist in the protection and management of the bay and its associated species.*

To achieve this goal, the survey design sought to capture the density and distribution of avian species among bay subregions and among census locations throughout a year-long cycle of monitoring. Repeating these surveys every three to five years would allow the detection of a significant change in the population of key species utilizing the bay (defined in this report as a 20% change in abundance between surveys). Identifying species experiencing a long-term decline (or increase) in population will allow agencies managing the natural resources of the bay to adapt management strategies to focus on these species and their habitats.

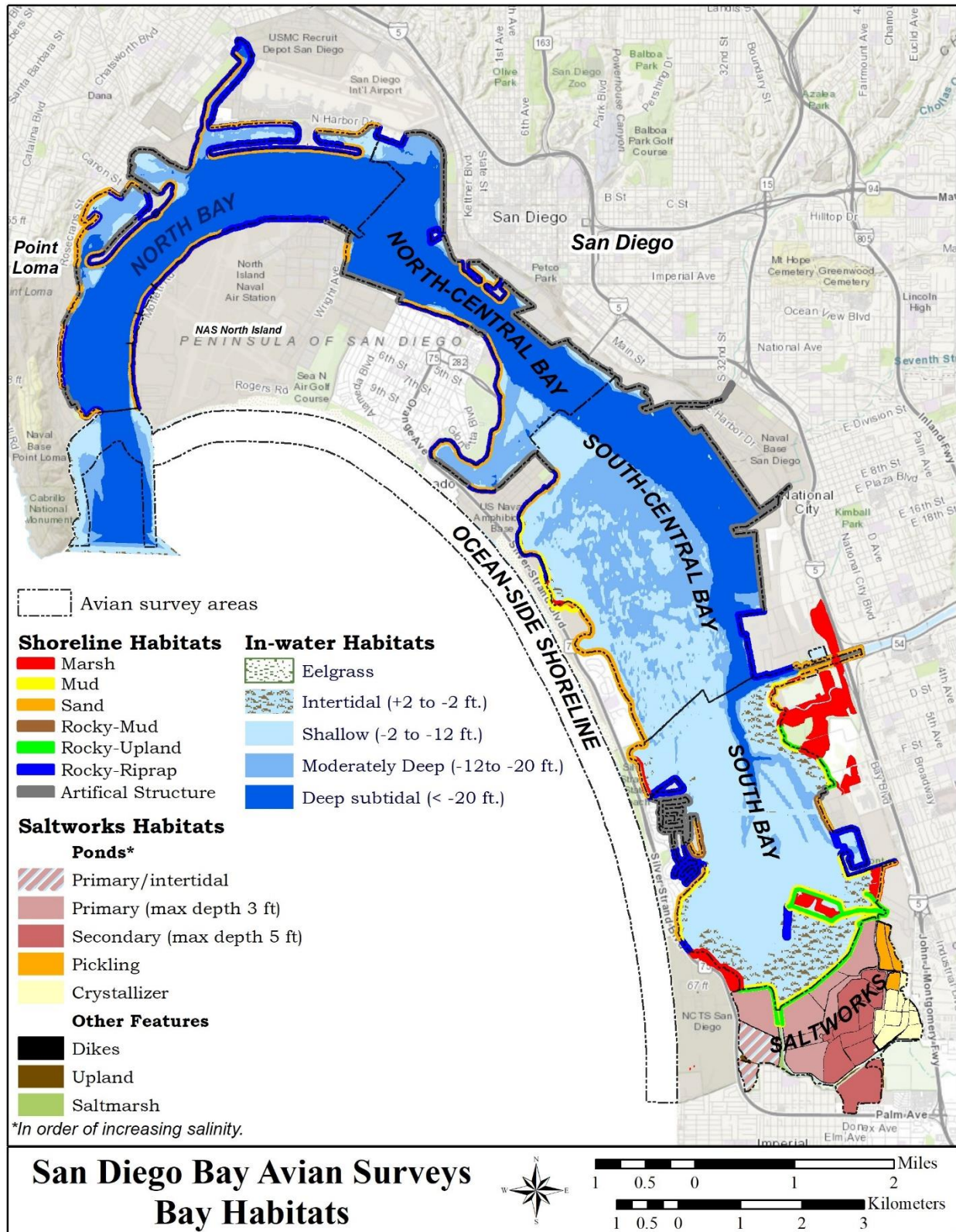
## 1.2 Study Area Setting

San Diego Bay is part of the greater ecosystem of the Southern California Bight (SCB) (Map 1-1), which encompasses the region from Point Conception, California to Punta Banda, Mexico. San Diego Bay covers 14,115 acres (5,714 hectares [ha]) of water and 4,940 acres (2,000 ha) of tidelands (including the saltworks in the southern end of the bay) (Port and Navy 2013) (Map 1-2). This project encompassed the entirety of the San Diego Bay area, from the open water to the intertidal shorelines and immediately adjacent uplands, as well as the coastal strand on the west side of the Coronado peninsula.



Map 1-1. San Diego Bay avian surveys regional context.





Map 1-2. San Diego Bay habitats.

Due to its position along the transition zone between cold subarctic waters and warmer subtropical water, San Diego Bay experiences a large variability in the structure of its bird communities throughout the seasons (USFWS 2005). The bay is a part of the Pacific Flyway used by millions of birds traveling between northern breeding grounds and southern wintering sites. It supports large populations of over-wintering birds depending on bay resources for food, shelter, resting, and staging before migration (Hickey et al. 2003). San Diego Bay provides the largest expanse of protected bay waters in southern California to migrants on the Flyway (Hickey et al. 2003). The bay also serves as the northern range for tropical species, including some that breed and nest locally.

More than 300 bird species have been documented to use the bay (Port and Navy 2013) with close to half directly depending on it, sometimes in large numbers (Macdonald et al. 1990; Page et al. 1999; USFWS 1994; Terp 1998; Tierra Data Inc. 2009, 2011). The majority, representing 30 families, are migratory and use the bay as a winter stopover, while others come to nest or are resident species present year-round. Some migrants not usually found in the area, disoriented in their travel, on the edges of their range, or simply looking for suitable habitat, are regarded as vagrants. Although vagrants are not ordinarily regarded as dependent on the bay, a considerable number pass through and visit each year (Unitt 2004).

Migrant species regularly observed in high abundance on the San Diego Bay include Eared Grebe (*Podiceps nigricollis*), Western Sandpiper (*Calidris mauri*), and Red-necked Phalarope (*Phalaropus lobatus*). When compared to other midwinter populations of the SCB, the bay provides habitat for more than half of the entire midwinter duck population (USFWS 1995). A comparison to the 1994 winter waterbird population estimate of the Pacific Flyway and the state of California (Bartonek 1994) showed the bay also supporting a substantial proportion of midwinter seabird and waterbird populations.

San Diego Bay provides breeding, wintering, and/or stopover habitat for most shorebirds identified in the Southern Pacific U.S. Shorebird Conservation Plan as retaining primary importance within the region and has been identified as a Western Hemisphere Shorebird Reserve Network site of Regional Importance (Hickey et al. 2003). The bay supports eight of the ten species for which coastal habitats in the Southern Pacific Region are especially important, including the Black-bellied Plover (*Pluvialis squatarola*), Western Snowy Plover (*Charadrius nivosus nivosus*), Semipalmated Plover (*Charadrius semipalmatus*), Willet (*Tringa semipalmata*), Marbled Godwit (*Limosa fedoa*), Black Turnstone (*Arenaria melanocephala*), Short-billed Dowitcher (*Limnodromus griseus*), and Red-necked Phalarope (Hickey et al. 2003). The bay supports significant percentages of Black-necked Stilt (*Himantopus mexicanus*) and Willet in the spring, when over 5% of these species' populations are present; and for Red Knot (*Calidris canutus*) in the fall, spring, and winter, when almost a third of the U.S. Pacific Coast population can be present in the bay (Hickey et al. 2003).

Most shorebirds form roosting flocks during high tide, then disperse to forage on intertidal mudflats as prey are exposed with the ebbing tide. This results in concentrations of shorebirds on beaches, salt ponds, levees, and marsh edges during tidal peaks, as well as in shifting and movements as the tides change, and in concentrations on shorelines and flats as tides ebb (SDNHM and Avian Research Associates 2014; Burger and Olla 1984; Colwell 2010; Recher 1966; Stenzel et al. 2002; Warnock and Takekawa 1995). Significant numbers of seabirds and shorebirds establish nests on the salt pond levees each spring and summer (USFWS 1994; Patton 1999, 2012). These include the federally and state



endangered California Least Tern (*Sternula antillarum browni*) and federally threatened Western Snowy Plover. Large multispecies breeding colonies include Double-crested Cormorant (*Phalacrocorax auritus*), Caspian Tern (*Hydroprogne caspia*), Royal Tern (*Thalasseus maxima*), Elegant Tern (*T. elegans*), Forster's Tern (*Sterna forsteri*), Gull-billed Tern (*Geochelidon nilotica*), and Black Skimmer (*Rynchops niger*). American Avocet (*Recurvirostra americana*) and Black-necked Stilt nest on the levees throughout the salt ponds. Smaller numbers of nesting Mallard (*Anas platyrhynchos*), Gadwall (*A. strepera*), and Killdeer (*Charadrius vociferus*) are scattered throughout the salt ponds. Widespread nesting songbirds include Horned Lark (*Eremophila alpestris*) and state endangered Belding's Savannah Sparrow (*Passerculus sandwichensis beldi*) (SDNHM and Avian Research Associates 2014).

San Diego Bay has been divided into four separate hydrodynamic regions based on water circulation, temperature, and salinity. These four regions are the marine, thermal, seasonally hypersaline, and seasonally estuarine (Largier 1995; Largier et al. 1996). For our efforts, these areas correspond to the north, north-central, south-central, and south regions of the bay, with additional survey areas in the salt works and the ocean outside of the bay (see Map 1-2).



**Photo 1-2. Intertidal mudflats near Chula Vista Marina.**

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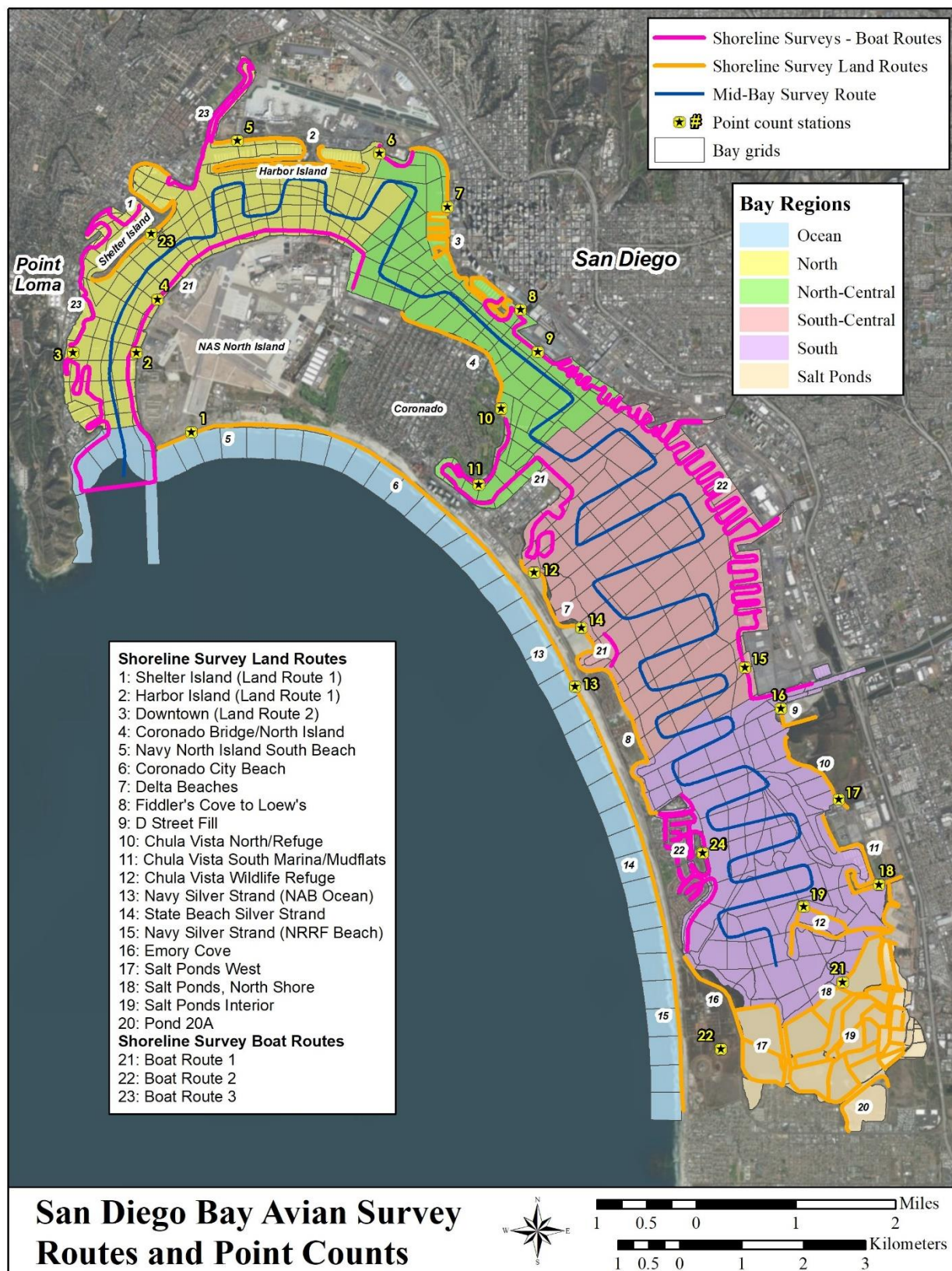
## 2.0 Methods

The 2006-07, 2009-10, and 2016-2017 surveys are the most comprehensive ever undertaken in San Diego Bay, with methods specifically targeted for maximum detectability of water-dependent birds and how they use habitats of the bay. Covering the entire bay in one year, the surveys documented abundance and richness of all birds in all parts of the bay, as well as along the ocean shoreline of the Coronado peninsula.

Methods for this avian survey were consistent with those utilized in 2006-07 and 2009-10. The survey protocol was developed collaboratively with expert San Diego Bay area birders, the SDNHM, and the USFWS Ecological Services and Refuges. The criteria used to develop methods are described in Tierra Data Inc. (2009). A key objective was to allow detection of a significant change in the population of key species utilizing the bay, defined as a 20% change in abundance between survey years. Methods were developed to focus detection of aquatic birds (i.e., shorebirds, waterfowl, gulls and terns). Marsh birds such as rails, passerines, herons, and egrets were not specifically targeted, and are best surveyed under other specific methodology due to their more secretive behavior; however, these species and all other birds were recorded when observed. The observations collected in the salt works in south San Diego Bay, part of the San Diego Bay National Wildlife Refuge, were funded independently by USFWS for part of the survey period through the Southwest Wetlands Interpretive Center. The data for all salt pond observations collected with that funding is joined with and analyzed in this report, as the same methods were used.

Surveys were broken into three methodologies: Paired Shoreline Surveys, Mid-Water Surveys, and Point Counts. Map 2-1 shows survey locations. Appendix A contains figures showing grid cell locations for the survey routes. Detailed protocols are presented in the sections below and in Appendix B.

- Paired Shoreline Surveys were conducted monthly for ebbing tides and quarterly for peaking tides. The Paired Shoreline Surveys were conducted on 19 unique shore routes, including 17 land routes surveyed on foot and two routes surveyed by bicycle. Paired ebbing and peaking tide surveys were conducted quarterly to document potential shifts in avian abundance, diversity, and use by different foraging guilds at each tidal stage. Observers transited each defined route recording species and number of individual birds in the grid cell where first sighted, and substrate where the bird was first sighted. The grid system has cells of unequal size based on water depth and habitat and has been used for survey or monitoring projects in San Diego Bay for over 15 years (see Map 2-1 and Appendix B).





- Mid-Water Surveys were conducted on a meandering route surveyed by boat focusing on mid-water areas not easily observed from the shoreline. These were focused in winter months when migrating waterfowl was expected to be most abundant. All data collection protocols were the same as the shoreline surveys, but these mid-water routes were not timed with tidal cycle; rather, they were conducted in the morning hours when winds were calmer than in the afternoon. Like the shoreline surveys, observations were also recorded by grid cell (see Map 2-1 and Appendix B).
- Point Count Surveys were conducted using fixed distances and timed durations at 23 locations. These points were chosen for several different reasons, including coordination with other monitoring efforts, as sites of special management concern to the Navy or Port, or as known bird congregation areas. Concentric rings (50-, 100-, and 500-meter radius) were developed around these points and an “instantaneous” count of each species within the rings was taken.

Table 2-1 lists observers who participated in this project. Many other individuals participated in various capacities, such as vessel pilots, data recorders, data entry, error checking, and analysis. The number of observers required for this effort reflects the fact that surveys were conducted over the whole bay simultaneously.

**Table 2-1. Individuals who participated in identifying birds for the San Diego Bay bird survey.**

Observers		
Mark Billings	John Konecny	Robert Patton
Elizabeth Copper	Joseph Kean	Maggie Lee Post
Gretchen Cummings	John Lovio	Rachel Smith
Kim Ferree	Karly Moore	Lea Squires
Brian Foster	Katrina Murbock	Phil Unitt
Gabriela Ibarguchi	Thomas Myers	Ignacio Vilches

## 2.1 Shoreline Surveys

Shoreline surveys took place monthly between July 2016 and June 2017 (Table 2-2) on 22 survey routes (see Map 2-1). Surveys were conducted within four hours preceding low tide. Ebbing tide surveys are designed to capture bird use of foraging habitats such as mudflats and other substrates which become exposed by receding water.

Peaking tide surveys were also conducted, over the crest of the tide, four times throughout the year—August, November, February, and May. At the discretion of field observers, additional peaking tide surveys were conducted in other months on the ocean beaches of the Silver Strand and salt works areas to capture known bird concentrations there during peaking tide. (These additional peaking tide data sets are not included in analysis when comparing this survey to previous surveys since they would artificially inflate the 2016-17 numbers.) It was the intention to complete all surveys over the course of three days; however, at times adverse weather conditions delayed survey teams.

**Table 2-2. Survey dates and tides for the San Diego Bay shoreline surveys.**

Month	Survey Days	Tidal Cycle
July 2016	18-20	Ebbing
August	29-31	Peaking and Ebbing
September	15-17	Ebbing
October	26-28	Ebbing
November	14-17	Peaking and Ebbing
December	10-13, 15	Ebbing
January 2017	9-11, 17	Ebbing
February	26-28; 1, 2 (March) <sup>1</sup>	Peaking and Ebbing
March	23-25	Ebbing
April	24-26	Ebbing <sup>2</sup>
May	23-25	Peaking and Ebbing <sup>3</sup>
June	20-23	Ebbing <sup>4</sup>

<sup>1</sup> Some surveys were delayed due to adverse weather conditions.

<sup>2</sup> Peaking tide surveys were also conducted during April for 10 routes.

<sup>3</sup> On 10 routes either peaking or ebbing surveys were conducted, not both. Both surveys were conducted on the other 12 routes.

<sup>4</sup> On 2 routes the field observers opted for conducting surveys at peaking instead of ebbing tide.

Scheduling of ebbing tide surveys was sometimes fine-tuned based on experience of subareas throughout a tidal cycle. For example, due to substrate elevation and topography, optimal habitat exposure for shorebirds in the southern portion of the western ponds was found to occur as tide ebbs from 6.0 to 5.5 feet above mean lower low water (MLLW). Surveys progressed from south to north as the tide receded into the south bay to capture the best tidal window. Start times at the flats of Emory Cove and the north shore of the salt works were targeted to coincide with ebbing tide levels of 3.0 to 2.5 feet. The observers were requested to photograph the time of maximum exposure of each route, with a time stamp on the photo, so that timing of surveys for maximum detection of shorebirds could be refined for each survey segment. Appendix C contains habitat and tide analysis forms to determine time of maximum exposure of habitat for different locations around the bay.

The shoreline surveys were conducted either on foot, bicycle or boat, depending upon the most advantageous view and access (Photo 2-1). Map 2-1 identifies shoreline survey boat routes and land routes. Many land and water locations consisted of Navy security zones. Private areas, such as the National Steel and Shipbuilding Company (NASSCO) shipyard, hire individual security patrols. A security form was forwarded to the appropriate Points of Contact one week prior to survey work.



**Photo 2-1. Examples of shoreline survey areas. (Left) Silver Strand State Beach. (Right) View of North Bay from the survey boat.**

Observers were assigned an area and transited an established route recording species, number of individual birds observed, and substrate where the bird was first sighted. Substrate classifications were defined as:

- Air: a bird flying;
- Upland: a bird anywhere above the high-water line;
  - Trees/tall vegetation
  - Shrubs/mid-height vegetation
  - Low forbs/grasses
  - Unvegetated ground – ( $\leq 5\%$  vegetation) Ex: dirt
  - Hard artificial substrate – Ex: asphalt or sidewalk
  - Artificial perch – Ex: lamp post, wire, fence
- Tidal: a bird on or in the water, on a structure that is in or above the water, or in any intertidal area;
  - Above-water attached structure – Ex: dock/pier, long-term docked boat
  - In-water perch – Ex: buoy, boom, lobster trap, boat, pilings, etc.
  - Riprap
  - Vegetated – Ex: salt march
  - Sandy beach
  - Mud
  - Open water

In addition to species and substrate information, time of day, air temperature, wind, cloud cover, visibility, and precipitation were recorded.



## 2.2 Mid-Water Surveys

Surveys focusing on detecting birds using the open water were conducted once monthly between November 2016 and February 2017, when maximum migratory waterfowl were expected (Table 2-3). During the winter, these species assemble in rafts or flocks. Surveys began in the morning, and all were completed by early afternoon. Wind and water conditions were monitored and survey times adjusted to ensure conditions were as optimal as possible on the day selected for visibility. Survey times were also adjusted to avoid conditions such as high winds during which birds might not be foraging as expected. Weather conditions are generally more calm and consistent during mornings than afternoons, when chop from increasing winds can make it difficult to detect rafting waterbirds. Additionally, survey start times were scheduled early to avoid the typical increase of boat traffic on the bay through mid-day.

**Table 2-3. Mid-water survey dates and times.**

Survey Date		Time
Month	Day	(24-hour clock, U.S. Pacific Time)
November 2016	17	07:30
December 2016	15	06:45
January 2017	17	09:00
February 2017	March 1*	07:00

*\*Weather conditions forced a delay to the February surveys.*

Two boats were needed to complete the surveys to cover the entire bay in a single morning. One vessel started at the mouth of the bay and the other at the south end of the bay near the salt ponds. Radio contact between the two was maintained ensuring start times and survey pace. The boats traveled between 5 and 20 miles per hour, stopping very briefly to count rafting birds if necessary. Boats moved throughout the bay ensuring that all open water cells in the bay, as well as a few cells touching the shoreline in narrow areas of the bay, were covered in the waterbird surveys. Observers tracked their position in the bay using a hand-held global positioning system (GPS) unit displaying the bay grid and a location beacon. Instructions were to survey for waterbirds. All bird observations were recorded by grid. Field conditions within each cell were noted, including date, start and stop times, tidal conditions, ambient temperature, estimated wind speed and direction, precipitation, percent of cloud cover, and visibility.

## 2.3 Point Counts

In addition to the shoreline survey of grid cells, point counts are conducted at established locations along the shoreline routes. Observations are recorded for a timed duration within a specified distance from the observer's location to allow for calculation of bird density, unlike the shoreline surveys which cover differing acreages and can extend for variable survey durations. The calculation of bird density for a set time and area allows a comparison to other locations, and to the same location over time, due to this standardization. The results represent an index and not a true measure of density because they do not account for bias related to probability of detection (Royle et al. 2005).

A total of 22 point count stations were established 2006-07 and 2009-10. Two new stations were established in 2016-17: Station 23 was established at Shelter Island and Station 24 at the Gran Caribe Isle. These two stations were added to establish the baseline bird abundance and diversity at locations where the Port had future development plans. Below is a summary of why the various locations were identified for density estimates that could be used as an index for comparative purposes.

- Natural Resource Damage Assessment (NRDA) sites: Points 1, 2, 3, 12, 13, 16, 18, 19, and 20;
- Long-term fish sampling locations established by Allen (1999): Points 4, 10, 14, and 19;
- Sites of special management interest to the Navy or Port: Points 1, 6, 7, 8, 9, 15, 16, 17, 21, 22, 23 and 24; and
- Known bird congregation areas: Points 1, 4, 5, 10, 11, 12, 13, 16, 20, 21.

At each point count station, all birds observed during a 15-minute period (broken into three increments of five minutes each) were recorded as occurring within one of three concentric rings (50-, 100-, and 500-meter radius) around each point count station. An exception was made at the Gran Caribe Isle (Station 24), where the “point” consisted of a timed walk along the western shore six acres south of the isthmus. As with the shoreline surveys, birds flying overhead were included in the count, if they occurred within the circle at the beginning of the count. The substrate on which the birds were seen was also recorded in the same way as the shoreline surveys.



Map 2-2. Point Count Station 24 (Gran Caribe Isle) in 2016-17.

Density was calculated by dividing the number of individual birds observed by the total area observable of the 500-meter radius around each point. Each point had a potential observable area of 78.4 ha. However, for many of the point count locations, the base 500-meter radius included areas of non-tidal upland (Figure 2-1) and areas that were obstructed from view. As these surveys were intended to focus solely on shorelines and in-water habitats, these obstructed and upland areas were not included in the observations and the density calculations were therefore performed using only the observable shoreline and tidal areas. As these counts are done at the same time as the shoreline transect surveys and are thus a subset of those, all analyses of totals and trends use only data collected during shoreline and waterbird surveys. The density data from point counts can be compared directly for site-specific trends over time (see Section 3.3.3 and Appendix E).

Sketches of habitat associated with point count locations were completed during the 2009-10 surveys (see Tierra Data Inc. 2011).



**Figure 2-1. Point Count Station 1. Example of how survey areas were adjusted prior to calculating bird density by excluding areas of non-tidal upland and visually obstructed areas during the point count.**

## 2.4 Data Collection and Summary

Observations were recorded digitally or on paper data sheets, based on observer preference. For those observers opting for digital recording of data, an application for use on tablet devices or on cell phones was provided. The data form application was designed using ESRI Collector to be filled out and downloaded to a central database when completed. All data were compiled into Microsoft Excel spreadsheets. Original data forms were maintained to allow for error checking and following up with observers to answer questions about specific records.

Data sheets and survey protocols are presented in Appendix B. Each observer was paired with a person to record to facilitate keeping eyes on the water or shore rather than on a notebook or tablet, and for timely submittal of data records.

### Bay Regions

Data were summarized by grid cell and by six bay subregions: North, North-Central, South-Central, South, Salt Works, and Ocean Beach, which encompassed the Pacific Ocean side of Silver Strand. Abundance (total number of observations), species richness (individual species per grid cell or region), and species diversity (evenness of species distribution by grid cell or region) were all calculated and reported, and density (observations per area of grid cell) was calculated for ranking purposes and depiction on a map.

### Seasonality

To depict how birds fluctuate in abundance, the data were grouped into four seasons. For the ebbing tide surveys, which were done every month, the seasons were evaluated as follows:

- Winter (December, January, **February**),
- Spring (March, *April*, **May**),
- Summer (June, July, **August**),
- and Fall (September, October, **November**).

The peaking tide surveys were conducted quarterly, and therefore each season is represented by only one month's data (shown in **bold** above), with one exception. In May 2017, only ebbing tide surveys were performed on six of the surveys routes. In April 2017, peaking tide surveys were performed in addition to the ebbing tide surveys on certain shoreline routes, including the six routes lacking May peaking tide surveys. Therefore, the spring peaking tide data analyzed in this report represent a combination of the six extra April peaking tide data sets and all the May surveys such that each route was represented once in the analysis of the spring peaking tide surveys.

As the ebbing tide surveys included three monthly surveys per season, and the peaking tide surveys included only one each, directly comparing the resulting numbers would be misleading. To allow for direct comparisons of peaking and ebbing tide surveys by season, three-month averages of bird abundance, density, richness, and diversity were calculated.

### Abundance and Density

Initial calculations and mapping consisted of species lists with abundance data in each cell of the survey grid for both the shoreline and mid-water surveys. However, since the bay grid cells vary in size, abundance numbers alone can be misleading. A more accurate measure is the density of birds observed in each cell, calculated by dividing the total number of observations by the cell area in hectares. All observations were used for this measure whether they indicated specific species or merely the group.

**Species Richness**

Species richness was calculated as the total number of unique species observed within each survey cell. Only identified species were used for this calculation (i.e., observations recorded only to group, such as “Gull sp.”, were not used since it was not determined to be a unique species). Species richness provides a measure of the diversity of bird species inhabiting certain regions of the bay, and specific grid cells within each region.





American Wigeon. © Timothy Burr, 2017.

### 3.0 Results

A total of 564,752 individual bird observations, representing 161 distinct species, were recorded during the shoreline and mid-water surveys in 2016-17. Additionally, a total of 102,944 individual observations were recorded during point counts at 23 locations around the bay.

Appendix D presents a combined species list for all surveys (Table D-1), species lists and number of individual birds observed per month during the shoreline surveys at ebbing (Table D-2) and peaking tides (Table D-3), and species and number observed during the mid-water surveys (Table D-4).

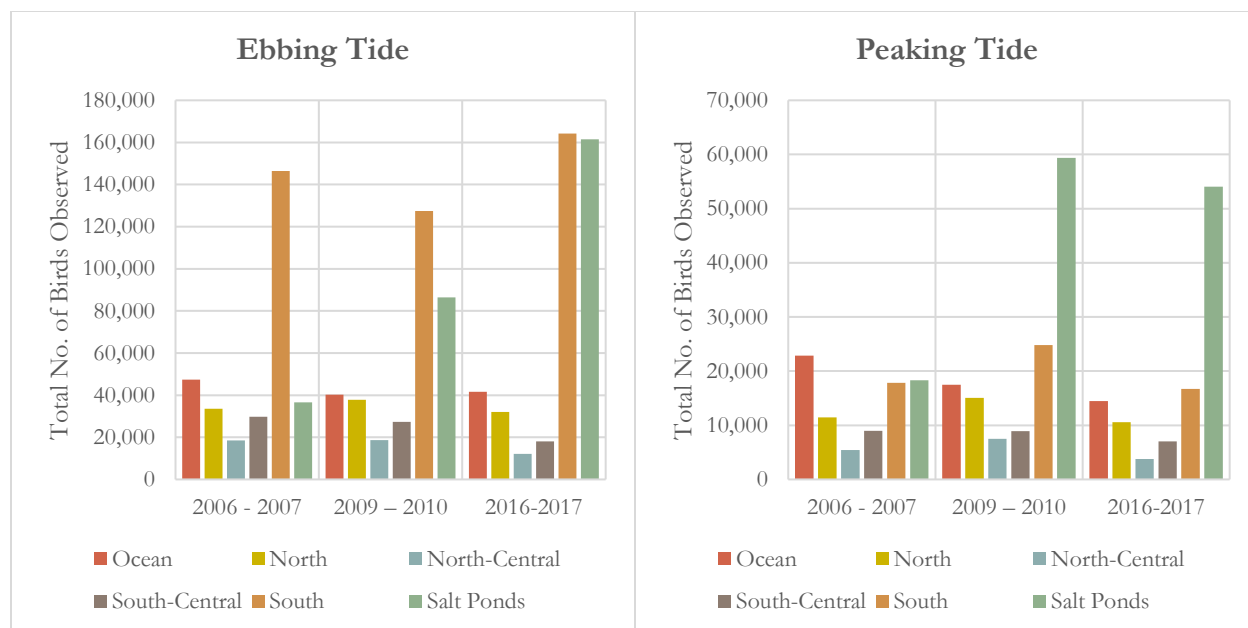
Appendix E presents the species lists and numbers observed at each point count station. Summaries for each survey type are presented separately below. Appendix F contains summaries of birds observed by grid, organized by region as shown on Map 2-1. Appendix G contains species profiles and ebbing tide survey results for the three survey periods since 2006 for the more abundant species.

### 3.1 Shoreline Surveys

#### 3.1.1 Abundance

A total of 556,619 observations were made during the shoreline portion of the 2016-17 survey effort. Of these, 434,594 birds and 154 species were observed during the ebbing tide surveys and 122,025 birds and 154 species were observed during the peaking tide surveys. Abundance of observed birds is greatest along extensive mudflat areas in the south bay, in certain salt ponds, and around the bait barge in north bay. The salt ponds have the greatest abundance of observed birds, while the north-central and south-central regions have the lowest. Table 3-1 and Figure 3-1 compare the numbers of birds observed among the surveyed bay regions.

In 2016-17 the total number of observations in the ebbing tide surveys was somewhat lower in all regions except the south bay and salt ponds, which have seen a steady increase in abundance over the course of the three surveys (Figure 3-1). For the peaking tide surveys, the total number of observations in 2016-17 was lower for all regions compared to the previous surveys.



**Figure 3-1. Comparison of total bird abundance by bay region in 2006-07, 2009-10, and 2016-17 during ebbing tide (left) and peaking tide (right) shoreline surveys.**

**Table 3-1. Number of individual birds observed in each of the bay regions in 2006-07, 2009-10, and 2016-17 shoreline surveys.\***

Region	2006-07		2009-10		2016-17	
	Ebbing	Peaking	Ebbing	Peaking	Ebbing <sup>1</sup>	Peaking <sup>2,3</sup>
Ocean	47,399	22,867	40,211	17,486	41,907	15,625
North	33,531	11,457	37,756	15,061	28,694	10,323
North-Central	18,584	5,414	18,596	7,472	12,131	3,902
South-Central	29,742	8,953	27,298	8,890	18,022	5,871
South	146,517	17,811	127,495	24,786	164,297	18,547
Salt Ponds	36,631	18,285	86,389	59,375	169,543	67,757
<b>Total</b>	<b>312,404</b>	<b>84,787</b>	<b>337,745</b>	<b>133,070</b>	<b>434,594</b>	<b>122,025</b>

\*Note that total observations in 2016-17 include surveys conducted in May and July, which were not surveyed in the two previous survey periods.

<sup>1</sup> In May 2017, four routes were not surveyed at ebbing tide; Salt Pond Interior (Salt Ponds), Emory Cove (South Bay), Coronado City Beach & Silver Strand State Beach (Ocean).

<sup>2</sup> Numbers include only those peaking tide surveys conducted in August, November, February, and May.

<sup>3</sup> In May 2017, six routes were not surveyed at peaking tide; CVWR & D Street Fill (South Bay), Salt Ponds North Shore & Pond 20A (Salt Ponds), Coronado Bridge/North Island (North-Central Bay), Fiddler's Cove/Loew's (South-Central and South Bay).

The number of individual birds observed per month during the ebbing tide surveys varied considerably with a high of 69,752 in December 2016 followed by a low of 5,992 in May 2017 (Table 3-2). Overall trends were very consistent with the 2006-07 and the 2009-10 surveys. Although, out of all three survey periods, four of the monthly surveys in 2016-17 produced the highest number of individual birds recorded. For both the ebbing and peaking tide surveys, the highest numbers of individual birds were observed in late fall/early winter, while a considerable drop occurred in the late spring/summer period (Table 3-3). Compared to previous surveys, the 2016-17 surveys saw the highest numbers of individual birds observed during three of the four seasons (winter, spring, and

summer). The higher numbers of individual birds observed in 2016-17 were likely due to increased avian usage of the salt ponds. While observations in all other bay regions have remained fairly constant or fluctuated over the three survey periods, the numbers of individual birds observed in the salt works have increased dramatically since 2006-07 (Figure 3-2). This is likely a result of efforts to re-open some of the ponds to tidal flushing, providing additional foraging area. A similar increase in bird observations during peaking tides was also seen (Figure 3-2).

**Table 3-2. Number of individual birds observed each month during the ebbing tide and peaking tide shoreline surveys. **Highest** and **Lowest** numbers for each survey type, within each survey period are highlighted.**

Month	Number of Individual Birds Observed					
	2006-07		2009-10		2016-17	
	Ebbing	Peaking	Ebbing	Peaking	Ebbing	Peaking
January	48,651	-	46,338	-	56,615	-
February	36,202	35,077	35,617	34,560	42,935	32,558
March	44,340	-	34,958	<b>12,176</b>	41,079	-
April	16,904	<b>23,291</b>	<b>12,656</b>	-	20,427	18,634 <sup>1</sup>
May	-	-	-	-	<b>5,992</b> <sup>2</sup>	<b>9,096</b> <sup>2</sup>
June	<b>15,014</b>	-	16,049	<b>44,406</b>	15,354	-
July	-	-	-	-	46,931	-
August	28,560	27,996	17,229	-	19,604	27,826
September	55,143	-	46,204	-	38,459	-
October	42,761	-	25,622	41,928	41,704	-
November	42,093	<b>35,443</b>	<b>54,037</b>	-	35,545	<b>33,596</b>
December	<b>58,087</b>	-	49,035	-	<b>69,636</b>	-

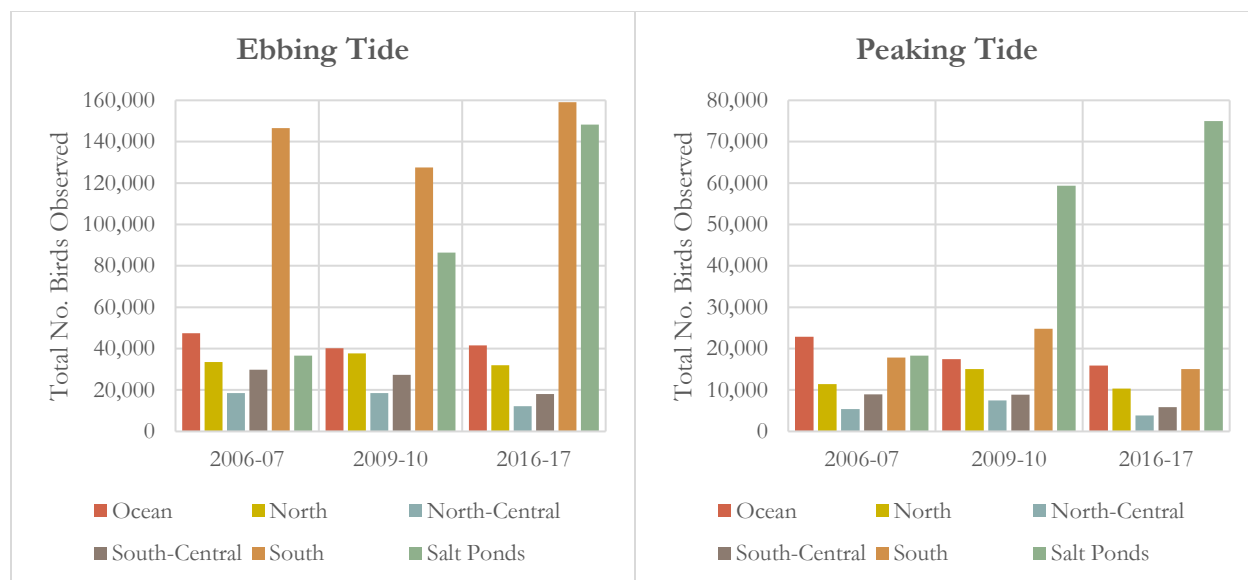
<sup>1</sup> Peaking tide surveys were conducted on ten routes although April was originally planned to be ebbing tide surveys only.

<sup>2</sup> May surveys were originally planned to include both ebbing and peaking tide surveys. However, peaking tide surveys were not conducted on six survey routes, and ebbing tide surveys were not conducted on four other routes.

**Table 3-3. Number of individual birds observed each season during the ebbing tide shoreline surveys. **Highest** and **Lowest** numbers for each survey type, within each survey period are highlighted in bold.**

Season	Number of Individual Birds Observed					
	2006-07		2009-10		2016-17	
	Ebbing	Peaking	Ebbing	Peaking	Ebbing	Peaking
Winter (Dec.-Feb.)	<b>142,940</b>	35,077	<b>130,990</b>	34,560	<b>169,186</b>	32,558
Spring (Mar.-May)	61,244	<b>23,291</b>	47,614	<b>12,176</b>	121,428	11,531 <sup>1</sup>
Summer (Jun.-Aug.)	<b>43,574</b>	27,996	<b>33,278</b>	<b>44,406</b>	<b>81,889</b>	<b>27,826</b>
Fall (Sep.-Nov.)	139,997	<b>35,443</b>	125,863	41,928	115,708	<b>33,596</b>

<sup>1</sup> The spring peaking tide surveys in 2017 were conducted primarily in May. However, since peaking tide surveys on six routes were not conducted in May, data from April 2017 for those routes were compiled with the May data for the other 14 routes such that each route was represented. The other four routes for which peaking tide surveys were conducted in April are not included in this summary.



**Figure 3-2. Distribution of total birds observed by bay region in 2006-07, 2009-10, and 2016-17 during ebbing (left) and peaking (right) tide shoreline surveys.**

### 3.1.2 Abundance by Species and Species Assemblage

The most abundant species observed during the ebbing tide surveys within each species assemblage are given in Table 3-4.

**Table 3-4. Top three species observed by species assemblage during ebbing tide shoreline surveys in 2016-17.**

Marshbirds	No. Observed	Terrestrial Birds	No. Observed
Belding's Savannah Sparrow	1,745	Rock Pigeon	5,146
Snowy Egret	846	House Finch	2,691
Great Blue Heron	709	Horned Lark	1,461
Seabirds	No. Observed	Waterfowl	No. Observed
Elegant Tern	32,808	Eared Grebe	16,554
Western Gull	23,432	Surf Scoter	14,789
California Gull	9,897	Brant	13,785
Shorebirds	No. Observed		
Western Sandpiper	129,683		
Peep sp.	14,812		
Willet	11,984		

Several species showed marked differences in overall abundance during the ebbing tide shoreline surveys from 2006-07 to 2016-17 (Table 3-5). A total of 14 species were at least 20% less abundant in 2016-17, while 17 other species increased by at least 20%. Red-necked Phalaropes showed the greatest decline from 13,974 individuals observed in 2006-07 to only 1,270 individuals observed in 2016-17. Three other species were at least 50% less abundant in 2016-17 (Marbled Godwit, Ring-billed Gull [*Larus delawarensis*], and Bufflehead [*Bucephala albeola*]).



**Table 3-5. Species with counts of 1,000+ individuals during the shoreline ebbing tide surveys showing a change of >20% between 2006-07 and 2016-17.**

Species	2016-17	2009-10	2006-07	Difference 2006-07/2016-17	% Change
<b>Species Decreased from 2006-07 to 2016-17</b>					
Red-necked Phalarope	1,270	8,803	13,974	-12,704	-90.9
Ring-billed Gull	2,068	2,972	4,955	-2,887	-58.3
Bufflehead	1,302	3,223	2,986	-1,684	-56.4
Marbled Godwit	10,563	13,517	23,654	-13,091	-55.3
Heermann's Gull	3,478	7,434	6,572	-3,094	-47.1
Mallard	1,085	1,087	2,016	-931	-46.2
Brown Pelican	3,867	7,512	6,664	-2,797	-42.0
Double-crested Cormorant	3,760	6,057	6,398	-2,638	-41.2
Black Skimmer	2,314	687	3,655	-1,341	-36.7
Rock Pigeon	4,945	5,109	7,641	-2,696	-35.3
Willet	11,984	7,932	17,978	-5,994	-33.3
Sanderling	7,204	7,975	10,498	-3,294	-31.4
Black-necked Stilt	2,061	1,998	2,756	-695	-25.2
Forster's Tern	2,096	2,518	2,757	-661	-24.0
<b>Species Increases from 2006-07 to 2016-17</b>					
Royal Tern	4,041	1,370	1,135	2,906	256.0
Elegant Tern	32,808	12,836	10,124	22,684	224.1
Least Sandpiper	10,029	2,989	3,452	6,577	190.5
Brant	13,785	5,050	5,168	8,617	166.7
Belding's Savannah Sparrow	1,745	1,175	714	1,031	144.4
California Gull	9,897	4,722	4,966	4,931	99.3
California Least Tern	1,855	565	990	865	87.4
Northern Shoveler	3,104	1,646	1,660	1,444	87.0
Western Sandpiper	129,708	66,781	77,716	51,992	66.9
Brandt's Cormorant	8,448	10,589	5,306	3,142	59.2
American Avocet	1,186	522	758	428	56.5
Eared Grebe	16,554	13,376	10,718	5,836	54.5
Semipalmated Plover	6,322	3,832	4,700	1,622	34.5
Black-bellied Plover	11,822	9,255	9,063	2,759	30.4
House Finch	2,691	1,165	2,136	555	26.0
Horned Lark	1,461	774	1,173	288	24.6
Western Snowy Plover	2,205	1,848	1,789	416	23.3

Five species were at least twice as abundant in 2016-17 (Belding's Savannah Sparrow, Royal Tern, Least Sandpiper [*Calidris minutilla*], Brant [*Branta bernicla*], and Elegant Tern), while seven other species increased by at least 50% (American Avocet, California Least Tern, Northern Shoveler [*Anas chryseata*], Brandt's Cormorant [*Phalacrocorax penicillatus*], California Gull [*Larus californicus californicus*], Eared Grebe, and Western Sandpiper).

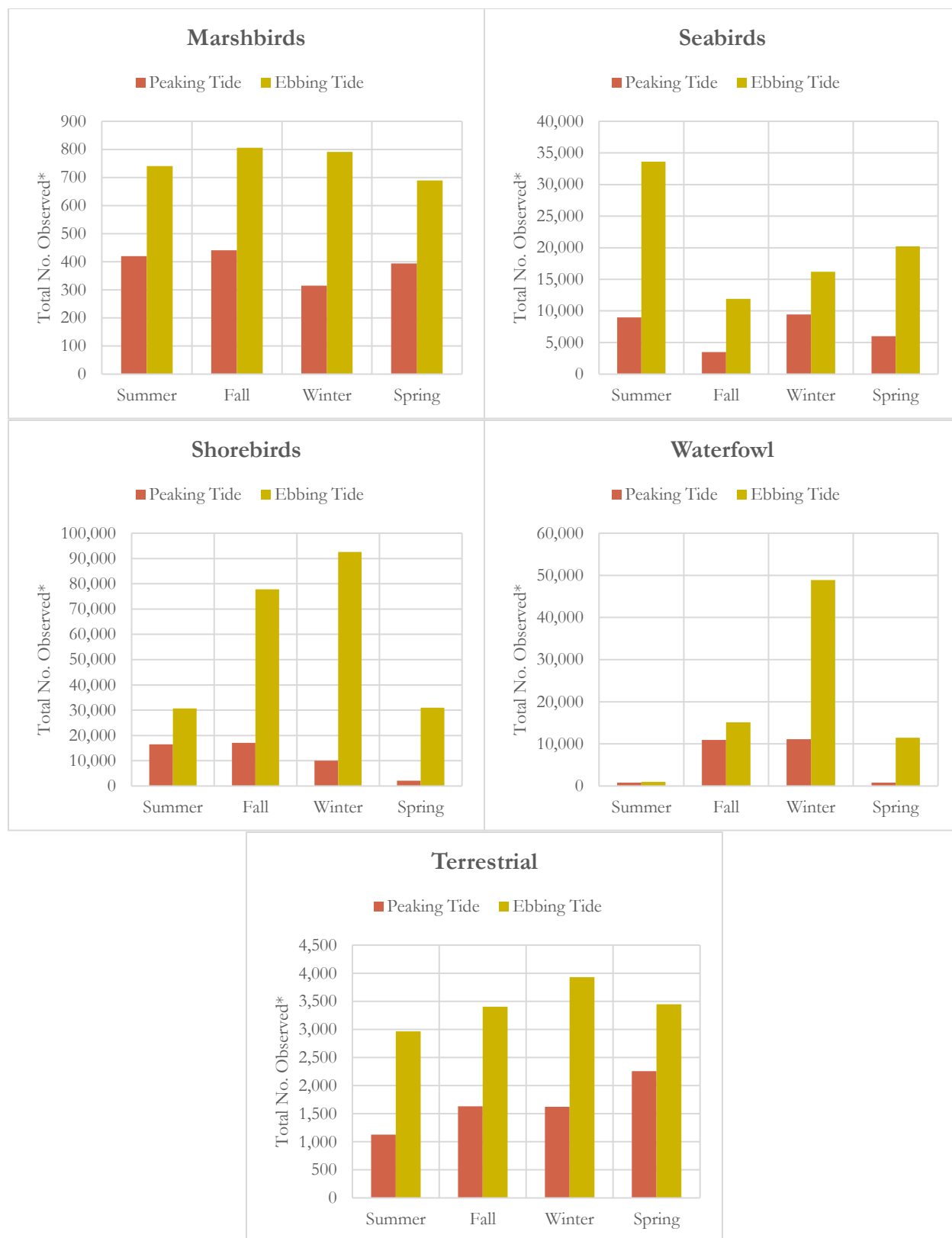
Shorebirds were the most abundant of the five assemblages during 2016-17 shoreline surveys, with over 92,000 individuals observed during the winter ebbing tides. The only period when shorebirds were not the most abundant assemblage was during the summer ebbing tides when seabirds were the most observed (33,615 seabirds, 30,701 shorebirds). Results organized by species assemblage are shown in Figure 3-3, showing seasonal abundance of birds observed during the shoreline surveys at peaking tide (one survey per season) and ebbing tide (average of three surveys per season). Seasonally, shorebirds and waterfowl were most abundant during the winter ebbing tide surveys, in comparison to the summer and spring. Shorebirds were also very abundant in the fall, while waterfowl abundance was relatively low the rest of the year. Seabirds showed a reverse seasonality, with the highest number observed in the summer. Marsh birds and terrestrial bird abundances remained relatively even from season-to-season. Most salt marsh birds and many birds that occupy the urban interface are resident rather than migratory so their number would not be expected to fluctuate through the year.

Among bay subregions, the salt ponds and south bay had the highest abundances observed, primarily among shorebirds (Figure 3-4; Figure 3-5). Eared Grebes dominated the grebe counts in 2016-17, and abundance was focused within the interior, non-tidal salt ponds.

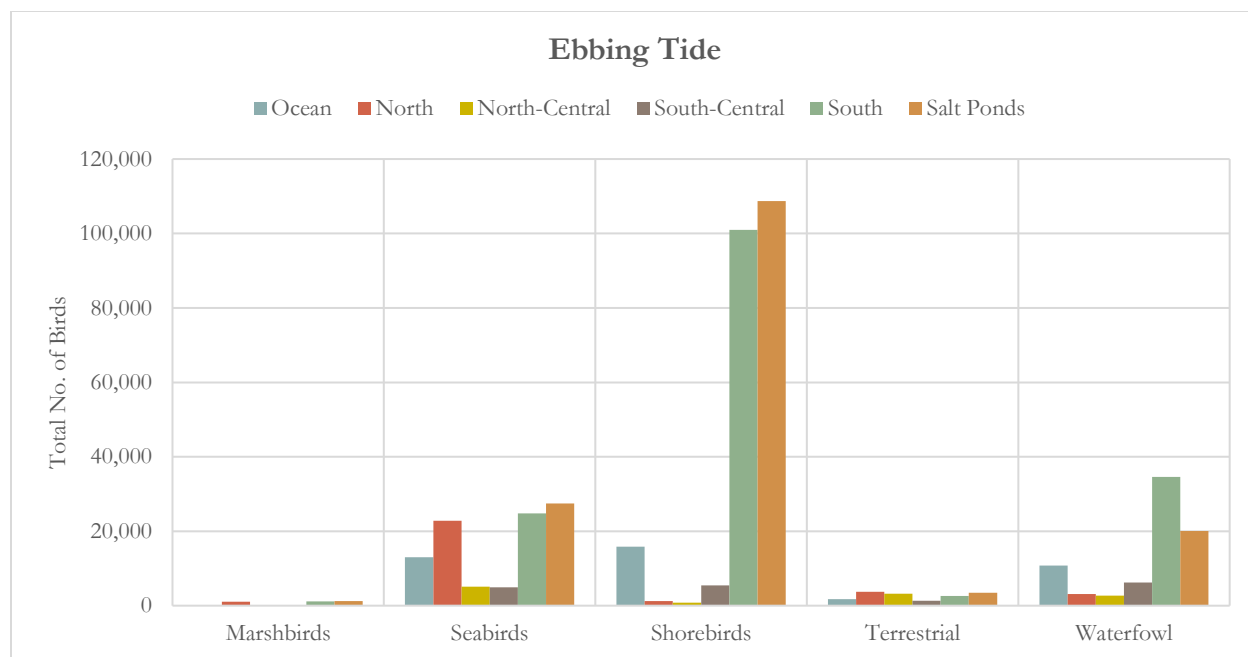
### 3.1.3 Density

Density of birds observed in 2016-17 varied greatly by season and location (Figure 3-6; Map 3-1; Map 3-2), with the highest densities observed in the salt ponds during the winter and fall surveys. In most seasons and bay regions, the observed density of birds at peaking and ebbing tide were generally similar, with a few exceptions. In the winter surveys, higher densities were observed during ebbing tide in the south bay, while in the salt ponds the peaking tide surveys had higher densities. A similar comparison is seen in the summer, though at much lower densities. In the spring and fall, however, the ebbing tide surveys showed the higher densities in both the south bay and salt ponds.

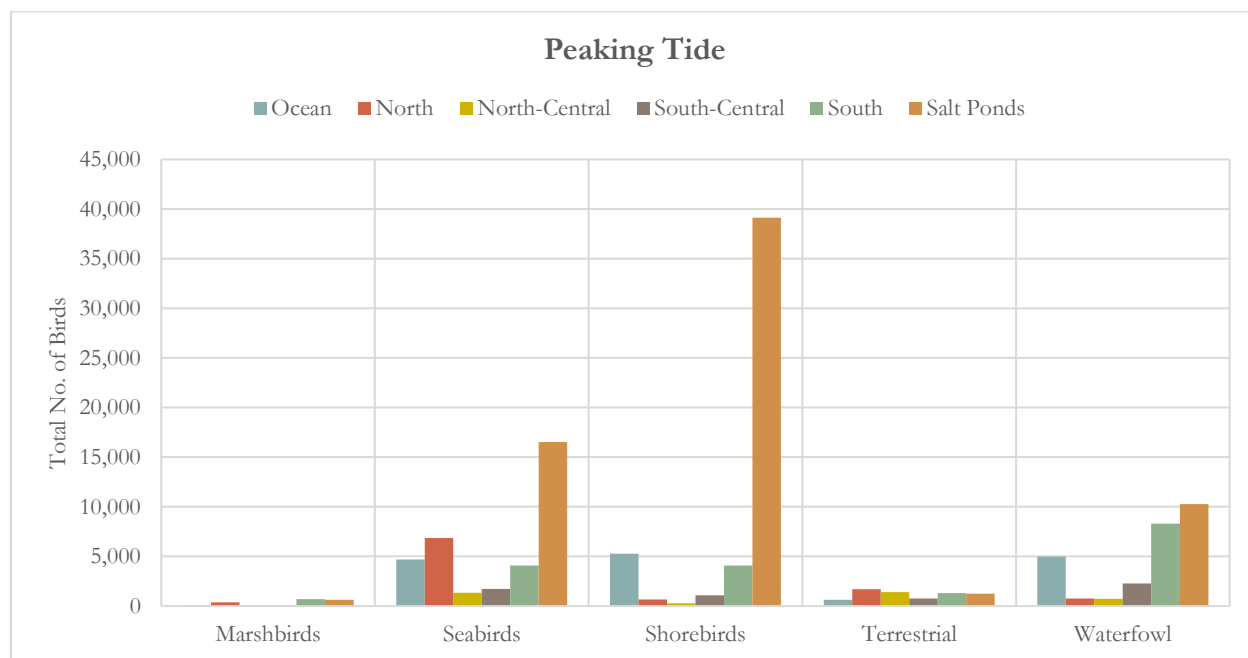
Bird densities during the ebbing and peaking tide survey were noticeably different at several locations in the bay (Map 3-3). The bait barge at the north end of the bay as well as several mudflat and marsh areas in the south bay had additional birds during ebbing tide, particularly in the southeastern portion of the bay. During the peaking tide, the bird density was much higher in the interior salt ponds, which were a key concentration area. Additional peaking tide concentrations occurred in a few areas along the Coronado shore, near the enhancement island in the central bay, and in many of the harbors.



**Figure 3-3. Seasonal abundance of birds by species assemblage observed during the shoreline surveys at peaking tide (one survey per season) and ebbing tide (average of three surveys per season).**

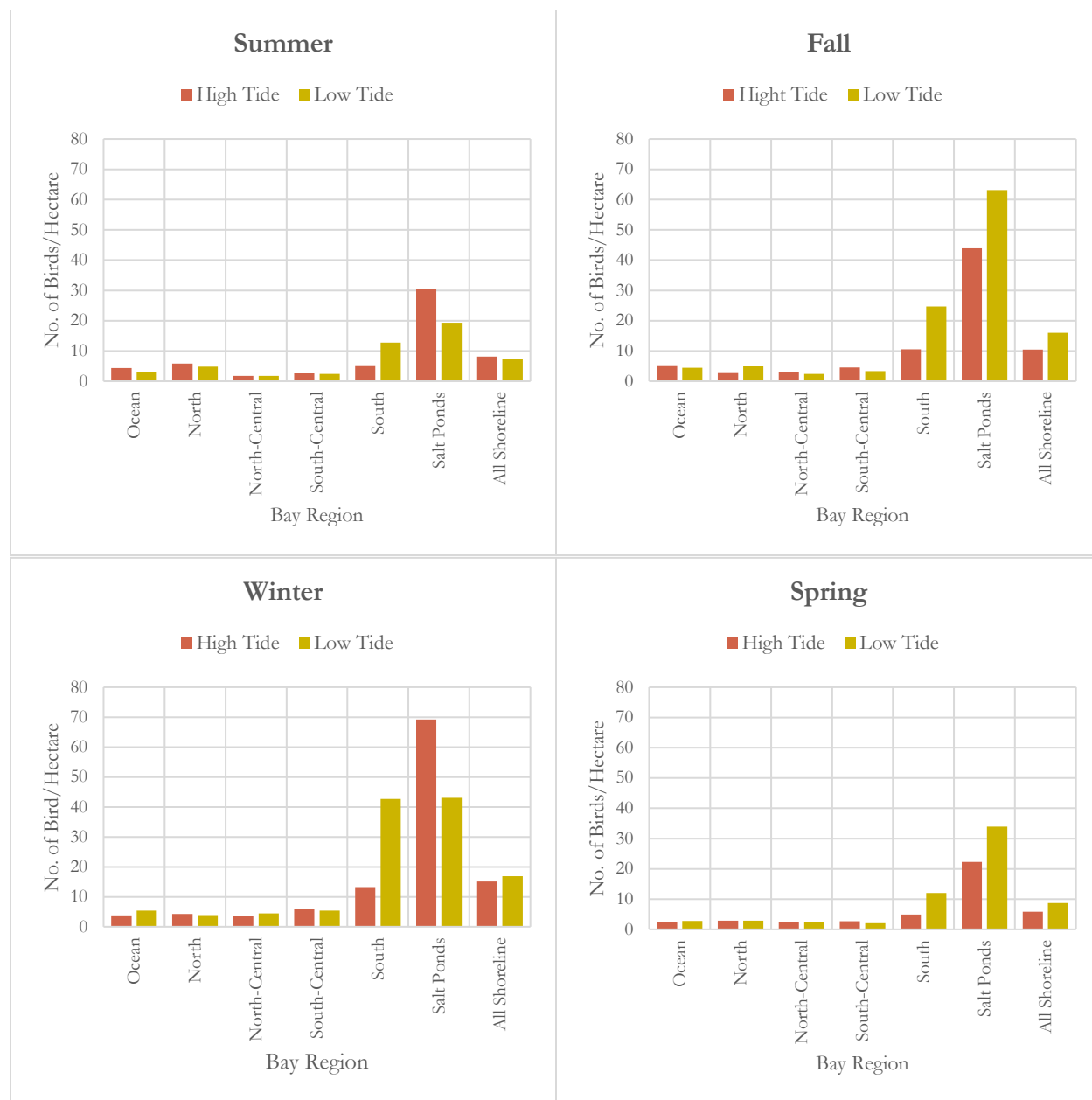


**Figure 3-4. Distribution of bird species assemblages during the 2016-17 ebbing tide shoreline surveys.**

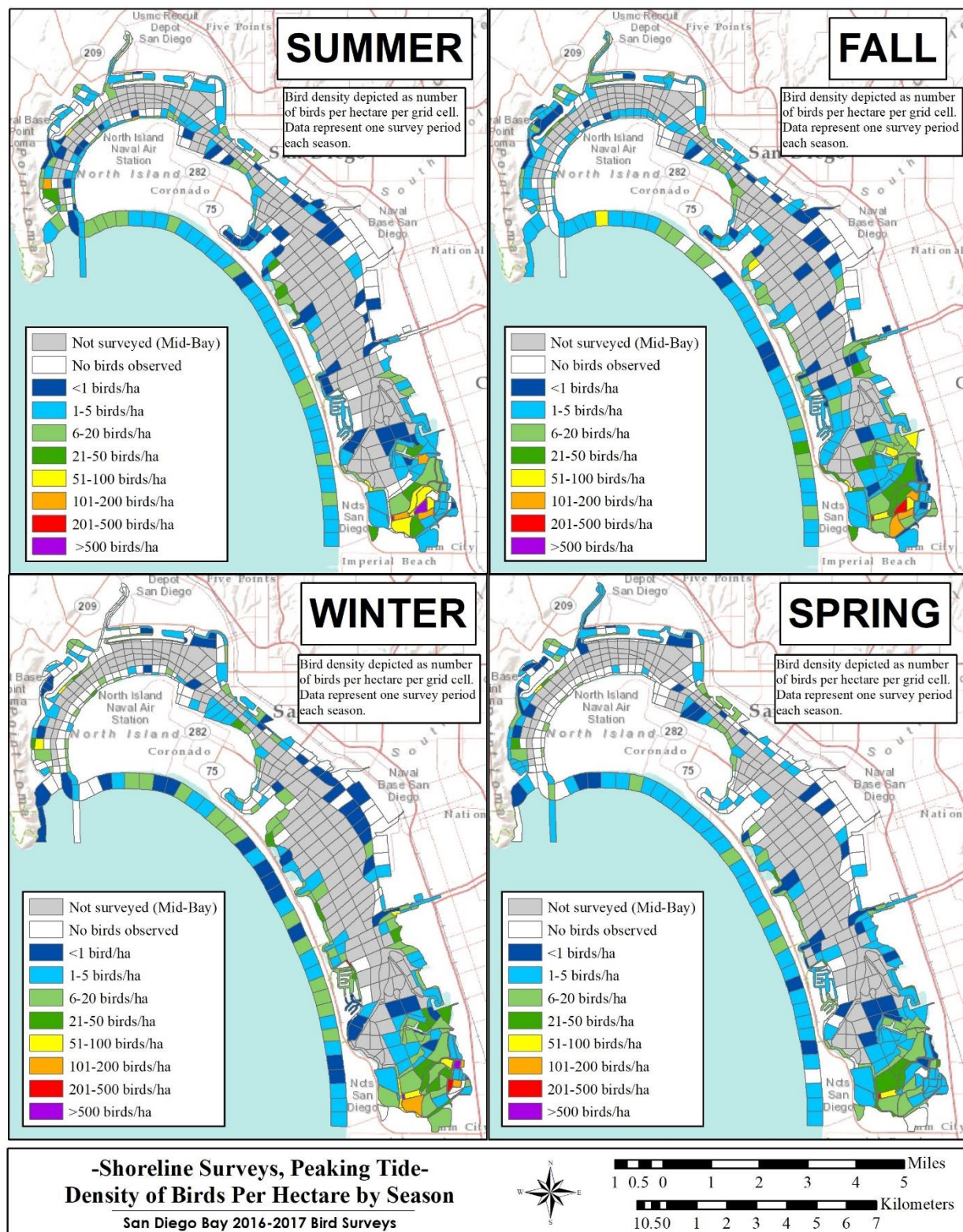


**Figure 3-5. Distribution of bird species assemblages during the 2016-17 peaking tide shoreline surveys.**



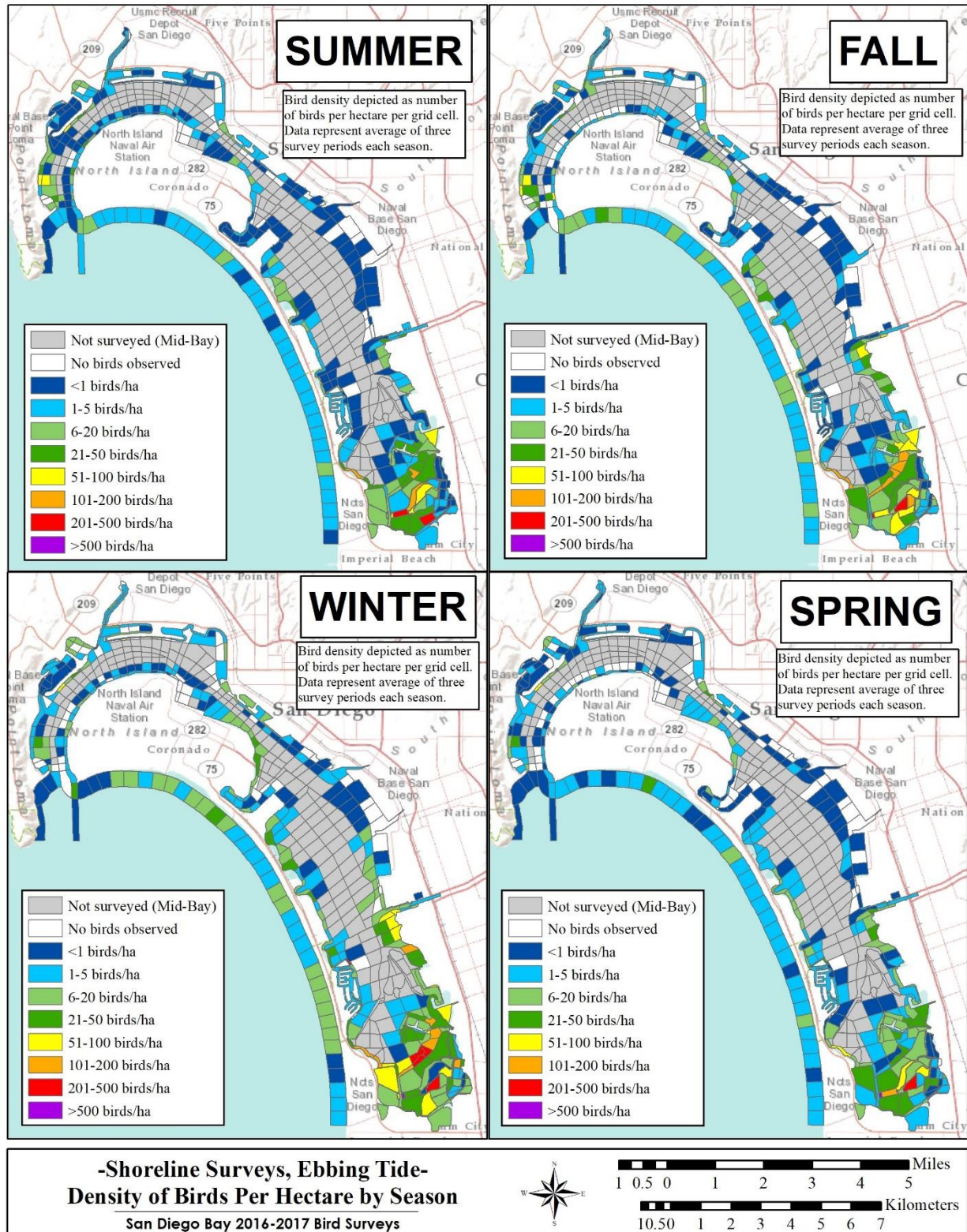


**Figure 3-6. Seasonal density (number of individual birds per hectare) of birds observed during ebbing and peaking tide shoreline surveys by bay region in 2016-17.**



Map 3-1. Density of birds observed during the 2016-17 peaking tide shoreline surveys in San Diego Bay.





Map 3-2. Density of birds observed during the 2016-17 ebbing tide shoreline surveys in San Diego Bay.

### 3.1.4 Species Richness

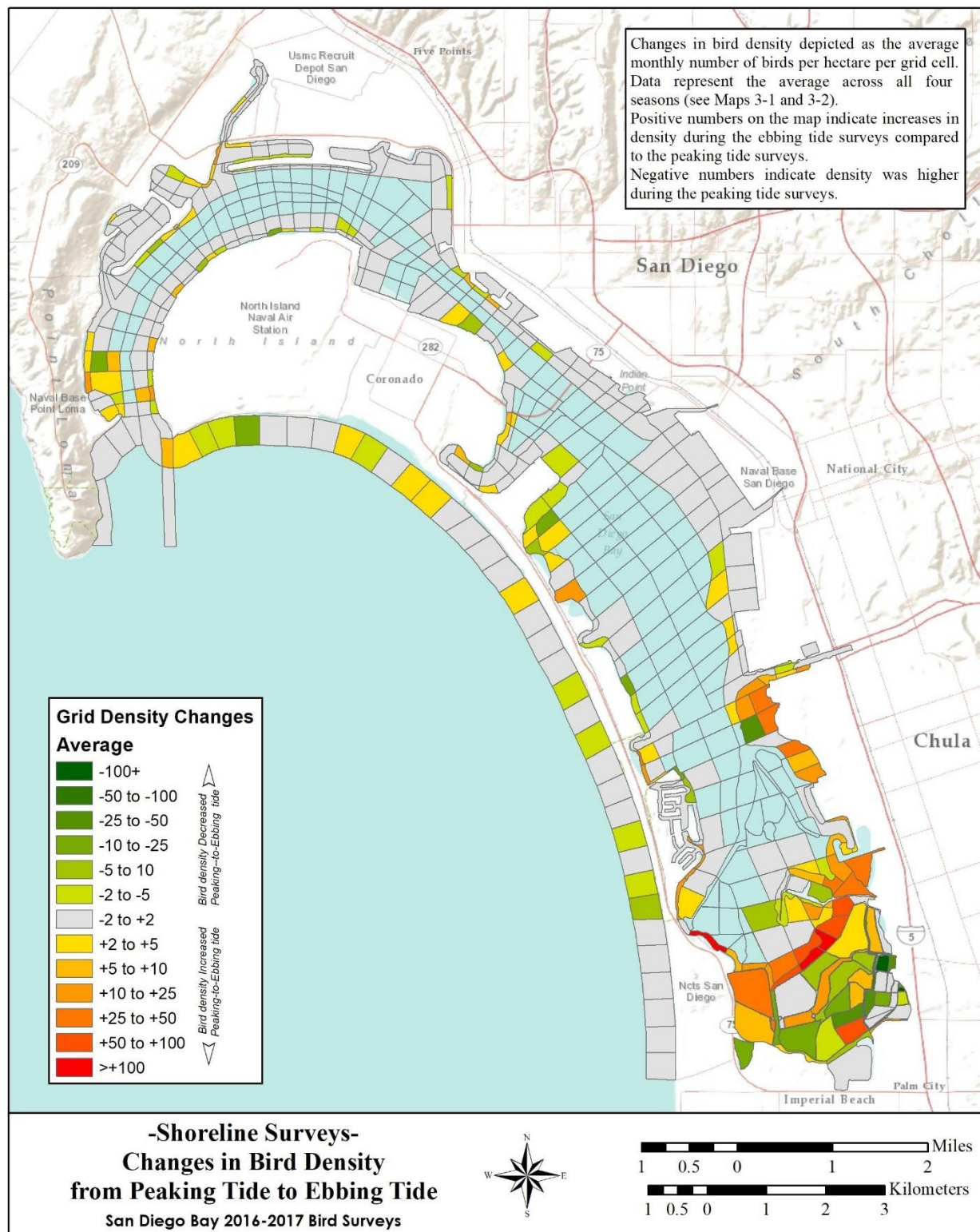
During the bay bird surveys 161 distinct species or subspecies were observed, compared to over 300 on record for San Diego Bay (Port and Navy 2013). The total number of species observed in 2016-17 (peaking and ebbing tide surveys combined) was lower than in previous years except for the south bay and salt ponds (Table 3-6). Species richness in 2016-17 was greatest in the south bay and salt ponds, and lowest in the north-central subregion (Table 3-6). Species richness was greatest along the southern edge of the south bay (mudflat just north of the salt ponds) and the salt ponds, as well as along the eastern shore of the south bay (Chula Vista Wildlife Refuge) (Map 3-4). Species richness was lowest along the eastern shore of the north-central and south-central bay, and along the north shore of North Island. The lower number of species observed in the peaking tide surveys compared to the ebbing tide surveys is likely due to different number of surveys (four surveys at peaking tide compared to 10-12 surveys at ebbing tide each year).

**Table 3-6. Number of distinct species observed by region during the 2006-07, 2009-10, and 2016-17 shoreline surveys.**

Region	2006-07			2009-10			2016-17		
	Total Species	Ebbing Tide*	Peaking Tide	Total Species	Ebbing Tide*	Peaking Tide	Total Species	Ebbing Tide*	Peaking Tide
Ocean	106	100	87	91	79	75	90	86	73
North	107	98	72	98	91	81	90	84	68
North-Central	89	79	73	92	79	72	80	75	64
South-Central	100	94	81	100	94	83	93	87	70
South	140	132	114	131	127	103	141	129	112
Salt Ponds	128	119	109	128	123	105	132	117	112
All Regions	183	168	156	174	164	144	164	150	151

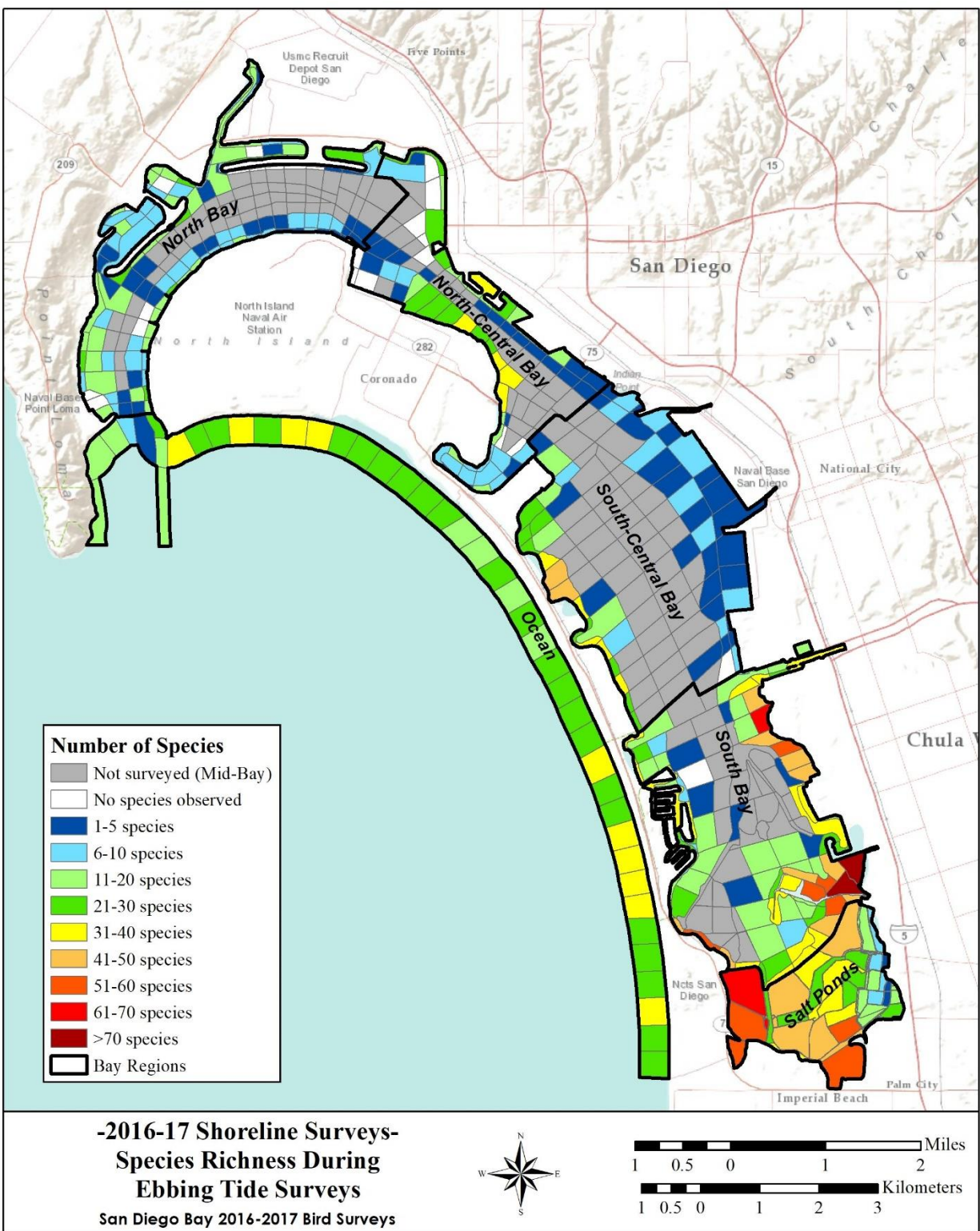
\*In 2006-07 and 2009-10, only ten ebbing tide surveys were conducted. In 2016-17 ebbing tide surveys were conducted all 12 months.





Map 3-3. Changes in bird density between the 2016-17 peaking tide and ebbing tide shoreline surveys.





Map 3-4. Species richness observed during the 2016-17 ebbing tide shoreline surveys.

## 3.2 Mid-Water Surveys

### 3.2.1 Abundance and Density

A total of 8,133 birds were observed during the mid-water surveys, with 32 species recorded. The number of individual birds observed during the mid-water surveys has declined with each subsequent survey since 2006-07 (Table 3-7). The decline in numbers is especially pronounced in the south-central and south bay regions.

Like the previous surveys, the number of individual birds observed peaked in January. But while the previous surveys also had high numbers of birds observed in December, the 2016-17 surveys did not (Table 3-8).

**Table 3-7. Number of individual birds observed by region during the 2006-07, 2009-10, and 2016-17 mid-water surveys.**

Region	2006-07	2009-10	2016-17
Mouth of Bay*	316	N/A	251
North	1,396	1,736	1,407
North-Central	421	3,286	723
South-Central	18,307	7,755	2,447
South	11,312	7,725	3,305
<b>Total</b>	<b>31,752</b>	<b>20,502</b>	<b>8,133</b>

\*Includes only 8 grid cells outside of the mouth of San Diego Bay, which were not surveyed in 2009-10.

**Table 3-8. Number of individual birds observed per month during the 2006-07, 2009-10, and 2016-17 mid-water surveys.**

Month	Number of Individual Birds Observed		
	2006-07	2009-10	2016-17
November	4,207	3,105	2,003
December	8,777	7,484	1,837
January	11,663	6,879	3,107
February	7,105	3,034	1,186

### 3.2.2 Abundance by Species Assemblage

Birds observed during the mid-water surveys were predominantly waterfowl (81.4% of all observations) and seabirds (18.4% of all observations) (Table 3-9). Seventeen species of seabirds were recorded, and 12 species of waterfowl. Surf Scoters (*Melanitta perspicillata*) were the most abundant species seen, with over 5,600 individual observations, with Brants (645 individual birds observed) and Western Gulls (*Larus occidentalis wymani*; 474 individual birds observed) the next most abundant (Table 3-10).

**Table 3-9. Number of individual birds observed per month and species assemblage during mid-water surveys in 2016-17.**

Species Assemblage	Nov. 2016	Dec. 2016	Jan. 2017	Feb. 2017	Total
Marshbirds	2	1	2	0	5
Seabirds	185	356	821	135	1,497
Shorebirds	0	2	12	0	14
Waterfowl	1,816	1,478	2,272	1,051	6,617
<b>Total</b>	<b>2,003</b>	<b>1,837</b>	<b>3,107</b>	<b>1,186</b>	<b>8,133</b>

**Table 3-10. Waterfowl and seabird bird species with at least 50 observations during the 2016-17 mid-water surveys. **Highest** and **Lowest** numbers for each species are highlighted in bold.**

Species	Nov. 2016	Dec. 2016	Jan. 2017	Feb. 2017	Totals
<b>Waterfowl</b>					
Surf Scoter	<b>723</b>	1,395	1,551	<b>1,964</b>	5,633
Brant	228	<b>52</b>	<b>236</b>	129	645
Bufflehead	20	22	<b>9</b>	<b>73</b>	124
Lesser Scaup	<b>70</b>	0	0	0	70
<b>Seabirds</b>					
Western Gull	100	<b>87</b>	95	<b>192</b>	474
Brandt's Cormorant	<b>13</b>	35	27	<b>315</b>	390
Cormorant sp.	<b>0</b>	50	<b>0</b>	<b>206</b>	256
Heermann's Gull	<b>4</b>	<b>58</b>	6	34	102
Brown Pelican	<b>7</b>	<b>49</b>	17	19	92

### 3.2.3 Species Richness

A total of 32 distinct species were observed during the mid-water surveys in 2016-17, compared to 43 in 2006-07 and 44 in 2009-10. Species richness was highest in the north and south bay regions (Table 3-11; Map 3-5), and was lower than in previous surveys in all but the north bay.

Unlike previous surveys, species richness remained relatively constant month-to-month (Table 3-12).

While some of the top ten most abundant species in 2016-17 showed little change in numbers compared to previous surveys, several were far less abundant (Table 3-13). This is especially true of the Surf Scoter, which has decreased in number each survey year from a high of 27,417 individuals in 2006-07 to just 5,633 individuals in 2016-17. The decline in Surf Scoters was especially pronounced in the south-central and south bay regions, which had an average abundance across the 2006-07 and 2009-10 surveys of 16,835 and 14,389 individuals each. In 2016-17, the two regions had just 6,026 and 6,623 individuals, respectively. The north, north-central, and ocean regions together had an average of 2,433 Surf Scoters over the two previous surveys and 1,987 individuals in 2016-17.

Brandt's Cormorants have also declined in abundance from 1,301 individuals in 2006-07 to 390 individuals in 2016-17. Brant was the only species observed to be more abundant in 2016-17.

**Table 3-11. Species richness by region during the the 2006-07, 2009-10, and 2016-17 mid-water surveys.**

Region	Species Observed		
	2006-07	2009-10	2016-17
Mouth of Bay	9	N/A*	11
North	21	23	20
North-Central	16	24	13
South-Central	24	25	15
South	31	34	19

\*The grid cells at the mouth of the bay (cells C1-C4) in the ocean region were not surveyed during this survey.

**Table 3-12. Species richness by month during the the 2006-07, 2009-10, and 2016-17 mid-water surveys.**

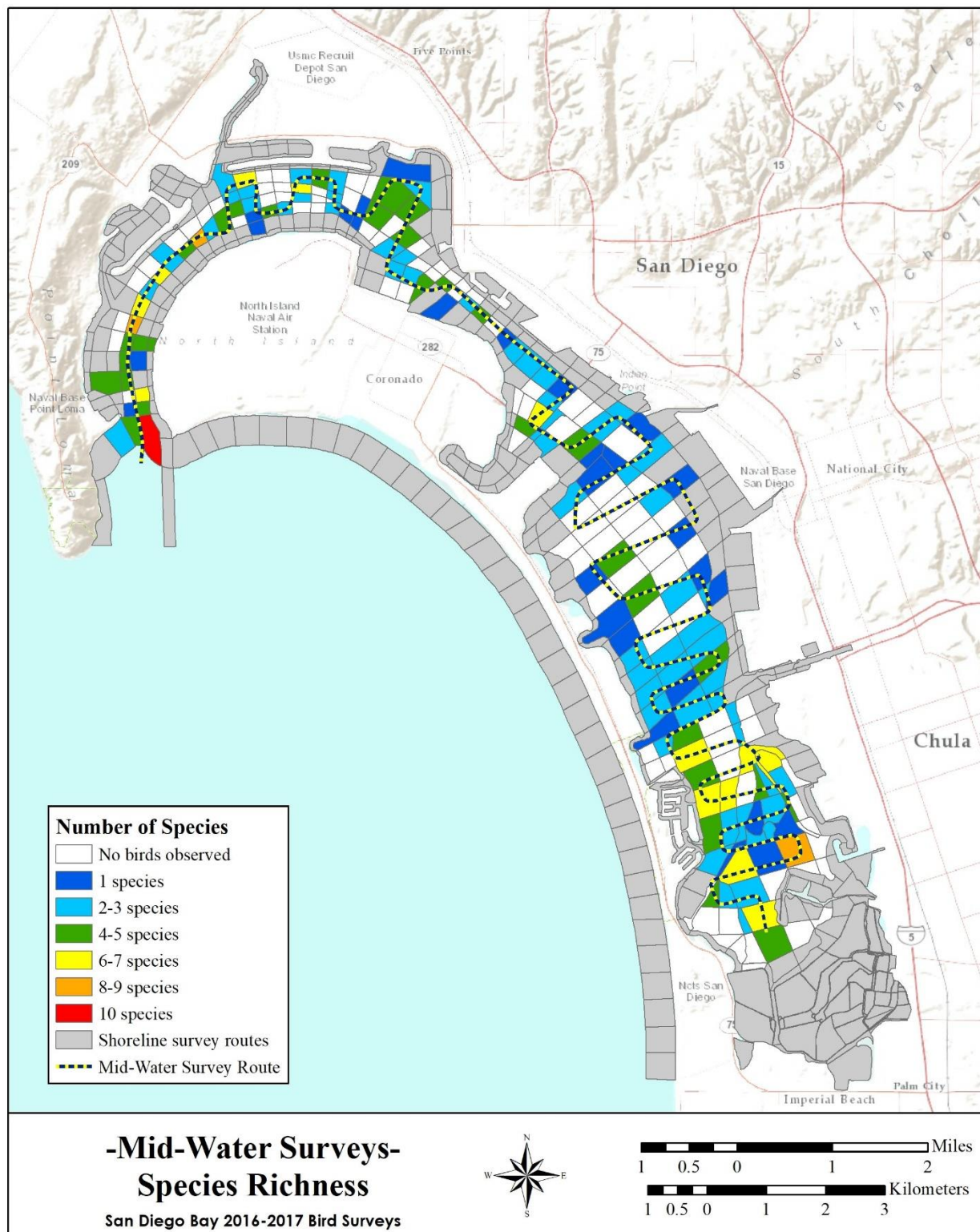
Month	Species Observed		
	2006-07	2009-10	2016-17
November	34	21	18
December	22	28	18
January	27	30	18
February	20	22	16

**Table 3-13. Ten most abundant species observed during the 2006-07, 2009-10, and 2016-17 mid-water surveys.**

Species	10 Most Abundant Species 2016-17 Mid-Water Survey		
	2006-07	2009-10	2016-17
Surf Scoter	27,417	14,327	5,633
Brant	270	316	645
Western Gull	457	404	474
Brandt's Cormorant	1,301	844	390
Lesser Scaup*	502	2,256	270
Bufflehead	756	740	124
Heermann's Gull	167	205	102
Brown Pelican	155	213	92
Royal Tern	33	18	44
Eared Grebe	72	105	41

\* - combined lesser scaup and scaup sp. records





Map 3-5. Species richness observed during the bay mid-water surveys in 2016-17.



### 3.3 Point Count Surveys

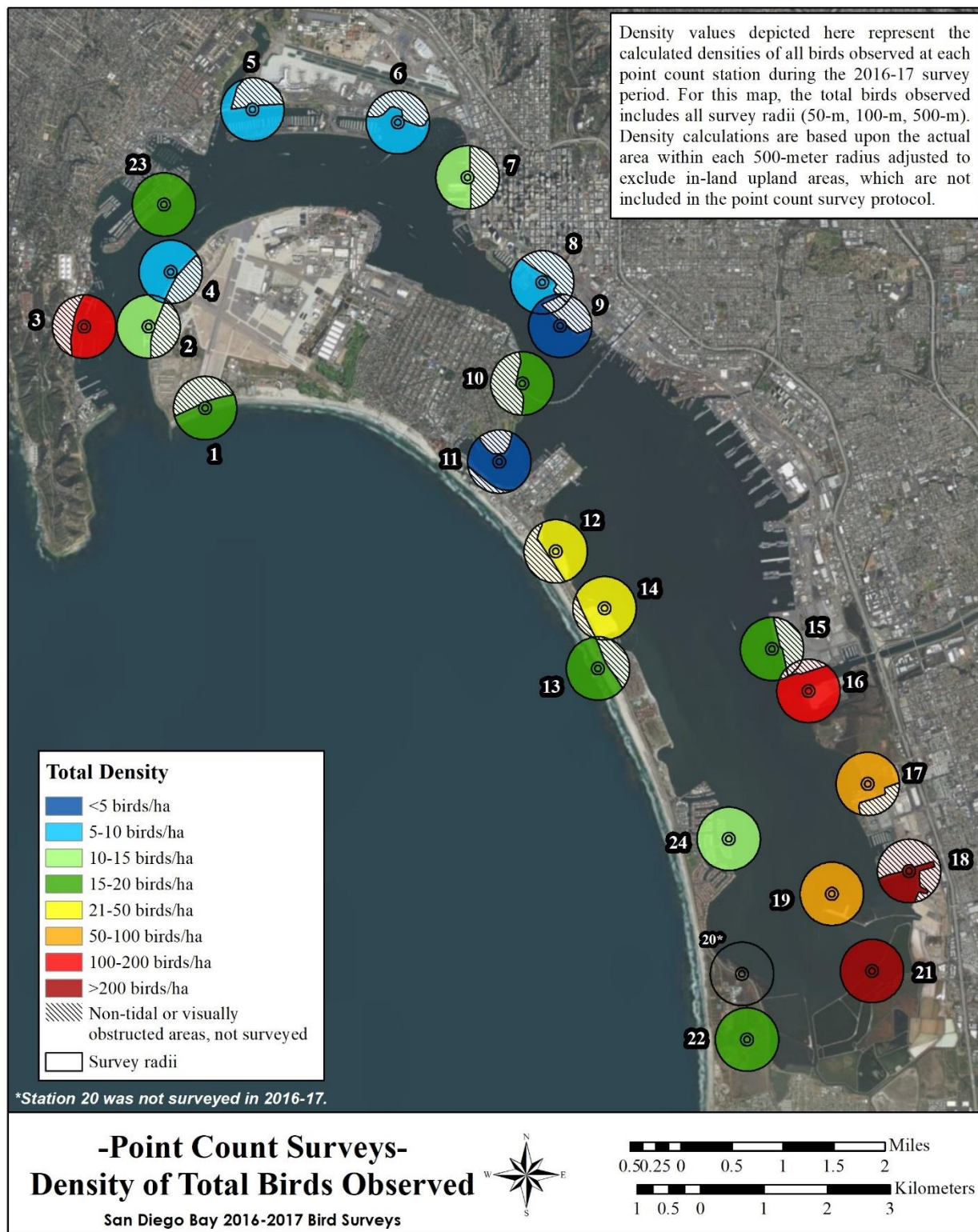
#### 3.3.1 Abundance and Density

A total of 88,894 individual birds were observed during the point count surveys (Table 3-14), with the greatest number observed at Station 21 on the north shore of the salt ponds (39,235 birds observed, mostly Elegant Terns). The lowest number observed was at Station 9 located north of the Coronado bridge on the east shore of the bay, with only 235 individual birds observed. The highest overall densities of birds (>100 birds per hectare) were observed at Station 21 (Salt Ponds-North Shore), Station 18 (Chula Vista South-Marina/Mudflats, Station 16 (D Street Fill), and Station 3 (Point Loma, near the bait barge) (Map 3-6). The lowest densities (<10 birds per hectare) were observed at stations in the north and north-central bay regions.

Table 3-14. Total number of individual birds observed per month at each point count station in 2016-17. **Highest** and **Lowest** numbers for each station are highlighted in bold.

Station ID	Jul. 2016	Aug. 2016	Sep. 2016	Oct. 2016	Nov. 2016	Dec. 2016	Jan. 2017	Feb. 2017	Mar. 2017	Apr. 2017	May. 2017	Jun. 2017	Total	Avg Count
1	106	18	116	113	127	46	67	<b>2</b>	27	<b>183</b>	6	87	898	74.8
2	71	37	73	<b>30</b>	<b>98</b>	47	51	69	nd	nd	36	85	597	59.7
3	375	<b>1,274</b>	770	754	86	354	618	<b>26</b>	344	393	198	421	5,613	467.8
4	<b>139</b>	18	52	<b>9</b>	51	76	29	55	25	nd	19	62	535	48.6
5	26	nd	88	<b>14</b>	29	<b>61</b>	42	36	20	29	25	42	412	37.5
6	12	53	19	34	27	<b>79</b>	67	47	37	<b>11</b>	13	nd	399	36.3
7	56	40	37	30	78	66	67	48	28	<b>15</b>	31	<b>90</b>	586	48.8
8	46	33	32	38	26	60	<b>70</b>	52	22	<b>7</b>	23	28	437	36.4
9	8	<b>4</b>	5	10	15	37	<b>89</b>	16	13	8	10	20	235	19.6
10	nd	<b>16</b>	30	22	39	112	<b>183</b>	107	66	53	34	34	696	63.3
11	nd	24	10	<b>3</b>	44	43	<b>48</b>	30	23	nd	8	25	258	25.8
12	nd	109	101	56	82	<b>445</b>	160	380	<b>18</b>	98	166	41	1,656	150.5
13	nd	67	<b>12</b>	64	236	15	65	<b>263</b>	217	34	83	15	1,071	97.4
14	nd	445	94	235	91	<b>699</b>	287	80	68	68	55	<b>28</b>	2,150	195.5
15	4	5	<b>3</b>	<b>3</b>	57	300	<b>374</b>	29	104	6	<b>3</b>	16	904	75.3
16	460	194	1,606	nd	841	<b>2,253</b>	1,117	1,211	1,394	501	nd	<b>79</b>	9,656	965.6
17	106	39	479	191	1,147	<b>1,222</b>	1,015	334	157	25	113	<b>23</b>	4,851	404.3
18	<b>164</b>	403	770	402	1,356	1,536	748	<b>1,868</b>	973	608	174	326	9,328	777.3
19	253	198	<b>63</b>	129	839	847	691	<b>1,003</b>	678	293	233	369	5,596	466.3
21	<b>8,446</b>	<b>200</b>	2,735	4,744	5,833	4,411	5,850	2,678	nd	2,127	637	1,574	39,235	3,539.1
22	<b>855</b>	33	nd	13	30	16	<b>7</b>	81	155	26	13	33	1,262	114.7
23	111	nd	222	102	<b>263</b>	198	123	84	<b>43</b>	65	86	150	1,447	131.5
24	37	38	94	32	87	84	97	<b>21</b>	<b>351</b>	146	42	43	1,072	89.3
<b>Total</b>	<b>11,275</b>	<b>3,248</b>	<b>7,411</b>	<b>7,028</b>	<b>11,482</b>	<b>13,007</b>	<b>11,865</b>	<b>8,520</b>	<b>4,763</b>	<b>4,696</b>	<b>2,008</b>	<b>3,591</b>	<b>88,894</b>	<b>395.9</b>

'nd' = data not available



Map 3-6. Overall density of birds observed within point count station survey areas in 2016-17.

Seasonally, the highest densities were observed in the winter surveys (24.5 birds/ha), with the lowest density observed in the spring surveys (8.9 birds/ha) (Table 3-15).

**Table 3-15. Overall density of birds observed by season at each point count station in 2016-17. Highest and Lowest numbers for each station are highlighted in bold.**

Point Count Station	Overall Density (#birds/ha)			
	Summer	Fall	Winter	Spring
1	4.5	<b>7.6</b>	<b>2.5</b>	4.6
2	3.8	<b>4.0</b>	3.3	<b>0.7</b>
3	<b>37.8</b>	29.4	18.2	<b>17.1</b>
4	<b>4.1</b>	2.1	3.0	<b>0.8</b>
5	<b>1.3</b>	2.6	<b>2.7</b>	1.5
6	1.4	1.7	<b>4.0</b>	<b>1.3</b>
7	<b>4.2</b>	3.3	4.1	<b>1.7</b>
8	2.3	2.0	<b>3.9</b>	<b>1.1</b>
9	<b>0.6</b>	<b>0.6</b>	<b>2.8</b>	<b>0.6</b>
10	<b>1.2</b>	2.1	<b>9.4</b>	3.6
11	0.9	1.0	<b>2.1</b>	<b>0.5</b>
12	<b>3.0</b>	4.7	<b>19.4</b>	5.6
13	<b>1.5</b>	5.5	<b>6.1</b>	5.9
14	6.8	6.0	<b>15.3</b>	<b>2.7</b>
15	<b>0.5</b>	1.2	<b>13.2</b>	2.1
16	<b>10.8</b>	36.2	<b>67.7</b>	28.0
17	<b>2.7</b>	29.2	<b>41.4</b>	4.7
18	<b>29.9</b>	84.7	<b>139.1</b>	58.8
19	<b>10.4</b>	13.1	<b>32.4</b>	15.3
21	130.2	<b>169.5</b>	164.8	<b>35.2</b>
22	<b>11.7</b>	<b>0.5</b>	1.3	2.5
23	3.3	<b>7.5</b>	5.2	<b>2.5</b>
24	<b>1.5</b>	2.7	2.6	<b>6.9</b>
Average	11.9	18.1	24.5	8.9
Min	0.5	0.5	1.3	0.5
Max	130.2	169.5	164.8	58.8

### 3.3.2 Species Richness

Species richness per point count station ranged from a low of 12 species at Station 9 (Terminal Street) to a high of 64 species at Station 18 (Chula Vista South-Marina/Mudflats (Table 3-16).

Species lists for each point count station are provided in Appendix E.

**Table 3-16. Species richness at point count stations in 2016-17. Highest and Lowest numbers for each station are highlighted in bold.**

Point Count Station	Jul. 2016	Aug. 2016	Sep. 2016	Oct. 2016	Nov. 2016	Dec. 2016	Jan. 2017	Feb. 2017	Mar. 2017	Apr. 2017	May. 2017	Jun. 2017	Total Species
1	6	4	7	14	13	3	7	0	1	14	2	11	30
2	9	4	8	10	16	9	10	9	nd	nd	6	11	31
3	9	9	9	12	11	13	12	8	18	12	10	13	30
4	9	6	8	3	12	10	8	7	5	nd	3	9	32
5	6	nd	6	8	6	9	7	12	7	3	8	11	32
6	5	6	4	6	9	10	9	10	9	5	5	nd	31
7	5	4	4	5	7	6	6	6	4	2	5	6	21
8	4	7	3	7	6	9	8	8	9	3	6	11	27
9	2	1	1	1	3	4	8	4	3	2	3	2	12
10	nd	6	2	8	9	8	17	14	14	14	10	6	34
11	nd	2	5	1	10	7	11	5	3	nd	4	6	25
12	nd	9	8	6	9	18	12	20	3	11	10	1	43
13	nd	10	9	6	11	2	3	6	13	4	8	3	30
14	nd	18	9	14	7	10	14	15	9	18	15	6	48
15	2	2	2	3	4	4	3	6	4	1	2	6	15
16	15	14	15	nd	27	22	27	22	21	23	nd	16	50
17	11	10	11	6	21	22	19	16	14	12	22	8	57
18	8	12	12	20	15	20	19	16	17	20	18	17	64
19	12	11	15	13	17	22	26	17	13	13	10	11	48
21	9	7	27	24	20	25	25	21	nd	25	25	15	49
22	4	5	nd	5	9	4	1	9	17	7	3	9	38
23	7	nd	9	6	9	12	8	8	10	5	12	11	28
24	6	4	11	13	17	18	19	9	12	16	8	12	51
<b>Total Species</b>	<b>46</b>	<b>51</b>	<b>54</b>	<b>64</b>	<b>84</b>	<b>69</b>	<b>71</b>	<b>68</b>	<b>73</b>	<b>63</b>	<b>61</b>	<b>57</b>	<b>129</b>
Average	7	7	8	9	12	12	12	11	10	11	9	9	36
Min	2	1	1	1	3	2	1	0	1	1	2	1	12
Max	15	18	27	24	27	25	27	22	21	25	25	17	64

### 3.3.3 Long-Term Trends

Over the course of the three surveys, the numbers of birds observed at the point count station have fluctuated (Figure 3-7), but some clear trends are apparent. Total birds observed in the summer surveys has increased each year, but while the winter and fall totals for 2016-17 were higher than 2006-07, they were lower than in 2009-10. The number of individual birds observed at each point count station also show few trends, although certain stations do stand out (Table 3-17). The largest declines in numbers have been seen at Station 18 (Chula Vista Mudflats), Station 14 (Delta Beaches-South), and Station 1 (North Island South Beach). The largest increases have been recorded at Station 21 (Salt Ponds North Shore), Station 19 (Chula Vista Wildlife Reserve), Station 3 (Point Loma), and Station 16 (D Street Fill).

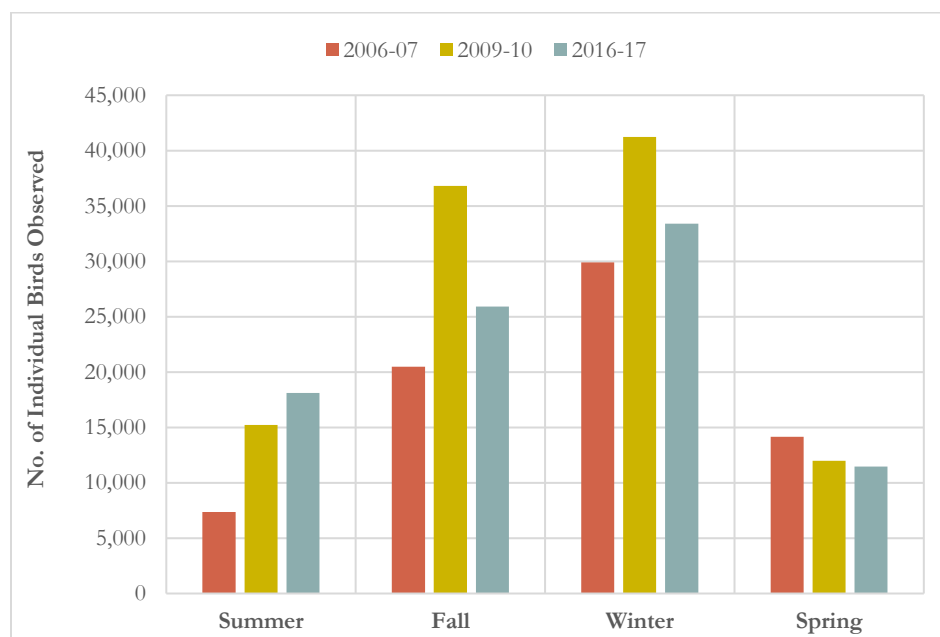


Figure 3-7. Number of individual birds observed during point count surveys in 2006-07, 2009-10, and 2016-17.



**Table 3-17. Total number of individual birds observed at point count stations in 2006-07, 2009-10, and 2016-17. Stations where the 2016-17 total differed from 2006-07 by at least +500 or -500 birds are shown in bold. Stations where the percent change from 2006-07 to 2016-17 was at least +25% or -25% is also shown.**

Station ID	Location	2006-07 <sup>1</sup>	2009-10	2016-17	Difference 2016-17/2006-07	Percent Change
1	North Island South Beach	2,440	3,934	898	<b>-1,542</b>	<b>-63.2</b>
2	North Island South	1,121	1,387	597	<b>-524</b>	<b>-46.7</b>
3	Point Loma	1,559	1,605	5,613	<b>4,054</b>	<b>+260</b>
4	North Island North	833	682	535	-298	<b>-35.8</b>
5	Harbor Island	344	498	412	68	+19.8
6	Coast Guard Station	578	684	399	-179	<b>-31.0</b>
7	Embarcadero	489	481	586	97	-19.8
8	Convention Center	481	1,107	437	-44	-9.1
9	Terminal Street	306	278	235	-71	-23.2
10	Coronado Bridge	940	1,337	696	-244	<b>-26.0</b>
11	Glorietta Bay	650	896	258	-392	<b>-60.3</b>
12	Delta Beaches-North	1,716	3,839	1,656	-60	-3.5
13	Silver Strand	1,099	3,260	1,071	-28	-2.5
14	Delta Beaches-South	3,856	6,330	2,150	<b>-1,706</b>	<b>-44.2</b>
15	Terminal Avenue	908	431	904	-4	-0.4
16	D Street Fill	6,575	11,840	9,656	<b>3,081</b>	<b>+46.9</b>
17	Chula Vista North	4,003	6,920	4,851	<b>848</b>	+21.2
18	Chula Vista Mudflats	16,593	9,262	9,328	<b>-7,265</b>	<b>-43.8</b>
19	Chula Vista Wildlife Reserve	1,326	1,953	5,596	<b>4,270</b>	<b>+322.0</b>
20	Emory Cove	11,263	14,579	-	-	-
21	Salt Ponds North Shore	14,432	32,836	39,235	<b>24,803</b>	<b>+171.9</b>
22 <sup>2</sup>	NRRF	-	1,100	1,262	162	+14.7
23 <sup>2</sup>	Shelter Island	-	-	1,447	-	-
24 <sup>2</sup>	Gran Caribe Isle	-	-	1,072	-	-
<b>Total</b>		<b>71,512</b>	<b>105,239</b>	<b>88,894</b>	<b>17,382</b>	<b>+24.3</b>

<sup>1</sup> Several stations in 2006-07 were not surveyed at peaking tide instead of ebbing tide. Where ebbing tide data were not available, peaking tide was used to complete the data set for that station.

<sup>2</sup> Station 22 was established in 2009. Stations 23 and 24 were established in 2016.



Short-Billed Dowitchers. © Timothy Burr, 2017.

## 4.0 Discussion and Recommendations

### 4.1 Survey Limitations

The counting of active, mobile birds can often be influenced by animals moving around within complex environments, where obstacles such as docks, piers, anchored boats, and waves can obscure visibility. Such factors could result in either over or undercounting. For example, roosting waterbirds during peaking tide surveys may be undercounted if they are in areas of reduced visibility; they can be in densely packed flocks where discernment of individuals is difficult. Similarly, individuals in densely packed foraging flocks during ebbing tide surveys may be undercounted. It is also possible that observers counted individual birds or groups moving between cells more than once. Although observers make every effort to avoid double-counting of birds that may be moving around during the survey, it is not always possible to do so. For this reason, adding the results from multiple cells or throughout the study area can yield an inflated total number of observations. Count results within each cell present the abundance of individual birds observed within that cell, but any combined number of observations from multiple cells should be interpreted as an index that approximates the abundance of individual birds in those cells, rather than an accurate measure of bird numbers.

These surveys were not designed to detect secretive marsh bird species, which often conceal themselves in vegetation and require specific, auditory sampling methodology. Conspicuous marsh species, such as egrets, were recorded in greatest abundance while more secretive species were likely undercounted. And while the survey methods were also not designed to detect songbirds, the native Belding's Savannah Sparrow was the songbird recorded in the greatest numbers.

### 4.2 Shoreline and Mid-Water Surveys

The total number of individual birds observed in 2016-17 was greater than previous surveys have recorded, in part due to two additional months of effort (May and June) this time (budget constraints were the reason behind earlier deletions of survey months). The distribution and seasonality of the total numbers remained very similar to previous patterns, with fall and winter the peak seasons for abundance and richness. San Diego Bay is important for wintering species and holds significant non-breeding concentrations of several species, including Surf Scoter, Red Knot, Willet, and Black-necked Stilt. As in both previous survey years, the salt ponds, south bay, and north bay (particularly around the bait barge) consistently rank highest in abundance and richness.

The decline in numbers of waterfowl observed during the 2009-10 mid-water surveys, compared to 2006-07, continued in 2016-17, dropping to less than half of what had been recorded in 2009-10. The halving of the Surf Scoter count was a major contributor to the decline. Despite the drop-off in the number of individuals seen, the species makeup remained consistent during the mid-water surveys, with the only large-scale patterns being a slight increase in certain waterfowl (scaup [*Aythya* sp.] and Redhead [*Aythya americana*]) and the large decrease in Surf Scoter observations. The cause of the decline in Surf Scoter in San Diego Bay and elsewhere is currently unknown, although Unitt suggests the possibility of boat traffic being a factor (Unitt 2012). However, the survey results are consistent with observations of declining scoter populations throughout western North America since the 1950s (Anderson et al. 2015; Unitt 2012; Pitkin and Wood 2011). The number of Surf Scoters detected on Alaska breeding surveys also appears to have declined from 1993-2012 (Bowman et al. 2015). On the Pacific Coast, the wintering population is estimated at approximately 225,000 Surf Scoters, based on compilation of results from a variety of independent surveys (J. Hodges, unpublished; Sea Duck Joint Venture 2015).

When compared to previous avian studies in San Diego Bay, similar rankings for the most abundant species observed are found. Past studies had different objectives in terms of bay subregion emphasized, habitat areas that were focused on, and methods due to whether the interest was shorebirds, waterfowl, or all bay birds. These past studies include those of Ogden Environment & Energy Services (1994, 1995) and USFWS (1994, 1995). Their results are provided as a reference to the earliest quantitative data available from Port- and Navy-funded projects. The joint Port-Navy studies since 2006 are the first comprehensive survey of avian species in that methods are designed to detect all species groups across the whole bay in all habitat types (except marsh birds in marshes which require calling methods to detect birds with secretive behavior). Those rankings since 2006, therefore, are the most directly comparable. Comparisons of the most abundant species observed during avian surveys from historical to present are shown below in Table 4-1.

**Table 4-1. Comparison of most abundant species observed during avian surveys from historical to present. Previous surveys include those of Ogden Environment & Energy Services (1994, 1995) and USFWS (1994, 1995). Rankings are ordered top-to-bottom from highest to lowest for each species group.**

	Previous Bay Studies	2006-07 Surveys	2009-10 Surveys	2016-17 Surveys
Waterfowl	<ul style="list-style-type: none"> <li>Surf Scoter</li> <li>Eared Grebe</li> <li>Scaup (lesser &amp; greater)</li> </ul>	<ul style="list-style-type: none"> <li>Surf Scoter</li> <li>Western Grebe</li> <li>Eared Grebe</li> </ul>	<ul style="list-style-type: none"> <li>Surf Scoter</li> <li>Eared Grebe</li> <li>Western Grebe</li> </ul>	<ul style="list-style-type: none"> <li>Surf Scoter</li> <li>Eared Grebe</li> <li>Brant</li> </ul>
Shorebirds	<ul style="list-style-type: none"> <li>Western Sandpiper</li> <li>Red-necked Phalarope</li> <li>Peep sp.</li> </ul>	<ul style="list-style-type: none"> <li>Western Sandpiper</li> <li>Peep sp.</li> <li>Marbled Godwit</li> </ul>	<ul style="list-style-type: none"> <li>Western Sandpiper</li> <li>Peep sp.</li> <li>Marbled Godwit</li> </ul>	<ul style="list-style-type: none"> <li>Western Sandpiper</li> <li>Peep sp.</li> <li>Black-bellied Plover</li> </ul>
Seabirds	<ul style="list-style-type: none"> <li>Brown Pelican</li> <li>Elegant Tern</li> <li>Heermann's Gull</li> </ul>	<ul style="list-style-type: none"> <li>Western Gull</li> <li>Elegant Tern</li> <li>Double-crested Cormorant</li> </ul>	<ul style="list-style-type: none"> <li>Western Gull</li> <li>Elegant Tern</li> <li>Brandt's Cormorant</li> </ul>	<ul style="list-style-type: none"> <li>Elegant Tern</li> <li>Western Gull</li> <li>California Gull</li> </ul>
Marshbirds	<ul style="list-style-type: none"> <li>Great Blue Heron</li> <li>Snowy Egret</li> <li>Great Egret</li> </ul>	<ul style="list-style-type: none"> <li>Snowy Egret</li> <li>Belding's Savannah Sparrow</li> <li>Great Blue Heron</li> </ul>	<ul style="list-style-type: none"> <li>Belding's Savannah Sparrow</li> <li>Snowy Egret</li> <li>Great Egret</li> </ul>	<ul style="list-style-type: none"> <li>Belding's Savannah Sparrow</li> <li>Snowy Egret</li> <li>Great Blue Heron</li> </ul>

Western Grebes (*Aechmophorus occidentalis*), which had placed sixth in previous efforts, have been very common more recently. Similarly, the Brown Pelican (*Pelecanus occidentalis californicus*) remains a common species, but not as common as Western Gulls and Brandt's Cormorants. Western Gulls, which were the most numerous of the seabirds during these surveys, placed seventh in previous efforts. This common gull was likely undercounted in past surveys as previous researchers often did not distinguish gulls to species (Ogden Environment & Energy Services 1994, 1995; USFWS 1994, 1995). The peeps listed in Table 4-1 are small, indistinguishable shorebirds, usually sandpipers that are difficult to differentiate to species from a distance. Many of the birds counted in this category are most likely Western Sandpipers, which would add even more individuals to the count of this abundant species.

Some bird movement patterns occur in concert with tidal cycles, as shown in Map 3-3. Sandpipers and plovers were the most numerous of the shorebird group and the differences in their locations between tides indicated their use of different habitats. For example, numbers in the interior salt works during peaking tide are high, with a shift to the tidal flats and western ponds during the ebbing tide as foraging opportunities become available. In August, migrant phalaropes are common in the non-tidal, interior salt works regardless of tide, along with Eared Grebe, stilt, and avocet. Eared Grebes, stilts, avocets, and phalaropes are known to rely on the brine fly and shrimp prey base of the interior salt ponds (SDNHM and Avian Research Associates 2014), and a similar feeding pattern has been noted in salt ponds of San Francisco Bay (Stenzel et al. 2002; Warnock et al. 2002). The importance of non-tidal salt ponds to foraging shorebirds and the possibility of higher foraging value in non-tidal salt ponds than in tidal habitats has been noted as well (Masero and Perez-Hurtado 2001; Warnock et al. 2002; Warnock and Takekawa 1995).

Previous monitoring has demonstrated the establishment of high tide roosting flocks of shorebirds along ocean-facing beaches and the shifting of those flocks to flats of the bay as they become exposed as tides ebb (Copper, Patton, Wolf, unpublished data 2014). Terns and skimmers showed a tendency to roost within the salt works during high tide and disperse to roost and forage in tidal areas during ebbing tide. Seabirds staged in the salt works often forage offshore. The ocean-side beaches of the Silver Strand (see Map 1-2) and the enhancement islet "Homeport Island" (south of Naval Amphibious Base), however, show heavy bird use regardless of tide. The width of the Silver Strand western beaches likely contributes to a longer duration of forage time when bayside foraging areas are flooded. At peaking tide, roosting areas remain available as well as some foraging opportunities, such as invertebrates associated with wrack line debris, for certain species. The availability of both food and resting areas throughout the day greatly contributes to the biodiversity seen in the bay. In addition, the apparent concentration and availability of prey within non-tidal salt ponds at times can also result in birds not shifting with the tides as expected.

Seasonally, seabirds have a reverse cycle compared to migratory shorebirds and waterfowl. The seabirds arrive from the south to breed in San Diego Bay and are highest in abundance in late summer. In 2017, a spike in abundance began on mudflats in April reflecting arriving migrant Elegant Terns, with 41,813 individual observations by summer's end. These and other seabirds stage from the salt ponds to forage offshore. The flocks roost, bathe, and show courting behavior in April, then nest and fledge young through the summer months. Observers at the salt ponds noted the arrival of cormorants, terns, and skimmers establishing nesting colonies on the levees in April, with those numbers boosted in late summer by pelicans and gulls.



The increase in numbers of birds at the salt works is likely a result of habitat restoration efforts to re-open some of the ponds to tidal flushing, providing additional foraging opportunity for birds. The South San Diego Bay Wetland Restoration Project is a long-term restoration and enhancement project of the San Diego Bay National Wildlife Refuge. Three salt evaporation ponds (10, 10A, and 11) totaling 585 ha (1,450 acres) on the west side of the salt works were converted to intertidal wetlands between late 2010 through September 2011. Tidal flow was restored by excavating channels within ponds 10 and 11 and breaching of the outer dikes (SDNHM and Avian Research Associates 2014). Planting of salt marsh vegetation extended through December 2011. By the time these 2016-17 surveys took place, much of the area had converted to salt marsh vegetation.

### 4.3 Point Counts

The point count results showed similar species richness and abundances as the shorebird surveys, though all measures were slightly lower, as would be expected with this method, which is conducted for a short 15-minute period and in a defined survey area (500-meter radius, usually as a subset of the routes). The consistency of species makeup and diversity between point count surveys and shorebird surveys indicates that this methodology can capture much of the diversity of the bay in a short amount of time.

To evaluate how well the point count abundance results represented the other methods, we conducted simple regressions comparing the annual total point count results for each station with the combined totals for both shoreline and mid-water surveys for grids within the 500-meter recording area of the station. We looked at August 2016, a low abundance month for birds, and January 2017, a high abundance month. Both showed a high correlation between point count results and the other combined survey methods ( $R^2$  for August = 0.91 and  $R^2$  for January = 0.98). This suggests that conducting point counts in interim years between the comprehensive survey events would produce robust results which could be a valuable index of both abundance and diversity, with highly correlated but generally lower numbers compared to the comprehensive survey events every five years.

As stated in the Methods section (Chapter 3), the point count Station 24 at Gran Caribe Isle was a timed walking route rather than a stationary count, to improve visibility for the observer. This site is of management interest to the Port as a future mitigation opportunity, and this station represents a baseline condition assessment for avian use of the area. Despite the adjustment in methods, these results can be combined with those of other point count locations because all are considered “moment-in-time” records. For other point counts where visibility was obstructed or urban hardscape formed a high proportion of the 500-meter circle, density calculations excluded the obstructed and much of the hardscape areas; for Gran Caribe Isle, a work-around to this problem by walking the site was the best solution.

### 4.4 Trends 2006-07 to 2016-17

This report's Appendix F provides survey results in a conveniently extractable format, for all survey years by grid or grid group, which can be distributed by the Port or Navy to support environmental baseline and impact studies. The point count results (Appendix E) are also presented in a way that the Navy and Port can easily extract for site-specific project needs.



Species-by-species trends for all three survey events are shown graphically in Appendix G, also to support environmental documentation needs of the project sponsors, and the management and conservation of the bay's birds. One of the key objectives of these surveys is to observe long-term trends of waterbirds that use San Diego Bay. Some species were identified (see Table 3-5) with a greater than 20% decline in observations between the 2006-07 and the 2016-17 surveys. These trends are large and likely overcome any observational bias or error in method. While statistical analyses of trend are beyond the scope of this report, a relatively straightforward analysis could be performed using the variability of observations among grids, species by species, to evaluate whether these large trends are significant.

A comparison of San Diego Bay results to regional, flyway, and national records for each species or species group provides context for interpreting the cause behind trends and, therefore, any management implication. This context helps determine if a decline or increase is local or a bigger picture than the bay. Understanding a species' geographic range, life history, and population status also provides valuable context. For instance, Red-necked Phalarope observations declined by over 90% in this survey compared to 2006-07. This species has an extremely large range and the population size is extremely large as well. Despite that the population trend appears to be decreasing on a broad scale (Manomet Bird Observatory 2018), the decline is not believed to be sufficiently rapid to make the species vulnerable. For these reasons this species is evaluated as Least Concern by the Manomet Bird Observatory (2018).

An overall downward trend in counts of North American shorebirds could be reversing since the late 1990s, according to almost 40 years of data from the International Shorebird Survey (1974-2009) published by the Manomet Bird Observatory. Despite these overall up trends, declines appear to be ongoing for 23 species. The declines were statistically significant for the geographic range of five of these species, including some already recognized to be of conservation concern, such as the Red Knot, Long-billed Curlew (*Numenius americanus*), and Black-bellied Plover (Manomet Bird Observatory 2018).

For ducks, conditions in breeding landscapes of the prairies and the boreal forest are key to their population status. According to the USFWS Waterfowl Population Survey (USFWS 2017), most duck populations are above long-term averages. However, they still identified pintails and scaup as a concern.

## 4.5 Recommendations for the Future

### 4.5.1 Data Acquisition, Sharing, and Distribution

Between the 2006-07 and 2016-17 surveys, improvements were made in how data collection was managed, leading to a more timely and accurate data set. These improvements have cut down on the time needed to collate the incoming records and enabled quicker identification and resolution of questions about the records when an observer's memory is still fresh. Use of the ESRI Collector application by most of the field crews greatly facilitated data acquisition by eliminating the time-consuming data entry required when data are recorded on paper. Continued use of the ESRI Collector or similar application would further streamline data acquisition efforts in the future.

The survey results collected should be provided to centralized clearinghouses for avian data so that conservation organizations can interpret the status and trend of each species for its regional and geographic range. A key data center is the Avian Knowledge Network (AKN), which is a network of

people, institutions and government agencies supporting the conservation of birds and their habitats in the western hemisphere. The partners aim to improve the conservation of birds and their habitats through best available science and open, collaborative partnerships. To facilitate data exchange, the AKN developed a data standard called Bird Monitoring Data Exchange (BMDE), and each contributor (node) to the AKN has built tools to accept in and transform data into the BMDE form (AKN 2018). eBird is a contributing node to the AKN, managed by the Cornell Lab of Ornithology (an AKN partner). eBird is the largest biodiversity-related citizen science project (eBird 2018). The California Avian Data Center is a regional node of the AKN, hosted by Point Blue Conservation Science. With the support of 2010 California Landscape Conservation Cooperative funding, Point Blue developed and launched an on-line data portal for wintering shorebird monitoring as part of the Pacific Flyway Shorebird Survey. Their interactive data summary application is a place the Navy and Port can find context for bird numbers and trends at user-defined scales. The Pacific Flyway Shorebird Survey is a coordinated multi-partner monitoring program led by Point Blue targeting the management and conservation of wintering shorebirds on the Pacific Flyway. In comparison with other locations reporting to these networks, avian use of San Diego Bay may be more strongly representative due to the year-long and comprehensive nature of the surveys, whereas many locales only report twice per year: in winter and breeding season.

Many combinations of factors (seasonality, bird species, bird group, tide, location, region, habitat substrate, etc.) can be analyzed with the current data set. In-depth statistical and other analyses of the data that are not appropriate for a general report may be of great interest to project proponents in certain jurisdictions of the bay. Allowing outside access to the data for further in-depth analysis should be a key component of the overall survey program. It is recommended that the Port and Navy outreach to local or regional research organizations to take advantage of these data for special studies to enhance understanding of trends and implications for management for their respective needs, and for the greater good of avian conservation region-wide.

An important opportunity exists to correlate the Port-Navy sponsored fish abundance surveys with avian productivity of the bay, in the context of available food and climate cycles, and climate change.

The scope of these surveys also does not cover a detailed analysis of trend in relation to weather cycles and other regions—this should be done through grant or other opportunities. Analysis of trend in bird densities should be interpreted separately for each species or species group (such as small, medium, and large shorebirds; dabbling ducks; sea ducks; etc.). Certain statistics are straightforward and routine, while other will require a statistician's expertise. Nonparametric methods should be used, such as locally estimated scatterplot smoothing Local Polynomial Regression, a method used by others for avian trends for fitting a smooth curve between two variables, or fitting a smooth surface between an outcome and up to four predictor variables (Cleveland 1979; Cleveland and Devin 1988).

It is recommended that the Port and Navy adopt a set of indicators to report on bay health in relation to bird populations. The status of San Diego Bay's birds is one of multiple indicators that can be used, in combination, to portray health of the bay; however, bird status cannot be used in isolation. For example, the San Francisco Estuary Partnership (2015) uses 33 indicators of ecosystem health to publish a "report card" of the San Francisco Bay and Sacramento-San Joaquin River Delta. The Partnership is one of 28 National Estuary Programs in the country, which has required the use of ecosystem indicators as

recommended by U.S. Environmental Protection Agency's Science Advisory Board (2002). The avian trends reported on as a part of ecosystem health in the San Francisco Bay/Delta could be a basis for considering for periodically reporting on populations in San Diego Bay as well. They are:

- Wintering waterfowl abundance, separating dabbling and diving ducks.
- Breeding waterfowl abundance.
- Shorebird abundance, separating large, medium, and small shorebirds.
- Heron and egret nest density, nest success in terms of fledged chicks, and brood size.
- Tidal marsh bird densities.
- Ridgway's Rail (*Rallus longirostris levipes*) population.
- Three birds of concern: Tri-colored Blackbird (*Agelaius tricolor*), California Black Rail (*Laterallus jamaicensis coturniculus*), and Sandhill Crane (*Grus canadensis*).
- Breeding success of Brandt's Cormorants (an indicator of fish as food).

#### 4.5.2 Future Surveys

One of the original purposes of the point count stations was to provide an inexpensive yet quantitative method for conducting avian surveys each year, in the interval between major survey events. To date, this recommendation has not risen to the level of a funding priority for the Navy and Port, since it is not a direct environmental compliance mandate. An annual effort would help to better separate actual trends as distinct from inter-annual weather variation. Extending the point count surveys to additional years could also allow answers to more specific questions about substrate use, and how the bay is used by conservation planning species of interest. These species or species functional groups (i.e., trophic niche birds such as long-legged shorebirds, or resident songbirds) are endemic or dependent on the bay and can add an important level of detail to a program of successful habitat enhancement or assessing bay health trends. Examples of such use can be found in the San Francisco Bay Estuary Program (see Thompson & Gunther 2004; Pitkin & Wood 2011) and other national estuary programs. Conservation planning species are discussed in the San Diego Bay INRMP (Port and Navy 2013) and the Chula Vista Bayfront Master Plan NRMP (Port 2016). It is recommended that grant funding be sought in the interim years to conduct annual point counts and one mid-water survey, to augment the interpretability of the comprehensive survey events. Grant funding could overcome the challenge of prioritizing these surveys when environmental compliance budgets are constrained.

Future comprehensive avian species surveys should be conducted at least every five years to support project analysis and environmental documentation under the California Environmental Quality Act and National Environmental Protection Act. These periodic surveys can be cost-effective as special studies on avian use may not be necessary as projects arise. Appendices E and F are designed to be extractable for site-specific questions, and Appendix G for species-specific questions. The repeat nature of the surveys allows interpretation of trends within long-term weather cycles and assess management implications of the bay's human use and development. This interval would help keep the budget manageable while providing sufficient frequency to support environmental documentation needs of Port and Navy projects. It is recommended that future avian surveys

coincide with periodic fish surveys, as well, so that any ties can be assessed between; for example, the success of seabird nesting and fish abundance that fluctuates with the El Nino cycle. These major survey events are designed to answer general questions about the bay, including the abundance and distribution of species through a tidal cycle and through seasons, high bird use versus low bird use habitats, and how abundance trends may change through time. Three distinct datasets are now available from which to build upon, making this one of the longer-term quantitative data sets on the west coast for tracking the status of coastal birds. Future surveys can improve and strengthen understanding of not only the bay's important benefit to birds, but broader-scale interpretation of trends along migratory pathways. The rich data set provided by these surveys can enhance the work of many other programs locally, such as the Bird Atlas work of the SDNHM, and the avian status and trend work of many conservation organizations in the west.





Great Blue Heron. © Timothy Burr, 2017.

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Pacific Loon. © Timothy Burr, 2017.

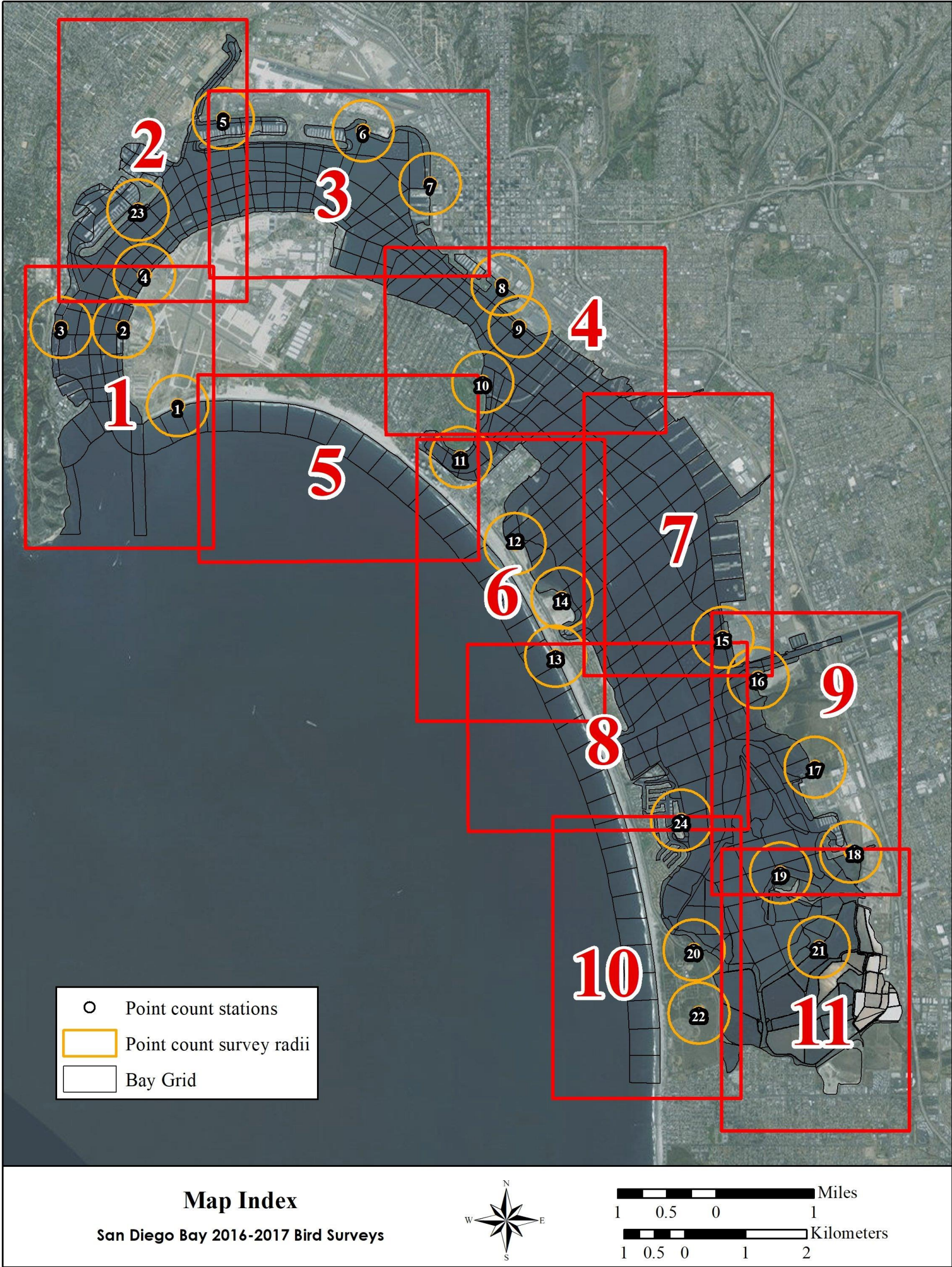
## Appendix A: Oversized Figures of Grid Cells and Point Count Locations

This appendix contains figures of numbered grid cells and point count locations that were too large to include in the body of the document.

- Map A-1 serves as an index to the maps that follow (Map A-2 through Map A-12).
- Map A-2 shows the survey grid and survey routes for part of the North Bay and Ocean regions, as well as Point Count Stations 1, 2, 3, and 4.
- Map A-3 shows the survey grid and survey routes for part of the North Bay region, as well as Point Count Stations 4, 5, and 23.
- Map A-4 shows the survey grid and survey routes for part of the North and North-Central Bay regions, as well as Point Count Stations 5, 6, and 7.
- Map A-5 shows the survey grid and survey routes for part of the North-Central and South-Central Bay regions, as well as Point Count Stations 8, 9, and 10.
- Map A-6 shows the survey grid and survey routes for part of the North-Central Bay and Ocean regions, as well as Point Count Station 11.
- Map A-7 shows the survey grid and survey routes for part of the North-Central, South-Central Bay, and Ocean regions, as well as Point Count Stations 11, 12, 13, and 14.
- Map A-8 shows the survey grid and survey routes for part of the South-Central Bay and South Bay regions, as well as Point Count Stations 15 and 16.
- Map A-9 shows the survey grid and survey routes for part of the South-Central Bay, South Bay, and Ocean regions, as well as Point Count Stations 13 and 24.
- Map A-10 shows the survey grid and survey routes for part of the South-Central Bay and South Bay regions, as well as Point Count Stations 15, 16, 17, 18, and 19.
- Map A-11 shows the survey grid and survey routes for part of the South Bay, Salt Ponds, and Ocean regions, as well as Point Count Stations 20, 22, and 24.
- Map A-12 shows the survey grid and survey routes for part of the South Bay and Salt Ponds regions, as well as Point Count Stations 19 and 21.

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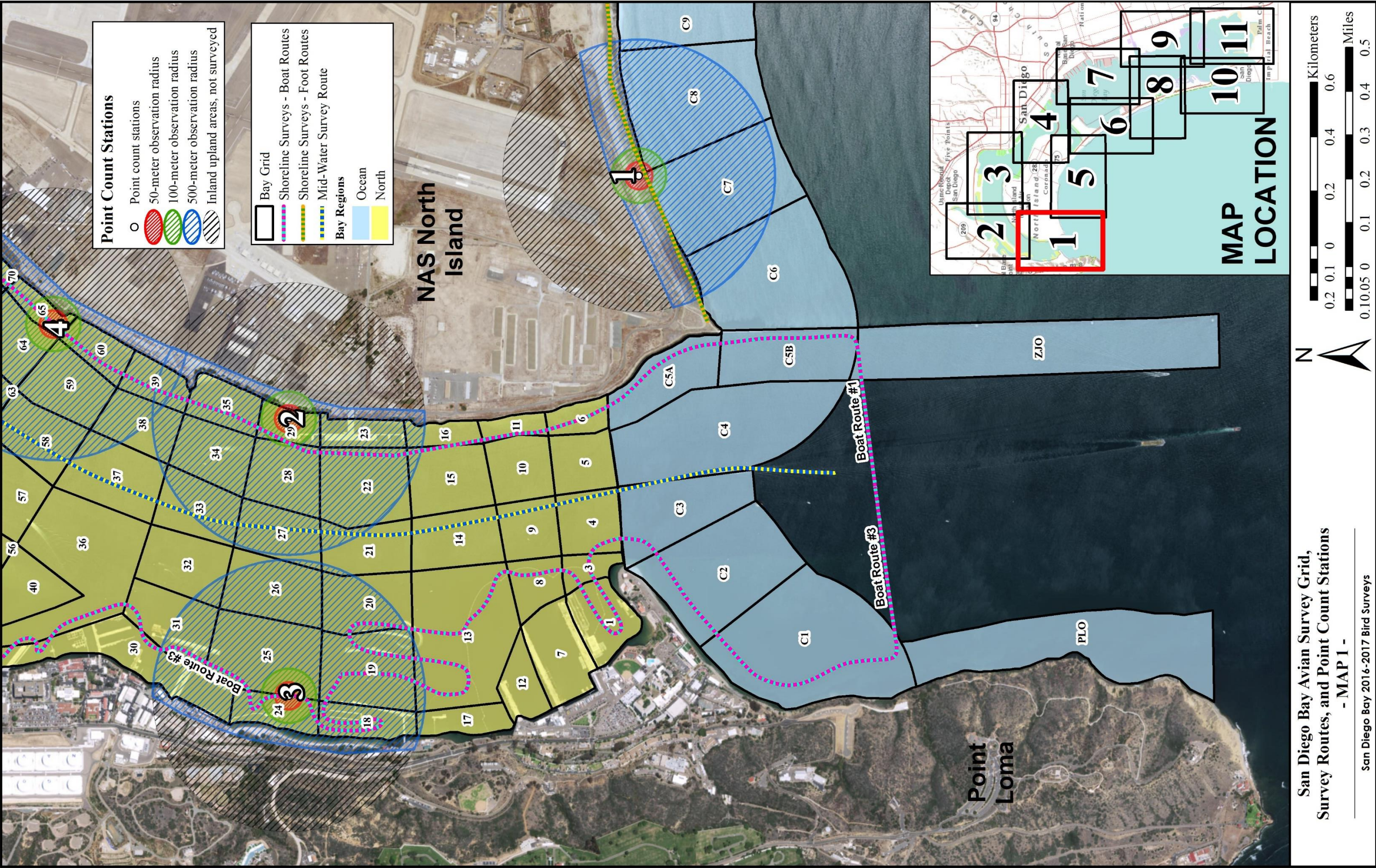


Map A-1. Overview map of San Diego Bay indicating the location of the grid cell close-up maps.



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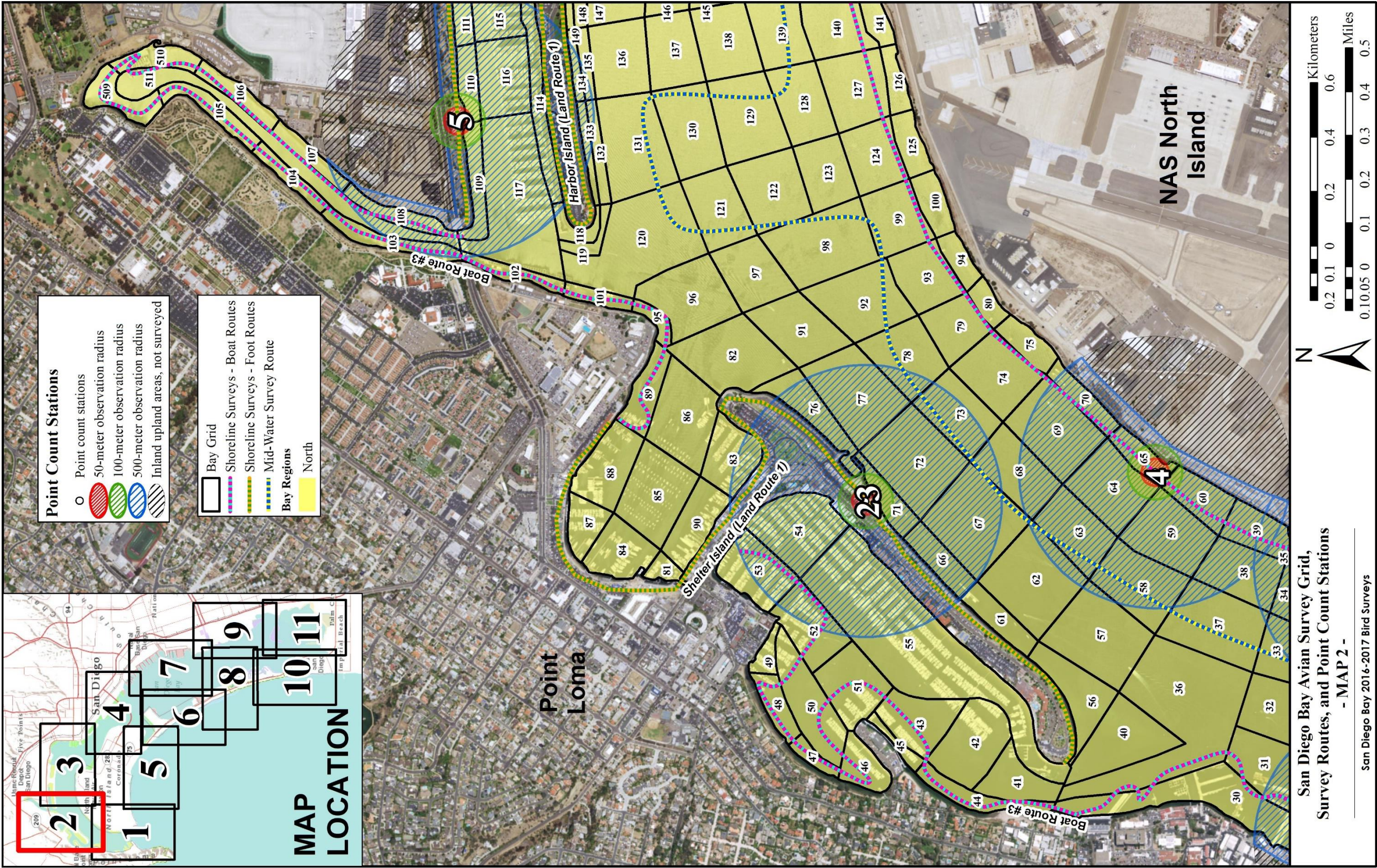


Map A-2. San Diego Bay avian survey grid, survey routes, and point count stations 1,2,3 & 4.



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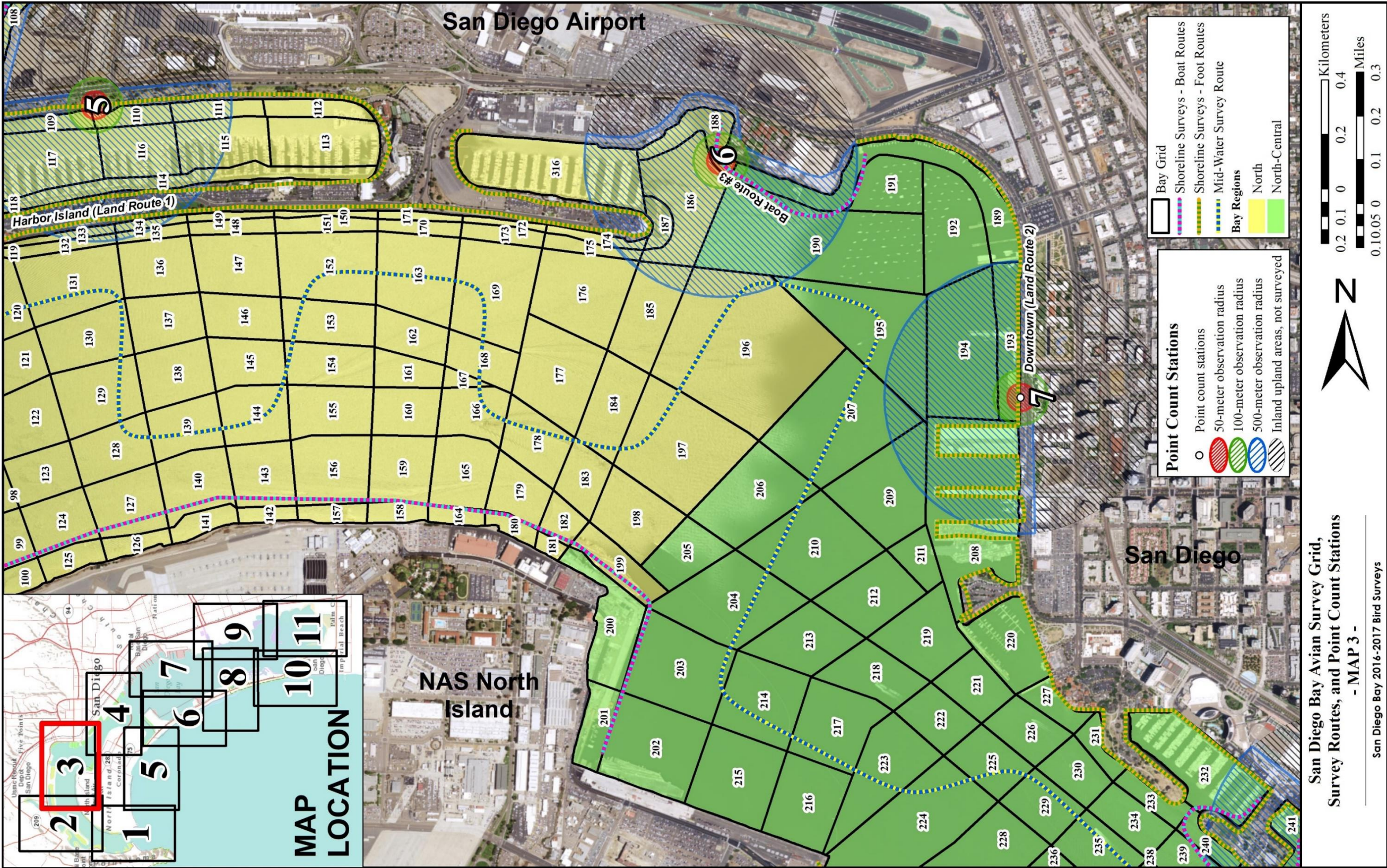


Map A-3. San Diego Bay avian survey grid, survey routes, and point count stations 4, 5 & 23.



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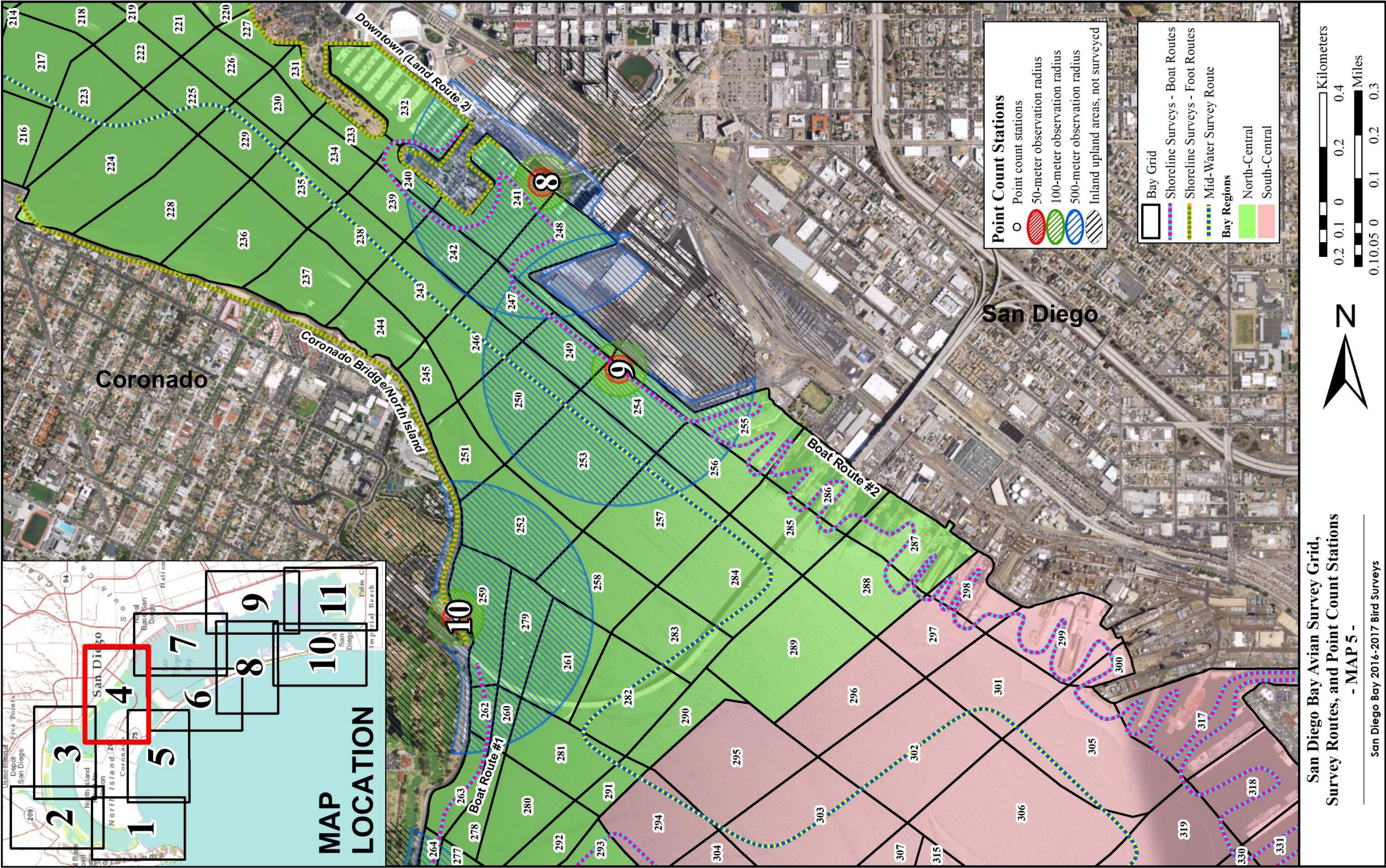


Map A-4. San Diego Bay avian survey grid, survey routes, and point count stations 5, 6 & 7.



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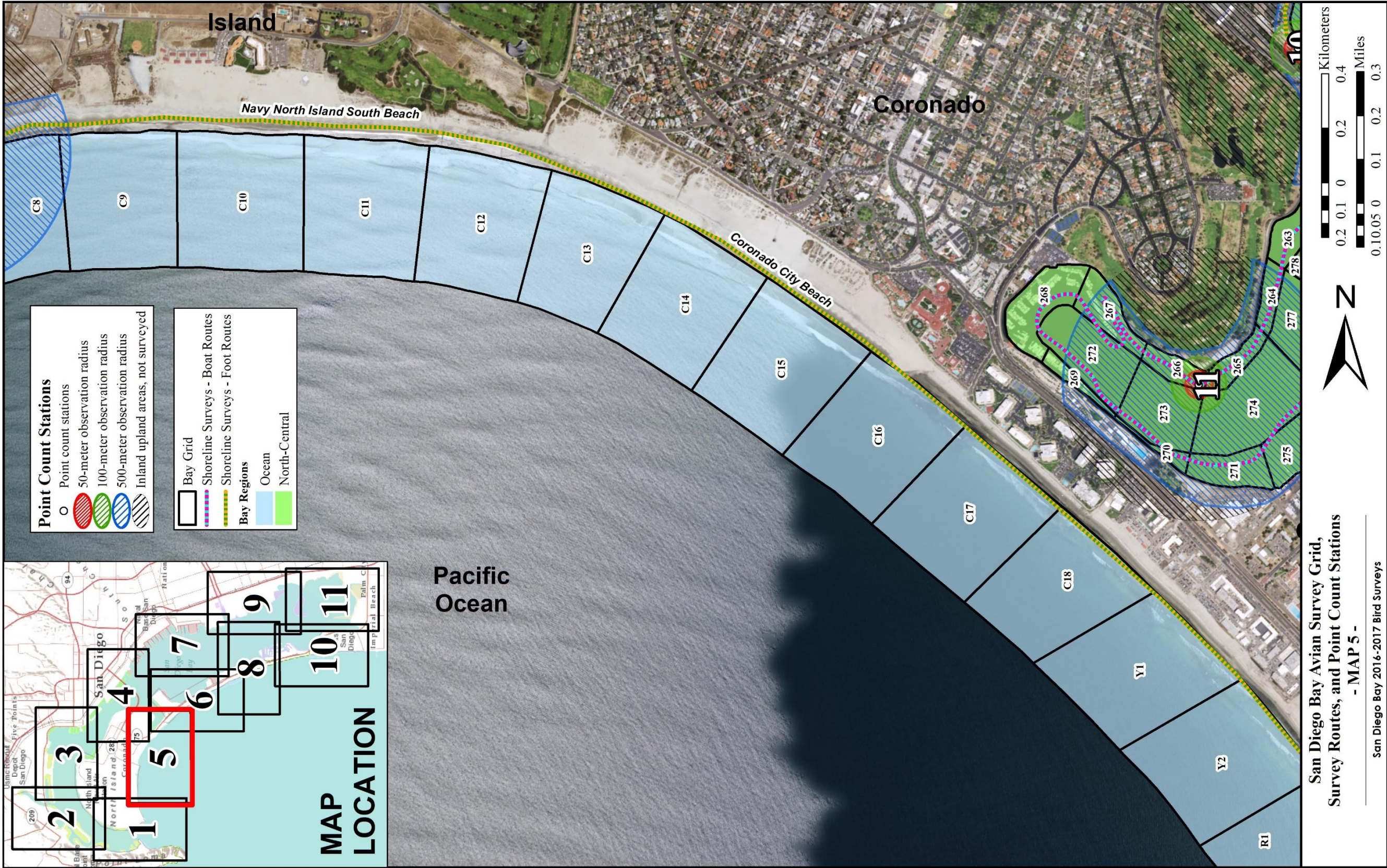


Map A-5. San Diego Bay avian survey grid, survey routes, and point count stations 8, 9 & 10.



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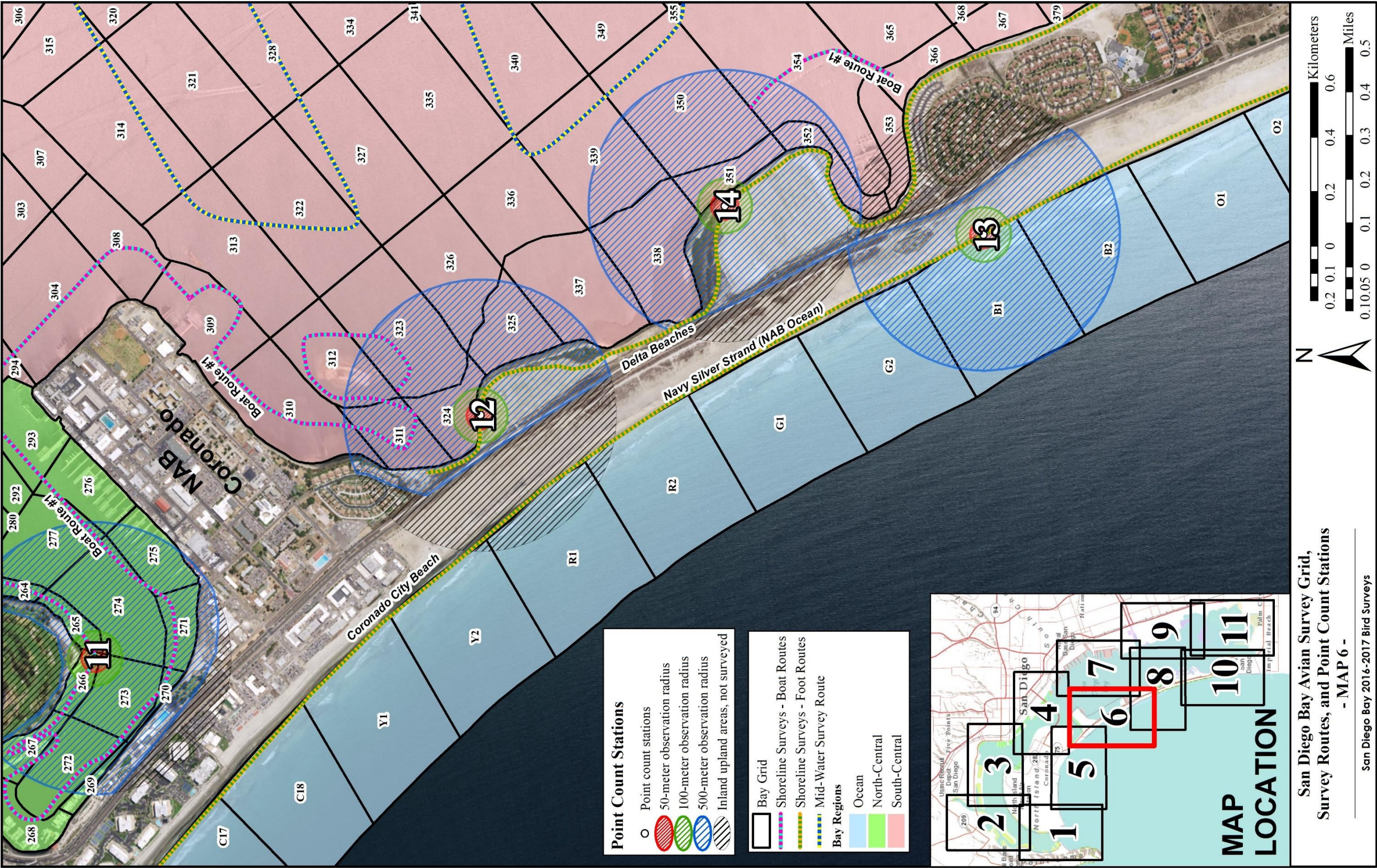


Map A-6. San Diego Bay avian survey grid, survey routes, and point count station 11.



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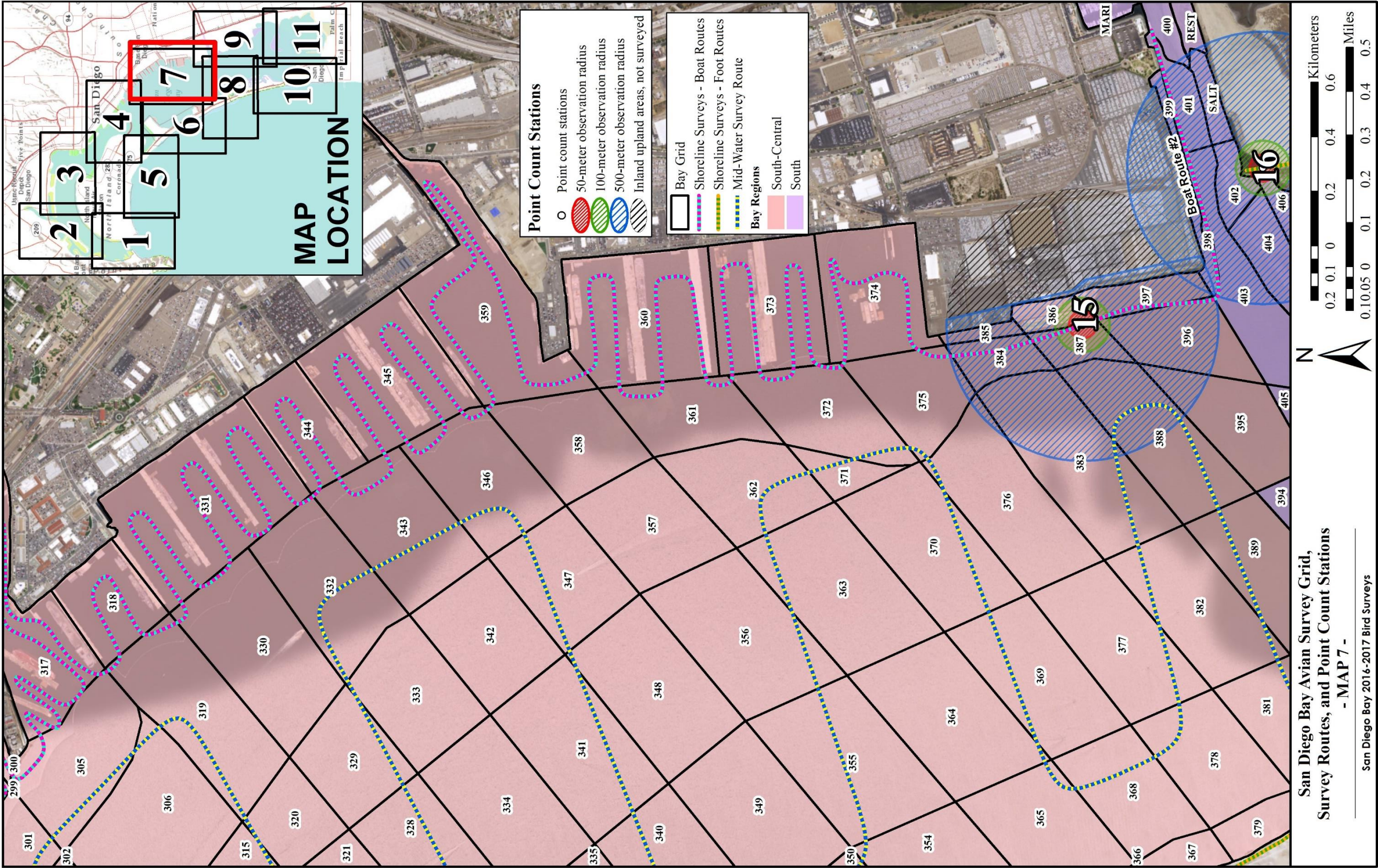


Map A-7. San Diego Bay avian survey grid, survey routes, and point count stations 11, 12, 13 & 14.



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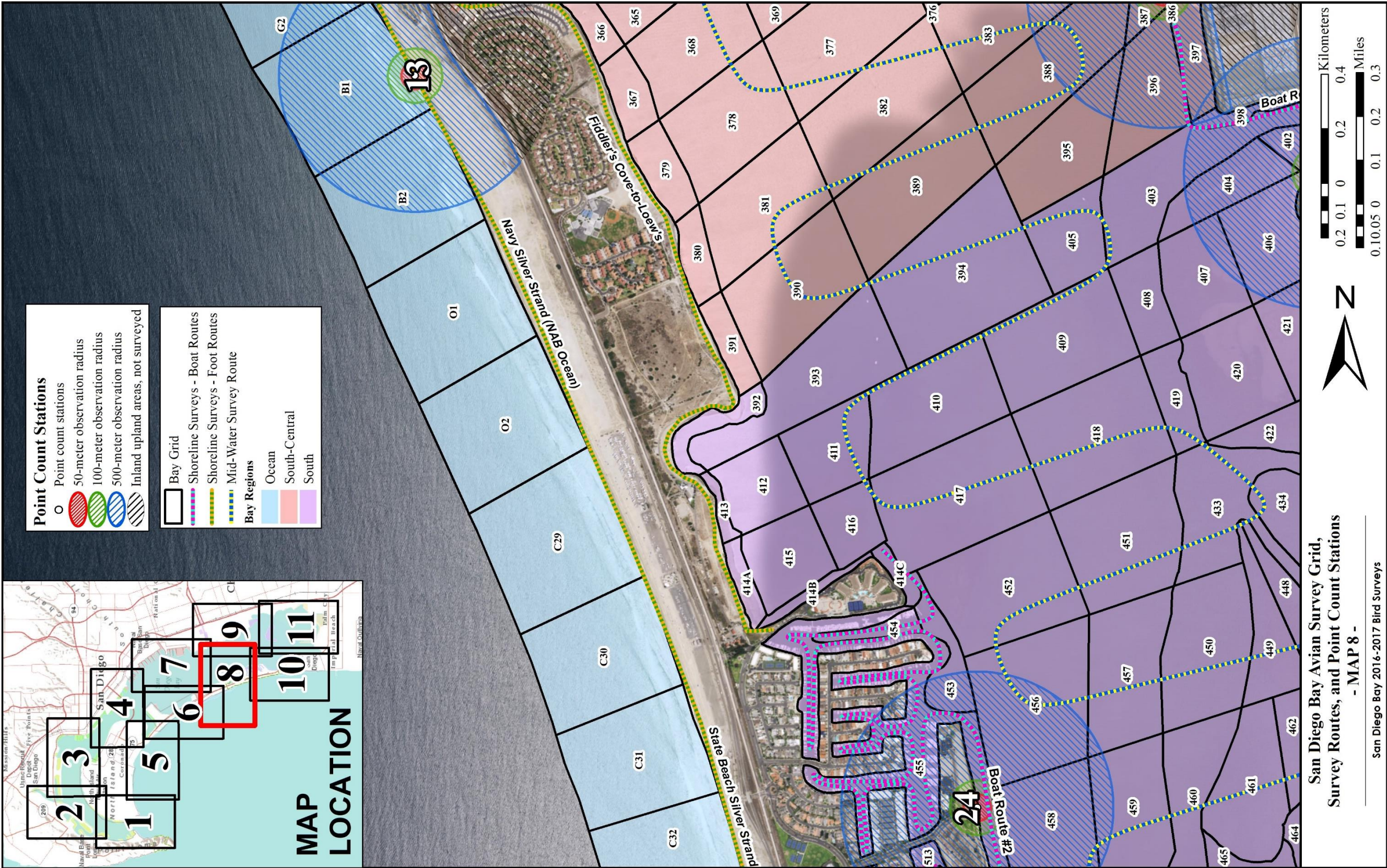


Map A-8. San Diego Bay avian survey grid, survey routes, and point count stations 15 & 16.



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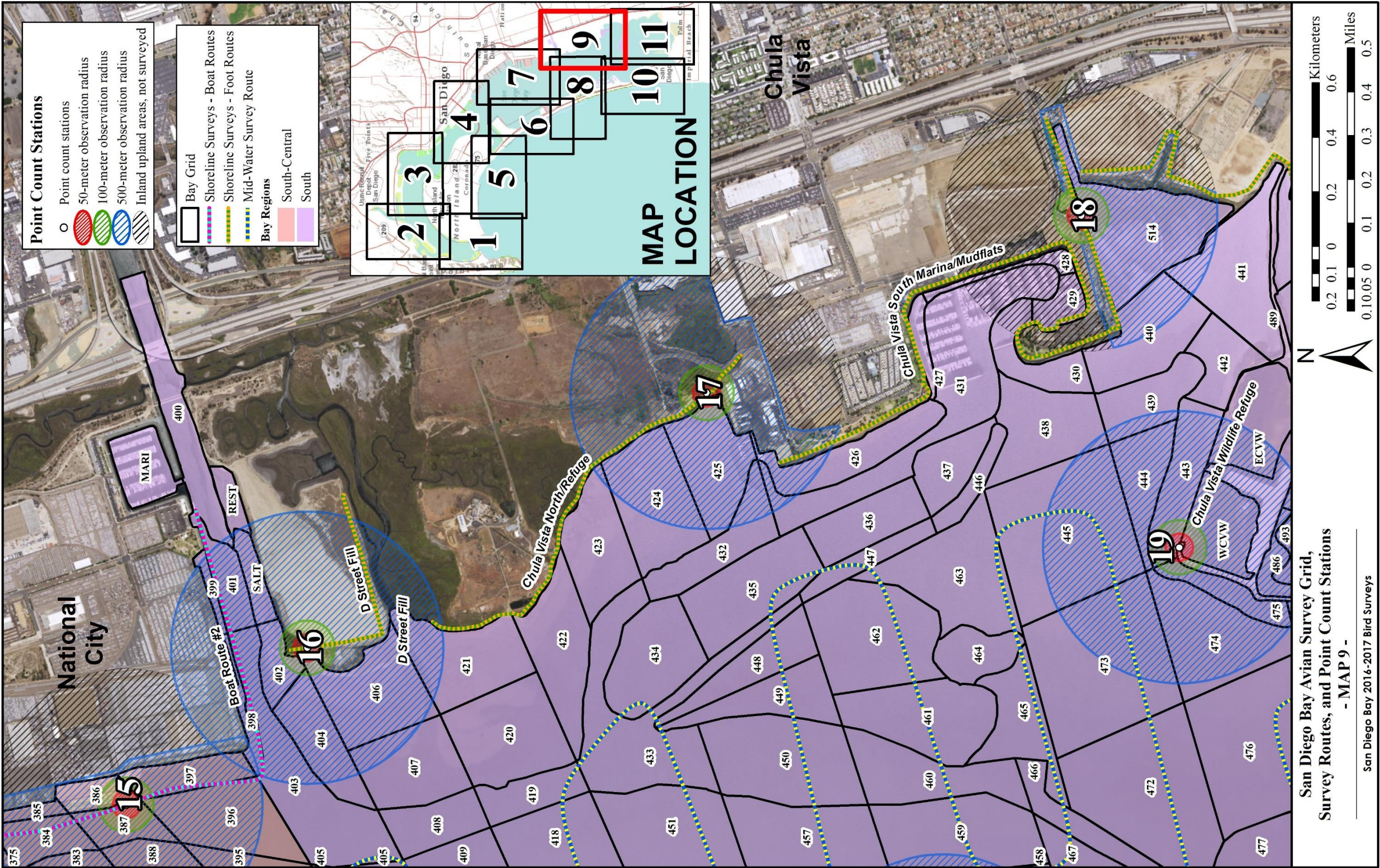


Map A-9. San Diego Bay avian survey grid, survey routes, and point count stations 13 & 24.



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Map A-10. San Diego Bay avian survey grid, survey routes, and point count stations 15, 16, 17, 18 & 19.



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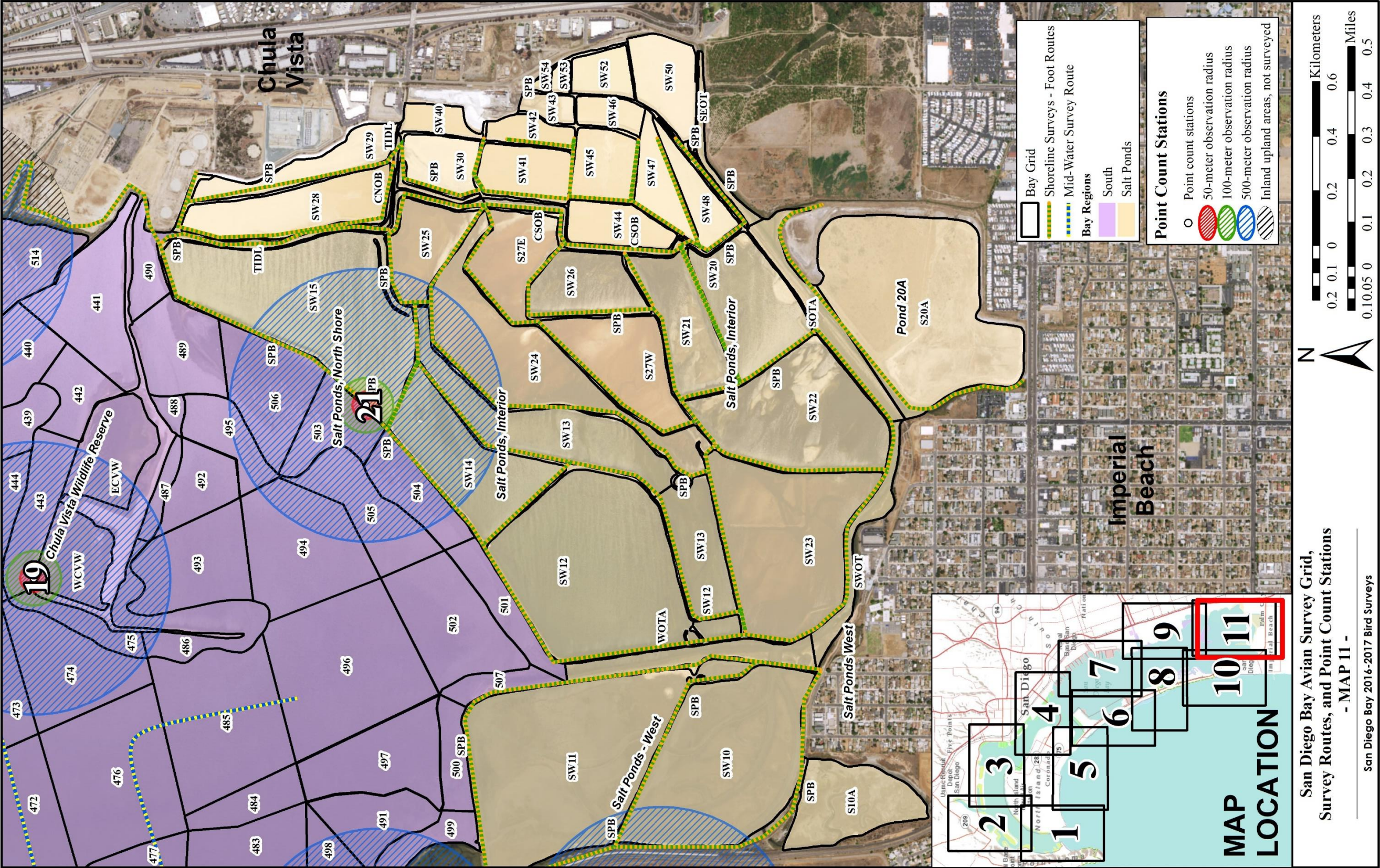


Map A-11. San Diego Bay avian survey grid, survey routes, and point count stations 22 & 24.



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Map A-12. San Diego Bay avian survey grid, survey routes, and point count stations 19 & 21.



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Surf Scoter. © Timothy Burr, 2017.

## Appendix B: Standard Operating Procedures and Example Data Sheets

### B.1 Data Collection with ESRI Collector

All bird survey data will be recorded using the ESRI “Collector” app. It is available at both the Apple and Android app stores. If you already have this app downloaded, make sure you have the most recent update, as old versions can cause formatting issues.

Take hard copy data sheets into the field with you. If you have technical issues in the field, switch to using data sheets and keep recording. To conserve battery life while you are collecting data, you may want to turn your device on airplane mode.

#### Setting Up an Offline Map

A cell signal may not always be available on your survey route. Downloading a high resolution offline map of your survey area before beginning each survey is advised. To download a map

- Locate your map on the main menu.
- Click the download button on the bottom right (On Apple devices this is a cloud with a down arrow.)
- Choose your work area. Keep the map small, but be sure to include your entire work location for that day. Collector will only allow you to download one map at a time, and there may not be another opportunity to download a map later in the day. However, a very large map will take a lot of space and a long time to load.
- Select "map detail" at the bottom of the screen. Zoom in to the resolution you require - close enough that you can orient yourself to your surroundings, but try not to go above 12MB, as it will take a long time to load.
- Select "download" in the upper right corner on Apple products, lower right corner on Android.
- Your map should now appear on the main menu under "On Device" on Apple products. For Android it will show up under All Maps or click on Collector All and select On Device.



## Inputting Data

You will be working in the offline map you created. Red circles represent Point Count areas. Red stars are Bird Sightings, and green circles are Survey Day (observer, time, date, weather conditions.)

- At the beginning of the survey, enter information for your Survey Day (observers, start time, and weather conditions.) To do this, click on the Plus Sign and select “Survey Day” (the green dot.) After entering all of the information, click on the square image at the top of the screen that looks like a shaded map, then hold your finger on the map to select your location. Click on the Check Mark image on the top of your screen to save the data to your device. You can make entries to “Survey Day” throughout the day to record weather changes, and at the end of the survey to record your End Time.
- There are two ways to add a new data point. If you are adding one in your current location (where you are standing) you can click the plus button at the top of the page (bottom of page for Android.) If you have signal, this will automatically populate the location with where you are. You will more likely be choosing the location, for which you can hold down on the map in the location where you want to add data, and select the button on the right side of the pop-up (the square with an up arrow for Apple products, three dots for Android.)
- Select "Collect here."
- Select "Bird Sightings" to record sightings. Fill out each section. If there are multiple bird species, or the same species using multiple habitats, you can record up to 10 in a single data point. However, if a bird is sighted in a different grid, you will need to create a new point in the corresponding grid.
- To record the data point, select the button in the upper right corner (“Submit” for Apple, a check mark for Android.)
- When adding a data point, you can also include a photo to clarify information, or show weather conditions or tide height. Tierra Data would appreciate periodic photos of tides, to assist us in determining appropriate survey times for maximum encounters, or photos of birds using various habitat. On Apple photos can be added by selecting the camera button on the top ribbon of the data entry page. Then select "Add," "Take photo or video," and select "OK" to allow Collector to access the camera. For Android, select the paperclip symbol on the bottom of the page and add attachment from camera, then take your photo and save it. It will automatically attach to the Bird Survey data point you created. Photos are useful for clarity, but too many can make the map size too large, and bog down the upload process later, so be frugal.

## Uploading Data to Tierra Data

- After adding the last green dot recording the end of survey information, you will need to upload your offline data to the main map once signal is available. When cell service is available, return to the main menu by selecting "Maps" in the upper left corner.
- Select the upload button on the bottom right corner of your offline map (the cloud with an up AND down arrow.) If you are connected, the data will automatically be uploaded. If there is a red circle on the upload button, then your map has data that has NOT been transferred to the main map. Do not delete your offline map until this circle is gone.

## Deleting Offline Map

When you are completely finished with your offline map, delete it by selecting the map, and on Apple, click the button in the upper right corner of the screen (the box with an up arrow). On Android, click on Menu in the left bottom corner. Then for both devices, select "Manage." A "Remove" option should appear on the bottom right corner of your map. Select "Remove features and base map" to delete the map.

## Troubleshooting

Tierra Data is excited to continue developing Collector as a data collection platform. If you have any comments or suggestions for the app, or the process through which data is being collected, please let us know. We would like to make this process as easy and streamlined as possible. If you have any trouble in the field and cannot proceed, continue recording on your hard copy data sheets and contact the Tierra Data office at (760) 749-2247 or contact Jim Kellogg at (760) 546-8367.

## B.2 Point Counts

Point counts are a separate survey from the grid-based bird surveys. They are conducted at the same time for convenience. All data collected in a point count area during the grid surveys will likely be duplicated in the point count. Point counts are collected during both low and high tide surveys. Counts should take 15 minutes, with 3 5-minute intervals

### Collecting Point Counts

- At the start of the point count, place a yellow "Point Count" star within the point count area, and record the time, recorder/observer initials, and the time interval in which you are recording (in this case, 0 – 5, as you are within the first 5 minutes).
- For 5 minutes, record all birds within the entire 0 – 500 point count area. Record the species, count, habitat, and distance interval (0 – 50, 50 – 100, 100 – 500).
- After 5 minutes, restart the clock and create a new "Point Count" star, recording the time interval as 5 – 10. Count every new bird that arrives in the area. Birds that were counted in the first 5 minutes do not need to be re-counted.
- Repeat for the 10 – 15 time interval.
- Even if there are no new birds, continue the point count for the entire 15 minutes.

### Changing Point Count Locations

Sometimes point count locations get moved to accommodate visibility or access concerns. This can be done, but only under extenuating circumstances. Consistency is very important for these surveys. If a point count needs to be moved, please contact a Tierra Data representative, and provide coordinates or a description of a recommended new location, and a description of the purpose for relocation.



### B.3 Habitat Designations

In order to keep data as clear and consistent as possible, Tierra Data has created several habitat categories for use when inputting bird data. These are meant to describe in as accurate and as useful a manner as possible how the birds are interacting with the habitat they are found in. For example, a bird is described as in air if it is simply flying over the habitat and not using it. A bird is upland if it is not in the tidal zone, and tidal if they are on or in the water, on a structure that is in or above the water, or in any intertidal area, such as on beach or mud. If you are having trouble selecting the correct category, please select other, and provide a brief description of the habitat use.

Important things to consider are tree use, and use of artificial habitat, such as piers, buoys, car hoods, or riprap. If any habitat use seems particularly odd or interesting, remark in notes, and take a picture to add to the point if possible. Examples of this are if birds are using an odd structure, such as a protruding pipe or car hood, or if they are particularly avoiding an area, or if there are convenient predator perches near a nesting site.

We understand that applying constrained categories can be very difficult to adjust to actual encounters in the field. We are providing a list of the categories, along with a brief description, as well as some examples to guide judgement.

- **Air:** The bird is flying over the habitat and not using it.
- **Upland:** The bird is not in the tidal zone
  - Trees/tall vegetation
  - Shrubs/mid-height vegetation
  - Low forbs/grasses
  - Unvegetated ground – ( $\leq 5\%$  vegetation) Ex: dirt
  - Hard artificial substrate – Ex: asphalt or sidewalk
  - Artificial perch – Ex: lamp post, wire, fence
- **Tidal:** The bird is on or in the water, on a structure that is in or above the water, or in any intertidal area, such as on beach or mud.
  - Above-water attached structure – Ex: dock/pier, long-term parked boat (Midway)
  - In-water perch – Ex: buoy, boom, lobster trap, boat, pilings, etc.
  - Riprap
  - Vegetated – Ex: salt marsh
  - Sandy beach
  - Mud
  - Open water – swimming on or in the water, including over eelgrass.
- **Other:** The bird is not using the habitat in any way described above – Please use the “specify other” option to elaborate.

## B.4 Mid-Water Surveys

Mid-water surveys are conducted once a month after the Shorebird Surveys in November, December, January and February. The surveys involve deploying two boats; one starting from the mouth of the bay in the North, and the other starting at the South end of the bay. The North survey team meets at Shelter Island and the South survey team meets at Glorietta Bay. The surveys begin in the morning at approximately 0800 and end at approximately 1200, however these times may vary. During periods of dense fog, surveys can begin when it is possible to see at least 1,000 feet. The boat generally travels between 5-20 mph and may stop for 10 minutes to count birds as necessary. According to Elizabeth Copper, it is better to conduct these at incoming or high tide, as surf scoters tend to leave the bay at lower tides.

The primary purposes of the waterbird surveys by boat in the same three-day period as shoreline-based surveys is to validate the point counts from shore and document bird presence/absence in unsurveyed areas. Waterbird surveys are separate from the shore surveys. Do not worry about double counting birds or sections of route. Count all the birds you can see, but focus on the water.

Boat traffic/abundance, weather conditions, and location will be gathered by the boat operator; while a biologist will gather bird observations. The driver will follow a track using a GPS unit to maintain the course. When one or more birds are observed and cannot be recorded while the boat is moving, the boat will be stopped within approximately 500 feet of the birds. Bird locations will be recorded in the appropriate grid cell.

## B.5 Data Analysis and Delivery

A combination of standardized field data collection forms and electronic data devices were provided to observer teams and all data was compiled in Microsoft Excel spreadsheets. Considerable effort was spent compiling the data and checking for errors. Original data forms were maintained to allow for checking when questions came up, and observers were also available to answer questions about specific records.

When referring to data in this report, a record is an observation of a bird species in a single cell. Fields are types of information collected for each record, such as Grid Cell, Time, Observer, Species, Abundance, Substrate, Comments, etc. Each record may contain multiple observations of a single species, or only one, depending on what was seen in each cell.

Bird species names were recorded in a variety of ways, including the full common name, and abbreviated form of the common name, or a four-letter code based on the common name. The four-letter codes are a standardized format for recording bird sightings in the field, using a list of codes developed by the U.S. Bird Banding Laboratory (BBL). Most codes use the first two letters of each word in a species common name, such as 'CORA' to indicate common raven, but other combinations are often used to differentiate species that would otherwise have the same code (e.g. Barn Swallows and Bank Swallows are assigned the codes 'BARS' and 'BANS', instead of 'BASW').

Given the variety of ways species information was recorded by the field observers, error checking consisted of verifying every entry against a list of species known to occur in the San Diego Bay region which included a master bird code list to identify any typing errors. The grid cell field was



also checked against the master list of grid cells created for the 2006-07 surveys. Cells that did not match the list were identified and corrected. Other cells that did not match the this list were sometimes specific areas within an established cell; the more specific information was moved to the comments field and the cell changed to match the rest. There are other established names for areas of the bay used by the birders participating in this project; those conversions were made as necessary.

Records were sorted by month, time, and cell to ensure that cells were not double counted, that all routes were covered each month, and that cells were not entered incorrectly (which become apparent when cell entries are compared to time and other matching entries). When suspect records were discovered that could not be corrected by searching the original data sheets or talking with data recorders, these records were flagged and not used in the analysis. Additional records were removed in areas where duplicate counts of one cell were performed. In these instances, the counts taken on the falling tide closest to low tide were used in the analysis.

Data sets are stored and delivered in three separate Microsoft Excel files for all three survey events from 2006-2007, 2011-2012, and the current 2016-2017. There is a separate spreadsheet for the shoreline, point count, and mid-water surveys. The first tab in the file contains the data; the second tab a Pivot Table, which can be used to manipulate and display the data without harming the integrity of that stored in the first tab.

# BAY SHOREBIRD POINT COUNT FORM

Page #\_\_\_\_\_

Date:	Point Count #:	Start Time:	Stop Time:	Cld Cvr %:	Precip. (Y/N):

<b>Air Temp:</b>	<b>Wind Spd:</b>	<b>Visibility:</b>	<b>Surf:</b>	<b>Observers:</b>
------------------	------------------	--------------------	--------------	-------------------

[illegible]

Air (A)	Other (O)
---------	-----------

Upland (U) Ha: Tr (Trees/tall vegetation) Sh (Shrubs/mid-height vegetation), F (Low forbs/grasses), UV (Unvegetated ground), H (Hard artificial substrate), A (Artificial perch)

Tidal (T) Ha: St (Above-water attached structure), P (In-water perch), R (Riprap), V (Vegetated), B (Sandy Beach), M (Mud), O (Open water)

THESE ARE 15 MINUTE FIXED TIME SURVEYS. PLEASE NOTE TIME EVERY 5 MINUTES. Use first sighting of bird.

## Pg.# \_\_\_\_\_

**End**

**Surf:**

Wind Spd.

**Air (A)**                      **Other (O)**

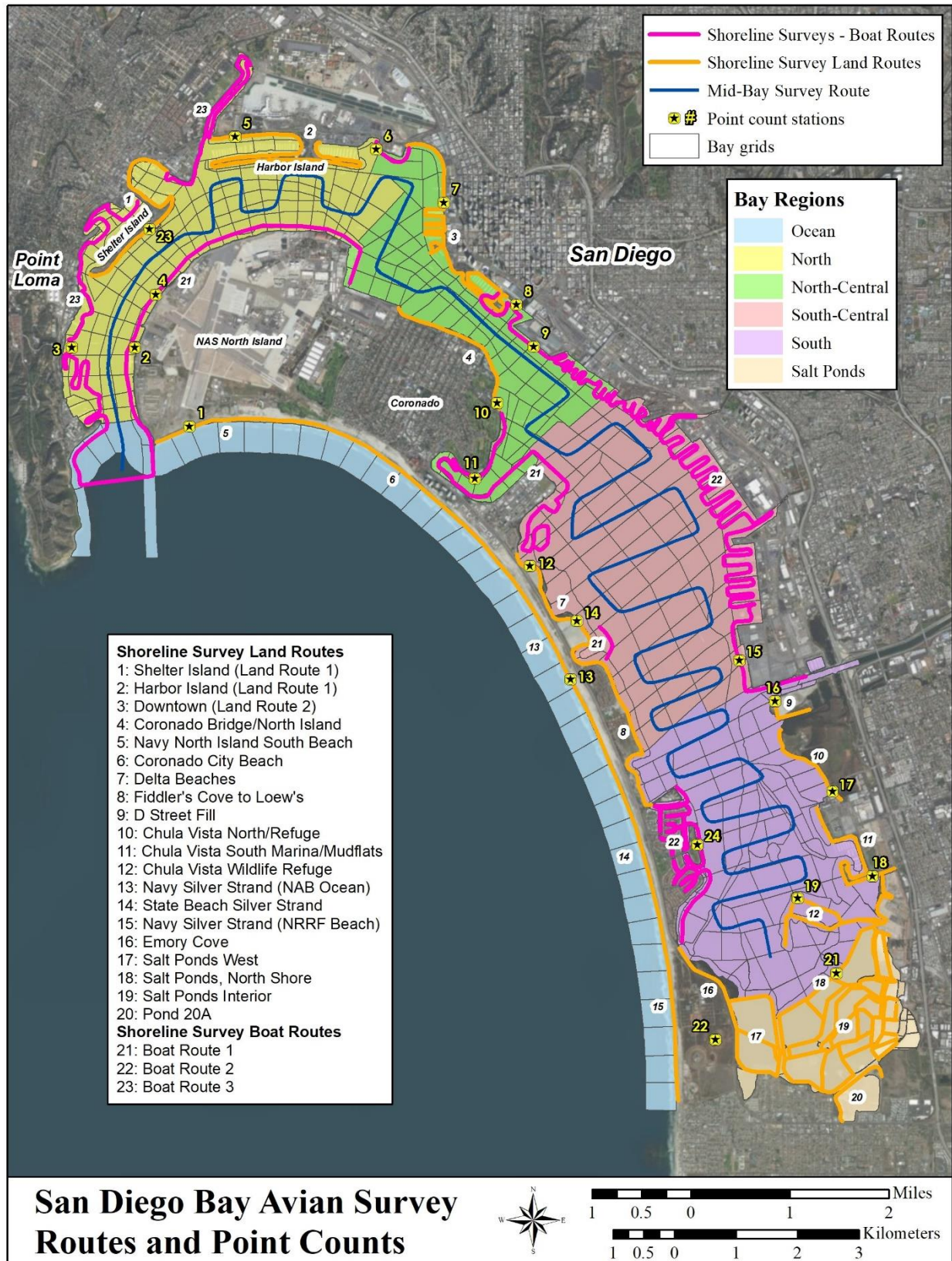




Ruddy Turnstone. © Timothy Burr, 2017.

## Appendix C: Habitat and Tide Analysis Forms

Map C-1 shows the routes (land and boat) for the 2016-17 surveys as described in the following habitat and tide analysis forms. (Note: Note all routes depicted on Map C-1 have a form.)





# Shelter Island and Harbor Island (Land Route 1)



7-18-16 Perches at beginning of Shelter Island section T2.2



11-14-16 Mud exposure far east end of Shelter Island T1.4



7-18-16 Sandy beach heavy gull habitat T2.1



11-14-16 Mud exposure To.6

## Route Description

Begins at Spanish Landing, begins west to Point Count 5, then backtracks to survey Harbor Island. After completing Harbor Island, skips west again to survey Shelter Island. Contains sandy beach and riprap, hard substrate, buoys, and boat perches. Heavy gull and pelican habitat.

## Tide Effects on Habitat Use

Riprap habitat may be affected by tide. Heavy human and dog presence negates potential sensitive habitat.

## Recommended Tide Range for Survey

## Recommended Approx. Starting Tide Given Route Length



## Downtown (Land Route 2)



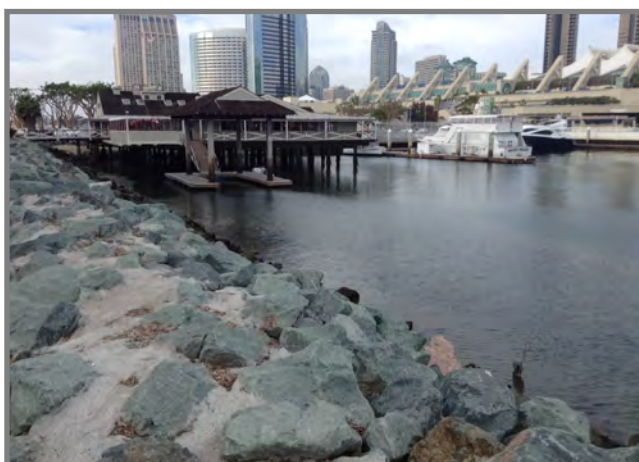
11-15-16 T1.9



11-15-16 T7.2



12-23-16 T3.4



11-15-16 Convention Center To.1

### Route Description

Begins at San Diego Harbor past the Coast Guard, ends at the convention center. Riprap, boats, trees.

### Tide Effects on Habitat Use

Exposure of riprap may be affected.

### Recommended Tide Range for Survey

### Recommended Approx. Starting Tide Given Route Length

# Navy North Island South Beach Route



11-14-16 T6.9



11-14-16 Entrance to shooting range T4.1



11-14-16 Sandy Beach T7.0



11-14-16 Lifeguard tower, upland artificial perch w gull T4.0

## Route Description

Navy Land. Begins at south end of Breakers Beach connecting with Coronado City beach, cuts through Navy shooting range, ends at Zuniga Jetty. Sandy beach, some upland habitat, and riprap at the end towards Zuniga. South end tends to have heavier human traffic due to rifle range in north, but route tends to be very quiet with many shorebirds. Directly before rifle range there tends to be a very large upland Snowy Plover site.

## Tide Effects on Habitat Use

Tide exposure of beach. Consider potential migration from Bay side when more tidal-dependent habitat is submerged.

## Recommended Tide Range for Survey

## Recommended Approx. Starting Tide Given Route Length



# Delta Beaches Route



10-26-16 Delta Beaches T:5.2



7-18-16 Difference in mud exposure T: 2.9



10-26-16 Mud use at low tide T:4.0



10-26-16 Deltas exposure T:4.0

## Route Description

Walking survey through Navy Delta Beaches reserve. Relatively short survey. Few birds in first half of survey, until mudflats. Heavy, deep mud, can sink past shins. No disturbed habitat because of restricted access, however there is trash and pollution. Borders the 75 freeway. Difference in bird population at different tide levels is extreme.

## Tide Effects on Habitat Use

Mudflat exposure is extremely sensitive to tides. Most habitat is only accessible at low tide. The short route means that in order to arrive at the mudflats at the lowest tide, the survey often starts later than others.

## Recommended Tide Range for Survey

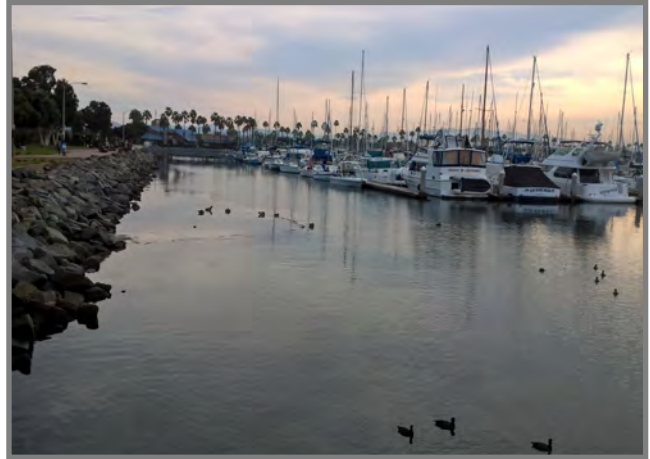
## Recommended Approx. Starting Tide Given Route Length



# Chula Vista South Marina/Mudflats Route



8/3/16 Riprap and exposed shoreline T3.3



10-27-16 Marina T:5.6



10-27-16 Exposed mudflat habitat T4.8



11-15-16 mudflats T0.5

## Route Description

Walking survey. Starts at Marine Group Boat Works at Bayside Park, and continues through Chula Vista Marina and ends at the mudflats by the old power plant, connecting with the D Street Fill route.

## Tide Effects on Habitat Use

The entire route contains riprap and shoreline with habitat sensitive to tide levels, however the most significant area of the survey is at the mudflats, with huge populations of birds at low tide.

## Recommended Tide Range for Survey

## Recommended Approx. Starting Tide Given Route Length

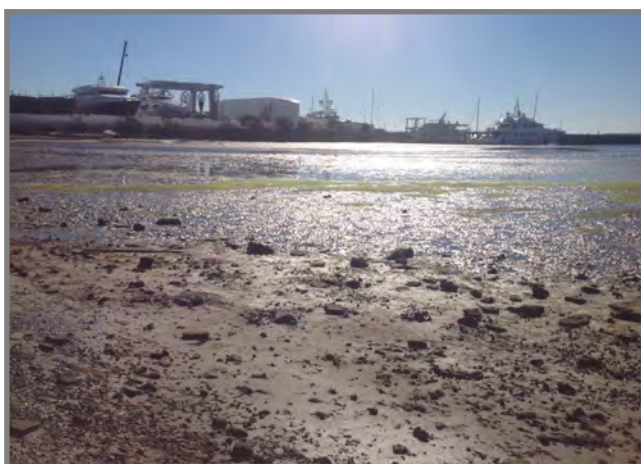
# Chula Vista Wildlife Refuge Route



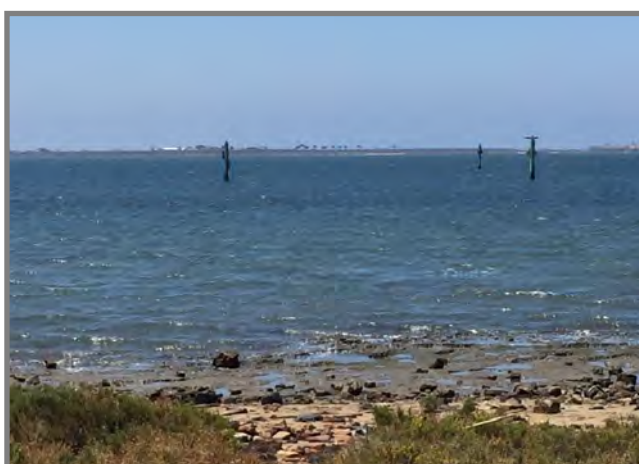
10-26-16 T5.4



7-19-16 T: 3.8



11-14-16 T0.4



7-19-16 T: 3.7

## Route Description

Through refuge at discovery Center. Be wary of effect of flushing birds. Stand and count, move, stand and count.

## Tide Effects on Habitat Use

Areas of the route strongly affected by tides include the area around the mitigation island. Zuniga Jetty can also be affected, as the rocks are submerged at high tide.

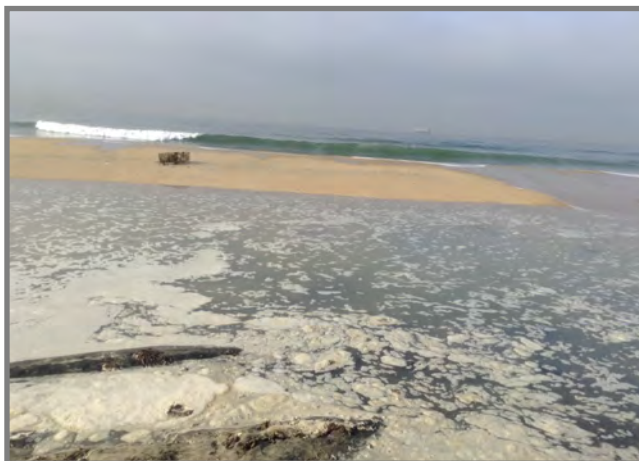
## Recommended Tide Range for Survey

## Recommended Approx. Starting Tide Given Route Length

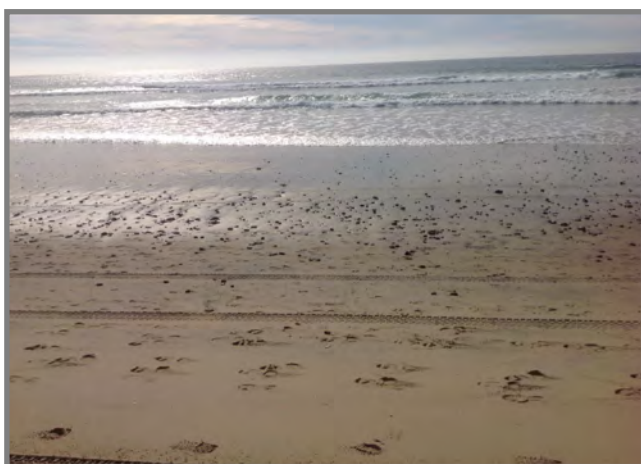
## Navy Silver Strand (NAB Ocean) Route



7-19-16 T:3.6



11-15-16 T7.5



11-15-16 T:2.1

### Route Description

Walking route. Generally relatively heavy foot traffic.

### Tide Effects on Habitat Use

### Recommended Tide Range for Survey

### Recommended Approx. Starting Tide Given Route Length



## Navy Silver Strand (NRRF Beach) Route



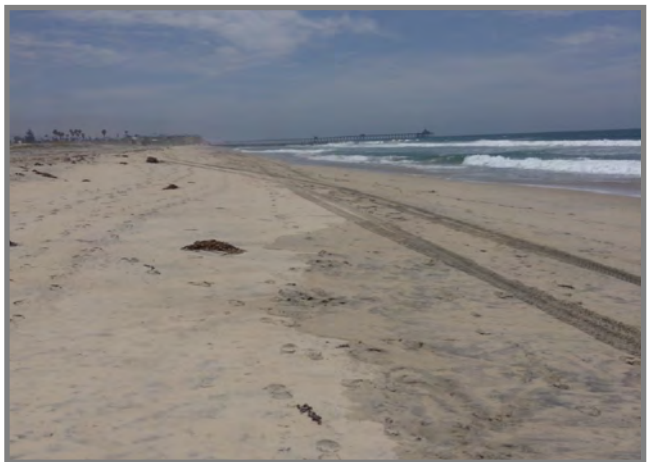
10-28-16 T:4.0



11-16-16 T:6.5



7-20-16 T:4.2



7-20-16 T:3.5

### Route Description

Walking survey, across from Emory Cove. Includes Point Count 22.

### Tide Effects on Habitat Use

Birds may come at high tide because of reduced habitat in bay.

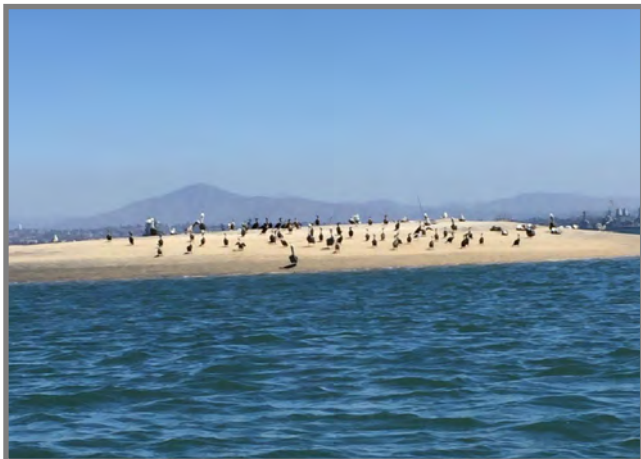
### Recommended Tide Range for Survey

### Recommended Approx. Starting Tide Given Route Length

# Boat Route 1



7-18-16 Jetty T: 4.0



9-15-16 Mitigation island T:2.0



12-23-16 Tide exposure difference T:1.1



11-14-16 common heron, egret, and shorebird habitat T: 2.9

## Route Description

Boat survey. Begins at Zuniga Jetty, continues down to the Midway, cuts down to the Coronado Bridge and ends doing a loop around the mitigation island.

## Tide Effects on Habitat Use

Areas of the route strongly affected by tides include the area around the mitigation island. Zuniga Jetty can also be affected, as the rocks are submerged at high tide.

## Recommended Tide Range for Survey

## Recommended Approx. Starting Tide Given Route Length

## Boat Route 2



11-16-16 Riprap To:6



11-16-16 Loews



11-16-16 Heavy use of buoys 7:21 am



11-16-16 exposed beach T:2.0

### Route Description

Boat survey. Begins where Land Route 2 ends by Convention Center. Continues all the way to D Street Fill, then goes through Loews down to Emory Cove. Habitat includes boats, piers, buoys, mudflats, and riprap.

### Tide Effects on Habitat Use

The end of the route is heavily tidal dependent. While lower tides lead to more mudflat exposure and more birds, the boat can also not maneuver when the tide is too low. The beginning of the route also contains potentially tide-dependent riprap habitat. The route is very long and can take over 4 hours, so it can be difficult to budget the correct time.

### Recommended Tide Range for Survey

### Recommended Approx. Starting Tide Given Route Length



## Boat Route 3



9-16-16 Buoys around Fuel Pier



12-23-16 Mud exposure T1.0



11-15-16 Cliffs, beginning of route. Many Herons, etc. T3.7



12-23-16 5 birds on riprap 8:33 T3.5

### Route Description

Boat survey. Begins at Northeast mouth of bay. Continues to harbor of Shelter Island, skips to connect gap in Land Route 1, starting near Driscoll's Warf and continues up inlet past Harbor Drive. Main features include cliffs with herons and egrets, bird-heavy buoys and in-water structures at the Fuel Pier, and tidal dependent riprap and mud habitat between Shelter and Harbor Island. As well as boat perches at the dock and harbor areas.

### Tide Effects on Habitat Use

Exposure of cliffs at start of route, when do cormorants etc. flock to buoys, mud and riprap exposure throughout survey, esp. last 1/3.

### Recommended Tide Range for Survey

### Recommended Approx. Starting Tide Given Route Length

## Route Descriptions of Time-Dependant Survey Areas

Name:

Route:

[illegible]



Pelagic Cormorant. © Timothy Burr, 2017.

## Appendix D: Species Lists and Abundances

This section contains tables providing species lists for the avian surveys.

- Table D-1 presents a combined species list for all surveys (2006-07, 2009-10, and 2016-17).
- Table D-2 presents species and number of birds observed per month at ebbing tide for the 2016-17 surveys.
- Table D-3 presents a species list and number of birds observed per month at peaking tide for the 2016-17 surveys.
- Table D-4 presents species and number of birds observed during the 2016-17 mid-water surveys.



**Table D-1. All species observed during the San Diego Bay avian surveys in 2006-07, 2009-10, and 2016-17, with their Federal and State of California listing status, if any, and the species assemblage for which they were analyzed in this report.**

Common Name	Species Name	Status <sup>1</sup>	Species Assemblage	Seen 2006-07	Seen 2009-10	Seen 2016-17
Allen's Hummingbird	<i>Selasphorus sasin</i>		Terrestrial			x
American Avocet	<i>Recurvirostra americana</i>		Shorebird	x	x	x
American Coot	<i>Fulica americana americana</i>		Waterfowl	x	x	x
American Crow	<i>Corvus brachyrhynchos hesperis</i>		Terrestrial	x	x	x
American Golden-Plover	<i>Pluvialis dominica</i>		Shorebird		x	x
American Goldfinch	<i>Spinus tristis</i>		Terrestrial	x		
American Kestrel	<i>Falco sparverius sparverius</i>		Terrestrial	x	x	x
American Oystercatcher	<i>Haematopus palliatus</i>		Shorebird	x		
American Pipit	<i>Anthus rubescens pacificus</i>		Terrestrial	x	x	x
American Redstart	<i>Setophaga ruticilla</i>		Terrestrial	x		
American White Pelican	<i>Pelecanus erythrorhynchos</i>	SSC	Seabird	x	x	x
American Wigeon	<i>Anas americana</i>		Waterfowl	x	x	x
Anna's Hummingbird	<i>Calypte anna</i>		Terrestrial	x	x	x
Ash-Throated Flycatcher	<i>Myiarchus cinerascens</i>		Terrestrial	x		
Audubon's Warbler (Yellow-Rumped)	<i>Setophaga coronata</i>		Terrestrial	x	x	x
Baird's Sandpiper	<i>Calidris bairdii</i>		Shorebird	x	x	x
Barn Owl	<i>Tyto alba</i>		Terrestrial			x
Barn Swallow	<i>Hirundo rustica erythrogaster</i>		Terrestrial	x	x	x
Barrow's Goldeneye	<i>Bucephala islandica</i>		Waterfowl		x	
Belding's Savannah Sparrow	<i>Passerculus sandwichensis beldingi</i>	SE	Marshbird	x	x	x
Belted Kingfisher	<i>Megasceryle alcyon</i>		Terrestrial	x	x	x
Bewick's Wren	<i>Thryomanes bewickii</i>		Terrestrial			x
Black Oystercatcher	<i>Haematopus bachmani</i>	BCC	Shorebird	x	x	
Black Phoebe	<i>Sayornis nigricans semiatra</i>		Terrestrial	x	x	x
Black Scoter	<i>Melanitta nigra americana</i>		Waterfowl	x	x	x
Black Skimmer	<i>Rynchops niger niger</i>	BCC, SSC	Seabird	x	x	x
Black Tern	<i>Chlidonias niger surinamensis</i>	SSC	Seabird	x	x	
Black Turnstone	<i>Arenaria melanocephala</i>		Shorebird	x	x	x

Common Name	Species Name	Status <sup>1</sup>	Species Assemblage	Seen 2006-07	Seen 2009-10	Seen 2016-17
Black-Bellied Plover	<i>Pluvialis squatarola</i>		Shorebird	x	x	x
Black-Crowned Night Heron	<i>Nycticorax nycticorax</i>		Marshbird	x	x	x
Black-Headed Grosbeak	<i>Pheucticus melanocephalus</i>		Terrestrial	x		
Black-Necked Stilt	<i>Himantopus mexicanus mexicanus</i>		Shorebird	x	x	x
Black-Throated Gray Warbler	<i>Setophaga nigrescens</i>	BCC	Terrestrial	x		
Blue Grosbeak	<i>Passerina caerulea</i>		Terrestrial	x		
Blue-Gray Gnatcatcher	<i>Poliophtila caerulea</i>		Terrestrial		x	
Blue-Winged Teal	<i>Anas discors</i>		Waterfowl	x	x	x
Bonaparte's Gull	<i>Chroicocephalus philadelphia</i>		Seabird	x	x	x
Brandt's Cormorant	<i>Phalacrocorax penicillatus</i>		Seabird	x	x	x
Brant	<i>Branta bernicla</i>	SSC	Waterfowl	x	x	x
Brewer's Blackbird	<i>Euphagus cyanocephalus</i>		Terrestrial	x	x	x
Brewer's Sparrow	<i>Spizella breweri</i>		Terrestrial		x	
Brown Pelican	<i>Pelecanus occidentalis californicus</i>	SP	Seabird	x	x	x
Brown-Headed Cowbird	<i>Molothrus ater</i>		Terrestrial	x		
Bufflehead	<i>Bucephala albeola</i>		Waterfowl	x	x	x
Bullock's Oriole	<i>Icterus bullockii</i>		Terrestrial		x	
Burrowing Owl	<i>Athene cunicularia</i>	BCC, SSC	Terrestrial	x	x	x
Bushtit	<i>Psaltiriparus minimus melanurus</i>		Terrestrial	x	x	x
California Gnatcatcher	<i>Poliophtila californica californica</i>	FE, SE, SP	Terrestrial	x		x
California Gull	<i>Larus californicus californicus</i>		Seabird	x	x	x
California Least Tern	<i>Sternula antillarum browni</i>	FE	Seabird		x	x
California Thrasher	<i>Toxostoma redivivum</i>		Terrestrial		x	
California Towhee	<i>Melospiza crissalis</i>		Terrestrial	x		x
Canada Goose	<i>Branta canadensis</i>		Waterfowl	x	x	x
Canvasback	<i>Aythya valisineria</i>		Waterfowl		x	
Caspian Tern	<i>Hydroprogne caspia</i>		Seabird	x	x	x
Cassin's Kingbird	<i>Tyrannus vociferans vociferans</i>		Terrestrial	x	x	x
Cattle Egret	<i>Bubulcus ibis</i>		Marshbird	x		
Cedar Waxwing	<i>Bombycilla cedrorum</i>		Terrestrial		x	x

Common Name	Species Name	Status <sup>1</sup>	Species Assemblage	Seen 2006-07	Seen 2009-10	Seen 2016-17
Chipping Sparrow	<i>Spizella passerina</i>		Terrestrial		x	
Cinnamon Teal	<i>Anas cyanoptera septentrionalium</i>		Waterfowl	x	x	x
Cliff Swallow	<i>Petrochelidon pyrrhonota tachina</i>		Terrestrial	x	x	x
Common Goldeneye	<i>Bucephala clangula</i>		Waterfowl	x	x	x
Common Loon	<i>Gavia immer</i>	SSC	Seabird	x	x	x
Common Merganser	<i>Mergus merganser</i>		Waterfowl	x	x	x
Common Moorhen	<i>Gallinula galeata</i>		Waterfowl	x		
Common Raven	<i>Corvus corax clarionensis</i>		Terrestrial	x	x	x
Common Tern	<i>Sterna hirundo hirundo</i>		Seabird	x	x	x
Common Yellowthroat	<i>Geothlypis trichas</i>		Terrestrial	x	x	x
Cooper's Hawk	<i>Accipiter cooperii</i>		Terrestrial	x	x	x
Costa's Hummingbird	<i>Calypte costae</i>		Terrestrial		x	
Dark-Eyed Junco	<i>Junco hyemalis</i>		Terrestrial	x		
Domestic Duck	<i>multiple species</i>		Waterfowl	x	x	
Double-Crested Cormorant	<i>Phalacrocorax auritus</i>		Seabird	x	x	x
Dunlin	<i>Calidris alpina pacifica</i>		Shorebird	x	x	x
Eared Grebe	<i>Podiceps nigricollis californicus</i>		Waterfowl	x	x	x
Elegant Tern	<i>Thalasseus elegans</i>		Seabird	x	x	x
Eurasian Collared Dove	<i>Streptopelia decaocto</i>		Terrestrial	x	x	x
Eurasian Wigeon	<i>Anas penelope</i>		Waterfowl	x	x	x
European Starling	<i>Sturnus vulgaris vulgaris</i>		Terrestrial	x	x	x
Flamingo	<i>Phoenicopterus sp.</i>		Shorebird			x
Forster's Tern	<i>Sterna forsteri</i>		Seabird	x	x	x
Fox Sparrow	<i>Passerella iliaca</i>		Terrestrial	x		
Franklin's Gull	<i>Leucophaeus pipixcan</i>		Seabird			x
Gadwall	<i>Anas strepera strepera</i>		Waterfowl	x	x	x
Glaucous Gull	<i>Larus hyperboreus</i>		Seabird	x		
Glaucous-Winged Gull	<i>Larus glaucescens</i>		Seabird	x	x	x
Golden-Crowned Sparrow	<i>Zonotrichia atricapilla</i>		Terrestrial		x	
Great Blue Heron	<i>Ardea herodias wardi</i>		Marshbird	x	x	x



Common Name	Species Name	Status <sup>1</sup>	Species Assemblage	Seen 2006-07	Seen 2009-10	Seen 2016-17
Great Egret	<i>Ardea alba egretta</i>		Marshbird	x	x	x
Great Horned Owl	<i>Bubo virginianus</i>		Terrestrial			x
Greater Scaup	<i>Aythya marila nearctica</i>		Waterfowl	x	x	x
Greater Yellowlegs	<i>Tringa melanoleuca</i>		Shorebird	x	x	x
Great-Tailed Grackle	<i>Quiscalus mexicanus</i>		Terrestrial	x		
Green Heron	<i>Butorides virescens anthonyi</i>		Marshbird	x	x	x
Green-Winged Teal	<i>Anas crecca carolinensis</i>		Waterfowl	x	x	x
Gull-Billed Tern	<i>Gelochelidon nilotica vanrossemi</i>	BCC, SSC	Seabird	x	x	x
Heermann's Gull	<i>Larus heermanni</i>	NT	Seabird	x	x	x
Heermann's Gull or Herring Gull	<i>Larus sp.</i>		Seabird	x		x
Hermit Warbler	<i>Setophaga occidentalis</i>		Terrestrial		x	
Herring Gull	<i>Larus argentatus smithsonianus</i>		Seabird	x	x	x
Hooded Merganser	<i>Lophodytes cucullatus</i>		Waterfowl	x	x	
Hooded Oriole	<i>Icterus cucullatus nelsoni</i>		Terrestrial	x	x	x
Horned Grebe	<i>Podiceps auritus cornutus</i>		Waterfowl	x	x	x
Horned Lark	<i>Eremophila alpestris</i>		Terrestrial	x	x	x
House Finch	<i>Carpodacus mexicanus frontalis</i>		Terrestrial	x	x	x
House Sparrow	<i>Passer domesticus domesticus</i>		Terrestrial	x	x	x
House Wren	<i>Troglodytes aedon parkmanii</i>		Terrestrial	x	x	x
Killdeer	<i>Charadrius vociferus vociferus</i>		Shorebird	x	x	x
Large-Billed Savannah Sparrow	<i>Passerculus sandwichensis rostratus</i>	SSC	Terrestrial	x	x	x
Lazuli Bunting	<i>Passerina amoena</i>		Terrestrial	x		
Least Sandpiper	<i>Calidris minutilla</i>		Shorebird	x	x	x
Lesser Goldfinch	<i>Spinus psaltria</i>		Terrestrial	x	x	x
Lesser Scaup	<i>Aythya affinis</i>		Waterfowl	x	x	x
Lesser Yellowlegs	<i>Tringa flavipes</i>		Shorebird	x	x	x
Lincoln's Sparrow	<i>Melospiza lincolni</i>	0	Terrestrial	x	x	x
Little Blue Heron	<i>Egretta caerulea</i>		Marshbird	x	x	x
Loggerhead Shrike	<i>Lanius ludovicianus</i>	BCC, SSC	Terrestrial	x	x	x
Long-Billed Curlew	<i>Numenius americanus</i>	BCC	Shorebird	x	x	x

Common Name	Species Name	Status <sup>1</sup>	Species Assemblage	Seen 2006-07	Seen 2009-10	Seen 2016-17
Long-Billed Dowitcher	<i>Limnodromus scolopaceus</i>		Shorebird	x	x	x
Long-Tailed Duck	<i>Clangula hyemalis</i>		Waterfowl	x	x	
Mallard	<i>Anas platyrhynchos platyrhynchos</i>		Waterfowl	x	x	x
Marbled Godwit	<i>Limosa fedoa fedoa</i>	BCC	Shorebird	x	x	x
Marsh Wren	<i>Cistothorus palustris</i>	SSC	Marshbird	x	x	x
Merlin	<i>Falco columbarius columbarius</i>		Terrestrial	x	x	x
Mew Gull	<i>Larus canus brachyrhynchus</i>		Seabird	x	x	x
Mourning Dove	<i>Zenaida macroura marginella</i>		Terrestrial	x	x	x
Nashville Warbler	<i>Oreothypis ruficapilla ridgwayi</i>		Terrestrial	x	x	
Northern Flicker	<i>Colaptes auratus collaris</i>		Terrestrial	x		
Northern Harrier	<i>Circus cyaneus hudsonius</i>	SSC	Terrestrial	x	x	x
Northern Mockingbird	<i>Mimus polyglottos polyglottos</i>		Terrestrial	x	x	x
Northern Pintail	<i>Anas acuta</i>		Waterfowl	x	x	x
Northern Rough-Winged Swallow	<i>Stelgidopteryx serripennis</i>		Terrestrial	x	x	x
Northern Shoveler	<i>Anas chryseata</i>		Waterfowl	x	x	x
Olympic Gull	<i>Larus glaucescens</i> × <i>occidentalis</i>		Seabird	x		
Orange-Crowned Warbler	<i>Oreothypis celata</i>		Terrestrial	x	x	x
Osprey	<i>Pandion haliaetus carolinensis</i>		Seabird	x	x	x
Pacific Golden-Plover	<i>Pluvialis fulva</i>		Shorebird	x	x	
Pacific Loon	<i>Gavia pacifica</i>		Seabird	x	x	x
Parasitic Jaeger	<i>Stercorarius parasiticus</i>		Seabird	x	x	x
Pectoral Sandpiper	<i>Calidris melanotos</i>		Shorebird		x	
Pelagic Cormorant	<i>Phalacrocorax pelagicus</i>		Seabird		x	x
Peregrine Falcon	<i>Falco peregrinus anatum</i>	BCC, SP	Terrestrial	x	x	x
Pied-Billed Grebe	<i>Podilymbus podiceps podiceps</i>		Waterfowl	x	x	x
Pomarine Jaeger	<i>Stercorarius pomarinus</i>		Seabird			x
Red Knot	<i>Calidris canutus roselaari</i>	BCC	Shorebird	x	x	x
Red Phalarope	<i>Phalaropus fulicarius</i>		Shorebird	x		
Red-Breasted Merganser	<i>Mergus serrator</i>		Waterfowl	x	x	x
Red-Crowned Parrot	<i>Amazona viridigenalis</i>		Terrestrial	x	x	

Common Name	Species Name	Status <sup>1</sup>	Species Assemblage	Seen 2006-07	Seen 2009-10	Seen 2016-17
Reddish Egret	<i>Egretta rufescens dickey</i>		Marshbird	x	x	x
Redhead	<i>Aythya americana</i>	SSC	Waterfowl	x	x	x
Red-Necked Grebe	<i>Podiceps grisegena</i>		Waterfowl		x	
Red-Necked Phalarope	<i>Phalaropus lobatus</i>		Shorebird	x	x	x
Red-Shouldered Hawk	<i>Buteo lineatus</i>		Terrestrial	x		
Red-Tailed Hawk	<i>Buteo jamaicensis</i>		Terrestrial	x	x	x
Red-Throated Loon	<i>Gavia stellata</i>		Seabird	x	x	x
Red-Winged Blackbird	<i>Agelaius phoeniceus</i>		Terrestrial? Marshbird?	x		
Ridgway's (Light-Footed Clapper) Rail	<i>Rallus longirostris levipes</i>		Marshbird	x	x	x
Ring-Billed Gull	<i>Larus delawarensis</i>		Seabird	x	x	x
Ring-Necked Duck	<i>Aythya collaris</i>		Waterfowl		x	
Rock Pigeon	<i>Columba livia</i>		Terrestrial	x	x	x
Rock Wren	<i>Salpinctes obsoletus</i>		Terrestrial	x	x	x
Ross' Goose	<i>Chen rossii</i>		Waterfowl	x		
Royal Tern	<i>Thalasseus maximus</i>		Seabird	x	x	x
Ruby-Crowned Kinglet	<i>Regulus calendula calendula</i>		Terrestrial	x	x	x
Ruddy Duck	<i>Oxyura jamaicensis rubida</i>		Waterfowl	x	x	x
Ruddy Turnstone	<i>Arenaria interpres</i>		Shorebird	x	x	x
San Diego Cactus Wren	<i>Campylorhynchus brunneicapillus sandiegensis</i>		Terrestrial		x	
San Diego Song Sparrow	<i>Melospiza melodia</i>		Terrestrial	x		
Sanderling	<i>Calidris alba</i>		Shorebird	x	x	x
Savannah Sparrow	<i>Passerculus sandwichensis</i>		Terrestrial	x	x	x
Say's Phoebe	<i>Sayornis saya saya</i>		Terrestrial	x	x	x
Scrub Jay	<i>Aphelocoma californica</i>		Terrestrial	x	x	
Semipalmated Plover	<i>Charadrius semipalmatus</i>		Shorebird	x	x	x
Semipalmated Sandpiper	<i>Calidris pusilla</i>		Shorebird	x	x	x
Sharp-Shinned Hawk	<i>Accipiter striatus velox</i>		Terrestrial	x	x	x
Short-Billed Dowitcher	<i>Limnodromus griseus caurinus</i>	BCC	Shorebird	x		x
Short-Eared Owl	<i>Asio flammeus flammeus</i>	SSC	Terrestrial	x	x	x



Common Name	Species Name	Status <sup>1</sup>	Species Assemblage	Seen 2006-07	Seen 2009-10	Seen 2016-17
Snow Goose	<i>Chen caerulescens</i>		Waterfowl	x	x	x
Snowy Egret	<i>Egretta thula thula</i>		Marshbird	x	x	x
Song Sparrow	<i>Melospiza melodia</i>	SSC	Terrestrial	x		x
Sora	<i>Porzana carolina</i>		Marshbird	x	x	x
Spotted Sandpiper	<i>Actitis macularius</i>		Shorebird		x	x
Spotted Towhee	<i>Pipilo maculatus</i>		Terrestrial	x	x	
Stilt Sandpiper	<i>Calidris himantopus</i>		Shorebird	x		
Surf Scoter	<i>Melanitta perspicillata</i>		Waterfowl	x	x	x
Surfbird	<i>Aphriza virgata</i>		Shorebird	x	x	x
Thayer's Gull	<i>Larus thayeri</i>		Seabird	x	x	x
Townsend's Warbler	<i>Setophaga townsendi</i>		Terrestrial	x		x
Tree Swallow	<i>Tachycineta bicolor</i>		Terrestrial	x	x	x
Tricolored Heron	<i>Egretta tricolor</i>		Marshbird			x
Tropical Kingbird	<i>Tyrannus melancholicus</i>		Terrestrial		x	
Turkey Vulture	<i>Cathartes aura meridionalis</i>		Terrestrial	x	x	x
Vaux's Swift	<i>Chaetura vauxi vauxi</i>	SSC	Terrestrial	x	x	
Violet-Green Swallow	<i>Tachycineta thalassina thalassina</i>		Terrestrial	x	x	x
Wandering Tattler	<i>Tringa incana</i>		Shorebird	x	x	
Western Grebe	<i>Aechmophorus occidentalis</i>		Waterfowl	x	x	x
Western Gull	<i>Larus occidentalis wymani</i>		Seabird	x	x	x
Western Kingbird	<i>Tyrannus verticalis</i>		Terrestrial	x		x
Western Meadowlark	<i>Sturnella neglecta</i>		Terrestrial	x	x	x
Western Sandpiper	<i>Calidris mauri</i>		Shorebird	x	x	x
Western Snowy Plover	<i>Charadrius nivosus nivosus</i>	FT	Shorebird		x	x
Whimbrel	<i>Numenius phaeopus budsonicus</i>	BCC	Shorebird	x	x	x
White-Crowned Sparrow	<i>Zonotrichia leucophrys</i>	0	Terrestrial	x	x	x
White-Faced Ibis	<i>Plegadis chihi</i>		Shorebird	x	x	x
White-Tailed Kite	<i>Elanus leucurus</i>		Terrestrial	x		
White-Throated Sparrow	<i>Zonotrichia albicollis</i>		Terrestrial			x
White-Throated Swift	<i>Aeronautes saxatalis</i>		Terrestrial	x		x

Common Name	Species Name	Status <sup>1</sup>	Species Assemblage	Seen 2006-07	Seen 2009-10	Seen 2016-17
White-Winged Scoter	<i>Melanitta fusca deglandi</i>		Waterfowl	x	x	x
Willet	<i>Tringa semipalmata inornatus</i>		Shorebird	x	x	x
Wilson's Plover	<i>Charadrius wilsonia</i>		Shorebird		x	
Wilson's Phalarope	<i>Phalaropus tricolor</i>		Shorebird	x	x	x
Wilson's Warbler	<i>Cardellina pusilla</i>		Terrestrial	x		x
Yellow Warbler	<i>Dendroica petechia</i>	SSC	Terrestrial	x	x	x
Yellow-Crowned Night-Heron	<i>Nyctanassa violacea</i>		Marshbird			x
Yellow-Headed Blackbird	<i>Xanthocephalus xanthocephalus</i>		Terrestrial			x

<sup>1</sup>FE: Federally Endangered; FT: Federally Threatened; BCC: USFWS Bird of Conservation Concern; SE: CA State Endangered, ST: CA State Threatened; SP: CA Fully Protected Species; SSC: CA State Species of Special Concern

**Table D-2. Species and number of birds observed per month during the San Diego Bay shoreline low/ebbing tide surveys in 2016-17. Species are organized from greatest to least total observed. Peak abundance for each species is highlighted in bold.**

Species	Total Observed	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May <sup>1</sup> 2017	Jun 2017	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016
Western Sandpiper	129,708	16,191	10,818	14,324	3,959	29	220	14,781	1,815	15,964	18,270	10,828	<b>22,509</b>
Elegant Tern	32,808	0	1	4,466	4,903	254	2,996	<b>18,502</b>	1,112	503	65	6	0
Western Gull	23,432	1,284	1,800	1,780	1,374	1,269	1,865	2,292	<b>3,001</b>	2,821	1,859	1,966	2,121
Eared Grebe	16,554	1,654	2,021	1,689	2,116	20	41	10	286	1,057	<b>2,761</b>	2,351	2,548
Peep sp. undifferentiated	14,812	2,668	212	1,119	495	0	58	290	1,418	2,464	1,297	1,145	<b>3,646</b>
Surf Scoter	14,789	<b>4,489</b>	2,954	1,710	35	2	18	5	0	2	40	1,082	4,452
Brant	13,785	<b>3,096</b>	2,454	2,449	99	0	0	1	1	0	362	2,446	2,877
Willet	11,984	1,276	1,072	752	407	112	699	1,721	631	<b>1,972</b>	1,125	997	1,220
Black-Bellied Plover	11,822	1,943	1,115	314	44	32	212	561	546	1,257	2,117	1,292	<b>2,389</b>
American Wigeon	11,269	1,871	2,474	378	0	0	0	0	0	8	337	1,819	<b>4,382</b>
Marbled Godwit	10,563	990	1,107	728	263	146	324	1,104	1,043	1,339	959	1,180	<b>1,380</b>
Least Sandpiper	10,029	<b>1,683</b>	799	947	109	1	52	468	244	1,652	1,500	966	1,608
California Gull	9,897	2,322	<b>3,727</b>	980	1,130	89	150	48	76	94	118	498	665
Brandt's Cormorant	8,448	1,436	451	231	101	150	342	0	<b>2,693</b>	1,631	534	518	361
Western Grebe	8,173	<b>2,630</b>	1,132	903	647	3	78	35	7	7	1,126	465	1,140
Sanderling	7,204	572	825	<b>1,634</b>	514	175	22	102	323	875	962	845	355
Dowitcher sp.	6,392	682	<b>1,149</b>	577	202	85	31	671	215	385	808	834	753
Semipalmated Plover	6,322	728	293	434	183	64	29	320	359	743	926	400	<b>1,843</b>
Rock Pigeon	5,150	443	396	464	369	599	<b>704</b>	409	317	304	391	283	471
Sandpiper sp.	4,350	12	30	224	0	0	0	0	0	74	0	10	<b>4,000</b>
Dunlin	4,236	1,069	501	293	31	0	2	0	5	13	587	292	<b>1,443</b>
Royal Tern	4,041	263	302	286	215	105	<b>1,305</b>	106	229	253	565	165	247
Red Knot	3,906	295	82	154	173	28	80	45	256	382	<b>997</b>	511	903
Brown Pelican	3,867	250	212	128	115	216	388	332	471	454	<b>590</b>	400	311
Double-Crested Cormorant	3,760	294	292	281	129	120	318	<b>823</b>	408	372	275	187	261
Heermann's Gull	3,478	168	44	4	4	3	231	468	<b>891</b>	669	395	356	245
Northern Shoveler	3,104	948	<b>1,578</b>	54	0	0	0	0	26	90	42	107	259
House Finch	2,691	220	167	286	199	225	378	95	54	85	<b>410</b>	228	344
Black Skimmer	2,314	1	1	0	18	6	489	<b>821</b>	530	400	48	0	0
Western Snowy Plover	2,205	175	211	148	136	41	139	156	<b>264</b>	259	217	203	256
Forster's Tern	2,096	216	66	44	264	305	<b>459</b>	87	39	114	176	154	172



Species	Total Observed	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May <sup>1</sup> 2017	Jun 2017	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016
Ring-Billed Gull	2,068	558	347	148	53	4	52	0	150	74	14	167	501
Black-Necked Stilt	2,061	383	195	323	310	38	512	79	15	60	1	0	145
Scaup sp.	1,930	487	655	84	0	0	0	0	0	0	0	95	609
California Least Tern	1,855	0	0	1	110	612	730	402	0	0	0	0	0
Belding's Savannah Sparrow	1,745	154	124	113	180	104	290	155	86	151	142	109	137
American Coot	1,711	301	441	300	2	1	0	0	0	3	139	222	302
Horned Lark	1,461	312	109	129	159	58	63	27	10	177	86	28	303
Bufflehead	1,302	312	325	115	0	0	0	0	0	0	2	105	443
Short-Billed Dowitcher	1,302	413	0	91	2	0	2	47	112	99	48	160	328
Red-Necked Phalarope	1,270	0	0	0	0	0	0	4	927	339	0	0	0
American Avocet	1,186	257	195	259	99	10	125	4	60	71	49	0	57
Gull sp.	1,177	672	40	113	24	64	10	0	0	6	17	113	118
Mallard	1,085	118	81	72	50	53	85	74	73	59	95	150	175
Redhead	938	541	124	3	0	0	0	0	0	0	6	12	252
Killdeer	911	121	48	65	43	43	59	29	45	55	166	110	127
Western Peep	900	0	0	0	0	0	0	0	0	0	0	0	900
Caspian Tern	894	7	0	18	92	99	370	75	189	23	14	4	3
House Sparrow	871	49	58	75	125	105	178	75	14	24	69	45	54
Cliff Swallow	864	0	0	15	155	71	265	314	0	44	0	0	0
Snowy Egret	846	45	58	62	73	70	98	70	83	81	77	71	58
European Starling	839	44	71	53	80	119	97	29	64	20	63	135	64
Northern Pintail	792	131	121	0	0	0	0	0	0	8	4	275	253
Greater Yellowlegs	753	71	146	30	42	22	37	32	23	64	65	88	133
Lesser Scaup	736	559	119	1	0	0	0	0	0	0	3	0	54
American Crow	709	107	100	63	80	39	68	49	9	25	65	52	52
Great Blue Heron	709	65	43	57	77	68	88	49	45	43	36	74	64
Long-Billed Curlew	705	74	84	105	16	37	43	33	42	72	38	78	83
Green-Winged Teal	582	20	383	8	0	0	0	0	0	0	0	74	97
Great Egret	549	39	26	22	2	7	8	40	60	115	70	69	91
No Species Given	530	0	0	0	1	0	0	526	3	0	0	0	0
American Pipit	432	86	64	12	5	0	0	0	0	0	46	61	158
Barn Swallow	423	12	2	27	37	30	92	59	18	132	2	0	12
Audubon's (Yellow-Rumped) Warbler	417	70	36	39	0	0	0	0	0	0	61	106	105

Species	Total Observed	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May <sup>1</sup> 2017	Jun 2017	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016
Osprey	405	30	26	35	30	44	38	17	23	55	23	36	48
Whimbrel	362	4	3	93	78	18	17	115	12	13	4	1	4
White-Crowned Sparrow	359	43	52	93	0	0	0	0	0	0	52	76	43
Herring Gull	336	136	56	4	0	0	0	26	0	2	4	28	80
Mourning Dove	276	22	3	7	30	22	48	9	5	21	1	36	72
Ruddy Turnstone	273	24	12	28	14	0	9	21	23	36	39	43	24
Gull-Billed Tern	259	0	0	3	41	18	136	60	0	1	0	0	0
Black Turnstone	256	10	22	46	1	0	0	40	27	26	33	44	7
Ruddy Duck	236	15	188	14	0	0	0	0	0	0	15	0	4
Surfbird	195	9	0	138	6	0	0	0	7	14	11	10	0
Brewer's Blackbird	193	17	4	3	10	2	44	45	35	2	7	14	10
Long-Billed Dowitcher	179	23	0	18	0	0	0	10	12	97	0	4	15
American White Pelican	174	23	32	78	0	0	0	0	4	2	6	6	23
Anna's Hummingbird	171	15	11	23	14	16	6	14	4	8	17	16	27
Black Phoebe	160	16	21	9	9	11	16	5	6	7	22	17	21
Wilson's Phalarope	135	0	0	0	0	0	0	97	24	8	0	0	0
Spotted Sandpiper	132	11	13	13	10	2	0	1	7	28	22	9	16
Common Tern	125	0	0	0	7	0	0	5	78	34	0	0	0
Red-Breasted Merganser	124	42	12	25	5	2	3	0	0	0	1	9	25
Semipalmated Sandpiper	119	0	0	65	0	0	0	0	37	0	2	13	2
Bonaparte's Gull	107	19	5	13	1	0	1	0	0	0	0	4	64
Savannah Sparrow	104	1	16	5	0	2	3	0	23	17	10	14	13
Northern Harrier	102	11	13	2	0	0	1	0	5	16	21	19	14
Song Sparrow	99	10	12	20	12	12	3	1	2	0	13	4	10
Say's Phoebe	98	17	9	4	2	0	1	0	1	4	10	28	22
Others (Unknown Species Codes)	97	2	0	6	0	0	0	0	0	0	11	37	41
Western Meadowlark	93	23	8	5	0	0	0	0	0	0	4	4	49
Horned Grebe	89	33	2	4	0	0	0	0	0	0	0	14	36
Belted Kingfisher	83	12	9	6	0	0	0	0	6	21	14	8	7
Yellow-Rumped Warbler	78	14	10	6	0	0	0	0	0	0	18	11	19
Swallow sp.	67	5	0	0	21	21	7	1	0	0	0	11	1
Unidentified Bird	67	0	0	0	0	0	0	0	0	0	0	67	0
Bushtit	65	0	0	4	3	16	2	0	2	2	6	15	15

Species	Total Observed	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May <sup>1</sup> 2017	Jun 2017	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016
Common Raven	57	3	8	4	11	0	5	0	1	3	6	9	7
Northern Mockingbird	56	1	0	9	15	9	14	4	0	0	4	0	0
Tern sp.	56	0	0	11	0	13	28	1	0	0	2	0	1
Pied-Billed Grebe	55	15	3	4	0	0	0	0	0	2	10	12	9
Red-Tailed Hawk	55	4	3	3	5	3	4	1	1	6	5	7	13
Flamingo	53	9	0	9	9	9	0	0	0	0	9	8	0
Turkey Vulture	50	2	5	0	0	0	0	4	9	11	10	4	5
Common Goldeneye	48	24	5	1	0	0	0	0	0	0	0	0	18
Gadwall	48	2	21	9	3	0	0	0	0	0	9	0	4
American Kestrel	47	4	3	1	2	0	2	0	5	6	5	11	8
Blue-Winged Teal	47	8	16	5	0	0	0	0	0	0	0	15	3
Common Loon	47	5	7	9	0	1	0	0	0	0	1	5	19
Peregrine Falcon	45	6	0	0	1	0	5	2	6	7	7	5	6
Reddish Egret	38	2	1	0	3	1	4	4	7	0	4	4	8
Cassin's Kingbird	36	1	1	5	4	3	3	1	1	5	6	4	2
Orange-Crowned Warbler	33	4	3	10	2	2	0	0	0	0	10	2	0
Eurasian Collared Dove	31	1	0	2	0	2	14	0	4	0	2	0	6
Black-Crowned Night Heron	22	0	0	2	7	7	4	0	1	0	0	0	1
Little Blue Heron	21	1	1	3	2	3	3	2	2	1	2	0	1
Hooded Oriole	20	0	0	3	1	4	8	4	0	0	0	0	0
Least Peep	20	0	0	0	0	0	0	0	0	0	0	0	20
Lesser Yellowlegs	20	0	2	9	1	3	1	0	3	1	0	0	0
Tree Swallow	19	10	4	0	0	0	0	0	0	0	0	4	1
Cinnamon Teal	17	1	7	6	0	0	0	0	0	0	0	3	0
Black Scoter	16	15	1	0	0	0	0	0	0	0	0	0	0
Green Heron	16	0	4	0	1	0	0	2	1	0	0	0	8
Large-Billed Savannah Sparrow	16	6	1	0	0	0	0	0	2	3	1	1	2
Pacific Loon	16	5	1	1	0	0	0	0	0	0	1	1	7
Greater Scaup	15	5	1	6	0	0	0	0	0	0	0	0	3
Shorebird sp. - Small	15	0	0	15	0	0	0	0	0	0	0	0	0
Northern Rough-Winged Swallow	14	0	1	0	6	0	4	1	0	2	0	0	0
Cormorant sp.	12	0	0	3	0	5	1	2	0	0	0	0	1
Loon sp.	12	3	5	1	1	0	0	0	0	1	0	0	1



Species	Total Observed	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May <sup>1</sup> 2017	Jun 2017	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016
Common Merganser	11	0	0	2	0	0	0	0	0	0	0	2	7
Cooper's Hawk	11	0	2	1	0	0	1	2	2	0	0	0	3
California Towhee	11	0	0	2	1	0	1	1	0	2	1	0	3
Hummingbird sp.	10	0	0	1	0	0	0	0	0	0	0	0	9
Merlin	10	2	0	1	1	0	0	0	0	0	4	1	1
Common Yellowthroat	9	1	1	0	0	0	0	0	0	1	1	1	4
Pelagic Cormorant	9	1	0	3	0	0	0	0	1	0	0	1	3
Red-Throated Loon	8	2	0	0	0	0	0	0	0	0	0	0	6
Short-Eared Owl	8	3	1	0	0	0	0	0	0	0	1	3	0
Allen's Hummingbird	7	0	1	2	0	1	0	0	0	2	0	0	1
Glaucous-Winged Gull	6	2	2	1	1	0	0	0	0	0	0	0	0
White-Faced Ibis	6	0	0	0	0	6	0	0	0	0	0	0	0
Barn Owl	5	0	0	0	0	0	0	5	0	0	0	0	0
Marsh Wren	5	0	0	0	0	0	0	0	0	0	2	0	3
Thayer's Gull	5	2	2	0	0	0	0	0	0	0	0	0	1
Western Kingbird	5	0	0	0	1	0	2	0	0	0	1	0	1
Burrowing Owl	4	0	1	0	0	0	1	0	0	0	1	0	1
Lesser Goldfinch	4	0	0	0	0	0	4	0	0	0	0	0	0
Eurasian Wigeon	3	1	0	0	0	0	0	0	0	0	0	1	1
Franklin's Gull	3	0	0	0	0	0	0	3	0	0	0	0	0
Loggerhead Shrike	3	1	0	0	0	0	0	0	1	1	0	0	0
Rock Wren	3	0	0	0	0	0	0	0	0	0	2	0	1
Crow sp.	2	0	0	0	2	0	0	0	0	0	0	0	0
Curlew sp.	2	0	0	0	0	0	0	0	0	0	0	2	0
Golden Plover sp.	2	0	0	0	0	0	0	0	0	0	0	2	0
House Wren	2	0	0	0	0	0	0	0	0	1	0	1	0
Lincoln's Sparrow	2	0	0	0	0	0	0	0	0	0	0	2	0
Townsend's Warbler	2	0	0	0	1	0	0	0	0	0	0	0	1
Violet-Green Swallow	2	0	0	0	0	0	0	0	0	0	0	2	0
Wilson's Warbler	2	0	0	1	1	0	0	0	0	0	0	0	0
Yellow Warbler	2	0	0	0	0	0	0	0	0	0	0	1	1
Baird's Sandpiper	1	0	0	0	0	0	0	0	0	1	0	0	0
California Gnatcatcher	1	0	0	0	0	0	1	0	0	0	0	0	0

Species	Total Observed	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May <sup>1</sup> 2017	Jun 2017	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016
Heermann's Gull or Herring Gull	1	0	1	0	0	0	0	0	0	0	0	0	0
Jaeger sp.	1	0	0	0	0	0	0	0	0	0	0	1	0
Pacific Golden-Plover	1	0	0	0	0	0	0	0	1	0	0	0	0
Parasitic Jaeger	1	1	0	0	0	0	0	0	0	0	0	0	0
Pipit	1	0	0	0	0	0	0	0	0	0	0	1	0
Ridgway's Rail	1	0	0	0	0	1	0	0	0	0	0	0	0
White-Winged Scoter	1	0	0	1	0	0	0	0	0	0	0	0	0
Yellow-Headed Blackbird	1	0	0	0	0	0	0	0	0	1	0	0	0
<b>Total Count</b>	<b>434,594</b>	<b>56,617</b>	<b>42,935</b>	<b>41,100</b>	<b>20,427</b>	<b>5,992</b>	<b>15,354</b>	<b>46,931</b>	<b>19,667</b>	<b>38,459</b>	<b>41,710</b>	<b>35,699</b>	<b>69,752</b>
<b>No. of Species<sup>2</sup></b>	<b>155</b>	<b>112</b>	<b>106</b>	<b>113</b>	<b>89</b>	<b>73</b>	<b>78</b>	<b>75</b>	<b>84</b>	<b>89</b>	<b>104</b>	<b>105</b>	<b>116</b>

**Notes**

<sup>1</sup> In May 2017, both high and low tide surveys were performed on 11 survey routes. On the other 10 routes, either low tide (5 routes) or high tide (5 routes) surveys were performed, but not both. Therefore, the numbers presented here represent only 16 of the 21 survey routes.

<sup>2</sup> Species counts include only those entries identified to species. Entries such as "Cormorant sp." are not included in the species counts.

**Table D-3. Species and number of birds observed per month during the San Diego Bay shoreline high/peaking tide surveys in 2016-17. Species are organized from greatest to least total number observed. Peak abundance for each species is highlighted in bold.**

Species	Total Observed	Feb 2017	Apr <sup>1</sup> 2017	May <sup>2</sup> 2017	Aug 2016	Nov 2016
Western Sandpiper	27,023	4,919	2,707	84	<b>10,042</b>	9,271
Elegant Tern	9,004	3	<b>6,869</b>	256	1,871	5
Eared Grebe	8,315	1,937	<b>3,013</b>	337	632	2,396
California Gull	6,949	<b>5,843</b>	168	696	85	157
Western Gull	6,564	1,491	359	1,111	<b>2,025</b>	1,578
Surf Scoter	5,651	<b>3,258</b>	91	10	11	2,281
Western Grebe	4,044	975	489	336	1	<b>2,243</b>
Brant	3,200	1,420	29	0	0	<b>1,751</b>
Least Sandpiper	3,101	473	55	0	1,080	<b>1,493</b>
Brandt's Cormorant	3,066	785	0	261	<b>1,976</b>	44
Black-Bellied Plover	2,907	740	20	147	736	<b>1,264</b>
Marbled Godwit	2,731	<b>756</b>	265	312	689	709
Peep sp.	2,600	<b>989</b>	523	0	804	284
Willet	2,534	488	410	227	<b>737</b>	672
American Wigeon	2,299	<b>1,361</b>	0	0	0	938
Rock Pigeon	2,296	476	64	<b>736</b>	523	497
Sanderling	2,034	346	138	127	490	<b>933</b>
Brown Pelican	1,644	210	45	312	<b>657</b>	420
Semipalmated Plover	1,553	273	191	31	475	<b>583</b>
Double-Crested Cormorant	1,410	148	83	324	<b>546</b>	309
House Finch	1,148	<b>274</b>	228	216	210	220
Black Skimmer	1,129	1	24	510	<b>594</b>	0
Belding's Savannah Sparrow	1,046	192	<b>257</b>	125	188	284
Royal Tern	997	<b>374</b>	207	230	70	116
Dunlin	988	139	27	0	0	<b>822</b>
Dowitcher sp.	939	140	142	38	176	<b>443</b>
Black-Necked Stilt	939	193	<b>405</b>	323	18	0
Heermann's Gull	898	21	8	3	<b>720</b>	146
Scaup sp.	660	505	0	0	0	<b>155</b>
Gull sp.	599	128	111	104	25	<b>231</b>
California Least Tern	738	0	111	<b>626</b>	1	0
Forster's Tern	560	15	<b>242</b>	59	35	209
Bufflehead	533	<b>386</b>	0	0	0	147
Redhead	227	<b>188</b>	0	0	0	39
American Avocet	526	<b>179</b>	141	114	87	5
Northern Shoveler	508	<b>296</b>	0	0	96	116
Cliff Swallow	488	0	233	<b>253</b>	2	0
Mallard	461	91	35	40	81	<b>214</b>
Caspian Tern	434	3	53	<b>218</b>	155	5
American Coot	433	212	2	1	1	<b>217</b>
Ring-Billed Gull	416	<b>180</b>	28	14	60	134
Red-Necked Phalarope	415	0	0	0	<b>415</b>	0
Western Snowy Plover	734	147	78	105	<b>221</b>	183
House Sparrow	382	82	92	<b>111</b>	48	49



Species	Total Observed	Feb 2017	Apr <sup>1</sup> 2017	May <sup>2</sup> 2017	Aug 2016	Nov 2016
Horned Lark	367	158	45	26	73	65
Red Knot	365	90	40	32	90	113
European Starling	354	62	63	79	35	115
Killdeer	306	50	28	25	48	155
American Pipit	283	194	2	0	0	87
Snowy Egret	253	60	20	79	65	29
American Crow	233	49	41	40	54	49
Great Blue Heron	224	34	12	64	41	73
Great Egret	214	23	8	17	116	50
Audubon's Warbler (Yellow-Rumped)	202	67	1	0	0	134
Barn Swallow	176	0	8	57	111	0
Long-Billed Curlew	160	56	12	10	50	32
Osprey	149	30	23	33	19	44
Lesser Scaup	140	140	0	0	0	0
Herring Gull	135	119	0	0	0	16
Anna's Hummingbird	128	31	21	6	27	43
Gull-Billed Tern	124	0	56	67	1	0
Common Tern	118	0	0	0	118	0
White-Crowned Sparrow	112	43	0	0	0	69
Short-Billed Dowitcher	108	0	4	0	104	0
Greater Yellowlegs	105	27	8	8	18	44
Mourning Dove	104	8	37	30	11	18
Ruddy Duck	93	84	2	0	0	7
Horned Grebe	91	76	0	0	0	15
Ruddy Turnstone	90	4	5	0	44	37
Unidentified bird	85	0	0	0	0	85
Black Turnstone	78	7	0	0	40	31
Greater Scaup	77	77	0	0	0	0
Black Phoebe	76	22	8	8	11	27
American White Pelican	75	54	0	0	5	16
Spotted Sandpiper	67	6	10	4	34	13
Swallow sp.	64	1	47	15	0	1
Others (Unknown Species Codes)	62	22	0	0	19	21
Tern sp.	62	0	0	51	0	11
Bonaparte's Gull	61	32	0	8	0	21
Green-Winged Teal	57	41	0	0	0	16
Red-Breasted Merganser	55	19	21	4	0	11
Northern Pintail	50	18	0	0	0	32
Long-Billed Dowitcher	48	4	0	0	44	0
Song Sparrow	44	16	15	5	6	2
Brewer's Blackbird	43	2	0	6	24	11
Savannah Sparrow	42	25	0	6	8	3
Say's Phoebe	42	12	4	3	0	23
Bushtit	39	6	2	2	14	15
Belted Kingfisher	38	13	1	0	11	13
Western Meadowlark	37	24	0	0	0	13
Wilson's Phalarope	35	0	5	0	30	0

Species	Total Observed	Feb 2017	Apr <sup>1</sup> 2017	May <sup>2</sup> 2017	Aug 2016	Nov 2016
Tree Swallow	35	1	0	0	0	34
Orange-Crowned Warbler	34	8	14	0	0	12
Loon sp.	32	1	0	23	0	8
Whimbrel	30	0	22	5	2	1
Yellow-Rumped Warbler	30	7	0	0	0	23
Common Raven	29	5	4	1	5	14
Peregrine Falcon	26	5	7	2	7	5
Surfbird	25	8	3	0	0	14
American Kestrel	23	3	0	0	6	14
Northern Harrier	22	2	5	0	2	13
Northern Mockingbird	21	4	7	8	0	2
Parrot sp.	21	0	0	21	0	0
Common Loon	20	7	1	1	0	11
Pied-Billed Grebe	19	6	0	0	0	13
Gadwall	19	10	8	0	0	1
Flamingo	18	0	9	0	0	9
Eurasian Collared Dove	17	2	12	3	0	0
Hooded Oriole	17	0	17	0	0	0
Blue-Winged Teal	15	11	0	0	0	4
Black-Crowned Night Heron	15	0	1	11	3	0
Cassin's Kingbird	14	1	6	4	0	3
Stilt	13	0	0	13	0	0
Red-Tailed Hawk	12	2	0	0	0	10
Duck sp.	12	0	0	0	0	12
Teal sp.	12	12	0	0	0	0
Reddish Egret	12	3	3	1	2	3
Common Yellowthroat	11	4	0	0	1	6
Western Kingbird	11	0	4	4	2	1
Lesser Yellowlegs	10	1	0	2	5	2
Lesser Goldfinch	9	2	2	0	0	5
Turkey Vulture	9	0	0	0	2	7
Sandpiper sp.	8	0	0	0	0	8
Pacific Loon	8	2	0	2	0	4
Northern Rough-Winged Swallow	8	0	3	2	0	3
California Towhee	8	0	2	2	1	3
Large-Billed Savannah Sparrow	7	2	0	0	0	5
Short-Eared Owl	7	1	0	0	0	6
Semipalmated Sandpiper	6	0	0	0	5	1
Cinnamon Teal	6	4	0	0	2	0
Glaucous-Winged Gull	6	6	0	0	0	0
Allen's Hummingbird	5	3	1	0	0	1
Canada Goose	4	0	4	0	0	0
Cooper's Hawk	4	1	1	0	1	1
Cormorant sp.	4	0	0	2	0	2
Wilson's Warbler	4	0	1	2	1	0
Curlew sp.	3	0	0	0	0	3
Green Heron	3	1	0	0	2	0

Species	Total Observed	Feb 2017	Apr <sup>1</sup> 2017	May <sup>2</sup> 2017	Aug 2016	Nov 2016
Hummingbird sp.	3	1	0	2	0	0
Lincoln's Sparrow	3	0	0	0	0	3
Merlin	3	2	0	0	0	1
Sparrow sp.	4	0	0	4	0	0
White-Throated Swift	3	0	3	0	0	0
Sora	3	1	0	0	0	2
Common Goldeneye	2	2	0	0	0	0
Baird's Sandpiper	2	0	0	0	2	0
Common Goldeneye	2	2	0	0	0	0
Little Blue Heron	2	0	0	1	1	0
Thayer's Gull	2	2	0	0	0	0
Yellow Warbler	2	2	0	0	0	0
Black Scoter	1	0	0	0	0	1
Burrowing Owl	1	0	0	0	0	1
Pelagic Cormorant	1	0	0	0	1	0
Eurasian Wigeon	1	0	0	0	0	1
Marsh Wren	1	0	0	0	0	1
House Wren	1	0	0	0	0	1
Townsend's Warbler	1	0	1	0	0	0
Bewick's Wren	1	0	0	0	0	1
Parasitic Jaeger	1	0	0	0	0	1
Ridgway's Rail	1	1	0	0	0	0
Selasphorus sp.	1	1	0	0	0	0
Snow Goose	1	0	0	0	0	1
American Golden-Plover	1	0	0	1	0	0
Great Horned Owl	1	0	0	1	0	0
Mew Gull	1	0	0	0	1	0
Ruby-Crowned Kinglet	1	0	0	0	0	1
Sharp-Shinned Hawk	1	1	0	0	0	0
Tricolored Heron	1	0	0	0	1	0
White-Throated Sparrow	1	0	0	0	0	1
Yellow-Crowned Night Heron	1	0	1	0	0	0
<b>Total Count</b>	<b>122,025</b>	<b>32,580</b>	<b>18,634</b>	<b>9,196</b>	<b>27,913</b>	<b>33,702</b>
<b>No. of Species<sup>3</sup></b>	<b>154</b>	<b>111</b>	<b>89</b>	<b>78</b>	<b>88</b>	<b>116</b>

**Notes**

<sup>1</sup>In April 2017, additional surveys were done at high tide on 9 survey routes.

<sup>2</sup>In May 2017, both high and low tide surveys were performed on 11 survey routes. On the other 10 routes, either low tide (5 routes) or high tide (5 routes) surveys were performed, but not both. Therefore the numbers presented here represent only 16 of the 21 survey routes.

<sup>3</sup>Species counts include only those entries identified to species. Entries such as "Cormorant sp." are not included in the species counts.



**Table D-4. Species and number of birds observed per month during the San Diego Bay mid-water surveys in 2016-17. Species are organized from greatest to least total number observed. Peak abundance for each species is highlighted in bold.**

Species	Total Observed	Jan 2017	Feb 2017	Nov 2016	Dec 2016
Surf Scoter	5,633	<b>1,964</b>	723	1,551	1,395
Brant	645	129	228	<b>236</b>	52
Western Gull	<b>474</b>	192	100	95	87
Brandt's Cormorant	390	<b>315</b>	13	27	35
Cormorant sp.	256	<b>206</b>	0	0	50
Bufflehead	124	<b>73</b>	20	9	22
Heermann's Gull	102	34	4	6	<b>58</b>
Brown Pelican	92	19	7	17	<b>49</b>
Lesser Scaup	70	0	<b>70</b>	0	0
Scaup sp.	69	<b>69</b>	0	0	0
Royal Tern	43	1	1	0	<b>41</b>
Eared Grebe	41	<b>33</b>	2	0	6
Double-Crested Cormorant	40	<b>24</b>	6	8	2
California Gull	30	0	0	6	<b>24</b>
Ring-Billed Gull	22	<b>22</b>	0	0	0
Western Grebe	22	1	2	<b>17</b>	2
Common Loon	20	6	2	5	<b>7</b>
Forster's Tern	15	0	0	<b>15</b>	0
Peep sp.	12	<b>12</b>	0	0	0
American Wigeon	6	0	<b>6</b>	0	0
Osprey	5	0	1	<b>3</b>	1
Great Egret	3	<b>2</b>	0	1	0
Black Scoter	2	<b>2</b>	0	0	0
Dowitcher sp.	2	0	0	0	<b>2</b>
Great Blue Heron	2	0	0	<b>1</b>	<b>1</b>
Gull sp.	2	0	0	<b>2</b>	0
American Coot	1	0	0	<b>1</b>	0
Bonaparte's Gull	1	0	0	0	<b>1</b>
Caspian Tern	1	0	<b>1</b>	0	0
Elegant Tern	1	<b>1</b>	0	0	0
Grebe sp.	1	0	0	<b>1</b>	0
Herring Gull	1	<b>1</b>	0	0	0
Horned Grebe	1	0	0	0	<b>1</b>
Mallard	1	<b>1</b>	0	0	0
Pacific Loon	1	0	0	<b>1</b>	0
Parasitic Jaeger	1	0	0	0	<b>1</b>
Pied-Billed Grebe	1	0	0	<b>1</b>	0
<b>Total Count</b>	<b>8,133</b>	<b>3,107</b>	<b>1,186</b>	<b>2,003</b>	<b>1,837</b>
<b>#Species<sup>1</sup></b>	<b>33</b>	<b>18</b>	<b>16</b>	<b>18</b>	<b>18</b>

**Notes**

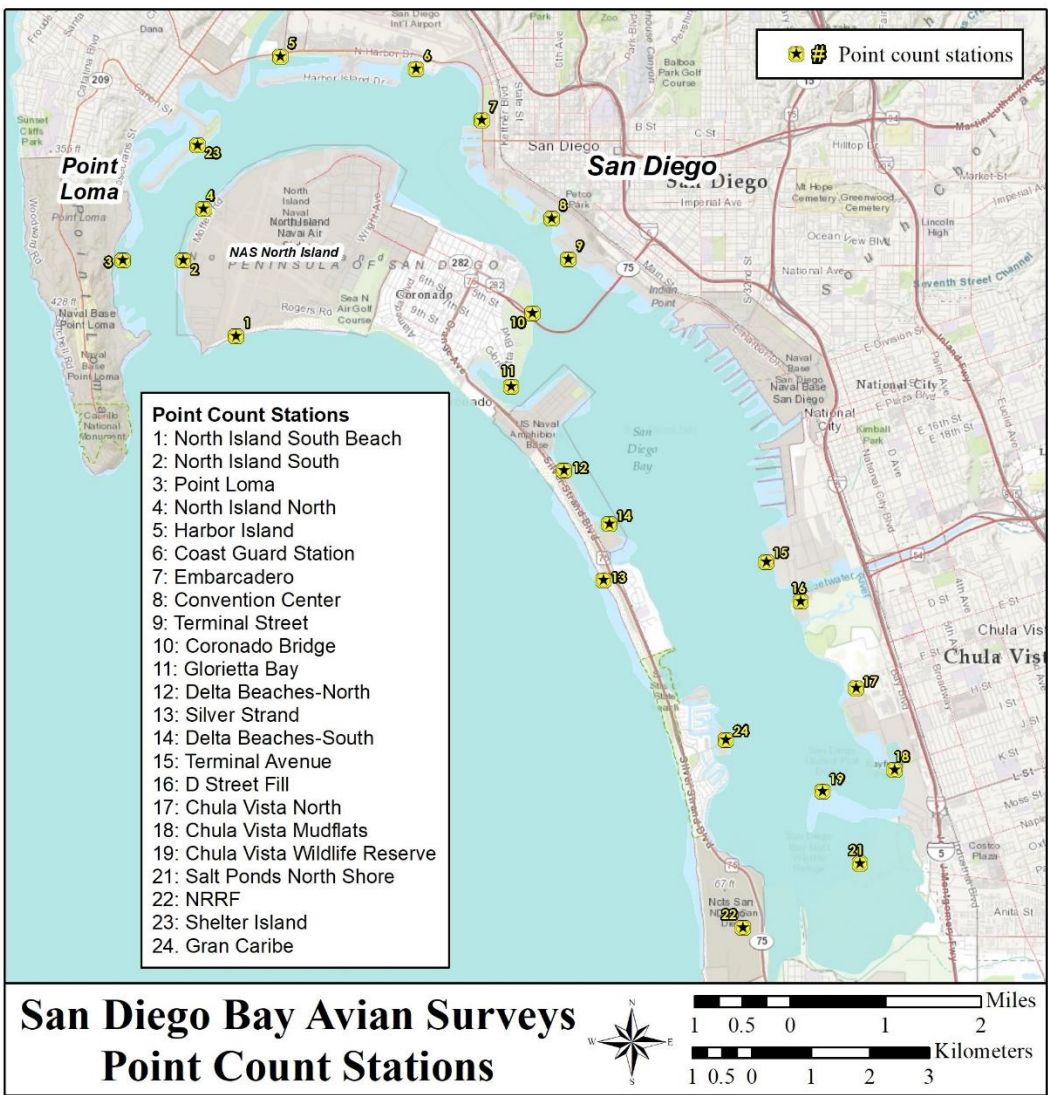
<sup>1</sup>Species counts include only those entries identified to species. Entries such as "Cormorant sp." are not included in the species counts.



Northern Shoveler. © Timothy Burr, 2017

## Appendix E: Point Count Station Species Lists

The tables below present the species observed at each point count station in 2016-17 each month, arranged in order of highest to lowest total number observed.



Map E-1. Point count station in San Diego in 2016-17.

**Table E-1. 2016-17 Species List for Point Count Station 1 (North Island South Beach).**

Species	Total 2016-17	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016
Western Gull	249	25	0	0	2	0	38	98	0	48	33	5	0
Marbled Godwit	113	0	0	0	31	0	0	0	0	0	31	51	0
Elegant Tern	74	0	0	0	52	0	0	2	15	1	4	0	0
Gull sp.	74	0	2	20	40	3	6	0	0	0	0	0	3
Black-Bellied Plover	71	0	0	0	0	0	0	0	0	15	20	17	19
Sanderling	53	0	0	0	0	0	0	0	0	42	10	1	0
Ring-Billed Gull	44	4	0	0	40	0	0	0	0	0	0	0	0
Western Snowy Plover	29	0	0	0	0	0	0	0	0	3	5	21	0
Brown Pelican	21	0	0	0	2	0	1	0	1	2	1	10	4
Heermann's Gull	21	1	0	0	0	0	14	2	0	0	1	3	0
Forster's Tern	20	6	0	0	3	0	0	0	0	0	1	0	10
Royal Tern	14	11	0	0	2	0	0	0	0	0	1	0	0
Brant	12	12	0	0	0	0	0	0	0	0	0	0	0
Red Knot	12	0	0	0	0	0	0	0	0	0	0	12	0
Caspian Tern	10	0	0	0	1	0	7	1	0	0	1	0	0
Tern sp.	10	0	0	0	0	0	0	0	0	0	0	0	10
Western Sandpiper	9	8	0	0	0	0	0	0	1	0	0	0	0
Barn Swallow	8	0	0	0	3	2	3	0	0	0	0	0	0
House Finch	8	0	0	0	0	0	7	1	0	0	0	0	0
Eared Grebe	7	0	0	0	2	0	4	0	0	1	0	0	0
Whimbrel	7	0	0	7	0	0	0	0	0	0	0	0	0
Horned Lark	6	0	0	0	2	1	3	0	0	0	0	0	0
Double-Crested Cormorant	5	0	0	0	0	0	0	2	0	0	0	3	0
Peep sp.	5	0	0	0	0	0	0	0	0	4	1	0	0
Brandt's Cormorant	3	0	0	0	1	0	0	0	0	0	2	0	0
Willet	3	0	0	0	1	0	0	0	0	0	1	1	0
Great Blue Heron	2	0	0	0	0	0	0	0	0	0	1	1	0
Osprey	2	0	0	0	0	0	1	0	0	0	0	1	0
Peregrine Falcon	2	0	0	0	0	0	2	0	0	0	0	0	0
Snowy Egret	2	0	0	0	1	0	1	0	0	0	0	0	0
American Pipit	1	0	0	0	0	0	0	0	0	0	0	1	0
Semipalmated Plover	1	0	0	0	0	0	0	0	1	0	0	0	0
<b>Totals</b>	<b>898</b>	<b>67</b>	<b>2</b>	<b>27</b>	<b>183</b>	<b>6</b>	<b>87</b>	<b>106</b>	<b>18</b>	<b>116</b>	<b>113</b>	<b>127</b>	<b>46</b>



Table E-2. 2016-17 Species List for Point Count Station 2 (North Island-South).

Species	Total 2016-17	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016
Western Gull	151	10	23	0	0	25	27	16	25	5	10	9	1
Brown Pelican	130	13	6	0	0	6	31	25	7	31	0	9	2
Double-Crested Cormorant	76	7	7	0	0	0	9	4	0	16	4	16	13
Brant	45	0	18	0	0	0	0	0	0	0	0	11	16
Heermann's Gull	34	4	0	0	0	0	9	8	4	5	1	1	2
Sandpiper sp.	30	0	0	0	0	0	0	0	0	0	0	30	0
Great Blue Heron	24	6	0	0	0	2	0	4	0	6	1	4	1
Rock Pigeon	19	0	4	0	0	0	0	7	0	0	8	0	0
Surf Scoter	12	3	6	0	0	0	0	0	0	0	0	0	3
Snowy Egret	11	1	0	0	0	1	1	0	0	7	1	0	0
Great Egret	10	2	1	0	0	0	1	0	0	0	2	2	2
Elegant Tern	7	0	0	0	0	1	0	5	0	0	1	0	0
Black Turnstone	6	0	0	0	0	0	0	0	0	0	0	6	0
Brandt's Cormorant	5	0	0	0	0	1	0	0	0	2	0	1	1
Peep sp.	5	0	0	0	0	0	0	0	0	0	0	0	5
Bufflehead	4	4	0	0	0	0	0	0	0	0	0	0	0
Barn Swallow	3	0	0	0	0	0	1	1	1	0	0	0	0
Caspian Tern	3	0	0	0	0	0	3	0	0	0	0	0	0
Osprey	3	0	0	0	0	0	0	0	0	0	1	2	0
California Least Tern	2	0	0	0	0	0	1	1	0	0	0	0	0
Eared Grebe	2	0	2	0	0	0	0	0	0	0	0	0	0
Mallard	2	0	2	0	0	0	0	0	0	0	0	0	0
American Crow	1	0	0	0	0	0	0	0	0	0	0	1	0
Black Skimmer	1	0	0	0	0	0	1	0	0	0	0	0	0
Common Loon	1	0	0	0	0	0	0	0	0	0	0	1	0
Cormorant sp.	1	0	0	0	0	0	0	0	0	0	0	1	0
Gull sp.	1	0	0	0	0	0	0	0	0	0	0	0	1
Marbled Godwit	1	0	0	0	0	0	0	0	0	0	0	1	0
Pacific Loon	1	0	0	0	0	0	0	0	0	0	0	1	0
Peregrine Falcon	1	0	0	0	0	0	1	0	0	0	0	0	0
Ring-Billed Gull	1	1	0	0	0	0	0	0	0	0	0	0	0
Royal Tern	1	0	0	0	0	0	0	0	0	1	0	0	0
Say's Phoebe	1	0	0	0	0	0	0	0	0	0	0	1	0
Western Grebe	1	0	0	0	0	0	0	0	0	0	1	0	0
Willet	1	0	0	0	0	0	0	0	0	0	0	1	0
<b>Totals</b>	<b>597</b>	<b>51</b>	<b>69</b>	<b>0</b>	<b>0</b>	<b>36</b>	<b>85</b>	<b>71</b>	<b>37</b>	<b>73</b>	<b>30</b>	<b>98</b>	<b>47</b>

**Table E-3. 2016-17 Species List for Point Count Station 3 (Point Loma).**

Species	Total 2016-17	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016
Brandt's Cormorant	3,398	440	0	180	93	91	117	260	1,022	502	510	23	160
Western Gull	805	26	9	58	152	42	181	49	62	58	107	14	47
Heermann's Gull	368	48	0	0	0	0	44	4	92	115	32	1	32
Brown Pelican	223	8	2	27	63	10	18	7	32	25	6	6	19
Double-Crested Cormorant	223	21	1	23	39	7	18	0	44	18	12	3	37
Great Egret	144	14	0	3	0	5	4	26	15	31	28	1	17
Western Grebe	108	0	0	3	0	0	0	20	0	0	31	30	24
Rock Pigeon	95	50	5	10	16	0	1	0	0	1	5	3	4
Snowy Egret	89	2	2	13	3	16	18	1	1	11	19	0	3
Great Blue Heron	87	4	0	5	20	23	12	7	2	9	2	2	1
Bufflehead	18	0	0	11	0	0	0	0	0	0	0	0	7
Eared Grebe	7	1	4	1	0	0	0	0	0	0	0	0	1
California Least Tern	6	0	0	0	0	0	6	0	0	0	0	0	0
Surf Scoter	5	0	2	2	1	0	0	0	0	0	0	0	0
Barn Swallow	4	0	0	0	0	0	0	0	4	0	0	0	0
Black Phoebe	4	3	0	0	1	0	0	0	0	0	0	0	0
California Gull	4	0	0	2	0	2	0	0	0	0	0	0	0
Black-Crowned Night Heron	3	0	0	1	0	1	1	0	0	0	0	0	0
Cliff Swallow	3	0	0	0	3	0	0	0	0	0	0	0	0
Osprey	3	0	0	0	1	0	0	0	0	0	0	0	2
Ring-Billed Gull	3	0	1	1	1	0	0	0	0	0	0	0	0
Caspian Tern	2	0	0	0	0	0	1	1	0	0	0	0	0
Common Loon	2	0	0	1	0	0	0	0	0	0	0	1	0
Common Merganser	2	0	0	0	0	0	0	0	0	0	0	2	0
Red-Breasted Merganser	2	0	0	2	0	0	0	0	0	0	0	0	0
Red-Tailed Hawk	2	1	0	0	0	0	0	0	0	0	1	0	0
American Crow	1	0	0	1	0	0	0	0	0	0	0	0	0
Black Turnstone	1	0	0	0	0	0	0	0	0	0	1	0	0
Forster's Tern	1	0	0	0	0	1	0	0	0	0	0	0	0
<b>Totals</b>	<b>5,613</b>	<b>618</b>	<b>26</b>	<b>344</b>	<b>393</b>	<b>198</b>	<b>421</b>	<b>375</b>	<b>1,274</b>	<b>770</b>	<b>754</b>	<b>86</b>	<b>354</b>

**Table E-4. 2016-17 Species List for Point Count Station 4 (North Island-North).**

Species	Total 2016-17	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016
Western Gull	257	10	28	14	0	11	33	87	9	40	2	17	6
Brant	78	5	0	0	0	0	0	0	0	0	0	13	60
Brown Pelican	39	2	2	0	0	5	0	24	0	3	0	2	1
House Finch	20	6	0	0	0	0	8	0	0	0	6	0	0
Double-Crested Cormorant	16	2	3	0	0	0	3	1	1	0	1	5	0
Peep sp.	12	0	12	0	0	0	0	0	0	0	0	0	0
Heermann's Gull	11	1	0	0	0	0	2	5	0	3	0	0	0
Rock Pigeon	11	0	1	0	0	0	1	9	0	0	0	0	0
Snowy Egret	10	0	0	0	0	0	4	4	1	1	0	0	0
California Least Tern	9	0	0	0	0	0	5	4	0	0	0	0	0
Great Blue Heron	7	0	1	0	0	0	0	4	0	0	0	1	1
Black Turnstone	6	1	0	0	0	0	0	0	0	0	0	5	0
Elegant Tern	6	0	0	0	0	0	0	1	4	1	0	0	0
Royal Tern	6	0	0	0	0	1	3	0	0	2	0	0	0
Surf Scoter	6	0	6	0	0	0	0	0	0	0	0	0	0
Surfbird	5	0	0	5	0	0	0	0	0	0	0	0	0
Brandt's Cormorant	4	0	0	0	0	0	0	0	2	1	0	0	1
Black-Bellied Plover	3	0	0	0	0	0	0	0	0	0	0	2	1
Caspian Tern	3	0	0	0	0	0	2	0	1	0	0	0	0
Great Egret	3	0	0	0	0	0	0	0	0	1	0	0	2
Tern sp.	3	0	0	0	0	2	1	0	0	0	0	0	0
Whimbrel	3	0	0	3	0	0	0	0	0	0	0	0	0
California Gull	2	2	0	0	0	0	0	0	0	0	0	0	0
Mallard	2	0	2	0	0	0	0	0	0	0	0	0	0
Marbled Godwit	2	0	0	0	0	0	0	0	0	0	0	2	0
Willet	2	0	0	2	0	0	0	0	0	0	0	0	0
Anna's Hummingbird	1	0	0	0	0	0	0	0	0	0	0	0	1
Belted Kingfisher	1	0	0	0	0	0	0	0	0	0	0	1	0
Black Phoebe	1	0	0	0	0	0	0	0	0	0	0	1	0
Common Loon	1	0	0	1	0	0	0	0	0	0	0	0	0
Cormorant sp.	1	0	0	0	0	0	0	0	0	0	0	0	1
Pacific Loon	1	0	0	0	0	0	0	0	0	0	0	0	1
Ruddy Turnstone	1	0	0	0	0	0	0	0	0	0	0	1	0
Semipalmated Plover	1	0	0	0	0	0	0	0	0	0	0	1	0
Western Grebe	1	0	0	0	0	0	0	0	0	0	0	0	1
<b>Totals</b>	<b>535</b>	<b>29</b>	<b>55</b>	<b>25</b>	<b>0</b>	<b>19</b>	<b>62</b>	<b>139</b>	<b>18</b>	<b>52</b>	<b>9</b>	<b>51</b>	<b>76</b>



**Table E-5. 2016-17 Species list for Point Count Station 5 (Harbor Island).**

Species	Total 2016-17	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016
Western Gull	230	16	9	11	17	14	20	16	0	82	2	15	28
Bufflehead	34	19	1	0	0	0	0	0	0	0	0	0	14
European Starling	22	2	2	0	11	2	0	0	0	0	0	0	5
Western Grebe	19	0	3	4	0	0	0	0	0	0	1	8	3
Yellow-Rumped Warbler	12	2	2	0	0	0	0	0	0	0	2	3	3
American Crow	11	0	1	1	1	2	3	0	0	0	2	1	0
Ring-Billed Gull	10	0	10	0	0	0	0	0	0	0	0	0	0
Rock Pigeon	9	0	1	0	0	0	0	2	0	1	3	0	2
American Coot	6	0	0	0	0	0	0	0	0	0	1	1	4
Snowy Egret	6	0	0	0	0	1	1	2	0	2	0	0	0
Anna's Hummingbird	5	0	0	0	0	0	1	1	0	0	2	0	1
Barn Swallow	4	0	0	0	0	0	4	0	0	0	0	0	0
Brown Pelican	4	0	1	1	0	1	0	0	0	0	0	1	0
Elegant Tern	4	0	0	0	0	0	0	4	0	0	0	0	0
House Finch	4	0	0	0	0	3	0	0	0	0	1	0	0
Black-Crowned Night Heron	3	0	0	0	0	0	2	1	0	0	0	0	0
Eurasian Collared Dove	3	0	0	0	0	0	3	0	0	0	0	0	0
Osprey	3	0	0	1	0	0	2	0	0	0	0	0	0
Surf Scoter	3	0	3	0	0	0	0	0	0	0	0	0	0
California Gull	2	0	2	0	0	0	0	0	0	0	0	0	0
Caspian Tern	2	0	0	0	0	1	1	0	0	0	0	0	0
Double-Crested Cormorant	2	0	0	0	0	0	0	0	0	1	0	0	1
California Least Tern	2	0	0	0	0	0	2	0	0	0	0	0	0
Parrot sp.	2	0	0	0	0	0	2	0	0	0	0	0	0
Pied-Billed Grebe	2	1	0	1	0	0	0	0	0	0	0	0	0
Cassin's Kingbird	1	0	0	0	0	0	1	0	0	0	0	0	0
Common Loon	1	1	0	0	0	0	0	0	0	0	0	0	0
Heermann's Gull	1	0	0	0	0	0	0	0	0	1	0	0	0
House Sparrow	1	0	0	0	0	1	0	0	0	0	0	0	0
Mallard	1	0	1	0	0	0	0	0	0	0	0	0	0
Orange-Crowned Warbler	1	0	0	1	0	0	0	0	0	0	0	0	0
Red-Breasted Merganser	1	1	0	0	0	0	0	0	0	0	0	0	0
Willet	1	0	0	0	0	0	0	0	0	1	0	0	0
<b>Totals</b>	<b>412</b>	<b>42</b>	<b>36</b>	<b>20</b>	<b>29</b>	<b>25</b>	<b>42</b>	<b>26</b>	<b>0</b>	<b>88</b>	<b>14</b>	<b>29</b>	<b>61</b>

Table E-6. 2016-17 Species list for Point Count Station 6 (Coast Guard Station).

Species	Total 2016-17	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016
Western Gull	164	17	7	17	6	9	0	7	42	12	10	4	33
Western Grebe	52	12	8	6	0	0	0	0	0	0	0	10	16
Surf Scoter	40	22	8	1	0	0	0	0	0	0	0	0	9
Bufflehead	34	7	8	6	0	0	0	0	0	0	0	2	11
European Starling	22	0	0	0	2	0	0	0	0	0	20	0	0
Brown Pelican	18	2	6	2	1	1	0	0	1	0	0	1	4
Double-Crested Cormorant	10	2	1	0	1	0	0	0	0	2	1	2	1
Eared Grebe	5	3	1	0	0	0	0	0	0	0	0	0	1
Great Blue Heron	5	1	0	0	0	1	0	0	0	0	0	1	2
Rock Pigeon	5	0	0	0	0	1	0	1	0	0	0	3	0
Brandt's Cormorant	4	0	2	0	0	0	0	2	0	0	0	0	0
Eurasian Collared Dove	4	0	0	0	0	0	0	0	4	0	0	0	0
Belted Kingfisher	3	0	0	0	0	0	0	0	0	2	1	0	0
Forster's Tern	3	0	0	0	0	0	0	0	3	0	0	0	0
Heermann's Gull	3	0	0	0	0	0	0	0	2	0	0	0	1
Sandpiper sp.	3	0	3	0	0	0	0	0	0	0	0	0	0
American Crow	2	0	0	2	0	0	0	0	0	0	0	0	0
California Gull	2	0	0	0	0	0	0	0	0	0	0	2	0
Common Loon	2	0	1	1	0	0	0	0	0	0	0	0	0
Northern Mockingbird	2	0	0	0	1	0	0	0	0	0	1	0	0
Snowy Egret	2	0	0	0	0	0	0	0	0	0	0	2	0
Barn Swallow	1	0	0	0	0	0	0	1	0	0	0	0	0
Black Phoebe	1	0	0	1	0	0	0	0	0	0	0	0	0
Brant	1	1	0	0	0	0	0	0	0	0	0	0	0
Caspian Tern	1	0	0	0	0	0	0	1	0	0	0	0	0
Cooper's Hawk	1	0	0	0	0	1	0	0	0	0	0	0	0
Elegant Tern	1	0	0	0	0	0	0	0	1	0	0	0	0
Great Egret	1	0	0	0	0	0	0	0	0	0	0	0	1
Heermann's Gull Or Herring Gull	1	0	1	0	0	0	0	0	0	0	0	0	0
Marbled Godwit	1	0	0	0	0	0	0	0	0	1	0	0	0
Osprey	1	0	0	1	0	0	0	0	0	0	0	0	0
Red-Breasted Merganser	1	0	1	0	0	0	0	0	0	0	0	0	0
Yellow-Rumped Warbler	1	0	0	0	0	0	0	0	0	0	1	0	0
<b>Totals</b>	<b>397</b>	<b>67</b>	<b>47</b>	<b>37</b>	<b>11</b>	<b>13</b>	<b>0</b>	<b>12</b>	<b>53</b>	<b>17</b>	<b>34</b>	<b>27</b>	<b>79</b>

**Table E-7. 2016-17 Species list for Point Count Station 7 (Embarcadero).**

Species	Total 2016-17	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016
Rock Pigeon	225	28	16	14	7	14	35	14	14	23	18	30	12
Western Gull	220	15	17	10	8	8	48	24	15	12	9	29	25
Heermann's Gull	51	7	0	0	0	0	1	0	9	1	0	10	23
Ring-Billed Gull	20	5	6	0	0	0	0	0	0	0	0	5	4
Surf Scoter	17	11	6	0	0	0	0	0	0	0	0	0	0
Herring Gull	15	0	0	0	0	0	0	15	0	0	0	0	0
American Crow	6	0	0	2	0	2	0	0	0	0	1	1	0
House Finch	5	0	0	0	0	4	0	0	0	1	0	0	0
California Gull	4	1	2	0	0	0	0	0	0	0	0	0	1
Great Blue Heron	3	0	0	0	0	0	0	1	2	0	0	0	0
House Sparrow	3	0	0	0	0	3	0	0	0	0	0	0	0
California Least Tern	3	0	0	0	0	0	3	0	0	0	0	0	0
Yellow-Rumped Warbler	3	0	0	0	0	0	0	0	0	0	1	2	0
Eurasian Collared Dove	2	0	0	0	0	0	2	0	0	0	0	0	0
Mourning Dove	2	0	0	0	0	0	0	2	0	0	0	0	0
Brandt's Cormorant	1	0	1	0	0	0	0	0	0	0	0	0	0
Cormorant sp.	1	0	0	1	0	0	0	0	0	0	0	0	0
Double-Crested Cormorant	1	0	0	0	0	0	0	0	0	0	0	0	1
Eared Grebe	1	0	0	0	0	0	0	0	0	0	0	1	0
European Starling	1	0	0	0	0	0	1	0	0	0	0	0	0
Mallard	1	0	0	1	0	0	0	0	0	0	0	0	0
Western Grebe	1	0	0	0	0	0	0	0	0	0	1	0	0
<b>Totals</b>	<b>586</b>	<b>67</b>	<b>48</b>	<b>28</b>	<b>15</b>	<b>31</b>	<b>90</b>	<b>56</b>	<b>40</b>	<b>37</b>	<b>30</b>	<b>78</b>	<b>66</b>



Table E-8. 2016-17 Species list for Point Count Station 8 (Convention Center).

Species	Total 2016-17	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016
Western Gull	194	22	18	7	4	1	5	32	24	22	9	20	30
Rock Pigeon	99	16	20	3	0	9	1	6	1	9	18	1	15
Surf Scoter	22	18	4	0	0	0	0	0	0	0	0	0	0
American Crow	17	1	0	1	1	3	3	0	0	0	6	0	2
Ring-Billed Gull	12	4	2	1	0	0	0	0	0	0	0	0	5
Brewer's Blackbird	11	0	0	0	0	0	4	7	0	0	0	0	0
European Starling	11	0	0	5	0	2	4	0	0	0	0	0	0
House Sparrow	9	0	0	0	0	6	2	0	0	0	0	1	0
American Coot	7	0	4	1	0	0	0	0	0	0	1	0	1
Northern Mockingbird	7	0	0	1	2	2	2	0	0	0	0	0	0
Heermann's Gull	6	0	0	0	0	0	0	0	2	0	0	0	4
Brandt's Cormorant	5	4	1	0	0	0	0	0	0	0	0	0	0
Yellow-Rumped Warbler	5	0	0	0	0	0	0	0	0	0	2	2	1
Double-Crested Cormorant	4	0	1	0	0	0	0	0	2	0	0	0	1
House Finch	4	0	0	2	0	0	1	0	0	0	1	0	0
Barn Swallow	3	0	0	0	0	0	3	0	0	0	0	0	0
Brown Pelican	3	0	2	0	0	0	0	0	1	0	0	0	0
Forster's Tern	3	0	0	0	0	0	0	0	2	1	0	0	0
Heermann's Gull Or Herring Gull	3	3	0	0	0	0	0	0	0	0	0	0	0
American Kestrel	2	0	0	0	0	0	0	0	1	0	0	1	0
Pied-Billed Grebe	2	1	0	1	0	0	0	0	0	0	0	0	0
Anna's Hummingbird	1	0	0	0	0	0	0	0	0	0	1	0	0
Black Phoebe	1	0	0	0	0	0	0	0	0	0	0	1	0
Caspian Tern	1	0	0	0	0	0	0	1	0	0	0	0	0
Cormorant sp.	1	0	0	0	0	0	1	0	0	0	0	0	0
Great Blue Heron	1	0	0	0	0	0	0	0	0	0	0	0	1
Herring Gull	1	1	0	0	0	0	0	0	0	0	0	0	0
Osprey	1	0	0	0	0	0	1	0	0	0	0	0	0
Snowy Egret	1	0	0	0	0	0	1	0	0	0	0	0	0
<b>Totals</b>	<b>437</b>	<b>70</b>	<b>52</b>	<b>22</b>	<b>7</b>	<b>23</b>	<b>28</b>	<b>46</b>	<b>33</b>	<b>32</b>	<b>38</b>	<b>26</b>	<b>60</b>

**Table E-9. 2016-17 Species list for Point Count Station 9 (Terminal Street).**

<b>Species</b>	<b>Total 2016-17</b>	<b>Jan 2017</b>	<b>Feb 2017</b>	<b>Mar 2017</b>	<b>Apr 2017</b>	<b>May 2017</b>	<b>Jun 2017</b>	<b>Jul 2016</b>	<b>Aug 2016</b>	<b>Sep 2016</b>	<b>Oct 2016</b>	<b>Nov 2016</b>	<b>Dec 2016</b>
Surf Scoter	103	72	3	3	0	0	0	0	0	0	0	0	25
Western Gull	92	4	11	9	7	5	18	7	4	5	10	5	7
Rock Pigeon	10	1	0	0	0	0	0	0	0	0	0	9	0
Ring-Billed Gull	7	5	0	1	1	0	0	0	0	0	0	0	0
Heermann's Gull	6	3	0	0	0	0	0	0	0	0	0	1	2
Brandt's Cormorant	3	0	1	0	0	0	0	0	0	0	0	0	2
Mourning Dove	3	0	0	0	0	3	0	0	0	0	0	0	0
American Crow	2	0	1	0	0	1	0	0	0	0	0	0	0
Brown Pelican	2	2	0	0	0	0	0	0	0	0	0	0	0
Great Blue Heron	2	1	0	0	0	0	0	1	0	0	0	0	0
Gull sp.	2	0	0	0	0	1	0	0	0	0	0	0	1
California Gull	1	1	0	0	0	0	0	0	0	0	0	0	0
Cormorant sp.	1	0	0	0	0	0	1	0	0	0	0	0	0
House Finch	1	0	0	0	0	0	1	0	0	0	0	0	0
<b>Totals</b>	<b>235</b>	<b>89</b>	<b>16</b>	<b>13</b>	<b>8</b>	<b>10</b>	<b>20</b>	<b>8</b>	<b>4</b>	<b>5</b>	<b>10</b>	<b>15</b>	<b>37</b>

**Table E-10. 2016-17 Species list for Point Count Station 10 (Coronado Bridge).**

Species	Total 2016-17	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016
Western Gull	136	34	15	7	15	2	7	0	10	29	5	8	4
Ring-Billed Gull	72	32	0	0	0	0	0	0	0	0	0	0	40
Mallard	60	38	5	4	7	0	0	0	0	0	0	6	0
Surf Scoter	55	0	12	12	0	0	0	0	0	0	0	0	31
American Crow	52	4	28	2	1	3	12	0	0	0	0	2	0
Audubon's Warbler (Yellow-Rumped)	47	20	8	6	0	0	0	0	0	0	5	8	0
Bufflehead	47	30	8	1	0	0	0	0	0	0	0	0	8
Marbled Godwit	40	1	15	2	0	0	0	0	0	0	0	5	17
House Finch	28	0	1	4	10	10	0	0	0	0	3	0	0
Willet	26	1	7	1	0	0	0	0	2	0	1	5	9
White-Crowned Sparrow	23	4	0	15	0	0	0	0	0	0	4	0	0
Anna's Hummingbird	14	1	1	5	4	2	0	0	1	0	0	0	0
Swallow sp.	10	0	0	0	0	10	0	0	0	0	0	0	0
Heermann's Gull	9	6	0	0	0	0	0	0	0	0	0	1	2
Cliff Swallow	8	0	0	0	0	2	6	0	0	0	0	0	0
European Starling	8	0	0	0	7	1	0	0	0	0	0	0	0
Lesser Scaup	7	7	0	0	0	0	0	0	0	0	0	0	0
Rock Pigeon	6	1	0	0	0	0	5	0	0	0	0	0	0
Snowy Egret	6	0	2	0	1	1	0	0	0	0	0	2	0
Black Phoebe	5	0	1	0	1	1	1	0	0	0	1	0	0
Great Blue Heron	5	1	1	0	2	0	0	0	0	0	0	0	1
Lesser Goldfinch	4	0	0	4	0	0	0	0	0	0	0	0	0
Orange-Crowned Warbler	4	1	0	2	0	1	0	0	0	0	0	0	0
Brown Pelican	3	0	2	1	0	0	0	0	0	0	0	0	0
Double-Crested Cormorant	3	0	0	0	1	0	0	0	0	0	2	0	0
Long-Billed Curlew	3	1	0	0	0	0	0	0	0	0	0	2	0
Osprey	3	0	0	0	1	0	0	0	1	1	0	0	0
Cassin's Kingbird	2	0	0	0	0	1	0	0	0	0	1	0	0
Northern Rough-Winged Swallow	2	0	0	0	0	0	2	0	0	0	0	0	0
Allen's Hummingbird	1	0	0	0	1	0	0	0	0	0	0	0	0
Caspian Tern	1	0	0	0	0	0	0	0	1	0	0	0	0
Eared Grebe	1	0	0	0	1	0	0	0	0	0	0	0	0
Horned Grebe	1	1	0	0	0	0	0	0	0	0	0	0	0
Royal Tern	1	0	0	0	0	0	0	0	1	0	0	0	0
Scaup sp.	1	0	1	0	0	0	0	0	0	0	0	0	0
Spotted Sandpiper	1	0	0	0	1	0	0	0	0	0	0	0	0
Unknown Code (LOTE)	1	0	0	0	0	0	1	0	0	0	0	0	0
<b>Totals</b>	<b>696</b>	<b>183</b>	<b>107</b>	<b>66</b>	<b>53</b>	<b>34</b>	<b>34</b>	<b>0</b>	<b>16</b>	<b>30</b>	<b>22</b>	<b>39</b>	<b>112</b>



Table E-11. 2016-17 Species list for Point Count Station 11 (Glorietta Bay).

Species	Total 2016-17	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016
Western Gull	82	8	18	2	0	2	9	0	23	5	3	10	2
American Coot	67	19	4	0	0	0	0	0	0	0	0	17	27
Surf Scoter	35	7	0	20	0	0	0	0	0	0	0	0	8
American Crow	16	1	0	1	0	2	8	0	0	1	0	0	3
Marbled Godwit	8	0	0	0	0	0	0	0	0	0	0	7	1
California Least Tern	7	0	0	0	0	3	4	0	0	0	0	0	0
Osprey	6	0	0	0	0	0	2	0	0	1	0	2	1
Ring-billed Gull	6	6	0	0	0	0	0	0	0	0	0	0	0
Scaup sp.	5	0	5	0	0	0	0	0	0	0	0	0	0
Forster's Tern	4	0	0	0	0	0	0	0	0	2	0	2	0
Brown Pelican	3	1	0	0	0	0	0	0	0	0	0	2	0
Eared Grebe	3	2	1	0	0	0	0	0	0	0	0	0	0
Snowy Egret	3	1	0	0	0	0	0	0	1	0	0	1	0
Barn Swallow	1	0	0	0	0	0	1	0	0	0	0	0	0
Bufflehead	1	1	0	0	0	0	0	0	0	0	0	0	0
California Gull	1	1	0	0	0	0	0	0	0	0	0	0	0
Caspian Tern	1	0	0	0	0	1	0	0	0	0	0	0	0
Common Loon	1	0	1	0	0	0	0	0	0	0	0	0	0
Cooper's Hawk	1	0	0	0	0	0	0	0	0	0	0	1	0
Double-crested Cormorant	1	1	0	0	0	0	0	0	0	0	0	0	0
Great Blue Heron	1	0	1	0	0	0	0	0	0	0	0	0	0
House Finch	1	0	0	0	0	0	1	0	0	0	0	0	0
Lesser Scaup	1	0	0	0	0	0	0	0	0	0	0	0	1
Long-Billed Curlew	1	0	0	0	0	0	0	0	0	0	0	1	0
Spotted Sandpiper	1	0	0	0	0	0	0	0	0	1	0	0	0
Willet	1	0	0	0	0	0	0	0	0	0	0	1	0
<b>Totals</b>	<b>258</b>	<b>48</b>	<b>30</b>	<b>23</b>	<b>0</b>	<b>8</b>	<b>25</b>	<b>0</b>	<b>24</b>	<b>10</b>	<b>3</b>	<b>44</b>	<b>43</b>

Table E-12. 2016-17 Species list for Point Count Station 12 (Delta Beaches-North).

Species	Total 2016-17	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016
Surf Scoter	350	8	180	10	0	0	0	0	0	0	0	65	87
American Wigeon	309	72	37	0	0	0	0	0	0	0	0	0	200
Western Gull	280	31	70	3	35	56	0	0	20	32	23	0	10
Double-Crested Cormorant	146	7	10	0	1	32	0	0	60	3	19	1	13
Western Grebe	75	1	13	1	0	0	0	0	0	0	0	0	60
Brown Pelican	72	3	1	0	0	18	0	0	17	14	10	1	8
Lesser Scaup	49	3	40	0	0	0	0	0	0	0	0	0	6
No Species Given	40	0	0	0	0	0	40	0	0	0	0	0	0
Cormorant sp.	38	0	0	0	0	0	0	0	0	38	0	0	0
California Least Tern	30	0	0	0	13	17	0	0	0	0	0	0	0
Tern sp.	30	0	0	0	0	30	0	0	0	0	0	0	0
Sanderling	25	25	0	0	0	0	0	0	0	0	0	0	0
Gull sp.	24	0	0	4	20	0	0	0	0	0	0	0	0
Greater Scaup	18	0	0	0	0	0	0	0	0	0	0	0	18
Bufflehead	16	0	5	0	0	0	0	0	0	0	0	0	11
Eared Grebe	15	1	1	0	0	0	0	0	0	0	0	0	13
Brandt's Cormorant	14	0	0	0	14	0	0	0	0	0	0	0	0
Brant	11	7	0	0	0	0	0	0	0	0	0	0	4
House Finch	11	0	2	0	3	6	0	0	0	0	0	0	0
Marbled Godwit	11	0	0	0	0	0	0	0	3	8	0	0	0
Royal Tern	10	0	3	0	0	0	0	0	2	1	1	3	0
Forster's Tern	9	0	0	0	0	1	0	0	0	1	0	1	6
California Gull	8	1	5	0	0	0	0	0	0	0	0	0	2
Horned Lark	8	0	4	0	2	2	0	0	0	0	0	0	0
Western Sandpiper	6	0	0	0	0	0	0	0	0	0	0	6	0
Willet	6	0	1	0	0	0	0	0	2	2	1	0	0
Caspian Tern	5	0	0	0	2	0	0	0	3	0	0	0	0
Ring-Billed Gull	5	0	4	0	0	0	0	0	0	0	0	1	0
Elegant Tern	4	0	0	0	4	0	0	0	0	0	0	0	0
European Starling	3	0	0	0	2	1	0	0	0	0	0	0	0
Long-Billed Curlew	3	0	0	0	0	0	0	0	0	0	0	0	3
Black-Bellied Plover	2	0	0	0	0	0	0	0	0	2	0	0	0
Great Egret	2	0	0	0	0	0	0	0	0	0	0	2	0
Killdeer	2	0	0	0	1	1	0	0	0	0	0	0	0
Mourning Dove	2	0	0	0	0	1	0	0	1	0	0	0	0
Pacific Loon	2	0	1	0	0	0	0	0	0	0	0	0	1
Red-Breasted Merganser	2	0	0	0	1	0	0	0	0	0	0	0	1
Snowy Egret	2	0	1	0	0	0	0	0	0	0	0	0	1
Belted Kingfisher	1	0	0	0	0	0	0	0	0	0	0	0	1
Black Skimmer	1	0	1	0	0	0	0	0	0	0	0	0	0
Curlew sp.	1	0	0	0	0	0	0	0	0	0	0	1	0
Great Blue Heron	1	0	0	0	0	0	0	0	0	0	1	0	0
Lesser Yellowlegs	1	0	0	0	0	0	0	0	1	0	0	0	0
Loon sp.	1	0	0	0	0	1	0	0	0	0	0	0	0
Northern Shoveler	1	1	0	0	0	0	0	0	0	0	0	0	0
Osprey	1	0	1	0	0	0	0	0	0	0	0	0	0

Species	Total 2016-17	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016
Peep sp.	1	0	0	0	0	0	0	0	0	0	1	0	0
Pippit	1	0	0	0	0	0	0	0	0	0	0	1	0
Western Snowy Plover	1	0	0	0	0	0	1	0	0	0	0	0	0
<b>Totals</b>	<b>1,656</b>	<b>160</b>	<b>380</b>	<b>18</b>	<b>98</b>	<b>166</b>	<b>41</b>	<b>0</b>	<b>109</b>	<b>101</b>	<b>56</b>	<b>82</b>	<b>445</b>



Table E-13. 2016-17 Species list for Point Count Station 13 (Silver Strand).

Species	Total 2016-17	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016
Surf Scoter	386	60	233	93	0	0	0	0	0	0	0	0	0
Sanderling	182	0	0	40	28	4	0	0	4	3	7	96	0
Western Grebe	151	0	15	60	0	40	0	0	0	0	30	6	0
House Finch	108	0	8	0	0	0	0	0	0	0	0	100	0
Western Gull	87	0	2	12	1	10	0	0	40	0	20	2	0
Brown Pelican	40	1	1	1	1	8	3	0	2	1	4	4	14
Western Sandpiper	19	0	0	0	0	0	0	0	0	0	0	19	0
Tern sp.	16	0	0	0	0	6	10	0	0	0	0	0	0
Willet	11	0	0	0	0	0	0	0	4	1	2	4	0
Western Snowy Plover	10	0	0	2	4	1	1	0	0	1	0	0	1
California Least Tern	9	0	0	0	0	9	0	0	0	0	0	0	0
Elegant Tern	9	0	0	0	0	2	0	0	7	0	0	0	0
Double-Crested Cormorant	7	0	0	1	0	0	0	0	4	1	1	0	0
Whimbrel	5	0	0	2	0	3	0	0	0	0	0	0	0
Brant	4	4	0	0	0	0	0	0	0	0	0	0	0
Forster's Tern	4	0	0	0	0	0	0	0	2	2	0	0	0
Horned Lark	4	0	3	1	0	0	0	0	0	0	0	0	0
Long-Billed Curlew	3	0	0	2	0	0	0	0	0	0	0	1	0
Ring-Billed Gull	2	0	0	0	0	0	0	0	0	0	0	2	0
Royal Tern	2	0	0	0	0	0	0	0	2	0	0	0	0
American Crow	1	0	0	1	0	0	0	0	0	0	0	0	0
American Pipit	1	0	0	0	0	0	0	0	0	0	0	1	0
Black-Bellied Plover	1	0	0	0	0	0	0	0	1	0	0	0	0
Brandt's Cormorant	1	0	0	0	0	0	0	0	0	1	0	0	0
California Gull	1	0	0	1	0	0	0	0	0	0	0	0	0
Great Egret	1	0	0	0	0	0	0	0	0	1	0	0	0
Gull-Billed Tern	1	0	0	0	0	0	1	0	0	0	0	0	0
Heermann's Gull	1	0	0	0	0	0	0	0	0	0	0	1	0
Marbled Godwit	1	0	0	0	0	0	0	0	1	0	0	0	0
Osprey	1	0	0	1	0	0	0	0	0	0	0	0	0
Sandpiper sp.	1	0	1	0	0	0	0	0	0	0	0	0	0
Semipalmated Plover	1	0	0	0	0	0	0	0	0	1	0	0	0
<b>Totals</b>	<b>1,071</b>	<b>65</b>	<b>263</b>	<b>217</b>	<b>34</b>	<b>83</b>	<b>15</b>	<b>0</b>	<b>67</b>	<b>12</b>	<b>64</b>	<b>236</b>	<b>15</b>

Table E-14. 2016-17 Species list for Point Count Station 14 (Delta Beaches-South).

Species	Total 2016-17	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016
Surf Scoter	653	0	24	0	0	0	0	0	0	0	0	0	629
Peep sp.	389	223	28	0	0	0	0	0	130	0	0	0	8
Red Knot	195	0	0	0	0	0	0	0	5	40	150	0	0
Marbled Godwit	117	7	0	0	0	0	0	0	19	21	40	30	0
Brant	104	2	2	10	0	0	0	0	0	0	9	32	49
Sanderling	91	15	0	45	31	0	0	0	0	0	0	0	0
Caspian Tern	86	0	0	0	3	0	0	0	80	0	3	0	0
Semipalmated Plover	75	4	0	0	6	0	0	0	48	17	0	0	0
Black-Bellied Plover	72	20	3	0	0	2	0	0	45	2	0	0	0
Royal Tern	54	0	1	0	0	2	0	0	48	2	1	0	0
California Least Tern	45	0	0	0	6	19	20	0	0	0	0	0	0
Willet	39	0	0	0	0	0	0	0	1	8	15	15	0
Short-Billed Dowitcher	31	0	0	0	0	0	0	0	31	0	0	0	0
Western Gull	24	0	3	3	2	4	0	0	0	0	6	3	3
Elegant Tern	21	0	0	0	1	0	2	0	18	0	0	0	0
Brown Pelican	17	1	1	2	2	4	0	0	0	0	0	4	3
Western Snowy Plover	15	0	0	0	1	3	0	0	10	1	0	0	0
House Finch	12	0	0	0	0	11	0	0	0	0	1	0	0
Long-Billed Curlew	10	1	0	1	0	1	0	0	3	2	2	0	0
Snowy Egret	9	1	0	0	3	2	1	0	1	0	0	0	1
American Wigeon	8	6	2	0	0	0	0	0	0	0	0	0	0
Eared Grebe	6	0	1	0	1	0	0	0	0	0	3	0	1
Great Egret	6	0	0	0	1	0	0	0	1	0	1	3	0
Killdeer	6	0	1	0	2	1	2	0	0	0	0	0	0
Osprey	6	1	1	0	1	1	0	0	1	0	0	0	1
Forster's Tern	5	0	0	1	3	0	0	0	1	0	0	0	0
Western Sandpiper	5	0	3	0	1	0	0	0	0	1	0	0	0
Barn Swallow	4	0	0	0	0	2	2	0	0	0	0	0	0
Double-Crested Cormorant	4	0	0	0	0	1	0	0	1	0	1	0	1
Great Blue Heron	4	0	0	0	0	0	1	0	1	0	0	2	0
Least Sandpiper	4	0	4	0	0	0	0	0	0	0	0	0	0
Bufflehead	3	0	2	0	0	0	0	0	0	0	0	0	1
Dunlin	3	3	0	0	0	0	0	0	0	0	0	0	0
Gull sp.	3	0	0	3	0	0	0	0	0	0	0	0	0
Lesser Scaup	3	0	3	0	0	0	0	0	0	0	0	0	0
Brandt's Cormorant	2	0	0	1	1	0	0	0	0	0	0	0	0
Common Merganser	2	0	0	0	0	0	0	0	0	0	2	0	0
Curlew sp.	2	0	0	0	0	0	0	0	0	0	0	2	0
Mourning Dove	2	0	0	0	2	0	0	0	0	0	0	0	0
Pacific Loon	2	0	0	0	0	0	0	0	0	0	0	0	2
Savannah Sparrow	2	0	0	0	1	1	0	0	0	0	0	0	0
American Crow	1	0	0	1	0	0	0	0	0	0	0	0	0
California Gull	1	0	0	0	0	0	0	0	0	0	1	0	0
Greater Yellowlegs	1	1	0	0	0	0	0	0	0	0	0	0	0
Heermann's Gull	1	1	0	0	0	0	0	0	0	0	0	0	0
Horned Lark	1	0	0	0	0	1	0	0	0	0	0	0	0

Species	Total 2016-17	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016
Lesser Yellowlegs	1	0	0	0	0	0	0	0	1	0	0	0	0
Red-Throated Loon	1	0	1	0	0	0	0	0	0	0	0	0	0
Ring-Billed Gull	1	1	0	0	0	0	0	0	0	0	0	0	0
Whimbrel	1	0	0	1	0	0	0	0	0	0	0	0	0
<b>Totals</b>	<b>2,150</b>	<b>287</b>	<b>80</b>	<b>68</b>	<b>68</b>	<b>55</b>	<b>28</b>	<b>0</b>	<b>445</b>	<b>94</b>	<b>235</b>	<b>91</b>	<b>699</b>



**Table E-15. 2016-17 Species list for Point Count Station 15 (Terminal Avenue).**

Species	Total 2016-17	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016
Surf Scoter	787	371	16	100	0	0	0	0	0	0	0	50	250
Peep sp.	40	0	0	0	0	0	0	0	0	0	0	0	40
Western Gull	31	2	4	0	6	2	4	2	4	2	1	3	1
Osprey	12	0	1	0	0	1	4	0	0	1	1	3	1
Ring-Billed Gull	9	0	2	1	0	0	0	0	0	0	0	0	6
California Gull	5	0	5	0	0	0	0	0	0	0	0	0	0
Forster's Tern	4	0	0	0	0	0	2	2	0	0	0	0	0
Least Tern	3	0	0	0	0	0	3	0	0	0	0	0	0
Brown Pelican	2	0	1	0	0	0	0	0	0	0	0	1	0
Gull sp.	2	0	0	0	0	0	0	0	0	0	0	0	2
Snowy Egret	2	0	0	2	0	0	0	0	0	0	0	0	0
Brandt's Cormorant	1	1	0	0	0	0	0	0	0	0	0	0	0
Caspian Tern	1	0	0	0	0	0	1	0	0	0	0	0	0
Double-Crested Cormorant	1	0	0	0	0	0	0	0	0	0	1	0	0
Elegant Tern	1	0	0	0	0	0	1	0	0	0	0	0	0
Marbled Godwit	1	0	0	0	0	0	0	0	1	0	0	0	0
Rock Pigeon	1	0	0	1	0	0	0	0	0	0	0	0	0
Tern sp.	1	0	0	0	0	0	1	0	0	0	0	0	0
<b>Totals</b>	<b>904</b>	<b>374</b>	<b>29</b>	<b>104</b>	<b>6</b>	<b>3</b>	<b>16</b>	<b>4</b>	<b>5</b>	<b>3</b>	<b>3</b>	<b>57</b>	<b>300</b>

Table E-16. 2016-17 Species list for Point Count Station 16 (D Street Fill).

Species	Total 2016-17	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016
Peep sp.	2,194	0	0	0	0	0	0	0	74	1,160	0	0	960
Western Sandpiper	1,992	300	360	520	242	0	5	190	0	224	0	150	1
Surf Scoter	1,015	127	112	158	8	0	0	0	0	0	0	30	580
Marbled Godwit	659	50	170	85	5	0	0	15	8	36	0	100	190
Brant	627	0	153	150	16	0	0	0	0	0	0	300	8
Willet	562	51	125	80	0	0	2	19	12	41	0	75	157
Black-Bellied Plover	432	101	45	0	0	0	0	31	49	50	0	60	96
Western Gull	333	76	35	114	15	0	17	7	14	18	0	17	20
American Wigeon	265	25	50	0	0	0	0	0	0	0	0	30	160
California Gull	259	17	27	55	127	0	0	0	0	0	0	1	32
Dowitcher sp.	181	25	0	0	0	0	0	140	3	6	0	0	7
Least Sandpiper	139	50	0	60	1	0	0	0	6	16	0	0	6
Royal Tern	134	1	0	110	2	0	13	0	0	0	0	8	0
Sanderling	112	100	12	0	0	0	0	0	0	0	0	0	0
Dunlin	91	40	50	0	0	0	0	0	0	0	0	0	1
Ring-Billed Gull	91	62	6	9	0	0	0	0	0	0	0	2	12
Red Knot	65	12	30	0	0	0	0	0	14	0	0	6	3
Least Tern	63	0	0	0	39	0	13	11	0	0	0	0	0
Long-Billed Curlew	61	26	3	7	2	0	4	7	3	0	0	7	2
Horned Lark	58	30	0	3	5	0	0	6	4	8	0	2	0
Western Snowy Plover	44	0	0	0	0	0	0	0	0	31	0	6	7
Elegant Tern	30	0	0	30	0	0	0	0	0	0	0	0	0
Semipalmated Plover	30	0	0	0	2	0	10	17	0	0	0	0	1
Short-Billed Dowitcher	26	0	1	0	0	0	0	0	0	0	0	25	0
Snowy Egret	25	1	1	2	4	0	2	4	2	2	0	5	2
Osprey	21	3	2	4	6	0	1	0	0	2	0	1	2
Belding's Savannah Sparrow	16	2	0	0	8	0	2	0	0	2	0	2	0
Rock Pigeon	16	0	10	1	1	0	1	0	0	0	0	3	0
Brown Pelican	15	4	8	0	0	0	0	3	0	0	0	0	0
Greater Yellowlegs	15	0	2	1	1	0	4	0	0	2	0	2	3
Killdeer	14	0	3	1	5	0	1	2	0	2	0	0	0
Forster's Tern	9	0	0	0	7	0	2	0	0	0	0	0	0
Caspian Tern	8	0	0	0	0	0	1	3	1	2	0	1	0
Great Egret	8	3	0	1	1	0	0	0	0	0	0	2	1
Redhead	6	0	6	0	0	0	0	0	0	0	0	0	0
Double-Crested Cormorant	5	4	0	0	0	0	0	0	1	0	0	0	0
Great Blue Heron	5	2	0	0	1	0	0	0	0	0	0	2	0
House Finch	4	0	0	0	0	0	0	2	0	2	0	0	0
Reddish Egret	4	1	0	0	0	0	0	0	1	0	0	1	1
Gull-Billed Tern	3	0	0	0	0	0	0	3	0	0	0	0	0
American Crow	2	0	0	0	0	0	0	0	0	0	0	2	0
Bufflehead	2	2	0	0	0	0	0	0	0	0	0	0	0
Common Raven	2	0	0	2	0	0	0	0	0	0	0	0	0
Gull sp.	2	0	0	0	0	0	0	0	0	2	0	0	0
Mourning Dove	2	0	0	0	2	0	0	0	0	0	0	0	0
Red-Breasted Merganser	2	1	0	0	0	0	1	0	0	0	0	0	0

Species	Total 2016-17	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016
Black Skimmer	1	0	0	0	0	0	0	0	1	0	0	0	0
Heermann's Gull	1	1	0	0	0	0	0	0	0	0	0	0	0
Herring Gull	1	0	0	1	0	0	0	0	0	0	0	0	0
Little Blue Heron	1	0	0	0	0	0	0	0	1	0	0	0	0
Northern Harrier	1	0	0	0	0	0	0	0	0	0	0	1	0
Say's Phoebe	1	0	0	0	0	0	0	0	0	0	0	0	1
Whimbrel	1	0	0	0	1	0	0	0	0	0	0	0	0
<b>Totals</b>	<b>9,656</b>	<b>1,117</b>	<b>1,211</b>	<b>1,394</b>	<b>501</b>	<b>0</b>	<b>79</b>	<b>460</b>	<b>194</b>	<b>1,606</b>	<b>0</b>	<b>841</b>	<b>2,253</b>



Table E-17. 2016-17 Species list for Point Count Station 17 (Chula Vista North).

Species	Total 2016-17	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016
Peep sp.	1,558	785	0	0	0	0	0	0	0	68	0	705	0
Western Sandpiper	710	0	180	0	0	1	0	8	7	30	19	0	465
Marbled Godwit	621	49	13	19	0	0	0	80	0	225	100	70	65
American Wigeon	548	28	0	0	0	0	0	0	0	0	0	240	280
Surf Scoter	310	1	3	0	0	1	0	0	0	0	0	0	305
Willet	275	52	7	13	1	0	0	1	8	103	60	20	10
Brant	233	25	92	37	0	0	0	0	0	0	0	63	16
Western Gull	55	2	6	8	7	16	5	5	1	0	0	5	0
Dowitcher sp.	54	0	0	10	0	0	0	0	0	26	4	10	4
Killdeer	53	7	0	2	1	2	1	0	9	10	0	2	19
Sandpiper sp.	50	0	0	50	0	0	0	0	0	0	0	0	0
Least Tern	33	0	0	0	0	30	3	0	0	0	0	0	0
Red Knot	33	31	0	0	0	0	0	0	1	0	0	0	1
Black-Bellied Plover	29	3	0	0	0	0	0	1	2	3	4	3	13
Short-Billed Dowitcher	29	14	0	3	0	0	0	0	0	0	0	0	12
Semipalmated Plover	27	1	0	0	0	13	0	2	0	4	0	1	6
Double-Crested Cormorant	20	2	2	0	0	2	0	0	5	2	2	4	1
Snowy Egret	19	0	0	3	3	9	3	0	0	0	0	1	0
Greater Yellowlegs	16	1	0	0	0	6	0	2	0	1	0	2	4
Long-Billed Curlew	16	3	4	1	0	0	0	1	0	0	0	3	4
House Finch	11	0	4	0	2	3	0	0	0	0	2	0	0
Forster's Tern	10	1	0	1	2	2	1	3	0	0	0	0	0
Osprey	10	0	2	2	1	2	1	0	2	0	0	0	0
Brown Pelican	9	0	0	0	1	0	0	0	0	0	0	7	1
Lesser Scaup	8	0	8	0	0	0	0	0	0	0	0	0	0
Ring-Billed Gull	8	1	5	1	0	0	0	0	0	0	0	0	1
California Gull	6	0	3	3	0	0	0	0	0	0	0	0	0
Caspian Tern	6	0	0	0	0	3	3	0	0	0	0	0	0
European Starling	6	0	0	0	0	0	6	0	0	0	0	0	0
Royal Tern	6	0	0	0	0	6	0	0	0	0	0	0	0
Gull sp.	5	0	0	0	0	0	0	0	0	3	0	0	2
Northern Pintail	5	5	0	0	0	0	0	0	0	0	0	0	0
American Coot	4	0	0	0	0	0	0	0	0	0	0	4	0
Eared Grebe	4	0	3	0	0	0	0	0	0	0	0	1	0
Great Egret	4	2	0	0	0	0	0	0	0	0	0	1	1
Horned Grebe	4	0	0	0	0	0	0	0	0	0	0	1	3
Horned Lark	4	0	0	0	0	4	0	0	0	0	0	0	0
Mourning Dove	4	0	0	0	0	4	0	0	0	0	0	0	0
Redhead	4	0	0	0	0	0	0	0	0	0	0	0	4
Whimbrel	4	0	0	3	0	0	0	0	0	0	0	1	0
American White Pelican	3	0	0	0	0	0	0	0	3	0	0	0	0
Great Blue Heron	3	0	1	0	0	1	0	0	0	0	0	1	0
Northern Mockingbird	3	0	0	0	0	2	0	1	0	0	0	0	0
Western Grebe	3	0	0	0	0	0	0	0	0	0	0	0	3
American Crow	2	0	0	0	2	0	0	0	0	0	0	0	0
Belding's Savannah Sparrow	2	0	0	0	0	2	0	0	0	0	0	0	0

Species	Total 2016-17	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016
Cliff Swallow	2	0	0	0	1	1	0	0	0	0	0	0	0
Eurasian Collared Dove	2	0	0	0	0	2	0	0	0	0	0	0	0
Greater Scaup	2	2	0	0	0	0	0	0	0	0	0	0	0
Least Sandpiper	2	0	0	0	0	0	0	0	0	2	0	0	0
Reddish Egret	2	0	0	0	1	0	0	0	0	1	0	0	0
Ruddy Turnstone	2	0	0	0	0	0	0	0	0	0	0	1	1
Unknown Code (HUIL?)	2	0	0	0	2	0	0	0	0	0	0	0	0
Anna's Hummingbird	1	0	0	0	0	0	0	0	0	0	0	0	1
Belted Kingfisher	1	0	1	0	0	0	0	0	0	0	0	0	0
Black Skimmer	1	0	0	0	0	0	0	0	1	0	0	0	0
Brandt's Cormorant	1	0	0	0	1	0	0	0	0	0	0	0	0
California Least Tern	1	0	0	0	0	1	0	0	0	0	0	0	0
Hummingbird sp.	1	0	0	0	0	0	0	1	0	0	0	0	0
Lesser Yellowlegs	1	0	0	1	0	0	0	0	0	0	0	0	0
Northern Rough-Winged Swallow	1	0	0	0	0	0	0	1	0	0	0	0	0
Pied-Billed Grebe	1	0	0	0	0	0	0	0	0	0	0	1	0
Spotted Sandpiper	1	0	0	0	0	0	0	0	0	1	0	0	0
<b>Totals</b>	<b>4,851</b>	<b>1,015</b>	<b>334</b>	<b>157</b>	<b>25</b>	<b>113</b>	<b>23</b>	<b>106</b>	<b>39</b>	<b>479</b>	<b>191</b>	<b>1,147</b>	<b>1,222</b>

Table E-18. 2016-17 Species list for Point Count Station 18 (Chula Vista Mudflats).

Species	Total 2016-17	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016
Peep sp.	2,560	4	0	0	0	0	0	0	75	680	0	900	901
California Gull	2,021	0	1,110	265	544	75	0	25	2	0	0	0	0
Gull sp.	788	455	0	0	0	0	0	0	0	0	0	187	146
Elegant Tern	526	0	0	415	0	1	110	0	0	0	0	0	0
Western Sandpiper	475	0	220	25	0	0	0	50	0	0	180	0	0
Marbled Godwit	422	20	68	18	15	22	40	1	125	1	85	10	17
American Wigeon	392	38	8	54	0	0	0	0	0	0	0	25	267
Dowitcher sp.	384	0	208	99	0	0	0	22	7	0	48	0	0
Western Gull	253	0	90	3	13	31	51	21	40	2	2	0	0
Willet	252	4	16	1	4	17	35	8	47	37	48	18	17
Short-Billed Dowitcher	194	111	0	0	0	0	0	0	0	0	0	12	71
American Coot	166	21	80	51	2	0	0	0	0	0	5	4	3
Ring-Billed Gull	151	0	10	3	0	0	40	0	95	0	3	0	0
Semipalmated Plover	150	0	0	0	0	0	0	0	0	0	0	140	10
Black-Bellied Plover	69	0	12	0	1	0	1	20	5	14	0	11	5
Brant	47	0	4	21	0	0	0	0	0	0	0	0	22
Least Sandpiper	45	42	0	1	0	0	0	0	0	2	0	0	0
Mallard	42	5	8	0	1	2	2	0	0	0	0	22	2
Green-Winged Teal	39	0	0	2	0	0	0	0	0	0	6	0	31
Snowy Egret	32	3	5	4	6	1	6	2	0	1	1	0	3
Black Skimmer	29	0	0	0	0	4	10	15	0	0	0	0	0
Redknot	25	0	0	0	0	0	0	0	0	25	0	0	0
Northern Shoveler	24	2	0	0	0	0	0	0	0	0	0	18	4
Heermann's Gull	20	0	20	0	0	0	0	0	0	0	0	0	0
Forster's Tern	18	1	0	0	2	4	0	0	0	0	0	0	11
Long-Billed Curlew	16	4	5	0	0	0	2	0	1	1	1	0	2
Blue-Winged Teal	14	7	0	2	0	0	0	0	0	0	3	2	0
Gadwall	14	0	0	0	0	0	0	0	0	0	0	2	12
Royal Tern	13	0	0	0	3	0	10	0	0	0	0	0	0
Greater Yellowlegs	12	4	0	0	4	1	0	0	0	1	0	2	0
Northern Pintail	10	10	0	0	0	0	0	0	0	0	0	0	0
Rock Pigeon	10	0	0	0	0	0	10	0	0	0	0	0	0
American Crow	9	7	0	0	0	0	2	0	0	0	0	0	0
American Avocet	8	1	2	5	0	0	0	0	0	0	0	0	0
Eared Grebe	7	0	0	0	0	0	0	0	0	0	3	0	4
Red-Breasted Merganser	7	7	0	0	0	0	0	0	0	0	0	0	0
Western Grebe	6	0	0	1	0	0	0	0	0	0	3	0	2
Barn Swallow	5	0	0	0	2	1	2	0	0	0	0	0	0
Cinnamon Teal	5	0	0	0	0	0	0	0	0	0	1	0	4
Least Tern	5	0	0	0	0	3	2	0	0	0	0	0	0
Lesser Yellowlegs	5	0	0	0	1	4	0	0	0	0	0	0	0
Red Knot	5	0	0	0	0	0	0	0	0	0	5	0	0
Savannah Sparrow	5	0	0	0	0	0	0	0	2	0	3	0	0
Caspian Tern	4	0	0	0	1	3	0	0	0	0	0	0	0
Great Blue Heron	4	0	0	0	1	0	1	0	1	0	0	1	0
Whimbrel	4	0	0	0	0	1	2	0	1	0	0	0	0



Species	Total 2016-17	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016
Black Scoter	3	0	0	0	0	0	0	0	0	3	0	0	0
Great Egret	3	1	0	0	0	0	0	0	0	0	1	0	1
Northern Rough-Winged Swallow	3	0	0	0	3	0	0	0	0	0	0	0	0
Osprey	3	0	0	0	0	1	0	0	0	0	0	1	1
Redhead	3	0	0	3	0	0	0	0	0	0	0	0	0
Black Phoebe	2	0	0	0	0	0	0	0	0	2	0	0	0
Black-Necked Stilt	2	0	2	0	0	0	0	0	0	0	0	0	0
Brown Pelican	2	0	0	0	1	0	0	0	0	0	1	0	0
Cliff Swallow	2	0	0	0	0	2	0	0	0	0	0	0	0
House Finch	2	0	0	0	2	0	0	0	0	0	0	0	0
American White Pelican	1	0	0	0	0	0	0	0	0	0	0	1	0
Avocet	1	0	0	0	1	0	0	0	0	0	0	0	0
Belted Kingfisher	1	0	0	0	0	0	0	0	0	0	1	0	0
Common Tern	1	0	0	0	0	0	0	0	1	0	0	0	0
Dunlin	1	0	0	0	0	0	0	0	0	0	1	0	0
European Starling	1	0	0	0	0	1	0	0	0	0	0	0	0
Killdeer	1	0	0	0	1	0	0	0	0	0	0	0	0
Peregrine Falcon	1	0	0	0	0	0	0	0	1	0	0	0	0
Pied-Billed Grebe	1	0	0	0	0	0	0	0	0	0	1	0	0
Spotted Sandpiper	1	0	0	0	0	0	0	0	0	1	0	0	0
Surf Scoter	1	1	0	0	0	0	0	0	0	0	0	0	0
<b>Totals</b>	<b>9,328</b>	<b>748</b>	<b>1,868</b>	<b>973</b>	<b>608</b>	<b>174</b>	<b>326</b>	<b>164</b>	<b>403</b>	<b>770</b>	<b>402</b>	<b>1,356</b>	<b>1,536</b>

**Table E-19. 2016-17 Species list for Point Count Station 19 (Chula Vista Wildlife Reserve).**

Species	Total 2016-17	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016
Brant	1,642	281	734	425	0	0	0	0	0	0	0	64	138
Scaup sp.	914	14	50	0	0	0	0	0	0	0	0	360	490
Forster's Tern	620	6	7	0	176	163	225	30	0	2	4	7	0
Peep sp.	471	10	33	45	0	0	0	145	104	3	13	98	20
Surf Scoter	444	41	71	52	0	0	0	0	0	0	0	240	40
Least Tern	202	0	0	0	42	44	115	1	0	0	0	0	0
American Wigeon	183	114	8	0	0	0	0	0	0	0	0	3	58
Western Gull	137	20	11	12	23	0	3	1	29	27	2	5	4
Western Grebe	111	31	4	0	0	0	0	0	0	0	54	0	22
Elegant Tern	90	0	0	60	9	4	0	16	0	1	0	0	0
Willet	85	6	19	25	6	0	0	6	0	2	6	7	8
Least Sandpiper	84	1	0	0	0	0	0	32	20	4	0	27	0
Redhead	78	49	14	1	0	0	0	0	0	0	0	0	14
Black-Bellied Plover	66	60	0	0	0	0	0	0	0	1	4	0	1
Double-Crested Cormorant	46	16	13	6	0	1	0	1	0	2	0	2	5
Osprey	46	1	1	0	10	6	3	6	4	7	2	5	1
California Gull	40	14	0	20	0	0	0	0	0	0	0	1	5
Belding's Savannah Sparrow	38	6	0	0	12	5	4	0	4	3	0	1	3
Royal Tern	34	1	18	0	0	2	6	0	0	1	5	1	0
Gull sp.	29	0	1	26	0	0	0	0	0	0	2	0	0
Brown Pelican	27	5	4	2	0	0	0	0	0	1	2	6	7
Black Skimmer	25	0	0	0	0	6	8	10	1	0	0	0	0
Marbled Godwit	25	0	6	0	0	0	0	0	0	0	18	0	1
Western Sandpiper	24	0	0	0	0	0	0	0	21	3	0	0	0
Great Blue Heron	16	0	0	0	5	0	0	3	6	1	0	0	1
Northern Shoveler	16	0	0	0	0	0	0	0	0	0	0	0	16
Snowy Egret	12	1	0	0	3	1	2	0	0	1	1	3	0
Duck sp.	9	0	0	0	0	0	0	0	0	0	9	0	0
Bonapartes Gull	8	0	0	0	0	0	0	0	0	0	0	0	8
Herring Gull	8	3	5	0	0	0	0	0	0	0	0	0	0
Greater Yellowlegs	7	2	1	1	0	1	0	0	0	0	2	0	0
Pied-Billed Grebe	7	0	0	0	0	0	0	0	0	0	0	6	1
Great Egret	6	0	0	0	0	0	0	0	3	1	2	0	0
Long-Billed Curlew	6	0	0	0	1	0	1	0	4	0	0	0	0
Gull-Billed Tern	4	0	0	0	4	0	0	0	0	0	0	0	0
Horned Grebe	4	2	1	0	0	0	0	0	0	0	0	0	1
Dowitcher sp.	3	0	0	0	0	0	0	0	0	3	0	0	0
Eared Grebe	3	0	0	0	0	0	0	0	0	0	3	0	0
Northern Harrier	3	0	0	0	0	0	0	0	1	0	0	2	0
Peregrine Falcon	3	1	0	0	0	0	1	0	1	0	0	0	0
Ring-Billed Gull	3	1	0	1	0	0	0	0	0	0	0	0	1
White Pelican	3	0	2	1	0	0	0	0	0	0	0	0	0
American Coot	2	2	0	0	0	0	0	0	0	0	0	0	0
Caspian Tern	2	0	0	0	1	0	0	1	0	0	0	0	0
Killdeer	2	0	0	1	0	0	1	0	0	0	0	0	0
Barn Swallow	1	0	0	0	0	0	0	1	0	0	0	0	0

Species	Total 2016-17	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016
Bufflehead	1	1	0	0	0	0	0	0	0	0	0	0	0
Common Loon	1	0	0	0	0	0	0	0	0	0	0	0	1
Horned Lark	1	0	0	0	1	0	0	0	0	0	0	0	0
Large-Billed Savannah Sparrow	1	1	0	0	0	0	0	0	0	0	0	0	0
Mallard	1	1	0	0	0	0	0	0	0	0	0	0	0
Pacific Loon	1	0	0	0	0	0	0	0	0	0	0	0	1
Short-Eared Owl	1	0	0	0	0	0	0	0	0	0	0	1	0
<b>Totals</b>	<b>5,596</b>	<b>691</b>	<b>1,003</b>	<b>678</b>	<b>293</b>	<b>233</b>	<b>369</b>	<b>253</b>	<b>198</b>	<b>63</b>	<b>129</b>	<b>839</b>	<b>847</b>



**Table E-20. 2016-17 Species list for Point Count Station 21 (Salt Ponds North Shore).**

Species	Total 2016-17	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016
Western Sandpiper	14,568	3,500	1,273	0	661	0	0	0	0	2,009	1,725	3,200	2,200
Elegant Tern	8,150	0	0	0	130	146	445	8,150	50	0	3	0	0
Eared Grebe	5,312	946	5	0	869	41	4	0	0	180	1,080	1,352	835
American Wigeon	1,771	76	687	0	0	0	0	0	0	8	406	260	334
Brant	1,192	510	291	0	0	0	0	0	0	1	250	126	14
Royal Tern	938	1	0	0	6	71	859	0	0	1	0	0	0
Black-Bellied Plover	928	24	109	0	0	9	0	0	0	163	390	152	81
Dunlin	789	235	25	0	26	0	0	0	0	0	66	110	327
Red Knot	781	16	0	0	0	0	0	0	0	49	170	329	217
Semipalmated Plover	781	250	71	0	1	3	0	0	0	17	85	164	190
Caspian Tern	393	0	0	0	40	174	157	22	0	0	0	0	0
Dowitcher sp.	391	27	19	0	30	13	0	0	50	2	205	33	12
Marbled Godwit	383	39	16	0	8	22	0	3	78	54	107	37	19
Least Sandpiper	316	80	65	0	80	0	0	0	0	32	27	0	32
Willet	286	28	12	0	17	35	1	0	0	19	119	28	27
Double-Crested Cormorant	207	1	0	0	15	19	40	99	0	13	12	7	1
Western Gull	169	0	0	0	23	11	6	36	0	57	33	3	0
Black-Necked Stilt	130	0	0	0	69	33	28	0	0	0	0	0	0
Forster's Tern	127	35	9	0	30	0	1	41	0	1	5	0	5
Brown Pelican	120	0	0	0	0	1	0	90	0	0	28	0	1
Long-Billed Curlew	79	16	7	0	2	8	1	0	0	2	14	19	10
Northern Pintail	67	2	0	0	0	0	0	0	0	0	4	0	61
Red-Necked Phalarope	66	0	0	0	0	0	0	0	1	65	0	0	0
American Avocet	54	21	0	0	5	9	2	0	0	17	0	0	0
Peep sp.	52	0	0	0	30	0	0	0	0	22	0	0	0
Northern Shoveler	50	0	36	0	0	0	0	0	0	9	0	0	5
California Gull	47	11	4	0	0	15	13	0	0	4	0	0	0
Greater Yellowlegs	43	5	14	0	1	1	0	0	0	1	9	2	10
Ring-Billed Gull	41	21	3	0	1	0	0	0	0	0	0	0	16
Western Snowy Plover	39	0	25	0	3	3	0	0	0	1	0	0	7
Least Tern	37	0	0	0	29	8	0	0	0	0	0	0	0
Belding's Savannah Sparrow	36	0	4	0	18	4	8	2	0	0	0	0	0
Gull sp.	26	0	0	0	26	0	0	0	0	0	0	0	0
Black Skimmer	20	0	0	0	0	0	7	0	13	0	0	0	0
Snowy Egret	16	2	0	0	2	2	0	3	3	0	1	0	3
Great Egret	8	1	0	0	0	0	0	0	1	0	1	5	0
Mallard	5	0	0	0	2	3	0	0	0	0	0	0	0
Osprey	5	0	1	0	0	1	0	0	0	1	1	0	1
Gull-Billed Tern	4	0	0	0	0	2	2	0	0	0	0	0	0
Northern Harrier	4	0	0	0	0	0	0	0	0	1	1	1	1
Ruddy Turnstone	4	0	0	0	0	0	0	0	4	0	0	0	0
American White Pelican	3	0	0	0	0	0	0	0	0	1	2	0	0
Bonapartes Gull	3	1	0	0	0	0	0	0	0	0	0	2	0
Common Tern	3	0	0	0	0	0	0	0	0	3	0	0	0

Species	Total 2016-17	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016
Herring Gull	3	0	1	0	0	0	0	0	0	0	0	1	1
Peregrine Falcon	3	1	0	0	0	0	0	0	0	1	0	1	0
Whimbrel	3	0	0	0	1	2	0	0	0	0	0	0	0
Gadwall	2	0	0	0	2	0	0	0	0	0	0	0	0
Great Blue Heron	2	0	1	0	0	0	0	0	0	0	0	1	0
Red-Breasted Merganser	2	1	0	0	0	1	0	0	0	0	0	0	0
Black Turnstone	1	0	0	0	0	0	0	0	0	1	0	0	0
Say's Phoebe	1	0	0	0	0	0	0	0	0	0	0	0	1
<b>Totals</b>	<b>53,285</b>	<b>5,850</b>	<b>2,678</b>	<b>0</b>	<b>2,127</b>	<b>637</b>	<b>1,574</b>	<b>22,496</b>	<b>200</b>	<b>2,735</b>	<b>4,744</b>	<b>5,833</b>	<b>4,411</b>

Table E-21. 2016-17 Species list for Point Count Station 22 (NRRF).

Species	Total 2016-17	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016
Elegant Tern	856	0	0	2	0	0	4	850	0	0	0	0	0
White-Crowned Sparrow	66	0	7	22	0	0	0	0	0	0	6	19	12
Peep sp.	60	0	0	60	0	0	0	0	0	0	0	0	0
American Wigeon	50	0	10	40	0	0	0	0	0	0	0	0	0
Northern Shoveler	44	0	40	4	0	0	0	0	0	0	0	0	0
Horned Lark	31	0	0	0	8	0	8	0	15	0	0	0	0
House Finch	29	0	0	0	0	0	10	2	11	0	4	1	1
Black-Bellied Plover	14	0	13	1	0	0	0	0	0	0	0	0	0
Gull-Billed Tern	10	0	0	0	3	4	3	0	0	0	0	0	0
Ruddy Duck	10	0	2	8	0	0	0	0	0	0	0	0	0
Mourning Dove	9	0	0	0	0	2	3	0	3	0	1	0	0
Western Gull	9	0	2	0	6	0	1	0	0	0	0	0	0
American Crow	7	0	0	0	0	7	0	0	0	0	0	0	0
Turkey Vulture	7	0	0	0	0	0	0	2	3	0	0	2	0
Royal Tern	6	0	0	0	4	0	0	0	0	0	0	2	0
Common Raven	5	2	0	1	2	0	0	0	0	0	0	0	0
Mallard	5	0	5	0	0	0	0	0	0	0	0	0	0
Sparrow sp.	5	5	0	0	0	0	0	0	0	0	0	0	0
Cinnamon Teal	4	0	0	4	0	0	0	0	0	0	0	0	0
Red-Tailed Hawk	4	0	0	1	0	0	2	0	0	0	0	1	0
Northern Pintail	3	0	1	2	0	0	0	0	0	0	0	0	0
American Avocet	2	0	0	2	0	0	0	0	0	0	0	0	0
Anna's Hummingbird	2	0	0	0	0	0	0	0	0	0	0	0	2
Caspian Tern	2	0	0	0	0	0	1	1	0	0	0	0	0
Green-Winged Teal	2	0	0	2	0	0	0	0	0	0	0	0	0
Loggerhead Shrike	2	0	0	0	0	0	0	0	0	0	1	1	0
Osprey	2	0	0	0	0	0	0	0	0	0	0	2	0
Western Kingbird	2	0	0	0	0	0	0	0	0	0	0	1	1
Whimbrel	2	0	0	2	0	0	0	0	0	0	0	0	0
Barn Swallow	1	0	0	0	1	0	0	0	0	0	0	0	0
Brown Pelican	1	0	0	0	1	0	0	0	0	0	0	0	0
California Towhee	1	0	0	1	0	0	0	0	0	0	0	0	0
Double-Crested Cormorant	1	0	0	0	0	0	1	0	0	0	0	0	0
Gull sp.	1	0	0	0	1	0	0	0	0	0	0	0	0
Killdeer	1	0	0	1	0	0	0	0	0	0	0	0	0
Lesser Yellowlegs	1	0	0	1	0	0	0	0	0	0	0	0	0
Merlin	1	0	0	1	0	0	0	0	0	0	0	0	0
Northern Harrier	1	0	0	0	0	0	0	0	1	0	0	0	0
Say's Phoebe	1	0	1	0	0	0	0	0	0	0	0	0	0
Song Sparrow	1	0	0	0	0	0	0	0	0	0	1	0	0
Western Meadowlark	1	0	0	0	0	0	0	0	0	0	0	1	0
<b>Totals</b>	<b>1,262</b>	<b>7</b>	<b>81</b>	<b>155</b>	<b>26</b>	<b>13</b>	<b>33</b>	<b>855</b>	<b>33</b>	<b>0</b>	<b>13</b>	<b>30</b>	<b>16</b>



Table E-22. 2016-17 Species list for Point Count Station 23 (Shelter Island).

Species	Total 2016-17	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016
Western Gull	533	76	42	13	43	48	35	24	0	100	27	54	71
Rock Pigeon	505	8	18	0	3	13	95	49	0	54	56	124	85
Heermann's Gull	137	11	3	1	0	0	8	24	0	58	8	14	10
European Starling	52	2	0	2	11	1	2	1	0	0	0	33	0
House Sparrow	45	2	5	1	6	6	4	5	0	1	7	4	4
Brown Pelican	41	2	8	0	0	7	0	7	0	4	0	8	5
Bufflehead	36	19	0	12	0	0	0	0	0	0	0	0	5
Ring-Billed Gull	29	3	5	2	0	0	0	0	0	2	0	5	12
Brewer's Blackbird	23	0	0	0	0	2	0	0	0	1	0	20	0
American Crow	11	0	0	4	2	2	0	0	0	0	3	0	0
Double-Crested Cormorant	5	0	0	0	0	2	1	0	0	1	0	0	1
California Gull	4	0	2	0	0	0	0	0	0	0	1	0	1
Parrot sp.	4	0	0	4	0	0	0	0	0	0	0	0	0
Eared Grebe	3	0	0	0	0	1	0	0	0	0	0	1	1
Elegant Tern	2	0	0	0	0	0	1	0	0	1	0	0	0
Green Parrot	2	0	0	0	0	2	0	0	0	0	0	0	0
Red-Breasted Merganser	2	0	0	2	0	0	0	0	0	0	0	0	0
Yellow-Rumped Warbler	2	0	0	0	0	0	0	0	0	0	0	0	2
Anna's Hummingbird	1	0	0	0	0	0	1	0	0	0	0	0	0
Barn Swallow	1	0	0	0	0	0	1	0	0	0	0	0	0
Caspian Tern	1	0	0	0	0	0	1	0	0	0	0	0	0
Common Loon	1	0	0	1	0	0	0	0	0	0	0	0	0
Great Egret	1	0	0	0	0	0	0	1	0	0	0	0	0
Least Tern	1	0	0	0	0	0	1	0	0	0	0	0	0
Mallard	1	0	0	0	0	1	0	0	0	0	0	0	0
Pelagic Cormorant	1	0	0	0	0	0	0	0	0	0	0	0	1
Snowy Egret	1	0	0	0	0	1	0	0	0	0	0	0	0
Song Sparrow	1	0	0	1	0	0	0	0	0	0	0	0	0
Willet	1	0	1	0	0	0	0	0	0	0	0	0	0
<b>Totals</b>	<b>1,447</b>	<b>123</b>	<b>84</b>	<b>43</b>	<b>65</b>	<b>86</b>	<b>150</b>	<b>111</b>	<b>0</b>	<b>222</b>	<b>102</b>	<b>263</b>	<b>198</b>

Table E-23. 2016-17 Species list for Point Count Station 24 (Gran Caribe).

Species	Total 2016-17	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016
Peep sp.	300	0	0	300	0	0	0	0	0	0	0	0	0
House Finch	154	20	0	11	74	26	11	0	0	0	8	0	4
Western Gull	104	1	2	4	16	3	6	22	22	21	1	3	3
Marbled Godwit	69	5	0	8	0	0	0	0	13	25	0	16	2
White-Crowned Sparrow	63	15	0	8	0	0	0	0	0	0	5	25	10
Willet	40	2	1	3	0	0	0	0	2	15	1	12	4
Western Grebe	30	27	1	0	0	0	0	0	0	0	2	0	0
Bufflehead	27	0	0	0	0	0	0	0	0	0	0	0	27
Swallow sp.	23	0	0	2	16	4	1	0	0	0	0	0	0
Audubon's Warbler (Yellow-Rumped)	21	2	0	2	0	0	0	0	0	0	6	9	2
Savannah Sparrow	18	6	0	4	1	2	0	0	0	0	2	3	0
Anna's Hummingbird	17	3	0	3	3	0	1	0	0	0	1	4	2
Western Sandpiper	17	0	5	0	0	0	0	0	0	12	0	0	0
American Crow	15	1	0	0	0	0	2	7	0	0	0	0	5
Cliff Swallow	14	0	0	0	12	0	2	0	0	0	0	0	0
Dowitcher sp.	10	0	0	0	0	0	0	0	0	10	0	0	0
Black-Bellied Plover	9	1	0	0	0	0	0	0	0	5	1	2	0
Brown Pelican	8	2	0	0	0	0	0	0	0	0	2	1	3
Least Tern	8	0	0	0	0	1	7	0	0	0	0	0	0
Osprey	8	1	0	0	2	1	0	0	0	0	0	1	3
Elegant Tern	7	0	0	1	1	0	2	2	1	0	0	0	0
Forster's Tern	7	2	0	0	5	0	0	0	0	0	0	0	0
Black Phoebe	6	0	0	0	1	1	2	0	0	0	0	2	0
Brant	6	0	0	0	0	0	0	0	0	0	0	0	6
European Starling	6	0	0	0	6	0	0	0	0	0	0	0	0
Say's Phoebe	6	2	0	0	0	0	0	0	0	0	1	2	1
Snowy Egret	6	1	0	0	1	2	0	0	0	1	0	0	1
Cassin's Kingbird	5	0	0	0	0	0	2	0	0	0	0	3	0
Eared Grebe	5	4	0	0	0	0	0	0	0	0	0	0	1
Scaup sp.	5	0	0	0	0	0	0	0	0	0	0	0	5
Cooper's Hawk	4	0	0	0	0	0	0	4	0	0	0	0	0
Double-Crested Cormorant	4	0	0	0	0	0	0	0	0	0	0	1	3
Great Blue Heron	4	0	1	0	0	0	0	0	0	1	0	1	1
Hooded Oriole	4	0	0	0	0	2	2	0	0	0	0	0	0
House Sparrow	4	0	0	0	4	0	0	0	0	0	0	0	0
Killdeer	4	0	3	0	1	0	0	0	0	0	0	0	0
Least Sandpiper	4	0	4	0	0	0	0	0	0	0	0	0	0
Black-Crowned Night Heron	3	0	2	0	0	0	1	0	0	0	0	0	0
Royal Tern	3	0	0	0	0	0	2	0	0	1	0	0	0
American Pipit	2	0	0	2	0	0	0	0	0	0	0	0	0
Great Egret	2	0	0	0	1	0	0	0	0	0	0	1	0
Northern Pintail	2	2	0	0	0	0	0	0	0	0	0	0	0
Orange-Crowned Warbler	2	0	0	0	0	0	0	0	0	0	1	1	0
Song Sparrow	2	0	0	2	0	0	0	0	0	0	0	0	0
Spotted Sandpiper	2	0	0	0	1	0	0	0	0	1	0	0	0

Species	Total 2016-17	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016
Surf Scoter	2	0	2	0	0	0	0	0	0	0	0	0	0
Unknown Code (CASP)	2	0	0	0	0	0	2	0	0	0	0	0	0
Allen's Hummingbird	1	0	0	1	0	0	0	0	0	0	0	0	0
American Kestrel	1	0	0	0	0	0	0	0	0	0	0	0	1
Bewick's Wren	1	0	0	0	0	0	0	0	0	0	1	0	0
Caspian Tern	1	0	0	0	0	0	0	1	0	0	0	0	0
Greater Yellowlegs	1	0	0	0	0	0	0	0	0	1	0	0	0
Gull-Billed Tern	1	0	0	0	0	0	0	1	0	0	0	0	0
Heermann's Gull	1	0	0	0	0	0	0	0	0	1	0	0	0
Mourning Dove	1	0	0	0	1	0	0	0	0	0	0	0	0
<b>Totals</b>	<b>1,072</b>	<b>97</b>	<b>21</b>	<b>351</b>	<b>146</b>	<b>42</b>	<b>43</b>	<b>37</b>	<b>38</b>	<b>94</b>	<b>32</b>	<b>87</b>	<b>84</b>





Marbled Godwit. © Timothy Burr, 2017.

## Appendix F: Grid Cell Species List

The following species lists are organized by Bay region and present the species observed by grid from the 2016-17 surveys. Refer to Appendix A: Oversized Figures for maps of Bay regions with grid cell numbers.

### F.1 Species Lists for North Bay Grid Cells

Common Name	Total Observed
<b>Grid Cell: 1</b>	
American Crow	4
Barn Swallow	1
Brandt's Cormorant	245
Brown Pelican	157
California Gull	2
Caspian Tern	1
Cliff Swallow	4
Double-crested Cormorant	26
European Starling	21
Great Blue Heron	7
Great Egret	19
Heermann's Gull	48
House Finch	1
Long-billed Dowitcher	1
Osprey	7
Red-tailed Hawk	1
Rock Pigeon	4
Snowy Egret	26
Surf Scoter	3
Western Grebe	6
Western Gull	151
Whimbrel	2
<b>Grid Cell: 3</b>	
Belted Kingfisher	1
Black Phoebe	1
Black-crowned Night Heron	1
Brandt's Cormorant	123
Brown Pelican	6
California Gull	1
Caspian Tern	1
Double-crested Cormorant	25

Common Name	Total Observed
Dowitcher sp.	1
Heermann's Gull	9
Marbled Godwit	1
Ring-billed Gull	1
Rock Pigeon	3
Snowy Egret	5
Surf Scoter	4
Western Gull	193
Willet	2
<b>Grid Cell: 4</b>	
Brandt's Cormorant	16
Brown Pelican	17
Heermann's Gull	5
Western Gull	12
<b>Grid Cell: 5</b>	
Brandt's Cormorant	22
Double-crested Cormorant	3
Heermann's Gull	3
Royal Tern	9
Surf Scoter	100
Western Gull	3
<b>Grid Cell: 6</b>	
Barn Swallow	1
Brandt's Cormorant	2
Brant	13
Brown Pelican	4
California Least Tern	1
Caspian Tern	1
Common Loon	1
Elegant Tern	7
Great Blue Heron	5
Heermann's Gull	5
Royal Tern	1
Say's Phoebe	1
Surf Scoter	21

Common Name	Total Observed	Common Name	Total Observed
Western Grebe	1	California Gull	2
Western Gull	18	Double-crested Cormorant	9
<b>Grid Cell: 7</b>		Dowitcher sp.	25
Double-crested Cormorant	6	Eared Grebe	5
Great Blue Heron	1	European Starling	12
Western Gull	4	Forster's Tern	1
<b>Grid Cell: 8</b>		Great Blue Heron	1
Brandt's Cormorant	277	Great Egret	1
Brown Pelican	7	Greater Yellowlegs	1
Double-crested Cormorant	50	Heermann's Gull	3
Elegant Tern	4	Long-billed Curlew	1
Heermann's Gull	9	Marbled Godwit	13
Surf Scoter	35	Osprey	2
Western Grebe	1	Peep sp.	10
Western Gull	147	Red-tailed Hawk	1
<b>Grid Cell: 9</b>		Ring-billed Gull	1
Brandt's Cormorant	33	Royal Tern	3
Double-crested Cormorant	1	Semipalmated Plover	1
Western Gull	65	Snowy Egret	2
<b>Grid Cell: 10</b>		Spotted Sandpiper	1
Belding's Savannah Sparrow	9	Surf Scoter	17
Belted Kingfisher	1	Tern sp.	1
Brandt's Cormorant	8	Western Gull	24
Brown Pelican	3	Western Kingbird	1
California Gull	3	Western Sandpiper	330
Double-crested Cormorant	1	White-winged Scoter	1
Dowitcher sp.	129	Willet	8
Forster's Tern	1	<b>Grid Cell: 12</b>	
Great Blue Heron	1	Western Gull	2
Great Egret	16	<b>Grid Cell: 13</b>	
Greater Yellowlegs	4	Belted Kingfisher	1
Killdeer	5	Brandt's Cormorant	2265
Least Sandpiper	3	Brown Pelican	47
Little Blue Heron	1	California Gull	4
Long-billed Curlew	1	Common Loon	1
Marbled Godwit	62	Double-crested Cormorant	376
Ring-billed Gull	1	Eared Grebe	4
Rock Pigeon	1	Elegant Tern	1
Royal Tern	6	Forster's Tern	1
Semipalmated Plover	30	Great Blue Heron	62
Snowy Egret	3	Great Egret	83
Surf Scoter	20	Gull sp.	1
Turkey Vulture	2	Heermann's Gull	183
Western Gull	3	Ring-billed Gull	3
Western Sandpiper	71	Rock Pigeon	31
Willet	50	Snowy Egret	33
<b>Grid Cell: 11</b>		Spotted Sandpiper	1
Barn Swallow	9	Surf Scoter	48
Belted Kingfisher	2	Western Gull	557
Black Phoebe	1	<b>Grid Cell: 14</b>	
Black Turnstone	2	Brandt's Cormorant	9
Black-bellied Plover	46	California Gull	2
Brandt's Cormorant	1	Double-crested Cormorant	2
Brant	4	Eared Grebe	430
Brown Pelican	7	Great Egret	1

Common Name	Total Observed	Common Name	Total Observed
Gull sp.	1	Brown Pelican	50
Peep sp.	3	Bufflehead	24
Ring-billed Gull	1	Cassin's Kingbird	1
Surf Scoter	6	Cliff Swallow	2
Western Gull	19	Common Loon	1
<b>Grid Cell: 15</b>		Common Merganser	2
Belding's Savannah Sparrow	1	Double-crested Cormorant	360
Black Turnstone	4	Eared Grebe	31
Black-bellied Plover	2	Great Blue Heron	35
Brown Pelican	1	Great Egret	3
Eared Grebe	730	Heermann's Gull	58
Great Blue Heron	1	Horned Grebe	2
Gull sp.	1	Osprey	1
Herring Gull	1	Red-breasted Merganser	3
Least Sandpiper	1	Ring-billed Gull	1
Western Gull	1	Rock Pigeon	22
Willet	1	Royal Tern	1
<b>Grid Cell: 16</b>		Say's Phoebe	1
Black Turnstone	3	Snowy Egret	12
Brandt's Cormorant	5	Spotted Sandpiper	1
Brown Pelican	53	Surf Scoter	11
California Gull	1	Western Grebe	110
Double-crested Cormorant	2	Western Gull	190
Great Blue Heron	2	<b>Grid Cell: 19</b>	
Greater Yellowlegs	1	Barn Swallow	1
Heermann's Gull	2	Black Turnstone	1
Mourning Dove	1	Black-crowned Night Heron	1
Osprey	5	Brandt's Cormorant	6003
Pacific Loon	1	Brown Pelican	340
Rock Pigeon	7	Bufflehead	3
Royal Tern	2	California Gull	2
Snowy Egret	4	California Least Tern	3
Surf Scoter	3	Caspian Tern	1
Tern sp.	3	Double-crested Cormorant	317
Western Gull	28	Elegant Tern	4
<b>Grid Cell: 17</b>		Forster's Tern	1
American Kestrel	1	Great Blue Heron	41
American Wigeon	1	Great Egret	134
Black Phoebe	1	Heermann's Gull	547
Brandt's Cormorant	440	Red-breasted Merganser	1
Brown Pelican	8	Ring-billed Gull	2
California Gull	1	Rock Pigeon	61
Double-crested Cormorant	2	Snowy Egret	117
Eared Grebe	2	Surf Scoter	5
European Starling	1	Western Grebe	4
Great Blue Heron	138	Western Gull	955
Great Egret	61	<b>Grid Cell: 20</b>	
Rock Pigeon	5	Brandt's Cormorant	178
Western Grebe	2	Brown Pelican	20
Western Gull	20	Double-crested Cormorant	64
<b>Grid Cell: 18</b>		Elegant Tern	4
Barn Swallow	3	Great Blue Heron	4
Black Phoebe	3	Great Egret	11
Black-crowned Night Heron	4	Heermann's Gull	96
Brandt's Cormorant	324	Snowy Egret	8



Common Name	Total Observed
Western Gull	70
<b>Grid Cell: 21</b>	
Brown Pelican	8
California Gull	2
Cormorant sp.	50
Heermann's Gull	1
Western Gull	11
<b>Grid Cell: 22</b>	
Brandt's Cormorant	1
Brant	5
Brown Pelican	17
California Gull	1
Double-crested Cormorant	5
Great Blue Heron	1
Heermann's Gull	2
Ring-billed Gull	1
Rock Pigeon	2
Western Gull	57
<b>Grid Cell: 23</b>	
Barn Swallow	1
Brown Pelican	42
California Gull	1
Caspian Tern	1
Double-crested Cormorant	14
Forster's Tern	2
Great Blue Heron	2
Great Egret	4
Heermann's Gull	57
Osprey	1
Ring-billed Gull	3
Rock Pigeon	9
Snowy Egret	1
Western Gull	59
<b>Grid Cell: 24</b>	
Barn Swallow	4
Black Phoebe	1
Brandt's Cormorant	192
Brown Pelican	1
Bufflehead	5
California Gull	3
Caspian Tern	1
Double-crested Cormorant	35
Eared Grebe	12
Elegant Tern	2
Great Blue Heron	34
Great Egret	79
Heermann's Gull	23
Horned Grebe	1
Rock Pigeon	22
Snowy Egret	4
Western Grebe	80
Western Gull	63
<b>Grid Cell: 25</b>	
Brandt's Cormorant	3
Brown Pelican	28

Common Name	Total Observed
California Gull	9
Double-crested Cormorant	13
Eared Grebe	1
Great Blue Heron	2
Great Egret	11
Gull sp.	1
Heermann's Gull	18
Herring Gull	1
Osprey	1
Red-breasted Merganser	1
Ring-billed Gull	2
Rock Pigeon	5
Snowy Egret	2
Western Grebe	5
Western Gull	58
<b>Grid Cell: 27</b>	
Brandt's Cormorant	3
Brown Pelican	1
California Gull	2
Dunlin	3
Heermann's Gull	3
Least Sandpiper	2
Western Snowy Plover	6
Western Gull	24
Western Sandpiper	24
<b>Grid Cell: 28</b>	
Brandt's Cormorant	3
Brown Pelican	25
California Gull	2
Double-crested Cormorant	12
Great Egret	1
Heermann's Gull	2
Herring Gull	1
Rock Pigeon	7
Royal Tern	1
Spotted Sandpiper	1
Western Gull	9
<b>Grid Cell: 29</b>	
Barn Swallow	3
Belted Kingfisher	1
Brandt's Cormorant	2
Brant	9
Brown Pelican	102
California Gull	4
California Least Tern	1
Caspian Tern	1
Double-crested Cormorant	81
Elegant Tern	6
European Starling	7
Great Blue Heron	28
Great Egret	6
Gull sp.	1
Heermann's Gull	53
Least Sandpiper	2
Marbled Godwit	1

Common Name	Total Observed	Common Name	Total Observed
Red-tailed Hawk	1	Bufflehead	4
Ring-billed Gull	1	California Least Tern	3
Rock Pigeon	9	Caspian Tern	1
Say's Phoebe	2	Double-crested Cormorant	6
Semipalmated Plover	2	Eared Grebe	2
Snowy Egret	3	Great Blue Heron	5
Western Grebe	3	Great Egret	1
Western Gull	89	Gull sp.	4
<b>Grid Cell: 30</b>		Marbled Godwit	4
American Crow	4	Peep sp.	25
Black Phoebe	4	Pelagic Cormorant	1
Black Scoter	1	Pied-billed Grebe	2
Brandt's Cormorant	5	Rock Pigeon	4
Brown Pelican	21	Royal Tern	2
Bufflehead	4	Semipalmated Plover	3
California Gull	2102	Snowy Egret	2
California Least Tern	5	Surf Scoter	3
Double-crested Cormorant	156	Surfbird	2
Elegant Tern	2	Western Grebe	2
European Starling	1	Western Gull	22
Great Blue Heron	22	Western Sandpiper	6
Great Egret	14	Willet	1
Heermann's Gull	34	<b>Grid Cell: 36</b>	
Herring Gull	6	Brandt's Cormorant	1
Rock Pigeon	22	Brown Pelican	9
Royal Tern	1	Bufflehead	2
Snowy Egret	1	California Gull	1
Surf Scoter	7	Cliff Swallow	1
Western Gull	200	Common Loon	1
<b>Grid Cell: 31</b>		Double-crested Cormorant	12
Brandt's Cormorant	8	European Starling	1
Brown Pelican	42	Forster's Tern	1
Bufflehead	2	Great Blue Heron	1
California Gull	2	Great Egret	1
Double-crested Cormorant	55	Gull sp.	4
Eared Grebe	1	Heermann's Gull	7
Elegant Tern	1	Little Blue Heron	1
Great Blue Heron	5	Rock Pigeon	11
Heermann's Gull	111	Snowy Egret	3
Rock Pigeon	17	Surf Scoter	13
Snowy Egret	2	Western Grebe	2
Western Gull	114	Western Gull	215
<b>Grid Cell: 33</b>		<b>Grid Cell: 37</b>	
Brandt's Cormorant	5	Brandt's Cormorant	6
Brown Pelican	1	California Gull	1
California Gull	2	Common Loon	1
Double-crested Cormorant	7	Double-crested Cormorant	1
Heermann's Gull	3	Royal Tern	5
Royal Tern	3	Western Gull	7
Western Grebe	2	<b>Grid Cell: 38</b>	
Western Gull	18	Brown Pelican	1
<b>Grid Cell: 35</b>		Western Gull	3
Black-bellied Plover	1	<b>Grid Cell: 39</b>	
Brant	75	Brant	11
Brown Pelican	3	Brown Pelican	6

Common Name	Total Observed
California Least Tern	2
Cormorant sp.	1
Double-crested Cormorant	9
Elegant Tern	2
Great Blue Heron	6
Great Egret	5
Gull sp.	14
Heermann's Gull	3
Marbled Godwit	5
Peep sp.	2
Sanderling	10
Say's Phoebe	1
Semipalmated Sandpiper	2
Snowy Egret	1
Surf Scoter	2
Western Grebe	4
Western Gull	22
<b>Grid Cell: 40</b>	
California Gull	8
Elegant Tern	11
Great Blue Heron	3
Heermann's Gull	2
California Least Tern	1
Parrot sp.	7
Rock Pigeon	1
Western Gull	18
<b>Grid Cell: 41</b>	
Black Phoebe	1
Bufflehead	1
California Gull	1
Eared Grebe	1
Gull sp.	1
Surf Scoter	2
Western Grebe	2
Western Gull	9
<b>Grid Cell: 42</b>	
Bufflehead	8
California Gull	1
Eared Grebe	1
Great Blue Heron	1
Gull sp.	1
Western Grebe	7
Western Gull	52
<b>Grid Cell: 43</b>	
Belted Kingfisher	2
Brown Pelican	1
Bufflehead	2
Caspian Tern	1
Double-crested Cormorant	4
Elegant Tern	2
Great Blue Heron	1
Mallard	2
Western Grebe	3
Western Gull	41

Common Name	Total Observed
<b>Grid Cell: 44</b>	
American Crow	3
Barn Swallow	2
Brandt's Cormorant	1
Great Blue Heron	1
Great Egret	1
Heermann's Gull	6
Surf Scoter	2
Western Grebe	2
Western Gull	29
<b>Grid Cell: 46</b>	
American Crow	1
Bufflehead	2
Eared Grebe	1
Great Blue Heron	19
Great Egret	2
Horned Grebe	1
Mallard	4
Western Grebe	6
Western Gull	8
<b>Grid Cell: 47</b>	
Long-billed Curlew	2
Northern Mockingbird	1
Spotted Sandpiper	2
Western Grebe	46
Western Gull	7
<b>Grid Cell: 48</b>	
American Crow	1
Cassin's Kingbird	1
Double-crested Cormorant	1
Forster's Tern	4
Great Blue Heron	3
Little Blue Heron	1
Long-billed Curlew	1
Mallard	13
Say's Phoebe	1
Snowy Egret	1
Spotted Sandpiper	1
Western Grebe	11
Western Gull	26
Whimbrel	1
Willet	1
<b>Grid Cell: 50</b>	
Black Phoebe	1
Brown Pelican	1
Bufflehead	2
California Gull	2
California Least Tern	3
Double-crested Cormorant	3
Eared Grebe	3
Great Blue Heron	3
Little Blue Heron	1
Mallard	6
Western Grebe	38
Western Gull	26



Common Name	Total Observed
<b>Grid Cell: 51</b>	
American Crow	1
Brown Pelican	1
Bufflehead	2
Double-crested Cormorant	1
Eared Grebe	2
Great Blue Heron	12
Mallard	1
Royal Tern	1
Surf Scoter	1
Western Grebe	24
Western Gull	32
<b>Grid Cell: 52</b>	
American Crow	1
Brandt's Cormorant	2
Brown Pelican	1
Caspian Tern	1
Common Loon	1
Double-crested Cormorant	5
Elegant Tern	3
Forster's Tern	1
Gull sp.	3
Rock Pigeon	2
Western Grebe	8
Western Gull	33
<b>Grid Cell: 53</b>	
American Crow	1
Double-crested Cormorant	2
Eared Grebe	1
Horned Grebe	1
Rock Pigeon	2
Western Grebe	48
Western Gull	18
<b>Grid Cell: 54</b>	
Brewer's Blackbird	6
Brown Pelican	1
Double-crested Cormorant	1
European Starling	2
Western Grebe	8
Western Gull	3
<b>Grid Cell: 55</b>	
Brandt's Cormorant	1
California Gull	1
Common Loon	1
Double-crested Cormorant	1
European Starling	1
Great Blue Heron	2
Great Egret	1
House Finch	1
House Sparrow	5
Rock Pigeon	4
Snowy Egret	1
Western Grebe	1
Western Gull	10

Common Name	Total Observed
<b>Grid Cell: 56</b>	
Barn Swallow	1
Brandt's Cormorant	4
Brewer's Blackbird	8
Brown Pelican	4
Bufflehead	13
Common Loon	2
Cormorant sp.	1
Double-crested Cormorant	2
Eared Grebe	5
Elegant Tern	3
European Starling	7
Forster's Tern	1
Great Blue Heron	4
Heermann's Gull	1
House Finch	2
House Sparrow	2
Mallard	2
Osprey	2
Pelagic Cormorant	1
Ring-billed Gull	3
Rock Pigeon	5
Royal Tern	3
Snowy Egret	3
Surf Scoter	20
Western Grebe	3
Western Gull	49
<b>Grid Cell: 57</b>	
Double-crested Cormorant	2
Western Gull	3
<b>Grid Cell: 58</b>	
Double-crested Cormorant	8
Western Gull	4
<b>Grid Cell: 59</b>	
Brandt's Cormorant	1
Brown Pelican	1
Elegant Tern	1
Western Gull	6
<b>Grid Cell: 60</b>	
American Kestrel	1
Black Phoebe	1
Brandt's Cormorant	3
Brant	28
Brown Pelican	4
Bufflehead	3
Caspian Tern	1
Double-crested Cormorant	7
Elegant Tern	7
Great Blue Heron	2
Great Egret	18
Heermann's Gull	1
Marbled Godwit	2
Snowy Egret	3
Surf Scoter	4
Western Gull	40

Common Name	Total Observed	Common Name	Total Observed
<b>Grid Cell: 61</b>			
Black Phoebe	2	Marbled Godwit	5
Black-crowned Night Heron	1	Rock Pigeon	10
Brewer's Blackbird	14	Semipalmated Plover	1
Brown Pelican	31	Snowy Egret	8
Bufflehead	29	Surfbird	5
Double-crested Cormorant	11	Western Grebe	1
Eared Grebe	1	Western Gull	159
Elegant Tern	4	Willet	6
European Starling	2	<b>Grid Cell: 66</b>	
Forster's Tern	1	American Crow	2
Great Blue Heron	3	Brewer's Blackbird	12
Heermann's Gull	30	Brown Pelican	6
House Sparrow	74	Bufflehead	17
California Least Tern	1	Caspian Tern	2
Red-breasted Merganser	5	Common Loon	1
Ring-billed Gull	1	Double-crested Cormorant	2
Rock Pigeon	2344	Eared Grebe	5
Royal Tern	2	Elegant Tern	3
Snowy Egret	1	European Starling	5
Surf Scoter	7	Forster's Tern	1
Western Gull	98	Great Egret	1
<b>Grid Cell: 62</b>		Heermann's Gull	12
Royal Tern	1	House Sparrow	67
Western Gull	3	Loon sp.	1
<b>Grid Cell: 63</b>		Mallard	2
Brandt's Cormorant	37	Rock Pigeon	192
Brant	10	Surf Scoter	1
Brown Pelican	5	Western Gull	73
Heermann's Gull	7	<b>Grid Cell: 67</b>	
Royal Tern	5	Brandt's Cormorant	6
Western Gull	6	Double-crested Cormorant	1
<b>Grid Cell: 64</b>		Western Gull	2
Brandt's Cormorant	1	<b>Grid Cell: 68</b>	
Elegant Tern	1	American Coot	1
Pacific Loon	1	Heermann's Gull	5
Snowy Egret	1	Western Gull	4
Surf Scoter	1	<b>Grid Cell: 69</b>	
Western Grebe	1	Black-bellied Plover	3
Western Gull	1	Brant	1
<b>Grid Cell: 65</b>		Brown Pelican	16
Black Turnstone	1	Double-crested Cormorant	7
Black-bellied Plover	2	Gull sp.	41
Brant	20	Heermann's Gull	2
Brown Pelican	28	Marbled Godwit	16
California Least Tern	6	Rock Pigeon	6
Caspian Tern	1	Surf Scoter	1
Double-crested Cormorant	6	Western Gull	10
Elegant Tern	2	<b>Grid Cell: 70</b>	
European Starling	12	Brandt's Cormorant	1
Great Blue Heron	6	Brant	11
Great Egret	2	Brown Pelican	57
Heermann's Gull	6	California Least Tern	1
House Finch	8	Caspian Tern	1
Mallard	2	Common Goldeneye	1
		Double-crested Cormorant	18

Common Name	Total Observed	Common Name	Total Observed
Elegant Tern	2	<b>Grid Cell: 75</b>	
Great Blue Heron	2	Black-bellied Plover	6
Heermann's Gull	1	Brown Pelican	8
Marbled Godwit	36	Bufflehead	1
Rock Pigeon	41	Double-crested Cormorant	10
Royal Tern	1	Eared Grebe	2
Ruddy Turnstone	1	Great Blue Heron	1
Sanderling	15	Marbled Godwit	18
Semipalmated Plover	1	Pacific Loon	1
Semipalmated Sandpiper	2	Rock Pigeon	10
Snowy Egret	3	Snowy Egret	1
Surf Scoter	5	Surf Scoter	3
Tern sp.	2	Western Gull	39
Western Gull	217	Willet	26
Willet	13	<b>Grid Cell: 76</b>	
<b>Grid Cell: 71</b>		American Crow	4
Belted Kingfisher	1	Barn Swallow	1
Brandt's Cormorant	1	Brandt's Cormorant	3
Brewer's Blackbird	6	Brown Pelican	30
Brown Pelican	5	Bufflehead	30
Bufflehead	13	Caspian Tern	1
California Gull	25	Cormorant sp.	1
Double-crested Cormorant	11	Double-crested Cormorant	6
Eared Grebe	2	Eared Grebe	8
Elegant Tern	2	Elegant Tern	9
European Starling	5	Great Egret	2
Forster's Tern	1	Heermann's Gull	72
Heermann's Gull	163	House Finch	1
House Sparrow	10	House Sparrow	14
Mallard	1	Parrot sp.	2
No species given	1	Red-breasted Merganser	3
Red-breasted Merganser	1	Ring-billed Gull	7
Ring-billed Gull	46	Rock Pigeon	132
Rock Pigeon	73	Royal Tern	2
Snowy Egret	1	Sandpiper sp.	1
Spotted Sandpiper	1	Snowy Egret	2
Western Grebe	2	Song Sparrow	1
Western Gull	596	Spotted Sandpiper	1
Willet	1	Western Grebe	9
<b>Grid Cell: 73</b>		Western Gull	338
Brandt's Cormorant	10	Western Sandpiper	2
Heermann's Gull	15	<b>Grid Cell: 78</b>	
Ring-billed Gull	11	Brandt's Cormorant	12
Surf Scoter	4	California Gull	1
Western Gull	36	Common Loon	1
<b>Grid Cell: 74</b>		Double-crested Cormorant	1
Brown Pelican	6	Heermann's Gull	3
Common Loon	1	Royal Tern	2
Double-crested Cormorant	4	Western Grebe	1
Heermann's Gull	2	Western Gull	23
Marbled Godwit	15	<b>Grid Cell: 79</b>	
Rock Pigeon	19	Brandt's Cormorant	1
Western Gull	86	Brown Pelican	1
Willet	2	Marbled Godwit	5
		Royal Tern	2

Common Name	Total Observed
Western Gull	10
<b>Grid Cell: 80</b>	
Black-bellied Plover	2
Double-crested Cormorant	1
Marbled Godwit	28
Sandpiper sp.	5
Snowy Egret	2
Western Grebe	5
Western Gull	28
Willet	2
<b>Grid Cell: 81</b>	
Cormorant sp.	1
Eared Grebe	2
Elegant Tern	1
Hooded Oriole	1
Mallard	4
Orange-Crowned Warbler	1
Osprey	1
Rock Pigeon	88
Western Grebe	23
Western Gull	29
<b>Grid Cell: 82</b>	
Brown Pelican	1
Bufflehead	12
Caspian Tern	3
Common Loon	1
Double-crested Cormorant	2
Eared Grebe	2
California Least Tern	1
Royal Tern	1
Snowy Egret	1
Western Grebe	13
Western Gull	11
<b>Grid Cell: 83</b>	
American Coot	2
American Crow	7
Anna's Hummingbird	1
Belted Kingfisher	1
Black Phoebe	1
Brewer's Blackbird	6
Brown Pelican	2
Double-crested Cormorant	1
Eared Grebe	1
Elegant Tern	2
European Starling	59
House Finch	7
House Sparrow	16
Long-billed Curlew	2
Mallard	4
Osprey	1
Parrot sp.	4
Ring-billed Gull	1
Rock Pigeon	78
Snowy Egret	4
Spotted Sandpiper	2

Common Name	Total Observed
Western Gull	31
Western Sandpiper	2
Yellow Warbler	1
<b>Grid Cell: 84</b>	
American Coot	5
American Crow	1
Barn Swallow	2
Black-crowned Night Heron	1
Brandt's Cormorant	2
Brown Pelican	8
Caspian Tern	2
Double-crested Cormorant	15
Eared Grebe	3
Elegant Tern	10
Great Blue Heron	7
Heermann's Gull	4
Mallard	6
Parrot sp.	2
Ring-billed Gull	3
Rock Pigeon	252
Royal Tern	7
Snowy Egret	23
Western Grebe	16
Western Gull	533
<b>Grid Cell: 86</b>	
Belted Kingfisher	1
Brown Pelican	1
Caspian Tern	9
Elegant Tern	3
European Starling	1
Great Blue Heron	1
House Sparrow	2
Rock Pigeon	82
Snowy Egret	1
Western Gull	17
<b>Grid Cell: 87</b>	
American Coot	4
American Crow	6
Black Phoebe	1
Brewer's Blackbird	8
Brown Pelican	3
Double-crested Cormorant	6
Elegant Tern	1
European Starling	27
Forster's Tern	3
Heermann's Gull	4
House Finch	11
House Sparrow	2
California Least Tern	1
Mallard	20
Mourning Dove	3
Rock Pigeon	44
Snowy Egret	11
Spotted Sandpiper	1
Western Grebe	3



Common Name	Total Observed
Western Gull	183
Willet	1
<b>Grid Cell: 88</b>	
American Coot	10
American Crow	23
Barn Swallow	3
Black Phoebe	1
Brandt's Cormorant	1
Brown Pelican	4
California Gull	1
Caspian Tern	4
Double-crested Cormorant	4
Eared Grebe	1
Elegant Tern	1
European Starling	4
Forster's Tern	1
Great Blue Heron	2
Great Egret	1
House Finch	2
House Sparrow	3
Mallard	25
Mourning Dove	4
Rock Pigeon	312
Snowy Egret	4
Western Grebe	11
Western Gull	151
<b>Grid Cell: 89</b>	
American Coot	16
Barn Swallow	1
Belted Kingfisher	2
Black Phoebe	1
Brown Pelican	3
Bufflehead	37
California Gull	8
California Least Tern	1
Double-crested Cormorant	2
Eared Grebe	3
Elegant Tern	5
European Starling	8
Forster's Tern	1
Heermann's Gull	4
House Finch	1
Lesser Scaup	1
Mallard	21
Red-breasted Merganser	1
Rock Pigeon	38
Snowy Egret	4
Spotted Sandpiper	2
Western Grebe	21
Western Gull	104
Willet	2
<b>Grid Cell: 90</b>	
Brandt's Cormorant	2
Brown Pelican	3
Caspian Tern	8

Common Name	Total Observed
Double-crested Cormorant	2
Eared Grebe	1
Elegant Tern	1
Great Blue Heron	1
Heermann's Gull	2
House Finch	2
Mallard	3
Rock Pigeon	130
Snowy Egret	1
Western Grebe	36
Western Gull	43
<b>Grid Cell: 92</b>	
Brandt's Cormorant	16
Heermann's Gull	1
Surf Scoter	12
<b>Grid Cell: 93</b>	
Cormorant sp.	2
Double-crested Cormorant	2
Heermann's Gull	2
Pacific Loon	1
Red-breasted Merganser	1
Surf Scoter	12
Western Gull	29
<b>Grid Cell: 94</b>	
Belted Kingfisher	1
Brown Pelican	1
Bufflehead	2
Double-crested Cormorant	1
Eared Grebe	1
European Starling	1
Great Blue Heron	1
Great Horned Owl	1
Mallard	2
Marbled Godwit	2
Rock Pigeon	2
Royal Tern	1
Snowy Egret	3
Western Grebe	1
Western Gull	45
Willet	1
<b>Grid Cell: 95</b>	
Brown Pelican	2
Bufflehead	2
California Gull	1
California Least Tern	1
Caspian Tern	1
Double-crested Cormorant	1
Rock Pigeon	2
Snowy Egret	4
Western Grebe	3
Western Gull	104
<b>Grid Cell: 96</b>	
California Least Tern	1
Caspian Tern	1
Osprey	1

Common Name	Total Observed
Snowy Egret	1
Western Gull	20
<b>Grid Cell: 98</b>	
Brandt's Cormorant	27
Brown Pelican	1
California Gull	1
Heermann's Gull	1
Western Gull	6
<b>Grid Cell: 99</b>	
Brandt's Cormorant	1
Brown Pelican	1
Bufflehead	1
California Least Tern	1
Elegant Tern	1
Snowy Egret	1
Spotted Sandpiper	1
Western Gull	13
<b>Grid Cell: 100</b>	
Brown Pelican	1
Bufflehead	5
California Least Tern	2
Double-crested Cormorant	1
Gull sp.	3
Rock Pigeon	4
Royal Tern	1
Spotted Sandpiper	1
Tern sp.	1
Western Gull	41
Willet	1
<b>Grid Cell: 101</b>	
American Coot	2
American Crow	2
Brown Pelican	7
Double-crested Cormorant	14
Great Blue Heron	1
Heermann's Gull	1
Little Blue Heron	1
Western Grebe	103
Western Gull	96
<b>Grid Cell: 102</b>	
Double-crested Cormorant	2
Great Blue Heron	2
Great Egret	1
Snowy Egret	1
Western Grebe	1
Western Gull	224
<b>Grid Cell: 103</b>	
American Crow	3
Black Phoebe	2
California Least Tern	4
Double-crested Cormorant	3
Eared Grebe	2
Great Blue Heron	2
Heermann's Gull	1
Little Blue Heron	1

Common Name	Total Observed
Long-billed Dowitcher	15
Mallard	2
Marbled Godwit	6
Mourning Dove	1
Osprey	1
Rock Pigeon	17
Snowy Egret	3
Spotted Sandpiper	1
Western Grebe	10
Western Gull	137
Willet	6
Yellow-rumped Warbler	1
<b>Grid Cell: 104</b>	
Bufflehead	1
Double-crested Cormorant	1
Eared Grebe	1
Long-billed Curlew	2
Long-billed Dowitcher	20
Marbled Godwit	17
Spotted Sandpiper	1
Western Grebe	1
Western Gull	22
Willet	4
<b>Grid Cell: 105</b>	
American Coot	2
American Crow	1
American Kestrel	1
Cassin's Kingbird	1
Cliff Swallow	5
Double-crested Cormorant	5
Forster's Tern	1
Great Blue Heron	1
Great Egret	1
Heermann's Gull	1
Lesser Scaup	3
Marbled Godwit	9
Rock Pigeon	3
Snowy Egret	3
Spotted Sandpiper	2
Western Grebe	9
Western Gull	33
Willet	8
<b>Grid Cell: 106</b>	
Black-bellied Plover	2
Double-crested Cormorant	1
Forster's Tern	1
Great Blue Heron	1
Great Egret	1
Little Blue Heron	1
Snowy Egret	1
Spotted Sandpiper	3
Western Gull	23
Willet	1
<b>Grid Cell: 107</b>	
American Crow	1

Common Name	Total Observed	Common Name	Total Observed
Black-bellied Plover	1	Common Loon	1
Bufflehead	2	Double-crested Cormorant	3
Eared Grebe	1	Eared Grebe	3
Heermann's Gull	1	Heermann's Gull	4
Little Blue Heron	3	House Finch	2
Long-billed Curlew	1	House Sparrow	2
Marbled Godwit	6	California Least Tern	2
Rock Pigeon	2	Pied-billed Grebe	1
Snowy Egret	2	Snowy Egret	1
Spotted Sandpiper	3	Western Grebe	4
Western Grebe	2	Western Gull	118
Western Gull	49	Willet	1
Willet	6	<b>Grid Cell: 111</b>	
<b>Grid Cell: 108</b>		Allen's Hummingbird	1
American Crow	1	Brown Pelican	2
Belted Kingfisher	1	Bufflehead	12
Black-bellied Plover	3	Eared Grebe	1
Brown Pelican	1	House Finch	4
Bufflehead	9	Red-tailed Hawk	1
Double-crested Cormorant	1	Western Grebe	17
Eared Grebe	1	Western Gull	36
Great Blue Heron	1	<b>Grid Cell: 112</b>	
Little Blue Heron	2	American Crow	1
Marbled Godwit	5	Bufflehead	2
Rock Pigeon	2	Double-crested Cormorant	3
Snowy Egret	2	European Starling	6
Spotted Sandpiper	2	Great Blue Heron	1
Western Grebe	1	House Finch	8
Western Gull	33	Mallard	5
Willet	2	Western Grebe	13
<b>Grid Cell: 109</b>		Western Gull	35
American Coot	26	Yellow-rumped Warbler	1
Brandt's Cormorant	1	<b>Grid Cell: 113</b>	
Brown Pelican	3	American Crow	3
Bufflehead	41	Anna's Hummingbird	2
Double-crested Cormorant	1	Brewer's Blackbird	1
Heermann's Gull	4	Double-crested Cormorant	1
Mallard	12	European Starling	3
Orange-Crowned Warbler	1	Great Blue Heron	1
Pied-billed Grebe	3	Green Heron	4
Red-breasted Merganser	1	House Finch	5
Ring-billed Gull	1	California Least Tern	4
Snowy Egret	3	Mallard	2
Western Grebe	14	Peregrine Falcon	1
Western Gull	54	Pied-billed Grebe	1
Willet	1	Ring-billed Gull	1
Yellow-rumped Warbler	2	Snowy Egret	1
<b>Grid Cell: 110</b>		Spotted Sandpiper	1
American Coot	2	Western Gull	35
American Crow	2	Yellow-rumped Warbler	2
Anna's Hummingbird	2	<b>Grid Cell: 114</b>	
Barn Swallow	4	American Coot	8
Black Phoebe	1	American Crow	11
Bufflehead	10	Anna's Hummingbird	2
Caspian Tern	2	Barn Swallow	3

Common Name	Total Observed
Belted Kingfisher	1
Black Phoebe	1
Brewer's Blackbird	1
Bufflehead	1
Double-crested Cormorant	5
Eared Grebe	5
Eurasian Collared Dove	2
European Starling	71
Great Blue Heron	10
House Finch	35
House Sparrow	44
California Least Tern	1
Mallard	108
Osprey	1
Pied-billed Grebe	4
Red-tailed Hawk	1
Rock Pigeon	60
Snowy Egret	5
Song Sparrow	1
Spotted Sandpiper	11
Western Grebe	7
Western Gull	272
Yellow-rumped Warbler	7
<b>Grid Cell: 115</b>	
Western Gull	9
<b>Grid Cell: 117</b>	
American Coot	5
American Crow	2
Belted Kingfisher	2
Brandt's Cormorant	3
Brown Pelican	6
Bufflehead	8
California Gull	1
Cliff Swallow	1
Common Loon	1
Double-crested Cormorant	11
Elegant Tern	1
European Starling	1
Forster's Tern	1
Great Egret	2
Heermann's Gull	8
Mallard	1
Rock Pigeon	7
Snowy Egret	6
Western Grebe	7
Western Gull	394
<b>Grid Cell: 118</b>	
Brandt's Cormorant	3
Brown Pelican	3
Common Loon	1
Great Blue Heron	1
Heermann's Gull	2
House Finch	1
Least Sandpiper	1
Mallard	6

Common Name	Total Observed
Rock Pigeon	4
Snowy Egret	1
Spotted Sandpiper	1
Western Gull	74
<b>Grid Cell: 119</b>	
Western Gull	1
<b>Grid Cell: 120</b>	
American Coot	4
Brandt's Cormorant	17
Brown Pelican	53
Bufflehead	7
California Gull	2
California Least Tern	1
Double-crested Cormorant	26
Eared Grebe	1
Elegant Tern	6
Forster's Tern	1
Great Blue Heron	1
Great Egret	2
Heermann's Gull	41
Mallard	3
Rock Pigeon	1
Snowy Egret	2
Western Grebe	46
Western Gull	521
<b>Grid Cell: 121</b>	
California Gull	1
Western Gull	3
<b>Grid Cell: 122</b>	
Brown Pelican	2
Forster's Tern	2
Surf Scoter	41
Western Gull	21
<b>Grid Cell: 124</b>	
Brown Pelican	1
Double-crested Cormorant	1
Red-breasted Merganser	1
Rock Pigeon	3
Western Grebe	1
Western Gull	66
<b>Grid Cell: 125</b>	
Belted Kingfisher	1
Black-bellied Plover	1
Brandt's Cormorant	1
Brant	4
Brown Pelican	3
Bufflehead	8
California Least Tern	1
Common Loon	1
Double-crested Cormorant	1
Eared Grebe	4
Elegant Tern	1
Great Blue Heron	2
Marbled Godwit	1
Osprey	1



Common Name	Total Observed
Pacific Loon	2
Red-breasted Merganser	1
Rock Pigeon	6
Say's Phoebe	1
Snowy Egret	1
Western Gull	160
<b>Grid Cell: 126</b>	
Caspian Tern	1
Common Merganser	1
Double-crested Cormorant	2
Elegant Tern	3
Marbled Godwit	7
Rock Pigeon	5
Snowy Egret	1
Western Grebe	1
Western Gull	36
Willet	4
<b>Grid Cell: 127</b>	
Brandt's Cormorant	17
Brant	4
Bufflehead	2
Common Loon	1
Snowy Egret	1
Western Gull	29
<b>Grid Cell: 128</b>	
Western Gull	2
<b>Grid Cell: 129</b>	
Brandt's Cormorant	7
Surf Scoter	3
Western Grebe	1
<b>Grid Cell: 130</b>	
Cormorant sp.	6
Surf Scoter	1
Western Gull	1
<b>Grid Cell: 131</b>	
Brandt's Cormorant	1
Brown Pelican	1
Bufflehead	1
Heermann's Gull	4
Pied-billed Grebe	1
Surf Scoter	7
Western Gull	4
<b>Grid Cell: 133</b>	
Anna's Hummingbird	1
Barn Swallow	2
Belted Kingfisher	1
Black Phoebe	1
Brown Pelican	3
Double-crested Cormorant	3
Eared Grebe	1
Elegant Tern	1
Surf Scoter	26
Western Grebe	2
Western Gull	18

Common Name	Total Observed
<b>Grid Cell: 134</b>	
American Crow	1
Common Loon	1
Double-crested Cormorant	2
Eared Grebe	1
Pied-billed Grebe	1
Surf Scoter	61
Western Gull	100
<b>Grid Cell: 139</b>	
Brandt's Cormorant	160
Brown Pelican	1
Heermann's Gull	1
Surf Scoter	1
Western Gull	1
<b>Grid Cell: 140</b>	
Brown Pelican	2
Bufflehead	8
Common Loon	1
Double-crested Cormorant	1
Royal Tern	1
Western Gull	27
<b>Grid Cell: 141</b>	
Belted Kingfisher	1
Brandt's Cormorant	175
Brant	2
Brown Pelican	9
Common Merganser	1
Double-crested Cormorant	1
Forster's Tern	1
Great Blue Heron	3
Great Egret	4
Killdeer	3
Snowy Egret	1
Western Gull	37
<b>Grid Cell: 142</b>	
Bufflehead	20
Eared Grebe	1
Western Gull	28
Willet	1
<b>Grid Cell: 143</b>	
Brown Pelican	1
Bufflehead	8
California Least Tern	3
Double-crested Cormorant	3
Eared Grebe	2
Great Blue Heron	1
Great Egret	1
Gull sp.	2
Killdeer	2
Snowy Egret	2
Surf Scoter	1
Western Gull	7
<b>Grid Cell: 144</b>	
Brown Pelican	1
Western Gull	2

Common Name	Total Observed
<b>Grid Cell: 149</b>	
American Crow	1
Double-crested Cormorant	1
Surf Scoter	24
Western Grebe	8
Western Gull	60
Willet	1
<b>Grid Cell: 150</b>	
Brandt's Cormorant	1
Brown Pelican	2
Bufflehead	3
Double-crested Cormorant	2
California Least Tern	2
Mallard	2
Snowy Egret	1
Surf Scoter	24
Western Gull	12
<b>Grid Cell: 152</b>	
Brown Pelican	1
Surf Scoter	15
Western Gull	2
<b>Grid Cell: 153</b>	
Brandt's Cormorant	4
Brown Pelican	1
Common Loon	3
Heermann's Gull	5
Surf Scoter	36
Western Gull	5
<b>Grid Cell: 154</b>	
Surf Scoter	4
Western Gull	1
<b>Grid Cell: 156</b>	
California Gull	1
Double-crested Cormorant	2
Elegant Tern	3
Heermann's Gull	44
Mallard	2
Royal Tern	1
Western Gull	32
<b>Grid Cell: 157</b>	
Heermann's Gull	51
Herring Gull	1
Killdeer	3
Western Gull	57
<b>Grid Cell: 158</b>	
Brown Pelican	2
Caspian Tern	1
Double-crested Cormorant	1
Great Blue Heron	1
Heermann's Gull	15
Snowy Egret	1
Western Grebe	2
Western Gull	27
<b>Grid Cell: 159</b>	
Black-bellied Plover	1

Common Name	Total Observed
Brandt's Cormorant	1
Brown Pelican	1
Bufflehead	1
Double-crested Cormorant	1
Great Blue Heron	1
Heermann's Gull	2
Western Grebe	1
Western Gull	12
<b>Grid Cell: 163</b>	
Common Loon	1
Osprey	1
Surf Scoter	6
Western Gull	1
<b>Grid Cell: 164</b>	
Bufflehead	3
California Least Tern	2
Heermann's Gull	26
Western Gull	12
<b>Grid Cell: 165</b>	
Brandt's Cormorant	1
Brown Pelican	1
Bufflehead	2
Common Loon	1
Double-crested Cormorant	1
Great Blue Heron	2
Heermann's Gull	6
Western Gull	41
Willet	3
<b>Grid Cell: 166</b>	
Brown Pelican	5
Western Gull	1
<b>Grid Cell: 168</b>	
California Gull	1
Western Gull	5
<b>Grid Cell: 169</b>	
Grebe sp.	1
Heermann's Gull	1
Surf Scoter	4
Western Gull	7
<b>Grid Cell: 171</b>	
American Crow	1
Barn Swallow	1
Black Phoebe	1
Brown Pelican	1
Surf Scoter	32
Western Gull	11
<b>Grid Cell: 172</b>	
American Crow	4
Brandt's Cormorant	1
Eared Grebe	1
European Starling	3
Killdeer	1
Ring-billed Gull	1
Surf Scoter	3
Western Gull	7

Common Name	Total Observed
<b>Grid Cell: 173</b>	
Elegant Tern	1
<b>Grid Cell: 174</b>	
Belted Kingfisher	1
Brewer's Blackbird	1
Eared Grebe	2
Pacific Loon	1
Rock Pigeon	19
Tern sp.	1
Western Gull	20
<b>Grid Cell: 175</b>	
European Starling	2
House Sparrow	1
Western Gull	1
<b>Grid Cell: 177</b>	
Western Gull	1
<b>Grid Cell: 178</b>	
Double-crested Cormorant	23
Western Gull	8
<b>Grid Cell: 179</b>	
Brandt's Cormorant	5
Brown Pelican	7
Cormorant sp.	200
Double-crested Cormorant	2
Eared Grebe	1
Elegant Tern	10
Forster's Tern	1
Great Blue Heron	1
Heermann's Gull	10
Ruddy Turnstone	1
Snowy Egret	1
Surf Scoter	1
Tern sp.	1
Western Gull	219
<b>Grid Cell: 180</b>	
Belted Kingfisher	1
California Least Tern	1
Common Loon	1
Great Blue Heron	1
Western Gull	22
<b>Grid Cell: 181</b>	
California Least Tern	2
Western Gull	7
<b>Grid Cell: 182</b>	
Brown Pelican	1
Caspian Tern	1
Double-crested Cormorant	2
Elegant Tern	1
Heermann's Gull	1
Western Gull	65
<b>Grid Cell: 183</b>	
Brown Pelican	2
Great Blue Heron	1
Heermann's Gull	2
Western Gull	103

Common Name	Total Observed
<b>Grid Cell: 184</b>	
Surf Scoter	20
<b>Grid Cell: 186</b>	
Belted Kingfisher	1
Brown Pelican	5
Bufflehead	10
California Gull	1
California Least Tern	1
Double-crested Cormorant	9
Great Blue Heron	1
Snowy Egret	1
Western Grebe	2
Western Gull	26
<b>Grid Cell: 187</b>	
Brown Pelican	1
Bufflehead	1
Double-crested Cormorant	1
Eared Grebe	1
Great Blue Heron	1
California Least Tern	5
Marbled Godwit	1
Western Gull	57
Willet	1
<b>Grid Cell: 188</b>	
Brandt's Cormorant	1
Brant	2
Brown Pelican	2
Bufflehead	18
California Gull	1
Double-crested Cormorant	8
Eurasian Collared Dove	4
Forster's Tern	1
Great Blue Heron	2
Great Egret	1
Pied-billed Grebe	1
Rock Pigeon	11
Ruddy Duck	3
Snowy Egret	1
Surf Scoter	4
Western Grebe	1
Western Gull	49
Willet	3
<b>Grid Cell: 189</b>	
American Crow	7
Anna's Hummingbird	2
Barn Swallow	4
Belted Kingfisher	2
Black Phoebe	2
Brandt's Cormorant	2
Brewer's Blackbird	2
Brown Pelican	3
Bufflehead	50
California Gull	1
California Least Tern	15
Double-crested Cormorant	11

Common Name	Total Observed	Common Name	Total Observed
Eared Grebe	3	Surf Scoter	11
European Starling	10	Western Grebe	1
Great Blue Heron	2	Western Gull	2
Green Heron	1	<b>Grid Cell: 198</b>	
Heermann's Gull	18	Brown Pelican	2
House Finch	3	Double-crested Cormorant	1
House Sparrow	8	Heermann's Gull	3
Killdeer	1	Western Gull	61
Mallard	4	<b>Grid Cell: 199</b>	
Mourning Dove	1	Brandt's Cormorant	1
Red-breasted Merganser	1	Brown Pelican	1
Ring-billed Gull	4	California Least Tern	3
Rock Pigeon	143	Royal Tern	1
Royal Tern	1	Western Gull	38
Snowy Egret	1	<b>Grid Cell: 208</b>	
Spotted Sandpiper	3	American Coot	4
Surf Scoter	14	American Crow	9
Western Grebe	2	Anna's Hummingbird	2
Western Gull	127	Barn Swallow	1
<b>Grid Cell: 191</b>		Black-crowned Night Heron	5
Brown Pelican	1	Brandt's Cormorant	2
Bufflehead	5	Brewer's Blackbird	10
California Least Tern	1	Brown Pelican	4
Pied-billed Grebe	1	California Gull	3
Rock Pigeon	6	Caspian Tern	1
Surf Scoter	2	Cliff Swallow	2
Western Gull	5	Double-crested Cormorant	1
<b>Grid Cell: 193</b>		European Starling	20
American Crow	3	Great Blue Heron	4
Black-crowned Night Heron	1	Heermann's Gull	55
Brandt's Cormorant	1	Herring Gull	3
California Gull	1	House Finch	15
Double-crested Cormorant	2	House Sparrow	107
Eared Grebe	2	California Least Tern	3
European Starling	8	Mallard	5
Great Blue Heron	3	Mourning Dove	2
Heermann's Gull	57	Ring-billed Gull	60
Herring Gull	6	Rock Pigeon	288
House Finch	11	Snowy Egret	3
Mourning Dove	2	Surf Scoter	5
Ring-billed Gull	10	Western Grebe	7
Rock Pigeon	255	Western Gull	402
Surf Scoter	26	<b>Grid Cell: 220</b>	
Western Grebe	2	American Coot	5
Western Gull	201	American Crow	5
<b>Grid Cell: 196</b>		Belted Kingfisher	1
Brown Pelican	5	Black Phoebe	2
Double-crested Cormorant	1	Black-crowned Night Heron	7
Heermann's Gull	2	Brandt's Cormorant	4
Surf Scoter	9	Brown Pelican	26
Western Gull	9	Double-crested Cormorant	22
<b>Grid Cell: 197</b>		European Starling	2
Brandt's Cormorant	1	Forster's Tern	1
California Gull	6	Great Blue Heron	3
Elegant Tern	1	Heermann's Gull	68



Common Name	Total Observed	Common Name	Total Observed
Herring Gull	13	California Least Tern	2
House Finch	1	Double-crested Cormorant	5
House Sparrow	61	Eared Grebe	7
California Least Tern	1	European Starling	55
Mallard	8	Great Blue Heron	8
Northern Mockingbird	2	Green Heron	2
Ring-billed Gull	24	Heermann's Gull	3
Rock Pigeon	121	House Finch	3
Snowy Egret	21	House Sparrow	62
Western Gull	691	Mallard	4
Yellow-rumped Warbler	1	Mourning Dove	4
<b>Grid Cell: 227</b>		Northern Mockingbird	11
American Crow	6	Pied-billed Grebe	5
Barn Swallow	1	Ring-billed Gull	5
Black-crowned Night Heron	1	Rock Pigeon	200
Brown Pelican	1	Royal Tern	1
Cormorant sp.	1	Say's Phoebe	2
European Starling	16	Snowy Egret	2
Heermann's Gull	5	Spotted Sandpiper	1
Herring Gull	3	Surf Scoter	3
House Finch	7	Western Grebe	1
House Sparrow	66	Western Gull	173
California Least Tern	1	Willet	12
Mourning Dove	1	Yellow-rumped Warbler	5
Ring-billed Gull	1	<b>Grid Cell: 233</b>	
Rock Pigeon	155	American Coot	8
Spotted Sandpiper	1	American Crow	7
Surf Scoter	5	Black Phoebe	2
Western Gull	118	Brant	1
<b>Grid Cell: 231</b>		Brewer's Blackbird	1
American Crow	2	Brown Pelican	2
Black Phoebe	1	California Gull	2
Brandt's Cormorant	1	Cormorant sp.	1
Brown Pelican	3	Eared Grebe	5
California Gull	1	European Starling	3
Double-crested Cormorant	2	Heermann's Gull	3
Eared Grebe	1	Herring Gull	1
Heermann's Gull	9	House Sparrow	15
House Sparrow	15	Mallard	3
Northern Mockingbird	2	Ring-billed Gull	5
Ring-billed Gull	5	Rock Pigeon	74
Rock Pigeon	92	Snowy Egret	1
Surf Scoter	14	Surf Scoter	7
Western Gull	29	Western Gull	47
Yellow-rumped Warbler	1	<b>Grid Cell: 240</b>	
<b>Grid Cell: 232</b>		American Coot	8
American Coot	175	American Crow	5
American Crow	19	Belted Kingfisher	1
Anna's Hummingbird	2	Black Phoebe	1
Barn Swallow	2	Black-crowned Night Heron	3
Belted Kingfisher	1	Brewer's Blackbird	1
Black Phoebe	2	Brown Pelican	7
Brandt's Cormorant	2	Double-crested Cormorant	1
Brewer's Blackbird	15	European Starling	31
California Gull	2	Forster's Tern	2

Common Name	Total Observed	Common Name	Total Observed
House Sparrow	5	House Sparrow	9
Ring-billed Gull	3	Killdeer	2
Rock Pigeon	125	Least Sandpiper	1
Royal Tern	3	California Least Tern	1
Surf Scoter	25	Mallard	3
Western Gull	122	Pied-billed Grebe	8
<b>Grid Cell: 241</b>		Ring-billed Gull	1
American Coot	18	Rock Pigeon	23
American Crow	9	Sandpiper sp.	12
Black Phoebe	1	Snowy Egret	5
Black-crowned Night Heron	5	Spotted Sandpiper	1
Brandt's Cormorant	1	Surf Scoter	20
Brant	1	Western Grebe	1
Brewer's Blackbird	30	Western Gull	217
Brown Pelican	9	Willet	2
Cassin's Kingbird	1	Yellow-rumped Warbler	2
Double-crested Cormorant	7	<b>Grid Cell: 471</b>	
Elegant Tern	3	American Wigeon	15
European Starling	17	Barn Owl	2
Forster's Tern	2	Black-bellied Plover	4
Great Blue Heron	1	Brandt's Cormorant	3
Green Heron	1	Brant	620
Heermann's Gull	8	Brown Pelican	16
House Finch	2	Double-crested Cormorant	2
House Sparrow	12	Dowitcher sp.	53
California Least Tern	1	Elegant Tern	21
Mallard	4	Forster's Tern	5
Northern Mockingbird	3	Horned Grebe	4
Osprey	1	Lesser Scaup	8
Pied-billed Grebe	2	Long-billed Curlew	4
Ring-billed Gull	6	Mallard	11
Rock Pigeon	142	Marbled Godwit	32
Snowy Egret	1	Mourning Dove	5
Spotted Sandpiper	2	Osprey	1
Surf Scoter	53	Red Knot	6
Western Grebe	2	Red-breasted Merganser	2
Western Gull	216	Ring-billed Gull	52
<b>Grid Cell: 316</b>		Royal Tern	3
American Crow	1	Semipalmated Plover	2
Anna's Hummingbird	2	Snowy Egret	2
Barn Swallow	11	Surf Scoter	85
Belted Kingfisher	2	Western Gull	97
Brandt's Cormorant	1	Western Sandpiper	336
Brewer's Blackbird	3	Whimbrel	1
Brown Pelican	4	Willet	18
Bufflehead	2	<b>Grid Cell: 509</b>	
Double-crested Cormorant	8	American Crow	2
Eared Grebe	3	American Pipit	1
Elegant Tern	1	American Wigeon	1
Eurasian Collared Dove	1	California Gull	1
European Starling	12	California Least Tern	1
Forster's Tern	2	Double-crested Cormorant	1
Great Blue Heron	18	Eared Grebe	1
Heermann's Gull	2	Great Egret	1
House Finch	26	Mallard	2

Common Name	Total Observed
Osprey	1
Parrot sp.	6
Pied-billed Grebe	5
Snowy Egret	3
Western Grebe	20
Western Gull	16
<b>Grid Cell: 510</b>	
Belted Kingfisher	1
Great Egret	1
Snowy Egret	1
Western Gull	13
<b>Grid Cell: 511</b>	
American Coot	6
American Crow	1
Barn Swallow	5
Black Phoebe	1
Black-bellied Plover	1
California Gull	6
California Least Tern	2
Cliff Swallow	2
Double-crested Cormorant	5
Eared Grebe	2
Elegant Tern	1
Great Blue Heron	2
Great Egret	1
Gull sp.	1
Heermann's Gull	1
Little Blue Heron	1
Long-billed Curlew	1
Marbled Godwit	9
Pied-billed Grebe	2
Rock Pigeon	6
Snowy Egret	5
Western Snowy Plover	3
Spotted Sandpiper	1
Western Grebe	99
Western Gull	250
Willet	9
<b>Grid Cell: 101/102</b>	
American Coot	2
Brandt's Cormorant	4
Brown Pelican	3
Double-crested Cormorant	2
Herring Gull	2
Snowy Egret	1
Western Gull	163
<b>Grid Cell: 103/104</b>	
Bufflehead	3
Eared Grebe	2
Lesser Scaup	9
Western Gull	9
<b>Grid Cell: 105/509</b>	
Belted Kingfisher	2
Western Grebe	2
Western Gull	9

Common Name	Total Observed
<b>Grid Cell: 106/510</b>	
Eared Grebe	1
Osprey	1
Rock Pigeon	1
Western Gull	10
<b>Grid Cell: 107/108</b>	
Belted Kingfisher	1
Bufflehead	7
Eared Grebe	1
Heermann's Gull Or Herring Gull	1
Lesser Scaup	10
Long-billed Dowitcher	3
Mallard	2
Rock Pigeon	2
Western Grebe	2
Western Gull	38
Willet	12
<b>Grid Cell: 186/188</b>	
Western Gull	2
<b>Grid Cell: 89/95</b>	
Bufflehead	11
Rock Pigeon	6
Western Gull	3
<b>Grid Cell: S10A</b>	
American Avocet	6
American Crow	22
American Kestrel	4
American Pipit	3
American Wigeon	172
Anna's Hummingbird	8
Belding's Savannah Sparrow	62
Belted Kingfisher	2
Black Phoebe	4
Black Skimmer	8
Black-bellied Plover	12
Black-crowned Night Heron	1
Black-necked Stilt	7
California Gull	25
Caspian Tern	1
Cliff Swallow	46
Common Raven	2
Common Yellowthroat	1
Cooper's Hawk	4
Crow sp.	1
Double-crested Cormorant	18
Dowitcher sp.	251
Elegant Tern	118
European Starling	14
Forster's Tern	12
Great Blue Heron	2
Great Egret	16
Greater Yellowlegs	51
Gull sp.	12
Gull-billed Tern	3
Herring Gull	1

Common Name	Total Observed	Common Name	Total Observed
Hooded Oriole	2	Crow sp.	1
Horned Lark	1	Double-crested Cormorant	8
House Finch	12	Dowitcher sp.	80
Killdeer	64	Dunlin	21
Least Sandpiper	421	Eared Grebe	4
Little Blue Heron	1	Elegant Tern	392
Long-billed Curlew	8	European Starling	2
Long-billed Dowitcher	4	Forster's Tern	33
Mallard	2	Great Blue Heron	1
Marbled Godwit	400	Great Egret	22
Marsh Wren	1	Greater Yellowlegs	88
Merlin	1	Green-winged Teal	76
Northern Harrier	1	Gull-billed Tern	8
Northern Pintail	136	Horned Grebe	20
Northern Shoveler	16	Horned Lark	1
Pipit	1	House Finch	4
Red Knot	1	House Sparrow	17
Red-breasted Merganser	8	Killdeer	20
Reddish Egret	4	Least Sandpiper	360
Red-tailed Hawk	2	California Least Tern	13
Ring-billed Gull	3	Lesser Scaup	1
Rock Pigeon	5	Little Blue Heron	3
Savannah Sparrow	12	Long-billed Curlew	11
Savannah Sparrow sp. migrant	7	Mallard	3
Say's Phoebe	8	Marbled Godwit	143
Say's Phoebe?	1	Mourning Dove	1
Semipalmated Plover	245	Northern Harrier	1
Snowy Egret	51	Northern Pintail	38
Stilt	12	Northern Shoveler	103
Tree Swallow	5	Osprey	3
Unknown code (BSage Sparrow)	24	Peep sp.	176
Western Gull	5	Peregrine Falcon	1
Western Meadowlark	4	Red Knot	4
Western Sandpiper	227	Red-breasted Merganser	9
Whimbrel	9	Reddish Egret	1
White-crowned Sparrow	2	Red-tailed Hawk	2
Willet	381	Ring-billed Gull	7
Yellow-rumped Warbler	1	Rock Pigeon	1
<b>Grid Cell: SW10</b>		Royal Tern	9
American Avocet	18	Ruddy Duck	130
American Crow	4	Say's Phoebe	2
American Pipit	19	Semipalmated Plover	29
American Wigeon	400	Short-billed Dowitcher	2
Barn Swallow	3	Snowy Egret	48
Belding's Savannah Sparrow	203	Spotted Sandpiper	1
Belted Kingfisher	2	Stilt	1
Black Skimmer	9	Turkey Vulture	11
Black-bellied Plover	148	Western Grebe	19
Black-necked Stilt	64	Western Gull	10
Bonaparte's Gull	2	Western Sandpiper	961
Brant	7	Whimbrel	2
California Gull	7	Willet	217
Canada Goose	4		
Caspian Tern	8		
Cliff Swallow	91		



## F.2 Species Lists for North-Central Bay Grids

Common Name	Total Observed
<b>Grid Cell: 189</b>	
American Crow	7
Anna's Hummingbird	2
Barn Swallow	4
Belted Kingfisher	2
Black Phoebe	2
Brandt's Cormorant	2
Brewer's Blackbird	2
Brown Pelican	3
Bufflehead	50
California Gull	1
California Least Tern	15
Double-crested Cormorant	11
Eared Grebe	3
European Starling	10
Great Blue Heron	2
Green Heron	1
Heermann's Gull	18
House Finch	3
House Sparrow	8
Killdeer	1
Mallard	4
Mourning Dove	1
Red-breasted Merganser	1
Ring-billed Gull	4
Rock Pigeon	143
Royal Tern	1
Snowy Egret	1
Spotted Sandpiper	3
Surf Scoter	14
Western Grebe	2
Western Gull	127
<b>Grid Cell: 190</b>	
Brown Pelican	3
Bufflehead	43
California Least Tern	6
Double-crested Cormorant	2
Eared Grebe	5
Great Blue Heron	2
Heermann's Gull	1
Snowy Egret	1
Surf Scoter	28
Western Gull	61
<b>Grid Cell: 191</b>	
Brown Pelican	1
Bufflehead	5
California Least Tern	1
Pied-billed Grebe	1
Rock Pigeon	6
Surf Scoter	2
Western Gull	5

Common Name	Total Observed
<b>Grid Cell: 193</b>	
American Crow	3
Black-crowned Night Heron	1
Brandt's Cormorant	1
California Gull	1
Double-crested Cormorant	2
Eared Grebe	2
European Starling	8
Great Blue Heron	3
Heermann's Gull	57
Herring Gull	6
House Finch	11
Mourning Dove	2
Ring-billed Gull	10
Rock Pigeon	255
Surf Scoter	26
Western Grebe	2
Western Gull	201
<b>Grid Cell: 195</b>	
California Gull	1
Heermann's Gull	1
Western Gull	9
<b>Grid Cell: 203</b>	
Elegant Tern	3
Heermann's Gull	1
Western Gull	21
<b>Grid Cell: 204</b>	
Brandt's Cormorant	3
Brown Pelican	2
Double-crested Cormorant	2
Elegant Tern	25
Ring-billed Gull	1
Western Gull	215
<b>Grid Cell: 205</b>	
Brandt's Cormorant	1
Brown Pelican	1
Double-crested Cormorant	1
Heermann's Gull	1
Western Gull	19
<b>Grid Cell: 207</b>	
Brown Pelican	1
Heermann's Gull	3
Surf Scoter	14
Western Gull	11
<b>Grid Cell: 208</b>	
American Coot	4
American Crow	9
Anna's Hummingbird	2
Barn Swallow	1
Black-crowned Night Heron	5
Brandt's Cormorant	2
Brewer's Blackbird	10
Brown Pelican	4
California Gull	3
Caspian Tern	1

Common Name	Total Observed
Cliff Swallow	2
Double-crested Cormorant	1
European Starling	20
Great Blue Heron	4
Heermann's Gull	55
Herring Gull	3
House Finch	15
House Sparrow	107
California Least Tern	3
Mallard	5
Mourning Dove	2
Ring-billed Gull	60
Rock Pigeon	288
Snowy Egret	3
Surf Scoter	5
Western Grebe	7
Western Gull	402
<b>Grid Cell: 210</b>	
Brown Pelican	1
California Gull	1
Surf Scoter	13
Western Gull	3
<b>Grid Cell: 213</b>	
Brandt's Cormorant	1
Brown Pelican	2
Double-crested Cormorant	3
Heermann's Gull	1
Ring-billed Gull	1
Western Gull	31
<b>Grid Cell: 214</b>	
Brandt's Cormorant	11
Brown Pelican	7
California Gull	2
Double-crested Cormorant	2
Elegant Tern	18
Great Blue Heron	1
Ring-billed Gull	1
Tern sp.	1
Western Gull	196
<b>Grid Cell: 215</b>	
Brandt's Cormorant	7
Brown Pelican	10
Double-crested Cormorant	4
Western Gull	23
<b>Grid Cell: 216</b>	
Brown Pelican	2
Double-crested Cormorant	6
Ring-billed Gull	3
Western Gull	27
<b>Grid Cell: 217</b>	
Brandt's Cormorant	1
California Gull	2
Double-crested Cormorant	2
Forster's Tern	8
Ring-billed Gull	7

Common Name	Total Observed
Royal Tern	1
Western Grebe	15
Western Gull	26
<b>Grid Cell: 219</b>	
House Sparrow	5
Western Gull	6
<b>Grid Cell: 220</b>	
American Coot	5
American Crow	5
Belted Kingfisher	1
Black Phoebe	2
Black-crowned Night Heron	7
Brandt's Cormorant	4
Brown Pelican	26
Double-crested Cormorant	22
European Starling	2
Forster's Tern	1
Great Blue Heron	3
Heermann's Gull	68
Herring Gull	13
House Finch	1
House Sparrow	61
California Least Tern	1
Mallard	8
Northern Mockingbird	2
Ring-billed Gull	24
Rock Pigeon	121
Snowy Egret	21
Western Gull	691
Yellow-rumped Warbler	1
<b>Grid Cell: 222</b>	
Heermann's Gull	2
Royal Tern	2
Western Gull	20
<b>Grid Cell: 223</b>	
Anna's Hummingbird	2
Brandt's Cormorant	3
Brown Pelican	19
Cassin's Kingbird	1
Double-crested Cormorant	31
Eared Grebe	2
Forster's Tern	10
Heermann's Gull	7
House Finch	2
Ring-billed Gull	5
Surf Scoter	41
Western Gull	129
<b>Grid Cell: 224</b>	
American Coot	8
American Crow	4
Anna's Hummingbird	1
Brown Pelican	4
Bufflehead	59
Caspian Tern	2
Double-crested Cormorant	11

Common Name	Total Observed	Common Name	Total Observed
Eared Grebe	4	Heermann's Gull	7
Forster's Tern	2	House Finch	6
Great Blue Heron	2	House Sparrow	4
Heermann's Gull	4	Lesser Goldfinch	2
California Least Tern	1	Marbled Godwit	84
Marbled Godwit	55	Northern Mockingbird	3
Mourning Dove	2	Osprey	1
Osprey	1	Ring-billed Gull	5
Ring-billed Gull	5	Royal Tern	1
Royal Tern	1	Surf Scoter	95
Snowy Egret	1	Unknown code (URWA)	2
Spotted Sandpiper	1	Western Grebe	2
Surf Scoter	36	Western Gull	40
Western Grebe	1	Willet	24
Western Gull	38	<b>Grid Cell: 231</b>	
Willet	21	American Crow	2
<b>Grid Cell: 225</b>		Black Phoebe	1
Brown Pelican	3	Brandt's Cormorant	1
California Gull	2	Brown Pelican	3
Heermann's Gull	1	California Gull	1
Surf Scoter	14	Double-crested Cormorant	2
Western Grebe	1	Eared Grebe	1
<b>Grid Cell: 227</b>		Heermann's Gull	9
American Crow	6	House Sparrow	15
Barn Swallow	1	Northern Mockingbird	2
Black-crowned Night Heron	1	Ring-billed Gull	5
Brown Pelican	1	Rock Pigeon	92
Cormorant sp.	1	Surf Scoter	14
European Starling	16	Western Gull	29
Heermann's Gull	5	Yellow-rumped Warbler	1
Herring Gull	3	<b>Grid Cell: 232</b>	
House Finch	7	American Coot	175
House Sparrow	66	American Crow	19
California Least Tern	1	Anna's Hummingbird	2
Mourning Dove	1	Barn Swallow	2
Ring-billed Gull	1	Belted Kingfisher	1
Rock Pigeon	155	Black Phoebe	2
Spotted Sandpiper	1	Brandt's Cormorant	2
Surf Scoter	5	Brewer's Blackbird	15
Western Gull	118	California Gull	2
<b>Grid Cell: 228</b>		California Least Tern	2
American Coot	6	Double-crested Cormorant	5
American Crow	8	Eared Grebe	7
Anna's Hummingbird	6	European Starling	55
Black-bellied Plover	1	Great Blue Heron	8
Brown Pelican	7	Green Heron	2
Bufflehead	4	Heermann's Gull	3
Bushtit	8	House Finch	3
California Gull	2	House Sparrow	62
Caspian Tern	1	Mallard	4
Cassin's Kingbird	2	Mourning Dove	4
Double-crested Cormorant	7	Northern Mockingbird	11
Eared Grebe	1	Pied-billed Grebe	5
Forster's Tern	1	Ring-billed Gull	5
Great Blue Heron	3	Rock Pigeon	200

Common Name	Total Observed	Common Name	Total Observed
Royal Tern	1	Northern Mockingbird	4
Say's Phoebe	2	Orange-Crowned Warbler	2
Snowy Egret	2	Ring-billed Gull	34
Spotted Sandpiper	1	Rock Pigeon	6
Surf Scoter	3	Royal Tern	1
Western Grebe	1	Sanderling	6
Western Gull	173	Snowy Egret	8
Willet	12	Song Sparrow	7
Yellow-rumped Warbler	5	Spotted Sandpiper	1
<b>Grid Cell: 233</b>		Surf Scoter	73
American Coot	8	Swallow sp.	1
American Crow	7	Western Gull	89
Black Phoebe	2	Willet	105
Brant	1	<b>Grid Cell: 237</b>	
Brewer's Blackbird	1	Allen's Hummingbird	2
Brown Pelican	2	American Coot	73
California Gull	2	American Crow	20
Cormorant sp.	1	Anna's Hummingbird	12
Eared Grebe	5	Audubon's Warbler (Yellow-Rumped)	26
European Starling	3	Black Phoebe	4
Heermann's Gull	3	Black-bellied Plover	10
Herring Gull	1	Brown Pelican	2
House Sparrow	15	Bufflehead	10
Mallard	3	California Gull	1
Ring-billed Gull	5	Caspian Tern	1
Rock Pigeon	74	Double-crested Cormorant	5
Snowy Egret	1	Eared Grebe	7
Surf Scoter	7	Elegant Tern	2
Western Gull	47	European Starling	4
<b>Grid Cell: 235</b>		Forster's Tern	3
California Gull	2	Heermann's Gull	11
Common Loon	1	Hooded Oriole	2
Western Gull	1	House Finch	20
<b>Grid Cell: 236</b>		House Sparrow	178
American Coot	54	Mallard	7
American Crow	34	Marbled Godwit	208
Anna's Hummingbird	7	Mourning Dove	1
Audubon's Warbler (Yellow-Rumped)	7	Northern Mockingbird	1
Black Phoebe	4	Orange-Crowned Warbler	1
Black-bellied Plover	12	Osprey	5
Brown Pelican	4	Red-tailed Hawk	1
Bufflehead	62	Ring-billed Gull	68
California Gull	35	Rock Pigeon	484
Caspian Tern	1	Rock Pigeon?	4
Cassin's Kingbird	3	Royal Tern	4
Double-crested Cormorant	4	Snowy Egret	6
Forster's Tern	2	Song Sparrow	16
Great Blue Heron	4	Surf Scoter	29
Heermann's Gull	14	Western Grebe	1
House Finch	3	Western Gull	74
House Sparrow	27	White-crowned Sparrow	3
Jaeger sp.	1	Willet	56
Mallard	7	<b>Grid Cell: 238</b>	
Marbled Godwit	216	Brown Pelican	1
Mourning Dove	3	Bufflehead	3



Common Name	Total Observed
Heermann's Gull	1
Ring-billed Gull	1
Western Grebe	1
Western Gull	10
<b>Grid Cell: 239</b>	
American Coot	1
Brown Pelican	1
Ring-billed Gull	1
Surf Scoter	8
Western Gull	3
<b>Grid Cell: 240</b>	
American Coot	8
American Crow	5
Belted Kingfisher	1
Black Phoebe	1
Black-crowned Night Heron	3
Brewer's Blackbird	1
Brown Pelican	7
Double-crested Cormorant	1
European Starling	31
Forster's Tern	2
House Sparrow	5
Ring-billed Gull	3
Rock Pigeon	125
Royal Tern	3
Surf Scoter	25
Western Gull	122
<b>Grid Cell: 241</b>	
American Coot	18
American Crow	9
Black Phoebe	1
Black-crowned Night Heron	5
Brandt's Cormorant	1
Brant	1
Brewer's Blackbird	30
Brown Pelican	9
Cassin's Kingbird	1
Double-crested Cormorant	7
Elegant Tern	3
European Starling	17
Forster's Tern	2
Great Blue Heron	1
Green Heron	1
Heermann's Gull	8
House Finch	2
House Sparrow	12
California Least Tern	1
Mallard	4
Northern Mockingbird	3
Osprey	1
Pied-billed Grebe	2
Ring-billed Gull	6
Rock Pigeon	142
Snowy Egret	1
Spotted Sandpiper	2

Common Name	Total Observed
Surf Scoter	53
Western Grebe	2
Western Gull	216
<b>Grid Cell: 242</b>	
Brandt's Cormorant	1
Surf Scoter	8
Western Gull	1
<b>Grid Cell: 243</b>	
Western Gull	1
<b>Grid Cell: 244</b>	
American Coot	8
American Crow	72
Anna's Hummingbird	5
Audubon's Warbler (Yellow-Rumped)	29
Black Phoebe	2
Black-bellied Plover	1
Brown Pelican	1
Bufflehead	6
California Gull	3
Caspian Tern	1
Double-crested Cormorant	3
Eared Grebe	3
European Starling	14
Forster's Tern	8
Gull sp.	75
Heermann's Gull	12
Hooded Oriole	3
House Finch	14
House Sparrow	106
Mallard	1
Marbled Godwit	12
Ring-billed Gull	9
Rock Pigeon	76
Rock Pigeon?	1
Royal Tern	5
Snowy Egret	2
Song Sparrow	2
Surf Scoter	8
Swallow sp.	2
Western Grebe	4
Western Gull	75
Willet	1
<b>Grid Cell: 245</b>	
American Crow	27
Anna's Hummingbird	12
Audubon's Warbler (Yellow-Rumped)	18
Belted Kingfisher	1
Black Phoebe	4
California Gull	3
Double-crested Cormorant	2
Forster's Tern	1
Heermann's Gull	1
House Finch	8
House Sparrow	21
California Least Tern	1

Common Name	Total Observed	Common Name	Total Observed
Mallard	4	Bushtit	5
Marbled Godwit	17	California Gull	371
Orange-Crowned Warbler	3	Common Tern	1
Osprey	1	Double-crested Cormorant	5
Ring-billed Gull	3	Eared Grebe	2
Rock Pigeon	6	European Starling	8
Royal Tern	1	Flamingo	71
Song Sparrow	9	Forster's Tern	1
Spotted Sandpiper	1	Great Blue Heron	4
Surf Scoter	5	Heermann's Gull	35
Unknown code (BRPL)	1	Hooded Oriole	2
Unknown code (OAGU)	1	Horned Grebe	1
Western Gull	36	House Finch	33
Willet	2	House Sparrow	34
<b>Grid Cell: 246</b>		Hummingbird sp.	9
Western Gull	1	Mallard	346
<b>Grid Cell: 247</b>		Marbled Godwit	73
Brandt's Cormorant	1	Northern Mockingbird	5
Common Raven	2	Orange-Crowned Warbler	4
Heermann's Gull	1	Osprey	2
Ring-billed Gull	2	Ring-billed Gull	78
Western Gull	2	Rock Pigeon	18
<b>Grid Cell: 248</b>		Royal Tern	2
American Coot	1	Snowy Egret	4
Brandt's Cormorant	2	Song Sparrow	21
Brown Pelican	1	Spotted Sandpiper	3
California Gull	25	Surf Scoter	13
Cormorant sp.	1	Swallow sp.	7
Double-crested Cormorant	3	Unknown code (SNOW)	1
Great Blue Heron	3	Western Gull	272
Heermann's Gull	7	Willet	20
Pied-billed Grebe	1	<b>Grid Cell: 252</b>	
Ring-billed Gull	14	American Coot	1
Rock Pigeon	19	American Crow	24
Surf Scoter	100	American Pipit	23
Western Gull	78	Anna's Hummingbird	29
<b>Grid Cell: 249</b>		Audubon's Warbler (Yellow-Rumped)	93
Snowy Egret	1	Black Phoebe	8
Surf Scoter	38	Black-bellied Plover	2
Western Gull	10	Brown Pelican	3
<b>Grid Cell: 250</b>		Bufflehead	35
Brown Pelican	1	Bushtit	4
Heermann's Gull	1	California Gull	3
Surf Scoter	17	Cassin's Kingbird	3
<b>Grid Cell: 251</b>		Cliff Swallow	4
American Coot	98	Common Loon	1
American Crow	63	Double-crested Cormorant	6
American Kestrel	1	Eared Grebe	3
Anna's Hummingbird	7	European Starling	12
Audubon's Warbler (Yellow-Rumped)	84	Great Blue Heron	2
Barn Swallow	1	Heermann's Gull	9
Black Phoebe	13	House Finch	30
Black-bellied Plover	2	House Sparrow	4
Black-crowned Night Heron	1	Lesser Goldfinch	2
Bufflehead	14	Mallard	42

Common Name	Total Observed	Common Name	Total Observed
Marbled Godwit	45	Surf Scoter	3
Northern Mockingbird	2	Western Gull	11
Northern Rough-winged Swallow	2	<b>Grid Cell: 257</b>	
Orange-Crowned Warbler	8	California Gull	1
Ring-billed Gull	40	Great Blue Heron	1
Rock Pigeon	14	Surf Scoter	34
Royal Tern	2	<b>Grid Cell: 259</b>	
Say's Phoebe	1	Allen's Hummingbird	2
Snowy Egret	4	American Crow	80
Song Sparrow	4	American Kestrel	2
Surf Scoter	30	Anna's Hummingbird	28
Swallow sp.	3	Audubon's Warbler (Yellow-Rumped)	139
Townsend's Warbler	1	Barn Swallow	5
Western Gull	89	Belted Kingfisher	1
Whimbrel	2	Black Phoebe	11
White-crowned Sparrow	21	Brown Pelican	13
Willet	12	Bufflehead	48
Wilson's Warbler	1	Bushtit	15
<b>Grid Cell: 253</b>		California Gull	4
Brown Pelican	2	Caspian Tern	1
Surf Scoter	68	Cassin's Kingbird	4
<b>Grid Cell: 254</b>		Cliff Swallow	10
American Crow	3	Common Loon	2
Anna's Hummingbird	1	Double-crested Cormorant	7
Audubon's Warbler (Yellow-Rumped)	3	European Starling	11
Brown Pelican	1	Forster's Tern	4
Caspian Tern	1	Great Blue Heron	7
Cormorant sp.	1	Gull sp.	3
Double-crested Cormorant	1	Heermann's Gull	11
Heermann's Gull	2	Horned Grebe	2
Lesser Goldfinch	1	House Finch	84
Mourning Dove	3	House Sparrow	10
Orange-Crowned Warbler	1	California Least Tern	1
Osprey	1	Lesser Scaup	7
Surf Scoter	52	Long-billed Curlew	1
Western Gull	9	Mallard	52
<b>Grid Cell: 255</b>		Marbled Godwit	26
Barn Swallow	4	Mourning Dove	2
Black-crowned Night Heron	2	Northern Rough-winged Swallow	2
Brandt's Cormorant	1	Orange-Crowned Warbler	18
Brown Pelican	1	Osprey	5
California Gull	2	Ring-billed Gull	43
Double-crested Cormorant	1	Rock Pigeon	36
European Starling	3	Rock Pigeon?	3
Gull sp.	1	Royal Tern	2
Heermann's Gull	40	Ruby-Crowned Kinglet	1
Osprey	1	Scaup sp.	3
Ring-billed Gull	22	Snowy Egret	5
Rock Pigeon	10	Spotted Sandpiper	1
Snowy Egret	1	Surf Scoter	267
Western Gull	67	Swallow sp.	13
<b>Grid Cell: 256</b>		Unknown code (CEWA)	20
Heermann's Gull	1	Unknown code (REGO)	4
Ring-billed Gull	5	Western Gull	174
Rock Pigeon	6	Western Kingbird	1

Common Name	Total Observed
White-crowned Sparrow	47
Willet	15
<b>Grid Cell: 260</b>	
Bufflehead	10
Ring-billed Gull	2
Surf Scoter	62
<b>Grid Cell: 262</b>	
American Crow	2
Anna's Hummingbird	4
Barn Swallow	1
Brown Pelican	2
Bufflehead	42
Eared Grebe	1
Forster's Tern	1
Great Blue Heron	5
Heermann's Gull	3
House Finch	6
Marbled Godwit	5
Osprey	2
Say's Phoebe	1
Surf Scoter	92
Western Gull	19
Western Kingbird	2
Willet	1
<b>Grid Cell: 263</b>	
American Coot	5
American Crow	7
Barn Swallow	2
Brown Pelican	1
Bufflehead	17
California Gull	1
Common Loon	1
Double-crested Cormorant	1
Great Blue Heron	10
Heermann's Gull	2
Osprey	2
Red-tailed Hawk	1
Ring-billed Gull	53
Surf Scoter	28
Western Gull	22
Willet	1
<b>Grid Cell: 264</b>	
American Coot	35
American Crow	2
Barn Swallow	4
California Least Tern	2
Common Raven	1
Eared Grebe	6
Lesser Scaup	1
Snowy Egret	2
Surf Scoter	13
Western Grebe	2
Western Gull	28
<b>Grid Cell: 265</b>	
American Coot	14

Common Name	Total Observed
Bufflehead	1
Lesser Scaup	1
Osprey	1
Snowy Egret	1
Surf Scoter	10
Western Grebe	2
Western Gull	36
<b>Grid Cell: 266</b>	
American Coot	61
American Crow	7
Anna's Hummingbird	1
California Least Tern	1
Common Loon	1
Eared Grebe	8
Heermann's Gull	1
Lesser Scaup	27
Long-billed Curlew	2
Marbled Godwit	5
Osprey	1
Say's Phoebe	1
Snowy Egret	1
Surf Scoter	2
Western Gull	17
Willet	2
Yellow-rumped Warbler	3
<b>Grid Cell: 267</b>	
American Coot	227
American Crow	3
Belted Kingfisher	3
California Gull	1
California Least Tern	4
Eared Grebe	5
Great Blue Heron	2
Great Egret	1
Greater Scaup	6
Gull sp.	1
Lesser Scaup	16
Long-billed Curlew	1
Marbled Godwit	5
Osprey	1
Pacific Loon	1
Redhead	2
Snowy Egret	2
Western Gull	29
Willet	1
<b>Grid Cell: 268</b>	
American Coot	2
Barn Swallow	2
Double-crested Cormorant	1
Eared Grebe	1
Osprey	1
Snowy Egret	1
Western Grebe	35
Western Gull	4



Common Name	Total Observed	Common Name	Total Observed
<b>Grid Cell: 269</b>		American Crow	2
Surf Scoter	6	Black-bellied Plover	1
Western Gull	2	Brown Pelican	1
<b>Grid Cell: 270</b>		California Least Tern	2
Common Tern	1	Common Tern	2
Great Egret	1	Double-crested Cormorant	4
Osprey	1	European Starling	4
Rock Pigeon	1	Heermann's Gull	7
Western Gull	9	Long-billed Curlew	2
<b>Grid Cell: 271</b>		Marbled Godwit	6
American Coot	11	Osprey	6
American Crow	1	Rock Pigeon	2
Brant	1	Western Gull	73
Bufflehead	4	Western Kingbird	3
California Least Tern	2	Willet	1
Double-crested Cormorant	1	<b>Grid Cell: 275</b>	
Eared Grebe	1	Brandt's Cormorant	7
Forster's Tern	3	Brown Pelican	2
Heermann's Gull	1	Double-crested Cormorant	1
Lesser Scaup	28	Eared Grebe	1
Long-billed Curlew	2	Great Blue Heron	1
Marbled Godwit	7	Gull-billed Tern	1
Osprey	7	Heermann's Gull	3
Red Knot	1	Lesser Scaup	26
Red-breasted Merganser	1	Osprey	4
Redhead	22	Peep sp.	8
Snowy Egret	1	Red-breasted Merganser	1
Surf Scoter	29	Rock Pigeon	4
Western Gull	55	Surf Scoter	15
Willet	12	Western Gull	68
<b>Grid Cell: 272</b>		Willet	1
American Coot	12	<b>Grid Cell: 276</b>	
Bufflehead	2	Brown Pelican	6
Common Loon	1	California Least Tern	2
Common Raven	2	Great Blue Heron	1
Double-crested Cormorant	1	Gull sp.	1
Eared Grebe	2	Heermann's Gull	2
Forster's Tern	1	Surf Scoter	6
Osprey	1	Western Gull	66
Pied-billed Grebe	1	<b>Grid Cell: 277</b>	
Surf Scoter	12	American Coot	3
Western Grebe	28	Barn Swallow	2
Western Gull	24	California Least Tern	2
<b>Grid Cell: 273</b>		Heermann's Gull	1
American Coot	2	Marbled Godwit	3
Bufflehead	11	Osprey	1
California Least Tern	2	Western Gull	9
Double-crested Cormorant	1	Willet	1
Eared Grebe	1	<b>Grid Cell: 278</b>	
House Finch	3	American Kestrel	1
Lesser Scaup	1	Bufflehead	1
Surf Scoter	61	Eared Grebe	2
Western Gull	18	Forster's Tern	3
<b>Grid Cell: 274</b>		House Finch	2
American Coot	3	Spotted Sandpiper	1

Common Name	Total Observed
Surf Scoter	8
Western Gull	4
Willet	1
<b>Grid Cell: 281</b>	
Bufflehead	5
Eared Grebe	3
Surf Scoter	27
Western Gull	1
<b>Grid Cell: 282</b>	
Brandt's Cormorant	1
Brown Pelican	1
Bufflehead	14
Eared Grebe	1
Surf Scoter	126
Western Gull	4
<b>Grid Cell: 283</b>	
Surf Scoter	100
Western Gull	2
<b>Grid Cell: 284</b>	
Surf Scoter	12
<b>Grid Cell: 285</b>	
Brandt's Cormorant	3
Great Blue Heron	1
Northern Rough-winged Swallow	2
Spotted Sandpiper	2
Surf Scoter	1
Western Gull	36
<b>Grid Cell: 286</b>	
Heermann's Gull	2
Rock Pigeon	3
Western Gull	11
<b>Grid Cell: 287</b>	
Barn Swallow	1
Heermann's Gull	1
California Least Tern	1
Rock Pigeon	3
Western Gull	21
<b>Grid Cell: 288</b>	
Brandt's Cormorant	3
Heermann's Gull	1
Snowy Egret	1
Surf Scoter	93
Western Gull	32
<b>Grid Cell: 290</b>	
Brown Pelican	3
Great Blue Heron	1
Western Gull	3
<b>Grid Cell: 291</b>	
Bufflehead	8
Surf Scoter	32
<b>Grid Cell: 293</b>	
Brandt's Cormorant	3
Brown Pelican	2
California Least Tern	1
Common Raven	1

Common Name	Total Observed
Double-crested Cormorant	1
Great Blue Heron	3
Heermann's Gull	10
Ruddy Turnstone	2
Snowy Egret	1
Surf Scoter	24
Western Gull	95

### F.3 Species Lists for South-Central Bay Grids

Common Name	Total Observed
<b>Grid Cell: 294</b>	
Eared Grebe	4
Forster's Tern	1
Heermann's Gull	1
Surf Scoter	120
Western Gull	5
<b>Grid Cell: 297</b>	
Double-crested Cormorant	1
Great Blue Heron	1
Pelagic Cormorant	2
Western Gull	57
<b>Grid Cell: 298</b>	
Western Gull	2
<b>Grid Cell: 299</b>	
Brandt's Cormorant	6
Brown Pelican	4
Double-crested Cormorant	10
California Least Tern	1
Rock Pigeon	7
Western Grebe	1
Western Gull	69
<b>Grid Cell: 300</b>	
Rock Pigeon	3
<b>Grid Cell: 301</b>	
Brandt's Cormorant	2
Brown Pelican	3
California Least Tern	2
Double-crested Cormorant	5
Eared Grebe	1
Great Blue Heron	1
Heermann's Gull	2
Rock Pigeon	1
Surf Scoter	122
Western Gull	150
<b>Grid Cell: 302</b>	
Ring-billed Gull	1
Western Grebe	1
<b>Grid Cell: 303</b>	
Bufflehead	15
Common Loon	1
Eared Grebe	2

Common Name	Total Observed	Common Name	Total Observed
Horned Grebe	1	Western Gull	43
Surf Scoter	108	Willet	1
<b>Grid Cell: 304</b>		<b>Grid Cell: 310</b>	
Brandt's Cormorant	1	American Crow	2
Brown Pelican	5	American Wigeon	481
Bufflehead	9	Black Skimmer	1
California Least Tern	3	Brant	27
Double-crested Cormorant	1	Brown Pelican	23
Elegant Tern	1	Bufflehead	7
European Starling	8	California Gull	8
Great Blue Heron	2	California Least Tern	2
Gull sp.	1	Common Loon	1
Marbled Godwit	15	Double-crested Cormorant	6
Osprey	1	Eared Grebe	12
Snowy Egret	1	Forster's Tern	11
Spotted Sandpiper	1	Great Blue Heron	8
Surf Scoter	178	Gull sp.	1
Tern sp.	1	Heermann's Gull	1
Western Grebe	1	Long-billed Curlew	3
Western Gull	76	Marbled Godwit	75
Willet	1	Osprey	1
<b>Grid Cell: 305</b>		Peep sp.	15
Brandt's Cormorant	1	Red Knot	5
California Least Tern	2	Red-breasted Merganser	1
Rock Pigeon	3	Ring-billed Gull	4
Surf Scoter	60	Rock Pigeon	8
Western Gull	32	Royal Tern	4
<b>Grid Cell: 307</b>		Semipalmated Plover	2
Brandt's Cormorant	1	Spotted Sandpiper	5
<b>Grid Cell: 308</b>		Surf Scoter	373
American Crow	1	Western Grebe	16
Brandt's Cormorant	1	Western Gull	57
Brown Pelican	3	Whimbrel	3
Bufflehead	1	Willet	34
Double-crested Cormorant	6	<b>Grid Cell: 311</b>	
Ruddy Turnstone	4	American Wigeon	320
Snowy Egret	1	Barn Swallow	1
Surf Scoter	12	Belted Kingfisher	2
Western Gull	25	Black Phoebe	2
<b>Grid Cell: 309</b>		Black Scoter	15
Barn Swallow	2	Brandt's Cormorant	7
Black-bellied Plover	1	Brant	36
Brandt's Cormorant	3	Bufflehead	4
Bufflehead	15	California Gull	2
California Least Tern	7	California Least Tern	1
Double-crested Cormorant	1	Double-crested Cormorant	13
European Starling	8	Eared Grebe	2
Forster's Tern	3	Forster's Tern	7
Heermann's Gull	4	Great Egret	2
Least Sandpiper	200	Greater Yellowlegs	3
Marbled Godwit	7	Least Sandpiper	300
Osprey	1	Lesser Scaup	6
Snowy Egret	1	Long-billed Curlew	1
Surf Scoter	121	Marbled Godwit	26
Tern sp.	2	Mourning Dove	3

Common Name	Total Observed
Osprey	1
Peep sp.	22
Redhead	38
Ring-billed Gull	5
Royal Tern	6
Surf Scoter	366
Western Grebe	9
Western Gull	43
Willet	39
<b>Grid Cell: 312</b>	
American Wigeon	14
Black-bellied Plover	7
Brandt's Cormorant	1
Brant	18
Brown Pelican	181
Bufflehead	5
California Gull	9
Caspian Tern	23
Double-crested Cormorant	407
Eared Grebe	1
Elegant Tern	72
Forster's Tern	19
Great Blue Heron	5
Great Egret	1
Greater Yellowlegs	10
Gull sp.	7
Heermann's Gull	2
Long-billed Curlew	2
Marbled Godwit	4
Ring-billed Gull	6
Royal Tern	25
Semipalmated Plover	3
Spotted Sandpiper	4
Surf Scoter	666
Western Grebe	22
Western Gull	537
Whimbrel	1
Willet	18
<b>Grid Cell: 313</b>	
Bufflehead	11
Eared Grebe	2
Surf Scoter	137
Western Gull	7
<b>Grid Cell: 314</b>	
Surf Scoter	42
<b>Grid Cell: 315</b>	
Common Loon	1
<b>Grid Cell: 317</b>	
American Crow	3
Brandt's Cormorant	7
Double-crested Cormorant	1
Great Blue Heron	1
Heermann's Gull	18
Rock Pigeon	33
Spotted Sandpiper	1

Common Name	Total Observed
Western Gull	39
<b>Grid Cell: 318</b>	
Western Gull	5
<b>Grid Cell: 319</b>	
Brandt's Cormorant	6
Brown Pelican	1
California Gull	7
Double-crested Cormorant	2
Red-breasted Merganser	1
Ring-billed Gull	1
Surf Scoter	15
Western Gull	31
<b>Grid Cell: 320</b>	
Bufflehead	2
Eared Grebe	2
<b>Grid Cell: 322</b>	
Surf Scoter	126
<b>Grid Cell: 323</b>	
Black-bellied Plover	2
Brown Pelican	43
Bufflehead	27
California Least Tern	1
Double-crested Cormorant	26
Eared Grebe	1
Forster's Tern	1
Marbled Godwit	7
Peep sp.	15
Surf Scoter	508
Western Grebe	20
Western Gull	147
Whimbrel	2
Willet	5
<b>Grid Cell: 324</b>	
American Wigeon	381
Barn Swallow	1
Black Skimmer	1
Black-bellied Plover	1
Brant	7
Brown Pelican	1
Bufflehead	11
California Least Tern	57
Caspian Tern	2
Double-crested Cormorant	5
Eared Grebe	1
Elegant Tern	4
European Starling	3
Forster's Tern	31
Great Blue Heron	1
Greater Scaup	10
Heermann's Gull	3
Horned Lark	1
House Finch	15
Killdeer	29
Lesser Scaup	26
Lesser Yellowlegs	1



Common Name	Total Observed	Common Name	Total Observed
Long-billed Curlew	2	<b>Grid Cell: 330</b>	
Marbled Godwit	5	Brandt's Cormorant	1
Mourning Dove	1	Surf Scoter	52
Red-breasted Merganser	1	Western Gull	12
Redhead	4	<b>Grid Cell: 331</b>	
Royal Tern	4	Brandt's Cormorant	2
Sanderling	150	Double-crested Cormorant	2
Say's Phoebe	1	Great Blue Heron	1
Snowy Egret	1	Ring-billed Gull	1
Surf Scoter	45	Rock Pigeon	3
Western Grebe	75	Surf Scoter	15
Western Gull	6	Western Gull	60
Western Snowy Plover	2	<b>Grid Cell: 332</b>	
Willet	2	Brown Pelican	2
<b>Grid Cell: 325</b>		California Least Tern	2
American Wigeon	12	Surf Scoter	47
Barn Swallow	3	Western Gull	29
Belted Kingfisher	1	<b>Grid Cell: 333</b>	
Black-bellied Plover	126	Common Loon	1
Brown Pelican	2	Eared Grebe	2
Bufflehead	4	Heermann's Gull	1
California Least Tern	113	Surf Scoter	17
Caspian Tern	50	<b>Grid Cell: 337</b>	
Double-crested Cormorant	3	American Wigeon	238
Dowitcher sp.	50	Belted Kingfisher	1
Eared Grebe	12	Black-bellied Plover	387
Elegant Tern	31	Brant	2
Forster's Tern	7	Brown Pelican	28
Great Blue Heron	4	Bufflehead	5
Horned Lark	9	California Least Tern	56
House Finch	26	Caspian Tern	2
Killdeer	22	Common Raven	1
Lesser Yellowlegs	1	Common Tern	1
Long-billed Curlew	3	Cooper's Hawk	1
Mallard	2	Curlew sp.	2
Marbled Godwit	19	Double-crested Cormorant	3
Northern Shoveler	1	Dowitcher sp.	79
Osprey	2	Dunlin	16
Peep sp.	44	Elegant Tern	49
Red Knot	33	Forster's Tern	41
Royal Tern	4	Great Blue Heron	4
Ruddy Turnstone	4	Great Egret	1
Savannah Sparrow	7	Gull sp.	2
Semipalmated Plover	12	Gull-billed Tern	1
Short-billed Dowitcher	5	House Finch	91
Snowy Egret	1	Killdeer	29
Surf Scoter	3	Least Sandpiper	7
Western Gull	9	Lesser Scaup	20
Western Sandpiper	155	Lesser Yellowlegs	4
Western Snowy Plover	2	Long-billed Curlew	16
Whimbrel	2	Marbled Godwit	83
Willet	3	Mourning Dove	5
<b>Grid Cell: 328</b>		Osprey	3
Surf Scoter	9	Peep sp.	146
		Red Knot	191

Common Name	Total Observed	Common Name	Total Observed
Redhead	70	Sanderling	163
Royal Tern	105	Sandpiper sp.	10
Ruddy Turnstone	19	Savannah Sparrow	9
Sanderling	14	Say's Phoebe	2
Savannah Sparrow	5	Semipalmated Plover	284
Semipalmated Plover	59	Short-billed Dowitcher	82
Short-billed Dowitcher	103	Snowy Egret	12
Snowy Egret	3	Spotted Sandpiper	1
Spotted Sandpiper	1	Western Grebe	20
Surf Scoter	30	Western Gull	34
Unknown code (WESP)	20	Western Sandpiper	987
Western Grebe	32	Western Snowy Plover	28
Western Gull	35	Whimbrel	6
Western Sandpiper	472	Willet	57
Western Snowy Plover	7	<b>Grid Cell: 339</b>	
Whimbrel	9	Surf Scoter	22
Willet	59	<b>Grid Cell: 340</b>	
<b>Grid Cell: 338</b>		Brandt's Cormorant	1
American Crow	1	Bufflehead	2
American Kestrel	1	Eared Grebe	3
American Wigeon	4	Surf Scoter	12
Barn Swallow	6	Western Gull	4
Black-bellied Plover	433	<b>Grid Cell: 341</b>	
Brant	104	Black-bellied Plover	1
Brown Pelican	32	Surf Scoter	6
California Gull	4	<b>Grid Cell: 343</b>	
California Least Tern	16	Brandt's Cormorant	1
Caspian Tern	84	California Gull	1
Curlew sp.	3	Cormorant sp.	1
Double-crested Cormorant	17	Heermann's Gull	1
Dowitcher sp.	19	Ring-billed Gull	1
Dunlin	86	Surf Scoter	12
Eared Grebe	2	Western Gull	62
Elegant Tern	46	<b>Grid Cell: 344</b>	
Forster's Tern	59	Brandt's Cormorant	1
Great Blue Heron	6	Double-crested Cormorant	2
Great Egret	7	Heermann's Gull	1
Gull-billed Tern	1	Western Gull	6
Horned Lark	5	<b>Grid Cell: 345</b>	
House Finch	13	Brandt's Cormorant	1
Killdeer	13	California Least Tern	1
Least Sandpiper	36	Western Gull	4
Lesser Yellowlegs	2	<b>Grid Cell: 346</b>	
Long-billed Curlew	43	California Gull	1
Marbled Godwit	166	Heermann's Gull	1
Mourning Dove	5	Western Gull	74
Osprey	11	<b>Grid Cell: 347</b>	
Pacific Loon	1	Bufflehead	3
Peep sp.	309	Surf Scoter	36
Red Knot	225	<b>Grid Cell: 350</b>	
Red-breasted Merganser	1	Brown Pelican	1
Redhead	16	Surf Scoter	206
Ring-billed Gull	1	Western Gull	10
Royal Tern	111	<b>Grid Cell: 351</b>	
Ruddy Turnstone	10	American Crow	2

Common Name	Total Observed	Common Name	Total Observed
American Wigeon	5	Eared Grebe	5
Barn Swallow	3	Elegant Tern	1
Belted Kingfisher	1	European Starling	7
Black-bellied Plover	16	Forster's Tern	2
Brant	9	Greater Yellowlegs	5
Brown Pelican	13	Hooded Oriole	1
Bufflehead	1	Horned Lark	8
California Least Tern	271	House Finch	135
Caspian Tern	5	Kestrel	2
Double-crested Cormorant	8	Killdeer	17
Dunlin	1	Lesser Scaup	8
Eared Grebe	11	Long-billed Curlew	1
Elegant Tern	33	Mallard	4
Forster's Tern	3	Mourning Dove	5
Great Egret	1	Osprey	4
Gull sp.	1	Peep sp.	6
Gull-billed Tern	2	Redhead	2
Horned Lark	11	Red-tailed Hawk	1
House Finch	109	Ring-billed Gull	1
Killdeer	5	Rock Pigeon	14
Lesser Yellowlegs	1	Royal Tern	1
Long-billed Curlew	7	Snowy Egret	1
Marbled Godwit	5	Surf Scoter	60
Merlin	1	Western Grebe	56
Osprey	2	Western Gull	84
Pacific Loon	1	Western Sandpiper	15
Peep sp.	64	Willet	4
Red Knot	5	Yellow-rumped Warbler	1
Rock Pigeon	9	<b>Grid Cell: 353</b>	
Royal Tern	61	American Crow	3
Sanderling	5	American Pipit	1
Sandpiper sp.	1	Anna's Hummingbird	4
Savannah Sparrow	11	Audubon's Warbler (Yellow-Rumped)	19
Say's Phoebe	1	Black Phoebe	4
Semipalmated Plover	21	Brant	10
Short-billed Dowitcher	11	Brown Pelican	44
Snowy Egret	2	Bufflehead	1
Spotted Sandpiper	3	Cassin's Kingbird	6
Surf Scoter	18	Cooper's Hawk	1
Western Gull	18	Double-crested Cormorant	4
Western Sandpiper	12	Eared Grebe	4
Western Snowy Plover	19	Elegant Tern	1
Whimbrel	1	Eurasian Collared Dove	11
Willet	3	European Starling	17
<b>Grid Cell: 352</b>		Forster's Tern	11
American Kestrel	1	Great Egret	1
Anna's Hummingbird	6	Hooded Oriole	2
Barn Swallow	1	House Finch	105
Belted Kingfisher	3	House Sparrow	20
Black Phoebe	1	Killdeer	3
Black Skimmer	8	California Least Tern	3
Brown Pelican	15	Lesser Goldfinch	3
Bufflehead	2	Lesser Scaup	4
California Least Tern	15	Long-billed Curlew	4
Double-crested Cormorant	3	Mallard	6

Common Name	Total Observed	Common Name	Total Observed
Mourning Dove	4	California Gull	3
Orange-Crowned Warbler	2	Double-crested Cormorant	2
Osprey	7	Herring Gull	6
Ring-billed Gull	5	Ring-billed Gull	3
Rock Pigeon	4	Surf Scoter	234
Royal Tern	2	Western Gull	163
Snowy Egret	5	<b>Grid Cell: 362</b>	
Spotted Sandpiper	1	Herring Gull	1
Surf Scoter	42	<b>Grid Cell: 363</b>	
Swallow sp.	5	Common Loon	1
Unknown code (SYSP)	5	Eared Grebe	1
Unkown code (SVSP)	2	<b>Grid Cell: 365</b>	
Western Grebe	41	Bonaparte's Gull	1
Western Gull	52	Brandt's Cormorant	1
Willet	11	Brown Pelican	297
<b>Grid Cell: 354</b>		California Least Tern	1
Belted Kingfisher	1	Double-crested Cormorant	49
Brown Pelican	344	Eared Grebe	2
California Least Tern	3	Forster's Tern	3
Common Tern	1	Heermann's Gull	10
Double-crested Cormorant	18	Royal Tern	1
Elegant Tern	1	Surf Scoter	100
Forster's Tern	1	Western Gull	30
Great Egret	2	<b>Grid Cell: 366</b>	
Gull sp.	2	American Crow	2
Heermann's Gull	6	American Pipit	6
Rock Pigeon	8	Anna's Hummingbird	3
Surf Scoter	686	Audubon's Warbler (Yellow-Rumped)	9
Western Grebe	2	Black Phoebe	1
Western Gull	58	Brant	5
<b>Grid Cell: 355</b>		Brown Pelican	233
Brant	8	Bufflehead	2
Eared Grebe	4	Bushtit	4
Surf Scoter	26	California Gull	1
Western Gull	1	Caspian Tern	1
<b>Grid Cell: 357</b>		Cassin's Kingbird	3
Surf Scoter	120	Double-crested Cormorant	62
<b>Grid Cell: 358</b>		Dunlin	1
Brandt's Cormorant	5	Elegant Tern	4
California Gull	1	Eurasian Collared Dove	18
Double-crested Cormorant	6	European Starling	69
Herring Gull	2	Forster's Tern	6
Surf Scoter	210	Great Egret	2
Western Gull	192	Greater Yellowlegs	1
<b>Grid Cell: 359</b>		Heermann's Gull	29
Belted Kingfisher	1	Hooded Oriole	5
Brown Pelican	1	Horned Grebe	1
Double-crested Cormorant	1	Horned Lark	2
Heermann's Gull	1	House Finch	160
Western Gull	105	House Sparrow	2
<b>Grid Cell: 360</b>		California Least Tern	7
Double-crested Cormorant	1	Lesser Scaup	1
Western Gull	12	Long-billed Curlew	4
<b>Grid Cell: 361</b>		Merlin	2
Brandt's Cormorant	12	Mourning Dove	14



Common Name	Total Observed
No species given	1
Northern Mockingbird	2
Orange-Crowned Warbler	1
Osprey	12
Ring-billed Gull	1
Rock Pigeon	6
Royal Tern	9
Savannah Sparrow	1
Snowy Egret	4
Surf Scoter	119
Swallow sp.	2
Unknown code (BRPS)	16
Western Grebe	4
Western Gull	133
Western Sandpiper	7
Willet	4
<b>Grid Cell: 367</b>	
American Crow	2
American Wigeon	3
Anna's Hummingbird	6
Audubon's Warbler (Yellow-Rumped)	41
Black Phoebe	4
Black-bellied Plover	1
Brown Pelican	5
Cassin's Kingbird	8
Double-crested Cormorant	8
Eurasian Collared Dove	5
European Starling	62
Forster's Tern	6
Heermann's Gull	4
Hooded Oriole	3
Horned Grebe	2
Horned Lark	2
House Finch	229
Killdeer	7
Long-billed Curlew	1
Mallard	1
Marbled Godwit	1
Mourning Dove	2
Orange-Crowned Warbler	3
Osprey	1
Royal Tern	10
Say's Phoebe	3
Surf Scoter	69
Swallow sp.	5
Violet-Green Swallow	2
Western Grebe	21
Western Gull	24
Western Kingbird	4
Western Sandpiper	20
White-crowned Sparrow	18
Willet	1
<b>Grid Cell: 368</b>	
Brant	6
Surf Scoter	56

Common Name	Total Observed
<b>Grid Cell: 370</b>	
Western Gull	1
<b>Grid Cell: 371</b>	
Brandt's Cormorant	1
Common Loon	1
Surf Scoter	30
<b>Grid Cell: 372</b>	
Brandt's Cormorant	10
California Gull	2
Surf Scoter	382
Western Gull	86
<b>Grid Cell: 373</b>	
Herring Gull	1
Ring-billed Gull	3
Snowy Egret	1
Western Gull	47
<b>Grid Cell: 374</b>	
Brandt's Cormorant	2
Brown Pelican	10
California Gull	1
Double-crested Cormorant	5
Great Blue Heron	1
Mourning Dove	2
Rock Pigeon	15
Snowy Egret	1
Surf Scoter	168
Tern sp.	1
Western Grebe	1
Western Gull	102
<b>Grid Cell: 375</b>	
Brandt's Cormorant	4
Forster's Tern	2
Surf Scoter	244
Western Gull	2
<b>Grid Cell: 376</b>	
Brandt's Cormorant	3
Surf Scoter	120
Western Gull	2
<b>Grid Cell: 377</b>	
Eared Grebe	1
Western Grebe	1
<b>Grid Cell: 378</b>	
Eared Grebe	18
Surf Scoter	568
<b>Grid Cell: 379</b>	
Allen's Hummingbird	1
American Crow	3
American Pipit	81
American Wigeon	4
Anna's Hummingbird	12
Audubon's Warbler (Yellow-Rumped)	35
Barn Swallow	1
Black Phoebe	3
Black Skimmer	2
Black-bellied Plover	1

Common Name	Total Observed	Common Name	Total Observed
Brant	5	Heermann's Gull	1
Brown Pelican	2	Hooded Oriole	2
California Gull	1	House Finch	100
Caspian Tern	2	House Sparrow	11
Cassin's Kingbird	2	Killdeer	1
Cliff Swallow	4	California Least Tern	2
Double-crested Cormorant	4	Lesser Scaup	3
Eared Grebe	1	Long-billed Curlew	2
Elegant Tern	14	Marbled Godwit	2
Eurasian Collared Dove	3	Mourning Dove	23
European Starling	40	Northern Mockingbird	2
Forster's Tern	1	Orange-Crowned Warbler	2
Hooded Oriole	8	Rock Pigeon	16
Horned Lark	62	Savannah Sparrow	2
House Finch	140	Say's Phoebe	4
House Sparrow	5	Scaup sp.	2
Killdeer	23	Surf Scoter	110
Long-billed Curlew	1	Swallow sp.	5
Marbled Godwit	1	Turkey Vulture	1
Mourning Dove	26	Western Gull	25
Orange-Crowned Warbler	2	White-crowned Sparrow	61
Osprey	1	Willet	1
Rock Pigeon	3	Wilson's Warbler	1
Royal Tern	3	<b>Grid Cell: 381</b>	
Sanderling	1	Brant	6
Savannah Sparrow	15	Surf Scoter	82
Say's Phoebe	3	<b>Grid Cell: 382</b>	
Scaup sp.	5	Eared Grebe	1
Snowy Egret	2	Surf Scoter	56
Surf Scoter	223	<b>Grid Cell: 383</b>	
Swallow sp.	3	Brown Pelican	1
Unknown code (MAKE)	10	Surf Scoter	24
Western Grebe	2	<b>Grid Cell: 384</b>	
Western Gull	18	Brandt's Cormorant	1
White-crowned Sparrow	10	Brown Pelican	1
Willet	1	California Least Tern	1
<b>Grid Cell: 380</b>		Common Loon	1
Allen's Hummingbird	1	Double-crested Cormorant	2
American Crow	4	Osprey	2
American Kestrel	1	Surf Scoter	180
American Pipit	3	Western Gull	8
Anna's Hummingbird	14	<b>Grid Cell: 385</b>	
Audubon's Warbler (Yellow-Rumped)	22	Eared Grebe	1
Bewick's Wren	1	Surf Scoter	10
Black Phoebe	6	Western Gull	2
Brant	5	<b>Grid Cell: 386</b>	
Brown Pelican	4	Osprey	1
Burrowing Owl	1	Western Gull	1
Bushtit	6	<b>Grid Cell: 387</b>	
Common Raven	1	Brandt's Cormorant	3
Double-crested Cormorant	1	Surf Scoter	100
Eared Grebe	2	<b>Grid Cell: 388</b>	
Elegant Tern	6	Brown Pelican	1
European Starling	11	Double-crested Cormorant	1
Forster's Tern	8	Surf Scoter	570

Common Name	Total Observed
Western Gull	1
<b>Grid Cell: 389</b>	
Common Loon	2
<b>Grid Cell: 390</b>	
Bufflehead	2
Pacific Loon	1
Surf Scoter	88
<b>Grid Cell: 391</b>	
American Crow	4
American Wigeon	2
Anna's Hummingbird	7
Audubon's Warbler (Yellow-Rumped)	2
Barn Swallow	6
Black-bellied Plover	1
Brown Pelican	7
Caspian Tern	2
Cliff Swallow	3
Double-crested Cormorant	5
European Starling	22
Forster's Tern	9
Great Blue Heron	1
Horned Lark	2
House Finch	27
Killdeer	6
Long-billed Curlew	1
Mourning Dove	5
Red-breasted Merganser	18
Royal Tern	4
Say's Phoebe	1
Scaup sp.	1
Song Sparrow	2
Surf Scoter	46
Swallow sp.	16
Western Gull	10
White-crowned Sparrow	37
White-Throated Swift	3
Willet	1
<b>Grid Cell: 395</b>	
Double-crested Cormorant	2
Surf Scoter	50
<b>Grid Cell: 397</b>	
Brant	35
Double-crested Cormorant	1
Least Sandpiper	10
Marbled Godwit	20
Osprey	13
Ring-billed Gull	1
Surf Scoter	104
Western Gull	4
Willet	2

## F.4 Species Lists for South Bay Grids

Common Name	Total Observed
<b>Grid Cell: 80</b>	
Black-bellied Plover	2
Double-crested Cormorant	1
Marbled Godwit	28
Sandpiper sp.	5
Snowy Egret	2
Western Grebe	5
Western Gull	28
Willet	2
<b>Grid Cell: 353</b>	
American Crow	3
American Pipit	1
Anna's Hummingbird	4
Audubon's Warbler (Yellow-Rumped)	19
Black Phoebe	4
Brant	10
Brown Pelican	44
Bufflehead	1
Cassin's Kingbird	6
Cooper's Hawk	1
Double-crested Cormorant	4
Eared Grebe	4
Elegant Tern	1
Eurasian Collared Dove	11
European Starling	17
Forster's Tern	11
Great Egret	1
Hooded Oriole	2
House Finch	105
House Sparrow	20
Killdeer	3
California Least Tern	3
Lesser Goldfinch	3
Lesser Scaup	4
Long-billed Curlew	4
Mallard	6
Mourning Dove	4
Orange-Crowned Warbler	2
Osprey	7
Ring-billed Gull	5
Rock Pigeon	4
Royal Tern	2
Snowy Egret	5
Spotted Sandpiper	1
Surf Scoter	42
Swallow sp.	5
Unknown code (SYSP)	5
Unknown code (SVSP)	2
Western Grebe	41
Western Gull	52
Willet	11

Common Name	Total Observed	Common Name	Total Observed
<b>Grid Cell: 366</b>			
American Crow	2	Brown Pelican	5
American Pipit	6	Cassin's Kingbird	8
Anna's Hummingbird	3	Double-crested Cormorant	8
Audubon's Warbler (Yellow-Rumped)	9	Eurasian Collared Dove	5
Black Phoebe	1	European Starling	62
Brant	5	Forster's Tern	6
Brown Pelican	233	Heermann's Gull	4
Bufflehead	2	Hooded Oriole	3
Bushtit	4	Horned Grebe	2
California Gull	1	Horned Lark	2
Caspian Tern	1	House Finch	229
Cassin's Kingbird	3	Killdeer	7
Double-crested Cormorant	62	Long-billed Curlew	1
Dunlin	1	Mallard	1
Elegant Tern	4	Marbled Godwit	1
Eurasian Collared Dove	18	Mourning Dove	2
European Starling	69	Orange-Crowned Warbler	3
Forster's Tern	6	Osprey	1
Great Egret	2	Royal Tern	10
Greater Yellowlegs	1	Say's Phoebe	3
Heermann's Gull	29	Surf Scoter	69
Hooded Oriole	5	Swallow sp.	5
Horned Grebe	1	Violet-Green Swallow	2
Horned Lark	2	Western Grebe	21
House Finch	160	Western Gull	24
House Sparrow	2	Western Kingbird	4
California Least Tern	7	Western Sandpiper	20
Lesser Scaup	1	White-crowned Sparrow	18
Long-billed Curlew	4	Willet	1
Merlin	2	<b>Grid Cell: 379</b>	
Mourning Dove	14	Allen's Hummingbird	1
No species given	1	American Crow	3
Northern Mockingbird	2	American Pipit	81
Orange-Crowned Warbler	1	American Wigeon	4
Osprey	12	Anna's Hummingbird	12
Ring-billed Gull	1	Audubon's Warbler (Yellow-Rumped)	35
Rock Pigeon	6	Barn Swallow	1
Royal Tern	9	Black Phoebe	3
Savannah Sparrow	1	Black Skimmer	2
Snowy Egret	4	Black-bellied Plover	1
Surf Scoter	119	Brant	5
Swallow sp.	2	Brown Pelican	2
Unknown code (BRPS)	16	California Gull	1
Western Grebe	4	Caspian Tern	2
Western Gull	133	Cassin's Kingbird	2
Western Sandpiper	7	Cliff Swallow	4
Willet	4	Double-crested Cormorant	4
<b>Grid Cell: 367</b>		Eared Grebe	1
American Crow	2	Elegant Tern	14
American Wigeon	3	Eurasian Collared Dove	3
Anna's Hummingbird	6	European Starling	40
Audubon's Warbler (Yellow-Rumped)	41	Forster's Tern	1
Black Phoebe	4	Hooded Oriole	8
Black-bellied Plover	1	Horned Lark	62
		House Finch	140



Common Name	Total Observed	Common Name	Total Observed
House Sparrow	5	Scaup sp.	2
Killdeer	23	Surf Scoter	110
Long-billed Curlew	1	Swallow sp.	5
Marbled Godwit	1	Turkey Vulture	1
Mourning Dove	26	Western Gull	25
Orange-Crowned Warbler	2	White-crowned Sparrow	61
Osprey	1	Willet	1
Rock Pigeon	3	Wilson's Warbler	1
Royal Tern	3	<b>Grid Cell: 391</b>	
Sanderling	1	American Crow	4
Savannah Sparrow	15	American Wigeon	2
Say's Phoebe	3	Anna's Hummingbird	7
Scaup sp.	5	Audubon's Warbler (Yellow-Rumped)	2
Snowy Egret	2	Barn Swallow	6
Surf Scoter	223	Black-bellied Plover	1
Swallow sp.	3	Brown Pelican	7
Unknown code (MAKE)	10	Caspian Tern	2
Western Grebe	2	Cliff Swallow	3
Western Gull	18	Double-crested Cormorant	5
White-crowned Sparrow	10	European Starling	22
Willet	1	Forster's Tern	9
<b>Grid Cell: 380</b>		Great Blue Heron	1
Allen's Hummingbird	1	Horned Lark	2
American Crow	4	House Finch	27
American Kestrel	1	Killdeer	6
American Pipit	3	Long-billed Curlew	1
Anna's Hummingbird	14	Mourning Dove	5
Audubon's Warbler (Yellow-Rumped)	22	Red-breasted Merganser	18
Bewick's Wren	1	Royal Tern	4
Black Phoebe	6	Say's Phoebe	1
Brant	5	Scaup sp.	1
Brown Pelican	4	Song Sparrow	2
Burrowing Owl	1	Surf Scoter	46
Bushtit	6	Swallow sp.	16
Common Raven	1	Western Gull	10
Double-crested Cormorant	1	White-crowned Sparrow	37
Eared Grebe	2	White-Throated Swift	3
Elegant Tern	6	Willet	1
European Starling	11	<b>Grid Cell: 392</b>	
Forster's Tern	8	American Crow	15
Heermann's Gull	1	American Pipit	2
Hooded Oriole	2	Anna's Hummingbird	1
House Finch	100	Audubon's Warbler (Yellow-Rumped)	14
House Sparrow	11	Belted Kingfisher	1
Killdeer	1	Black Phoebe	3
California Least Tern	2	Black-bellied Plover	1
Lesser Scaup	3	Caspian Tern	2
Long-billed Curlew	2	Cliff Swallow	2
Marbled Godwit	2	Double-crested Cormorant	1
Mourning Dove	23	Eared Grebe	3
Northern Mockingbird	2	Elegant Tern	10
Orange-Crowned Warbler	2	European Starling	107
Rock Pigeon	16	Greater Yellowlegs	1
Savannah Sparrow	2	Horned Grebe	5
Say's Phoebe	4	Horned Lark	6

Common Name	Total Observed	Common Name	Total Observed
House Finch	73	Marbled Godwit	4
Killdeer	3	Osprey	19
California Least Tern	3	Ring-billed Gull	3
Lesser Scaup	5	Rock Pigeon	3
Marbled Godwit	1	Snowy Egret	3
Mourning Dove	3	Surf Scoter	42
Orange-Crowned Warbler	1	Western Gull	14
Osprey	1	Willet	2
Red Knot	1	<b>Grid Cell: 399</b>	
Redhead	4	Brown Pelican	2
Royal Tern	2	California Gull	2
Ruddy Duck	15	Common Raven	2
Sanderling	2	Great Blue Heron	1
Scaup sp.	33	Osprey	2
Western Snowy Plover	2	Ring-billed Gull	1
Surf Scoter	32	Rock Pigeon	63
Swallow sp.	2	Western Gull	17
Western Grebe	8	Yellow-rumped Warbler	1
Western Gull	25	<b>Grid Cell: 400</b>	
Western Sandpiper	4	Anna's Hummingbird	6
White-crowned Sparrow	36	Barn Swallow	2
Willet	3	Belding's Savannah Sparrow	1
<b>Grid Cell: 393</b>		Belted Kingfisher	3
American Wigeon	20	Black Phoebe	1
Black Phoebe	1	Black Skimmer	1
Black-bellied Plover	1	Brown Pelican	6
Brant	24	Bushtit	10
Brown Pelican	7	California Gnatcatcher	1
Bufflehead	2	Caspian Tern	2
Caspian Tern	2	Common Loon	1
Common Tern	1	Common Yellowthroat	1
Double-crested Cormorant	12	Double-crested Cormorant	20
Elegant Tern	3	Dowitcher sp.	8
European Starling	4	European Starling	8
Forster's Tern	1	Forster's Tern	3
House Finch	1	Great Egret	1
California Least Tern	6	Gull sp.	9
Lesser Scaup	20	House Finch	22
Osprey	1	House Wren	1
Redhead	30	Killdeer	2
Royal Tern	1	California Least Tern	18
Scaup sp.	54	Lesser Scaup	7
Snowy Egret	1	Mourning Dove	2
Surf Scoter	49	Northern Mockingbird	1
Swallow sp.	3	Northern Rough-winged Swallow	4
Western Gull	31	Osprey	5
Willet	2	Peep sp.	8
<b>Grid Cell: 394</b>		Peregrine Falcon	1
Eared Grebe	2	Pied-billed Grebe	1
Surf Scoter	78	Ring-billed Gull	5
Western Gull	2	Rock Pigeon	53
<b>Grid Cell: 398</b>		Snowy Egret	1
Brant	1	Spotted Sandpiper	3
Brown Pelican	1	Surf Scoter	76
Double-crested Cormorant	2	Swallow sp.	1

Common Name	Total Observed	Common Name	Total Observed
Western Gull	16	Reddish Egret	1
White-crowned Sparrow	5	Ring-billed Gull	64
Willet	6	Royal Tern	101
Yellow-rumped Warbler	9	Semipalmated Plover	46
<b>Grid Cell: 401</b>		Snowy Egret	20
American Crow	1	Western Snowy Plover	2
Brandt's Cormorant	1	Surf Scoter	1
Brown Pelican	9	Western Gull	168
Bufflehead	2	Western Sandpiper	323
California Gull	7	Whimbrel	1
Cassin's Kingbird	1	Willet	84
Double-crested Cormorant	10	<b>Grid Cell: 403</b>	
Gull sp.	1	Belted Kingfisher	1
Horned Grebe	2	Brandt's Cormorant	1
California Least Tern	5	Brant	12
Marbled Godwit	4	Brown Pelican	3
Osprey	12	Bufflehead	2
Pied-billed Grebe	2	California Gull	5
Red-breasted Merganser	5	Double-crested Cormorant	6
Reddish Egret	1	Forster's Tern	2
Ring-billed Gull	8	Gull sp.	5
Rock Pigeon	80	Horned Grebe	1
Snowy Egret	3	California Least Tern	2
Surf Scoter	27	Lesser Scaup	1
Western Gull	43	Marbled Godwit	4
Willet	20	Osprey	4
<b>Grid Cell: 402</b>		Pied-billed Grebe	1
American Kestrel	1	Surf Scoter	466
American Pipit	1	Western Grebe	1
American Wigeon	9	Western Gull	39
Belding's Savannah Sparrow	22	Willet	1
Black Skimmer	1	<b>Grid Cell: 404</b>	
Black-bellied Plover	63	American Kestrel	1
Brant	28	American Pipit	1
California Gull	99	American Wigeon	155
Dowitcher sp.	63	Belding's Savannah Sparrow	7
Dunlin	12	Black Skimmer	1
Eared Grebe	1	Black Turnstone	1
Elegant Tern	40	Black-bellied Plover	21
Eurasian Wigeon	1	Brandt's Cormorant	1
Forster's Tern	9	Brant	232
Great Blue Heron	1	Bufflehead	3
Great Egret	3	California Gull	90
Greater Yellowlegs	16	Double-crested Cormorant	2
Herring Gull	2	Dowitcher sp.	3
Horned Lark	63	Dunlin	39
House Finch	21	Forster's Tern	1
Killdeer	14	Greater Yellowlegs	4
Least Sandpiper	352	Horned Grebe	1
California Least Tern	25	Horned Lark	6
Long-billed Curlew	15	House Finch	2
Long-billed Dowitcher	3	Least Sandpiper	46
Marbled Godwit	286	California Least Tern	7
Peep sp.	74	Lesser Yellowlegs	1
Red Knot	1	Long-billed Curlew	12

Common Name	Total Observed	Common Name	Total Observed
Long-billed Dowitcher	5	Red-breasted Merganser	14
Marbled Godwit	238	Reddish Egret	3
Osprey	4	Redhead	6
Peep sp.	7	Ring-billed Gull	20
Red Knot	20	Royal Tern	34
Reddish Egret	1	Ruddy Turnstone	2
Ring-billed Gull	8	Sanderling	168
Ruddy Turnstone	1	Scaup sp.	30
Sanderling	3	Semipalmated Plover	43
Snowy Egret	4	Short-billed Dowitcher	116
Western Snowy Plover	15	Snowy Egret	8
Surf Scoter	373	Western Snowy Plover	106
Tree Swallow	1	Western Grebe	2
Western Gull	72	Western Gull	97
Western Sandpiper	662	Western Meadowlark	1
Willet	153	Western Sandpiper	2183
<b>Grid Cell: 405</b>		Whimbrel	5
Surf Scoter	18	Willet	396
Western Gull	1	<b>Grid Cell: 407</b>	
<b>Grid Cell: 406</b>		American Wigeon	302
American Wigeon	236	Brant	384
Belding's Savannah Sparrow	32	Brown Pelican	2
Black Skimmer	3	Bufflehead	8
Black Turnstone	2	California Gull	1
Black-bellied Plover	551	Caspian Tern	3
Brant	479	Cinnamon Teal	1
Brown Pelican	9	Double-crested Cormorant	2
Bufflehead	3	Forster's Tern	3
California Gull	96	Greater Scaup	28
Caspian Tern	6	California Least Tern	6
Cliff Swallow	1	Marbled Godwit	1
Double-crested Cormorant	1	Red-breasted Merganser	2
Dowitcher sp.	129	Redhead	7
Dunlin	143	Ring-billed Gull	1
Forster's Tern	5	Scaup sp.	25
Great Blue Heron	3	Surf Scoter	571
Great Egret	7	Western Gull	6
Greater Yellowlegs	20	Willet	2
Gull-billed Tern	1	<b>Grid Cell: 408</b>	
Herring Gull	2	Brant	192
Horned Grebe	1	Scaup sp.	300
Horned Lark	67	Surf Scoter	344
House Finch	14	Western Gull	2
Killdeer	8	<b>Grid Cell: 409</b>	
Least Sandpiper	121	Bufflehead	4
California Least Tern	34	<b>Grid Cell: 410</b>	
Little Blue Heron	1	Bufflehead	9
Long-billed Curlew	48	Lesser Scaup	16
Long-billed Dowitcher	2	Surf Scoter	12
Marbled Godwit	533	Western Gull	7
Northern Harrier	1	<b>Grid Cell: 411</b>	
Northern Pintail	2	Brant	6
Osprey	3	Brown Pelican	3
Peregrine Falcon	1	California Gull	4
Red Knot	118	Caspian Tern	4



Common Name	Total Observed	Common Name	Total Observed
Lesser Scaup	8	Forster's Tern	30
Peep sp.	2	Great Egret	1
Redhead	14	Greater Yellowlegs	1
Royal Tern	2	Gull-billed Tern	8
Scaup sp.	4	Horned Lark	32
Snowy Egret	1	House Finch	103
Surf Scoter	61	Killdeer	7
Western Grebe	2	Least Sandpiper	1
Western Gull	19	California Least Tern	1
<b>Grid Cell: 412</b>		Long-billed Curlew	13
American Wigeon	325	Mallard	2
Black-bellied Plover	5	Marbled Godwit	28
Brant	25	Mourning Dove	10
Brown Pelican	25	Northern Mockingbird	2
California Gull	2	Osprey	2
Caspian Tern	1	Peregrine Falcon	1
Double-crested Cormorant	16	Red-breasted Merganser	1
Elegant Tern	28	Redhead	6
Forster's Tern	27	Ring-billed Gull	62
Great Blue Heron	1	Royal Tern	27
Great Egret	5	Say's Phoebe	4
Heermann's Gull	12	Semipalmated Plover	44
Horned Grebe	2	Snowy Egret	2
California Least Tern	2	Western Snowy Plover	11
Lesser Scaup	50	Song Sparrow	4
Osprey	4	Swallow sp.	2
Peep sp.	5	Western Gull	234
Red Knot	1	Western Sandpiper	72
Red-breasted Merganser	1	Whimbrel	1
Redhead	125	Willet	19
Ring-billed Gull	7	<b>Grid Cell: 415</b>	
Royal Tern	15	Brant	21
Scaup sp.	10	Brown Pelican	4
Surf Scoter	56	Caspian Tern	1
Western Gull	174	Double-crested Cormorant	6
Western Sandpiper	2	Elegant Tern	1
Willet	5	Forster's Tern	2
<b>Grid Cell: 413</b>		California Least Tern	2
American Crow	1	Lesser Scaup	6
American Pipit	12	Osprey	1
Anna's Hummingbird	1	Redhead	7
Audubon's Warbler (Yellow-Rumped)	14	Ring-billed Gull	3
Belding's Savannah Sparrow	6	Scaup sp.	95
Black Phoebe	7	Surf Scoter	57
Black Skimmer	2	Western Gull	14
Black-bellied Plover	12	<b>Grid Cell: 416</b>	
Brant	224	Brant	9
Brown Pelican	1	Brown Pelican	3
California Gull	151	Bufflehead	2
Caspian Tern	5	Caspian Tern	4
Cliff Swallow	2	Double-crested Cormorant	1
Dowitcher sp.	3	Eared Grebe	2
Dunlin	1	Elegant Tern	5
Elegant Tern	51	Forster's Tern	2
European Starling	45	Great Egret	2

Common Name	Total Observed	Common Name	Total Observed
House Finch	2	Bufflehead	31
Red-breasted Merganser	1	California Gull	13
Ring-billed Gull	1	California Least Tern	20
Royal Tern	3	Caspian Tern	29
Scaup sp.	79	Cliff Swallow	2
Snowy Egret	1	Common Loon	3
Surf Scoter	63	Double-crested Cormorant	12
Western Gull	14	Dowitcher sp.	71
<b>Grid Cell: 417</b>		Dunlin	1
Belted Kingfisher	1	Eared Grebe	2
Black-crowned Night Heron	1	Elegant Tern	3
Bonaparte's Gull	1	Eurasian Wigeon	1
Brant	12	Forster's Tern	23
Brown Pelican	1	Great Blue Heron	5
Elegant Tern	1	Great Egret	9
European Starling	1	Greater Scaup	40
Forster's Tern	7	Greater Yellowlegs	11
House Finch	1	Green-winged Teal	2
Lesser Scaup	12	Gull sp.	3
Osprey	3	Gull-billed Tern	1
Song Sparrow	1	Horned Grebe	3
Surf Scoter	218	Horned Lark	2
Western Gull	3	House Finch	2
<b>Grid Cell: 419</b>		Killdeer	12
Brandt's Cormorant	2	Least Sandpiper	45
Common Loon	1	Lesser Scaup	176
Surf Scoter	220	Long-billed Curlew	28
<b>Grid Cell: 420</b>		Long-billed Dowitcher	5
American Wigeon	16	Mallard	5
Black-bellied Plover	2	Marbled Godwit	543
Brant	86	Marsh Wren	1
Brown Pelican	5	Mourning Dove	1
Bufflehead	7	Northern Mockingbird	1
Lesser Scaup	9	Northern Pintail	39
Marbled Godwit	56	Northern Shoveler	6
Peep sp.	340	Osprey	15
Red Knot	3	Peep sp.	618
Royal Tern	3	Pied-billed Grebe	1
Surf Scoter	1298	Red Knot	18
Western Gull	4	Red-breasted Merganser	19
Willet	20	Reddish Egret	4
<b>Grid Cell: 421</b>		Redhead	4
American Coot	22	Ring-billed Gull	3
American Kestrel	4	Royal Tern	120
American Pipit	1	Sandpiper sp.	45
American Wigeon	99	Semipalmated Plover	24
Anna's Hummingbird	2	Short-billed Dowitcher	51
Barn Swallow	9	Snowy Egret	22
Belding's Savannah Sparrow	12	Western Snowy Plover	8
Belted Kingfisher	1	Spotted Sandpiper	1
Black Skimmer	3	Surf Scoter	398
Black-bellied Plover	185	Western Grebe	1
Brandt's Cormorant	1	Western Gull	60
Brant	1036	Western Sandpiper	2220
Brown Pelican	8	Whimbrel	5

Common Name	Total Observed	Common Name	Total Observed
White-crowned Sparrow	2	Western Sandpiper	188
Willet	383	Willet	49
<b>Grid Cell: 422</b>		<b>Grid Cell: 423</b>	
American Crow	6	American Kestrel	1
American Wigeon	14	American Wigeon	427
Barn Swallow	1	Belding's Savannah Sparrow	16
Belding's Savannah Sparrow	1	Belted Kingfisher	4
Belted Kingfisher	3	Black Skimmer	3
Black Scoter	1	Black-bellied Plover	14
Black Skimmer	2	Brant	203
Black-bellied Plover	23	Brown Pelican	1
Brant	221	Bufflehead	7
Brown Pelican	3	California Gull	3
Bufflehead	20	California Least Tern	3
California Gull	33	Caspian Tern	11
Caspian Tern	11	Cliff Swallow	7
Cliff Swallow	3	Common Merganser	7
Common Loon	1	Double-crested Cormorant	3
Double-crested Cormorant	7	Dowitcher sp.	227
Dowitcher sp.	25	Dunlin	74
Dunlin	8	Elegant Tern	5
Eared Grebe	2	Forster's Tern	12
Forster's Tern	2	Great Blue Heron	7
Great Egret	3	Great Egret	3
Greater Yellowlegs	4	Greater Yellowlegs	9
Gull sp.	1	Gull sp.	6
Heermann's Gull	2	Killdeer	12
Killdeer	21	Least Sandpiper	32
Least Sandpiper	69	Lesser Scaup	17
California Least Tern	1	Lesser Yellowlegs	5
Lesser Scaup	86	Little Blue Heron	1
Lesser Yellowlegs	2	Loggerhead Shrike	1
Long-billed Curlew	4	Long-billed Curlew	18
Long-billed Dowitcher	1	Long-billed Dowitcher	11
Mallard	2	Mallard	3
Marbled Godwit	103	Marbled Godwit	730
Mourning Dove	1	Mourning Dove	1
Northern Mockingbird	2	Northern Harrier	2
Osprey	1	Northern Pintail	3
Peep sp.	221	Osprey	7
Peregrine Falcon	1	Peep sp.	609
Red-breasted Merganser	14	Pied-billed Grebe	1
Redhead	2	Red Knot	55
Rock Pigeon	5	Red-breasted Merganser	12
Sanderling	1	Reddish Egret	1
Semipalmated Plover	4	Red-tailed Hawk	1
Semipalmated Sandpiper	20	Ridgway's Rail	1
Short-billed Dowitcher	23	Sanderling	1
Snowy Egret	4	Sandpiper sp.	12
Western Snowy Plover	1	Savannah Sparrow	16
Spotted Sandpiper	1	Semipalmated Plover	18
Surf Scoter	217	Semipalmated Sandpiper	45
Tricolored Heron	1	Short-billed Dowitcher	219
Western Grebe	1	Snowy Egret	11
Western Gull	30	Song Sparrow	1

Common Name	Total Observed	Common Name	Total Observed
Sora	1	American Wigeon	83
Spotted Sandpiper	8	Belding's Savannah Sparrow	1
Surf Scoter	91	Belted Kingfisher	1
Turkey Vulture	1	Black Phoebe	4
Western Gull	29	Black Skimmer	5
Western Sandpiper	1174	Black-bellied Plover	52
Whimbrel	5	Brant	203
Willet	702	Brown Pelican	13
<b>Grid Cell: 424</b>		Bufflehead	6
American Wigeon	189	California Gull	3
Black-bellied Plover	21	Caspian Tern	1
Brant	152	Common Loon	1
Brown Pelican	1	Double-crested Cormorant	33
Bufflehead	6	Dowitcher sp.	144
California Least Tern	2	Dunlin	20
Caspian Tern	3	Eared Grebe	1
Double-crested Cormorant	5	Elegant Tern	2
Dowitcher sp.	24	European Starling	22
Dunlin	18	Forster's Tern	2
Elegant Tern	1	Great Blue Heron	3
Eurasian Wigeon	1	Greater Yellowlegs	5
Forster's Tern	5	Horned Grebe	1
Great Blue Heron	1	House Finch	7
Greater Scaup	2	Killdeer	71
Greater Yellowlegs	8	Least Sandpiper	11
Horned Lark	3	California Least Tern	2
Killdeer	6	Lesser Scaup	18
Least Sandpiper	7	Lesser Yellowlegs	2
Lesser Scaup	24	Long-billed Curlew	14
Lesser Yellowlegs	1	Mallard	2
Long-billed Curlew	7	Marbled Godwit	613
Long-billed Dowitcher	1	Northern Mockingbird	4
Marbled Godwit	60	Osprey	6
Osprey	4	Peep sp.	186
Peep sp.	110	Red Knot	9
Red Knot	4	Reddish Egret	3
Red-breasted Merganser	2	Redhead	4
Reddish Egret	1	Ring-billed Gull	7
Ring-billed Gull	3	Ruddy Turnstone	1
Royal Tern	1	Semipalmated Plover	22
Ruddy Turnstone	1	Short-billed Dowitcher	64
Savannah Sparrow	7	Snowy Egret	16
Semipalmated Plover	10	Spotted Sandpiper	3
Short-billed Dowitcher	76	Surf Scoter	9
Snowy Egret	5	Western Grebe	2
Spotted Sandpiper	1	Western Gull	38
Surf Scoter	41	Western Sandpiper	901
Western Gull	15	Whimbrel	1
Western Sandpiper	847	Willet	349
Whimbrel	2	<b>Grid Cell: 426</b>	
Willet	71	American Coot	96
<b>Grid Cell: 425</b>		American Crow	16
American Coot	11	American Pipit	1
American Crow	3	American Wigeon	133
American White Pelican	3	Black-bellied Plover	1



Common Name	Total Observed	Common Name	Total Observed
Brandt's Cormorant	1	Rock Pigeon	42
Brant	41	Spotted Sandpiper	10
California Gull	241	Swallow sp.	1
Caspian Tern	4	Western Gull	15
Cooper's Hawk	1	Willet	14
Double-crested Cormorant	7	<b>Grid Cell: 428</b>	
Elegant Tern	15	American Coot	25
European Starling	6	American Crow	10
Forster's Tern	8	American Kestrel	1
Great Blue Heron	1	American Wigeon	1
Great Egret	1	Anna's Hummingbird	3
Gull sp.	19	Barn Swallow	26
Horned Grebe	1	Belted Kingfisher	1
Horned Lark	1	Brandt's Cormorant	1
House Finch	1	Brewer's Blackbird	1
House Sparrow	1	California Gull	4
Lesser Scaup	2	Caspian Tern	2
Mallard	8	Cassin's Kingbird	1
Marbled Godwit	3	Cliff Swallow	5
Mourning Dove	2	Double-crested Cormorant	2
Osprey	2	Eared Grebe	5
Pacific Loon	1	European Starling	9
Pied-billed Grebe	4	Forster's Tern	3
Ring-billed Gull	35	Great Blue Heron	2
Rock Pigeon	48	Great Egret	1
Royal Tern	1	Green Heron	1
Ruddy Duck	1	Gull sp.	1
Scaup sp.	3	Horned Grebe	2
Western Snowy Plover	1	House Finch	46
Spotted Sandpiper	3	House Sparrow	8
Surf Scoter	87	House Wren	1
Tern sp.	11	California Least Tern	1
Western Grebe	2	Mallard	54
Western Gull	99	Mourning Dove	1
Willet	22	Northern Rough-winged Swallow	1
<b>Grid Cell: 427</b>		Rock Pigeon	3
American Coot	398	Snowy Egret	1
American Crow	18	Spotted Sandpiper	5
Barn Swallow	12	Western Grebe	2
Brewer's Blackbird	15	Western Gull	19
California Gull	5	<b>Grid Cell: 429</b>	
Cassin's Kingbird	2	American Coot	26
Western Grebe	1	American Crow	3
Double-crested Cormorant	1	American Wigeon	5
Eared Grebe	2	Anna's Hummingbird	4
Forster's Tern	1	Barn Swallow	11
Great Blue Heron	3	Belted Kingfisher	1
Green Heron	1	Brewer's Blackbird	12
Gull sp.	12	California Gull	40
Horned Grebe	7	Caspian Tern	1
House Finch	4	Cliff Swallow	6
House Sparrow	3	Double-crested Cormorant	1
Lesser Scaup	1	Elegant Tern	1
Mallard	360	Eurasian Collared Dove	2
Ring-billed Gull	1	European Starling	4

Common Name	Total Observed	Common Name	Total Observed
Forster's Tern	1	Brandt's Cormorant	2
Great Blue Heron	10	Brant	48
Gull sp.	30	Brewer's Blackbird	43
House Finch	4	Brown Pelican	2
California Least Tern	1	Bufflehead	3
Mallard	11	California Gull	18
Mew Gull	1	Double-crested Cormorant	4
Osprey	1	Eared Grebe	2
Ring-billed Gull	34	Elegant Tern	4
Rock Pigeon	8	European Starling	6
Snowy Egret	1	Forster's Tern	2
Song Sparrow	1	Great Blue Heron	4
Spotted Sandpiper	6	Gull sp.	34
Unidentified bird	67	Gull-billed Tern	1
Western Gull	18	Horned Grebe	1
<b>Grid Cell: 430</b>		House Finch	26
American Coot	40	House Sparrow	10
American Crow	1	California Least Tern	8
American Wigeon	139	Lesser Scaup	2
Anna's Hummingbird	1	Long-billed Curlew	1
Barn Swallow	1	Mallard	29
Brandt's Cormorant	1	Marbled Godwit	1
Brant	41	Northern Pintail	3
Brown Pelican	4	Osprey	29
California Gull	26	Peregrine Falcon	2
Common Loon	1	Pied-billed Grebe	2
Eared Grebe	2	Ring-billed Gull	1
Elegant Tern	2	Rock Pigeon	7
European Starling	4	Scaup sp.	5
Forster's Tern	5	Snowy Egret	2
Great Blue Heron	24	Song Sparrow	1
Gull sp.	2	Surf Scoter	469
California Least Tern	2	Western Grebe	3
Mallard	7	Western Gull	106
Marbled Godwit	7	Willet	25
Northern Pintail	4	<b>Grid Cell: 432</b>	
Osprey	4	Brown Pelican	1
Peep sp.	178	<b>Grid Cell: 433</b>	
Pied-billed Grebe	7	Brandt's Cormorant	2
Reddish Egret	1	Brant	16
Ring-billed Gull	27	Brown Pelican	2
Rock Pigeon	5	Osprey	1
Spotted Sandpiper	2	Surf Scoter	256
Surf Scoter	53	Western Grebe	1
Western Grebe	10	Western Gull	3
Western Gull	41	<b>Grid Cell: 434</b>	
Willet	28	Bufflehead	6
<b>Grid Cell: 431</b>		Caspian Tern	1
American Coot	60	Double-crested Cormorant	2
American Crow	10	Osprey	1
American Wigeon	7	Surf Scoter	184
Barn Swallow	17	Western Gull	2
Black Phoebe	1	<b>Grid Cell: 435</b>	
Black Skimmer	1	Bufflehead	2
Black-crowned Night Heron	1	Surf Scoter	134

Common Name	Total Observed	Common Name	Total Observed
Western Gull	2	California Least Tern	3
<b>Grid Cell: 438</b>		Lesser Scaup	25
Brant	2	Lesser Yellowlegs	3
<b>Grid Cell: 439</b>		Long-billed Curlew	1
American Coot	22	Mallard	3
American Wigeon	33	Marbled Godwit	6
Black Skimmer	7	Mourning Dove	2
Black-bellied Plover	1	Osprey	2
Brant	74	Peep sp.	333
California Gull	1	Ring-billed Gull	95
Caspian Tern	1	Rock Pigeon	105
Double-crested Cormorant	1	Royal Tern	1
Dowitcher sp.	3	Scaup sp.	31
Forster's Tern	6	Semipalmated Plover	1
Gull sp.	4	Snowy Egret	4
California Least Tern	2	Spotted Sandpiper	1
Northern Shoveler	6	Surf Scoter	2
Peep sp.	12	Western Grebe	2
Redhead	144	Western Gull	268
Royal Tern	2	Western Sandpiper	30
Scaup sp.	189	Willet	6
Surf Scoter	20	<b>Grid Cell: 441</b>	
Western Grebe	26	American Avocet	12
Western Gull	16	American Coot	14
Willet	1	American Crow	5
<b>Grid Cell: 440</b>		American Pipit	25
American Coot	72	American White Pelican	8
American White Pelican	2	American Wigeon	379
American Wigeon	168	Anna's Hummingbird	2
Black Phoebe	1	Barn Swallow	2
Black Skimmer	6	Belding's Savannah Sparrow	35
Black-bellied Plover	2	Belted Kingfisher	5
Black-necked Stilt	2	Black Phoebe	1
Brant	104	Black Skimmer	8
Brewer's Blackbird	36	Black Turnstone	1
Brown Pelican	6	Black-bellied Plover	110
Bufflehead	1	Black-necked Stilt	6
California Gull	1186	Brant	18
Caspian Tern	9	Brown Pelican	12
Double-crested Cormorant	1	Bufflehead	5
Dunlin	1	California Gull	913
Eared Grebe	2	Caspian Tern	7
Elegant Tern	84	Cliff Swallow	8
European Starling	21	Common Raven	1
Forster's Tern	8	Double-crested Cormorant	6
Glaucous-winged Gull	1	Dowitcher sp.	147
Great Blue Heron	1	Dunlin	37
Greater Scaup	2	Eared Grebe	3
Green-winged Teal	1	Elegant Tern	181
Gull sp.	4	European Starling	1
Heermann's Gull	9	Forster's Tern	26
Herring Gull	4	Gadwall	16
Horned Grebe	1	Great Blue Heron	4
Killdeer	2	Great Egret	8
Least Sandpiper	3	Greater Scaup	1

Common Name	Total Observed	Common Name	Total Observed
Greater Yellowlegs	17	Black Skimmer	16
Green-winged Teal	9	Black Turnstone	5
Gull sp.	14	Black-bellied Plover	66
Gull-billed Tern	2	Bonaparte's Gull	1
Heermann's Gull	1	Brant	180
Herring Gull	3	Brown Pelican	19
Hooded Oriole	1	Bufflehead	1
Horned Grebe	6	California Gull	298
Horned Lark	123	Caspian Tern	6
House Finch	8	Double-crested Cormorant	60
Killdeer	7	Dowitcher sp.	75
Least Sandpiper	104	Dunlin	54
California Least Tern	8	Elegant Tern	116
Lesser Scaup	3	Forster's Tern	68
Long-billed Curlew	8	Gadwall	4
Long-billed Dowitcher	17	Great Blue Heron	8
Mallard	4	Great Egret	7
Marbled Godwit	213	Greater Yellowlegs	14
Northern Harrier	1	Green-winged Teal	4
Northern Mockingbird	2	Gull sp.	29
Northern Pintail	4	Gull-billed Tern	2
Northern Shoveler	123	Herring Gull	22
Osprey	8	Killdeer	3
Peep sp.	1872	Large-billed Savannah Sparrow	2
Peregrine Falcon	1	Least Sandpiper	244
Red Knot	78	California Least Tern	14
Red-breasted Merganser	6	Lesser Yellowlegs	1
Reddish Egret	2	Long-billed Curlew	28
Redhead	46	Long-billed Dowitcher	36
Red-tailed Hawk	3	Mallard	4
Ring-billed Gull	8	Marbled Godwit	159
Rock Pigeon	1	Northern Harrier	2
Royal Tern	14	Northern Pintail	14
Ruddy Turnstone	6	Northern Shoveler	136
Savannah Sparrow	5	Peep sp.	263
Savannah Sparrow sp. migrant	1	Peregrine Falcon	1
Say's Phoebe	1	Red Knot	12
Scaup sp.	90	Redhead	129
Semipalmated Plover	11	Ring-billed Gull	39
Short-billed Dowitcher	17	Royal Tern	42
Snowy Egret	20	Ruddy Turnstone	3
Spotted Sandpiper	7	Scaup sp.	116
Surf Scoter	1	Semipalmated Plover	30
Turkey Vulture	2	Short-billed Dowitcher	15
Western Grebe	70	Snowy Egret	17
Western Gull	206	Surf Scoter	2
Western Sandpiper	739	Western Grebe	1
Willet	147	Western Gull	1077
Yellow-rumped Warbler	2	Western Sandpiper	835
<b>Grid Cell: 442</b>		Whimbrel	17
American Coot	15	Willet	75
American White Pelican	24	<b>Grid Cell: 443</b>	
American Wigeon	209	American Coot	2
Belding's Savannah Sparrow	30	American White Pelican	2
Belted Kingfisher	1	American Wigeon	172



Common Name	Total Observed	Common Name	Total Observed
Belding's Savannah Sparrow	10	Gull sp.	2
Black Turnstone	18	Herring Gull	3
Black-bellied Plover	8	Horned Grebe	4
Brant	448	Osprey	1
Brown Pelican	1	Peep sp.	9
Bufflehead	1	Redhead	11
California Gull	5	Royal Tern	3
Caspian Tern	2	Scaup sp.	116
Common Raven	2	Surf Scoter	13
Double-crested Cormorant	7	Western Grebe	25
Dunlin	6	Western Gull	9
Eared Grebe	1	<b>Grid Cell: 445</b>	
Elegant Tern	9	Bonaparte's Gull	1
Forster's Tern	99	Brandt's Cormorant	3
Gadwall	4	Brant	170
Great Blue Heron	2	Brown Pelican	2
Greater Yellowlegs	4	Bufflehead	6
Gull sp.	7	California Gull	1
Heermann's Gull	2	Double-crested Cormorant	2
Herring Gull	2	Dowitcher sp.	2
Horned Grebe	3	Elegant Tern	1
Large-billed Savannah Sparrow	1	Forster's Tern	7
Least Sandpiper	104	Gull sp.	2
California Least Tern	1	Horned Grebe	6
Long-billed Curlew	3	Lesser Scaup	4
Long-billed Dowitcher	1	Osprey	2
Loon sp.	1	Pacific Loon	1
Marbled Godwit	31	Peep sp.	1
Northern Harrier	1	Ring-billed Gull	1
Osprey	2	Royal Tern	2
Peep sp.	28	Scaup sp.	306
Pied-billed Grebe	2	Surf Scoter	130
Red Knot	19	Western Grebe	23
Redhead	19	Western Gull	6
Red-tailed Hawk	1	<b>Grid Cell: 447</b>	
Ring-billed Gull	1	Brandt's Cormorant	2
Royal Tern	1	Brant	7
Ruddy Turnstone	11	Brown Pelican	2
Scaup sp.	11	Common Loon	2
Semipalmated Plover	24	Surf Scoter	24
Short-billed Dowitcher	2	<b>Grid Cell: 448</b>	
Snowy Egret	4	Brown Pelican	2
Surf Scoter	11	Forster's Tern	1
Western Gull	26	<b>Grid Cell: 449</b>	
Western Sandpiper	199	Black Scoter	2
Willet	54	Bufflehead	2
<b>Grid Cell: 444</b>		Lesser Scaup	4
Bonaparte's Gull	26	Western Gull	1
Brant	83	<b>Grid Cell: 450</b>	
Brown Pelican	12	Brant	6
California Gull	12	<b>Grid Cell: 451</b>	
Common Loon	1	Brant	50
Eared Grebe	1	<b>Grid Cell: 452</b>	
Elegant Tern	7	Brant	12
Forster's Tern	11	Brown Pelican	5

Common Name	Total Observed	Common Name	Total Observed
Bufflehead	3	House Sparrow	9
Common Loon	2	Hummingbird sp.	1
Double-crested Cormorant	1	Killdeer	2
Peep sp.	12	Mallard	51
Surf Scoter	140	Marbled Godwit	13
Western Gull	3	Mourning Dove	12
<b>Grid Cell: 453</b>		Osprey	3
Brant	86	Peregrine Falcon	1
Brown Pelican	9	Rock Pigeon	11
Elegant Tern	2	Snowy Egret	5
Forster's Tern	2	Song Sparrow	1
House Finch	1	Spotted Sandpiper	5
Marbled Godwit	2	Surf Scoter	221
Surf Scoter	240	Western Grebe	1
Western Gull	11	Western Gull	198
Willet	2	Western Sandpiper	1
<b>Grid Cell: 454</b>		Willet	3
Barn Swallow	3	Yellow-rumped Warbler	2
Brown Pelican	2	<b>Grid Cell: 456</b>	
Caspian Tern	1	Barn Swallow	1
Double-crested Cormorant	2	Brandt's Cormorant	2
Eared Grebe	1	Brant	32
European Starling	1	Brown Pelican	4
Forster's Tern	3	Bufflehead	1
Gull sp.	1	Cormorant sp.	1
House Sparrow	4	Double-crested Cormorant	1
Rock Pigeon	6	Great Blue Heron	1
Snowy Egret	1	Surf Scoter	259
Spotted Sandpiper	1	Western Gull	19
Surf Scoter	18	<b>Grid Cell: 457</b>	
Western Gull	14	Brant	12
<b>Grid Cell: 455</b>		Bufflehead	11
Allen's Hummingbird	1	Common Loon	1
American Crow	10	Forster's Tern	2
Anna's Hummingbird	3	Surf Scoter	68
Barn Swallow	27	Western Grebe	1
Belted Kingfisher	1	<b>Grid Cell: 458</b>	
Black Phoebe	3	Anna's Hummingbird	1
Brandt's Cormorant	2	Bonaparte's Gull	1
Brant	14	Brandt's Cormorant	1
Brown Pelican	20	Brant	40
California Least Tern	3	Brown Pelican	1
Caspian Tern	2	Bufflehead	6
Cassin's Kingbird	3	Double-crested Cormorant	4
Common Loon	1	Eared Grebe	1
Common Raven	1	Lesser Scaup	50
Cooper's Hawk	1	Osprey	3
Double-crested Cormorant	16	Surf Scoter	256
Eared Grebe	25	Western Gull	11
Elegant Tern	6	Willet	2
European Starling	20	<b>Grid Cell: 459</b>	
Forster's Tern	11	Bonaparte's Gull	18
Great Blue Heron	8	Bufflehead	5
Great Egret	1	Lesser Scaup	16
House Finch	37	Western Gull	2

Common Name	Total Observed
<b>Grid Cell: 460</b>	
Brant	48
Surf Scoter	100
Western Gull	4
<b>Grid Cell: 461</b>	
Surf Scoter	74
<b>Grid Cell: 462</b>	
Brant	5
Common Loon	1
Surf Scoter	108
<b>Grid Cell: 463</b>	
Surf Scoter	43
<b>Grid Cell: 464</b>	
Brant	5
Surf Scoter	12
<b>Grid Cell: 465</b>	
American Wigeon	6
Brant	2
Scaup sp.	3
<b>Grid Cell: 466</b>	
Western Gull	2
<b>Grid Cell: 467</b>	
American Wigeon	14
Black Phoebe	1
Black-bellied Plover	3
Brant	125
Brown Pelican	4
California Least Tern	2
Cliff Swallow	4
Double-crested Cormorant	2
Elegant Tern	1
Forster's Tern	7
Lesser Scaup	3
Marbled Godwit	9
Osprey	1
Red Knot	2
Ring-billed Gull	3
Sandpiper sp.	20
Scaup sp.	56
Snowy Egret	5
Surf Scoter	58
Western Grebe	11
Western Gull	40
Western Sandpiper	150
Willet	24
<b>Grid Cell: 468</b>	
Anna's Hummingbird	1
Barn Owl	1
Barn Swallow	1
Black Phoebe	1
Brant	20
Double-crested Cormorant	1
Forster's Tern	3
Great Blue Heron	2
Lesser Scaup	6

Common Name	Total Observed
Long-billed Curlew	1
Mallard	14
Marbled Godwit	83
Snowy Egret	1
Surf Scoter	30
Western Gull	4
Western Sandpiper	20
Willet	33
<b>Grid Cell: 469</b>	
American Wigeon	16
Black-bellied Plover	2
Brant	48
Forster's Tern	2
Marbled Godwit	26
Redhead	14
Ring-billed Gull	1
Semipalmated Plover	2
Surf Scoter	10
Western Sandpiper	70
Willet	25
<b>Grid Cell: 470</b>	
American Wigeon	10
Black Phoebe	1
Black-bellied Plover	5
Brant	16
Bushtit	10
Double-crested Cormorant	1
Dowitcher sp.	50
Great Egret	1
Greater Yellowlegs	7
Horned Grebe	1
House Finch	1
Least Sandpiper	30
California Least Tern	1
Lesser Scaup	1
Long-billed Curlew	4
Mallard	2
Marbled Godwit	51
Osprey	1
Ring-billed Gull	41
Royal Tern	1
Semipalmated Plover	9
Snowy Egret	4
Western Gull	22
Western Sandpiper	399
Whimbrel	4
Willet	18
<b>Grid Cell: 471</b>	
American Wigeon	15
Barn Owl	2
Black-bellied Plover	4
Brandt's Cormorant	3
Brant	620
Brown Pelican	16
Double-crested Cormorant	2

Common Name	Total Observed	Common Name	Total Observed
Dowitcher sp.	53	Forster's Tern	8
Elegant Tern	21	Great Egret	1
Forster's Tern	5	Gull sp.	2
Horned Grebe	4	Herring Gull	1
Lesser Scaup	8	Horned Grebe	6
Long-billed Curlew	4	Peep sp.	17
Mallard	11	Redhead	88
Marbled Godwit	32	Royal Tern	3
Mourning Dove	5	Scaup sp.	89
Osprey	1	Surf Scoter	106
Red Knot	6	Western Grebe	2
Red-breasted Merganser	2	Western Gull	4
Ring-billed Gull	52	Western Sandpiper	2
Royal Tern	3	Willet	3
Semipalmated Plover	2	<b>Grid Cell: 475</b>	
Snowy Egret	2	Barn Swallow	1
Surf Scoter	85	Belding's Savannah Sparrow	34
Western Gull	97	Black Turnstone	2
Western Sandpiper	336	Black-bellied Plover	1
Whimbrel	1	Bonaparte's Gull	2
Willet	18	Brant	168
<b>Grid Cell: 472</b>		Brown Pelican	9
Brant	26	California Gull	2
Bufflehead	2	Common Raven	2
Forster's Tern	6	Double-crested Cormorant	2
Lesser Scaup	12	Elegant Tern	1
Surf Scoter	78	Forster's Tern	17
Western Gull	2	Great Egret	2
<b>Grid Cell: 473</b>		Large-billed Savannah Sparrow	5
Barn Swallow	1	Least Sandpiper	20
Brant	24	Mourning Dove	1
Brown Pelican	1	Osprey	7
Double-crested Cormorant	6	Peep sp.	16
Elegant Tern	10	Royal Tern	3
Forster's Tern	8	Short-eared Owl	1
Gull sp.	1	Snowy Egret	1
Horned Grebe	1	Surf Scoter	7
Little Blue Heron	1	Western Gull	12
Osprey	2	Western Sandpiper	2
Peep sp.	1	Willet	13
Redhead	18	<b>Grid Cell: 476</b>	
Scaup sp.	148	Brown Pelican	2
Surf Scoter	15	Osprey	4
Western Grebe	4	Peep sp.	1
Western Gull	77	Western Gull	14
<b>Grid Cell: 474</b>		<b>Grid Cell: 477</b>	
American Coot	1	Brant	2
Bonaparte's Gull	3	Surf Scoter	124
Brant	97	<b>Grid Cell: 478</b>	
Brown Pelican	1	Brant	56
Bufflehead	1	Bufflehead	1
California Gull	13	Double-crested Cormorant	1
Caspian Tern	5	Royal Tern	1
Double-crested Cormorant	3	Western Gull	5
Elegant Tern	31		



Common Name	Total Observed	Common Name	Total Observed
<b>Grid Cell: 480</b>		Black-bellied Plover	528
American Crow	1	Bonaparte's Gull	4
American Wigeon	7	Brant	737
Audubon's Warbler (Yellow-Rumped)	1	Brown Pelican	16
Belding's Savannah Sparrow	1	Bufflehead	2
Belted Kingfisher	3	Bushtit	2
Black-bellied Plover	4	California Gull	7
Brant	99	Caspian Tern	3
Brown Pelican	4	Common Tern	9
Bushtit	1	Cooper's Hawk	1
Caspian Tern	5	Double-crested Cormorant	12
Common Loon	1	Dowitcher sp.	767
Cooper's Hawk	1	Dunlin	96
Double-crested Cormorant	4	Eared Grebe	1
Eared Grebe	5	Elegant Tern	1559
Elegant Tern	370	Forster's Tern	73
Forster's Tern	5	Great Blue Heron	2
Great Egret	2	Great Egret	8
Greater Yellowlegs	2	Greater Yellowlegs	35
Gull-billed Tern	1	Gull-billed Tern	6
Herring Gull	1	Herring Gull	16
House Finch	16	Hooded Oriole	1
Killdeer	7	Horned Grebe	2
Least Sandpiper	41	House Finch	82
California Least Tern	1	Killdeer	20
Long-billed Curlew	2	Least Sandpiper	93
Marbled Godwit	41	California Least Tern	6
Mourning Dove	2	Long-billed Curlew	20
Northern Rough-winged Swallow	4	Marbled Godwit	309
Osprey	1	Marsh Wren	1
Reddish Egret	1	Osprey	5
Ring-billed Gull	1	Red Knot	413
Rock Pigeon	3	Red-breasted Merganser	10
Royal Tern	13	Reddish Egret	5
Ruddy Turnstone	6	Redhead	179
Savannah Sparrow	5	Ring-billed Gull	25
Semipalmated Plover	2	Rock Pigeon	28
Snowy Egret	9	Royal Tern	268
Western Snowy Plover	1	Ruddy Turnstone	17
Spotted Sandpiper	4	Scaup sp.	78
Surf Scoter	5	Semipalmated Plover	331
Western Grebe	113	Snowy Egret	8
Western Gull	17	Surf Scoter	6
Western Sandpiper	3	Western Grebe	3
White-crowned Sparrow	8	Western Gull	58
Willet	14	Western Meadowlark	1
Yellow-rumped Warbler	1	Western Sandpiper	2806
<b>Grid Cell: 481</b>		Western Snowy Plover	115
American Wigeon	138	Whimbrel	3
Anna's Hummingbird	3	White-crowned Sparrow	19
Audubon's Warbler (Yellow-Rumped)	4	Willet	656
Barn Swallow	6	Wilson's Warbler	2
Belding's Savannah Sparrow	48	Yellow-rumped Warbler	6
Belted Kingfisher	1	<b>Grid Cell: 484</b>	
Black Skimmer	2	Brown Pelican	1

Common Name	Total Observed	Common Name	Total Observed
Surf Scoter	20	Redhead	14
<b>Grid Cell: 485</b>		Royal Tern	4
American White Pelican	10	Ruddy Turnstone	4
Black-bellied Plover	1	Semipalmated Plover	5
Brandt's Cormorant	1	Short-eared Owl	2
Brant	342	Snowy Egret	1
Brown Pelican	13	Spotted Sandpiper	2
Bufflehead	14	Surf Scoter	9
California Gull	1	Western Gull	59
Double-crested Cormorant	19	Western Sandpiper	7
Eared Grebe	12	Willet	39
Elegant Tern	30	<b>Grid Cell: 487</b>	
Forster's Tern	15	Belding's Savannah Sparrow	8
Gull sp.	6	Black Turnstone	4
Horned Grebe	4	Black-bellied Plover	22
Lesser Scaup	6	Double-crested Cormorant	2
Northern Shoveler	2	Forster's Tern	5
Osprey	1	Gull sp.	1
Pacific Loon	1	Herring Gull	1
Peep sp.	1	Least Sandpiper	1
Redhead	286	California Least Tern	10
Royal Tern	6	Long-billed Dowitcher	2
Scaup sp.	197	Osprey	7
Surf Scoter	374	Peep sp.	7
Western Grebe	55	Royal Tern	4
Western Gull	16	Say's Phoebe	1
Willet	4	Western Gull	10
<b>Grid Cell: 486</b>		Western Sandpiper	1
American Pipit	1	Whimbrel	1
American White Pelican	45	Willet	11
Barn Swallow	1	<b>Grid Cell: 488</b>	
Belding's Savannah Sparrow	25	American Coot	9
Black Turnstone	32	Belding's Savannah Sparrow	19
Black-bellied Plover	15	Belted Kingfisher	1
Brant	438	Black Skimmer	7
Brown Pelican	71	Black-bellied Plover	4
California Gull	3	Brant	67
Double-crested Cormorant	373	Brown Pelican	3
Dunlin	1	Bufflehead	4
Elegant Tern	2	Caspian Tern	1
Forster's Tern	236	Common Loon	1
Great Blue Heron	11	Eared Grebe	2
Greater Yellowlegs	1	Elegant Tern	3
Gull sp.	1	Forster's Tern	7
Horned Lark	15	Gadwall	2
Killdeer	5	Great Blue Heron	1
Large-billed Savannah Sparrow	3	Great Egret	3
Least Sandpiper	82	Gull sp.	1
California Least Tern	32	Herring Gull	1
Long-billed Curlew	4	Killdeer	3
Marbled Godwit	4	Large-billed Savannah Sparrow	1
Northern Harrier	4	Least Sandpiper	12
Osprey	14	California Least Tern	1
Peep sp.	17	Marbled Godwit	2
Pied-billed Grebe	1	Northern Shoveler	7

Common Name	Total Observed	Common Name	Total Observed
Osprey	6	Mallard	3
Peep sp.	12	Marbled Godwit	123
Red-tailed Hawk	1	Northern Harrier	4
Royal Tern	1	Northern Pintail	283
Scaup sp.	5	Northern Shoveler	192
Semipalmated Plover	1	Osprey	9
Snowy Egret	2	Peep sp.	255
Surf Scoter	1	Peregrine Falcon	2
Western Grebe	121	Red Knot	66
Western Gull	6	Red-breasted Merganser	2
Whimbrel	2	Reddish Egret	1
Willet	4	Ring-billed Gull	74
<b>Grid Cell: 489</b>		Royal Tern	28
American Avocet	36	Ruddy Turnstone	7
American Pipit	2	Sanderling	1
American White Pelican	16	Semipalmated Plover	69
American Wigeon	484	Short-billed Dowitcher	2
Anna's Hummingbird	1	Snowy Egret	33
Barn Swallow	8	Western Snowy Plover	6
Belding's Savannah Sparrow	39	Spotted Sandpiper	3
Belted Kingfisher	2	Surf Scoter	5
Black Skimmer	9	Thayer's Gull	1
Black Turnstone	14	Western Grebe	7
Black-bellied Plover	1163	Western Gull	241
Black-necked Stilt	27	Western Peep	900
Brant	998	Western Sandpiper	5010
Brown Pelican	3	Whimbrel	31
Bufflehead	3	Willet	61
California Gull	210	<b>Grid Cell: 490</b>	
Caspian Tern	3	American Avocet	6
Cliff Swallow	2	American Crow	3
Common Raven	2	American Kestrel	3
Common Tern	1	American Pipit	2
Double-crested Cormorant	9	American Wigeon	50
Dowitcher sp.	112	Anna's Hummingbird	4
Dunlin	97	Barn Swallow	4
Eared Grebe	3	Belding's Savannah Sparrow	46
Elegant Tern	52	Belted Kingfisher	2
Forster's Tern	57	Black Phoebe	1
Gadwall	3	Black Skimmer	5
Great Blue Heron	2	Black-bellied Plover	3
Great Egret	7	Black-necked Stilt	18
Greater Scaup	3	Brant	5
Greater Yellowlegs	9	Brown Pelican	4
Green Heron	2	California Gull	72
Gull sp.	3	Caspian Tern	7
Gull-billed Tern	4	Cliff Swallow	17
Herring Gull	45	Common Raven	1
House Finch	2	Double-crested Cormorant	4
Killdeer	4	Eared Grebe	11
Least Peep	20	Elegant Tern	5
Least Sandpiper	146	Forster's Tern	22
California Least Tern	10	Glaucous-winged Gull	1
Little Blue Heron	1	Great Blue Heron	5
Long-billed Curlew	52	Great Egret	3

Common Name	Total Observed	Common Name	Total Observed
Greater Yellowlegs	4	Surf Scoter	1
Gull sp.	4	Western Grebe	55
Hooded Oriole	1	Western Gull	14
Horned Lark	9	<b>Grid Cell: 493</b>	
House Finch	18	American White Pelican	35
Killdeer	4	Anna's Hummingbird	1
Least Sandpiper	4	Black-bellied Plover	10
California Least Tern	3	Brant	1304
Lesser Goldfinch	5	Brown Pelican	9
Long-billed Curlew	1	Caspian Tern	1
Mallard	2	Double-crested Cormorant	45
Marbled Godwit	6	Elegant Tern	10
Northern Harrier	2	Forster's Tern	44
Northern Pintail	7	Great Blue Heron	3
Northern Shoveler	5	Gull sp.	1
Osprey	6	Horned Grebe	1
Peep sp.	29	California Least Tern	4
Peregrine Falcon	1	Long-billed Curlew	1
Red-tailed Hawk	7	Northern Pintail	3
Ruddy Duck	2	Peep sp.	3
Say's Phoebe	1	Redhead	18
Semipalmated Plover	6	Royal Tern	5
Snowy Egret	2	Scaup sp.	30
Spotted Sandpiper	8	Western Grebe	9
Surf Scoter	3	Western Gull	5
Turkey Vulture	1	Willet	3
Western Grebe	14	<b>Grid Cell: 494</b>	
Western Gull	47	American White Pelican	41
Western Sandpiper	14	Black-bellied Plover	10
Whimbrel	1	Brant	553
Willet	11	Brown Pelican	10
Yellow-rumped Warbler	4	Caspian Tern	1
<b>Grid Cell: 492</b>		Double-crested Cormorant	32
American Coot	8	Elegant Tern	142
American Wigeon	3	Forster's Tern	4
Black-bellied Plover	1	Gull sp.	13
Brant	1690	Northern Pintail	3
Brown Pelican	5	Royal Tern	6
Bufflehead	15	Scaup sp.	38
California Gull	3	Surf Scoter	1
Caspian Tern	1	Western Gull	2
Common Loon	1	Willet	1
Common Raven	1	<b>Grid Cell: 495</b>	
Double-crested Cormorant	3	American Wigeon	196
Eared Grebe	1	Black-bellied Plover	3
Elegant Tern	47	Bonaparte's Gull	10
Forster's Tern	27	Brant	292
Gull sp.	1	Brown Pelican	3
Horned Grebe	1	Bufflehead	4
California Least Tern	6	California Gull	23
Northern Harrier	1	Caspian Tern	4
Osprey	1	Double-crested Cormorant	1
Peep sp.	2	Eared Grebe	1
Royal Tern	3	Elegant Tern	85
Scaup sp.	29	Forster's Tern	21



Common Name	Total Observed	Common Name	Total Observed
Great Blue Heron	1	Greater Yellowlegs	16
Gull sp.	3	Gull-billed Tern	3
Herring Gull	3	Herring Gull	1
Horned Grebe	45	Horned Grebe	1
California Least Tern	4	Horned Lark	7
Mallard	10	House Finch	14
Marbled Godwit	3	Killdeer	3
Northern Pintail	1	Least Sandpiper	263
Northern Shoveler	23	California Least Tern	6
Osprey	4	Little Blue Heron	1
Peep sp.	2	Long-billed Curlew	19
Ring-billed Gull	1	Marbled Godwit	265
Royal Tern	15	Osprey	3
Ruddy Turnstone	2	Pacific Loon	1
Scaup sp.	2	Peep sp.	66
Snowy Egret	1	Red Knot	41
Western Grebe	2	Red-breasted Merganser	3
Western Gull	35	Reddish Egret	1
Western Sandpiper	1	Ring-billed Gull	5
Willet	1	Royal Tern	13
<b>Grid Cell: 496</b>		Scaup sp.	80
Bonaparte's Gull	16	Semipalmated Plover	26
Brant	125	Short-billed Dowitcher	2
Brown Pelican	4	Snowy Egret	17
Double-crested Cormorant	5	Western Snowy Plover	1
Elegant Tern	82	Western Grebe	17
Forster's Tern	6	Western Gull	3
Gull sp.	6	Western Sandpiper	700
California Least Tern	1	White-crowned Sparrow	9
Osprey	4	Willet	299
Peep sp.	17	Yellow-Crowned Night-Heron	1
Royal Tern	5	<b>Grid Cell: 500</b>	
Surf Scoter	130	American Pipit	1
Western Grebe	4	Barn Swallow	2
Western Gull	4	Belding's Savannah Sparrow	51
Willet	1	Belted Kingfisher	3
<b>Grid Cell: 499</b>		Black Skimmer	4
American Wigeon	43	Black-bellied Plover	29
Barn Swallow	2	Brant	218
Belding's Savannah Sparrow	58	Brown Pelican	14
Belted Kingfisher	2	Caspian Tern	1
Black Phoebe	1	Cliff Swallow	1
Black Skimmer	1	Double-crested Cormorant	5
Black-bellied Plover	37	Dowitcher sp.	32
Brant	351	Elegant Tern	709
Brown Pelican	6	Forster's Tern	8
Bufflehead	4	Greater Yellowlegs	7
Double-crested Cormorant	3	Gull-billed Tern	1
Dowitcher sp.	255	Herring Gull	2
Dunlin	1	Horned Grebe	5
Eared Grebe	1	Killdeer	4
Elegant Tern	332	Least Sandpiper	21
Forster's Tern	50	California Least Tern	3
Great Blue Heron	6	Long-billed Curlew	4
Great Egret	11	Marbled Godwit	22

Common Name	Total Observed	Common Name	Total Observed
Merlin	1	<b>Grid Cell: 502</b>	
Osprey	8	American White Pelican	1
Pacific Loon	1	American Wigeon	414
Red Knot	1	Black Skimmer	1
Reddish Egret	1	Black-bellied Plover	367
Redhead	35	Brant	172
Ring-billed Gull	2	Brown Pelican	2
Royal Tern	44	Bufflehead	12
Ruddy Turnstone	4	California Gull	3
Savannah Sparrow	2	Caspian Tern	3
Semipalmated Plover	18	Double-crested Cormorant	1
Surf Scoter	4	Dowitcher sp.	372
Swallow sp.	1	Dunlin	59
Turkey Vulture	1	Elegant Tern	428
Western Grebe	24	Forster's Tern	12
Western Gull	16	Great Egret	1
Western Meadowlark	1	Greater Yellowlegs	2
Western Sandpiper	146	Green-winged Teal	2
Willet	51	Least Sandpiper	32
<b>Grid Cell: 501</b>		Long-billed Curlew	15
Belding's Savannah Sparrow	14	Marbled Godwit	153
Black-bellied Plover	106	Northern Pintail	23
Black-necked Stilt	6	Northern Shoveler	165
Brown Pelican	10	Osprey	1
Bufflehead	7	Peep sp.	8
Caspian Tern	7	Red Knot	43
Cliff Swallow	3	Reddish Egret	1
Common Raven	1	Ring-billed Gull	79
Double-crested Cormorant	6	Royal Tern	2
Dowitcher sp.	217	Scaup sp.	85
Dunlin	101	Snowy Egret	5
Elegant Tern	220	Western Sandpiper	2425
Forster's Tern	10	Willet	47
Great Egret	2	<b>Grid Cell: 503</b>	
Greater Yellowlegs	12	American Avocet	2
Least Sandpiper	150	American Wigeon	664
California Least Tern	2	Belding's Savannah Sparrow	11
Long-billed Curlew	11	Black Skimmer	4
Marbled Godwit	111	Black-bellied Plover	268
Northern Harrier	1	Black-necked Stilt	17
Osprey	1	Bonaparte's Gull	2
Peregrine Falcon	1	Brant	295
Red Knot	57	Brown Pelican	3
Ring-billed Gull	7	Bufflehead	3
Royal Tern	7	California Gull	24
Ruddy Turnstone	1	Caspian Tern	127
Savannah Sparrow	3	Common Loon	1
Semipalmated Plover	5	Double-crested Cormorant	8
Snowy Egret	1	Dowitcher sp.	134
Turkey Vulture	1	Dunlin	345
Western Gull	4	Eared Grebe	1
Western Sandpiper	4721	Elegant Tern	2352
Whimbrel	9	Forster's Tern	23
Willet	62	Gadwall	2
		Great Egret	2

Common Name	Total Observed	Common Name	Total Observed
Greater Yellowlegs	20	Snowy Egret	4
Gull sp.	26	Western Snowy Plover	25
Gull-billed Tern	1	Western Gull	30
Least Sandpiper	181	Western Sandpiper	6710
California Least Tern	7	Willet	211
Long-billed Curlew	31	<b>Grid Cell: 505</b>	
Mallard	5	American Avocet	21
Marbled Godwit	168	American White Pelican	1
Northern Harrier	3	American Wigeon	2175
Northern Pintail	6	Belding's Savannah Sparrow	2
Northern Shoveler	7	Black Skimmer	5
Red Knot	217	Black-bellied Plover	546
Red-necked Phalarope	1	Bonaparte's Gull	10
Ring-billed Gull	5	Brant	963
Royal Tern	14	Brown Pelican	5
Semipalmated Plover	404	California Gull	22
Snowy Egret	7	Caspian Tern	10
Western Snowy Plover	9	Double-crested Cormorant	2
Tree Swallow	11	Dowitcher sp.	128
Western Gull	4	Dunlin	320
Western Sandpiper	6789	Eared Grebe	2
Willet	54	Elegant Tern	856
Wilson's Phalarope	4	Forster's Tern	47
<b>Grid Cell: 504</b>		Great Egret	1
American White Pelican	1	Greater Yellowlegs	5
American Wigeon	522	Gull sp.	26
Belding's Savannah Sparrow	13	Herring Gull	2
Black Skimmer	3	Horned Grebe	26
Black-bellied Plover	348	California Least Tern	4
Black-necked Stilt	11	Long-billed Curlew	3
Brant	16	Marbled Godwit	64
Brown Pelican	3	Northern Pintail	55
California Gull	14	Osprey	1
Caspian Tern	5	Peep sp.	2
Dowitcher sp.	539	Peregrine Falcon	1
Dunlin	773	Red Knot	104
Elegant Tern	729	Ring-billed Gull	1
Forster's Tern	16	Royal Tern	1
Great Egret	1	Sandpiper sp.	4000
Greater Yellowlegs	25	Semipalmated Plover	196
Gull-billed Tern	2	Snowy Egret	1
Herring Gull	2	Western Snowy Plover	1
Horned Grebe	1	Western Gull	32
Least Sandpiper	242	Western Sandpiper	510
California Least Tern	6	Willet	72
Long-billed Curlew	31	<b>Grid Cell: 506</b>	
Marbled Godwit	177	American Wigeon	128
Northern Harrier	1	Belding's Savannah Sparrow	20
Northern Pintail	2	Black Skimmer	4
Northern Shoveler	6	Black Turnstone	1
Osprey	4	Black-bellied Plover	734
Peregrine Falcon	2	Black-necked Stilt	31
Red Knot	675	Bonaparte's Gull	1
Reddish Egret	1	Brant	540
Semipalmated Plover	680	Brown Pelican	1

Common Name	Total Observed	Common Name	Total Observed
Bufflehead	1	Northern Pintail	2
California Gull	11	Northern Shoveler	125
Caspian Tern	8	Osprey	9
Common Tern	1	Peep sp.	2
Double-crested Cormorant	2	Redhead	21
Dowitcher sp.	144	Ring-billed Gull	15
Dunlin	126	Royal Tern	2
Eared Grebe	1	Scaup sp.	3
Elegant Tern	1188	Snowy Egret	2
Forster's Tern	20	Western Grebe	1
Great Egret	2	Western Gull	2
Greater Yellowlegs	15	Western Sandpiper	274
Gull-billed Tern	2	Willet	4
Herring Gull	1	<b>Grid Cell: 512</b>	
Killdeer	1	Black-bellied Plover	1
Least Sandpiper	141	Brant	9
California Least Tern	16	Dowitcher sp.	3
Long-billed Curlew	24	Forster's Tern	1
Mallard	1	Great Blue Heron	1
Marbled Godwit	148	Marbled Godwit	30
Northern Pintail	1	Sandpiper sp.	150
Northern Shoveler	77	Semipalmated Plover	4
Osprey	1	Western Gull	23
Red Knot	212	Western Sandpiper	100
Red-breasted Merganser	1	Willet	4
Reddish Egret	1	<b>Grid Cell: 513</b>	
Ring-billed Gull	22	Allen's Hummingbird	1
Royal Tern	21	American Crow	3
Ruddy Turnstone	2	Anna's Hummingbird	2
Semipalmated Plover	519	Barn Owl	2
Snowy Egret	2	Barn Swallow	19
Western Snowy Plover	19	Black Phoebe	5
Western Grebe	1	Brown Pelican	2
Western Gull	44	Bufflehead	5
Western Sandpiper	5500	Caspian Tern	1
Whimbrel	22	Cliff Swallow	29
Willet	69	Cooper's Hawk	1
<b>Grid Cell: 507</b>		Double-crested Cormorant	2
American Wigeon	38	Eared Grebe	13
Black Skimmer	1	Elegant Tern	15
Black-bellied Plover	6	European Starling	14
Black-necked Stilt	1	Forster's Tern	8
Brant	2	Great Blue Heron	2
Brown Pelican	1	Horned Grebe	1
Bufflehead	1	House Finch	30
Dowitcher sp.	18	House Sparrow	6
Elegant Tern	48	Hummingbird sp.	1
Forster's Tern	11	Mallard	14
Great Egret	3	Marbled Godwit	1
Greater Yellowlegs	3	Mourning Dove	10
Green-winged Teal	2	Osprey	3
Least Sandpiper	26	Pied-billed Grebe	1
California Least Tern	3	Snowy Egret	2
Long-billed Curlew	1	Song Sparrow	1
Marbled Godwit	3	Spotted Sandpiper	1



Common Name	Total Observed	Common Name	Total Observed
Surf Scoter	2	Lesser Yellowlegs	4
Western Grebe	32	Long-billed Curlew	15
Western Gull	58	Long-billed Dowitcher	10
Willet	2	Mallard	93
Yellow Warbler	2	Marbled Godwit	807
<b>Grid Cell: 514</b>		Northern Harrier	3
Allen's Hummingbird	1	Northern Mockingbird	2
American Avocet	16	Northern Pintail	24
American Coot	169	Northern Shoveler	94
American Crow	3	Osprey	3
American Pipit	1	Peep sp.	1888
American White Pelican	2	Peregrine Falcon	1
American Wigeon	2140	Pied-billed Grebe	1
Anna's Hummingbird	1	Red Knot	90
Barn Swallow	4	Red-breasted Merganser	4
Belding's Savannah Sparrow	2	Redhead	17
Belted Kingfisher	1	Red-tailed Hawk	1
Black Skimmer	35	Ridgway's Rail	1
Black-bellied Plover	257	Ring-billed Gull	193
Black-necked Stilt	7	Rock Pigeon	2
Blue-winged Teal	40	Royal Tern	11
Bonaparte's Gull	1	Ruddy Turnstone	2
Brant	58	Savannah Sparrow	2
Brown Pelican	3	Say's Phoebe	1
Bufflehead	3	Scaup sp.	74
California Gull	820	Semipalmated Plover	174
Caspian Tern	46	Short-billed Dowitcher	558
Cassin's Kingbird	1	Snowy Egret	60
Cinnamon Teal	10	Sora	2
Cliff Swallow	2	Spotted Sandpiper	4
Common Tern	1	Surf Scoter	1
Double-crested Cormorant	5	Unidentified bird	85
Dowitcher sp.	542	Western Grebe	4
Dunlin	16	Western Gull	278
Eared Grebe	4	Western Sandpiper	2541
Elegant Tern	329	Whimbrel	7
Eurasian Collared Dove	1	White-crowned Sparrow	1
Eurasian Wigeon	1	Willet	393
European Starling	3	<b>Grid Cell: 414A</b>	
Forster's Tern	14	American Crow	1
Gadwall	3	Anna's Hummingbird	4
Golden Plover sp.	2	Audubon's Warbler (Yellow-Rumped)	8
Great Blue Heron	12	Belted Kingfisher	1
Great Egret	10	Black Phoebe	2
Greater Yellowlegs	32	Black-bellied Plover	5
Green-winged Teal	196	Brant	75
Gull sp.	326	Brown Pelican	3
Heermann's Gull	8	Cassin's Kingbird	1
Hooded Oriole	2	Cooper's Hawk	1
House Finch	5	Dunlin	6
House Sparrow	4	Elegant Tern	5
Killdeer	1	European Starling	6
Least Sandpiper	55	Great Blue Heron	4
California Least Tern	4	Great Egret	4
Lesser Scaup	6	Greater Yellowlegs	3

Common Name	Total Observed	Common Name	Total Observed
Gull-billed Tern	4	Osprey	2
Horned Lark	8	Peregrine Falcon	1
House Finch	41	Ring-billed Gull	40
House Sparrow	1	Royal Tern	1
Killdeer	67	Semipalmated Plover	8
California Least Tern	1	Snowy Egret	5
Long-billed Curlew	7	Song Sparrow	13
Marbled Godwit	13	Spotted Sandpiper	1
Northern Mockingbird	1	Swallow sp.	4
Osprey	1	Unknown code (AMOR)	2
Red Knot	1	Unknown code (BEWR)	1
Red-tailed Hawk	1	Unknown code (WOSP)	2
Ring-billed Gull	16	Western Gull	52
Sanderling	2	Western Sandpiper	40
Savannah Sparrow	2	White-crowned Sparrow	2
Semipalmated Plover	101	Willet	4
Snowy Egret	2	<b>Grid Cell: 414C</b>	
Western Snowy Plover	3	Allen's Hummingbird	1
Swallow sp.	2	American Crow	2
Unknown code (BSS)	1	Anna's Hummingbird	13
Unknown code (HolWar)	5	Audubon's Warbler (Yellow-Rumped)	6
Unknown code (SPBL)	15	Belted Kingfisher	1
Unknown code (SVSP)	2	Black Phoebe	4
Western Gull	20	Brant	434
Western Sandpiper	244	Brown Pelican	44
Whimbrel	1	California Gull	10
White-crowned Sparrow	10	Caspian Tern	8
Willet	10	Double-crested Cormorant	9
<b>Grid Cell: 414B</b>		Elegant Tern	4
American Crow	3	European Starling	13
American Kestrel	1	Forster's Tern	7
Anna's Hummingbird	15	Great Blue Heron	6
Audubon's Warbler (Yellow-Rumped)	13	House Finch	26
Barn Swallow	4	House Sparrow	57
Black Phoebe	5	California Least Tern	2
Black-bellied Plover	1	Long-billed Curlew	1
Bonaparte's Gull	1	Marbled Godwit	1
Brant	75	Mourning Dove	3
Brown Pelican	6	Orange-Crowned Warbler	5
Bushtit	32	Osprey	2
California Gull	6	Red-breasted Merganser	1
Caspian Tern	1	Ring-billed Gull	21
Cliff Swallow	2	Royal Tern	8
Common Yellowthroat	1	Scaup sp.	2
Dowitcher sp.	2	Semipalmated Sandpiper	1
Elegant Tern	2	Snowy Egret	3
Great Egret	1	Song Sparrow	6
House Finch	33	Surf Scoter	751
House Sparrow	88	Townsend's Warbler	2
Lincoln's Sparrow	2	Western Gull	88
Long-billed Curlew	2	Willet	1
Marbled Godwit	9	Wilson's Warbler	2
Mourning Dove	3	<b>Grid Cell: ECVW</b>	
Northern Mockingbird	1	American Coot	2
Orange-Crowned Warbler	5	American Crow	1

Common Name	Total Observed	Common Name	Total Observed
American Pipit	1	Semipalmated Plover	37
American White Pelican	6	Short-billed Dowitcher	28
American Wigeon	40	Snowy Egret	31
Anna's Hummingbird	1	Western Grebe	1
Baird's Sandpiper	2	Western Gull	103
Barn Swallow	2	Western Sandpiper	885
Belding's Savannah Sparrow	172	Whimbrel	19
Belted Kingfisher	1	Willet	98
Black Skimmer	8	<b>Grid Cell: MARI</b>	
Black Turnstone	2	Anna's Hummingbird	1
Black-bellied Plover	163	Belted Kingfisher	1
Brant	393	Brandt's Cormorant	1
Brown Pelican	4	Brown Pelican	1
California Gull	47	Cliff Swallow	2
Caspian Tern	5	Double-crested Cormorant	1
Cinnamon Teal	2	Eurasian Collared Dove	1
Cliff Swallow	1	European Starling	1
Common Raven	1	Forster's Tern	1
Double-crested Cormorant	5	House Finch	4
Dowitcher sp.	83	House Sparrow	2
Dunlin	1	Mourning Dove	6
Elegant Tern	6	Northern Mockingbird	2
Forster's Tern	99	Osprey	4
Glaucous-winged Gull	1	Peregrine Falcon	1
Great Blue Heron	7	Pied-billed Grebe	1
Great Egret	14	Ring-billed Gull	1
Greater Yellowlegs	20	Rock Pigeon	2
Gull sp.	3	Snowy Egret	4
Herring Gull	14	Spotted Sandpiper	1
Horned Lark	24	Western Gull	12
House Finch	2	Yellow-rumped Warbler	2
Killdeer	13	<b>Grid Cell: REST</b>	
Large-billed Savannah Sparrow	2	Anna's Hummingbird	1
Least Sandpiper	271	Barn Swallow	1
California Least Tern	62	Belding's Savannah Sparrow	11
Long-billed Curlew	87	Belted Kingfisher	1
Long-billed Dowitcher	65	Black Skimmer	2
Loon sp.	1	Black Turnstone	2
Marbled Godwit	280	Brown Pelican	3
Northern Harrier	7	California Gull	6
Northern Pintail	12	Common Yellowthroat	1
Northern Shoveler	13	Double-crested Cormorant	8
Osprey	33	Dowitcher sp.	27
Peep sp.	440	Forster's Tern	7
Peregrine Falcon	2	Great Blue Heron	4
Pied-billed Grebe	2	Great Egret	3
Red Knot	6	Greater Yellowlegs	9
Reddish Egret	2	Gull sp.	5
Redhead	4	Horned Grebe	1
Red-tailed Hawk	1	Horned Lark	9
Ring-billed Gull	2	House Finch	5
Royal Tern	2	Killdeer	18
Ruddy Turnstone	1	Least Sandpiper	123
Say's Phoebe	2	California Least Tern	11
Scaup sp.	2	Long-billed Curlew	20

Common Name	Total Observed	Common Name	Total Observed
Long-billed Dowitcher	13	Double-crested Cormorant	2
Marbled Godwit	99	Dowitcher sp.	3
Osprey	1	Forster's Tern	3
Peep sp.	10	Great Blue Heron	4
Peregrine Falcon	1	Great Egret	2
Pied-billed Grebe	1	Greater Yellowlegs	1
Red-breasted Merganser	6	Gull sp.	1
Reddish Egret	1	Horned Lark	48
Ring-billed Gull	5	House Finch	6
Say's Phoebe	1	Killdeer	6
Semipalmated Plover	3	Large-billed Savannah Sparrow	1
Short-billed Dowitcher	5	Least Sandpiper	18
Snowy Egret	10	California Least Tern	4
Song Sparrow	1	Long-billed Curlew	9
Spotted Sandpiper	5	Marbled Godwit	35
Surf Scoter	6	Mourning Dove	1
Western Gull	19	Northern Harrier	1
Western Sandpiper	50	Osprey	4
Whimbrel	3	Peep sp.	6
White-crowned Sparrow	1	Red Knot	14
Willet	205	Reddish Egret	2
Yellow-rumped Warbler	4	Ring-billed Gull	1
<b>Grid Cell: S10/11 dike</b>		Rock Pigeon	5
American Avocet	2	Say's Phoebe	1
American Wigeon	14	Snowy Egret	13
Belding's Savannah Sparrow	66	Western Gull	16
Black-bellied Plover	47	Western Meadowlark	1
Black-necked Stilt	4	Western Sandpiper	50
Brown Pelican	1	Willet	15
California Gull	3	<b>Grid Cell: SW10</b>	
Cliff Swallow	6	American Avocet	18
Elegant Tern	10	American Crow	4
Forster's Tern	3	American Pipit	19
Great Blue Heron	1	American Wigeon	400
Great Egret	1	Barn Swallow	3
Green-winged Teal	3	Belding's Savannah Sparrow	203
Gull-billed Tern	1	Belted Kingfisher	2
Herring Gull	1	Black Skimmer	9
Horned Lark	3	Black-bellied Plover	148
Killdeer	4	Black-necked Stilt	64
Long-billed Curlew	2	Bonaparte's Gull	2
Long-billed Dowitcher	1	Brant	7
Marbled Godwit	1	California Gull	7
Royal Tern	1	Canada Goose	4
Ruddy Duck	6	Caspian Tern	8
Say's Phoebe	1	Cliff Swallow	91
Short-eared Owl	2	Crow sp.	1
Western Gull	4	Double-crested Cormorant	8
Willet	2	Dowitcher sp.	80
<b>Grid Cell: SALT</b>		Dunlin	21
Barn Swallow	1	Eared Grebe	4
Belding's Savannah Sparrow	17	Elegant Tern	392
Black Skimmer	1	European Starling	2
California Gull	1	Forster's Tern	33
Caspian Tern	1	Great Blue Heron	1



Common Name	Total Observed	Common Name	Total Observed
Great Egret	22	Brant	110
Greater Yellowlegs	88	Brown Pelican	16
Green-winged Teal	76	Bufflehead	6
Gull-billed Tern	8	Bushtit	2
Horned Grebe	20	California Gull	37
Horned Lark	1	Caspian Tern	5
House Finch	4	Cliff Swallow	44
House Sparrow	17	Common Raven	1
Killdeer	20	Double-crested Cormorant	16
Least Sandpiper	360	Dowitcher sp.	523
California Least Tern	13	Dunlin	327
Lesser Scaup	1	Elegant Tern	2492
Little Blue Heron	3	Forster's Tern	97
Long-billed Curlew	11	Gadwall	2
Mallard	3	Great Blue Heron	7
Marbled Godwit	143	Great Egret	15
Mourning Dove	1	Greater Yellowlegs	55
Northern Harrier	1	Green-winged Teal	161
Northern Pintail	38	Gull-billed Tern	17
Northern Shoveler	103	Horned Lark	10
Osprey	3	House Finch	2
Peep sp.	176	Killdeer	11
Peregrine Falcon	1	Least Sandpiper	641
Red Knot	4	California Least Tern	27
Red-breasted Merganser	9	Lesser Scaup	9
Reddish Egret	1	Little Blue Heron	1
Red-tailed Hawk	2	Long-billed Curlew	35
Ring-billed Gull	7	Long-billed Dowitcher	5
Rock Pigeon	1	Marbled Godwit	378
Royal Tern	9	Northern Harrier	2
Ruddy Duck	130	Northern Pintail	124
Say's Phoebe	2	Northern Shoveler	279
Semipalmated Plover	29	Osprey	13
Short-billed Dowitcher	2	Peep sp.	1901
Snowy Egret	48	Peregrine Falcon	3
Spotted Sandpiper	1	Red Knot	110
Stilt	1	Red-breasted Merganser	5
Turkey Vulture	11	Reddish Egret	5
Western Grebe	19	Ring-billed Gull	8
Western Gull	10	Royal Tern	74
Western Sandpiper	961	Ruddy Turnstone	9
Whimbrel	2	Ruddy Turnstone?	1
Willet	217	Savannah Sparrow sp. migrant	2
<b>Grid Cell: SW11</b>		Say's Phoebe	2
American Avocet	4	Semipalmated Plover	103
American Pipit	3	Short-billed Dowitcher	25
American Wigeon	151	Short-eared Owl	4
Anna's Hummingbird	1	Snowy Egret	32
Barn Swallow	3	Spotted Sandpiper	1
Belding's Savannah Sparrow	248	Surf Scoter	5
Black Skimmer	8	Turkey Vulture	4
Black Turnstone	1	Western Grebe	14
Black-bellied Plover	954	Western Gull	20
Black-necked Stilt	19	Western Sandpiper	12255
Bonaparte's Gull	1	Whimbrel	4

Common Name	Total Observed
White-crowned Sparrow	2
White-faced Ibis	6
Willet	377
Yellow Warbler	1
<b>Grid Cell: WCVW</b>	
American Pipit	3
American Wigeon	11
Barn Swallow	2
Belding's Savannah Sparrow	165
Belted Kingfisher	2
Black Skimmer	9
Black Turnstone	1
Black-bellied Plover	2
Brant	65
Brown Pelican	5
California Gull	3
Common Yellowthroat	1
Double-crested Cormorant	2
Dowitcher sp.	6
Forster's Tern	215
Great Blue Heron	9
Great Egret	11
Greater Yellowlegs	13
Gull sp.	1
Gull-billed Tern	2
Heermann's Gull	7
Horned Lark	33
Killdeer	6
Large-billed Savannah Sparrow	4
Least Sandpiper	254
California Least Tern	96
Lesser Yellowlegs	1
Long-billed Curlew	19
Long-billed Dowitcher	6
Marbled Godwit	9
Mourning Dove	1
Northern Harrier	9
Osprey	18
Peep sp.	317
Peregrine Falcon	3
Pied-billed Grebe	1
Ring-billed Gull	1
Royal Tern	1
Say's Phoebe	2
Semipalmated Plover	2
Short-eared Owl	2
Snowy Egret	11
Surf Scoter	1
Western Gull	10
Western Sandpiper	64
Whimbrel	5
Willet	22
<b>Grid Cell: WEST</b>	
Black Skimmer	65
Black-bellied Plover	4

Common Name	Total Observed
Long-billed Curlew	1
Mallard	1
Marbled Godwit	15
Ring-billed Gull	6
Snowy Egret	1
Western Gull	15
Western Sandpiper	175
Willet	67

## F.5 Species Lists for Salt Ponds Grids

Common Name	Total Observed
<b>Grid Cell: CNOB</b>	
Barn Swallow	1
Belding's Savannah Sparrow	7
Black-necked Stilt	17
Eared Grebe	158
Elegant Tern	1
Least Sandpiper	73
Peregrine Falcon	1
Western Snowy Plover	13
Swallow sp.	1
Western Sandpiper	25
Willet	2
<b>Grid Cell: CSOB</b>	
American Avocet	5
American Kestrel	1
American Pipit	5
Barn Swallow	30
Belding's Savannah Sparrow	54
Black Phoebe	1
Black-necked Stilt	14
California Gull	1
Cliff Swallow	145
Eared Grebe	283
Gull sp.	1
Gull-billed Tern	4
Horned Lark	10
House Finch	10
Killdeer	1
Least Sandpiper	29
California Least Tern	1
Loon sp.	1
Northern Harrier	3
Northern Shoveler	5
Peep sp.	40
Peregrine Falcon	2
Red-necked Phalarope	10
Say's Phoebe	3
Western Snowy Plover	12
Spotted Sandpiper	1
Tree Swallow	2

Common Name	Total Observed	Common Name	Total Observed
Western Sandpiper	44	Great Blue Heron	2
Willet	3	Great Egret	16
<b>Grid Cell: S10/11 dike</b>		Greater Yellowlegs	51
American Avocet	2	Gull sp.	12
American Wigeon	14	Gull-billed Tern	3
Belding's Savannah Sparrow	66	Herring Gull	1
Black-bellied Plover	47	Hooded Oriole	2
Black-necked Stilt	4	Horned Lark	1
Brown Pelican	1	House Finch	12
California Gull	3	Killdeer	64
Cliff Swallow	6	Least Sandpiper	421
Elegant Tern	10	Little Blue Heron	1
Forster's Tern	3	Long-billed Curlew	8
Great Blue Heron	1	Long-billed Dowitcher	4
Great Egret	1	Mallard	2
Green-winged Teal	3	Marbled Godwit	400
Gull-billed Tern	1	Marsh Wren	1
Herring Gull	1	Merlin	1
Horned Lark	3	Northern Harrier	1
Killdeer	4	Northern Pintail	136
Long-billed Curlew	2	Northern Shoveler	16
Long-billed Dowitcher	1	Pipit	1
Marbled Godwit	1	Red Knot	1
Royal Tern	1	Red-breasted Merganser	8
Ruddy Duck	6	Reddish Egret	4
Say's Phoebe	1	Red-tailed Hawk	2
Short-eared Owl	2	Ring-billed Gull	3
Western Gull	4	Rock Pigeon	5
Willet	2	Savannah Sparrow	12
<b>Grid Cell: S10A</b>		Savannah Sparrow sp. migrant	7
American Avocet	6	Say's Phoebe	8
American Crow	22	Say's Phoebe?	1
American Kestrel	4	Semipalmated Plover	245
American Pipit	3	Snowy Egret	51
American Wigeon	172	Stilt	12
Anna's Hummingbird	8	Tree Swallow	5
Belding's Savannah Sparrow	62	Unknown code (BSage Sparrow)	24
Belted Kingfisher	2	Western Gull	5
Black Phoebe	4	Western Meadowlark	4
Black Skimmer	8	Western Sandpiper	227
Black-bellied Plover	12	Whimbrel	9
Black-crowned Night Heron	1	White-crowned Sparrow	2
Black-necked Stilt	7	Willet	381
California Gull	25	Yellow-rumped Warbler	1
Caspian Tern	1	<b>Grid Cell: S10E</b>	
Cliff Swallow	46	American Avocet	35
Common Raven	2	American Crow	3
Common Yellowthroat	1	American Wigeon	81
Cooper's Hawk	4	Belding's Savannah Sparrow	24
Crow sp.	1	Belted Kingfisher	1
Double-crested Cormorant	18	Black-bellied Plover	53
Dowitcher sp.	251	Black-necked Stilt	2
Elegant Tern	118	California Gull	1
European Starling	14	Cinnamon Teal	4
Forster's Tern	12	Common Goldeneye	1

Common Name	Total Observed	Common Name	Total Observed
Double-crested Cormorant	1	Ring-billed Gull	3
Dowitcher sp.	9	Royal Tern	25
Forster's Tern	4	Ruddy Duck	46
Gadwall	1	Scaup sp.	6
Greater Yellowlegs	12	Snowy Egret	3
Green-winged Teal	88	Western Grebe	6
Gull sp.	6	Western Gull	6
Killdeer	1	Western Sandpiper	2421
Least Sandpiper	98	Willet	11
Long-billed Curlew	2	<b>Grid Cell: S20A</b>	
Marbled Godwit	14	American Avocet	12
Northern Harrier	1	American Crow	33
Northern Pintail	4	American Kestrel	6
Northern Shoveler	122	American Pipit	113
Peep sp.	4	Anna's Hummingbird	11
Red-breasted Merganser	2	Barn Swallow	10
Ring-billed Gull	2	Belding's Savannah Sparrow	10
Royal Tern	8	Belted Kingfisher	2
Ruddy Duck	49	Black Phoebe	3
Short-eared Owl	1	Black Skimmer	1
Snowy Egret	1	Black-bellied Plover	2
Turkey Vulture	1	Black-necked Stilt	109
Western Grebe	1	Burrowing Owl	1
Western Sandpiper	130	Caspian Tern	2
Willet	27	Cliff Swallow	79
<b>Grid Cell: S11E</b>		Common Raven	7
American Wigeon	92	Double-crested Cormorant	1
Belding's Savannah Sparrow	28	Eared Grebe	2
Black-bellied Plover	218	Elegant Tern	2
Brant	44	European Starling	23
Brown Pelican	3	Great Blue Heron	1
Bufflehead	5	Great Egret	3
California Gull	12	Greater Yellowlegs	36
Caspian Tern	1	Gull-billed Tern	16
Dowitcher sp.	25	Herring Gull	1
Dunlin	72	Horned Lark	406
Forster's Tern	2	House Finch	194
Gadwall	11	Hummingbird sp.	1
Great Egret	2	Killdeer	31
Greater Yellowlegs	8	Long-billed Curlew	1
Green-winged Teal	64	Mallard	2
Herring Gull	4	Mourning Dove	21
Killdeer	3	Northern Harrier	3
Large-billed Savannah Sparrow	1	Northern Mockingbird	7
Least Sandpiper	240	Northern Shoveler	79
Long-billed Curlew	4	Red-tailed Hawk	3
Mallard	1	Ring-billed Gull	4
Marbled Godwit	20	Rock Pigeon	2
Merlin	1	Ruddy Duck	24
Northern Harrier	1	Say's Phoebe	1
Northern Pintail	11	Western Snowy Plover	8
Northern Shoveler	556	Spotted Sandpiper	2
Osprey	3	Turkey Vulture	3
Red Knot	2	Western Gull	4
Red-breasted Merganser	1	Western Meadowlark	37



Common Name	Total Observed	Common Name	Total Observed
Western Sandpiper	2	Least Sandpiper	3668
Whimbrel	53	California Least Tern	20
White-crowned Sparrow	33	Merlin	1
Willet	27	Northern Harrier	4
Yellow-rumped Warbler	3	Northern Shoveler	16
<b>Grid Cell: S27E</b>		Osprey	1
American Pipit	8	Peep sp.	294
Belding's Savannah Sparrow	5	Peregrine Falcon	6
Black Skimmer	2	Red Knot	18
Black-bellied Plover	2	Ring-billed Gull	7
California Gull	246	Ruddy Turnstone	1
Caspian Tern	1	Semipalmated Plover	306
Cliff Swallow	2	Semipalmated Sandpiper	1
Double-crested Cormorant	2	Western Snowy Plover	168
Dunlin	95	Turkey Vulture	1
Glaucous-winged Gull	2	Western Gull	67
Great Egret	1	Western Sandpiper	25294
Herring Gull	27	Willet	2
Horned Lark	1	<b>Grid Cell: SEOT</b>	
Least Sandpiper	467	American Coot	9
California Least Tern	8	American Kestrel	1
Marbled Godwit	16	Anna's Hummingbird	1
Northern Harrier	3	Belding's Savannah Sparrow	8
Osprey	2	Black Phoebe	3
Peep sp.	124	Blue-winged Teal	12
Peregrine Falcon	1	Bufflehead	6
Ring-billed Gull	3	Caspian Tern	1
Savannah Sparrow	1	Cliff Swallow	19
Semipalmated Plover	369	Common Yellowthroat	3
Western Snowy Plover	42	Gadwall	9
Western Gull	117	Green-winged Teal	11
Western Sandpiper	5086	House Finch	3
Willet	32	Least Sandpiper	2
<b>Grid Cell: S27W</b>		California Least Tern	1
American Avocet	32	Mallard	7
American Kestrel	1	Northern Mockingbird	2
American Pipit	13	Northern Rough-winged Swallow	1
Belding's Savannah Sparrow	10	Osprey	2
Black Skimmer	72	Ring-billed Gull	1
Black-bellied Plover	104	Song Sparrow	4
Black-necked Stilt	12	Tree Swallow	4
California Gull	135	Western Grebe	1
Caspian Tern	1	Western Gull	4
Cliff Swallow	14	White-crowned Sparrow	5
Common Tern	3	<b>Grid Cell: SOTA</b>	
Double-crested Cormorant	1	American Coot	139
Dowitcher sp.	2	American Pipit	1
Dunlin	777	American Wigeon	175
Elegant Tern	10	Barn Swallow	10
Great Blue Heron	1	Belding's Savannah Sparrow	77
Greater Yellowlegs	5	Belted Kingfisher	2
Gull sp.	11	Black Phoebe	2
Gull-billed Tern	4	Black-necked Stilt	14
Herring Gull	2	Blue-winged Teal	10
Horned Lark	11	Bufflehead	2

Common Name	Total Observed	Common Name	Total Observed
Cinnamon Teal	4	<b>Grid Cell: SW10</b>	
Cliff Swallow	104	American Avocet	18
Common Yellowthroat	1	American Crow	4
Double-crested Cormorant	1	American Pipit	19
Elegant Tern	3	American Wigeon	400
Forster's Tern	5	Barn Swallow	3
Gadwall	1	Belding's Savannah Sparrow	203
Great Blue Heron	1	Belted Kingfisher	2
Great Egret	1	Black Skimmer	9
Greater Yellowlegs	1	Black-bellied Plover	148
Green Heron	1	Black-necked Stilt	64
Green-winged Teal	9	Bonaparte's Gull	2
Gull-billed Tern	12	Brant	7
Herring Gull	1	California Gull	7
Horned Lark	2	Canada Goose	4
House Finch	22	Caspian Tern	8
Mallard	28	Cliff Swallow	91
Mourning Dove	5	Crow sp.	1
Northern Harrier	2	Double-crested Cormorant	8
Northern Mockingbird	3	Dowitcher sp.	80
Northern Shoveler	23	Dunlin	21
Peregrine Falcon	1	Eared Grebe	4
Redhead	2	Elegant Tern	392
Red-tailed Hawk	2	European Starling	2
Ruddy Duck	23	Forster's Tern	33
Savannah Sparrow	2	Great Blue Heron	1
Say's Phoebe	2	Great Egret	22
Scaup sp.	2	Greater Yellowlegs	88
Snowy Egret	6	Green-winged Teal	76
Western Snowy Plover	1	Gull-billed Tern	8
Song Sparrow	3	Horned Grebe	20
Spotted Sandpiper	3	Horned Lark	1
Turkey Vulture	1	House Finch	4
Western Grebe	2	House Sparrow	17
Western Gull	1	Killdeer	20
Whimbrel	24	Least Sandpiper	360
White-crowned Sparrow	4	California Least Tern	13
Willet	55	Lesser Scaup	1
Yellow-rumped Warbler	4	Little Blue Heron	3
<b>Grid Cell: SPB</b>		Long-billed Curlew	11
American Pipit	2	Mallard	3
American Wigeon	2	Marbled Godwit	143
Belding's Savannah Sparrow	36	Mourning Dove	1
Black Phoebe	1	Northern Harrier	1
California Gull	1	Northern Pintail	38
Eared Grebe	1	Northern Shoveler	103
Great Egret	2	Osprey	3
Green Heron	2	Peep sp.	176
Marsh Wren	1	Peregrine Falcon	1
Northern Harrier	1	Red Knot	4
Peep sp.	7	Red-breasted Merganser	9
Say's Phoebe	1	Reddish Egret	1
Turkey Vulture	1	Red-tailed Hawk	2
White-crowned Sparrow	5	Ring-billed Gull	7
Yellow-rumped Warbler	5	Rock Pigeon	1

Common Name	Total Observed	Common Name	Total Observed
Royal Tern	9	Northern Harrier	2
Ruddy Duck	130	Northern Pintail	124
Say's Phoebe	2	Northern Shoveler	279
Semipalmated Plover	29	Osprey	13
Short-billed Dowitcher	2	Peep sp.	1901
Snowy Egret	48	Peregrine Falcon	3
Spotted Sandpiper	1	Red Knot	110
Stilt	1	Red-breasted Merganser	5
Turkey Vulture	11	Reddish Egret	5
Western Grebe	19	Ring-billed Gull	8
Western Gull	10	Royal Tern	74
Western Sandpiper	961	Ruddy Turnstone	9
Whimbrel	2	Ruddy Turnstone?	1
Willet	217	Savannah Sparrow sp. migrant	2
<b>Grid Cell: SW11</b>		Say's Phoebe	2
American Avocet	4	Semipalmated Plover	103
American Pipit	3	Short-billed Dowitcher	25
American Wigeon	151	Short-eared Owl	4
Anna's Hummingbird	1	Snowy Egret	32
Barn Swallow	3	Spotted Sandpiper	1
Belding's Savannah Sparrow	248	Surf Scoter	5
Black Skimmer	8	Turkey Vulture	4
Black Turnstone	1	Western Grebe	14
Black-bellied Plover	954	Western Gull	20
Black-necked Stilt	19	Western Sandpiper	12255
Bonaparte's Gull	1	Whimbrel	4
Brant	110	White-crowned Sparrow	2
Brown Pelican	16	White-faced Ibis	6
Bufflehead	6	Willet	377
Bushtit	2	Yellow Warbler	1
California Gull	37	<b>Grid Cell: SW12</b>	
Caspian Tern	5	American Avocet	150
Cliff Swallow	44	American Pipit	3
Common Raven	1	American White Pelican	7
Double-crested Cormorant	16	American Wigeon	6
Dowitcher sp.	523	Barn Swallow	3
Dunlin	327	Belding's Savannah Sparrow	87
Elegant Tern	2492	Belted Kingfisher	4
Forster's Tern	97	Black Phoebe	1
Gadwall	2	Black Skimmer	45
Great Blue Heron	7	Black Turnstone	1
Great Egret	15	Black-bellied Plover	3
Greater Yellowlegs	55	Black-necked Stilt	261
Green-winged Teal	161	Bonaparte's Gull	17
Gull-billed Tern	17	Brant	1
Horned Lark	10	Brown Pelican	100
House Finch	2	Bufflehead	565
Killdeer	11	California Gull	508
Least Sandpiper	641	Caspian Tern	1
California Least Tern	27	Cliff Swallow	6
Lesser Scaup	9	Common Goldeneye	1
Little Blue Heron	1	Common Loon	1
Long-billed Curlew	35	Double-crested Cormorant	57
Long-billed Dowitcher	5	Dunlin	11
Marbled Godwit	378	Eared Grebe	5461

Common Name	Total Observed	Common Name	Total Observed
Elegant Tern	5636	Northern Harrier	1
Forster's Tern	57	Northern Shoveler	123
Great Blue Heron	2	Osprey	1
Great Egret	1	Peep sp.	216
Greater Yellowlegs	3	Peregrine Falcon	2
Gull-billed Tern	35	Red-necked Phalarope	23
Herring Gull	42	Ring-billed Gull	1
Horned Grebe	2	Royal Tern	27
Horned Lark	3	Semipalmated Plover	2
Killdeer	2	Turkey Vulture	1
Least Sandpiper	46	Western Gull	9
Lesser Scaup	24	Western Sandpiper	209
Long-billed Curlew	2	Willet	53
Marbled Godwit	123	Wilson's Phalarope	24
Northern Harrier	1	<b>Grid Cell: SW13E</b>	
Northern Shoveler	285	American Avocet	27
Osprey	9	American White Pelican	1
Peep sp.	567	Black Skimmer	2
Red Knot	18	Black-necked Stilt	19
Red-necked Phalarope	108	Caspian Tern	10
Red-tailed Hawk	1	Dunlin	5
Ring-billed Gull	14	Eared Grebe	894
Royal Tern	187	Gull-billed Tern	2
Ruddy Duck	2	Herring Gull	1
Ruddy Turnstone	4	Least Sandpiper	3
Sanderling	1	California Least Tern	1
Scaup sp.	20	Marbled Godwit	2
Semipalmated Plover	2	Northern Harrier	3
Short-billed Dowitcher	1	Northern Shoveler	129
Short-eared Owl	1	Peep sp.	102
Western Snowy Plover	2	Peregrine Falcon	2
Swallow sp.	1	Red-tailed Hawk	1
Thayer's Gull	2	Royal Tern	20
Turkey Vulture	3	Western Sandpiper	203
Western Gull	164	Willet	26
Western Meadowlark	1	<b>Grid Cell: SW13W</b>	
Western Sandpiper	518	American Avocet	295
Whimbrel	1	American Pipit	3
Willet	108	American White Pelican	3
Wilson's Phalarope	1	Belding's Savannah Sparrow	12
<b>Grid Cell: SW13</b>		Black Skimmer	434
American Avocet	1	Black-necked Stilt	182
Belding's Savannah Sparrow	4	Bonaparte's Gull	14
Belted Kingfisher	1	Bufflehead	4
Black Skimmer	385	California Gull	84
Black-necked Stilt	7	Cliff Swallow	3
Brown Pelican	11	Common Goldeneye	1
California Gull	3	Common Raven	2
Double-crested Cormorant	27	Double-crested Cormorant	29
Eared Grebe	1481	Eared Grebe	2616
Elegant Tern	4706	Elegant Tern	3366
Gull sp.	6	Forster's Tern	7
Gull-billed Tern	2	Gadwall	2
Least Sandpiper	19	Gull sp.	11
Marbled Godwit	4	Gull-billed Tern	62



Common Name	Total Observed	Common Name	Total Observed
Herring Gull	61	Willet	73
Least Sandpiper	13	Wilson's Phalarope	5
California Least Tern	3	<b>Grid Cell: SW15</b>	
Lesser Scaup	2	American Avocet	130
Marbled Godwit	2	American Pipit	10
Northern Harrier	1	American White Pelican	7
Northern Pintail	2	Baird's Sandpiper	1
Northern Shoveler	297	Barn Swallow	1
Peep sp.	365	Belding's Savannah Sparrow	93
Royal Tern	391	Black Skimmer	15
Scaup sp.	25	Black Turnstone	25
Western Snowy Plover	14	Black-bellied Plover	1
Western Gull	47	Black-necked Stilt	257
Western Sandpiper	103	Brewer's Blackbird	1
Willet	58	Brown Pelican	60
<b>Grid Cell: SW14</b>		California Gull	194
American Avocet	326	Caspian Tern	301
American White Pelican	23	Cliff Swallow	71
Barn Swallow	3	Common Tern	1
Belding's Savannah Sparrow	15	Double-crested Cormorant	123
Black Skimmer	115	Dowitcher sp.	50
Black Turnstone	3	Dunlin	11
Black-necked Stilt	80	Eared Grebe	7123
Bonaparte's Gull	2	Elegant Tern	1010
Brant	3	Forster's Tern	1
Brown Pelican	301	Gadwall	2
California Gull	125	Great Egret	4
Caspian Tern	127	Greater Yellowlegs	13
Common Raven	1	Heermann's Gull	1
Common Tern	6	Herring Gull	15
Double-crested Cormorant	356	Horned Lark	1
Dunlin	16	Killdeer	9
Eared Grebe	4608	Least Sandpiper	228
Elegant Tern	289	Long-billed Curlew	2
Forster's Tern	5	Mallard	4
Glaucous-winged Gull	2	Marbled Godwit	91
Greater Yellowlegs	4	No species given	2
Gull-billed Tern	40	Northern Harrier	4
Herring Gull	27	Northern Pintail	8
Least Sandpiper	40	Northern Shoveler	397
Marbled Godwit	77	Osprey	1
Northern Harrier	1	Peep sp.	15
Northern Shoveler	63	Peregrine Falcon	1
Osprey	5	Red Knot	1
Peep sp.	490	Reddish Egret	1
Peregrine Falcon	5	Royal Tern	600
Red-necked Phalarope	92	Ruddy Turnstone	7
Ring-billed Gull	3	Sanderling	40
Royal Tern	392	Semipalmated Plover	5
Ruddy Turnstone	10	Sharp-Shinned Hawk	1
Sanderling	7	Short-eared Owl	1
Semipalmated Plover	1	Snowy Egret	5
Western Snowy Plover	2	Western Snowy Plover	3
Western Gull	179	Spotted Sandpiper	5
Western Sandpiper	458	Swallow sp.	1

Common Name	Total Observed	Common Name	Total Observed
Thayer's Gull	2	Song Sparrow	2
Tree Swallow	3	Turkey Vulture	4
Western Gull	35	Western Gull	5
Western Sandpiper	525	Western Sandpiper	11445
Willet	66	Whimbrel	15
<b>Grid Cell: SW20</b>		White-crowned Sparrow	5
American Avocet	124	Willet	604
American Crow	2	Wilson's Phalarope	98
American Pipit	4	Yellow-headed Blackbird	1
Barn Swallow	6	Yellow-rumped Warbler	1
Belding's Savannah Sparrow	96	<b>Grid Cell: SW21</b>	
Belted Kingfisher	1	American Avocet	20
Black Phoebe	1	American Crow	1
Black Turnstone	2	American Pipit	5
Black-bellied Plover	4	Barn Swallow	7
Black-necked Stilt	114	Belding's Savannah Sparrow	92
Bonaparte's Gull	12	Black Skimmer	1
Bufflehead	45	Black-bellied Plover	12
California Gull	23	Black-necked Stilt	99
California Towhee	1	California Gull	13
Caspian Tern	3	Caspian Tern	1
Cinnamon Teal	2	Cliff Swallow	25
Cliff Swallow	30	Common Goldeneye	5
Common Goldeneye	23	Common Tern	26
Double-crested Cormorant	4	Double-crested Cormorant	1
Dowitcher sp.	114	Dowitcher sp.	8
Dunlin	1	Dunlin	29
Eared Grebe	121	Eared Grebe	28
Gadwall	4	Elegant Tern	62
Great Blue Heron	1	Forster's Tern	1
Great Egret	1	Gadwall	1
Greater Yellowlegs	49	Great Blue Heron	1
Gull sp.	5	Greater Yellowlegs	5
Gull-billed Tern	8	Gull sp.	6
Horned Lark	19	Gull-billed Tern	7
House Finch	20	Horned Lark	28
Killdeer	12	Least Sandpiper	100
Large-billed Savannah Sparrow	3	Lesser Scaup	4
Least Sandpiper	74	Long-billed Curlew	1
Lesser Scaup	24	Marbled Godwit	331
Marbled Godwit	139	Merlin	1
No species given	490	Northern Harrier	6
Northern Harrier	7	Northern Shoveler	35
Northern Mockingbird	1	Peep sp.	108
Northern Shoveler	5	Peregrine Falcon	3
Peep sp.	25	Red Knot	82
Red Knot	40	Red-necked Phalarope	778
Red-necked Phalarope	208	Ring-billed Gull	2
Ring-billed Gull	1	Rock Wren	1
Rock Wren	1	Royal Tern	3
Royal Tern	4	Say's Phoebe	1
Say's Phoebe	2	Semipalmated Plover	26
Scaup sp.	16	Western Snowy Plover	33
Semipalmated Plover	25	Turkey Vulture	3
Western Snowy Plover	68	Western Gull	74

Common Name	Total Observed	Common Name	Total Observed
Western Sandpiper	3015	Spotted Sandpiper	4
Willet	840	Turkey Vulture	1
Wilson's Phalarope	24	Western Gull	167
<b>Grid Cell: SW22</b>		Western Sandpiper	17107
American Avocet	64	Whimbrel	25
American Crow	3	Willet	1438
American Pipit	23	Wilson's Phalarope	8
American Wigeon	1	American Golden-Plover	1
Barn Swallow	2	<b>Grid Cell: SW23</b>	
Belding's Savannah Sparrow	72	American Avocet	248
Belted Kingfisher	3	American Pipit	3
Black Phoebe	1	American White Pelican	2
Black Skimmer	501	American Wigeon	10
Black Turnstone	9	Belding's Savannah Sparrow	24
Black-bellied Plover	1088	Belted Kingfisher	1
Black-necked Stilt	397	Black Phoebe	1
Bonaparte's Gull	6	Black Skimmer	958
Bufflehead	3	Black Turnstone	1
California Gull	16	Black-bellied Plover	1405
Caspian Tern	10	Black-necked Stilt	271
Cliff Swallow	21	Bonaparte's Gull	2
Common Raven	2	California Gull	165
Common Tern	166	Caspian Tern	1
Dowitcher sp.	211	Cliff Swallow	35
Dunlin	673	Common Raven	1
Eared Grebe	117	Common Tern	20
Elegant Tern	868	Double-crested Cormorant	1
Forster's Tern	17	Dowitcher sp.	745
Great Blue Heron	2	Dunlin	67
Greater Yellowlegs	6	Eared Grebe	1
Gull sp.	9	Elegant Tern	3718
Gull-billed Tern	10	Forster's Tern	195
Herring Gull	2	Glaucous-winged Gull	1
Horned Lark	1	Great Blue Heron	2
House Finch	10	Greater Yellowlegs	65
Hummingbird sp.	1	Gull sp.	2
Killdeer	1	Gull-billed Tern	1
Least Sandpiper	180	Herring Gull	15
California Least Tern	7	House Sparrow	2
Long-billed Curlew	2	Killdeer	30
Marbled Godwit	393	Least Sandpiper	34
No species given	2	California Least Tern	3
Northern Harrier	2	Lesser Yellowlegs	1
Northern Shoveler	35	Marbled Godwit	340
Osprey	1	No species given	1
Peep sp.	646	Peep sp.	110
Peregrine Falcon	1	Peregrine Falcon	2
Red Knot	221	Red Knot	465
Red-necked Phalarope	120	Red-tailed Hawk	1
Royal Tern	74	Ring-billed Gull	159
Sanderling	128	Royal Tern	645
Say's Phoebe	2	Ruddy Turnstone	9
Scaup sp.	107	Say's Phoebe	2
Semipalmated Plover	21	Western Snowy Plover	12
Western Snowy Plover	41	Spotted Sandpiper	3

Common Name	Total Observed	Common Name	Total Observed
Thayer's Gull	2	Belding's Savannah Sparrow	1
Turkey Vulture	1	Black Turnstone	4
Western Gull	191	Black-bellied Plover	283
Western Sandpiper	2789	Black-necked Stilt	12
Whimbrel	2	California Gull	95
Willet	1055	Cliff Swallow	10
Wilson's Phalarope	6	Double-crested Cormorant	1
<b>Grid Cell: SW24</b>		Dowitcher sp.	32
American Avocet	33	Dunlin	15
American Pipit	9	Eared Grebe	80
Barn Swallow	2	Elegant Tern	1
Belding's Savannah Sparrow	7	Great Blue Heron	1
Black Skimmer	642	Herring Gull	1
Black Turnstone	10	Least Sandpiper	32
Black-bellied Plover	1578	California Least Tern	6
Black-necked Stilt	41	Northern Harrier	4
California Gull	93	Northern Rough-winged Swallow	1
Caspian Tern	2	Peep sp.	97
Cliff Swallow	4	Red Knot	16
Common Raven	2	Royal Tern	4
Double-crested Cormorant	14	Western Snowy Plover	22
Dowitcher sp.	79	Swallow sp.	1
Dunlin	43	Tree Swallow	2
Elegant Tern	5397	Western Gull	2
Forster's Tern	2	Western Sandpiper	501
Great Blue Heron	1	Willet	8
Great Egret	1	<b>Grid Cell: SW26</b>	
Greater Yellowlegs	1	American Avocet	4
Gull sp.	4	American Crow	1
Gull-billed Tern	16	American Pipit	4
Herring Gull	4	Barn Swallow	2
Horned Lark	2	Belding's Savannah Sparrow	27
Least Sandpiper	65	Black-necked Stilt	25
California Least Tern	9	California Gull	22
Marbled Godwit	2	Cliff Swallow	27
Merlin	1	Common Raven	1
Northern Harrier	5	Double-crested Cormorant	1
Northern Shoveler	16	Dowitcher sp.	5
Osprey	4	Dunlin	4
Peep sp.	78	Great Blue Heron	1
Peregrine Falcon	4	Gull sp.	7
Red Knot	88	Gull-billed Tern	2
Ring-billed Gull	4	Horned Lark	16
Royal Tern	17	Least Sandpiper	119
Ruddy Turnstone	2	California Least Tern	3
Savannah Sparrow	2	Northern Harrier	7
Say's Phoebe	1	Northern Shoveler	1
Snow Goose	1	Peep sp.	357
Western Snowy Plover	33	Red Knot	8
Western Gull	186	Red-necked Phalarope	345
Western Sandpiper	639	Semipalmated Plover	408
Willet	7	Western Snowy Plover	10
<b>Grid Cell: SW25</b>		Western Gull	12
American Avocet	3	Western Sandpiper	3971
American Pipit	64	Willet	182



Common Name	Total Observed	Common Name	Total Observed
<b>Grid Cell: SW27E</b>		Western Sandpiper	1
California Gull	23	White-crowned Sparrow	1
Dunlin	10	<b>Grid Cell: SW30</b>	
Least Sandpiper	15	American Pipit	21
Ring-billed Gull	1	Black-bellied Plover	1
Semipalmated Plover	282	Black-necked Stilt	1
Western Snowy Plover	22	California Gull	4817
Western Gull	3	Cliff Swallow	7
Western Sandpiper	950	Common Raven	2
<b>Grid Cell: SW28</b>		Double-crested Cormorant	1
American Pipit	1	Elegant Tern	1
American Wigeon	1	Glaucous-winged Gull	1
Belding's Savannah Sparrow	10	Gull sp.	1
Black-bellied Plover	113	Heermann's Gull	1
Black-necked Stilt	9	Herring Gull	7
California Gull	1708	Killdeer	1
Cliff Swallow	6	Least Sandpiper	32
Common Raven	1	California Least Tern	5
Glaucous-winged Gull	1	Peep sp.	3
Great Blue Heron	3	Peregrine Falcon	1
Gull sp.	2	Western Snowy Plover	27
Herring Gull	20	Western Gull	69
Horned Lark	3	Western Sandpiper	7
House Finch	4	<b>Grid Cell: SW40</b>	
Killdeer	2	American Pipit	1
Least Sandpiper	48	California Gull	355
Mallard	2	Glaucous-winged Gull	1
Mourning Dove	1	Gull sp.	320
Osprey	1	Herring Gull	20
Red Knot	2	Killdeer	1
Red-tailed Hawk	2	Peep sp.	1
Say's Phoebe	1	Western Gull	26
Semipalmated Plover	2	<b>Grid Cell: SW41</b>	
Shorebird sp Small	15	American Kestrel	1
Western Snowy Plover	5	American Pipit	19
Tree Swallow	3	Belding's Savannah Sparrow	33
Turkey Vulture	1	Black-bellied Plover	1
Western Gull	7	Black-necked Stilt	2
Western Sandpiper	13	California Gull	4
<b>Grid Cell: SW29</b>		Caspian Tern	1
Belding's Savannah Sparrow	3	Cliff Swallow	7
Black-bellied Plover	25	Gull sp.	17
California Gull	55	Gull-billed Tern	2
Common Raven	3	Heermann's Gull	1
Double-crested Cormorant	1	Least Sandpiper	6
Dowitcher sp.	1	California Least Tern	1
Gull sp.	3	Peep sp.	181
Herring Gull	1	Say's Phoebe	2
Killdeer	54	Western Snowy Plover	2
Least Sandpiper	14	Tree Swallow	2
Mallard	2	Western Gull	5
Mourning Dove	1	Western Sandpiper	2
Peregrine Falcon	1	<b>Grid Cell: SW42</b>	
Western Snowy Plover	2	American Crow	3
Western Gull	1	American Kestrel	3

Common Name	Total Observed	Common Name	Total Observed
American Pipit	1	Least Sandpiper	22
California Gull	3	Peep sp.	484
Caspian Tern	1	Peregrine Falcon	1
Cliff Swallow	2	Say's Phoebe	1
Common Raven	2	Semipalmated Plover	219
European Starling	5	Western Sandpiper	762
Glaucous-winged Gull	1	<b>Grid Cell: SW46</b>	
Gull sp.	22	Cliff Swallow	10
House Finch	16	Double-crested Cormorant	2
Killdeer	1	Peep sp.	2
Mourning Dove	9	Western Snowy Plover	5
Peep sp.	54	Western Gull	1
Say's Phoebe	1	<b>Grid Cell: SW47</b>	
Western Gull	7	American Kestrel	1
<b>Grid Cell: SW43</b>		Barn Swallow	10
American Pipit	1	Belding's Savannah Sparrow	7
Cliff Swallow	1	Black-necked Stilt	4
Gull sp.	1	Cliff Swallow	16
Horned Lark	2	Double-crested Cormorant	2
House Finch	7	Greater Yellowlegs	1
Mourning Dove	8	Gull sp.	3
Peep sp.	3	Horned Lark	8
<b>Grid Cell: SW44</b>		House Finch	2
Barn Swallow	18	Killdeer	2
Belding's Savannah Sparrow	2	Merlin	1
Black-necked Stilt	6	Northern Harrier	2
Cliff Swallow	10	Peep sp.	2
Common Raven	2	Peregrine Falcon	1
Double-crested Cormorant	2	Say's Phoebe	1
Dunlin	8	Western Gull	1
Great Egret	1	<b>Grid Cell: SW48</b>	
Gull sp.	8	American Kestrel	1
Gull-billed Tern	1	American Pipit	5
Horned Lark	6	Barn Swallow	51
Least Sandpiper	216	Belding's Savannah Sparrow	13
California Least Tern	2	Black-necked Stilt	7
Northern Harrier	2	California Gull	1
Peep sp.	613	Cliff Swallow	13
Ring-billed Gull	1	Common Raven	2
Say's Phoebe	1	Double-crested Cormorant	1
Semipalmated Plover	407	Great Blue Heron	1
Western Snowy Plover	6	Gull sp.	5
Tree Swallow	9	Gull-billed Tern	1
Western Gull	1	Horned Lark	22
Western Sandpiper	1375	House Finch	6
Willet	1	Mallard	1
<b>Grid Cell: SW45</b>		Northern Harrier	1
American Kestrel	1	Red-tailed Hawk	1
Belding's Savannah Sparrow	2	Royal Tern	3
Black-necked Stilt	1	Say's Phoebe	2
Caspian Tern	1	Semipalmated Plover	7
Cliff Swallow	5	Turkey Vulture	2
Double-crested Cormorant	1	Whimbrel	1
Dunlin	92	White-crowned Sparrow	8
Gull sp.	9		

Common Name	Total Observed	Common Name	Total Observed
<b>Grid Cell: SW50</b>		Western Gull	2
American Crow	7	Western Sandpiper	34
American Kestrel	1	White-crowned Sparrow	17
Anna's Hummingbird	7	White-throated Sparrow	1
Belding's Savannah Sparrow	1	Yellow-rumped Warbler	4
Black Phoebe	2	<b>Grid Cell: SW53</b>	
Bushtit	4	American Crow	3
California Towhee	6	American Kestrel	1
Cliff Swallow	2	Anna's Hummingbird	1
Common Raven	5	Black Phoebe	2
Common Yellowthroat	4	California Towhee	3
Double-crested Cormorant	4	Cliff Swallow	2
Forster's Tern	1	Common Raven	2
Gull sp.	5	Common Yellowthroat	1
Hooded Oriole	1	Gull sp.	21
Horned Lark	2	House Finch	53
House Finch	65	Least Sandpiper	174
Killdeer	91	Mourning Dove	7
Lincoln's Sparrow	1	Peep sp.	42
Mourning Dove	4	Red-tailed Hawk	1
Orange-Crowned Warbler	1	Royal Tern	2
Peep sp.	2	Say's Phoebe	1
Royal Tern	1	Semipalmated Plover	229
Say's Phoebe	3	Western Snowy Plover	3
Western Snowy Plover	4	Western Sandpiper	489
Song Sparrow	13	White-crowned Sparrow	7
Tree Swallow	1	Yellow-rumped Warbler	3
Turkey Vulture	2	<b>Grid Cell: SW54</b>	
Western Gull	3	American Crow	5
White-crowned Sparrow	32	American Kestrel	1
Yellow-rumped Warbler	7	Anna's Hummingbird	1
<b>Grid Cell: SW52</b>		Black Phoebe	1
American Crow	7	California Towhee	2
American Kestrel	1	Cliff Swallow	3
Anna's Hummingbird	4	Common Raven	3
Black Phoebe	1	Cooper's Hawk	1
California Towhee	4	Gull sp.	11
Cliff Swallow	2	Horned Lark	1
Common Raven	2	House Finch	21
Common Yellowthroat	2	Least Sandpiper	1
Gull sp.	8	Mourning Dove	23
House Finch	30	Northern Mockingbird	1
House Wren	1	Peep sp.	42
Killdeer	130	Red-tailed Hawk	1
Least Sandpiper	25	Say's Phoebe	1
Lincoln's Sparrow	2	Semipalmated Plover	22
Mallard	3	Song Sparrow	1
Mourning Dove	1	Western Gull	1
Northern Mockingbird	4	White-crowned Sparrow	3
Peep sp.	1	Yellow-rumped Warbler	3
Savannah Sparrow sp. migrant	1	<b>Grid Cell: SWOT</b>	
Say's Phoebe	1	American Avocet	23
Semipalmated Plover	33	American Coot	48
Western Snowy Plover	1	American Crow	1
Song Sparrow	2	American Wigeon	274

Common Name	Total Observed	Common Name	Total Observed
Belding's Savannah Sparrow	19	Pied-billed Grebe	1
Black Phoebe	2	Red-tailed Hawk	1
Black Skimmer	5	Snowy Egret	1
Black-necked Stilt	289	Swallow sp.	2
California Gull	33	Willet	1
Cliff Swallow	182	<b>Grid Cell: WOTA</b>	
Double-crested Cormorant	1	American Pipit	1
Dowitcher sp.	136	American Wigeon	400
Forster's Tern	11	Barn Swallow	1
Great Blue Heron	1	Belding's Savannah Sparrow	100
Great Egret	2	Belted Kingfisher	2
Greater Yellowlegs	6	Black Skimmer	2
Green-winged Teal	1	Black-necked Stilt	37
Gull-billed Tern	1	Brant	2
Herring Gull	7	Bufflehead	62
Killdeer	17	California Gull	2
Least Sandpiper	172	California Least Tern	6
California Least Tern	1	Caspian Tern	2
Long-billed Curlew	9	Cliff Swallow	62
Mallard	10	Dowitcher sp.	2
Marbled Godwit	54	Elegant Tern	373
Northern Pintail	10	Forster's Tern	70
Northern Shoveler	23	Great Blue Heron	1
Pied-billed Grebe	4	Great Egret	1
Red Knot	2	Green-winged Teal	10
Ring-billed Gull	49	Herring Gull	1
Royal Tern	1	Least Sandpiper	47
Ruddy Duck	18	Long-billed Curlew	4
Semipalmated Plover	1	Mallard	5
Snowy Egret	12	Marbled Godwit	5
Spotted Sandpiper	1	Northern Harrier	2
Tree Swallow	10	Northern Pintail	4
Western Grebe	2	Northern Shoveler	14
Western Gull	50	Osprey	1
Western Sandpiper	3	Peep sp.	16
Whimbrel	8	Red-breasted Merganser	2
Willet	543	Red-tailed Hawk	1
<b>Grid Cell: TIDL</b>		Royal Tern	6
Barn Swallow	2	Ruddy Duck	5
Belding's Savannah Sparrow	110	Scaup sp.	10
Belted Kingfisher	1	Semipalmated Plover	2
Black Phoebe	1	Snowy Egret	4
Black-necked Stilt	16	Teal sp.	12
California Gull	2	Western Grebe	1
Cliff Swallow	95	Western Gull	8
Common Raven	3	Western Meadowlark	1
Cooper's Hawk	1	Western Sandpiper	4
European Starling	7	Whimbrel	1
Great Blue Heron	4	Willet	69
Great Egret	3		
Horned Lark	2		
Least Sandpiper	4		
Mallard	8		
Osprey	1		
Peregrine Falcon	1		



## F.6 Species Lists for Ocean Grids

Common Name	Total Observed
<b>Grid Cell: B1</b>	
American Crow	4
Black-bellied Plover	5
Brandt's Cormorant	2
Brant	44
Brown Pelican	30
California Least Tern	28
Caspian Tern	2
Double-crested Cormorant	8
Elegant Tern	8
European Starling	1
Forster's Tern	2
Gull sp.	7
Gull-billed Tern	5
Heermann's Gull	1
House Finch	65
Loon sp.	5
Merlin	1
Osprey	3
Red-tailed Hawk	1
Ring-billed Gull	2
Royal Tern	1
Ruddy Turnstone	2
Sanderling	187
Semipalmated Plover	4
Surf Scoter	342
Tern sp.	20
Western Grebe	115
Western Gull	41
Western Sandpiper	6
Western Snowy Plover	22
Whimbrel	2
Willet	15
<b>Grid Cell: B2</b>	
American Crow	7
American Pipit	1
Barn Swallow	2
Black-bellied Plover	2
Brant	30
Brown Pelican	22
Bufflehead	1
California Gull	5
California Least Tern	152
Caspian Tern	3
Double-crested Cormorant	7
Elegant Tern	1
European Starling	4
Forster's Tern	4
Great Blue Heron	1
Gull sp.	8
Heermann's Gull	1
Horned Lark	7
House Finch	9

Common Name	Total Observed
Killdeer	2
Least Sandpiper	50
Long-billed Curlew	4
Marbled Godwit	2
Ring-billed Gull	8
Rock Pigeon	4
Royal Tern	3
Ruddy Turnstone	2
Sanderling	350
Semipalmated Plover	6
Surf Scoter	395
Tern sp.	2
Western Grebe	152
Western Gull	115
Western Sandpiper	45
Western Snowy Plover	78
Whimbrel	2
Willet	15
<b>Grid Cell: C1</b>	
Black Phoebe	4
Black Turnstone	6
Brandt's Cormorant	4
Brown Pelican	35
California Gull	10
Caspian Tern	3
Double-crested Cormorant	12
Eared Grebe	12
Elegant Tern	10
Great Blue Heron	38
Great Egret	2
Green Heron	4
Heermann's Gull	2
California Least Tern	2
Osprey	2
Ring-billed Gull	1
Rock Pigeon	1
Royal Tern	1
Snowy Egret	7
Spotted Sandpiper	8
Western Grebe	3
Western Gull	99
<b>Grid Cell: C10</b>	
American Crow	10
Barn Swallow	2
Black-bellied Plover	17
Brown Pelican	19
California Gull	62
Caspian Tern	2
Double-crested Cormorant	3
Eared Grebe	3
Elegant Tern	175
Forster's Tern	7
Great Egret	1
Gull sp.	59
Heermann's Gull	170

Common Name	Total Observed	Common Name	Total Observed
Herring Gull	8	Western Grebe	8
Horned Lark	2	Western Gull	67
House Finch	2	Western Kingbird	1
Least Sandpiper	9	Western Sandpiper	1
Marbled Godwit	221	Western Snowy Plover	16
Peep sp.	109	Willet	208
Red Knot	35	<b>Grid Cell: C12</b>	
Ring-billed Gull	69	American Crow	14
Royal Tern	316	American Pipit	7
Ruddy Turnstone	1	Audubon's Warbler (Yellow-Rumped)	11
Sanderling	185	Barn Swallow	4
Sanderling?	1	Black Phoebe	9
Semipalmated Plover	82	Black-bellied Plover	6
Surf Scoter	100	Brandt's Cormorant	17
Tern sp.	13	Brown Pelican	31
Western Grebe	77	California Gull	23
Western Gull	297	Caspian Tern	56
Western Kingbird	1	Cassin's Kingbird	2
Western Sandpiper	122	Cliff Swallow	1
Western Snowy Plover	249	Double-crested Cormorant	52
Willet	38	Eared Grebe	1
<b>Grid Cell: C11</b>		Elegant Tern	49
American Crow	6	Forster's Tern	15
Barn Swallow	1	Heermann's Gull	22
Black Phoebe	6	House Finch	10
Black Phoebe?	1	Killdeer	1
Black-bellied Plover	81	California Least Tern	8
Brandt's Cormorant	1	Long-billed Curlew	21
Brown Pelican	10	Loon sp.	2
Bufflehead	1	Marbled Godwit	37
California Gull	10	Osprey	2
Caspian Tern	2	Pacific Loon	2
Double-crested Cormorant	6	Red-Throated Loon	1
Elegant Tern	66	Ring-billed Gull	36
Forster's Tern	12	Royal Tern	28
Great Blue Heron	1	Sanderling	83
Gull sp.	6	Say's Phoebe	5
Heermann's Gull	25	Snowy Egret	2
Horned Lark	2	Western Snowy Plover	1
House Finch	11	Song Sparrow	3
California Least Tern	1	Surf Scoter	59
Marbled Godwit	163	Unknown code (BCPU)	1
Osprey	1	Unknown code (HEGR)	1
Parasitic Jaeger	1	Western Grebe	271
Peep sp.	1	Western Gull	122
Red-tailed Hawk	1	Western Sandpiper	115
Ring-billed Gull	29	Whimbrel	1
Royal Tern	37	Willet	7
Ruddy Turnstone	5	<b>Grid Cell: C13</b>	
Sanderling	193	American Crow	50
Savannah Sparrow	1	American Pipit	4
Snowy Egret	2	Barn Swallow	19
Surf Scoter	100	Black Phoebe	2
Surfbird	1	Black Turnstone	1
Tern sp.	1	Black-bellied Plover	2

Common Name	Total Observed	Common Name	Total Observed
Brown Pelican	41	Swallow sp.	11
California Gull	107	Western Grebe	323
Caspian Tern	6	Western Gull	261
Double-crested Cormorant	22	Willet	34
Dowitcher sp.	1	<b>Grid Cell: C15</b>	
Eared Grebe	1	American Crow	6
Elegant Tern	30	Audubon's Warbler (Yellow-Rumped)	4
Forster's Tern	35	Barn Swallow	6
Gull-billed Tern	2	Black Phoebe	1
Heermann's Gull	84	Black Turnstone	6
House Finch	17	Black-bellied Plover	1
California Least Tern	2	Brown Pelican	36
Long-billed Curlew	41	California Gull	95
Marbled Godwit	161	Caspian Tern	9
Northern Rough-winged Swallow	2	Cassin's Kingbird	1
Osprey	1	Cliff Swallow	1
Pacific Loon	1	Double-crested Cormorant	41
Ring-billed Gull	69	Elegant Tern	8
Rock Pigeon	16	Forster's Tern	19
Royal Tern	79	Heermann's Gull	139
Sanderling	1038	House Finch	2
Surf Scoter	11	California Least Tern	1
Swallow sp.	13	Loon sp.	3
Western Grebe	415	Marbled Godwit	87
Western Gull	264	Pacific Loon	2
Willet	37	Red Knot	31
<b>Grid Cell: C14</b>		Ring-billed Gull	57
American Crow	11	Rock Pigeon	37
American Pipit	2	Royal Tern	67
Barn Swallow	1	Sanderling	139
Black Phoebe	3	Say's Phoebe	2
Black Turnstone	7	Snowy Egret	1
Black-bellied Plover	1	Surf Scoter	282
Brandt's Cormorant	1	Swallow sp.	13
Brown Pelican	26	Unknown code (ALTU)	2
California Gull	29	Western Grebe	603
Caspian Tern	7	Western Gull	269
Double-crested Cormorant	37	Whimbrel	1
Elegant Tern	14	Willet	161
European Starling	9	<b>Grid Cell: C16</b>	
Forster's Tern	15	American Crow	6
Great Blue Heron	1	American Pipit	1
Gull-billed Tern	14	Anna's Hummingbird	1
Heermann's Gull	71	Audubon's Warbler (Yellow-Rumped)	3
House Finch	2	Barn Swallow	10
California Least Tern	3	Black Phoebe	9
Marbled Godwit	84	Black Turnstone	50
Mourning Dove	6	Black-bellied Plover	2
Northern Mockingbird	2	Brandt's Cormorant	1
Osprey	1	Brown Pelican	30
Ring-billed Gull	29	California Gull	58
Rock Pigeon	25	Caspian Tern	8
Royal Tern	63	Common Loon	1
Sanderling	108	Double-crested Cormorant	29
Surf Scoter	2	Elegant Tern	15

Common Name	Total Observed	Common Name	Total Observed
European Starling	2	European Starling	29
Forster's Tern	8	Forster's Tern	12
Heermann's Gull	81	Heermann's Gull	7
House Finch	4	House Finch	2
House Sparrow	6	House Sparrow	1
California Least Tern	5	California Least Tern	2
Marbled Godwit	4	Marbled Godwit	294
Ring-billed Gull	18	Peep sp.	300
Rock Pigeon	30	Red-Throated Loon	1
Royal Tern	13	Ring-billed Gull	6
Sanderling	21	Rock Pigeon	10
Snowy Egret	1	Royal Tern	16
Surf Scoter	308	Sanderling	125
Surfbird	196	Surf Scoter	465
Swallow sp.	10	Western Grebe	340
Western Grebe	322	Western Gull	176
Western Gull	238	Western Sandpiper	6
Willet	18	Willet	261
<b>Grid Cell: C17</b>		<b>Grid Cell: C2</b>	
American Crow	6	Barn Swallow	1
Anna's Hummingbird	2	Belted Kingfisher	1
Audubon's Warbler (Yellow-Rumped)	11	Black Phoebe	2
Barn Swallow	1	Black-crowned Night Heron	1
Black Phoebe	2	Brandt's Cormorant	18
Brown Pelican	53	Brown Pelican	19
Caspian Tern	8	California Gull	2
Common Loon	1	Caspian Tern	1
Double-crested Cormorant	43	Cliff Swallow	6
Elegant Tern	19	Double-crested Cormorant	7
European Starling	2	Dunlin	1
Forster's Tern	10	Elegant Tern	23
Heermann's Gull	38	European Starling	1
House Finch	3	Forster's Tern	3
California Least Tern	4	Heermann's Gull	538
Marbled Godwit	80	California Least Tern	2
Orange-Crowned Warbler	6	Marbled Godwit	1
Rock Pigeon	19	Ring-billed Gull	3
Royal Tern	15	Rock Pigeon	1
Sanderling	40	Snowy Egret	10
Song Sparrow	2	Surf Scoter	25
Surf Scoter	1471	Western Grebe	3
Western Grebe	600	Western Gull	151
Western Gull	220	Western Kingbird	1
Willet	34	<b>Grid Cell: C29</b>	
<b>Grid Cell: C18</b>		American Crow	11
American Crow	3	American Pipit	1
Audubon's Warbler (Yellow-Rumped)	3	Barn Swallow	3
Barn Swallow	1	Black Phoebe	1
Black Phoebe	7	Black-bellied Plover	14
Brown Pelican	35	Brewer's Blackbird	3
California Gull	3	Brown Pelican	50
Caspian Tern	7	California Gull	91
Common Loon	1	Caspian Tern	1
Double-crested Cormorant	33	Common Loon	1
Elegant Tern	5	Double-crested Cormorant	27



Common Name	Total Observed	Common Name	Total Observed
Elegant Tern	41	Loon sp.	1
European Starling	43	Marbled Godwit	21
Forster's Tern	4	Red-Throated Loon	1
Great Egret	3	Ring-billed Gull	42
Gull sp.	35	Rock Pigeon	5
Heermann's Gull	59	Royal Tern	22
Herring Gull	1	Sanderling	55
Horned Lark	26	Sandpiper sp.	8
House Finch	6	Say's Phoebe	1
House Sparrow	3	Semipalmated Plover	14
California Least Tern	33	Western Snowy Plover	5
Marbled Godwit	9	Surf Scoter	17
Osprey	1	Unknown code (POJA)	1
Red-Throated Loon	2	Western Grebe	587
Ring-billed Gull	36	Western Gull	124
Rock Pigeon	82	Western Sandpiper	32
Royal Tern	5	Willet	21
Sanderling	135	<b>Grid Cell: C31</b>	
Sandpiper sp.	8	American Crow	2
Semipalmated Plover	36	American Pipit	8
Western Snowy Plover	31	Barn Swallow	8
Surf Scoter	104	Black Turnstone	1
Unknown code (POJA)	1	Black-bellied Plover	1
Western Grebe	498	Brown Pelican	26
Western Gull	151	California Gull	3
Western Sandpiper	62	Caspian Tern	2
Willet	34	Common Loon	2
<b>Grid Cell: C3</b>		Double-crested Cormorant	13
Brandt's Cormorant	25	Duck sp.	12
Brown Pelican	48	Elegant Tern	23
California Gull	1	Gull sp.	9
Caspian Tern	1	Gull-billed Tern	1
Double-crested Cormorant	7	Heermann's Gull	16
Heermann's Gull	22	Herring Gull	1
Marbled Godwit	2	Horned Lark	2
Osprey	2	House Finch	6
Surf Scoter	10	Marbled Godwit	10
Western Gull	87	Pacific Loon	2
<b>Grid Cell: C30</b>		Red-Throated Loon	2
American Crow	4	Ring-billed Gull	5
American Kestrel	1	Royal Tern	4
American Pipit	1	Ruddy Turnstone	1
Barn Swallow	2	Sanderling	26
Black Phoebe	1	Sandpiper sp.	8
Black-bellied Plover	6	Say's Phoebe	2
Brown Pelican	33	Semipalmated Plover	24
California Gull	59	Western Snowy Plover	10
Common Loon	3	Surf Scoter	7
Double-crested Cormorant	32	Unknown code (RBPL)	2
Elegant Tern	17	Western Grebe	921
European Starling	2	Western Gull	62
Forster's Tern	2	Western Sandpiper	13
Heermann's Gull	436	Willet	24
Horned Lark	8	<b>Grid Cell: C32</b>	
House Finch	43	American Crow	9

Common Name	Total Observed	Common Name	Total Observed
American Pipit	14	Killdeer	6
Barn Swallow	9	California Least Tern	1
Black-bellied Plover	5	Marbled Godwit	19
Brown Pelican	28	Osprey	1
California Gull	3	Red-Throated Loon	1
Caspian Tern	1	Ring-billed Gull	5
Common Loon	3	Royal Tern	27
Common Raven	2	Ruddy Turnstone	9
Double-crested Cormorant	29	Sanderling	59
Elegant Tern	21	Sandpiper sp.	7
Forster's Tern	1	Savannah Sparrow	2
Gull-billed Tern	2	Say's Phoebe	3
Heermann's Gull	10	Semipalmated Plover	95
Herring Gull	3	Western Snowy Plover	110
Horned Lark	9	Surf Scoter	23
House Finch	29	Tree Swallow	1
House Sparrow	2	Western Grebe	716
Killdeer	6	Western Gull	33
Least Sandpiper	2	Western Sandpiper	13
California Least Tern	2	Whimbrel	57
Long-billed Curlew	1	Willet	36
Loon sp.	1		
Marbled Godwit	7	<b>Grid Cell: C34</b>	
Red Knot	7	American Pipit	24
Ring-billed Gull	7	Barn Swallow	4
Royal Tern	3	Black-bellied Plover	4
Ruddy Turnstone	6	Brown Pelican	28
Sanderling	30	Bushtit	1
Sandpiper sp.	4	California Gull	6
Say's Phoebe	2	Caspian Tern	2
Semipalmated Plover	83	Common Loon	3
Western Snowy Plover	79	Double-crested Cormorant	21
Surf Scoter	21	Elegant Tern	64
Western Grebe	1171	European Starling	3
Western Gull	49	Forster's Tern	3
Western Sandpiper	18	Gull sp.	7
Willet	22	Gull-billed Tern	3
<b>Grid Cell: C33</b>		Heermann's Gull	11
American Pipit	20	Herring Gull	2
Barn Swallow	10	Horned Lark	16
Black-bellied Plover	17	House Finch	15
Brown Pelican	22	Killdeer	2
California Gull	4	Least Sandpiper	1
Caspian Tern	1	Long-billed Curlew	1
Common Loon	2	Loon sp.	23
Double-crested Cormorant	19	Marbled Godwit	8
Elegant Tern	14	Northern Rough-winged Swallow	3
European Starling	1	Osprey	1
Forster's Tern	4	Ring-billed Gull	4
Gull sp.	2	Royal Tern	8
Gull-billed Tern	5	Ruddy Turnstone	21
Heermann's Gull	3	Sanderling	80
Herring Gull	1	Sandpiper sp.	13
Horned Lark	32	Say's Phoebe	4
House Finch	25	Semipalmated Plover	45
		Western Snowy Plover	59

Common Name	Total Observed	Common Name	Total Observed
Surf Scoter	44	Royal Tern	10
Unkown code (WBGR)	1	Surf Scoter	155
Western Grebe	1267	Western Grebe	1
Western Gull	61	Western Gull	34
Western Sandpiper	5	<b>Grid Cell: C40</b>	
Willet	19	American Kestrel	1
<b>Grid Cell: C35</b>		American Pipit	7
American Pipit	14	Barn Swallow	10
Barn Swallow	1	Black-bellied Plover	8
Belding's Savannah Sparrow	1	Brown Pelican	9
Black-bellied Plover	13	Cormorant sp.	1
Brown Pelican	47	Double-crested Cormorant	1
California Gull	32	Elegant Tern	51
Caspian Tern	3	European Starling	3
Common Loon	1	Gull sp.	11
Common Raven	1	Gull-billed Tern	2
Double-crested Cormorant	22	Heermann's Gull	2
Elegant Tern	123	House Finch	242
Forster's Tern	1	Least Sandpiper	25
Great Blue Heron	2	Marbled Godwit	1
Gull-billed Tern	5	Mourning Dove	4
Heermann's Gull	3	No species given	1
Herring Gull	1	Peep sp.	7
Horned Lark	17	Peregrine Falcon	1
House Finch	7	Red-tailed Hawk	8
Killdeer	4	Ring-billed Gull	2
Least Sandpiper	12	Royal Tern	3
California Least Tern	3	Ruddy Turnstone	14
Long-billed Curlew	2	Sanderling	80
Marbled Godwit	23	Say's Phoebe	4
Osprey	2	Semipalmated Plover	2
Peregrine Falcon	1	Surf Scoter	75
Red Knot	4	Tern sp.	5
Royal Tern	22	Western Gull	43
Ruddy Turnstone	11	Western Kingbird	1
Sanderling	42	Western Sandpiper	6
Sandpiper sp.	24	Western Snowy Plover	13
Say's Phoebe	3	Willet	15
Semipalmated Plover	443	<b>Grid Cell: C41</b>	
Western Snowy Plover	49	American Crow	3
Surf Scoter	209	American Kestrel	1
Western Grebe	1169	American Pipit	4
Western Gull	53	Black Phoebe	3
Western Sandpiper	169	Black-bellied Plover	3
Willet	52	Brandt's Cormorant	4
<b>Grid Cell: C4</b>		Brant	4
Bonaparte's Gull	1	Brown Pelican	10
Brandt's Cormorant	6	California Gull	4
Brown Pelican	22	California Least Tern	2
California Gull	1	Caspian Tern	1
Double-crested Cormorant	4	Double-crested Cormorant	10
Eared Grebe	2	Elegant Tern	33
Elegant Tern	1	Forster's Tern	2
Heermann's Gull	21	Gull sp.	12
Parasitic Jaeger	1	Gull-billed Tern	4

Common Name	Total Observed	Common Name	Total Observed
Heermann's Gull	6	Brandt's Cormorant	779
House Finch	163	Brant	14
Least Sandpiper	1	Brown Pelican	224
Marbled Godwit	4	Caspian Tern	2
Mourning Dove	10	Common Loon	1
Osprey	1	Double-crested Cormorant	177
Ring-billed Gull	4	Elegant Tern	217
Rock Pigeon	4	Forster's Tern	5
Royal Tern	5	Great Egret	1
Ruddy Turnstone	2	Heermann's Gull	49
Sanderling	141	Osprey	3
Savannah Sparrow	1	Pelagic Cormorant	1
Say's Phoebe	5	Red-tailed Hawk	1
Semipalmated Plover	1	Royal Tern	31
Surf Scoter	60	Snowy Egret	11
Tern sp.	1	Surf Scoter	16
Western Grebe	1	Surfbird	1
Western Gull	72	Tern sp.	4
Western Sandpiper	11	Western Grebe	3
Western Snowy Plover	2	Western Gull	82
Willet	30	<b>Grid Cell: C6</b>	
Yellow-rumped Warbler	2	American Pipit	1
<b>Grid Cell: C5A</b>		Barn Swallow	2
Barn Swallow	4	Black Turnstone	94
Black-bellied Plover	1	Black-bellied Plover	21
Brandt's Cormorant	45	Brandt's Cormorant	3
Brant	21	Brown Pelican	168
Brown Pelican	33	California Gull	2
California Least Tern	2	Caspian Tern	3
Caspian Tern	1	Common Tern	1
Common Loon	3	Double-crested Cormorant	4
Double-crested Cormorant	39	Eared Grebe	23
Eared Grebe	3	Elegant Tern	8
Elegant Tern	27	Forster's Tern	3
Great Blue Heron	7	Franklin's Gull	2
Gull sp.	2	Great Blue Heron	2
Heermann's Gull	13	Heermann's Gull	154
House Finch	35	Horned Lark	7
Osprey	4	House Finch	40
Pacific Loon	1	Marbled Godwit	27
Pelagic Cormorant	1	Osprey	1
Red-tailed Hawk	1	Peep sp.	113
Ring-billed Gull	1	Red Knot	7
Royal Tern	23	Red-breasted Merganser	1
Ruddy Turnstone	3	Ring-billed Gull	3
Say's Phoebe	1	Royal Tern	37
Snowy Egret	1	Ruddy Turnstone	10
Surf Scoter	18	Sanderling	431
Tern sp.	7	Semipalmated Plover	97
Western Grebe	1	Snowy Egret	1
Western Gull	98	Spotted Sandpiper	2
Western Kingbird	1	Western Grebe	6
<b>Grid Cell: C5B</b>		Western Gull	438
Black Phoebe	1	Western Sandpiper	84
Black Turnstone	10	Western Snowy Plover	23



Common Name	Total Observed	Common Name	Total Observed
Whimbrel	2	Marbled Godwit	17
Willet	7	Osprey	3
<b>Grid Cell: C7</b>		Peep sp.	20
American Pipit	15	Peregrine Falcon	2
Barn Swallow	20	Red-tailed Hawk	1
Black Turnstone	1	Royal Tern	23
Black-bellied Plover	24	Ruddy Turnstone	3
Brant	8	Sanderling	18
Brown Pelican	11	Savannah Sparrow	1
California Gull	2	Say's Phoebe	1
Caspian Tern	31	Semipalmated Plover	4
Common Loon	1	Western Grebe	1
Double-crested Cormorant	2	Western Gull	119
Eared Grebe	22	Western Sandpiper	1
Elegant Tern	71	Western Snowy Plover	25
Forster's Tern	3	Willet	3
Franklin's Gull	1	<b>Grid Cell: C9</b>	
Gull sp.	45	American Crow	1
Heermann's Gull	5	American Kestrel	1
Horned Lark	16	Barn Swallow	2
House Finch	31	Black Turnstone	6
Least Sandpiper	1	Black-bellied Plover	561
Long-billed Curlew	1	Brandt's Cormorant	1
Loon sp.	1	Brant	1
Marbled Godwit	52	Brown Pelican	7
Osprey	3	California Gull	13
Peep sp.	5	Caspian Tern	9
Red Knot	17	Common Raven	2
Ring-billed Gull	13	Double-crested Cormorant	5
Royal Tern	28	Eared Grebe	7
Ruddy Turnstone	8	Elegant Tern	188
Sanderling	195	Forster's Tern	62
Say's Phoebe	1	Great Blue Heron	1
Semipalmated Plover	89	Gull sp.	9
Western Gull	163	Gull-billed Tern	2
Western Sandpiper	85	Heermann's Gull	11
Western Snowy Plover	44	Herring Gull	1
Willet	7	Horned Lark	5
<b>Grid Cell: C8</b>		House Finch	105
Barn Swallow	11	Killdeer	1
Black-bellied Plover	29	Least Sandpiper	3
Brandt's Cormorant	1	Marbled Godwit	483
Brown Pelican	12	Pacific Loon	1
California Gull	1	Peep sp.	280
Caspian Tern	55	Red Knot	30
Double-crested Cormorant	3	Ring-billed Gull	26
Eared Grebe	3	Royal Tern	107
Elegant Tern	158	Ruddy Turnstone	15
Forster's Tern	4	Sanderling	1115
Great Blue Heron	18	Say's Phoebe	1
Gull sp.	10	Semipalmated Plover	172
Heermann's Gull	6	Surfbird	15
Horned Lark	2	Tern sp.	1
House Finch	7	Western Grebe	1
Loon sp.	1	Western Gull	140

Common Name	Total Observed	Common Name	Total Observed
Western Sandpiper	122	Surf Scoter	300
Western Sandpiper?	25	Tern sp.	3
Western Snowy Plover	245	Western Grebe	85
Whimbrel	7	Western Gull	29
Willet	70	Western Sandpiper	5
<b>Grid Cell: G1</b>		Western Snowy Plover	37
American Kestrel	2	Willet	29
Black-bellied Plover	9	<b>Grid Cell: O1</b>	
Brown Pelican	8	American Pipit	2
California Gull	1	Black-bellied Plover	7
California Least Tern	30	Brandt's Cormorant	2
Caspian Tern	2	Brant	14
Double-crested Cormorant	24	Brown Pelican	25
Elegant Tern	12	California Least Tern	204
European Starling	2	Caspian Tern	1
Forster's Tern	1	Double-crested Cormorant	4
Gull sp.	1	Elegant Tern	3
Gull-billed Tern	1	European Starling	4
Horned Lark	5	Forster's Tern	1
House Finch	4	Gull sp.	4
Killdeer	2	Gull-billed Tern	4
Long-billed Curlew	1	Horned Lark	4
Marbled Godwit	4	House Finch	2
Osprey	2	Long-billed Curlew	1
Peep sp.	31	Loon sp.	1
Red Knot	12	Marbled Godwit	5
Royal Tern	2	Merlin	1
Ruddy Turnstone	16	Mourning Dove	1
Sanderling	632	Ring-billed Gull	3
Snowy Egret	1	Royal Tern	5
Surf Scoter	10	Ruddy Turnstone	3
Tern sp.	11	Sanderling	195
Western Gull	78	Sandpiper sp.	30
Western Sandpiper	1	Say's Phoebe	1
Western Snowy Plover	20	Semipalmated Plover	2
Willet	23	Surf Scoter	144
<b>Grid Cell: G2</b>		Western Grebe	20
American Kestrel	1	Western Gull	73
Black-bellied Plover	12	Western Sandpiper	28
Brandt's Cormorant	1	Western Snowy Plover	36
Brant	2	Willet	9
Brown Pelican	11	<b>Grid Cell: O2</b>	
California Least Tern	13	American Crow	1
Caspian Tern	1	American Pipit	1
Double-crested Cormorant	8	Black Phoebe	1
Elegant Tern	3	Black-bellied Plover	50
Forster's Tern	2	Brandt's Cormorant	1
Gull sp.	2	Brant	12
Horned Lark	8	Brown Pelican	22
House Finch	3	Bufflehead	1
Killdeer	1	California Gull	1
Osprey	2	California Least Tern	344
Royal Tern	9	Caspian Tern	1
Sanderling	233	Double-crested Cormorant	10
Semipalmated Plover	2	Elegant Tern	3

Common Name	Total Observed	Common Name	Total Observed
Forster's Tern	4	Willet	16
Great Egret	1	<b>Grid Cell: P2</b>	
Gull sp.	4	American Pipit	2
Horned Lark	2	Black-bellied Plover	6
House Finch	16	Brandt's Cormorant	2
Long-billed Curlew	1	Brown Pelican	9
Marbled Godwit	8	California Gull	7
Mourning Dove	2	California Least Tern	1
Osprey	2	Caspian Tern	2
Peep sp.	1	Common Raven	4
Red-tailed Hawk	2	Double-crested Cormorant	5
Ring-billed Gull	2	Elegant Tern	214
Royal Tern	2	Gull sp.	9
Ruddy Turnstone	3	Gull-billed Tern	9
Sanderling	362	Horned Lark	4
Say's Phoebe	1	House Finch	117
Semipalmated Plover	75	Least Sandpiper	318
Semipalmated Sandpiper	12	Loggerhead Shrike	1
Surf Scoter	201	Marbled Godwit	10
Western Grebe	2	No species given	35
Western Gull	22	Northern Harrier	1
Western Sandpiper	80	Osprey	2
Western Snowy Plover	262	Pacific Golden-plover	1
Willet	12	Peep sp.	252
<b>Grid Cell: P1</b>		Red-breasted Merganser	1
American Crow	1	Red-tailed Hawk	2
American Kestrel	2	Ring-billed Gull	2
American Pipit	8	Royal Tern	2
Black-bellied Plover	16	Ruddy Turnstone	9
Brown Pelican	20	Sanderling	47
California Gull	1	Say's Phoebe	2
Caspian Tern	1	Semipalmated Plover	119
Double-crested Cormorant	1	Semipalmated Sandpiper	38
Elegant Tern	31	Surf Scoter	62
Forster's Tern	1	Turkey Vulture	1
Gull-billed Tern	3	Western Grebe	20
Horned Lark	3	Western Gull	26
House Finch	9	Western Sandpiper	1
Least Sandpiper	110	Western Snowy Plover	147
Loon sp.	1	Willet	20
Marbled Godwit	10	<b>Grid Cell: PLO</b>	
Peep sp.	202	Brandt's Cormorant	49
Red-tailed Hawk	1	Brown Pelican	162
Ring-billed Gull	2	Caspian Tern	1
Royal Tern	8	Double-crested Cormorant	27
Ruddy Turnstone	10	Elegant Tern	2
Sanderling	64	Great Blue Heron	5
Say's Phoebe	1	Great Egret	10
Semipalmated Plover	38	Heermann's Gull	11
Semipalmated Sandpiper	3	Osprey	1
Surf Scoter	31	Pelagic Cormorant	2
Western Grebe	3	Ring-billed Gull	1
Western Gull	29	Royal Tern	1
Western Sandpiper	18	Snowy Egret	6
Western Snowy Plover	70	Spotted Sandpiper	2

Common Name	Total Observed	Common Name	Total Observed
Western Grebe	7	Surf Scoter	25
Western Gull	61	Tern sp.	1
<b>Grid Cell: R1</b>		Western Gull	112
Barn Swallow	12	Western Sandpiper	4
Black-bellied Plover	32	Western Snowy Plover	57
Brown Pelican	14	Willet	45
California Gull	4	<b>Grid Cell: W1</b>	
California Least Tern	291	American Kestrel	3
Caspian Tern	2	American Pipit	2
Double-crested Cormorant	10	Barn Swallow	3
Elegant Tern	12	Black Skimmer	1
Forster's Tern	1	Black-bellied Plover	12
Gull sp.	6	Brant	32
Gull-billed Tern	6	Brown Pelican	22
Heermann's Gull	1	California Gull	39
Horned Lark	13	Common Raven	2
House Finch	2	Common Tern	1
Killdeer	1	Cormorant sp.	1
Loon sp.	1	Double-crested Cormorant	2
Marbled Godwit	73	Elegant Tern	680
Red Knot	2	Forster's Tern	6
Ring-billed Gull	1	Gull sp.	191
Royal Tern	2	Gull-billed Tern	5
Ruddy Turnstone	3	Horned Lark	3
Sanderling	901	House Finch	6
Say's Phoebe	1	Least Sandpiper	5
Semipalmated Plover	1	Marbled Godwit	5
Surf Scoter	12	Osprey	1
Tern sp.	11	Peep sp.	15
Western Gull	50	Royal Tern	23
Western Sandpiper	7	Ruddy Turnstone	6
Western Snowy Plover	42	Sanderling	44
Willet	92	Savannah Sparrow	3
<b>Grid Cell: R2</b>		Say's Phoebe	1
Black-bellied Plover	21	Semipalmated Plover	12
Brandt's Cormorant	1	Surf Scoter	131
Brown Pelican	13	Tern sp.	7
California Least Tern	137	Turkey Vulture	1
Caspian Tern	3	Western Grebe	350
Common Raven	1	Western Gull	67
Cormorant sp.	2	Western Snowy Plover	91
Double-crested Cormorant	9	Willet	16
Elegant Tern	11	<b>Grid Cell: W2</b>	
Forster's Tern	5	American Kestrel	3
Gull sp.	4	American Pipit	3
Gull-billed Tern	2	Black-bellied Plover	142
Killdeer	1	Brown Pelican	19
Long-billed Curlew	1	California Gull	14
Marbled Godwit	6	Caspian Tern	1
Mourning Dove	3	Common Loon	1
Osprey	1	Common Raven	1
Red Knot	27	Double-crested Cormorant	4
Royal Tern	3	Elegant Tern	175
Ruddy Turnstone	13	Forster's Tern	1
Sanderling	692	Gull sp.	16



Common Name	Total Observed	Common Name	Total Observed
Gull-billed Tern	7	Black-bellied Plover	21
Heermann's Gull	2	Brown Pelican	5
Horned Lark	4	California Gull	1
House Finch	32	California Least Tern	20
Least Sandpiper	3	Double-crested Cormorant	1
Marbled Godwit	20	Horned Lark	1
Peep sp.	1	Marbled Godwit	51
Red Knot	14	Mourning Dove	1
Red-tailed Hawk	1	Peep sp.	100
Royal Tern	6	Red Knot	3
Ruddy Turnstone	28	Ring-billed Gull	4
Sanderling	84	Rock Pigeon	2
Semipalmated Plover	7	Royal Tern	3
Semipalmated Sandpiper	1	Ruddy Turnstone	1
Short-billed Dowitcher	1	Sanderling	117
Surf Scoter	1	Snowy Egret	1
Tern sp.	6	Surf Scoter	14
Western Gull	36	Western Grebe	66
Western Sandpiper	4	Western Gull	68
Western Snowy Plover	43	Western Snowy Plover	3
Willet	18	Willet	32
<b>Grid Cell: Y1</b>		<b>Grid Cell: ZJO</b>	
American Crow	7	Brandt's Cormorant	44
Brandt's Cormorant	2	Brant	24
Brown Pelican	3	Brown Pelican	208
California Gull	2	California Gull	2
California Least Tern	2	Caspian Tern	2
Forster's Tern	1	Double-crested Cormorant	33
Heermann's Gull	1	Elegant Tern	17
Marbled Godwit	297	Forster's Tern	1
Ring-billed Gull	3	Great Blue Heron	1
Ruddy Duck	2	Heermann's Gull	21
Sanderling	248	Osprey	1
Surf Scoter	238	Parasitic Jaeger	1
Western Grebe	1	Pelagic Cormorant	2
Western Gull	134	Royal Tern	2
Willet	186	Surf Scoter	7
<b>Grid Cell: Y2</b>		Western Gull	112
American Crow	2		
Barn Swallow	1		

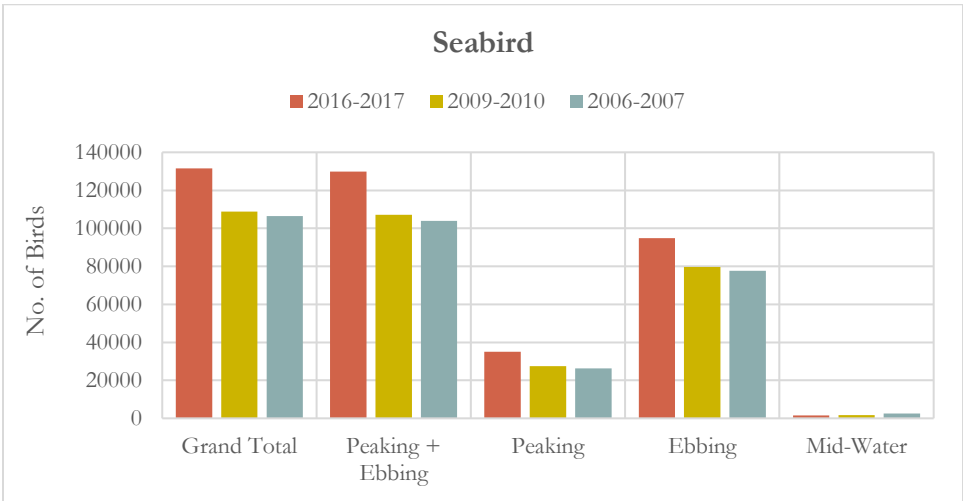
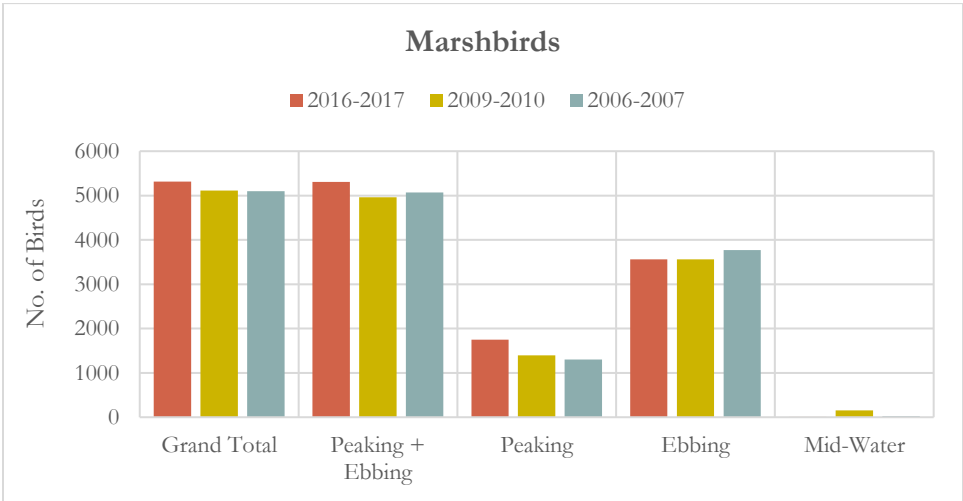
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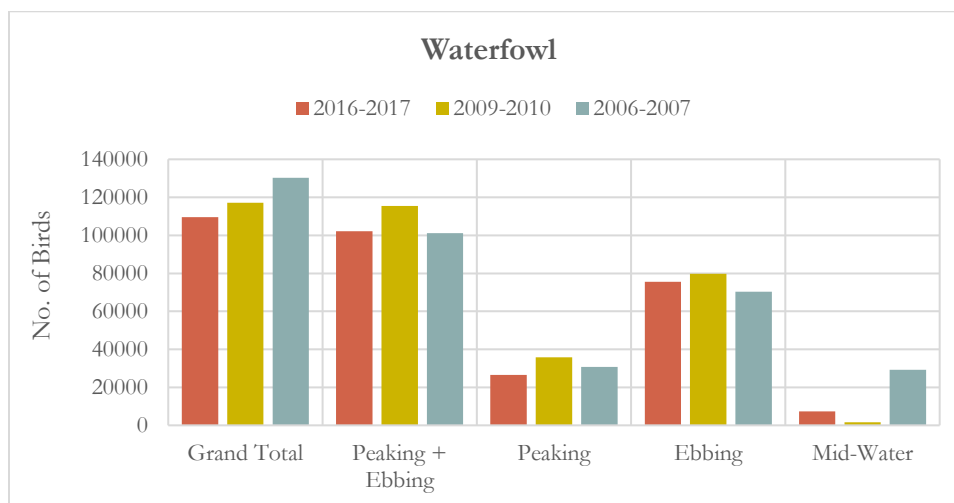
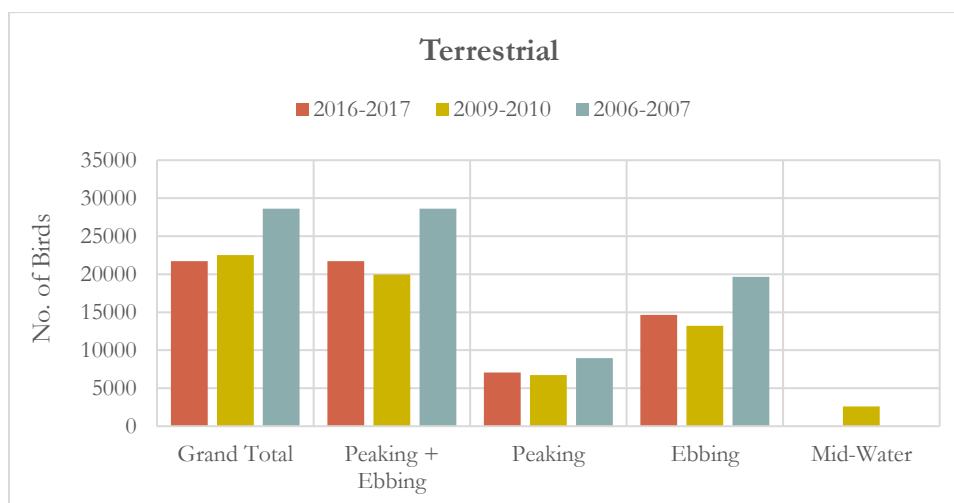


Elegant Tern. © Timothy Burr, 2017.

## Appendix G: Species Profiles

Below find graphs summarizing the results of the 2016-17 surveys by species assemblage.







Species observed during the 2016-17 San Diego Bay Bird Survey are presented below, organized by Order then by Family. Naming convention (except for capitalization) follows the American Ornithologists' Union (AOU) Check-list of North American Birds (AOU 1998) supplemented by Unitt (2004) when subspecies not covered in the check-list, but important locally, are discussed. Species observed during this survey were cross-referenced with the San Diego Bay INRMP (Navy and Port 2013) species list. Species not observed are discussed under each Family's section. The San Diego Bay INRMP incorporated all major bird survey information prior to 2013 for the bay.

Species descriptions contain a brief discussion of the location where the species was found and total number of birds observed during the shoreline ebbing tide and midwater surveys. Results for the peaking tide surveys are included when more than 50+ birds were counted over the course of the three survey efforts (2006-07, 2009-10, and 2016-17). Graphs showing ebbing tide survey results were included for species with 50+ observations during the surveys. The information presented is discussed in the context of historical observations, relying heavily on the Bay INRMP and Unitt's 2004 San Diego County Bird Atlas.

## G.1 Anseriformes

Of the 35 Anseriformes listed on the San Diego Bay INRMP's species list, eight were not found during this survey effort: Ross's goose (*Anser rossii*), wood duck (*Aix sponsa*), ring-necked duck (*Aythya collaris*), tufted duck (*Aythya fuligula*), long-tailed duck (*Clangula hyemalis*), fulvous whistling-duck (*Dendrocygna bicolor*), harlequin duck (*Histrionicus histrionicus*), brant Atlantic subspecies (*Branta bernicla brota*), canvasback (*Aythya valisineria*), Barrow's goldeneye (*Bucephala islandica*), hooded merganser (*Lophodytes cucullatus*), and king eider (*Somateris spectabilis*).

### Anatidae (Swans, Geese, and Ducks)

#### Snow Goose (*Anser caerulescens*)

The snow goose is a rare winter visitor in San Diego County, although there is an increasing wintering population at the Salton Sea; its distribution in the county follows that of the Canada goose. Snow geese typically occur in the county from November to February (Unitt 2004).

During the 2016-17 surveys, one snow goose was recorded during the November 2016 peaking tide survey in the salt ponds.

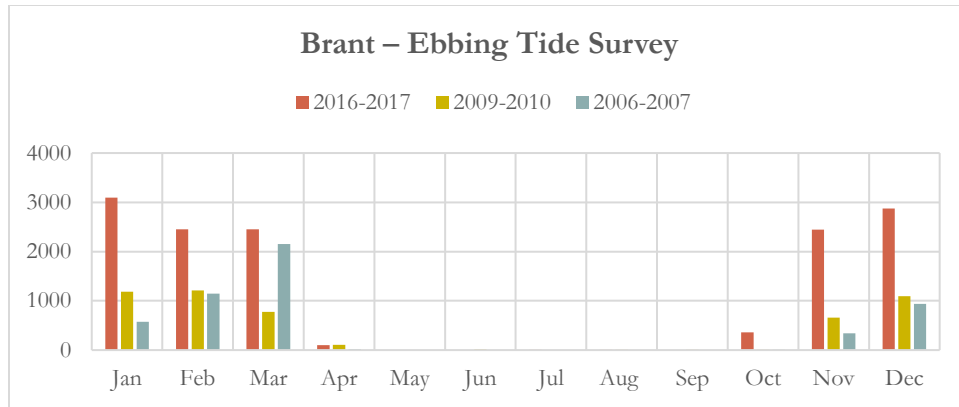
#### Brant (*Branta bernicla*)

Since the collapse of the brant population in San Diego Bay prior to 1970, the species has been increasing in the bay (Unitt 2004). Brant are most abundant between November and March. The black brant (*Branta bernicla nigricans*) is the brant subspecies regularly occurring in San Diego County because of its migration route along the Pacific coast (Unitt 2004). No brant from the Atlantic subspecies were noted during the surveys.



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Overall, 17,828 brant were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 13,785 brant were counted, and another 843 were counted during midwater surveys. Peaking tide surveys showed the most use in Grid ECVW with 393 brants recorded. Brants were observed in all regions of the bay, but the overwhelming majority were recorded in the south bay.



### Canada Goose (*Branta canadensis*)

Approximately 5,000 to 8,000 of these geese normally spend the winter in San Diego County, congregating in a few large flocks. They usually frequent fresh or brackish water and have not been historically seen in very high numbers around San Diego Bay (Unitt 2004).

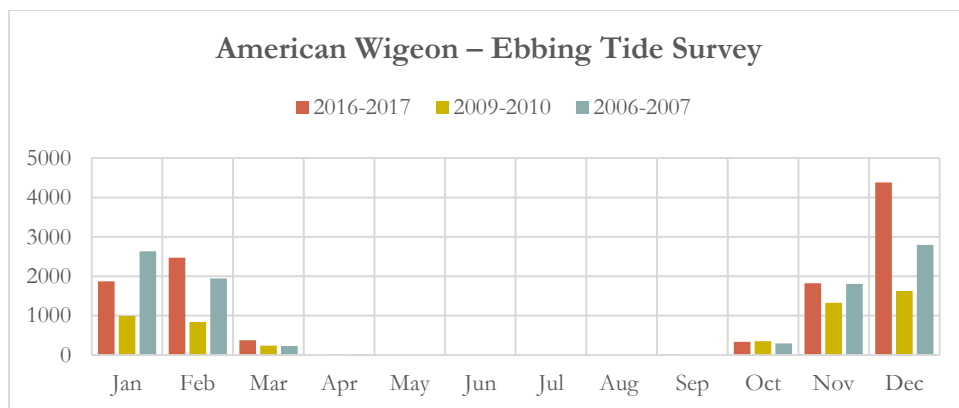
Four Canada geese were noted in April 2017 in the south bay and salt ponds during the peaking tide survey.

### American Wigeon (*Anas americana*)

The American wigeon is a common winter visitor in San Diego County, second only to the mallard in distribution. Wigeons typically arrive in September and usually depart by April. This bird can be seen where other ducks are seldom found due to its habit of grazing on terrestrial vegetation. In San Diego Bay, eelgrass is a favorite food (Unitt 2004).



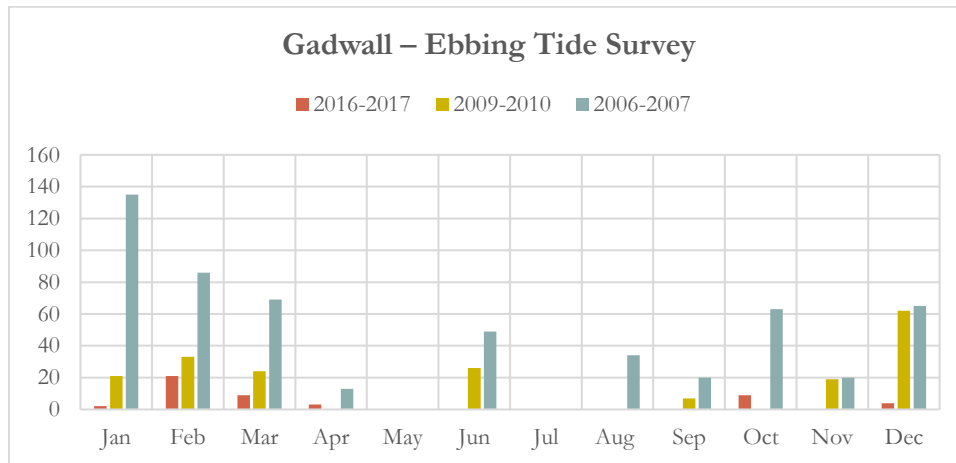
Overall, 13,574 American wigeons were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 11,269 American wigeons were counted, and another six were counted during midwater surveys. Peaking tide surveys showed the most use in Grid 514 with 803 American wigeons recorded. Almost all birds were in the south bay, with observations also recorded in the salt ponds and south-central and north bay.



**Gadwall (*Anas strepera strepera*)**

The gadwall is an abundant winter visitor to San Diego County and has extended its breeding range to include the county. Nesting birds can typically be found in the coastal lagoons of North County, which is also where higher numbers of wintering birds can be seen (Unitt 2004).

Overall, 67 gadwalls were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 48 gadwalls were counted. Gadwall were observed in the south bay and salt works.

**Eurasian Wigeon (*Anas penelope*)**

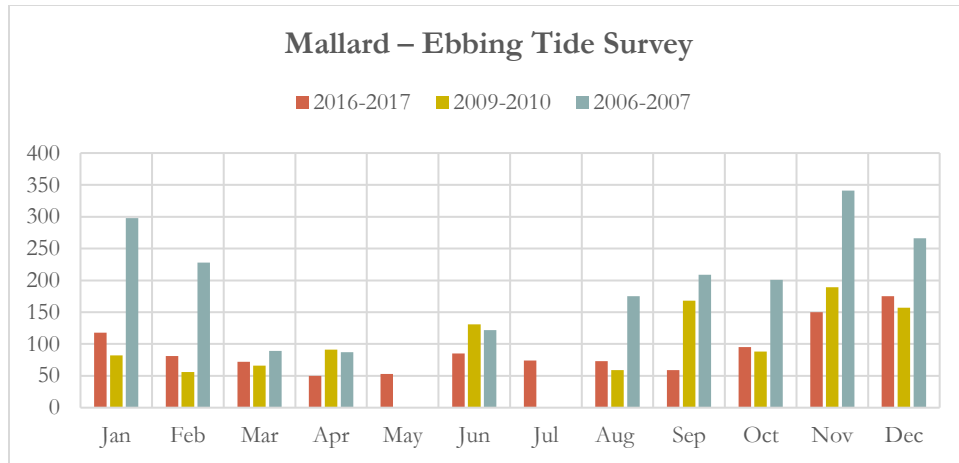
The Eurasian wigeon is a yearly winter visitor in San Diego County, usually found within groups of American wigeons. They are typically present from November through March (Unitt 2004).

Four Eurasian wigeons were observed during the 2016-17 surveys in the south bay.

**Mallard (*Anas platyrhynchos platyrhynchos*)**

The mallard is a common, locally abundant, year-round resident, and the most widespread duck in San Diego County. The mallard has a widespread breeding distribution in the county and is known to nest in the bay's salt ponds and at the Chula Vista Wildlife Refuge (Unitt 2004).

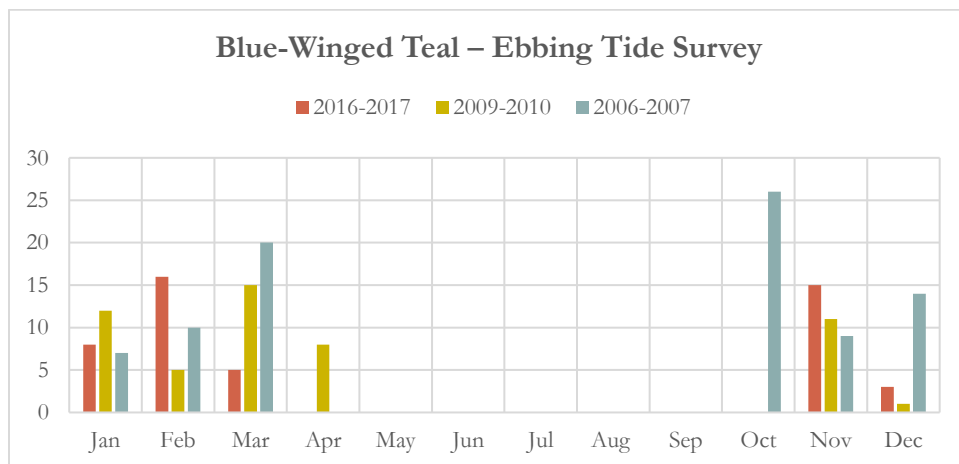
Overall, 1,547 mallards were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 1,085 mallards were counted, with one mallard recorded during the midwater surveys. Peaking tide survey showed the most use in Grid 251 with 114 mallards recorded. Mallards were observed most in the south and north-central bay, and in smaller numbers in the north and south-central bay and salt ponds.



### **Blue-Winged Teal (*Anas discors*)**

The blue-winged teal is a regular, although in low numbers, migrant and winter visitor in San Diego County from October to April. Blue-winged teal can typically be found at the San Diego River flood-control channel and at Famosa Slough (Unitt 2004).

Overall, 62 blue-winged teal were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 47 blue-winged teal were counted. Blue-winged teal were observed in the south bay and salt ponds.

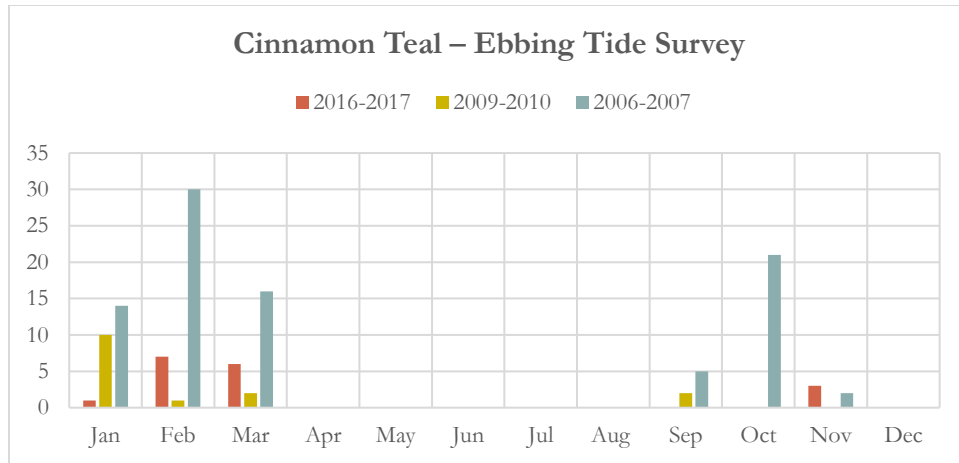


### **Cinnamon Teal (*Anas cyanoptera septentrionalis*)**

The cinnamon teal is a common migrant and winter visitor, and an uncommon summer breeding resident in San Diego County. Breeding birds are scattered in the coastal lagoons and lowlands, as well as inland (Unitt 2004).

Overall, 23 cinnamon teal were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 17 cinnamon teal were counted. Cinnamon teal were observed in the south bay and salt ponds.

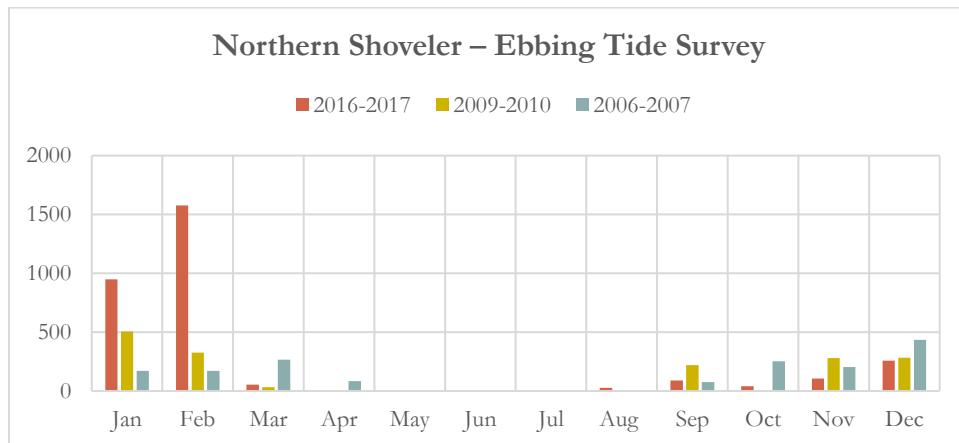




### **Northern Shoveler (*Anas clypeata*)**

The northern shoveler is a common winter visitor in San Diego County typically present from August to April (Unitt 2004).

Overall, 3,612 northern shovelers were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 3,104 northern shovelers were counted. Peaking tide survey showed the most use in Grid SW13W with 123 shovelers recorded. Northern shovelers were observed predominantly in the south bay, as well as in the salt ponds.

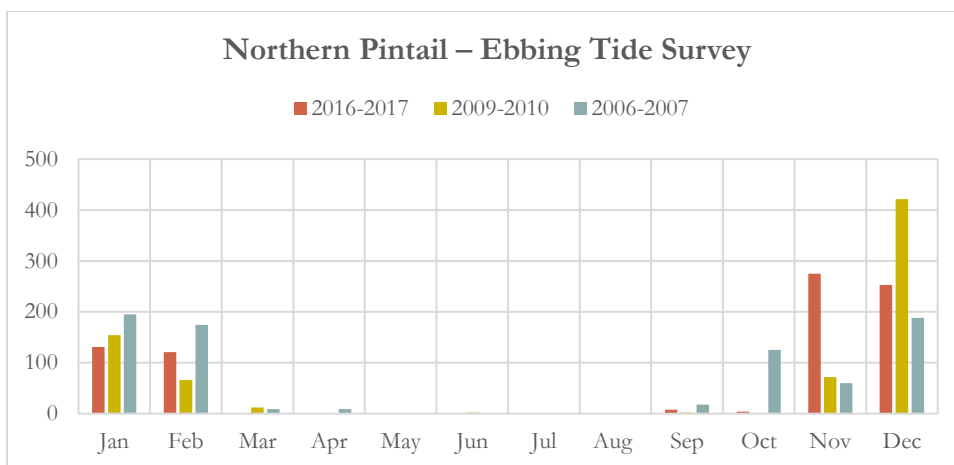


### **Northern Pintail (*Anas acuta*)**

The northern pintail is a locally common winter visitor in San Diego County. Occasionally, northern pintails have been recorded nesting in the county; none have been recorded since 1978. It frequents shallow water inland and along the coast (Unitt 2004).

Overall, 845 northern pintails were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 792 northern pintails were counted, with another three recorded during the midwater surveys. Northern pintails were observed in the south bay and salt ponds.

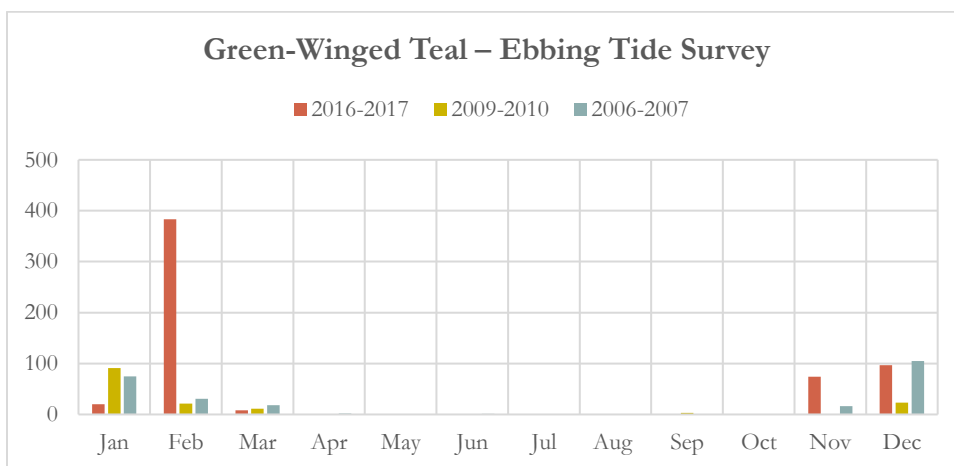




### **Green-Winged Teal (*Anas crecca carolinensis*)**

The green-winged teal is a rare winter visitor in San Diego County. It frequents the fresh and brackish waters on inland lakes and coastal wetlands. They are typically present from August through April (Unitt 2004).

Overall, 639 green-winged teal were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 582 green-winged teal were counted. Green-winged teal were observed in the south bay and salt ponds.



### **Canvasback (*Aythya valisineria*)**

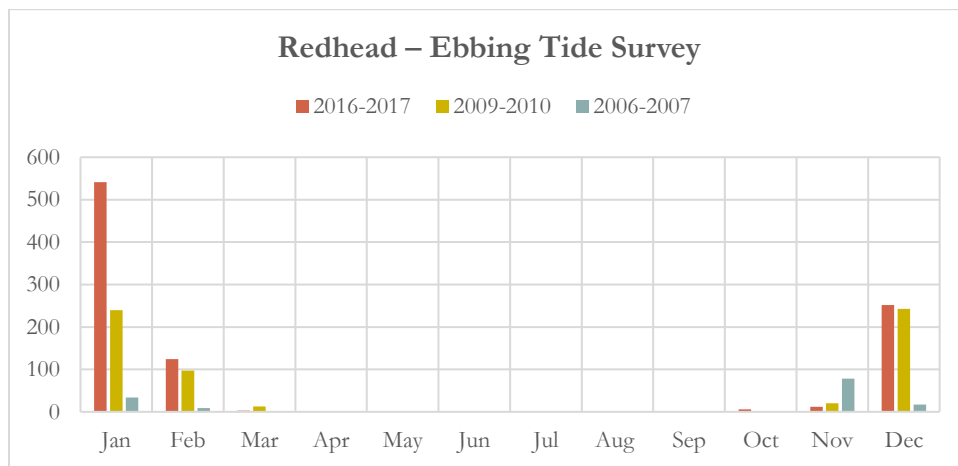
The canvasback is irregular during the winter in San Diego County, sometimes showing up in large flocks between November and March. They are often found in the brackish lagoons along the north coast, but rarely in San Diego Bay (Unitt 2004). No canvasbacks were observed during the 2016-17 surveys.

**Redhead (*Aythya americana*)**

The redhead is mainly a winter visitor to San Diego County; however, it does breed along the county's northern coast, which is the south end of its breeding range on the Pacific Coast. It is quite common during the winter in Mission Bay, with inconsistent numbers at sites such as San Diego Bay, Buena Vista, and Batiquitos Lagoons (Unitt 2004).

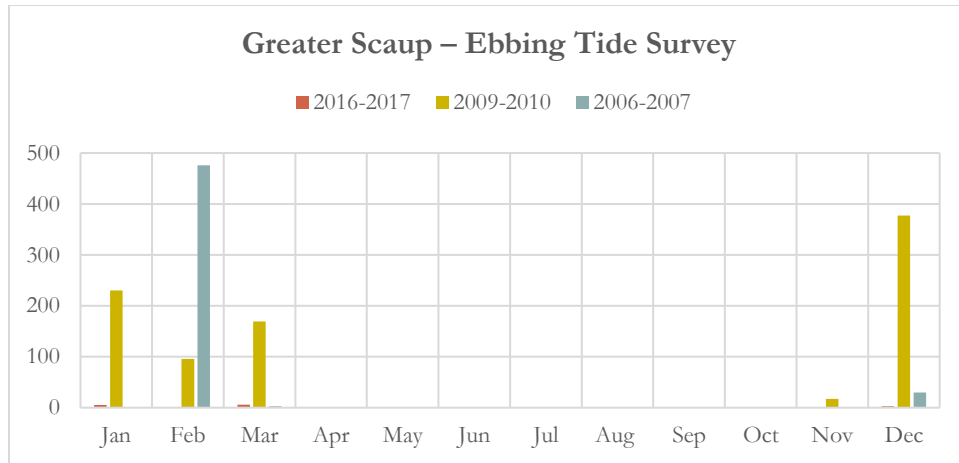


Overall, 1,765 redheads were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 938 redheads were counted, with another 300 observed during the midwater surveys. Peaking tide survey showed the most use in Grid 485 with 286 redheads recorded. Redheads were mostly observed in the south bay, with smaller numbers recorded in the south-central bay, north-central bay, and the salt ponds.

**Greater Scaup (*Aythya marila nearctica*)**

The greater scaup is an uncommon to rare winter visitor in San Diego County. It is usually found within flocks of lesser scaups. The two species are extremely similar, and thus the species' status in the county is poorly known. It is typically present from November through March. In San Diego County, it is most likely to be found in south San Diego Bay (Unitt 2004).

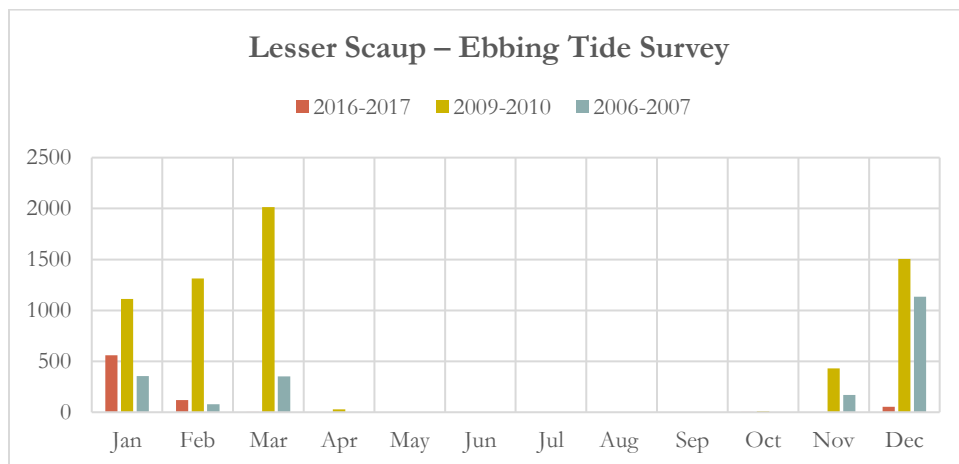
Overall, 92 greater scaups were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 15 greater scaups were counted. Greater scaups were primarily seen in the south bay, with smaller numbers recorded in the south-central and north-central bay.



### **Lesser Scaup (*Aythya affinis*)**

In southern California, wintering lesser scaups can be found in highest concentration on San Diego Bay. They are second only in abundance to the surf scoter in south bay (Unitt 2004).

Overall, 946 lesser scaup were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 736 lesser scaups were counted, with another 70 lesser scaup recorded during midwater surveys. Lesser scaups were primarily seen in the south bay, with smaller numbers recorded in all other regions except the ocean grids.



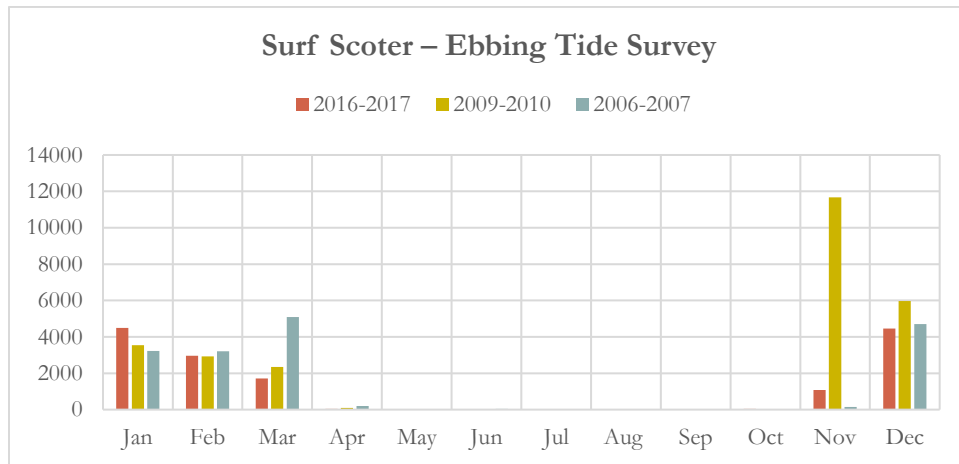
### **Surf Scoter (*Melanitta perspicillata*)**

San Diego Bay is one of the surf scoter's key winter habitats, supporting the largest concentration of these birds in their winter range. Concentrated mainly in the south central and south bay, the scoter is the most abundant bird species on the bay (Unitt 2004).

Overall, 26,141 surf scoters were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 14,789 surf scoters were counted, with another 5,701 counted during the midwater surveys. Peaking tide surveys showed the most use in



Grid 420 with 618 observations. Surf scoters were well-represented in all regions, but were most common in the south bay.



### **White-Winged Scoter (*Melanitta fusca deglandi*)**

The white-winged scoter was previously a common winter visitor in San Diego County; however, since the 1970s it has almost disappeared from the area. It is believed that the wintering range of the white-winged scoter has shifted north, no longer including San Diego County (Unitt 2004).

During the 2016-17 surveys, only one white-winged scoter was observed in March in the north bay.

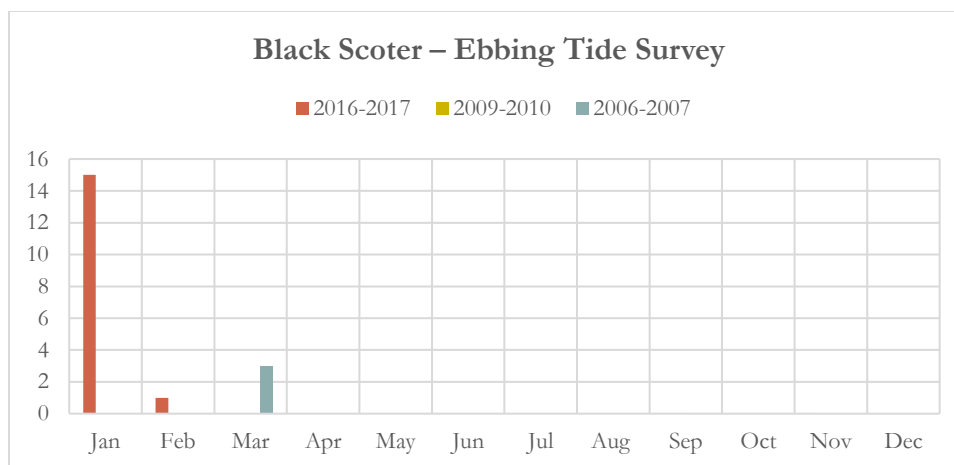


### **Black Scoter (*Melanitta nigra americana*)**

The black scoter is a rare winter visitor to San Diego County typically found in San Diego Bay or along the near-shore ocean (Unitt 2004).

A total of 19 black scoters were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 16 black scoters were counted, with another two black scoters recorded during the midwater surveys. Black scoters were primarily seen in the south-central bay, with smaller numbers recorded in the north and south bay.



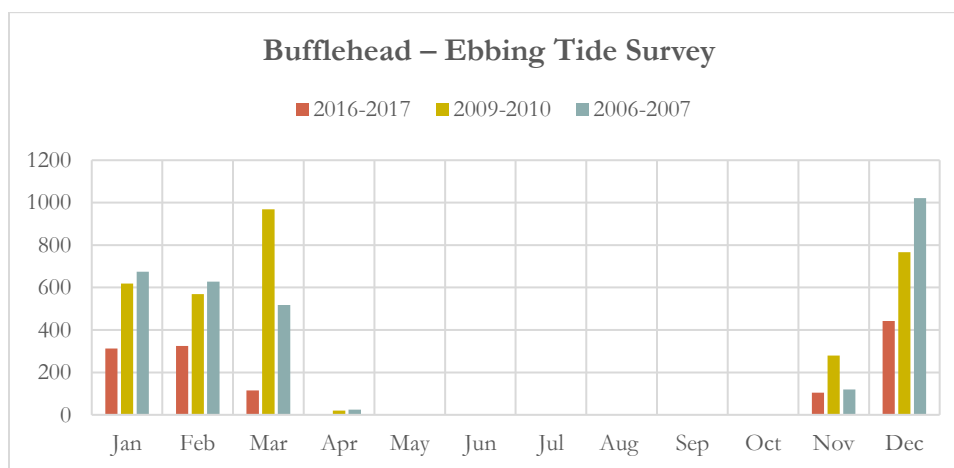


### **Bufflehead (*Bucephala albeola*)**

The bufflehead is a common migrant and winter visitor in San Diego County. On San Diego Bay, it is the third most common diving duck behind the surf scoter and lesser scaup. Buffleheads are typically present from November to April (Unitt 2004).



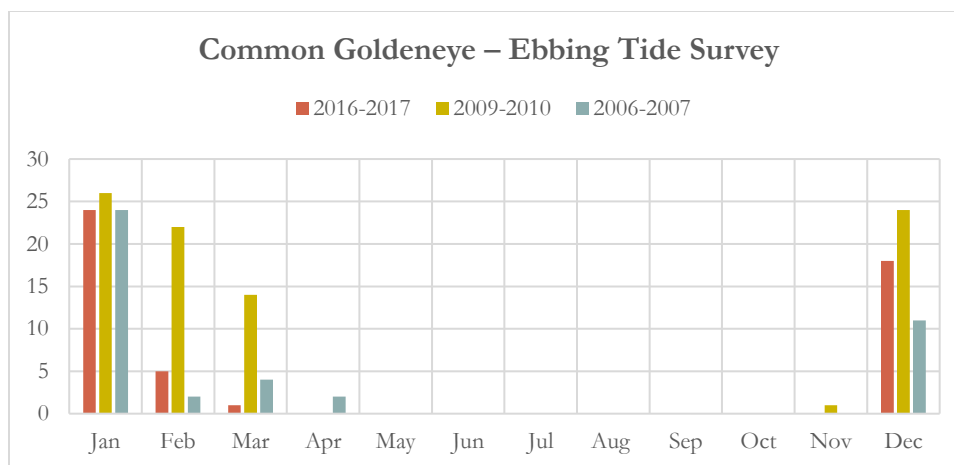
Overall, 1,959 buffleheads were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 1,302 buffleheads were counted, with another 124 counted during the midwater surveys. Peaking tide surveys showed the most use in Grid SW12 with 193 observations. Surf scoters were observed in all regions of bay, but were most common in the salt ponds.



### **Common Goldeneye (*Bucephala clangula*)**

The common goldeneye is an uncommon winter visitor in the San Diego Bay salt ponds and a rare winter visitor elsewhere (Unitt 2004).

Overall, 50 common goldeneyes were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 48 common goldeneyes were counted. Common goldeneyes were observed primarily in the salt ponds, with one observation in the north bay.



### **Common Merganser (*Mergus merganser*)**

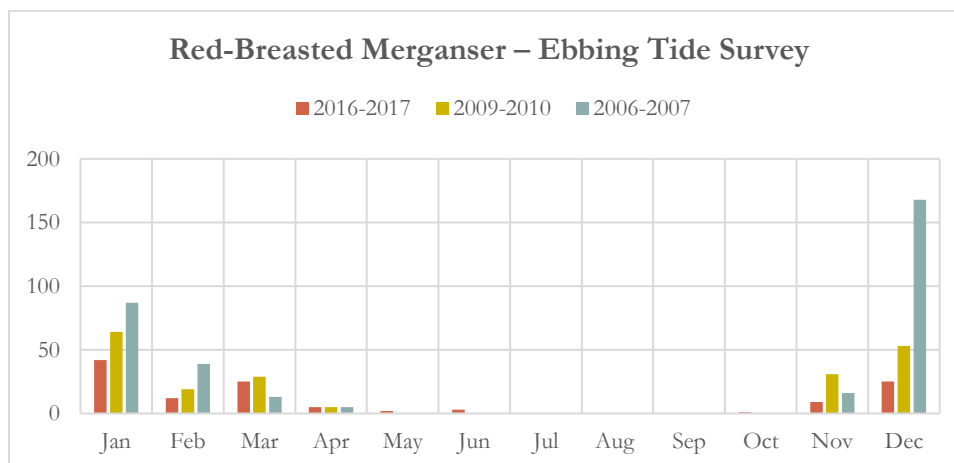
The common merganser is a common winter visitor in San Diego County. It is more often seen on inland lakes than in coastal wetlands and is typically present from November through March (Unitt 2004).

There were 11 common mergansers recorded in the north and south bay during the shoreline ebbing surveys of the 2016-17 effort.

### **Red-Breasted Merganser (*Mergus serrator*)**

The only San Diego County merganser with a preference for salt water, the red-breasted merganser is common during the winter on San Diego Bay. Its numbers can vary considerably from year to year with no clear trend (Unitt 2004).

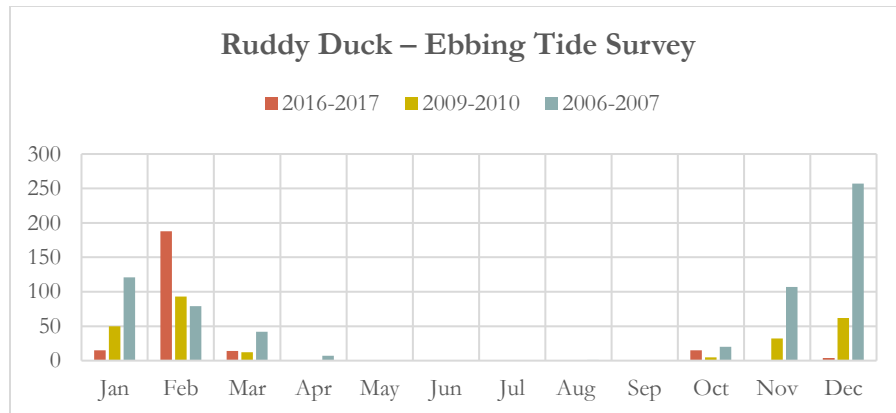
Overall, 179 red-breasted mergansers were recorded during the 2016-17 surveys. Red-breasted mergansers were recorded in all regions of the bay, but were mostly recorded in the south bay.



### **Ruddy Duck (*Oxyura jamaicensis rubida*)**

The ruddy duck is an abundant winter visitor and a locally common breeder in San Diego County. It frequents brackish lagoons and freshwater lakes and ponds. Wintering birds are typically present from October to April (Unitt 2004).

Overall, 329 ruddy ducks were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 236 ruddy ducks were counted. Ruddy ducks were predominantly observed in the salt ponds, with smaller numbers counted in the south and north bay and ocean grids.



## **G.2 Galliformes**

Neither of the birds in this Order listed in the species list were found in the San Diego Bay INRMP was observed during this survey effort; this includes the California quail (*Callipepla californica californica*) and ring-necked pheasant (*Phasianus colchicus*). While the California quail is common year-round in San Diego County, and even on Point Loma, it rapidly disappears from developing urban areas and has limited available habitat where bay bird survey observations took place. Ring-necked pheasants are rarer in the county, but also have no potential habitat around San Diego Bay.

## **G.3 Gaviiformes**

### **Gaviidae (Loons)**

Of the birds listed under this Order on the San Diego Bay INRMP species list, the yellow-billed loon (*Gavia adamsii*) was not observed during this effort. The yellow-billed loon breeds in the far north Arctic and its normal winter range is in southeast Alaska and along the coast of British Columbia, though it has been known to irregularly winter south to Baja California. Recent observations of this species south of its normal winter range, including in many inland areas of the U.S. may indicate a shift in non-breeding habitat use (North 1994). One yellow-billed loon was recorded in the south bay during the 2009-10 surveys.

**Red-Throated Loon (*Gavia stellata*)**

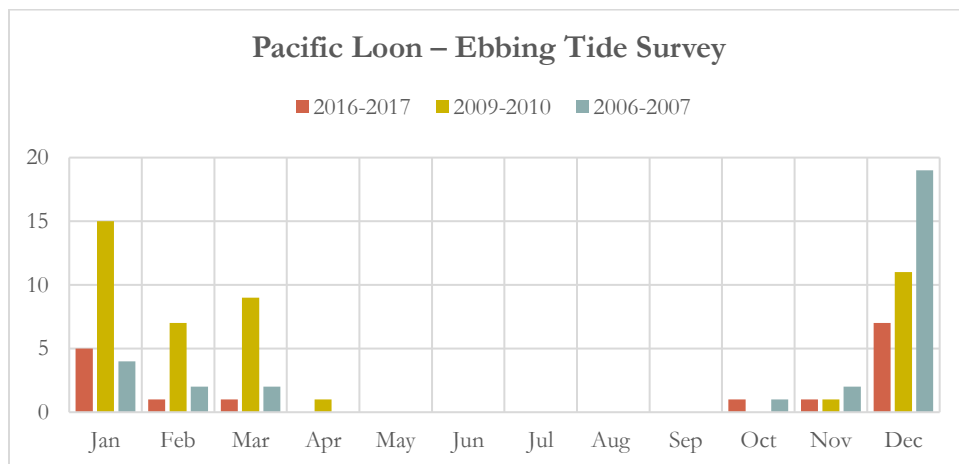
The red-throated loon is considered an uncommon winter visitor to the county. The birds arrive in October and are usually gone by April. Almost all records are coastal and only a few individuals venture inland (Unitt 2004).

During the 2016-17 surveys, eight red-throated loons were recorded during shoreline ebbing tide surveys in the ocean grids in December 2016 and January 2017.

**Pacific Loon (*Gavia pacifica*)**

The Pacific loon is a common winter visitor to San Diego County's ocean, but is uncommon to rare in the county's bays and lagoons. Birds may arrive in October and usually depart March through June (Unitt 2004).

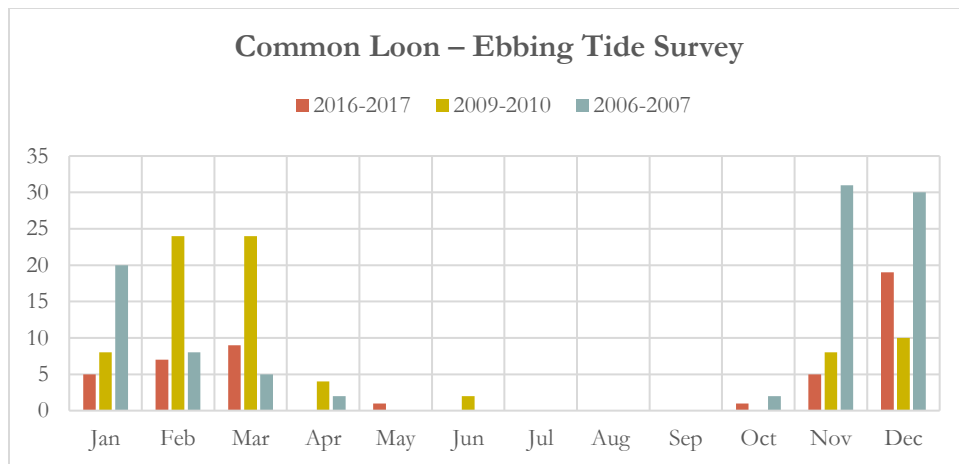
Overall, 25 Pacific loons were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 16 Pacific loons were counted, with one Pacific loon counted during the midwater surveys. Pacific loons were observed in all regions of the bay except for the salt ponds.



### **Common Loon (*Gavia immer*)**

The common loon is a fairly common winter visitor to the county along the shore, in bays and estuaries, and on occasion on inland lakes. Birds usually start to arrive in October and depart in late March and early April (Unitt 2004).

Overall, 87 common loons were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 47 common loons were counted, with 20 common loons counted during the midwater surveys. Common loons were observed in all regions of the bay.



## **G.4 Podicipediiformes**

### **Podicipedidae (Grebes)**

Of the birds listed under this Order on the San Diego Bay INRMP species list, the red-necked grebe (*Podiceps grisegena*) was not observed during this effort. Listed as an accidental observation in the Bay INRMP, there have only been three well-supported records of the red-necked grebe in San Diego County (Unitt 2004).

### **Pied-Billed Grebe (*Podilymbus podiceps podiceps*)**

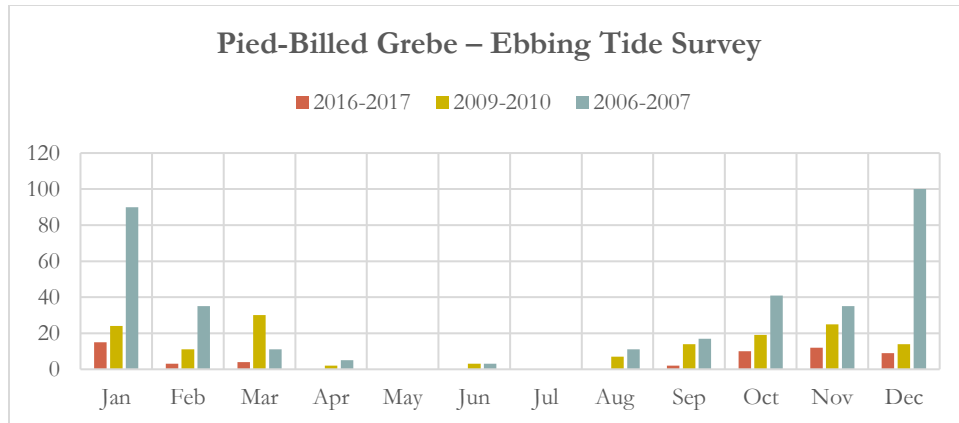
The pied-billed grebe is a breeder and winter resident in San Diego County. Birds can also be seen in the county during migration, although it is uncertain if these sightings represent arrival and departure of migrants or movement of local birds. San Diego Bay is used as a wintering site for the pied-billed grebe, but this species has not been reported as breeding on the bay (Unitt 2004).

Overall, 75 pied-billed grebes were recorded during the 2016-17 surveys.

During the shoreline ebbing tide surveys, 55 pied-billed grebes were counted, with one counted during the midwater surveys. Pied-billed grebes were observed primarily in the north and south bay, with smaller numbers recorded in the north-central bay and salt ponds.



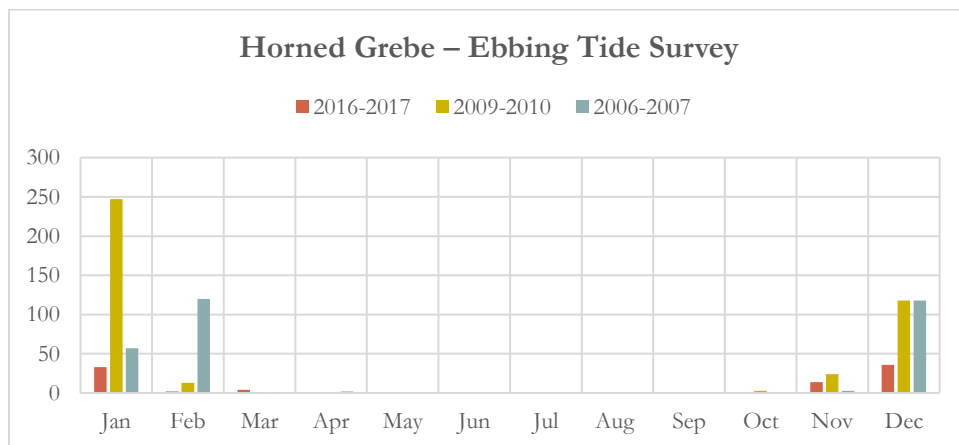




### **Horned Grebe (*Podiceps auritus cornutus*)**

The horned grebe is a fairly common winter visitor in San Diego County, usually arriving in November and staying through March. San Diego Bay and Mission Bay support the highest number of birds in the county (Unitt 2004).

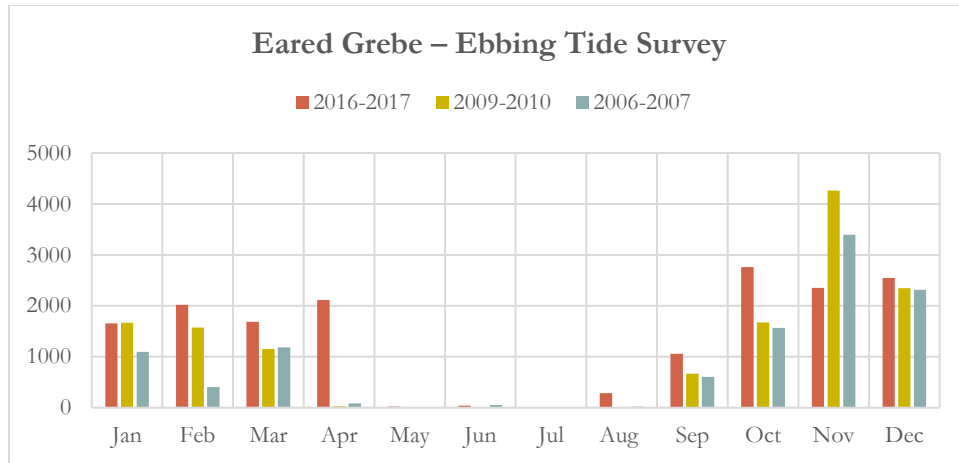
Overall, 181 horned grebes were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 89 horned grebes were counted, with one counted during the midwater surveys. Horned grebes were observed primarily in the north and south bay, with smaller numbers recorded in the north-central bay and salt ponds.



### **Eared Grebe (*Podiceps nigricollis californicus*)**

The eared grebe is a rare breeder and a common winter visitor in San Diego County. Breeding birds nest around fresh or brackish water and non-breeding birds use hypersaline waters. San Diego Bay, especially the south bay, supports thousands of wintering birds. Some non-breeding birds may also be seen on the bay during the summer months (Unitt 2004).

Overall, 24,910 eared grebes were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 16,554 eared grebes were counted, with another 41 counted during the midwater surveys. Peaking tide surveys showed the most use in Grid SW15 with 2,363 observations. Eared grebes were observed predominantly in the salt ponds, with smaller numbers recorded in all other regions of the bay.



### **Western Grebe (*Aechmophorus occidentalis*)**

The western grebe is both a breeder and a winter visitor in San Diego County (Unitt 2004). It breeds on freshwater lakes and marshes but winters on salt or brackish water; hence, the birds seen on and around the bay would most likely be migrants.

Overall, 12,239 western grebes were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 8,173 western grebes were counted, with another 22 counted during the midwater surveys. Peaking tide surveys showed the most use in Grid C35 with 646 observations. Western grebes were observed predominantly in the ocean grids, with smaller numbers recorded in all other regions of the bay.

## **G.5 Procellariiformes**

The only Procellariiform listed on the San Diego Bay INRMP species list is the black storm-petrel (*Oceanodroma melania*) of the Family Hydrobatidae; it is listed as an accidental observation. This bird nests on Los Coronados Islands and regularly occurs two to three miles offshore of San Diego County, but is rarely seen from land (Unitt 2004). It is therefore not a surprise that it went unobserved during this survey effort. Black-vent shearwaters (*Puffinus opisthomelas*), not listed on the San Diego Bay INRMP species list, were observed offshore during the 2006-07 surveys, but not during this iteration.

## **G.6 Pelecaniformes**

Of the birds listed under this Order on the San Diego Bay INRMP species list, the magnificent frigatebird (*Fregata magnificens*) and brown booby (*Sula leucogaster brewsteri*) were not observed during this effort.

### **Sulidae (Boobies)**

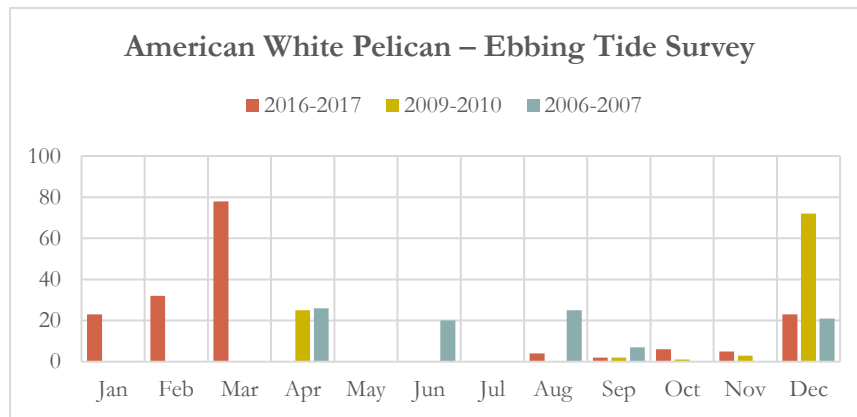
The brown booby is listed as an accidental observation on the San Diego Bay INRMP species list and is an uncommon, but increasingly seen, species around the San Diego Bay/northern Baja California region of the eastern Pacific (Unitt 2004).

## Pelecanidae (Pelicans)

### American White Pelican (*Pelecanus erythrorhynchos*)

American white pelicans winter in varying numbers in San Diego County, using coastal wetlands and inland lakes. On the coast, the Buena Vista lagoon and the southernmost basin of San Diego Bay are sites where pelicans can frequently be seen (Unitt 2004).

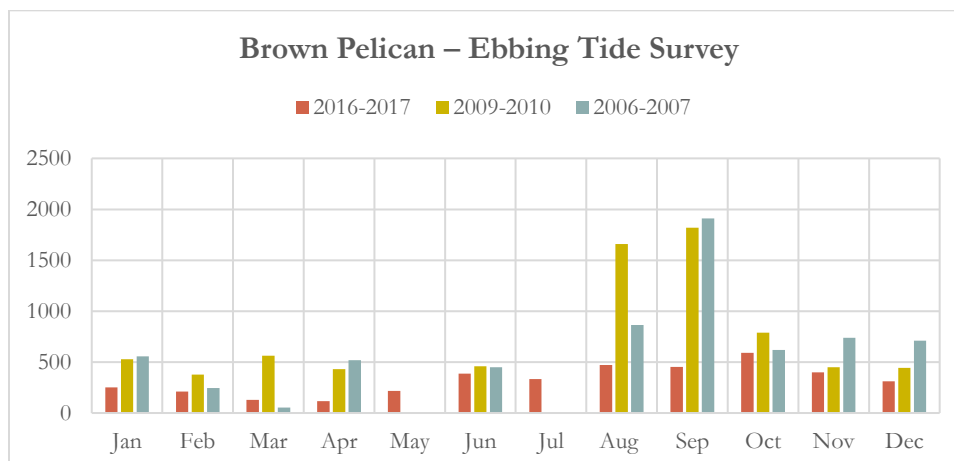
Overall, 248 American white pelicans were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 173 American white pelicans were counted. American white pelicans were primarily observed in the south bay with smaller numbers recorded in the salt ponds.



### Brown Pelican (*Pelecanus occidentalis californicus*)

The brown pelican is a common winter visitor to San Diego County, but can be seen year round. It is most often found along the coast and offshore, although birds can regularly be seen on the Sweetwater Reservoir. In San Diego Bay, brown pelicans are usually found in the north and north-central portion of the bay and also roosting on the dikes of the south bay salt ponds (Unitt 2004).

Overall, 5,603 brown pelicans were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 3,867 brown pelicans were counted, with another 92 counted during the midwater surveys. Peaking tide surveys showed the most use in Grid ZJO with 132 observations. Brown pelicans were observed in all regions of the bay.

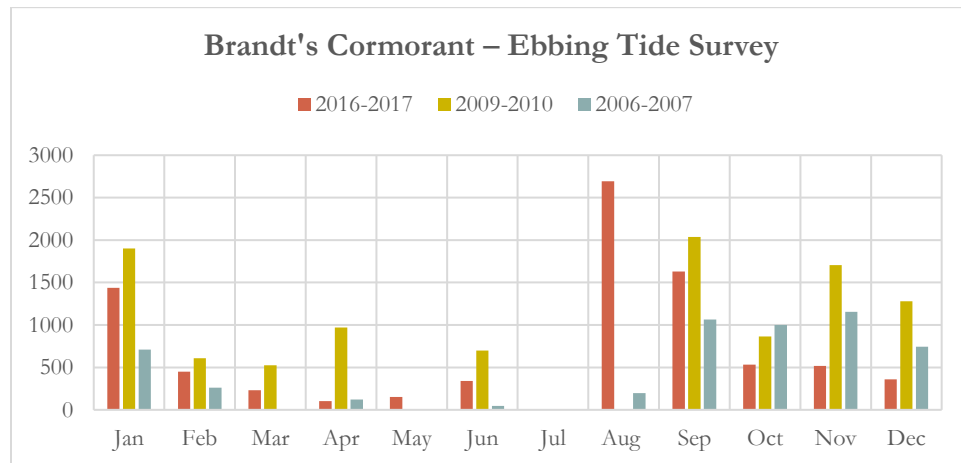


## Phalacrocoracidae (Cormorants)

### **Brandt's Cormorant (*Phalacrocorax penicillatus*)**

Brandt's cormorant is a common winter visitor to San Diego County, although a few birds will stay year-round and some birds have been observed nesting at La Jolla. Brandt's cormorants attempted nesting yearly from 1993 through 1995 on the degaussing pier of the Navy's submarine base on Point Loma. All three attempts failed: the first one from the disturbance of degaussing a minesweeper; no chicks hatched in the two following attempts (Unitt 2004).

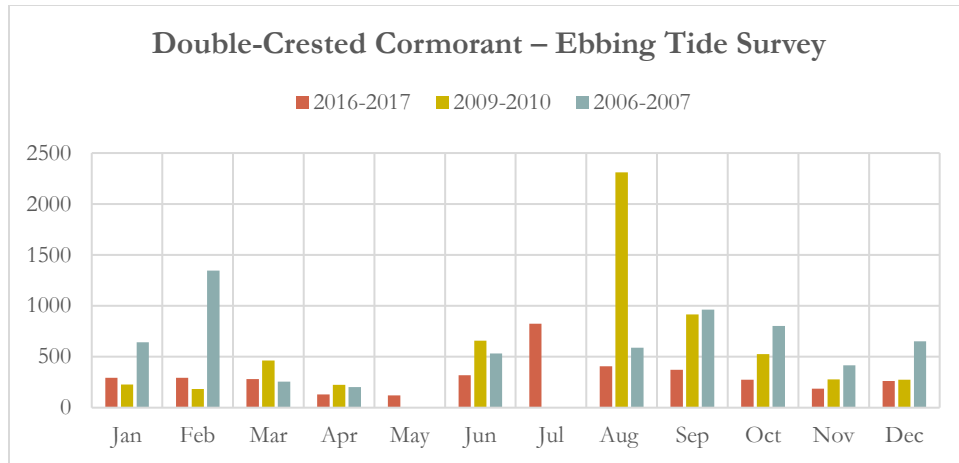
Overall, 11,904 Brandt's cormorants were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 8,448 Brandt's cormorants were counted, with another 390 counted during the midwater surveys. Peaking tide surveys showed the most use in Grid 19 with 1,939 observations. Brandt's cormorants were observed predominantly in the north bay, with smaller numbers observed in the ocean grids and north-central, south, and south-central bay.



### **Double-Crested Cormorant (*Phalacrocorax auritus*)**

The double-crested cormorant is a common non-breeding visitor to San Diego County. Since 1988, two breeding colonies have formed in the county: one at the Sweetwater Reservoir and one at the salt ponds of south San Diego Bay, where 77 nests were counted in 2005 (Unitt 2004; USFWS 2006).

Overall, 5,210 double-crested cormorants were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 3,760 double-crested cormorants were counted, with another 40 counted during the midwater surveys. Peaking tide surveys showed the most use in Grid 312 with 136 observations. Double-crested cormorants were observed in all regions of the bay.

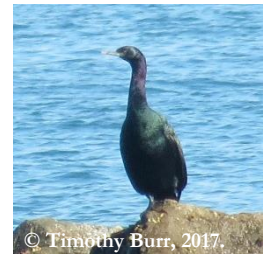


### **Pelagic Cormorant (*Phalacrocorax pelagicus*)**

The pelagic cormorant is the least numerous of San Diego County's cormorants and can be easily overlooked among Brandt's cormorants, which are more common. It has been previously recorded in low numbers (6 to 10), with occasional high influxes (up to 127 in 1987), around the rocky shores of Point Loma (Unitt 2004).

Overall, 10 pelagic cormorants were recorded during the 2016-17 surveys.

During the shoreline ebbing tide surveys, nine pelagic cormorants were counted. Pelagic cormorants were observed in the ocean grids and north and south-central bay.



### **Fregatidae (Frigatebirds)**

The magnificent frigatebird is an increasingly uncommon visitor to San Diego County with rare visitors crossing from Mexico after fledging (Unitt 2004). It is listed as an accidental observation on the San Diego Bay INRMP species list and was not observed during this effort.

## **G.7 Ciconiiformes**

The American bittern (*Botaurus lentiginosus*), least bittern (*Ixobrychus exilis hesperius*), and cattle egret (*Bubulcus ibis*) are listed on the Bay INRMP species list but were not observed during this effort. The American and least bittern are somewhat uncommon in San Diego County and especially in the bay, where limited marsh habitat exists for them. In San Diego County, the cattle egret breeding population has fluctuated greatly over the years, and this species has seen a decline as its preferred habitat of pastures and farmland has been converted to urban sprawl (Unitt 2004). The only Ciconiidae listed on the San Diego Bay INRMP species list, the wood stork (*Mycteria americana*), was not observed during this survey.



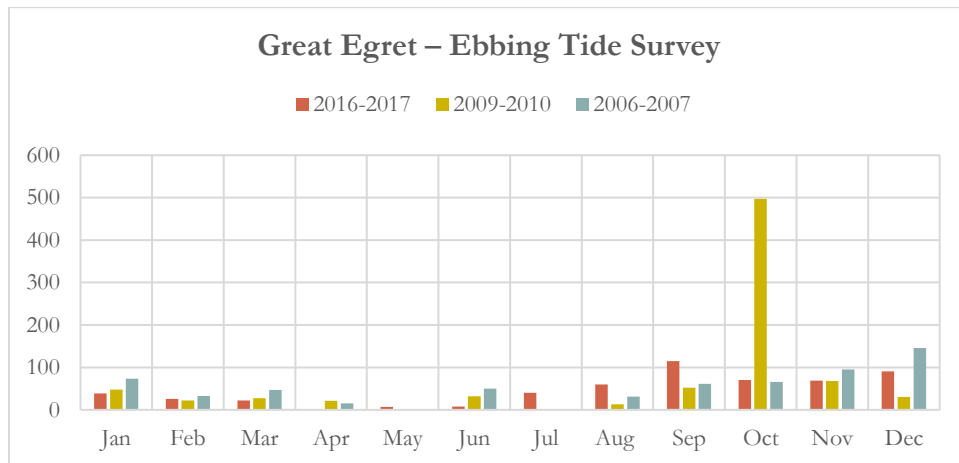
## Ardeidae (Hérons)

### Great Egret (*Ardea alba egretta*)

The great egret is a common winter visitor to San Diego County and since 1988 has become a breeding species in the county with less than 100 pairs. The main breeding colony is at the Wild Animal Park. Other colony locations include Rancho Santa Fe, El Capitan Reservoir, Lindo Lake, the San Dieguito River estuary, the Point Loma naval research laboratory, Lake Wohlford, and Batiquitos Lagoon (Unitt 2004).



Overall, 766 great egrets were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 549 great egrets were counted, with another three counted during the midwater surveys. Peaking tide surveys showed the most use in Grid 19 with 79 observations. Great egrets were observed primarily in the north bay, with smaller numbers recorded in all other regions of the bay.

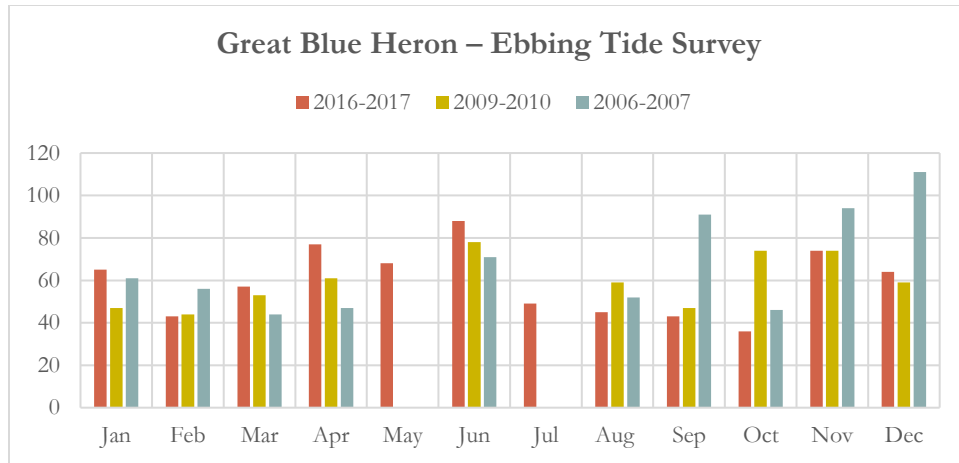


### Great Blue Heron (*Ardea herodias wardi*)

The great blue heron is common year-round in San Diego County. It is mostly a colonial breeder, although some birds might nest as isolated pairs. Breeding birds forage close to the colony and it appears that many wintering birds remain close to the breeding colonies. Some of the largest breeding colonies can be found at O'Neill Lake, Rancho Santa Fe, the Wild Animal Park, Sea World, Point Loma, and Naval Air Station North Island (Unitt 2004).



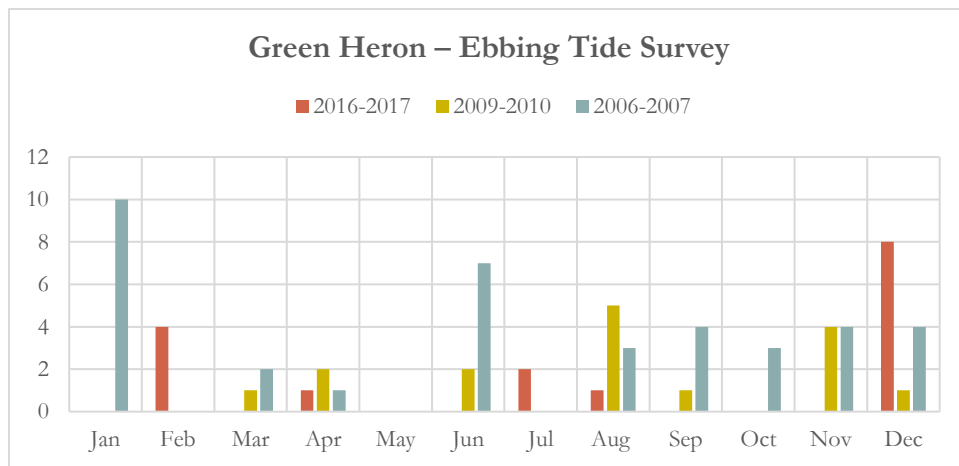
Overall, 935 great blue herons were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 709 great blue herons were counted, with another two counted during the midwater surveys. Great blue herons were observed primarily in the north bay, with smaller numbers recorded in all other regions of the bay.



### **Green Heron (*Butorides virescens anthonyi*)**

The green heron can be found year-round in San Diego County. It is a bird of ponds, marshes, riparian woodlands, and channels (Unitt 2004).

Overall, 19 green herons were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 16 green herons were counted. Green herons were in all regions of the bay except for the south-central bay.

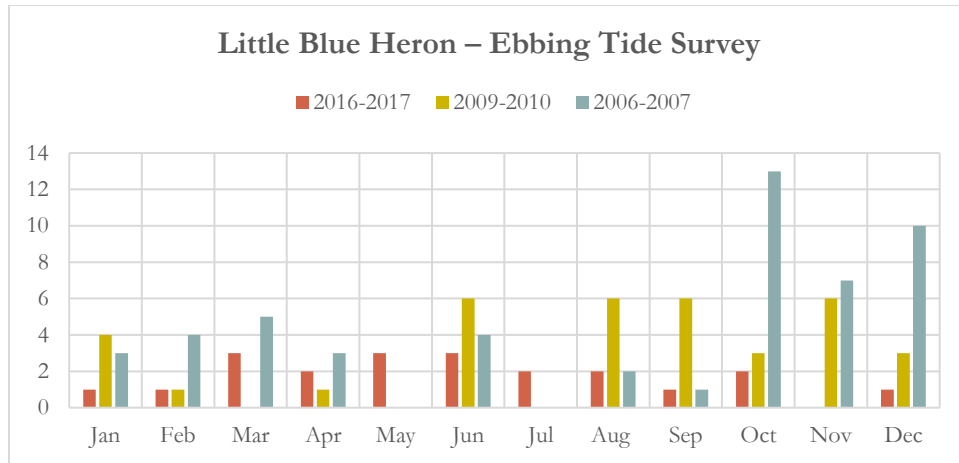


### **Little Blue Heron (*Egretta caerulea*)**

The little blue heron is a rare year-round resident in San Diego County since the 1980s. It forms breeding colonies in association with the snowy egret and has been seen nesting in the Sea World colony and in the heronry on Naval Air Station North Island (NASNI). San Diego is the northwest corner of this species range (Unitt 2004).

Overall, 23 little blue herons were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 21 little blue herons were counted. Little blue herons were observed primarily in the north bay, with smaller numbers recorded in the south bay and salt ponds.

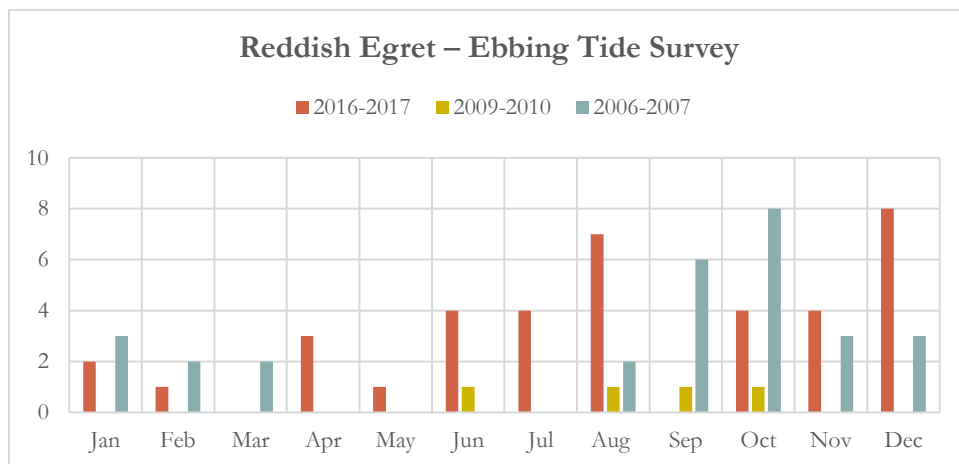




### **Reddish Egret (*Egretta rufescens dickey*)**

The reddish egret is a rare winter visitor to San Diego County. This species does not breed here, although some non-breeding individuals might be observed over the summer. San Diego County is the northern limit of the species range (Unitt 2004).

Overall, 50 reddish egrets were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 38 reddish egrets were counted. Reddish egrets were observed primarily in the south bay with smaller numbers recorded in the salt ponds.

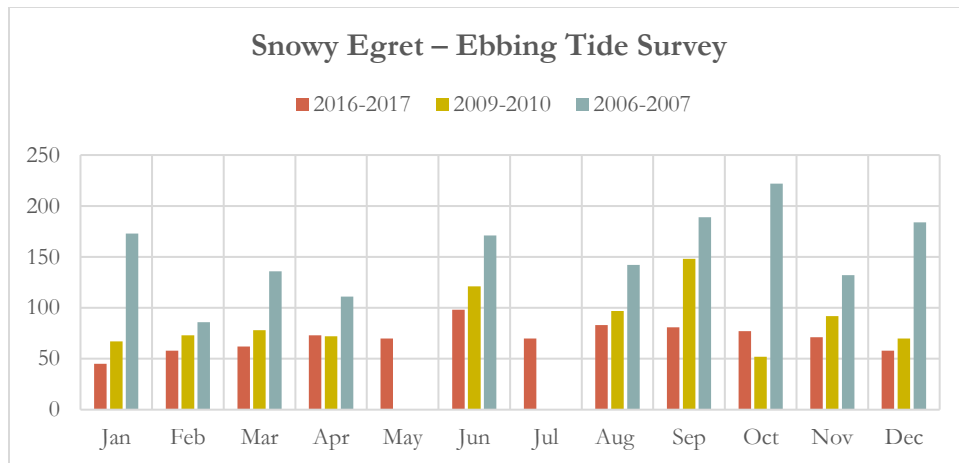


### **Snowy Egret (*Egretta thula thula*)**

The snowy egret is a common fall and winter visitor to San Diego County, and since 1979, it is also a breeding bird in the county. The colony at Sea World and the one at the Wild Animal Park are two of the biggest colonies in the county (Unitt 2004).

Overall, 1,099 snowy egrets were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 846 snowy egrets were counted. Snowy egrets were observed in all regions of the bay.





### **Tricolored Heron (*Egretta tricolor ruficollis*)**

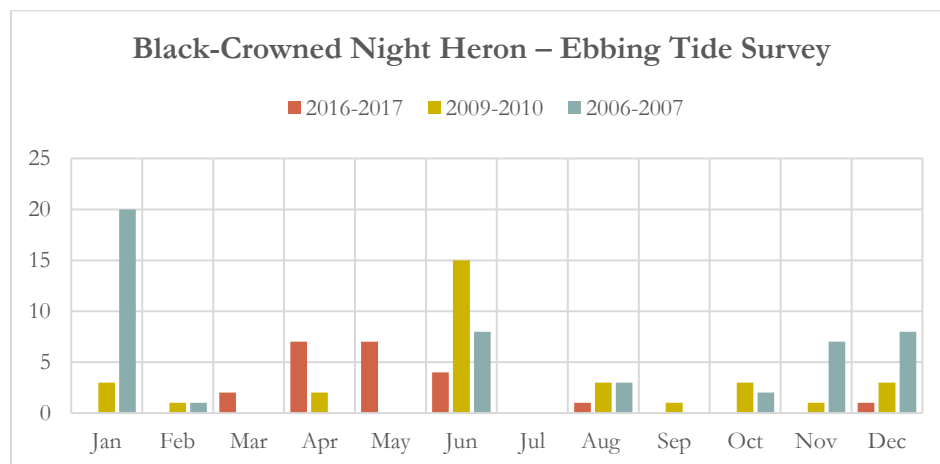
The tricolored heron is a rare winter migrant in San Diego, but when sighted has been seen around San Diego Bay (Unitt 2004).

During the 2016-17 surveys, one tricolored heron was observed during the August 2016 peaking tide survey in the south bay.

### **Black-Crowned Night-Heron (*Nycticorax nycticorax hoactli*)**

The black-crowned night-heron is common year round in San Diego County. Breeding colonies exist at the Wild Animal Park, in Solana Beach, at Lindo Lake, at the Navy's submarine base on Point Loma, at NASNI, and at the 32nd Street Naval Station. Isolated nesting birds have been observed in several locations throughout the county (Unitt 2004).

Overall, 37 black-crowned night-herons were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 22 black-crowned night-herons were counted. Black-crowned night-herons were observed primarily in the north-central bay, with smaller numbers recorded in all regions of the bay except for the south-central region.



**Yellow-Crowned Night Heron (*Nyctanassa violaceus bancrofti*)**

The yellow-crowned night heron is the rarest of the herons that reach San Diego north from Mexico, and is listed as an accidental observation in San Diego Bay. One did, however, breed on Naval Air Station North Island in 2007 (Shepherd 2008).

During the 2016-17 surveys, one yellow-crowned night heron was observed during the April 2017 peaking tide survey in the south bay.

**Threskiornithidae (Ibises)****White-Faced Ibis (*Plegadis chihi*)**

The white-faced ibis is a winter visitor and breeder in San Diego County. During the Bird Atlas years (1997-2002), two active nesting colonies were identified: one at Guajome Lake and one in the San Luis Rey River valley (Unitt 2004).

During the 2016-17 surveys, six white-faced ibis were observed during the April 2017 shoreline ebbing tide survey in the salt ponds.

**Ciconiidae (Storks)**

The wood stork is listed as an accidental observation in the Bay INRMP, one that does not regularly occur in San Diego Bay; it was not observed during this effort. This bird was formerly much more common in the county but has become exceedingly rare (Unitt 2004).

**G.8 Falconiformes**

Of the Falconiformes listed in the Bay INRMP the white-tailed kite (*Elanus leucurus majusculus*), golden eagle (*Aquila chrysaetos canadensis*), rough-legged hawk (*Buteo lagopus sanctijohannis*), red-shouldered hawk (*Buteo lineatus elegans*), broad-winged hawk (*Buteo platypterus platypterus*), ferruginous hawk (*Buteo regalis*), Swainson's hawk (*Buteo swainsoni*), California condor (*Gymnogyps californianus*), crested caracara (*Caracara plancus auduboni*), and prairie falcon (*Falco mexicanus*) were not observed during this survey effort.

**Cathartidae (Vultures)**

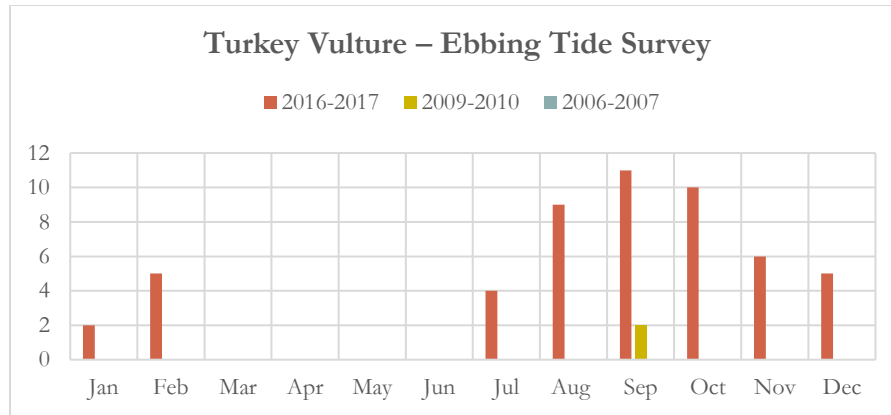
The California condor is listed as an accidental observation in the San Diego Bay INRMP and was not observed during this survey effort.

**Turkey Vulture (*Cathartes aura meridionalis*)**

Turkey vultures are not common along the San Diego County coastline, having retreated from its urbanization. They are present in the County year-round; however, they are less numerous during fall migration and in the winter (Unitt 2004).

Overall, 59 turkey vultures were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 50 turkey vultures were counted. Turkey vultures were observed primarily in the salt ponds, with smaller numbers recorded in all regions of the bay except for the north-central region.





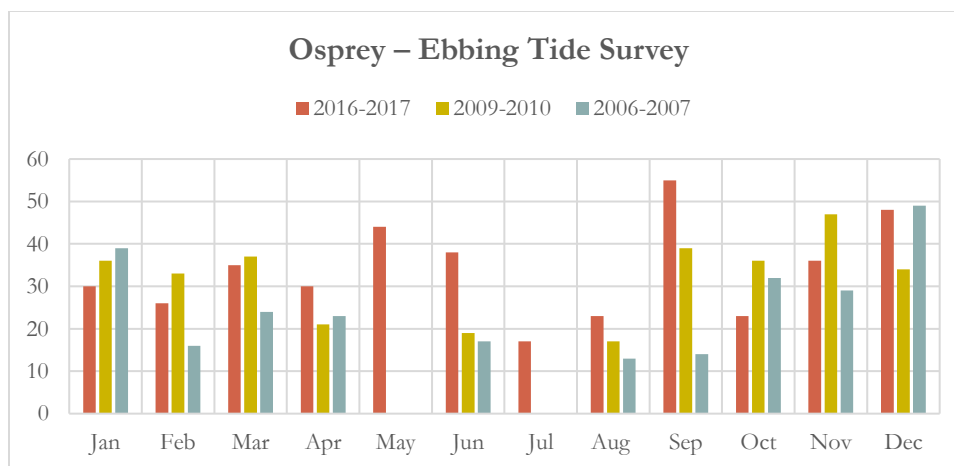
### Accipitridae (Hawks, Kites, and Eagles)

The golden eagle, rough-legged hawk, broad-winged hawk, ferruginous hawk, and Swainson's hawk are all listed as accidental observations in the San Diego Bay INRMP, and were not observed during this survey effort.

### Osprey (*Pandion haliaetus carolinensis*)

Ospreys are present year-round in San Diego County, occurring in small numbers along the coast and near inland lakes and reservoirs. They began breeding in the County again, after a decline and resurgence, in 1997 (Unitt 2004).

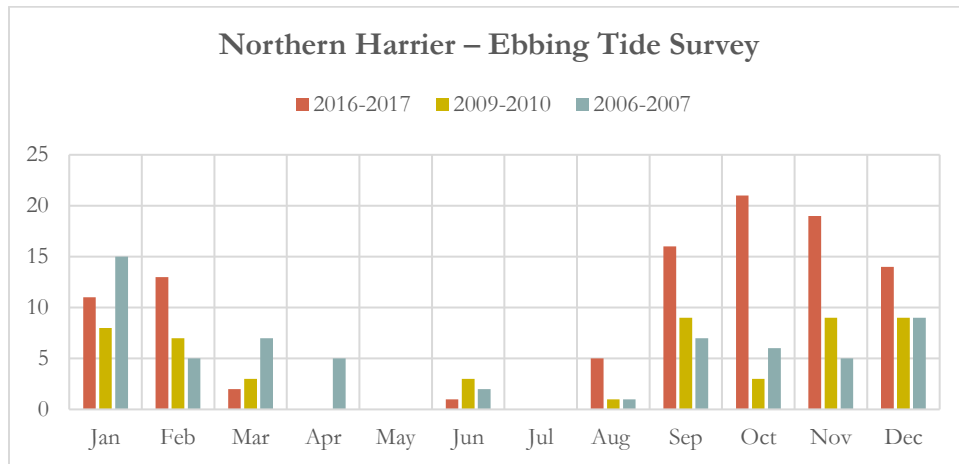
Overall, 559 ospreys were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 405 ospreys were counted, with another five counted during the midwater surveys. Ospreys were observed primarily in the south bay, with smaller numbers recorded in all other regions of the bay.



### Northern Harrier (*Circus cyaneus hudsonius*)

In San Diego County, the northern harrier is present year-round; however, it is more widespread during the winter, utilizing marsh and grassland habitat (Unitt 2004).

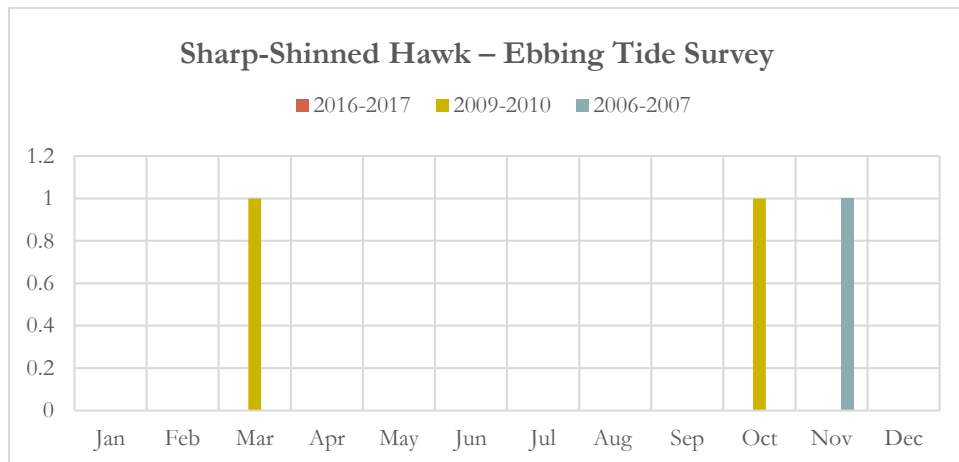
Overall, 124 northern harriers were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 102 northern harriers were counted. Northern harriers were observed primarily in the south bay and salt ponds, with one recorded in the ocean grids.



### **Sharp-Shinned Hawk (*Accipiter striatus velox*)**

Sharp-shinned hawks are uncommon winter residents and migrants through San Diego County, using a wide variety of habitats (Unitt 2004).

During the 2016-17 surveys, one sharp-shinned hawk was observed during the February 2017 peaking tide survey in the salt ponds.



### **Cooper's Hawk (*Accipiter cooperi*)**

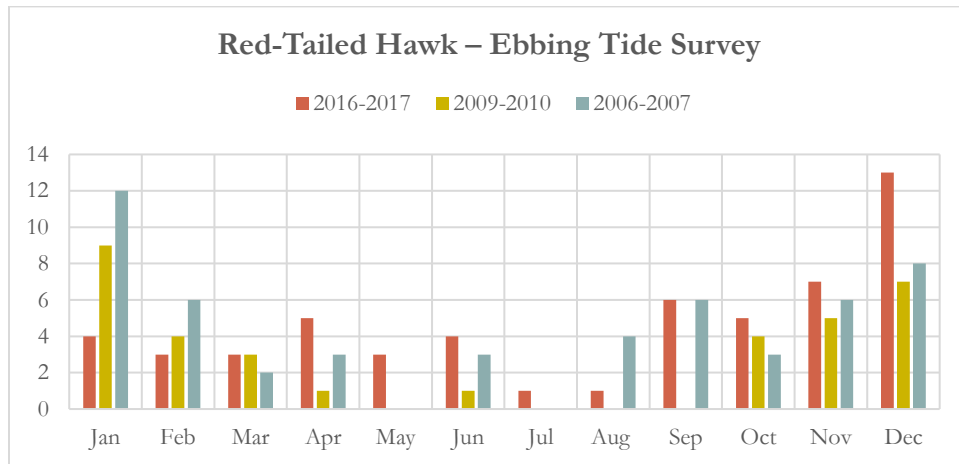
The Cooper's hawk is a covered species under San Diego's Multiple Species Conservation Plan. Since the 1980s, its number has increased as the population adapted to urban living (Unitt 2004).

Overall, 15 Cooper's hawks were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 11 Cooper's hawks were counted. Cooper's hawks were observed in the south-central and south bay and salt ponds.

### **Red-Tailed Hawk (*Buteo jamaicensis*)**

The red-tailed hawk is the bird of prey most widespread in San Diego County, using all of the County's terrestrial areas. They are present as both a breeding and winter species (Unitt 2004).

Overall, 66 red-tailed hawks were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 54 red-tailed hawks were counted. Red-tailed hawks were observed in all regions of the bay.



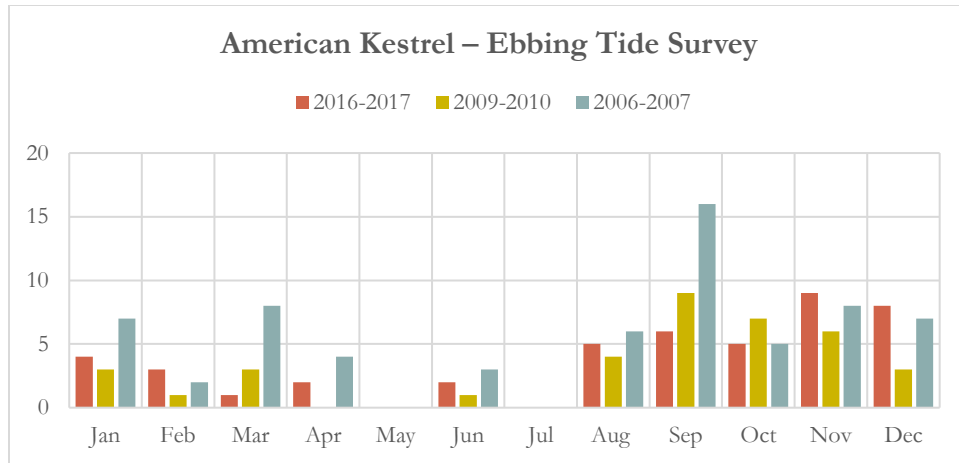
### **Falconidae (Falcons)**

The crested caracara is listed as an accidental observation in the San Diego Bay INRMP and was not observed during this survey effort. Prairie falcons breed in San Diego County, albeit in low numbers (20 to 30 pairs) and are an uncommon winter visitor to the county. During the breeding season, prairie falcons are distributed inland. While they can be seen along the coast during the winter, none were observed during this survey effort (Unitt 2004).

### **American Kestrel (*Falco sparverius sparverius*)**

American kestrels are present in San Diego County year-round, but are more common in the winter. They occupy a great variety of habitats and are observed widely in the County (Unitt 2004).

Overall, 70 American kestrels were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 47 American kestrels were counted. American kestrels were observed in all regions of the bay.



### **Merlin (*Falco columbarius columbarius*)**

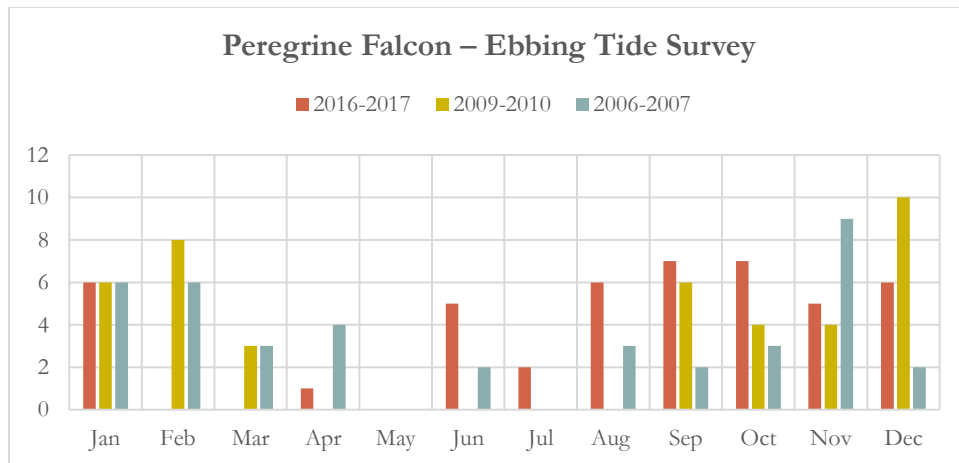
Occurring occasionally in any habitat save dense woodland, the merlin is a rare winter visitor in San Diego County, seen mainly from October to March. Since they eat smaller birds they tend to occur where those species congregate, and can be seen annually along Point Loma during fall migration (Unitt 2004).

Overall, 13 merlins were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 10 merlins were counted. Merlins were observed in all regions of the bay except for the north and north-central bay.

### **Peregrine Falcon (*Falco peregrinus anatum*)**

Peregrine falcons were nearly extirpated from San Diego County in the middle of the 20th century due to effects from DDT (dichlorodiphenyltrichloroethane). Since the ban of the chemical they have recovered and a small stable population exists in the County (Unitt 2004).

Overall, 71 peregrine falcons were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 45 peregrine falcons were counted. Peregrine falcons were observed primarily in the south bay and salt ponds.



## G.9 Gruiformes

Of the birds listed under this Order on the San Diego Bay INRMP species list, the sandhill crane (*Grus canadensis*), black rail (*Laterallus jamaicensis*), and Virginia rail (*Rallus limicola*), were not observed during this effort.

### Rallidae (Coot, Gallinules, and Rails)

The following Rallidae were not observed during this effort: The black rail is listed as an accidental observation on the bay and is labeled as extirpated from the bay in the INRMP. The Virginia rail is a resident and winter visitor in San Diego County. During the breeding season, they are concentrated around north county coastal lagoons and ponds. In winter, Virginia rails can also be seen in tidal salt marshes. The common moorhen generally avoids salt water, preferring fresh, but it can be sighted along the coast in slightly brackish conditions. The bird is present in the county year-round as a non-migrant (Unitt 2004)

#### Ridgway's (Light-Footed Clapper) Rail (*Rallus longirostris levipes*)

Listed as federally endangered since 1970, the Ridgway's rail, formerly the light-footed clapper rail, was once common in the county's coastal salt marshes; the degradation of its habitat decimated its population (Unitt 2004). All rails typically stay hidden in marshes and are therefore difficult to detect, especially since this survey effort was not targeted in marsh habitat.



During the 2016-17 surveys, two Ridgway's rails were observed, one during the February 2017 peaking tide survey and one during the May 2017 shoreline ebbing tide survey, both in the south bay.

#### Sora (*Porzana carolina*)

The sora is an uncommon winter visitor in San Diego County. Soras are concentrated around the north county coastal lagoons and ponds, although some birds may use salt marshes (Unitt 2004).

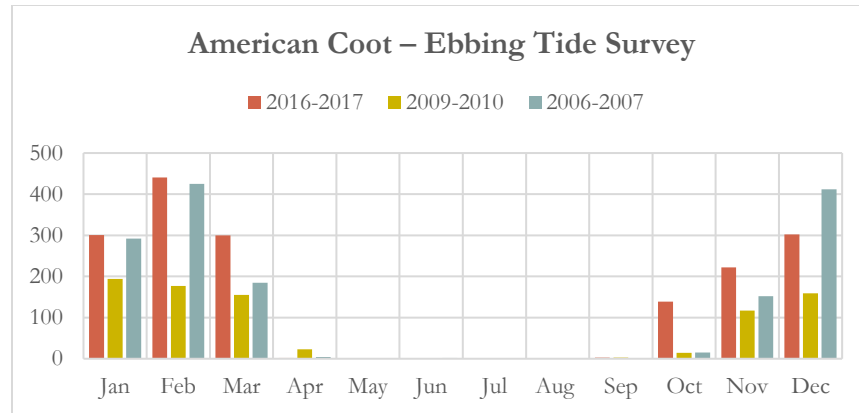
During the 2016-17 surveys, three soras were observed in the south bay during peaking tide surveys, one each in August 2016, November 2016, and February 2017.

#### American Coot (*Fulica americana americana*)

The American coot is common in San Diego County as both a winter visitor and breeding season species, both inland and near the coast (Unitt 2004).

Overall, 2,145 American coots were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 1,711 American coots were counted, with one also counted during the midwater surveys. Peaking tide surveys showed the most use in Grid SOTA with 77 observations. American coots were observed primarily in the north-central and south bay, with smaller numbers recorded in the salt ponds and north bay.





### Gruidae (Cranes)

The sandhill crane is listed as an accidental observation on the San Diego Bay INRMP species list as one was seen flying over the south bay along the Silver Strand in 1999. In the early twentieth century, it was common in flocks migrating over the county, but its general decline has made recent sightings of only very occasional individuals (Unitt 2004).

## G.10 Charadriiformes

Of the birds listed under this Order on the San Diego Bay INRMP species list, the following species were not observed during this effort: the mountain plover (*Charadrius montanus*) and Wilson's plover in the Charadriidae family; the American oystercatcher (*Haematopus palliatus frazari*) and black oystercatcher (*Haematopus bachmani*) in the Haematopodidae family; the sooty tern (*Sterna fuscata*), sandwich tern (*Sterna sandvicensis*), laughing gull (*Larus atricilla*), glaucous gull (*Larus hyperboreus barrovianus*), Sabine's gull (*Xema sabini*), black-legged kittiwake (*Rissa tridactyla*), black tern (*Chlidonias niger surinamensis*), and arctic tern (*Sterna paradisaea*) in the Laridae family; and the stilt sandpiper (*Calidris himantopus*), Wilson's snipe (*Gallinago delicata*) (previously common snipe), bar-tailed godwit (*Limosa lapponica*), ruff (*Philomachus pugmax*), wandering tattler (*Tringa incana*), solitary sandpiper (*Tringa solitaria*), pectoral sandpiper (*Calidris melanotos*), and red phalarope (*Phalaropus fulicarius*) in the Scolopacidae family.

### Charadriidae (Plovers)

The mountain plover was not observed during this survey effort. The mountain plover is a wintering bird in southern California, but its population has been declining most likely due to habitat change in its breeding and wintering grounds. This species hasn't been wintering in San Diego County since 1991 (the only records in the San Diego Bay area come from birds sighted at the south end of the Silver Strand in 1938) and the only record of a migrant since was that of a single individual at Stuart Mesa on Camp Pendleton in October 1999 (Unitt 2004). While there were six recorded observations of Wilson's plover during the 2009-10 surveys, none were recorded during this survey effort. The Wilson's plover is listed as an accidental observation on the San Diego Bay INRMP species list; it is a rare vagrant on the Pacific coast north of the Mexican border. There are scattered records for San Diego Bay, in 1998 on the Delta Beaches, 2000 on North Island, and in 2008 on North Island (Unitt 2004; Copper 2008).

### **American Golden-Plover (*Pluvialis dominica*)**

The American golden-plover has been noted in San Diego County in the past during fall migration, though it has become a less than annual visitor with the decline of agricultural fields in the Tijuana River Valley (Unitt 2004).

One American golden-plover was recorded during the May 2017 peaking tide survey in the salt ponds.

### **Pacific Golden-Plover (*Pluvialis fulva*)**

A few Pacific golden-plovers reach coastal San Diego County each winter and migratory season. Similarities between the American golden-plover and the Pacific golden-plover make them difficult to distinguish with certitude. The field characteristics for distinguishing these two species have only been widely known for about a decade; hence, the status of the Pacific golden-plover is uncertain (Unitt 2004).

One Pacific golden-plover was recorded during the August 2016 shoreline ebbing tide survey in Grid P2.

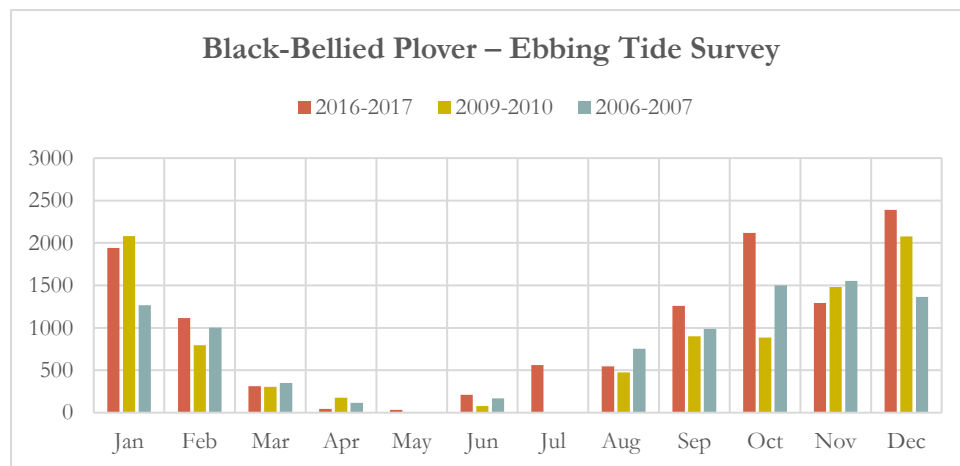
### **Black-Bellied Plover (*Pluvialis squatarola*)**

Black-bellied plovers were documented during every survey month, 11,196 total observations, in all regions of the bay and in the ocean grid. They are one of the County's more common wintering shorebirds along the coast (Unitt 2004).

Overall, 14,719 black-bellied plovers were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 11,822 black-bellied plovers were counted. Peaking tide surveys showed the most use in Grid SW24 with 971 observations. Black-bellied plovers were observed primarily in the south bay and salt ponds, with smaller numbers recorded in all other regions of the bay.



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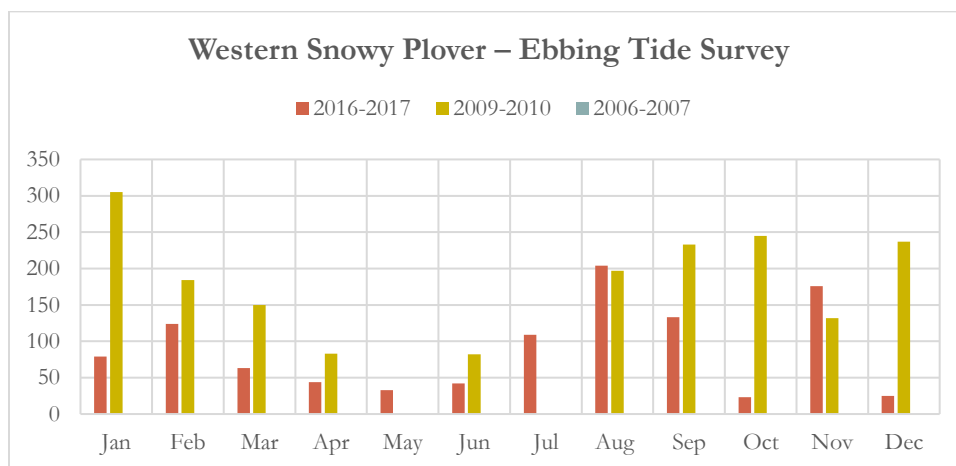
### **Western Snowy Plover (*Charadrius nivosus nivosus*)**

The western snowy plover is listed as federally threatened and is one of San Diego County's scarcest breeding birds. They breed in very limited areas on the coast and are somewhat more widespread during the winter, although not more numerous (Unitt 2004).

Overall, 1,467 western snowy plovers were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 1,055 western snowy plovers were counted. Peaking tide surveys showed the most use in Grid C9 with 101 observations. Western snowy plovers were observed predominantly in the ocean grids, with smaller numbers recorded in the south-central and south bay.



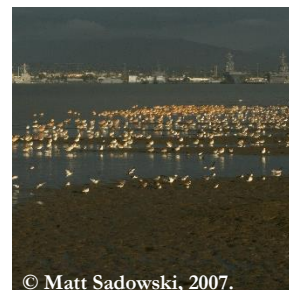
© Timothy Burr, 2017.



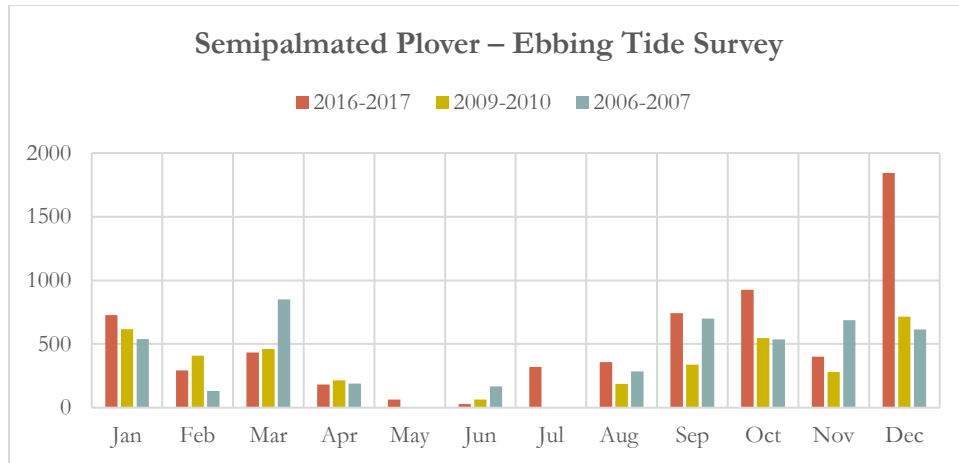
### **Semipalmated Plover (*Charadrius semipalmatus*)**

Semipalmated plovers are more common in coastal San Diego County than inland, preferring coastal mudflats. They are mainly winter visitors and migrants although some non-breeders remain year-round (Unitt 2004).

Overall, 7,875 semipalmated plovers were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 6,322 semipalmated plovers were counted. Peaking tide surveys showed the most use in Grid SW26 with 392 observations. Semipalmated plovers were observed predominantly in the south bay and salt ponds, with smaller numbers recorded in the ocean grids and north and south-central bay.



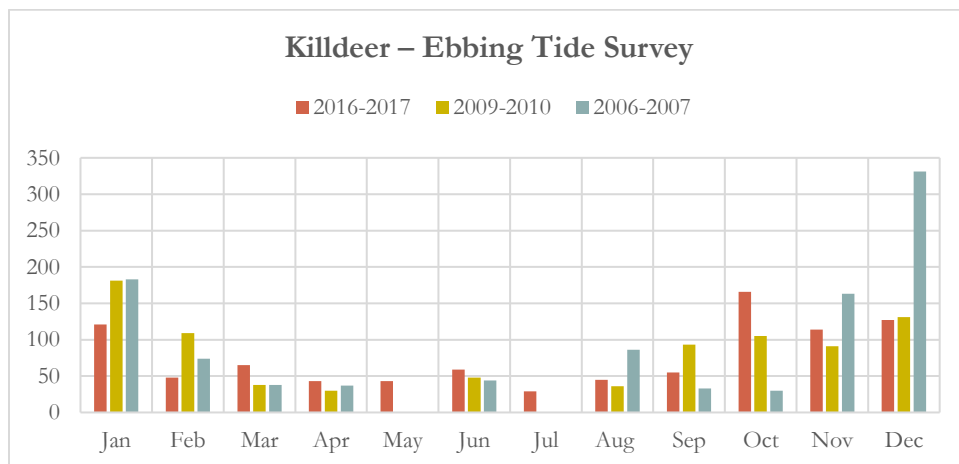
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### **Killdeer (*Charadrius vociferus vociferus*)**

The killdeer is common in San Diego County during the winter and breeding seasons, and is San Diego County's most widespread shorebird. They utilize bare ground and are common inland as well as near the coast (Unitt 2004).

Overall, 1,217 killdeer were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 911 killdeer were counted. Killdeer were observed in all regions of the bay, with most counted in the salt ponds.



### **Haematopodidae (Oystercatchers)**

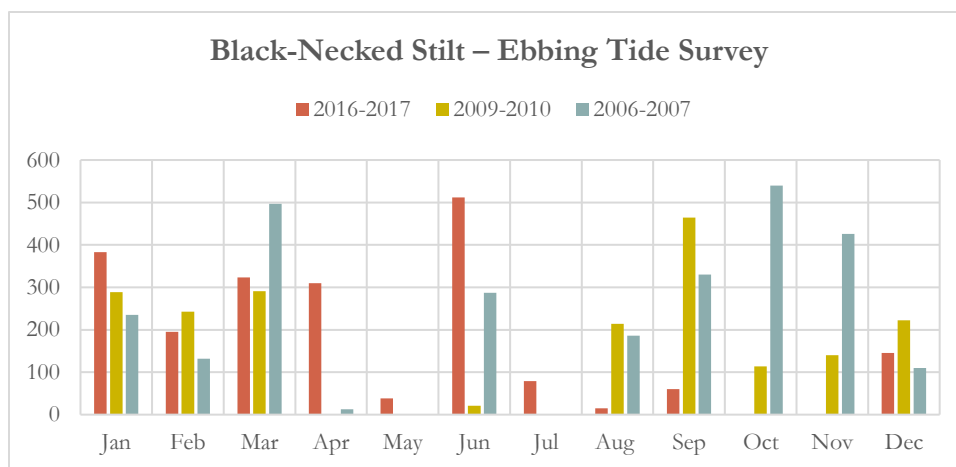
American oystercatchers are rare in southern California and most frequently seen on the Channel Islands (Unitt 2004). While it was noted during the 2006-07 surveys, none were seen in 2016-17. The black oystercatcher is rare in San Diego County, showing no clear seasonal trend in its sightings. They prefer natural rocky habitats, although they were seen mainly along Zuniga Jetty during these surveys (Unitt 2004). While it was noted during the previous surveys, none were seen in 2016-17.

## Recurvirostridae (Stilts and Avocets)

### **Black-Necked Stilt (*Himantopus mexicanus mexicanus*)**

Black-necked stilts are common year-round in San Diego County, and this survey found that pattern holding true, with only April and June having low counts (Unitt 2004).

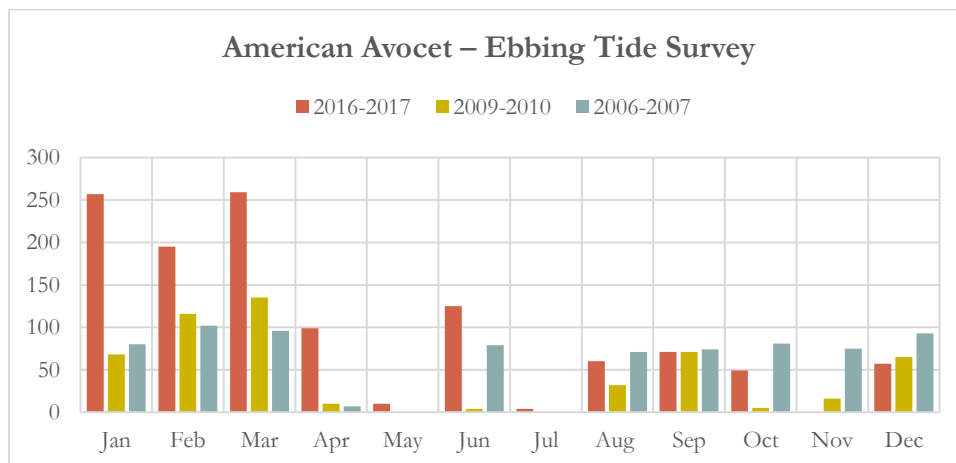
Overall, 3,000 black-necked stilts were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 2,061 black-necked stilts were counted. Peaking tide surveys showed the most use in Grid SW22 with 187 observations. Black-necked stilts were observed predominantly in the salt ponds with smaller numbers recorded in the south bay.



### **American Avocet (*Recurvirostra americana*)**

American avocets are present year-round in San Diego County; in coastal south County they concentrate in the salt pond area of south San Diego Bay and in the Tijuana River estuary (Unitt 2004).

Overall, 1,712 American avocets were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 1,186 American avocets were counted. Peaking tide surveys showed the most use in Grid SW13W with 148 observations. American avocets were observed predominantly in the salt ponds with smaller numbers recorded in the south bay.





**Scolopacidae (Sandpipers and Phalaropes)**

A total of 4,358 sandpiper sp. and 17,424 peeps were recorded during these surveys. These were instances where field conditions did not permit identification to species, but that the birds were clearly small sandpipers. A vast majority of these records were from the south bay (12,320) and the saltworks (7,233).

The following birds were not observed during this survey effort:

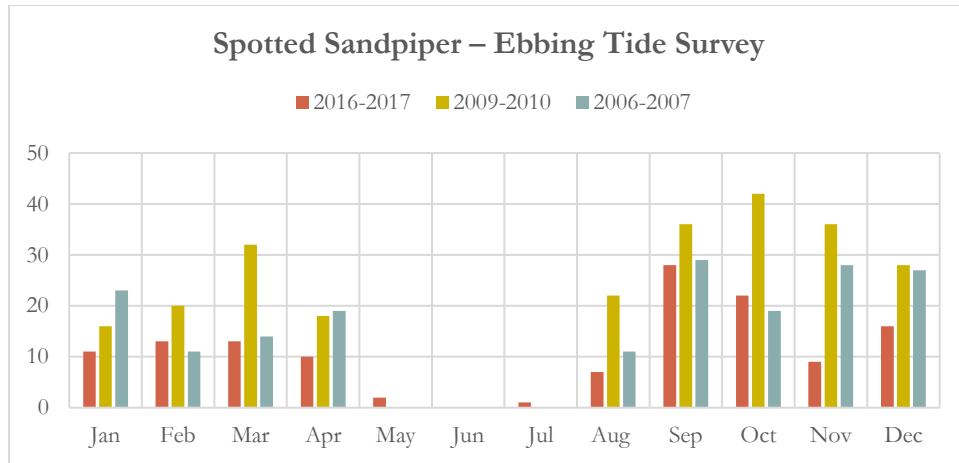
Stilt sandpipers are rare along the Pacific coast, occurring mainly in the fall (Unitt 2004). They were observed in the 2006-07 surveys in small numbers. The Wilson's snipe (previously common snipe) is mainly a winter visitor to San Diego County, although a few individuals have been seen during the summer. It is mainly a bird of fresh or brackish water and is seldom seen along the seashore (Unitt 2004). Wandering tattlers are primarily found in rocky habitats; in San Diego County, they are present as winter visitors and migrants (Unitt 2004). Only 18 observations were made of this species during the 2009-10 surveys. The bar-tailed godwit is a casual migrant in California and San Diego County has two confirmed records (Unitt 2004). The ruff is a rare, but regular migrant and winter visitor in North America. One individual returned yearly to the San Diego Bay shore to winter between 1984 and 1991. Birds have also wintered at the salt ponds during the winter of 2002-2003 (Unitt 2004). The solitary sandpiper is a rare to uncommon fall migrant in San Diego County and is found around fresh and brackish water. The pectoral sandpiper is a yearly visitor, though in low numbers, to the county during migration. They are most common near fresh water, although a few individuals visit the coastal marshes (Unitt 2004). One individual was noted in the south bay in October during the 2009-10 surveys. The red phalarope is rarely seen ashore, although occasional flocks do appear. They usually occur October through May (Unitt 2004). A record of this species occurred during the 2006-07 surveys.

**Spotted Sandpiper (*Actitis macularius*)**

The spotted sandpiper can be found inland as well as along the coast in San Diego County. They are present in the winter but more common during migration; small numbers also nest in the County (Unitt 2004).

Overall, 199 spotted sandpipers were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 132 spotted sandpipers were counted. Spotted sandpipers were observed in all regions of the bay.

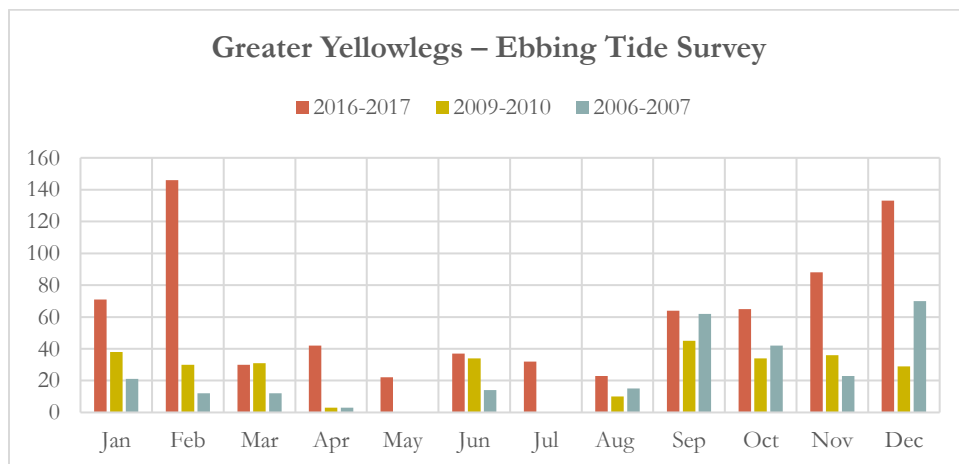




### **Greater Yellowlegs (*Tringa melanoleuca*)**

Greater yellowlegs are found both inland and along the County's coast, seldom gathering in flocks (Unitt 2004).

Overall, 858 greater yellowlegs were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 753 greater yellowlegs were counted. Greater yellowlegs were observed primarily in the salt ponds and south bay, with smaller numbers recorded in the south-central and north bay.

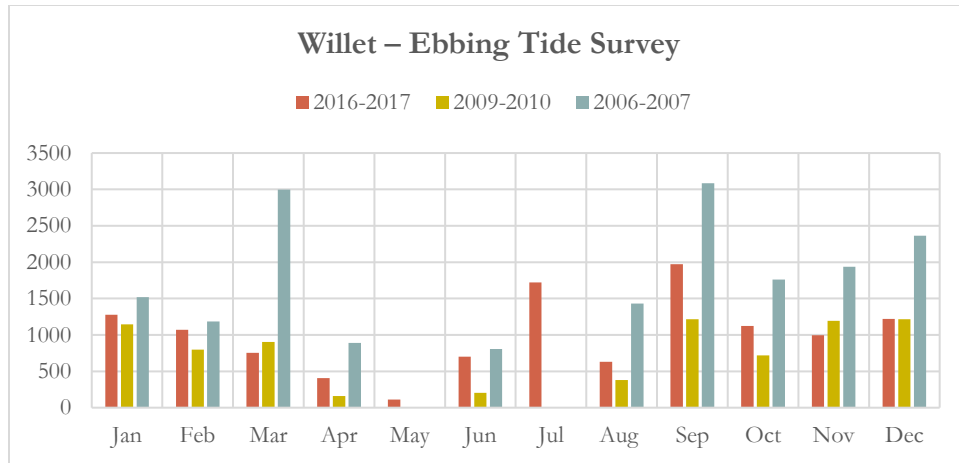


### **Willet (*Tringa semipalmata inornatus*)**

Willetts are very abundant along San Diego County's shoreline, especially in southern San Diego Bay. They can be seen year-round but are most common during fall migration (Unitt 2004).

Overall, 14,518 willets were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 11,984 willets were counted. Peaking tide surveys showed the most use in Grid SW22 with 475 observations. Willets were observed predominantly in the salt ponds and south bay with smaller numbers recorded in all other regions.

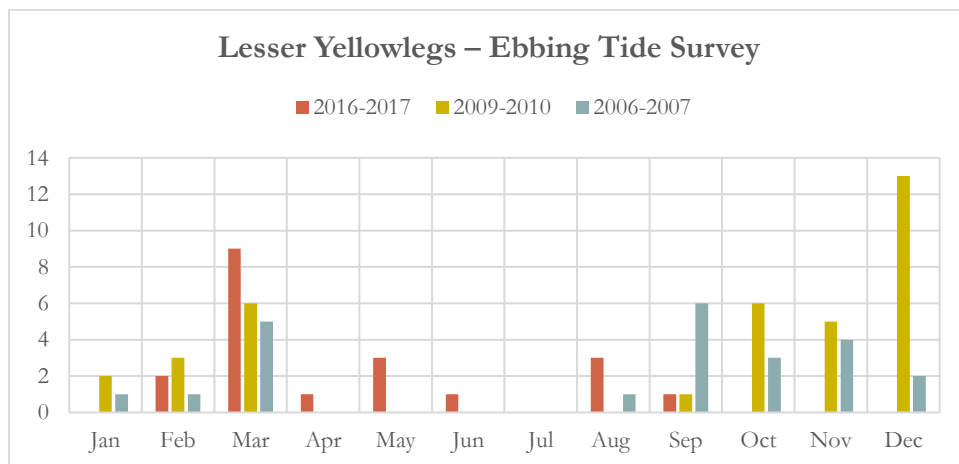




### **Lesser Yellowlegs (*Tringa flavipes*)**

The lesser yellowlegs is less common in San Diego County than the greater yellowlegs. The lesser is common during migration but rare in the winter; California is just north of the species' main winter range (Unitt 2004).

Overall, 30 lesser yellowlegs were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 20 lesser yellowlegs were counted. Lesser yellowlegs were observed primarily in the south bay, with smaller numbers recorded in the south-central bay and salt ponds.

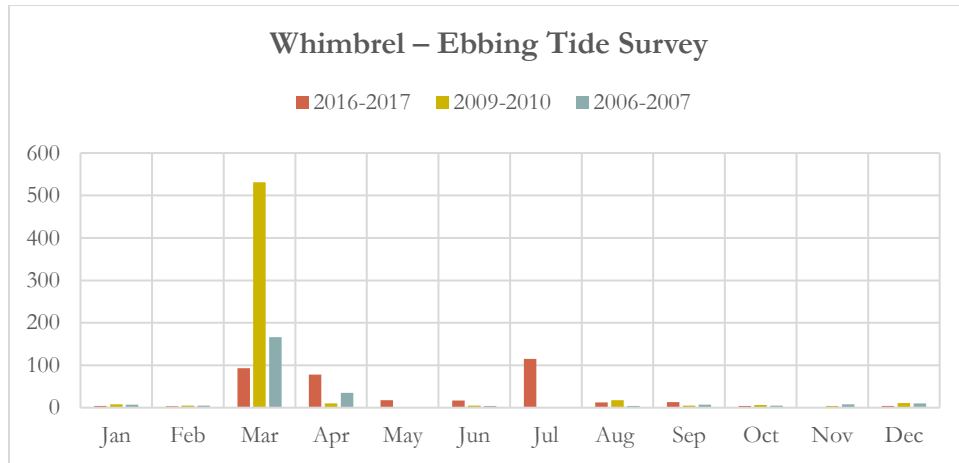


### **Whimbrel (*Numenius phaeopus hudsonicus*)**

July through September, during the whimbrel's fall migration, is when this bird is normally most common along San Diego County's shoreline (Unitt 2004).

Overall, 392 whimbrels were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 362 whimbrels were counted. Whimbrels were observed predominantly in the salt ponds and south bay with smaller numbers recorded in all other regions.

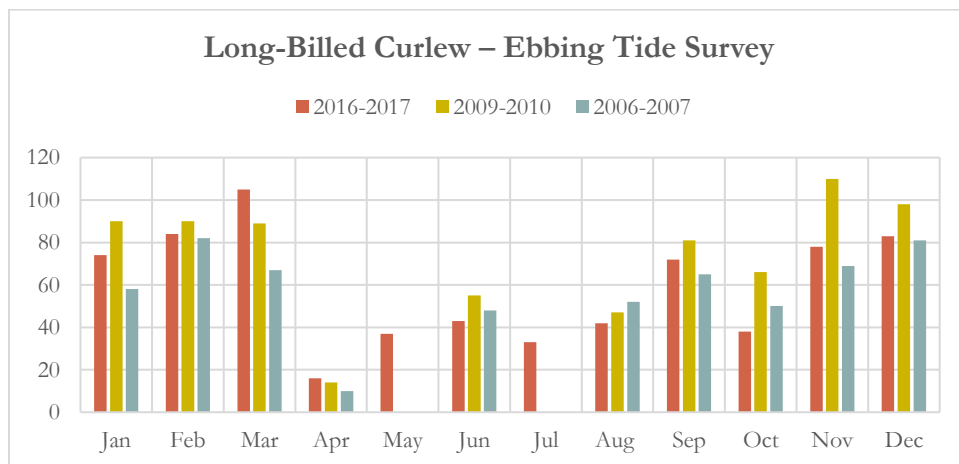




### **Long-Billed Curlew (*Numenius americanus*)**

The long-billed curlew inhabits mudflats and open grassland in San Diego County. They can be found year-round but are most common during the winter and migratory seasons (Unitt 2004).

Overall, 865 long-billed curlew were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 705 long-billed curlew were counted. Long-billed curlew were observed predominantly in the south bay with smaller numbers recorded in all other regions.



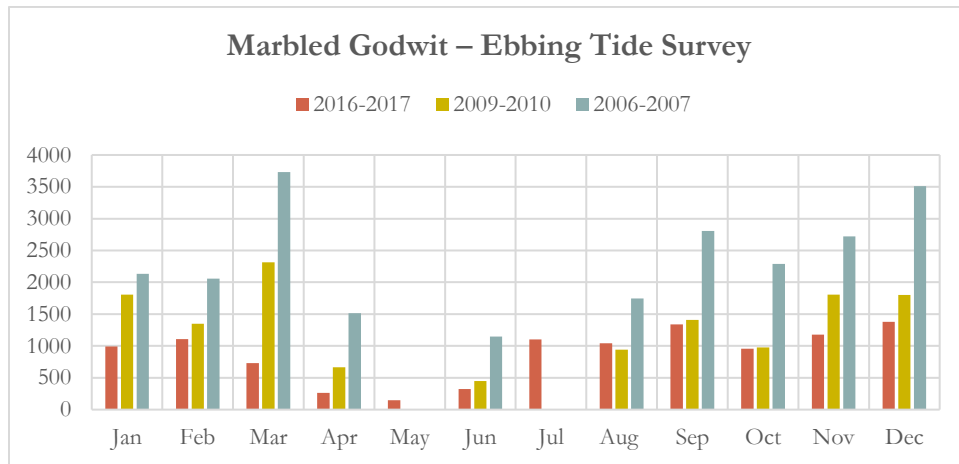
### **Marbled Godwit (*Limosa fedoa fedoa*)**

The marbled godwit is very common along the County's coast, especially in south San Diego County. Although it is mainly present as a winter visitor, several hundred normally remain through the summer (Unitt 2004).

Overall, 13,294 marbled godwits were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 10,563 marbled godwits were counted. Peaking tide surveys showed the most use in Grid SW22 with 232



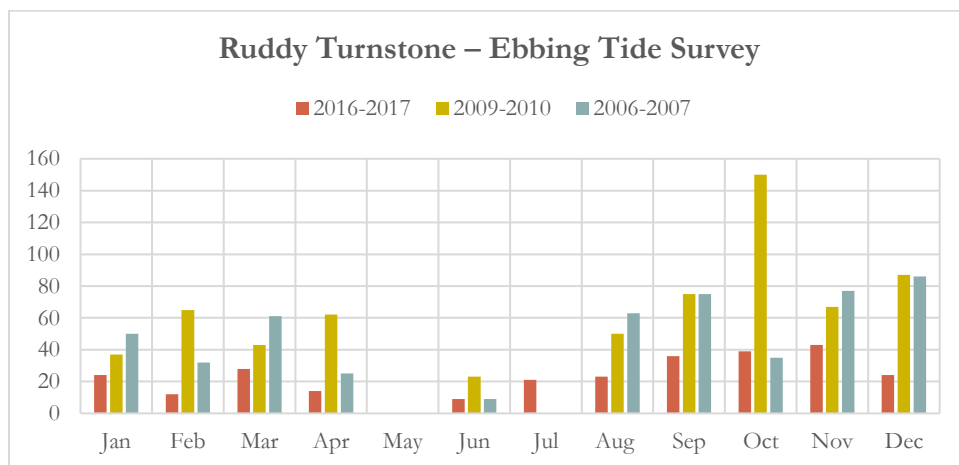
observations. Marbled godwits were observed predominantly in the south bay with smaller numbers recorded in all other regions.



### **Ruddy Turnstone (*Arenaria interpres*)**

Ruddy turnstones are common on mudflats and beaches in San Diego County where they can be observed year-round (Unitt 2004).

Overall, 363 ruddy turnstones were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 273 ruddy turnstones were counted. Ruddy turnstones were observed predominantly in the ocean grids with smaller numbers recorded in all other regions.

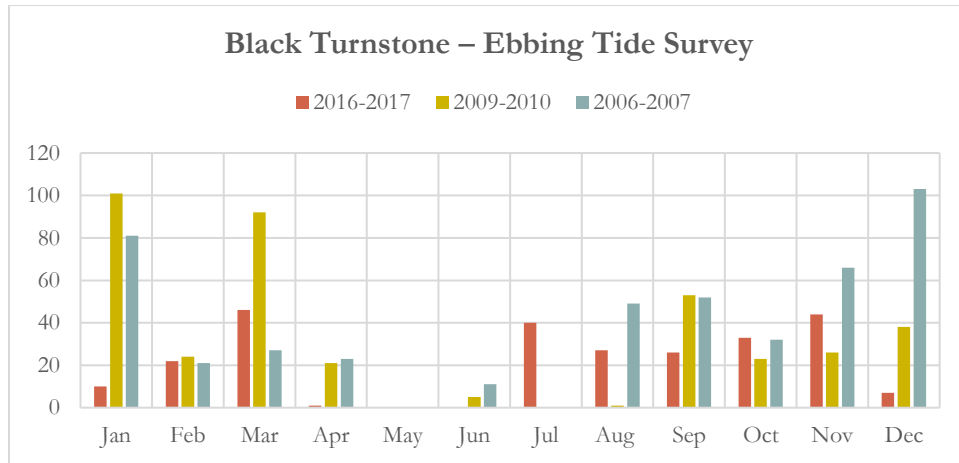


### **Black Turnstone (*Arenaria melanocephala*)**

Black turnstones primarily utilize rocky shorelines, although they can also be found on tidal mudflats and beaches; they occur in the County year-round (Unitt 2004).

Overall, 334 black turnstones were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 256 black turnstones were counted. Black turnstones were observed predominantly in the ocean grids with smaller numbers recorded in the north and south bay and salt ponds.

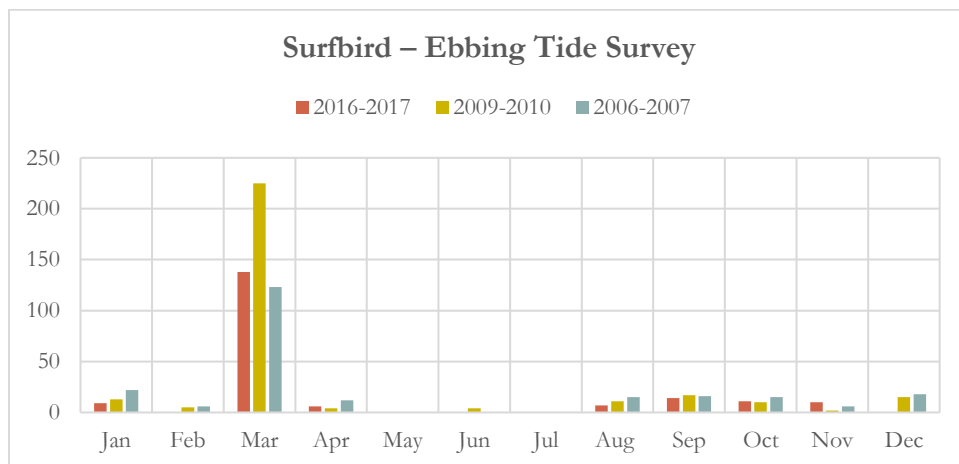




### **Surfbird (*Aphriza virgata*)**

Surfbirds are most common on rocky shorelines, sometimes using sandy beaches during spring migration. They are common during the winter in San Diego County and most abundant during spring migration (Unitt 2004).

Overall, 220 surfbirds were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 195 surfbirds were counted. Surfbirds were observed predominantly in the ocean grids with smaller numbers recorded in the north bay.

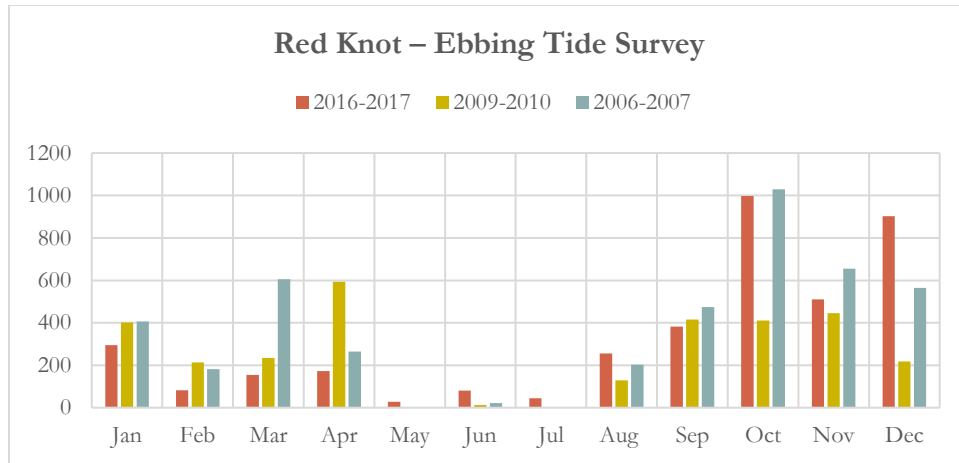


### **Red Knot (*Calidris canutus roselaari*)**

Red knots winter in San Diego Bay; they are present in greater numbers during migration, in groups of hundreds in the bay (Unitt 2004).

Overall, 4,271 red knots were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 3,906 red knots were counted. Peaking tide surveys showed the most use in Grid SW23 with 94 observations. Red knots were observed predominantly in the south bay with smaller numbers recorded in all other regions.



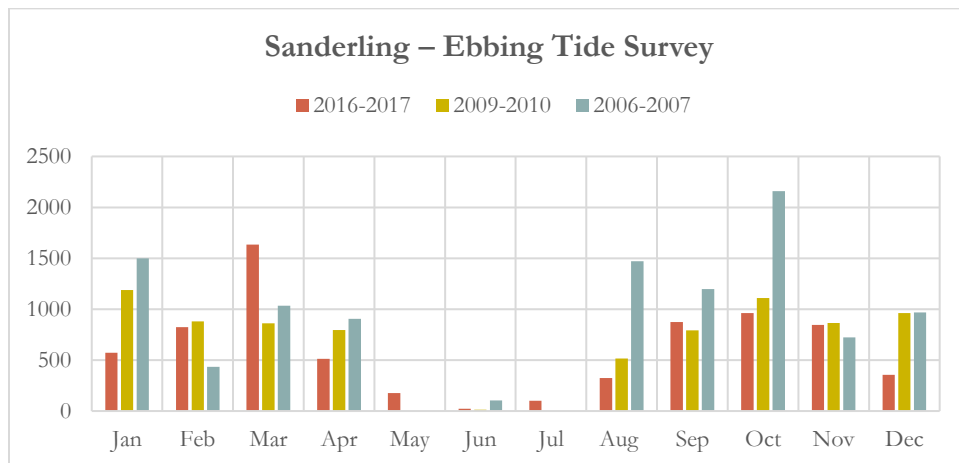


### **Sanderling (*Calidris alba*)**

Sanderlings winter along the County's beaches, utilizing other coastal habitats such as rocky shores and bays when their numbers increase during migration (Unitt 2004).

Overall, 9,238 sanderlings were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 7,204 sanderlings were counted. Peaking tide surveys showed the most use in Grid C9 with 826 observations.

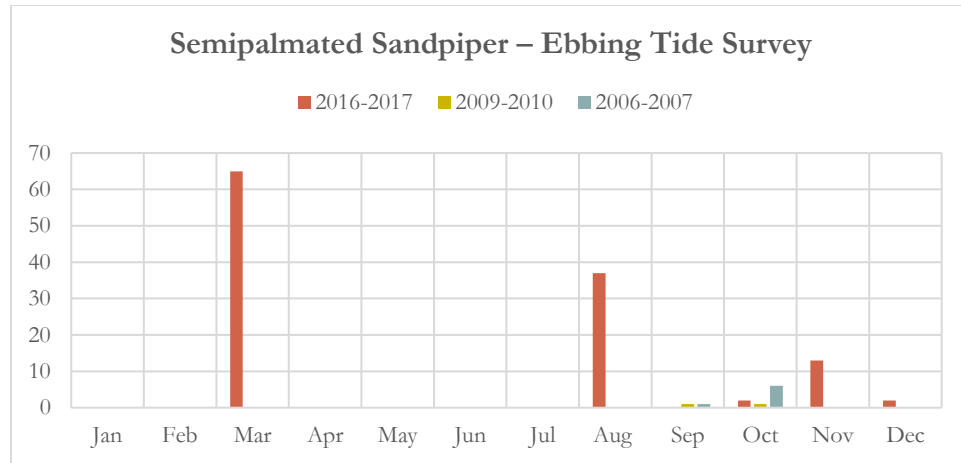
Sanderlings were observed predominantly in the ocean grids with smaller numbers recorded in all other regions.



### **Semipalmated Sandpiper (*Calidris pusilla*)**

Semipalmated sandpipers are rare in San Diego County, seen during fall migration. They concentrate in fresh and brackish water wetlands, avoiding the mudflats of San Diego Bay (Unitt 2004).

Overall, 125 semipalmated sandpipers were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 119 semipalmated sandpipers were counted. Semipalmated sandpipers were observed predominantly in the south bay and ocean grids, with smaller numbers recorded in the north bay and salt ponds.



### **Western Sandpiper (*Calidris mauri*)**

The western sandpiper is the most abundant bird on San Diego County's coastline. They are very common in the winter, with even larger numbers during migration (Unitt 2004).

Overall, 156,731 western sandpipers were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 129,708 western sandpipers were counted. Peaking tide surveys showed the most use in Grid S27W with 10,268 observations. Western sandpipers were observed predominantly in the salt ponds with smaller numbers recorded in the all other regions of the bay except for the north-central region.



### **Least Sandpiper (*Calidris minutilla*)**

The least sandpiper is a migrant and winter visitor in San Diego County, occurring in widespread habitats including San Diego Bay (Unitt 2004).

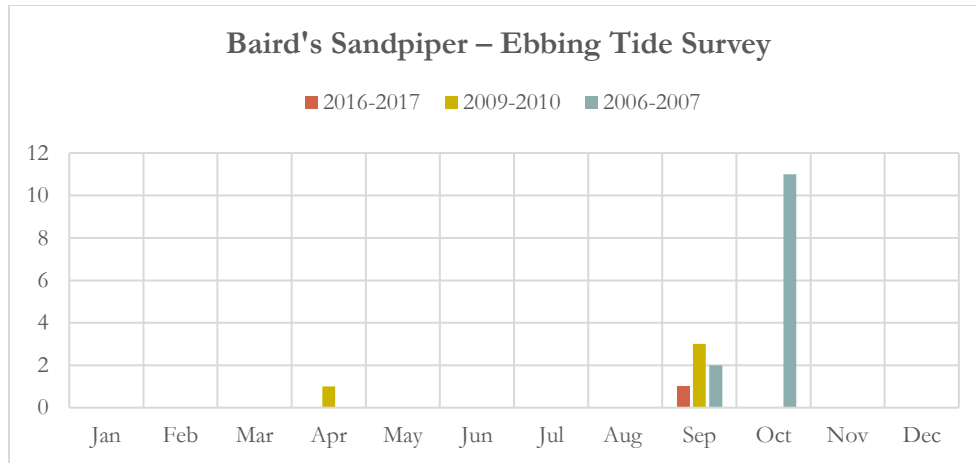
Overall, 10,617 least sandpipers were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 10,029 least sandpipers were counted. Peaking tide surveys showed the most use in Grid S27W with 988 observations. Least sandpipers were observed predominantly in the salt ponds with smaller numbers recorded in the all other regions of the bay except for the north-central region.



### **Baird's Sandpiper (*Calidris bairdii*)**

These birds are somewhat rare in San Diego County, with the majority of them occurring as juveniles during fall migration. The reduction of muddy ponds and irrigated areas has reduced sites available for this bird in the county (Unitt 2004).

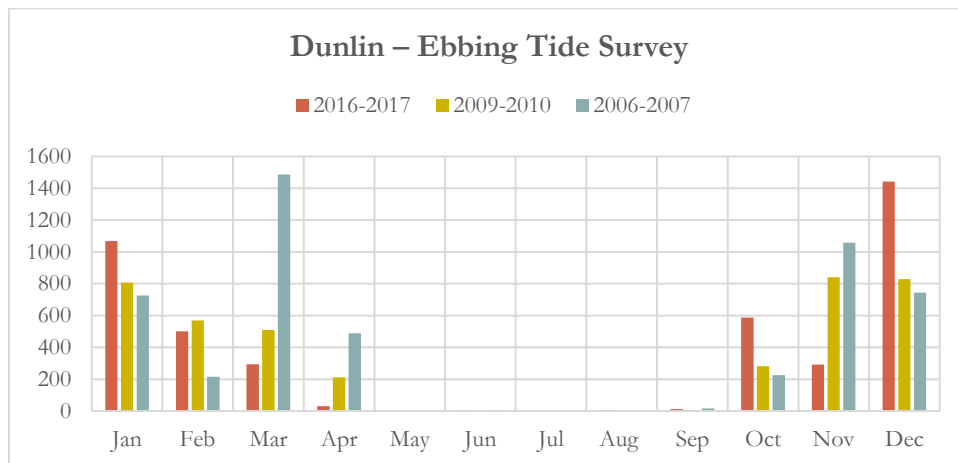
Three Baird's sandpipers were observed during the 2016-17 surveys, one during the September 2016 shoreline ebbing tide survey in the salt ponds and two during the August 2016 peaking tide survey in the south bay.



### **Dunlin (*Calidris alpina pacifica*)**

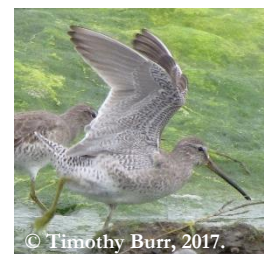
The dunlin winters in San Diego County, arriving in September and usually departing by May. They concentrate towards the coast, mainly in San Diego and Mission Bays (Unitt 2004).

Overall, 5,224 dunlin were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 4,236 dunlin were counted. Peaking tide surveys showed the most use in Grid S27W with 423 observations. Dunlin were observed predominantly in the salt ponds and south bay with smaller numbers recorded in the south-central bay and ocean grids.

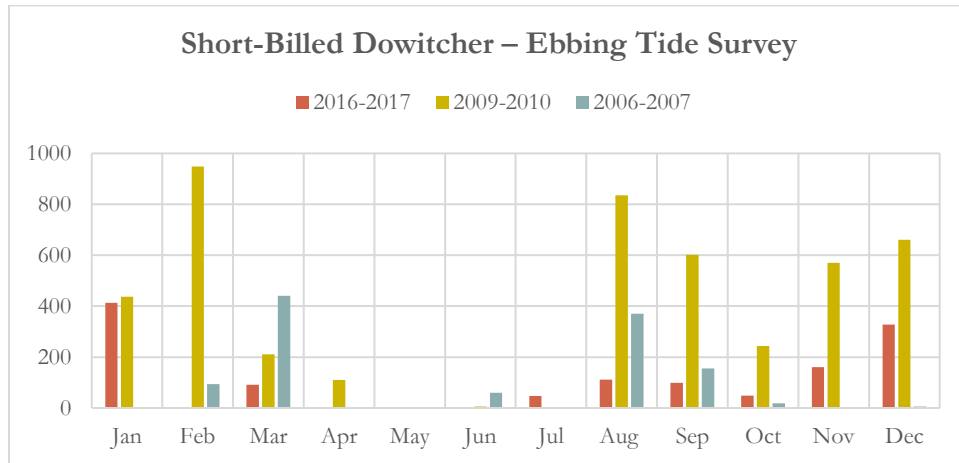


### **Short-Billed Dowitcher (*Limnodromus griseus caurinus*)**

Short-billed dowitchers are common on tidal flats around San Diego Bay, increasing in number during migration (Unitt 2004). This species is not easily distinguished from the long-billed dowitcher; therefore, many observations, 7,333 in total, were recorded simply as 'dowitcher sp.' As the short-billed is much more common, many of these observations, particularly during the summer most likely represent this species.



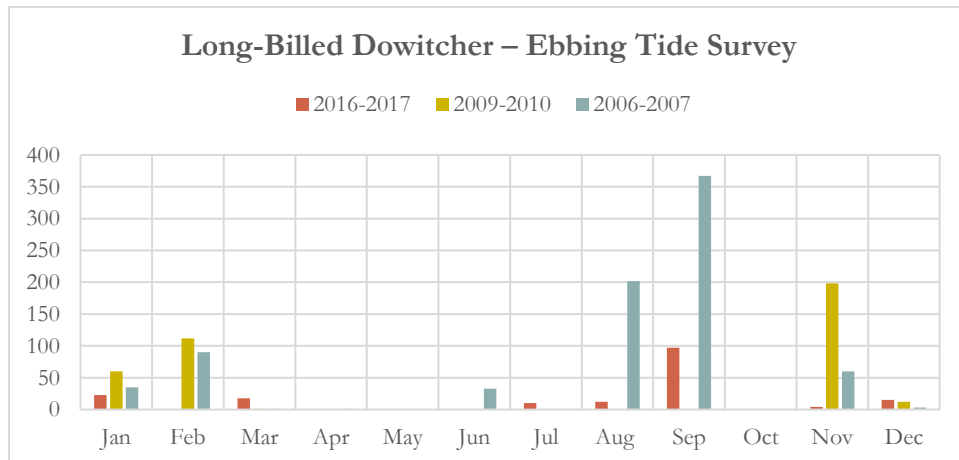
Overall, 1,410 short-billed dowitchers were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 1,302 short-billed dowitchers were counted. Peaking tide surveys showed the most use in Grid 337 with 100 observations. Short-billed dowitchers were observed predominantly in the south bay with smaller numbers recorded in the south bay, salt ponds, and ocean grids.



### **Long-Billed Dowitcher (*Limnodromus scolopaceus*)**

The long-billed dowitcher is less common on the tidal flats of San Diego Bay than the short-billed dowitcher. They also rarely remain through the summer, unlike the short-billed (Unitt 2004).

Overall, 227 long-billed dowitcher were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 179 long-billed dowitcher were counted. Long-billed dowitcher were observed predominantly in the south bay with smaller numbers recorded in all other regions.

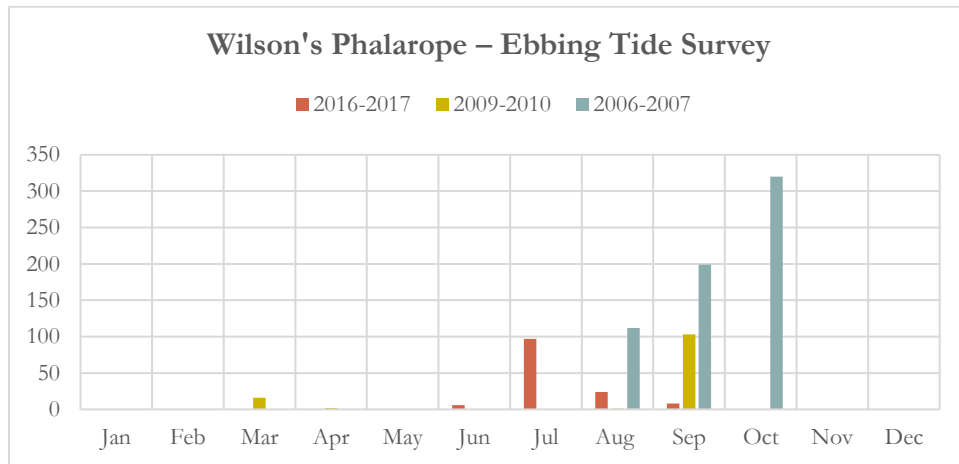


### **Wilson's Phalarope (*Phalaropus tricolor*)**

San Diego County is not included in the Wilson's phalarope's main migration route, but the birds are common during fall migration, including at the salt ponds in south San Diego Bay (Unitt 2004).



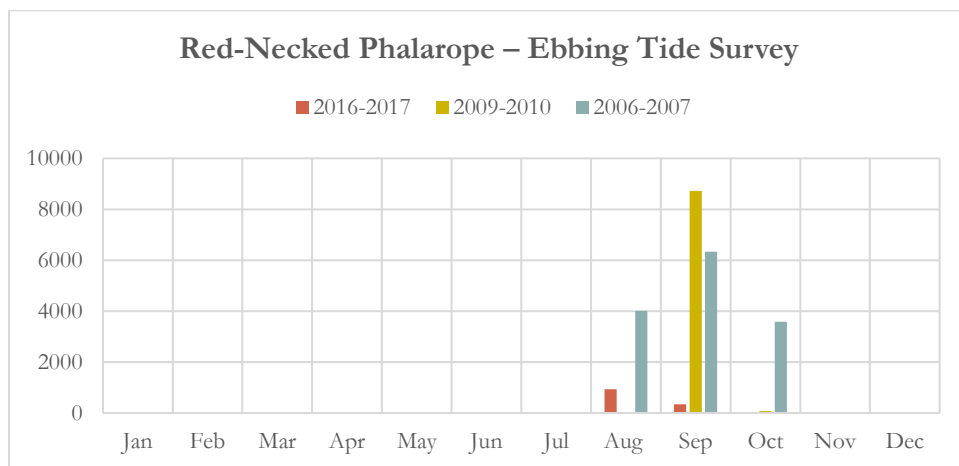
Overall, 170 Wilson's phalaropes were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 135 Wilson's phalaropes were counted. Wilson's phalaropes were observed predominantly in the salt ponds except for four records in the south bay.



### **Red-Necked Phalarope (*Phalaropus lobatus*)**

These birds are common migrants and winter visitors, concentrating at the San Diego Bay salt ponds during fall migration (Unitt 2004).

Overall, 1,685 red-necked phalarope were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 1,270 red-necked phalarope were counted. Peaking tide surveys showed the most use in Grid SW26 with 331 observations. Red-necked phalarope were observed in the salt ponds, except for one record in the south bay.



### **Laridae (Terns, Skimmers, Gulls, and Jaegers)**

The following species, while listed on the Bay INRMP species list, were not observed during this effort. The sooty tern and sandwich tern are listed as accidental sightings in the San Diego Bay INRMP. The laughing gull is considered a rare vagrant to the California coast. Sabine's gulls migrate through North America between their breeding grounds in the arctic to their wintering grounds in

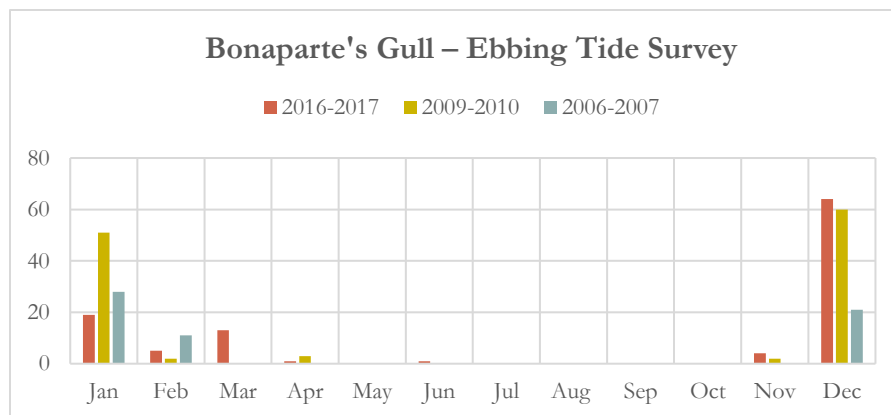
South America, but are mainly seen offshore. In the San Diego Bay area, one bird was seen on the bay in 1908 and one bird at Silver Strand State Beach in 1962. Glaucous gulls are rare winter visitors to San Diego County, which is at the southern end of their range. A few were noted during the 2006-07 surveys. The black-legged kittiwake is a pelagic species and is rarely seen onshore. One bird was spotted on San Diego Bay during migration in November 1962 (Unitt 2004). The black tern does not nest in San Diego County but is present as a migrant (Unitt 2004). The arctic tern migrates over the Pacific and Atlantic Ocean between its arctic breeding grounds and its Antarctic wintering grounds. It is very rarely seen onshore.

### **Bonaparte's Gull (*Chroicocephalus philadelphia*)**

The most regularly seen gull in San Diego County, Bonaparte's gull, is most abundant on the ocean. This gull is also common in San Diego Bay as a wintering bird and spring and fall migrant (Unitt 2004).



Overall, 169 Bonaparte's gulls were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 107 Bonaparte's gulls were counted, with another counted during midwater surveys. Bonaparte's gulls were observed predominantly in the south bay with smaller numbers recorded in the salt ponds, south-central bay, and the ocean grids.



### **Franklin's Gull (*Larus pipixcan*)**

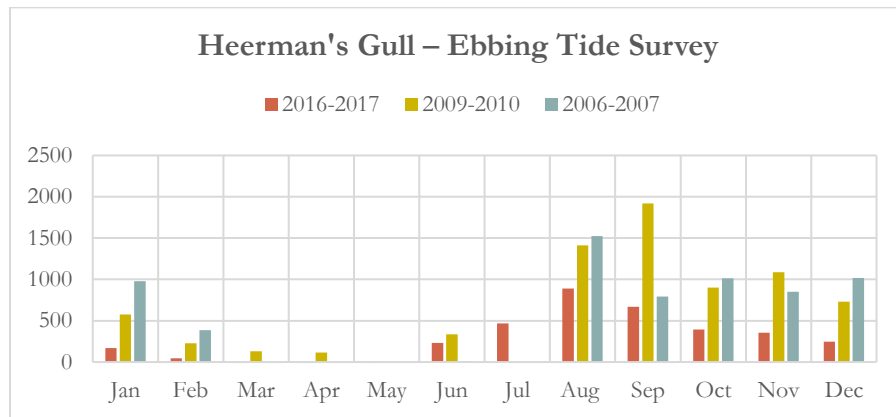
The Franklin's gull is considered a rare migrant in San Diego County. One bird was seen at Coronado in February 1997 and one bird was observed at the south bay salt ponds in May 1999 (Unitt 2004).

Three Franklin's gulls were recorded during the July 2016 shoreline ebbing tide surveys in the ocean grids.

**Heermann's Gull (*Larus heermanni*)**

Heermann's gulls are very common along the San Diego coastline with lowest numbers in the spring, increasing in the summer, and then decreasing again in the winter (Unitt 2004).

Overall, 4,478 Heermann's gulls were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 3,478 Heermann's gulls were counted, with another 102 counted during midwater surveys. Peaking tide surveys showed the most use in Grid C2 with 150 observations. Heermann's gulls were observed primarily in the ocean grids and north bay, with smaller numbers recorded in all other regions of the bay.

**Mew Gull (*Larus canus brachyrhynchus*)**

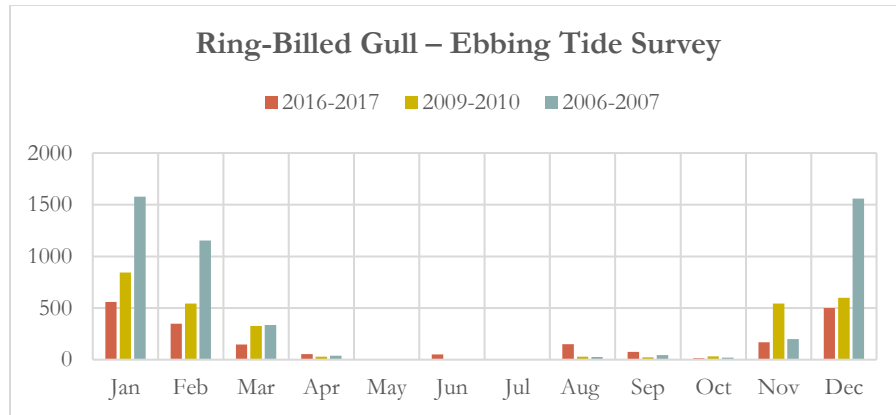
San Diego County is at the southern end of the mew gull's winter range. They concentrate in two areas along the coast in the County, one of which is along the beach of NASNI and along the shore of the Hotel Del Coronado (Unitt 2004).

One mew gull was recorded during the August 2016 peaking tide survey in the south bay.

**Ring-Billed Gull (*Larus delawarensis*)**

Although not the most numerous, the ring-billed gull is the County's most widespread. They are primarily here as winter visitors but more of them over-summer than other migratory gulls (Unitt 2004).

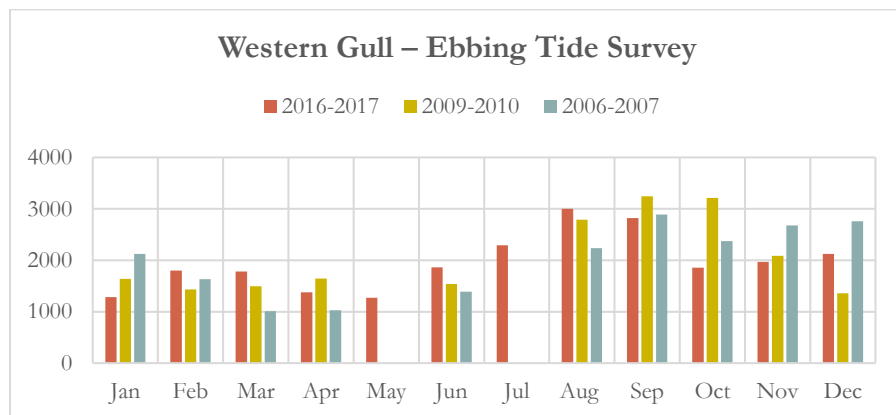
Overall, 2,510 ring-billed gulls were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 2,068 ring-billed gulls were counted, with another 26 counted during midwater surveys. Peaking tide surveys showed the most use in Grid SW23 with 53 observations. Ring-billed gulls were observed predominantly in the south bay, with smaller numbers recorded in all other regions of the bay.



### **Western Gull (*Larus occidentalis wymani*)**

The western is one of the most numerous gulls in the County, and the one observed most during these surveys. They are present as both breeding and winter residents, as the only gull nesting in San Diego County (Unitt 2004).

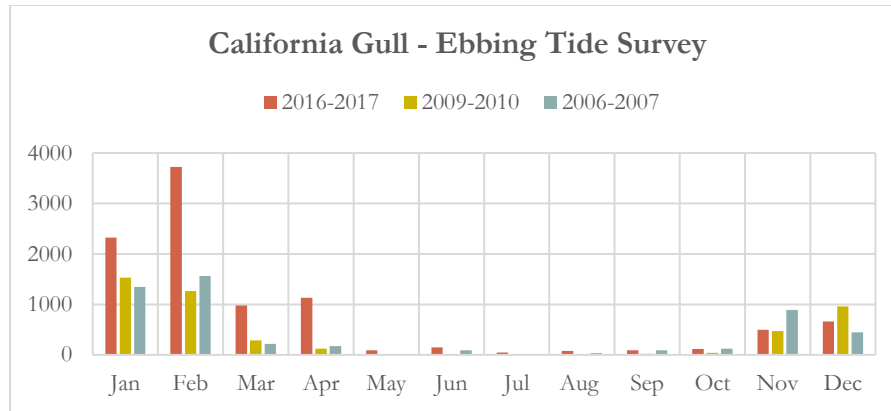
Overall, 30,470 western gulls were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 23,432 western gulls were counted, with another 474 counted during midwater surveys. Peaking tide surveys showed the most use in Grid 312 with 186 observations. Western gulls were observed predominantly in the north bay, with large numbers recorded in all other regions of the bay.



### **California Gull (*Larus californicus californicus*)**

California gulls winter in San Diego County primarily along the coast, with a few non-breeding summer residents remaining throughout the year (Unitt 2004).

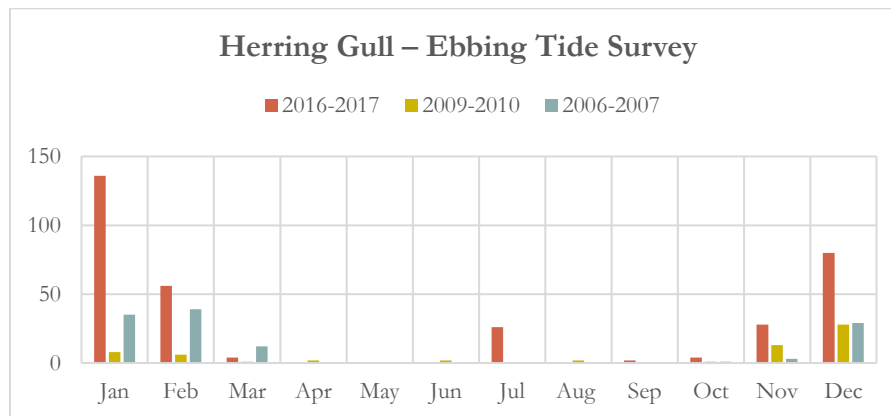
Overall, 16,876 California gulls were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 9,897 California gulls were counted, with another 30 counted during midwater surveys. Peaking tide surveys showed the most use in Grid SW30 with 4,779 observations. California gulls were observed predominantly in the salt ponds, with smaller numbers recorded in all other regions of the bay.



### **Herring Gull (*Larus argentatus smithsonianus*)**

The herring gull is uncommon to fairly common in San Diego County using beaches and inland wetlands, although being more common along the coast. They are an uncommon to locally common winter visitor in San Diego (Unitt 2004).

Overall, 472 herring gulls were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 336 herring gulls were counted, with another counted during midwater surveys. Herring gulls were observed primarily in the salt ponds, with smaller numbers recorded in all other regions of the bay.



### **Thayer's Gull (*Larus thayeri*)**

Thayer's gulls mainly winter along the coast north of San Diego, but are present in the County annually in low numbers (Unitt 2004).

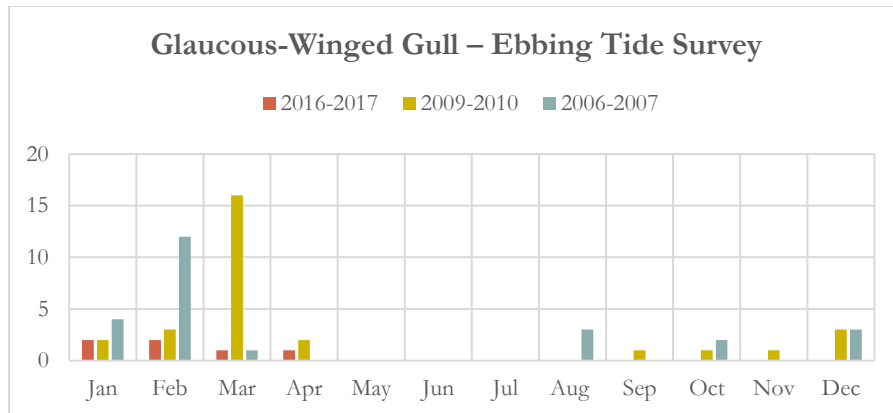
Overall, seven Thayer's gulls were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, five Thayer's gulls were counted. Thayer's gulls were observed predominantly in the salt ponds, except for one that was recorded in the south bay.



### **Glaucous-Winged Gull (*Larus glaucescens*)**

The glaucous-winged gull is uncommon in San Diego County; it is primarily a winter visitor present in low numbers along the coast (Unitt 2004).

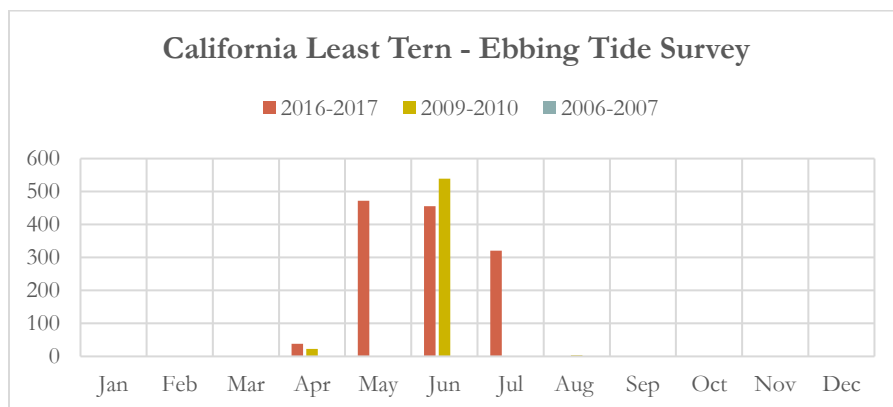
Overall, 12 glaucous-winged gulls were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 6 glaucous-winged gulls were counted. Glaucous-winged gulls were observed predominantly in the salt ponds, except for three that were recorded in the south bay.



### **California Least Tern (*Sternula antillarum browni*)**

The California least tern is listed as endangered by both the federal and California state government but is regularly seen around San Diego Bay where many nest at protected federal, state, and local sites.

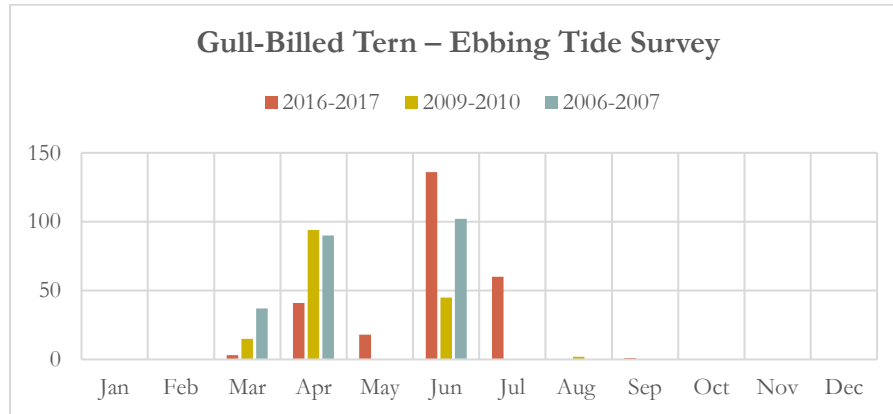
Overall, 1,872 California least terns were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 1,287 California least terns were counted. Peaking tide surveys showed the most use in Grid O2 with 120 observations. California least terns were observed predominantly the ocean grids, with smaller numbers recorded in all other regions of the bay.



### **Gull-Billed Tern (*Gelochelidon nilotica vanrossemi*)**

The gull-billed tern breeds in San Diego County only at the salt ponds in south San Diego Bay (Unitt 2004). They are recognized as a Bird Species of Special Concern by the California Department of Fish and Wildlife (CDFW).

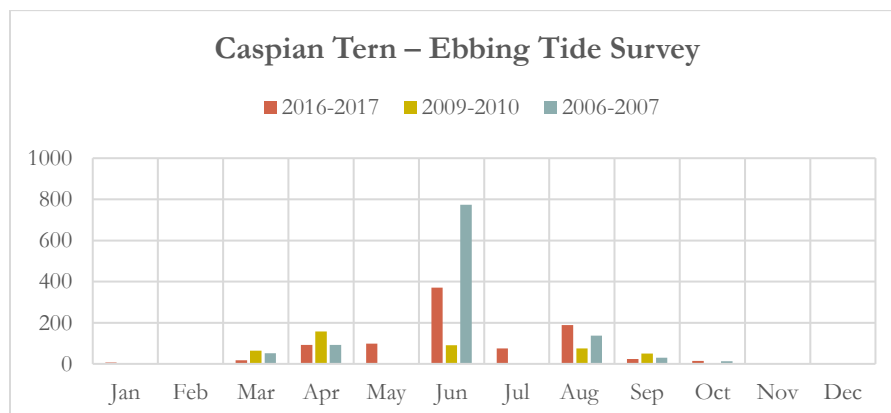
Overall, 383 gull-billed terns were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 269 gull-billed terns were counted. Gull-billed terns were observed predominantly in the salt ponds, with smaller numbers recorded in all other regions of the bay except for the north bay.



### **Caspian Tern (*Sterna caspia*)**

The south San Diego Bay salt ponds are a major nesting site for Caspian terns; they are generally less common in the winter but present in San Diego Bay (Unitt 2004). These terns began nesting at the salt ponds in 1941; 357 nests were counted in 2005 (USFWS 2006).

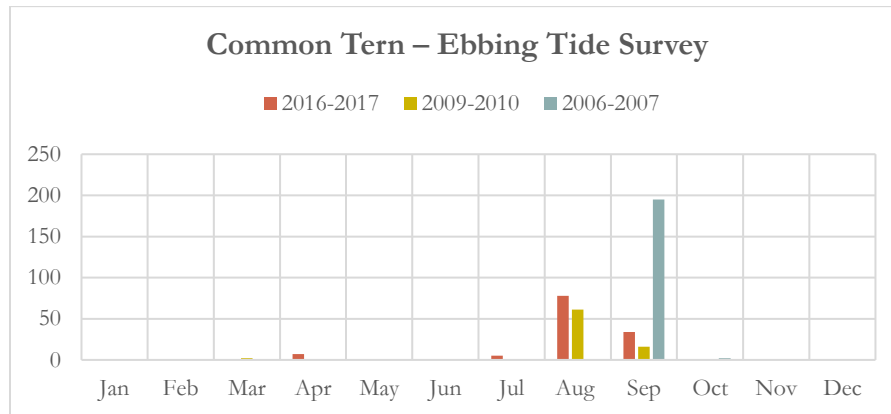
Overall, 1,329 Caspian terns were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 894 Caspian terns were counted, with another counted during midwater surveys. Peaking tide surveys showed the most use in Grid SW15 with 134 observations. Caspian terns were observed in all regions of the bay with the highest numbers recorded in the salt ponds and the lowest numbers seen in the north-central bay.



### **Common Tern (*Sterna hirundo hirundo*)**

The common tern is somewhat uncommon in San Diego County (Unitt 2004).

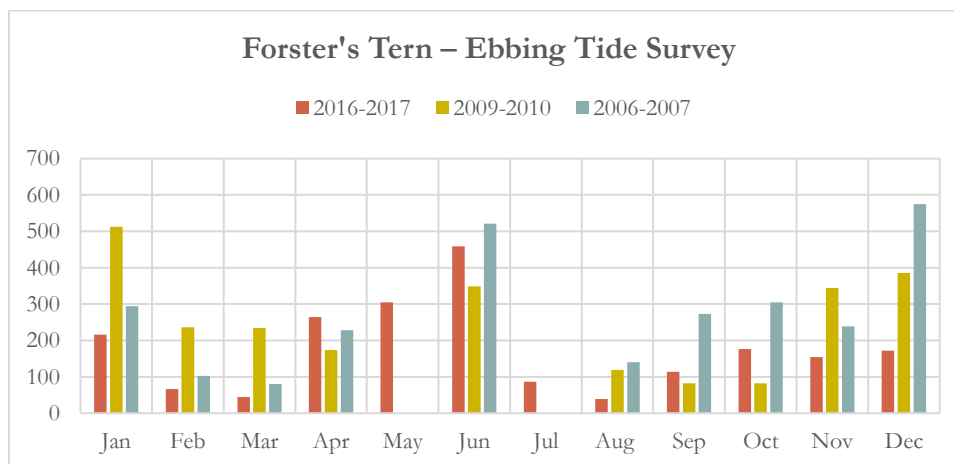
Overall, 243 common terns were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 125 common terns were counted. Peaking tide surveys showed the most use in Grid SW22 with 72 observations. Common terns were observed predominantly in the salt ponds, with smaller numbers recorded in all other regions of the bay except for the north bay.



### **Forster's Tern (*Sterna forsteri*)**

The most widespread tern in San Diego County, Forster's tern is common year-round. Their oldest nesting site in southern California is at the salt ponds in south San Diego Bay, as many as 415 nests were present in 2005 (Unitt 2004; USFWS 2006).

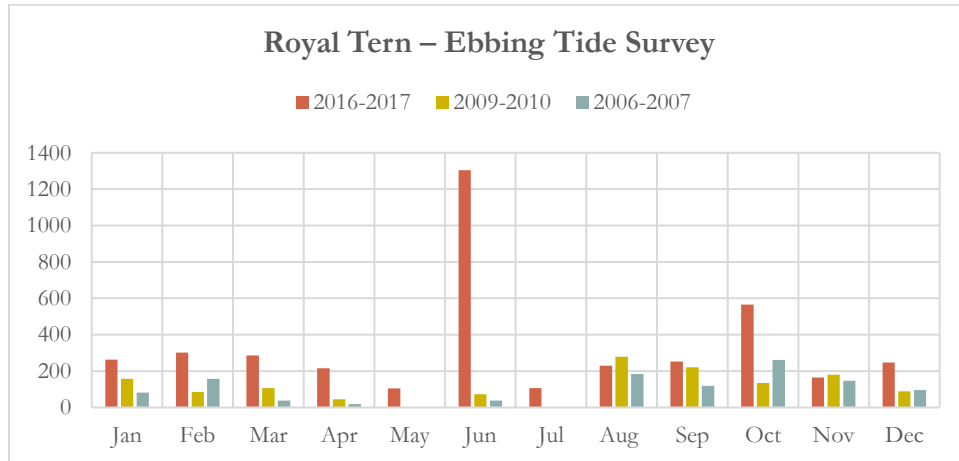
Overall, 2,671 Forster's terns were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 2,096 Forster's terns were counted, with another 15 counted during midwater surveys. Peaking tide surveys showed the most use in Grid SW23 with 59 observations. Forster's terns were observed predominantly south bay with smaller number recorded in all other regions of the bay.



### **Royal Tern (*Thalasseus maximus*)**

Royal terns are primarily winter visitors to the County, but they do breed in the salt ponds in southern San Diego Bay (Unitt 2004; USFWS 2006).

Overall, 5,082 royal terns were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 4,041 royal terns were counted, with another 44 counted during midwater surveys. Peaking tide surveys showed the most use in Grid SW23 with 202 observations. Royal terns were observed predominantly the salt ponds, with smaller number recorded in all other regions of the bay.

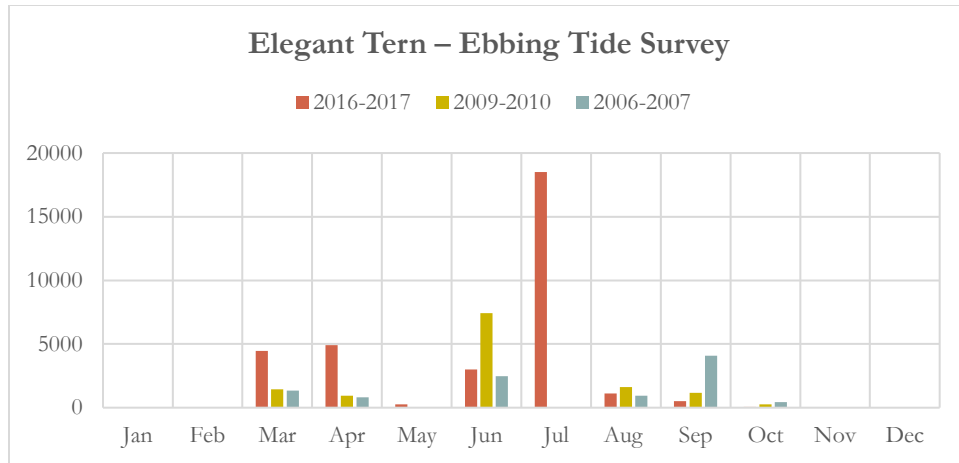


### **Elegant Tern (*Thalasseus elegans*)**

The elegant tern breeds in southern San Diego Bay; at one point the colony reached 10,300 nests (in 2003; USFWS 2006). The bird does not normally winter in the County, but they are commonly present in the spring and fall as migrants, when they may be most abundant (Unitt 2004).

Overall, 41,813 elegant terns were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 32,808 elegant terns were counted, with another counted during midwater surveys. Peaking tide surveys showed the most use in Grid SW12 with 3,098 observations. Elegant terns were observed predominantly the salt ponds, with smaller number recorded in all other regions of the bay.

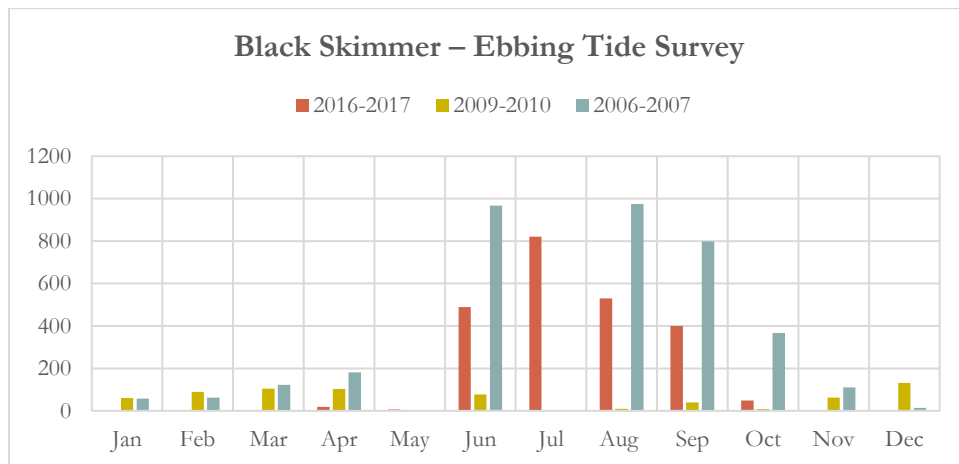




### **Black Skimmer (*Rynchops niger niger*)**

Black skimmers are present in the County year-round, most birds shifting summer and winter habitats between southern San Diego Bay and Mission Bay, respectively (Unitt 2004). They nest in the south bay salt ponds; 752 nests were counted in 2005 (USFWS 2006).

Overall, 3,443 black skimmers were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 2,314 black skimmers were counted. Peaking tide surveys showed the most use in Grid SW13W with 280 observations. Black skimmers were observed predominantly the salt ponds, with smaller numbers recorded in all other regions of the bay except for north-central.



### **Stercorariidae (Jaegers)**

#### **Parasitic Jaeger (*Stercorarius parasiticus*)**

The parasitic jaeger is a winter visitor and migrant in San Diego County (Unitt 2004).

Three parasitic jaegers were observed during the 2016-17 surveys: one during the November 2016 peaking tide surveys, one during the December 2016 midwater surveys, and one during the January 2017 shoreline ebbing tide survey. All three were observed in the ocean grids.



## Alcidae (Alcids)

Cassin's auklet (*Ptychoramphus aleuticus*) was not observed during this survey effort. During the winter these birds usually remain at least five miles away from the coast, but can sometimes be seen from shore during strong winds (Unitt 2004).

## G.11 Columbiformes

Of the birds listed under this Order on the San Diego Bay INRMP species list, the spotted dove (*Streptopelia chinensis*), ringed turtle dove (*Streptopelia risoria*), and white-winged dove (*Zenaida asiatica*) were not observed during this effort.

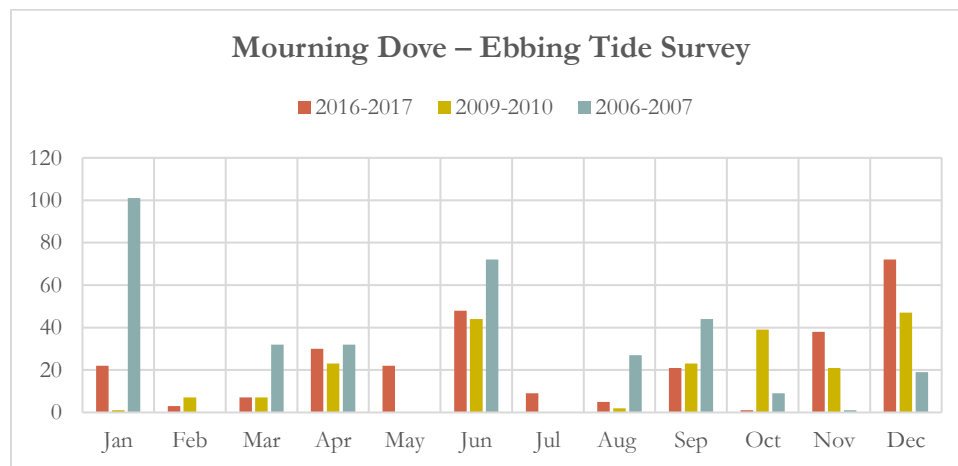
## Columbidae (Pigeons, Doves)

The spotted dove is listed as an accidental observation in the San Diego Bay INRMP and has been extirpated from the County. The ringed turtle-dove is a domestic form of the African collared dove (*Streptopelia roseogrisea*), and is a common cage bird. It is often seen as an escapee, but no feral population exists in San Diego County. The white-winged dove is a bird of desert habitat; eastern San Diego County is the edge of its range, although migrants can venture closer to the coast (Unitt 2004).

### Mourning Dove (*Zenaida macroura marginella*)

The mourning dove is common in San Diego County year round, where they are more abundant in developed than in their native habitat (Unitt 2004).

Overall, 380 mourning doves were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 376 mourning doves were counted. Mourning doves were observed predominantly in the salt ponds, with smaller numbers recorded in all other regions of the bay.



### Eurasian Collared Dove (*Streptopelia decaocto*)

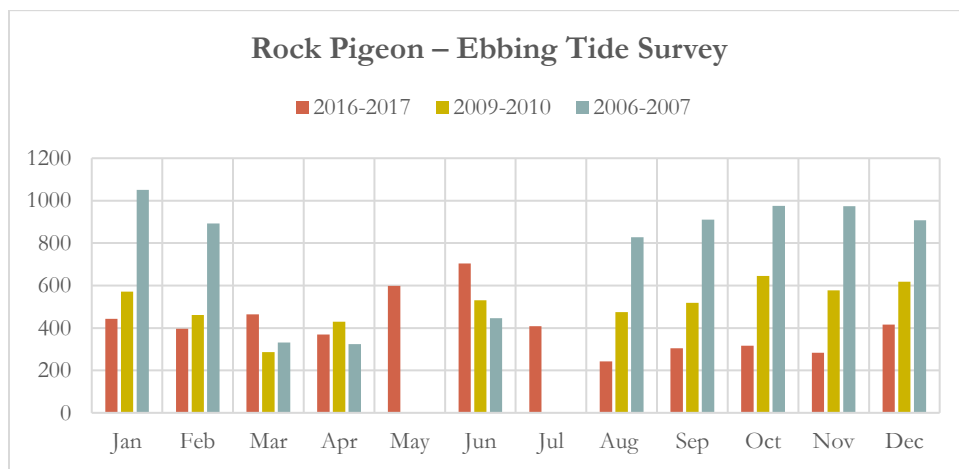
As implied by their name, the Eurasian collared dove is not native to North America; they first arrived in San Diego County in 2002 (Unitt 2004).

Overall, 48 Eurasian collared doves were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 31 Eurasian collared doves were counted. Eurasian collared doves were observed primarily in the south-central bay with smaller numbers recorded in the north and south bay.

### **Rock Pigeon (*Columba livia*)**

Rock pigeons are not native to North America but have been abundant in southern California for decades, where they are mainly confined to developed areas (Unitt 2004).

Overall, 7,173 rock pigeons were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 4,945 rock pigeons were counted. Peaking tide surveys showed the most use in Grid 61 with 581 observations. Rock pigeons were observed predominantly in the north bay, with smaller numbers recorded in all other regions of the bay.



## **G.12 Psittaciformes**

### **Psittacidae (Parrots)**

There were 21 parrot sp. recorded during the May 2017 peaking tide surveys in the north bay. The red-crowned parrot (*Amazona viridigenalis*), previously recorded during the 2006-07 and 2009-10 surveys, was not observed during the 2016-17 surveys.

## **G.13 Cuculiformes**

The two species in this order listed in the San Diego Bay INRMP, the yellow-billed cuckoo (*Coccyzus americanus*) and greater roadrunner (*Geococcyx californianus*), both in the Cuculidae family, were not observed during this effort.

### **Cuculidae (Cuckoos)**

The yellow-billed cuckoo is listed as an accidental observation in the San Diego Bay INRMP. In San Diego County, the greater roadrunner is an uncommon resident of the Anza-Borrego desert and can also be found on coastal slopes (Unitt 2004).

## G.14 Strigiformes

### Tytonidae (Barn Owls)

#### **Barn Owl (*Tyto alba*)**

The barn owl is an uncommon year-round resident in San Diego County. It nests in tree cavities and on cliff ledges as well as in palm trees, buildings, and nest boxes (Unitt 2004). The barn owl is a nocturnal species and its diurnal roosting habit makes it difficult to detect during the day.

Five barn owls were observed during the 2016-17 surveys, all in the south bay during the July 2016 shoreline ebbing tide surveys

### Strigidae (Typical Owls)

#### **Great Horned Owl (*Bubo virginianus*)**

The great horned owl is an uncommon, but widespread year-round resident in San Diego County. It inhabits woodlands and open scrub (Unitt 2004). The great horned owl is a nocturnal species. Its diurnal roosting habit makes it difficult to detect during the day.

One great horned owl was observed in the north bay during the May 2017 peaking tide surveys.

#### **Burrowing Owl (*Athene cunicularia*)**

Burrowing owls are a CDFW Bird Species of Special Concern. They have been extirpated from many of the areas in which they used to breed and are in danger of disappearing from the County entirely (Unitt 2004).

Five burrowing owls were observed during the 2016-17 surveys in the salt ponds and south-central bay. Four were recorded during the shoreline ebbing tide surveys in October and December 2016 and February and June 2017, and one was seen during the November 2016 peaking tide surveys.

#### **Short-Eared Owl (*Asio flammeus flammeus*)**

Short-eared owls are mainly visitors to San Diego County, concentrated around south San Diego Bay and the Tijuana River estuary. They have recently been recorded in the County in the spring (Unitt 2004).

Overall, 15 short-eared owls were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, eight short-eared owls were counted. Short-eared owls were observed in the salt ponds and the south bay.

## G.15 Caprimulgiformes

None of the birds listed under this order in the San Diego INRMP, the lesser nighthawk (*Chordeiles acutipennis texensis*) and the common nighthawk (*Chordeiles minor hesperis*), both in the Caprimulgidae family, were observed during this effort.

### Caprimulgidae (Nightjars)

The lesser nighthawk is an uncommon summer visitor in San Diego County. It can be found in the Anza-Borrego Desert and in the coastal lowlands, mainly in the Marine Corps Air Station Miramar area. It inhabits sparsely vegetated areas (Unitt 2004). The common nighthawk is listed as an accidental observation in the Bay INRMP.

## G.16 Apodiformes

Of the birds listed under this order in the San Diego INRMP, the Vaux's swift (*Chaetura vauxi vauxi*) in the Apodidae family, and the black-chinned hummingbird (*Archilochus alexandri*), Costa's hummingbird (*Calypte costae*), rufous hummingbird (*Selasphorus rufus*), Allen's hummingbird (*Selasphorus sasin*), and Calliope hummingbird (*Stellula calliope*), all in the Trochilidae family, were not observed during this effort.

### Apodidae (Swifts)

#### White-Throated Swift (*Aeronautes saxatilis*)

The white-throated swift is common in San Diego County year-round and is the only swift that breeds here (Unitt 2004).

Three white-throated swifts were recorded in the south bay during the April 2017 peaking tide surveys.

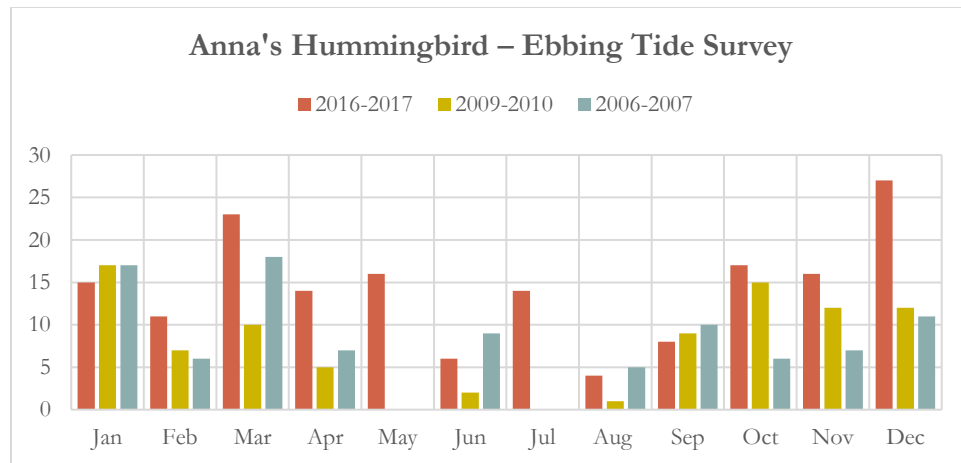
### Trochilidae (Hummingbirds)

The black-chinned hummingbird is a fairly common migrant and summer resident in San Diego County. The rufous hummingbird is a common migrant in the county and some individuals spend the winter. The Costa's hummingbird is a common breeder and winter resident in San Diego County. The Calliope hummingbird is considered a rare spring migrant (Unitt 2004). None of these birds, although listed in the INRMP species list, were detected during this survey.

#### Anna's Hummingbird (*Calypte anna*)

Anna's hummingbirds are well adapted to urban environments although they can still be found in their native habitat. They are present year-round, concentrated closer to the coast in the winter (Unitt 2004).

Overall, 299 Anna's hummingbirds were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 171 Anna's hummingbirds were counted. Anna's hummingbirds were observed predominantly in the north-central bay with smaller numbers recorded in all other regions of the bay.



### **Allen's Hummingbird (*Selasphorus sasin*)**

Allen's hummingbird is a common migrant in San Diego County and one individual was confirmed nesting for the first time in 2001 (Unitt 2004).

Overall, 12 Allen's hummingbirds were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, seven Allen's hummingbirds were counted. Allen's hummingbirds were observed in all regions of the bay except for the ocean grids.

## **G.17 Coraciiformes**

### **Alcedinidae (Kingfishers)**

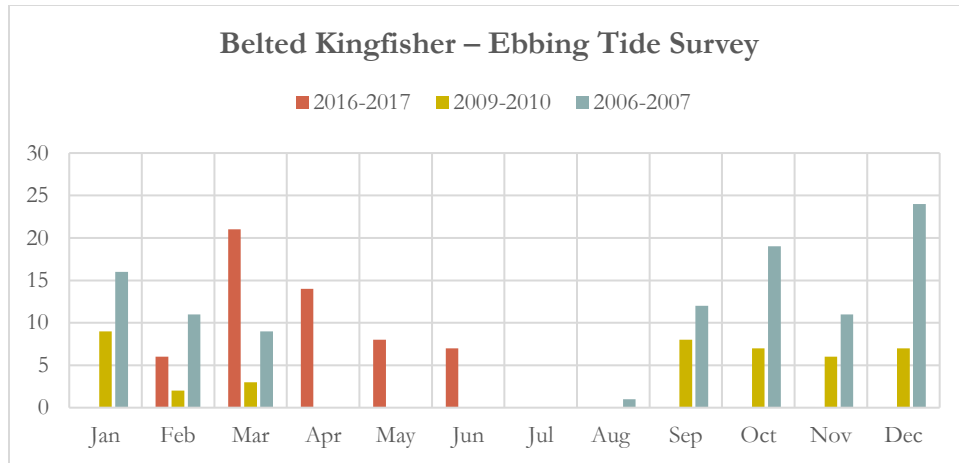
#### **Belted Kingfisher (*Megaceryle alcyon*)**

Lying at the southern end of the belted kingfisher's breeding range; San Diego County is rarely home to breeding kingfishers. As a winter visitor, the bird is more abundant, but still uncommon (Unitt 2004). The belted kingfisher is the only bird of its order listed on the San Diego INRMP species list.

Overall, 121 belted kingfishers were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 83 belted kingfishers were counted. Belted kingfishers were observed in all regions of the bay.







## G.18 Piciformes

### Picidae (Woodpeckers)

The only bird of this order listed on the San Diego INRMP species list, the northern flicker (*Colaptes auratus collaris*), was not observed during the 2016-17 surveys. The northern flicker is San Diego County's largest woodpecker; it is more common during the winter than in the summer when migrants from the north add to the population (Unitt 2004).

## G.19 Passeriformes

Of the birds listed under this order in the San Diego Bay INRMP, the following species were not observed during the 2016-17 surveys:

- Tyrannidae family: the olive-sided flycatcher (*Contopus cooperi*), western wood-pewee (*Contopus sordidulus sordidulus*), western flycatcher (*Empidonax difficilis difficilis*), Hammond's flycatcher (*Empidonax hammondi*), dusky flycatcher (*Empidonax oberholseri*), willow flycatcher (*Empidonax traillii*), gray flycatcher (*Empidonax wrightii*), ash-throated flycatcher (*Myiarchus cinerascens*), and tropical kingbird (*Tyrannus melancholicus satrapa*);
- Vireonidae family: the least Bell's vireo (*Vireo bellii pusillus*), warbling vireo (*Vireo gilvus swainsoni*), and solitary (blue-headed) vireo (*Vireo solitarius solitarius*);
- Corvidae family: the western scrub-jay (*Aphelocona californica obscura*);
- Hirundinidae family: the purple martin (*Progne subis subis*) and bank swallow (*Riparia riparia riparia*);
- Troglodytidae family: the San Diego cactus wren (*Campylorhynchus brunneicapillus sandiegensis*);
- Regulidae family: the golden-crowned kinglet (*Regulus satrapa apache*);
- Sylviidae family: the blue-gray gnatcatcher (*Poliophtila caerulea obscura*);
- Turdidae family: the hermit thrush (*Catharus guttatus*), Swainson's thrush (*Catharus ustulatus*), mountain bluebird (*Sialia currucoides*), and American robin (*Turdus migratorius propinquus*);
- Timaliidae family: the wrentit (*Chamaea fasciata henshawi*);

- Mimidae family: the sage thrasher (*Oreoscoptes montanus*) and California thrasher (*Toxostoma redivivum redivivum*);
- Motacillidae family: the red-throated pipit (*Anthus cervinus*);
- Bombycillidae family: the cedar waxwing (*Bombycilla cedrorum*);
- Ptilonotidae family: the phainopepla (*Phainopepla nitens lepida*);
- Parulidae family: the Virginia's warbler (*Vermivora virginiae*), Lucy's warbler (*Vermivora luciae*), black-throated gray warbler (*Dendroica nigrescens*), myrtle warbler (*Dendroica coronata hooveri*), hermit warbler (*Dendroica occidentalis*), palm warbler (*Dendroica palmarum palmarum*), American redstart (*Setophaga ruticilla*), Nashville warbler (*Oreothlypis ruficapilla ridgwayi*), MacGillivray's warbler (*Oporornis tolmiei tolmiei*), Wilson's warbler (*Wilsonia pusilla*), and yellow-breasted chat (*Icteria virens auricollis*);
- Thraupidae family: the western tanager (*Piranga ludoviciana*);
- Emberizidae family: the green-tailed towhee (*Pipilo chlorurus*), spotted towhee (*Pipilo maculatus megalonyx*), rufous-crowned sparrow (*Aimophila ruficeps canescens*), vesper sparrow (*Pooecetes gramineus*), lark bunting (*Calamospiza melanocorys*), Nelson's sharp-tailed sparrow (*Ammodramus nelsoni*), Brewer's sparrow (*Spizella breweri breweri*), chipping sparrow (*Spizella passerine arizonae*), fox sparrow (*Passerella iliaca*), swamp sparrow (*Passerella georgiana ericrypta*), golden-crowned sparrow (*Zonotrichia atricapilla*), and dark-eyed junco (*Junco hyemalis*);
- Cardinalidae family: the black-headed grosbeak (*Pheucticus melanocephalus maculatus*), blue grosbeak (*Passerina caerulea salicaria*), and lazuli bunting (*Passerina amoena*);
- Icteridae family: the red-winged blackbird (*Agelaius phoeniceus neutralis*), tricolored blackbird (*Agelaius tricolor*), Bullock's oriole (*Icterus bullocki*), great-tailed grackle (*Quiscalus mexicanus*), brown-headed cowbird (*Molothrus ater*), and Baltimore oriole (*Icterus galbula*);
- Fringilidae family: the Lawrence's goldfinch (*Carduelis lawrencei*), American goldfinch (*Carduelis tristis salicamans*), and pine siskin (*Carduelis pinus pinus*).

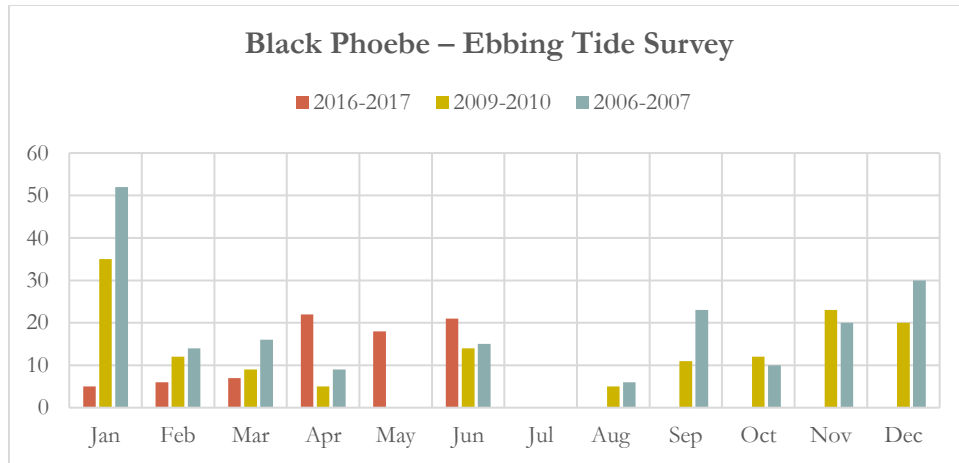
### **Tyrannidae (Flycatchers)**

The olive-sided flycatcher, western wood-pewee, western flycatcher, Hammond's flycatcher, dusky flycatcher, willow flycatcher, gray flycatcher, ash-throated flycatcher, and tropical kingbird were not observed during this effort.

### **Black Phoebe (*Sayornis nigricans semiatra*)**

The black phoebe is more common in developed than in natural environments. It exists in San Diego County as both a summer breeder and winter resident, not varying its habitat much between these seasons (Unitt 2004).

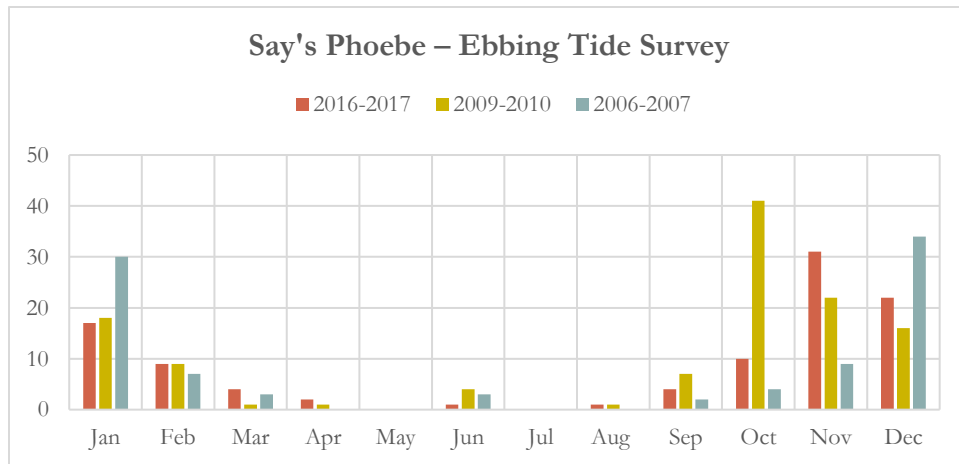
Overall, 236 black phoebes were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 160 black phoebes were counted. Black phoebes were observed in all regions of the bay.



### **Say's Phoebe (*Sayornis saya saya*)**

Say's phoebes are mainly winter visitors in the County, but they are also present as an uncommon breeding species (Unitt 2004).

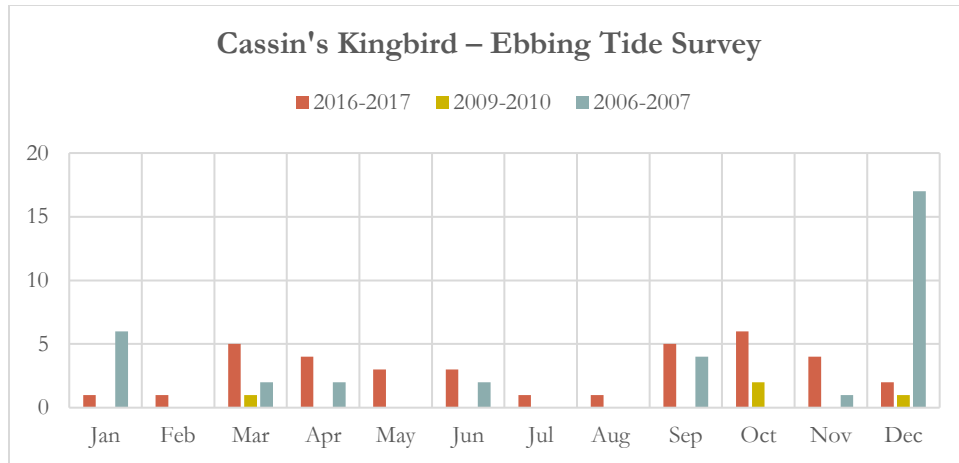
Overall, 140 Say's phoebes were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 98 Say's phoebes were counted. Say's phoebes were observed in all regions of the bay.



### **Cassin's Kingbird (*Tyrannus vociferans vociferans*)**

Cassin's kingbirds take advantage of suburban and rural sprawl clearing native brush and scrub habitat, and have been increasing in the County. They nest and roost in tall exotic trees, not differing in their winter and breeding season abundance or distribution (Unitt 2004).

Overall, 50 Cassin's kingbirds were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 36 Cassin's kingbirds were counted. Cassin's kingbirds were observed primarily in the south and north-central bay, with smaller numbers recorded in all other regions of the bay.



### **Western Kingbird (*Tyrannus verticalis*)**

The western kingbird is rare in the winter in San Diego County but common as a migrant and during the breeding season (Unitt 2004).

Overall, 16 western kingbirds were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, five western kingbirds were counted. Western kingbirds were observed in the north, north-central, and south bay and in the ocean grids.

### **Laniidae (Shrikes)**

#### **Loggerhead Shrike (*Lanius ludovicianus*)**

The loggerhead shrike is an uncommon year-round resident in San Diego County. It most commonly breeds in the desert, but has been seen breeding and wintering around San Diego Bay (Unitt 2004).

Three loggerhead shrikes were observed during the 2016-17 shoreline ebbing tide surveys, one each in August and September 2016 (ocean grids and south bay, respectively) and January 2017 (salt ponds).

### **Vireonidae (Vireos)**

The least Bell's vireo, warbling vireo, and solitary (blue-headed) vireo were not observed, although they are listed on the San Diego Bay INRMP species list.

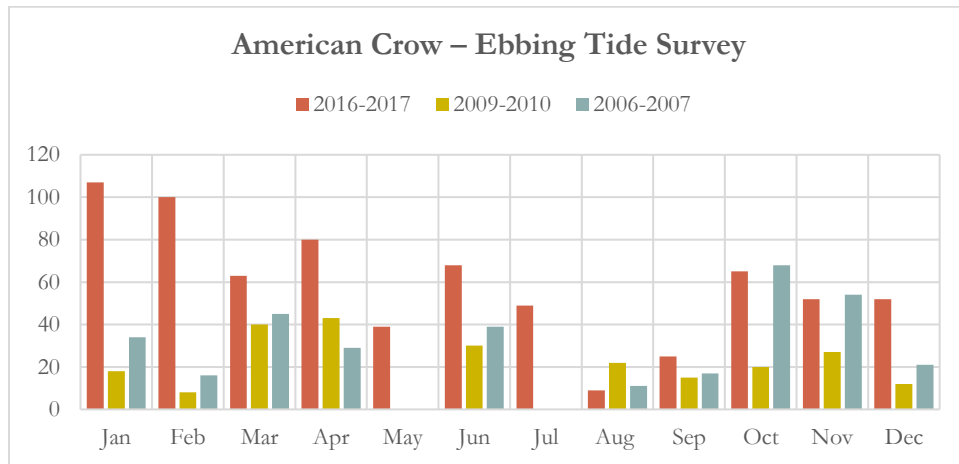
### **Corvidae (Jays, Crows)**

The western scrub-jay was not observed, although it is listed on the San Diego Bay INRMP species list.

#### **American Crow (*Corvus brachyrhynchos hesperius*)**

The American crow historically occurred in riparian and oak woodlands before expanding to take advantage of orchards and urban environments. It is a non-migratory year-round resident in the County, with similar winter and breeding distributions (Unitt 2004).

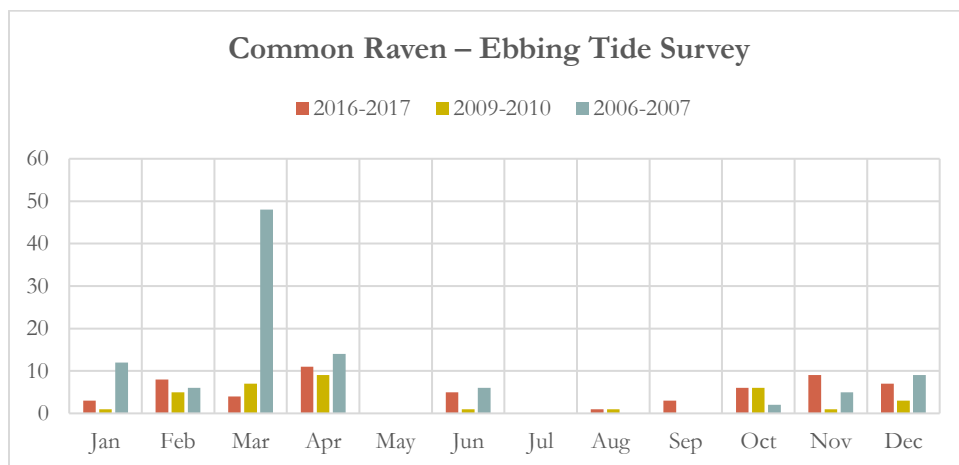
Overall, 942 American crows were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 709 American crows were counted. American crows were widespread and observed in every region of the bay and in the ocean grid.



### **Common Raven (*Corvus corax clarionensis*)**

One of the most widespread breeding birds in San Diego County, the common raven is a permanent resident utilizing all San Diego County habitats (Unitt 2004).

Overall, 86 common ravens were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 57 common ravens were counted. Common ravens were observed predominantly in the salt ponds, and in smaller numbers in every other region of the bay except for the north bay.



### **Alaudidae (Larks)**

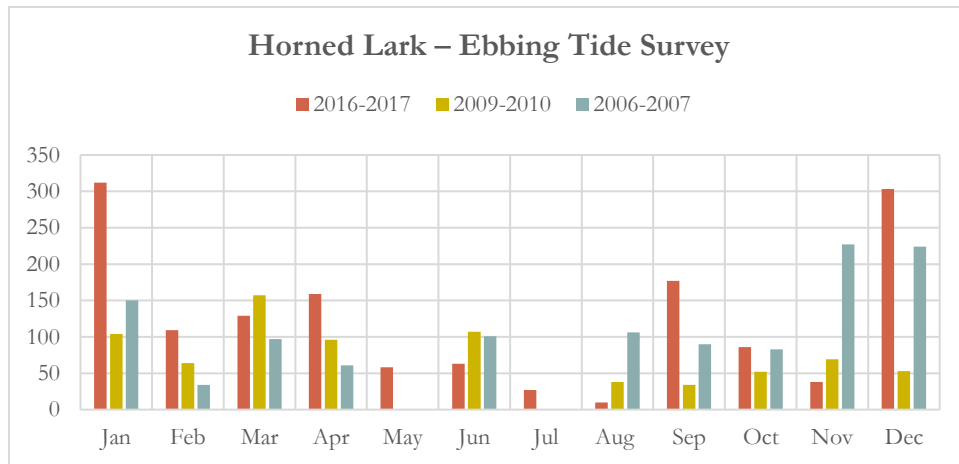
#### **Horned Lark (*Eremophila alpestris*)**

The horned lark is common around San Diego Bay during both the breeding and winter season; they utilize salt flat and bay fill habitats around the Bay (Unitt 2004).

Overall, 1,828 horned larks were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 1,461 horned larks were counted. Peaking tide surveys showed the most use in Grid



S20A with 127 observations. Horned larks were observed predominantly in the salt ponds, and in smaller numbers in the south bay, ocean grid, and south-central bay.



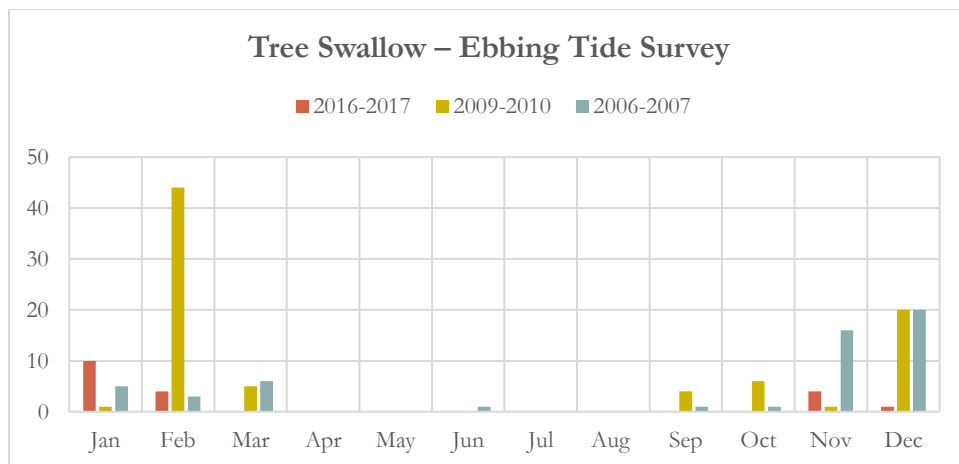
### Hirundinidae (Swallows)

The purple martin and bank swallow were not observed during this survey effort. The purple martin is listed as an accidental observation in the San Diego Bay INRMP as it is a declining summer visitor restricted almost completely to the mountains in this County. The bank swallow no longer nests in San Diego County and is rare as a migrant, though it was seen in the 2006-07 survey (Unitt 2004).

### Tree Swallow (*Tachycineta bicolor*)

San Diego County is at the southern end of the tree swallow's breeding range, the bird is primarily seen as a migrant in the area (Unitt 2004).

Overall, 54 tree swallows were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 19 tree swallows were counted. All the tree swallows were observed in the salt ponds, south bay, and ocean grids.



### **Violet-Green Swallow (*Tachycineta thalassina thalassina*)**

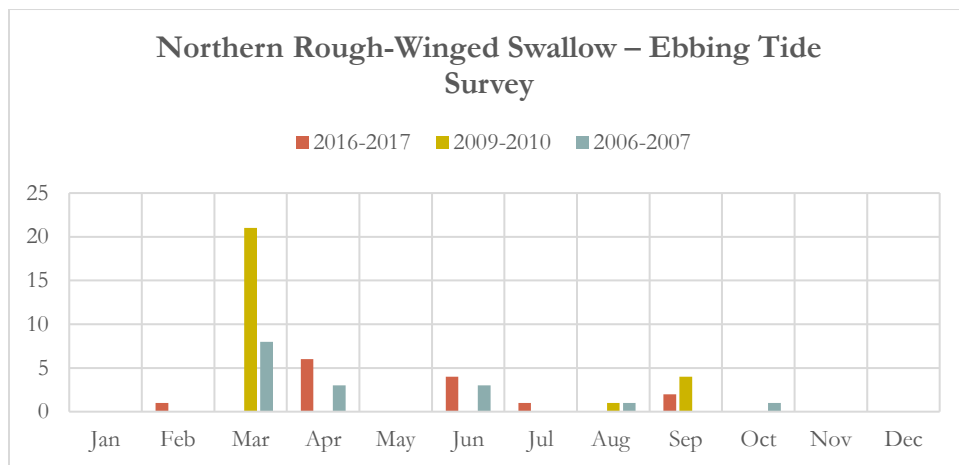
In San Diego County, the violet-green swallow is far more common as a breeding and migratory bird than during the winter. Around San Diego Bay, they are primarily migrants, with the birds observed during this survey seen during the peak of their spring migration (Unitt 2004).

Two violet-green swallows were seen during the November 2016 shoreline ebbing tide surveys in the south-central bay.

### **Northern Rough-Winged Swallow (*Stelgidopteryx serripennis*)**

Common in summer and during migration but rare in the winter, the northern rough-winged swallow is widespread in the coastal lowland of San Diego County (Unitt 2004).

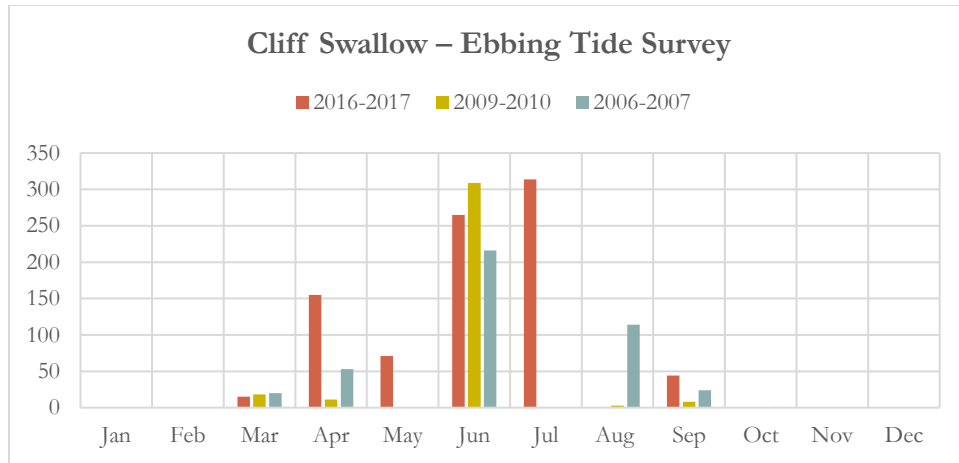
Overall, 22 northern rough-winged swallows were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 14 northern rough-winged swallows were counted. Northern rough-winged swallows were observed in the north-central and south bay, ocean grids, and salt ponds.



### **Cliff Swallow (*Hirundo pyrrhonota tachina*)**

The cliff swallow is a common summer resident, largely absent from San Diego County in the winter. It has adapted well to nesting on manmade structures, but may be on the decline in the county (Unitt 2004).

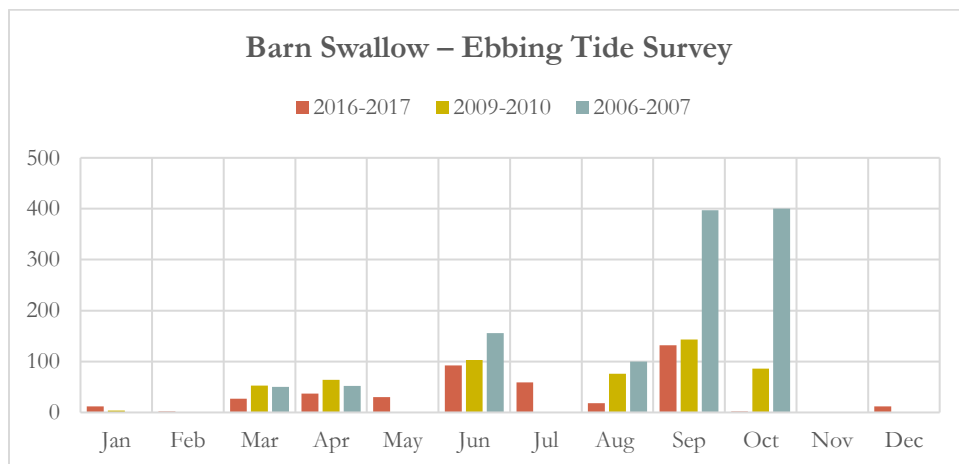
Overall, 1,352 cliff swallows were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 864 cliff swallows were counted. Peaking tide surveys showed the most use in Grid TIDL with 80 observations. Cliff swallows were observed predominantly in the salt ponds, with smaller numbers recorded in every other region of the bay.



### **Barn Swallow (*Hirundo rustica erythrogaster*)**

The barn swallow, while widespread in North America, is most common in San Diego County as a migrant. It does nest in limited areas in the County though, including on Point Loma and Coronado, and shows an increasing trend during the winter (Unitt 2004).

Overall, 599 barn swallows were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 423 barn swallows were counted. Barn swallows were observed in all regions of the bay and in the ocean grid, with the most records from the ocean, salt ponds, and south bay.

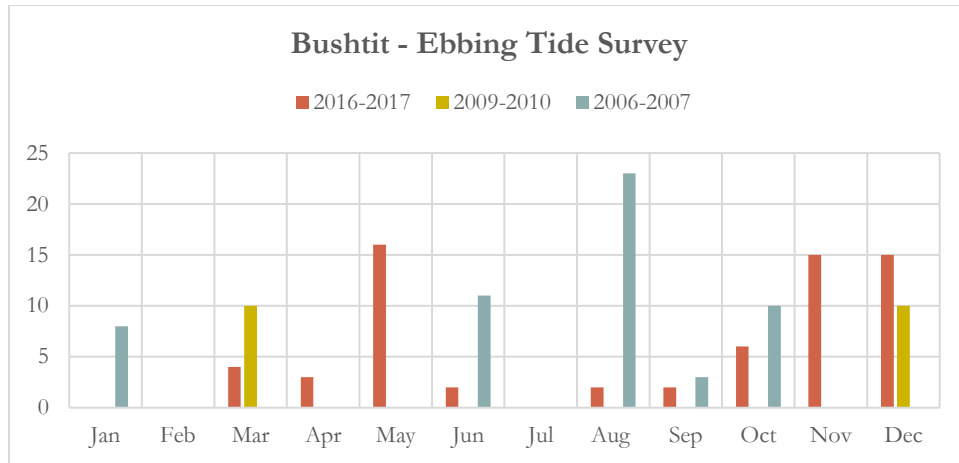


### **Aegithalidae (Long-Tailed Tits)**

#### **Bushtit (*Psaltiriparus minimus melanurus*)**

The bushtit is one of San Diego County's most common songbirds; it is a year-round resident and successful adapter to urban environments (Unitt 2004).

Overall, 104 bushtits were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 65 bushtits were counted. Bushtits were observed predominantly in the south bay, with smaller numbers observed in north-central bay, south-central bay, salt ponds and the ocean grid.



### **Troglodytidae (Wrens)**

The San Diego cactus wren was not observed during the 2016-17 surveys. This subspecies is restricted to the coastal plain of southern California, and is designated a Species of Special Concern by the state of California. It is a year-round resident and does not move far from its breeding range. It has disappeared from the San Diego Bay area recently and was not noted in the 2006-07 surveys (Unitt 2004).

### **Rock Wren (*Salpinctes obsoletus*)**

Rock wrens are present year-round in San Diego County, dispersing somewhat from their breeding range during the winter. Around San Diego Bay it is present as a winter and migratory bird (Unitt 2004).

Three rock wrens were observed during the shoreline ebbing tide surveys in October 2016 (2) and December 2016 (1). All three were recorded in the salt ponds.

### **House Wren (*Troglodytes aedon parkmanii*)**

Most common as a breeding bird in the County, the house wren is increasing as a year-round resident and winter visitor. It is primarily confined to forested habitat but is beginning to settle more in urban environments (Unitt 2004).

Three house wrens were observed during the 2016-17 surveys. Two were recorded during the shoreline ebbing tide surveys in September and November 2016 in the south bay. One was recorded during the November 2016 peaking tide surveys in the salt ponds.

### **Bewick's Wren (*Thryomanes bewickii*)**

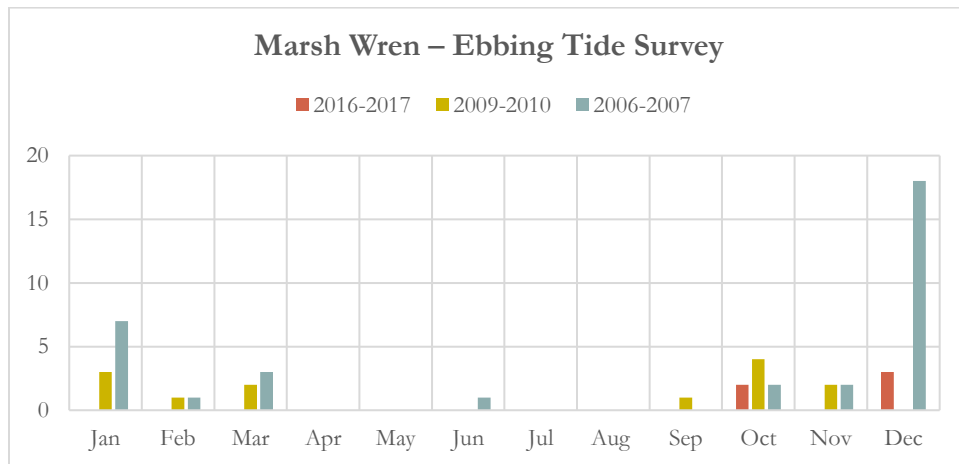
The Bewick's wren is one of San Diego County's most widespread birds. Bewick's wren can occupy any habitat with at least moderately dense shrubbery: sage scrub, the understory of oak, riparian, and pinyon-juniper woodland, desert-edge scrub, and desert washes, as well as chaparral, the habitat where it is most abundant. Though a year-round resident, Bewick's wren spreads uncommonly in winter even into the sparsest desert scrub (Unitt 2004).

One Bewick's wren was observed during the November 2016 peaking tide survey in the south-central bay.

### **Marsh Wren (*Cistothorus palustris*)**

The marsh wren occurs in San Diego County as both a year-round resident and winter visitor. It is confined mainly to coastal marshy habitats, more so during the breeding season. The local breeding subspecies (*C. p. clarkae*) is a species of concern in California (Unitt 2004).

Overall, six marsh wrens were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, five marsh wrens were counted. Marsh wrens were observed in the salt ponds and south bay.



### **Regulidae (Kinglets)**

The golden-crowned kinglet was not observed.

### **Ruby-Crowned Kinglet (*Regulus calendula calendula*)**

The ruby-crowned kinglet is a common winter visitor and migrant in the County, most abundant in riparian and oak woodland (Unitt 2004).

One ruby-crowned kinglet was observed during the November 2016 peaking tide survey in the north-central bay.

### **Sylviidae (Gnatcatchers)**

The blue-gray gnatcatcher was not observed during this survey effort despite its inclusion on the San Diego Bay INRMP species list and being noted in the 2009-10 surveys. The blue-gray gnatcatcher is a widespread species across San Diego, but occurs near the coast mainly in winter (Unitt 2004).

### **California Gnatcatcher (*Poliophtila californica californica*)**

The California gnatcatcher is listed as threatened under the Endangered Species Act and lives only in southern California's coastal sage scrub (Unitt 2004).



One California gnatcatcher was observed during the June 2017 shoreline ebbing tide survey in the south bay.

### **Turdidae (Thrushes)**

The hermit thrush, Swainson's thrush, mountain bluebird, and American robin were not observed.

### **Timaliidae (Babblers)**

The wren is abundant in San Diego County chaparral, but also present in sage scrub and in the understory of riparian and oak woodland (Unitt 2004). It was not recorded during these surveys, though it was in the 2006-07 surveys.

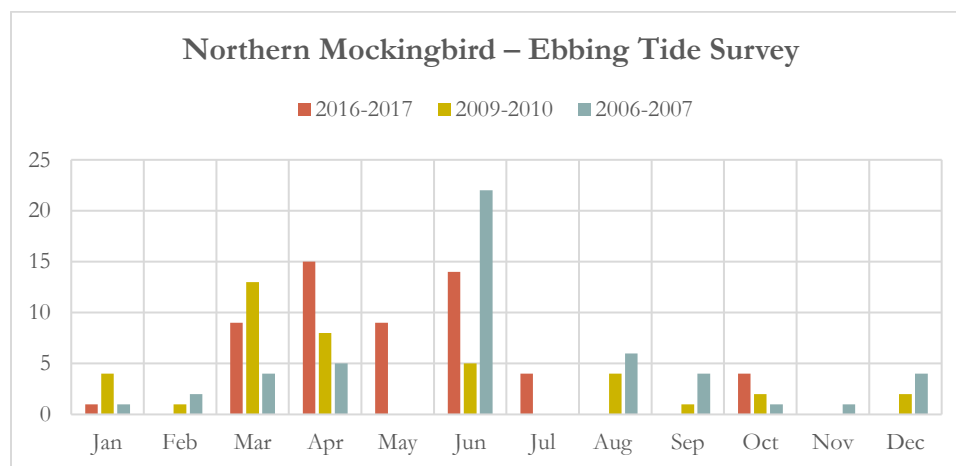
### **Mimidae (Mimic Thrushes)**

The sage thrasher and California thrasher were not observed during the 2016-17 surveys.

### **Northern Mockingbird (*Mimus polyglottos polyglottos*)**

The northern mockingbird is common year-round, occurring in urban, rural, and natural landscapes (Unitt 2004).

Overall, 77 northern mockingbirds were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 56 northern mockingbirds were counted. Northern mockingbirds were observed predominantly in were widely scattered and noted from every region.

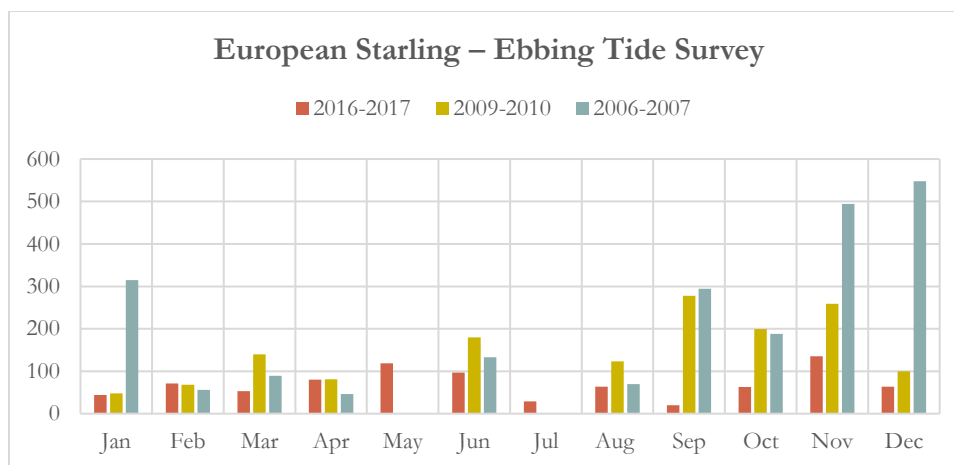


### **Sturnidae (Starlings)**

#### **European Starling (*Sturnus vulgaris vulgaris*)**

European starlings are abundant in San Diego County during both summer and winter, most abundant in agricultural and urban areas (Unitt 2004).

Overall, 1,193 European starlings were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 839 European starlings were counted. European starlings were seen in all regions of the bay and in the ocean grid.



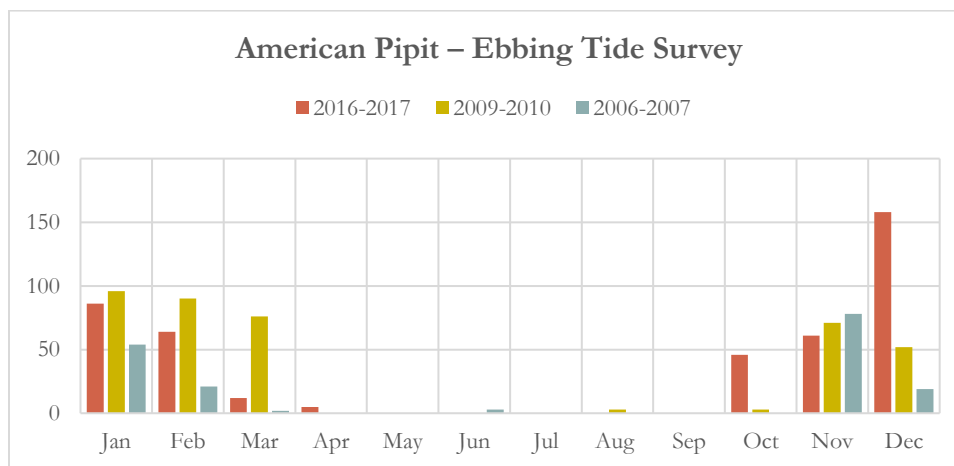
### Motacillidae (Wagtails, Pipits)

The red-throated pipit was not observed during this effort and is listed as an accidental observation in the San Diego Bay INRMP.

### American Pipit (*Anthus rubescens pacificus*)

American pipits are present in San Diego County only as a winter visitors and migrants (Unitt 2004).

Overall, 715 American pipits were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 432 American pipits were counted. Peaking tide surveys showed the most use in Grid 379 with 81 observations. American pipits were observed predominantly in the salt ponds, with smaller numbers recorded in all other regions of the bay and ocean grid.



### Bombycillidae (Waxwings)

The cedar waxwing was not observed during the 2016-17 surveys. The cedar waxwing is a winter visitor in San Diego County and its abundance varies from year to year. They are frugivores and feed on wild berries as well as berries from ornamental trees (Unitt 2004).

**Ptilonotidae (Silky-Flycatchers)**

The phainopepla is common in the desert in the fall, winter, and spring. It is common on the coastal lowlands oak and riparian woodlands and open chaparral in the spring and summer (Unitt 2004). In the vicinity of the San Diego Bay, the San Diego County Bird Atlas (Unitt 2004) only shows occurrence on Point Loma as presumed migrants. None were seen on this survey.

**Parulidae (Warblers, Redstarts, And Yellowthroats)**

The following birds were not observed during this effort: The black-throated gray warbler is rare in the winter and breeding season and sometimes common during migration through San Diego County. The palm warbler is a rare but regular visitor to the county; however, it is more common farther to the north. The Nashville warbler is most common as a spring migrant in San Diego County. The myrtle warbler, a subspecies of the yellow-rumped warbler, is an uncommon winter visitor in San Diego County, with most records being from the coastal lowland in October through May. The hermit warbler is primarily a migrant in San Diego County, particularly in the spring. The yellow-breasted chat is a locally common riparian bird, recovering in numbers since the mid-1980s. It has not been typically observed in the San Diego Bay area. MacGillivray's warbler is most likely found in spring at oases on the eastern base of the county's mountains. Lucy's warbler only colonized San Diego County in 1990; its breeding distribution is localized in the Borrego Valley, though they have been observed in the winter around San Diego Bay. Virginia's warbler is a rare vagrant to coastal southern California. Currently only two or three are reported in the county per year. Occurring most commonly in San Diego County during fall migration, the American redstart has been previously recorded during this time on Point Loma. San Diego County is at the southern end of the Wilson's warbler's breeding range, with only three or four pairs. The bird is common during spring and fall migration and is rare during the winter (Unitt 2004).

**Townsend's Warbler (*Dendroica townsendi*)**

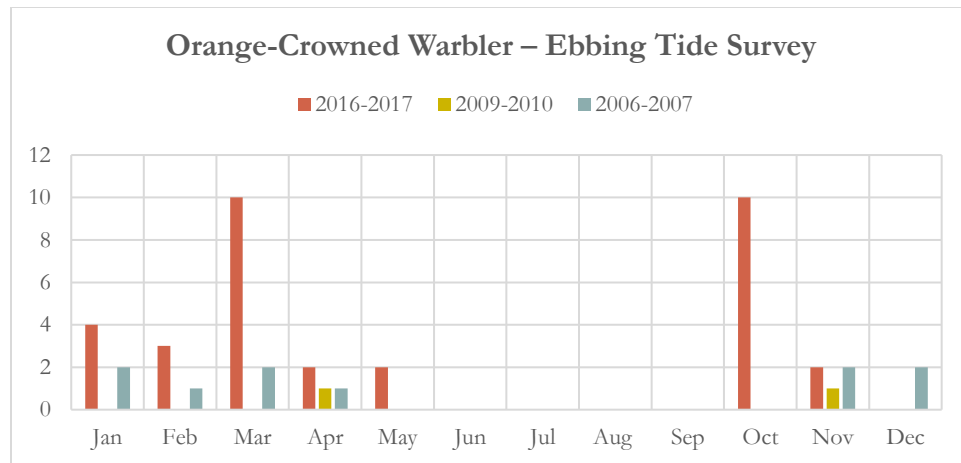
Not a breeder in San Diego County, the Townsend's warbler occurs mostly in the County as a spring migrant and rarely as a winter visitor (Unitt 2004).

Three Townsend's warblers were observed during the shoreline ebbing tide surveys in December 2016 (1) in the north-central bay and in April 2017 (2) in the south bay.

**Orange-Crowned Warbler (*Oreothlypis celata*)**

The orange-crowned warbler is fairly common year-round in San Diego County, in different habitats during its migration, breeding, and winter seasons. It is more common around San Diego Bay during the winter, consistent with this survey's results (Unitt 2004).

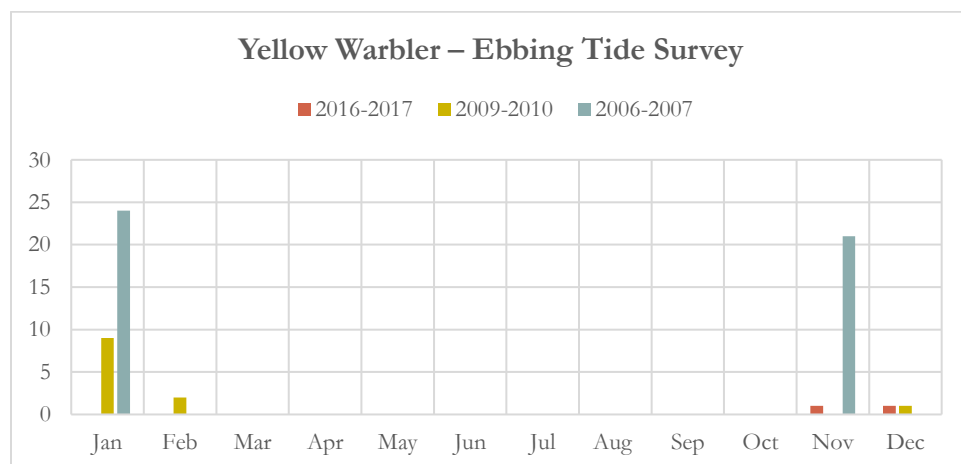
Overall, 67 orange-crowned warblers were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 33 orange-crowned warblers were counted. Orange-crowned warblers were observed predominantly in the north-central bay, with smaller numbers recorded in all other regions of the bay and the ocean grid.



### **Yellow Warbler (*Dendroica petechia*)**

The yellow warbler is a fairly common migrant and breeding season bird in San Diego County, but is somewhat rare in the winter (Unitt 2004).

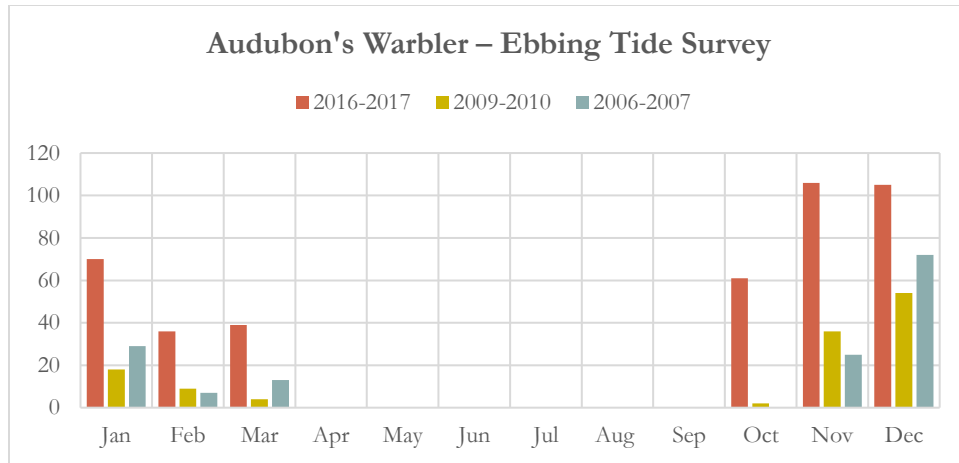
Four yellow warblers were seen during the 2016-17 surveys. Two were recorded during the shoreline ebbing tide surveys in November and December 2016 in the south bay and salt ponds, respectively. The other two were recorded during the February 2017 peaking tide surveys in the north and south bay.



### **Yellow-Rumped Warbler (Audubon's) (*Dendroica coronata auduboni*)**

One of San Diego County's most abundant winter visitors is the yellow-rumped warbler. It is also a recent breeding colonizer, confined to the County's highest mountains. The dominant subspecies in the County, and the one recorded during this survey is the *D. c. auduboni* (Unitt 2004).

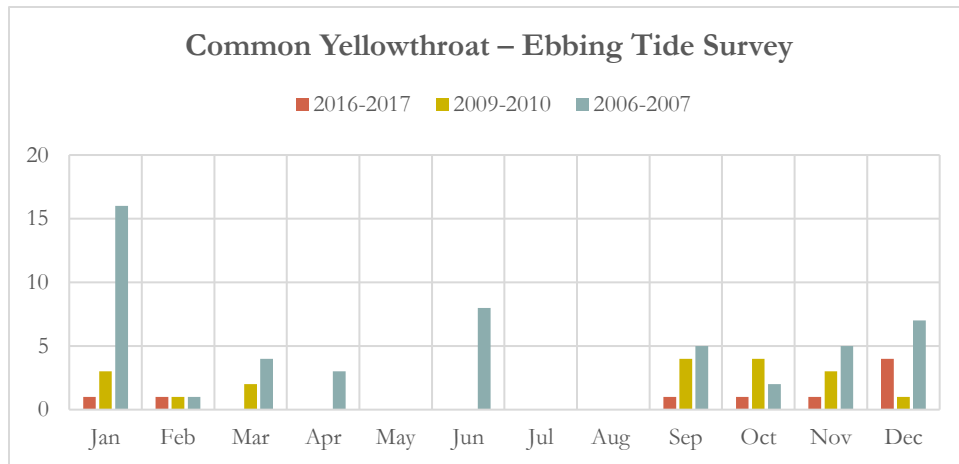
Overall, 619 Audubon's warblers were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 202 Audubon's warblers were counted. Audubon's warblers were observed predominantly in the north-central bay, with smaller numbers recorded in the south-central bay, south bay, and the ocean grid.



### **Common Yellowthroat (*Geothlypis trichas*)**

The common yellowthroat is present in the County in both the summer and winter, and is the second most common bird in the area's riparian woodland (Unitt 2004).

Overall, 20 common yellowthroats were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, nine common yellowthroats were counted. Common yellowthroats were observed in the salt ponds and south bay.



### **Thraupidae (Tanagers)**

The only bird of this family on the San Diego Bay INRMP species list is the western tanager, which was not observed during this effort. It has been observed during the winter around the bay, and it is most numerous in Balboa Park during this season (Unitt 2004).

### **Emberizidae (Sparrows, Towhees, and Buntings)**

The following birds were not observed during this effort: Spotted towhees are common in chaparral as a year-round resident in San Diego County. They are not well adapted to urbanization and are vulnerable to habitat fragmentation. The spotted towhee was seen in the 2006-07 surveys, but not in 2009-10 or 2016-17. The green-tailed towhee is rare in the winter, but has been observed during this time around San Diego Bay. The rufous-crowned sparrow is a year-round resident in San Diego



County. It inhabits coastal sage scrub and can also be found in burned chaparral and in openings in mature chaparral, they are rarely seen very far from their breeding habitat. It was seen in the 2006-07 surveys. The Nelson's sharp-tailed sparrow is a rare winter visitor in San Diego County, it is usually found in coastal salt marshes. Around San Diego Bay, Nelson's sharp-tailed sparrows were seen in the Sweetwater River estuary in 1987 and 1994. The chipping sparrow is a breeder and migrant in San Diego County. It usually breeds in open pine and oak woodlands, although a breeding colony has established itself on Point Loma around native scrubs and ornamental plantings. Brewer's sparrow is very limited breeder in San Diego County; however, it is a widespread migrant and winter visitor. Most records are from the desert areas, though it has been noted along the coast, as at Point Loma. The fox sparrow is much more common in the County as a winter visitor, as the area is marginal to the sparrow's breeding range. The swamp sparrow is a regular rare fall migrant and winter visitor in California. It inhabits freshwater marshes and riparian woodland understory; the San Diego County Bird Atlas (Unitt 2004) mentions sightings on Point Loma for fall migrants. The vesper sparrow is an uncommon winter visitor in San Diego County. It inhabits open grasslands and sparse scrub. The lark bunting is rare in California, and is primarily seen as a rare spring migrant in the desert. It is listed as an accidental observation in the San Diego Bay INRMP. The golden-crowned sparrow is a winter visitor in San Diego County where it is widespread over the coastal slopes. The dark-eyed junco is common in the conifers and oaks of San Diego County's mountains; while they are seen only as migrants and wintering birds around the bay (Unitt 2004).

#### **California Towhee (*Pipilo crissalis senicula*)**

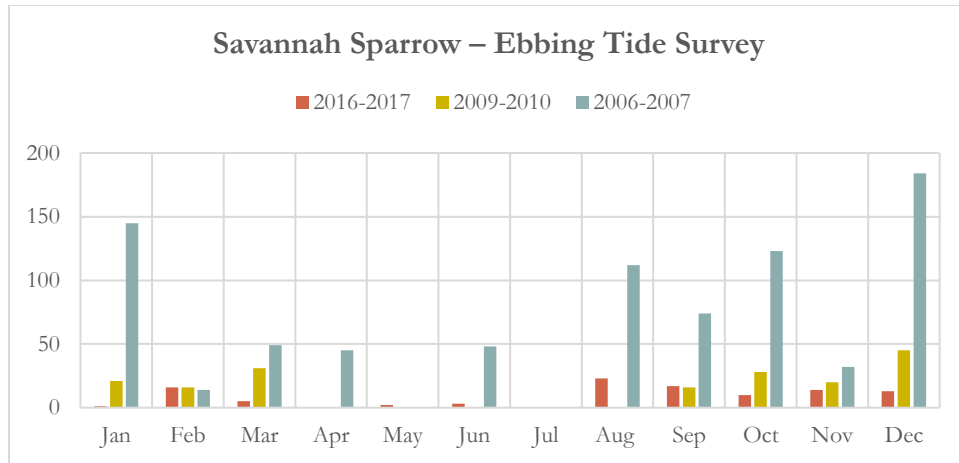
The California towhee is common in coastal sage scrub as well as in chaparral, riparian and high-desert scrub, and in the undergrowth of riparian and oak woodlands. It also adapts well to urbanized environments and is common in the County during the winter and breeding seasons, not widely varying its distribution (Unitt 2004).

Overall, 19 California towhees were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 11 California towhees were counted. California towhees were observed in the salt ponds.

#### **Savannah Sparrow (*Passerculus sandwichensis*)**

The Savannah sparrow is split into many subspecies, several of which occur in San Diego County. Three of these visiting as winter migrants from the north are not safely distinguishable from each other in the field, including *P. s. anthinus*, *P. s. nevadensis*, and *P. s. brooksi*. Another, the Belding's (*P. s. beldingi*), is a non-migratory year round resident (Unitt 2004).

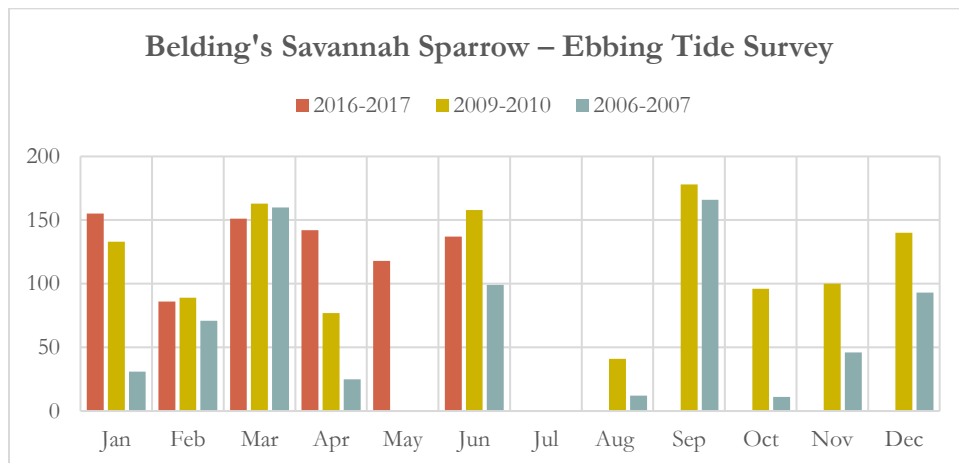
Overall, 129 Savannah sparrows were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 104 Savannah sparrows were counted. Savannah sparrows were observed in the south-central and south bay, salt ponds, and ocean grids.



### **Belding's Savannah Sparrow (*Passerculus sandwichensis beldingi*)**

Endemic to the coast of northern Baja and southern California, the Belding's Savannah sparrow is a non-migratory subspecies of the Savannah sparrow. It is primarily restricted to pickleweed dominated coastal marshes and is designated as endangered by the CDFW (Unitt 2004).

Overall, 2,791 Belding's Savannah sparrows were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 1,745 Belding's Savannah sparrows were counted. Peaking tide surveys showed the most use in Grid WCVW with 103 observations. Belding's Savannah sparrows were observed predominantly in the salt ponds and south bay, with smaller numbers recorded in the north bay and ocean grid.

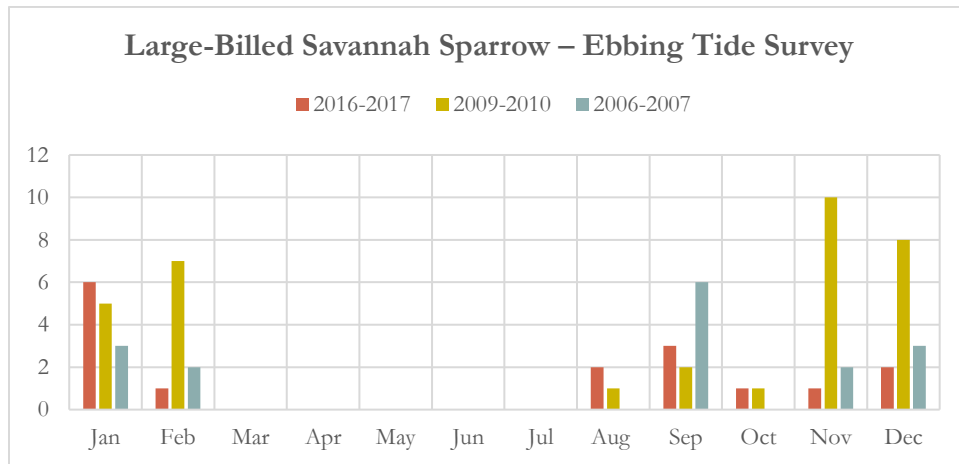


### **Large-Billed Savannah Sparrow (*Passerculus sandwichensis rostratus*)**

The large-billed Savannah sparrow is a subspecies of Savannah sparrow whose post breeding individuals reach San Diego County from northeastern Baja California and northwestern Sonora (Wheelwright and Rising 2008). This subspecies differs from the others in its large size, body streaking, and thick bill (Unitt 2004).

Overall, 23 large-billed Savannah sparrows were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 16 large-billed Savannah sparrows were counted. Large-billed

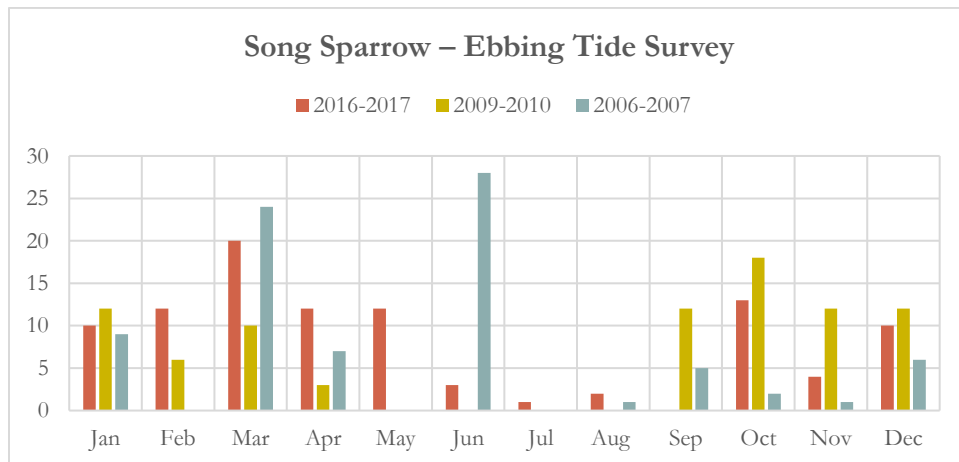
Savannah sparrows were observed predominantly in the south bay, with smaller numbers recorded in the salt ponds.



### **Song Sparrow (*Melospiza melodia*)**

A year-round resident and the most abundant bird in San Diego County riparian woodlands, the song sparrow makes limited use of heavily urbanized areas (Unitt 2004).

Overall, 143 song sparrows were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 99 song sparrows were counted. Song sparrows were observed predominantly in all regions of the bay and the ocean grid.



### **Lincoln's Sparrow (*Melospiza lincolni*)**

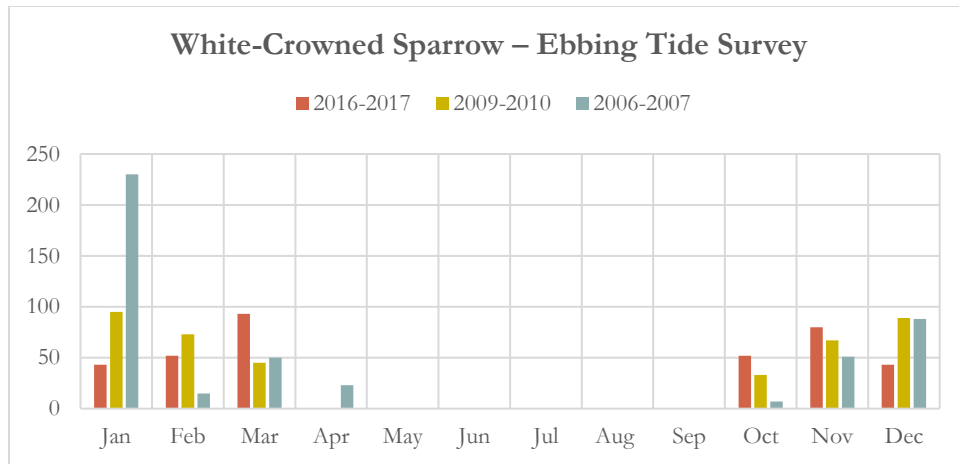
With only one summer record for San Diego County, Lincoln's sparrow is a migrant and winter visitor only (Unitt 2004).

Five Lincoln's sparrows were observed during the 2016-17 surveys. Two sparrows were recorded during the November 2016 shoreline ebbing tide surveys in the south bay and salt ponds. Three sparrows were recorded during the November 2016 peaking tide surveys, also in the salt ponds and south bay.

### **White-Crowned Sparrow (*Zonotrichia leucophrys*)**

The white-crowned sparrow is common in San Diego County during the winter. It normally arrives in September and departs April to May (Unitt 2004).

Overall, 471 white-crowned sparrows were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 359 white-crowned sparrows were counted. White-crowned sparrows were observed predominantly in the salt ponds and south-central bay, with smaller numbers recorded in the north-central and south bay.



### **Cardinalidae (Cardinals and Allies)**

No individuals of the three species in this family from the Bay INRMP were seen in the 2016-17 surveys, despite the presence of all three in the 2006-07 surveys. The black-headed grosbeak is common in the summer but rare in the winter in San Diego County. Breeding has been confirmed around San Diego Bay, on Coronado Island (Unitt 2004). Rare in the winter but locally common in the summer, the blue grosbeak prefers riparian woodland and scrub. They are not as common around San Diego Bay as around other parts of the County (Unitt 2004). The lazuli bunting is absent from San Diego County in the winter, but is common during breeding and migration. Unitt (2004) shows only migrants around San Diego Bay.

### **Icteridae (Blackbirds, Orioles, and Meadowlarks)**

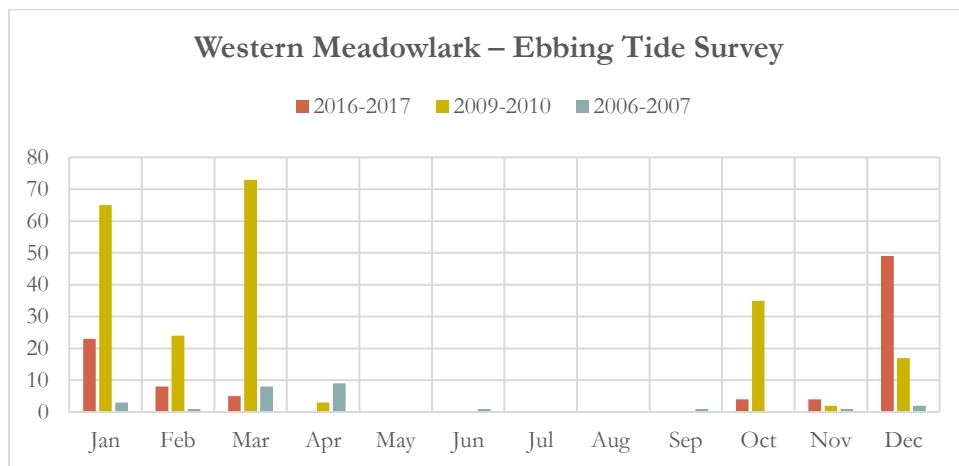
The red-winged blackbird is a locally common permanent resident in San Diego County. It mainly inhabits freshwater marshes, but can also use creeks, ponds, and mustard stands (Unitt 2004). The tricolored blackbird is a year-round resident in San Diego County. Twenty to thirty breeding colonies are known around the county, none around San Diego Bay. The San Diego County Bird Atlas (Unitt 2004) shows records of birds in the north-central bay and south of the bay in the winter. This species is a widespread breeding bird throughout the woods of San Diego, though it is absent as a breeder on Coronado and Point Loma. It is also a winter visitor to the San Diego Bay area. The great-tailed grackle is a locally common resident in San Diego County, after invading and increasing in number since the mid-1970s. They nest in wetland or marsh habitat, but have been spotted only as migrants or in the winter around San Diego Bay (Unitt 2004). The brown-headed cowbird is migratory, but found in San Diego County year-round. They are brood parasites, laying their eggs in small songbird nests (Unitt 2004). Both of these species were noted in 2006-07, but not in 2009-10.

The Baltimore oriole is a rare migrant and winter visitor in San Diego County. It is mostly associated with ornamental trees (Unitt 2004). The San Diego County Bird Atlas (Unitt 2004) mentions wintering birds on Point Loma and Coronado.

### **Western Meadowlark (*Sturnella neglecta*)**

Grasslands are the most common western meadowlark habitat, but they have been observed in coastal marshes, open sage scrub and other habitats, including those around San Diego Bay. The meadowlark is common as a breeding resident, but even more so in the winter (Unitt 2004).

Overall, 130 western meadowlarks were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 93 western meadowlarks were counted. Western meadowlarks were observed predominantly in the salt ponds, except for four recorded in the south bay.

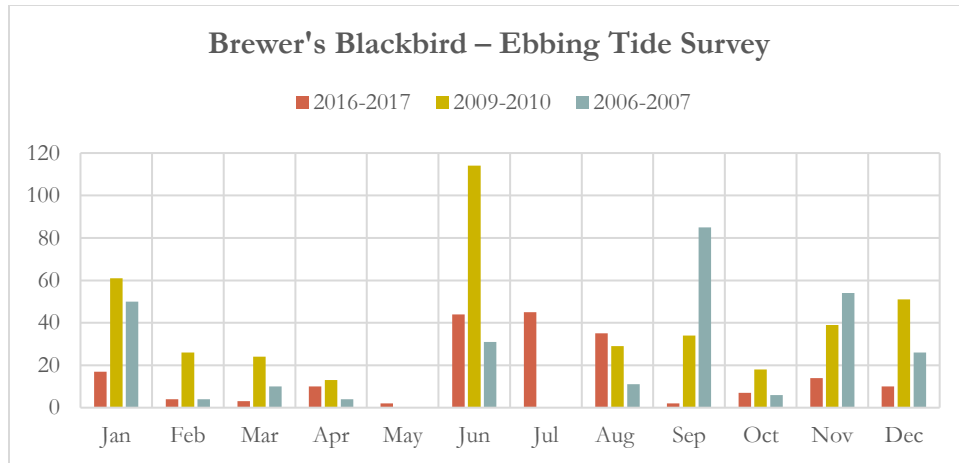


### **Brewer's Blackbird (*Euphagus cyanocephalus*)**

A common, but perhaps declining resident in San Diego County, the Brewer's blackbird exists in developed as well as undeveloped areas year-round (Unitt 2004).

Overall, 236 Brewer's blackbirds were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 193 Brewer's blackbirds were counted. Brewer's blackbirds were observed predominantly in the south bay, with smaller numbers records in all other regions except the south-central bay.





### **Yellow-Headed Blackbird (*Xanthocephalus xanthocephalus*)**

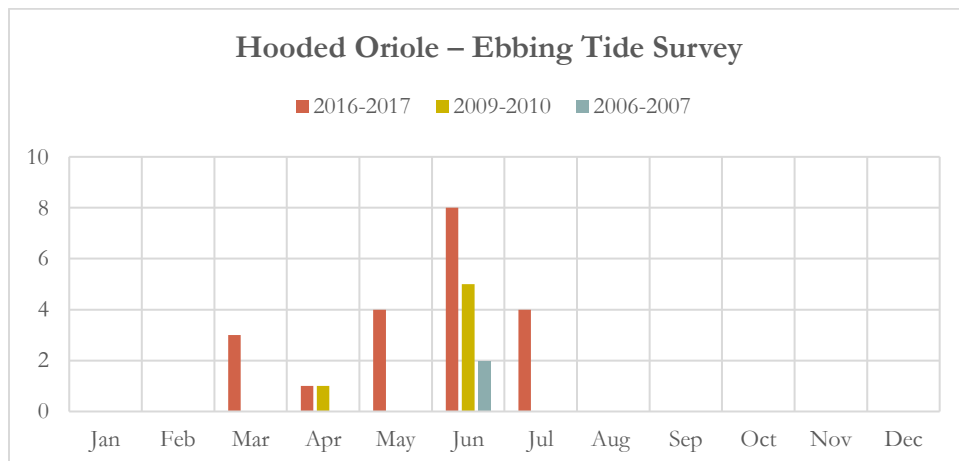
The yellow-headed blackbird is a rare migrant and winter visitor in San Diego County. Only one nesting colony was confirmed during the Atlas survey years, in the southeast county. In the San Diego Bay area, only one bird was sighted in the winter in the Tijuana River valley (Unitt 2004).

One yellow-headed black bird was recorded during the September 2016 shoreline ebbing tide surveys in the salt ponds.

### **Hooded Oriole (*Icterus cucullatus nelsoni*)**

The hooded oriole is very common during the breeding season but rare in the winter in San Diego County. It is well adapted to the urban landscape, nesting in palm and eucalyptus trees (Unitt 2004).

Overall, 37 hooded orioles were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 20 hooded orioles were counted. Hooded orioles were observed mainly in the south bay, with smaller numbers recorded in all other regions except for the ocean grid.



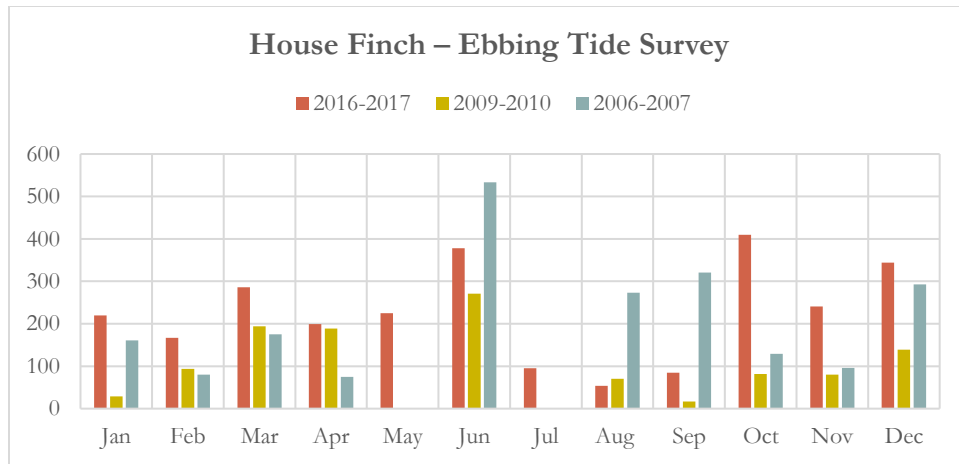
### **Fringillidae (Finches)**

Lawrence's goldfinch, American goldfinch, and the pine siskin were not observed during this survey effort.

### **House Finch (*Carpodacus mexicanus frontalis*)**

Unitt (2004) describes the house finch as the most abundant bird in San Diego County. It occupies all terrestrial habitats, adapting well to urbanized areas.

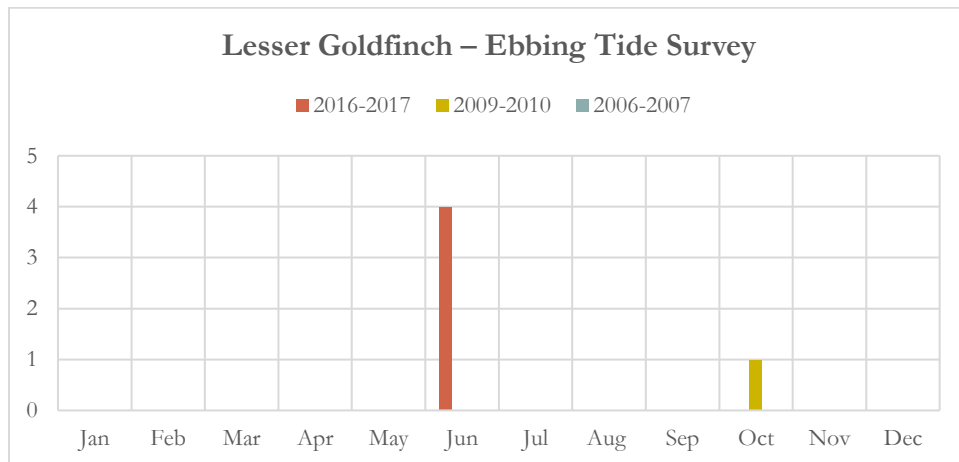
Overall, 3,839 house finches were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 2,691 house finches were counted. Peaking tide surveys showed the most use in Grid C9 with 10 observations. House finches were observed predominantly in the ocean grid, with smaller numbers recorded in all regions of the bay.



### **Lesser Goldfinch (*Spinus psaltria hesperophilus*)**

The lesser goldfinch is very common in San Diego County; it is a year-round resident utilizing a wide variety of habitats. Their winter habitat does not differ much from their breeding one; they are not as common around the bay as they are in other parts of the County (Unitt 2004).

Overall, 13 lesser goldfinches were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, four lesser goldfinches were counted. Lesser goldfinches were observed in the north-central, south-central, and south bay.



## Passeridae (Old World Sparrow)

### House Sparrow (*Passer domesticus domesticus*)

Introduced to the United States from Eurasia in the 19th century, the house sparrow is common to developed habitats (Unitt 2004).

Overall, 1,253 house sparrows were recorded during the 2016-17 surveys. During the shoreline ebbing tide surveys, 871 house sparrows were counted. Peaking tide surveys showed the most use in Grid 237 with 51 observations. House sparrows were observed predominantly in the north-central bay, with smaller numbers recorded in all other regions of the bay and the ocean grid.

