Marina Del Rey Annual Nesting Bird Survey

2022 Nesting Bird Survey Report

prepared for

County of Los Angeles Department of Beaches and Harbors
Porsche White
13837 Fiji Way
Marina del Rey, California 90292
Via email: PWhite@bh.lacounty.gov

prepared with the assistance of

Rincon Consultants, Inc.
250 East 1st Street, Suite 1400
Los Angeles, California 90012

July 2022

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Environmental Scientists | Planners | Engineers
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1 Introduction

This report presents the results of the 2022 nesting bird surveys conducted for the Los Angeles County Department of Beaches and Harbors (DBH) in accordance with the annual nesting bird survey requirements of the 2012 Marina del Rey Local Coastal Program (LCP). Rincon, Inc. (Rincon) conducted four surveys during the nesting bird season (January 1 to September 30) to determine the presence/absence of nesting colonial waterbirds and raptors that may nest in the trees within the unincorporated area of Marina del Rey. The nest surveys are an annual requirement in accordance with Tree Management Policies No. 23 and 34 from the Marina del Rey Land Use Plan (LUP; County of Los Angeles Department of Regional Planning 2012) and have been conducted in 2009, 2011, 2012, and 2014-2022. These surveys are referenced to monitor trends in nesting behavior, recommend mitigation measures regarding new plantings or nest removals, and provide information on potential public health, safety, and access concerns. This report provides colonial waterbird and raptor species background information, 2022 nest survey methodology and results, a discussion of colony trends, and recommendations on reducing potential conflicts between humans and birds.

1.1 Project Location and Existing Conditions

Marina del Rey is an unincorporated community in the southwestern portion of Los Angeles County, southeast of the incorporated neighborhood of Venice and north of the incorporated neighborhood of Playa del Rey. The community is surrounded by development to the north and west, and the Ballona Wetlands Ecological Reserve to the east and south (Figure 1). The 804-acre community includes 401 acres of developed land and 403 acres of water, of which 292 acres of land and 148 acres of water are leased to private entities. Numerous ornamental trees and shrubs such as coast coral tree (*Erythrina caffra*), Monterey pine (*Pinus radiata*), stone pine (*Pinus pinea*), Tasmanian blue gum (blue gum) (*Eucalyptus globulus*), rubber fig (*Ficus elastica*), rusty fig (*Ficus rubiginosa*), common olive (*Olia europaea)*, broad-leaved paperbark (*Melaleuca quinquenervia*), and Mexican fan palm (*Washingtonia robusta*) border roadways and pedestrian paths in Marina del Rey. Several areas within and adjacent to Marina del Rey have been restored including Oxford Retention Basin (10.27 acres of open water/marsh habitat), Wetland Park (1.46 acres of tidally influenced saltmarsh habitat at Parcel 9), and the margin of Ballona Wetlands Ecological Reserve Area A.

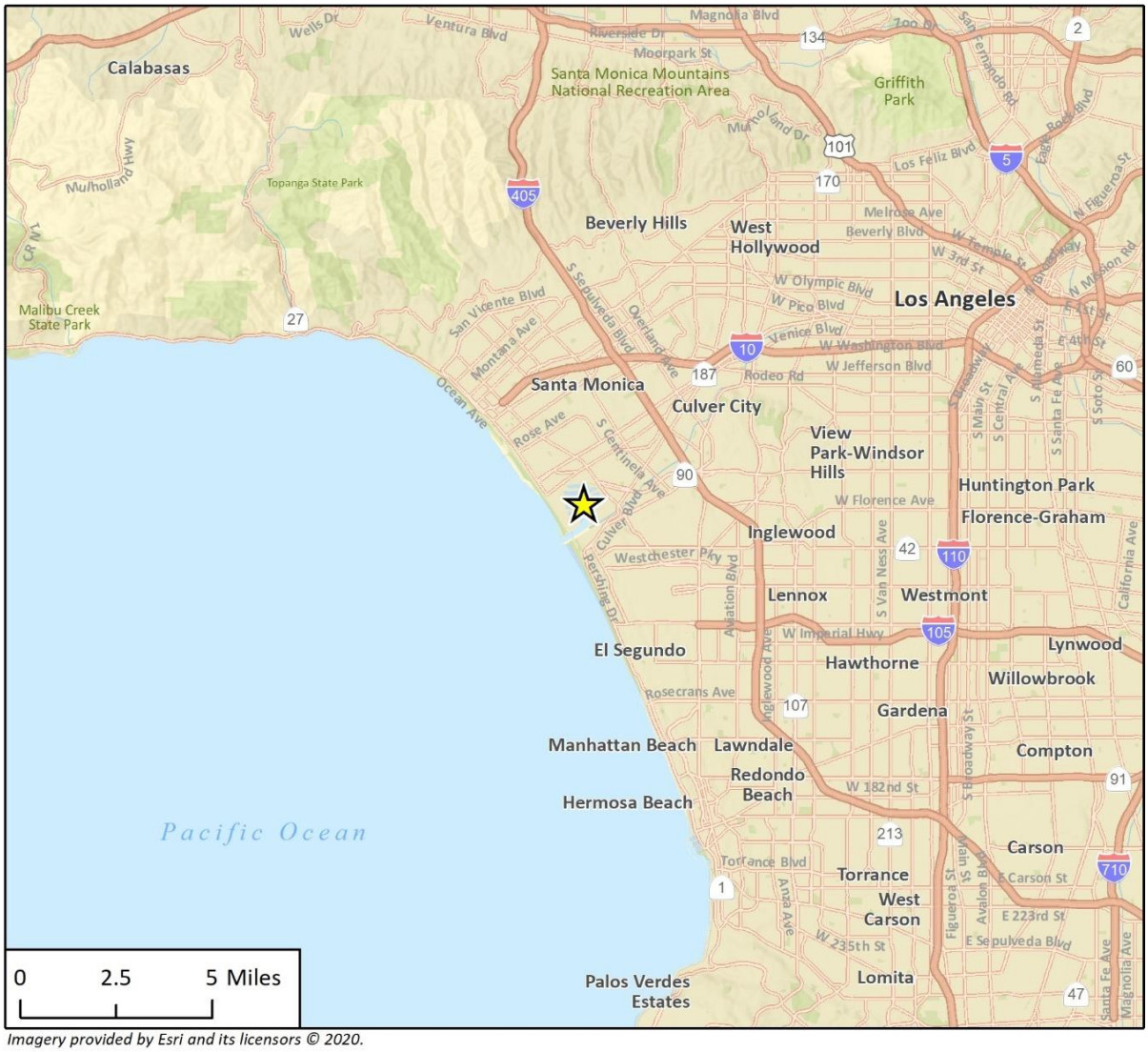
Nesting Bird Survey Area

The nesting bird survey area covered the unincorporated community of Marina del Rey. The survey area is further separated into ten distinct nesting areas based on historical nesting data and to maintain consistency with previous years' reports (Figure 2). Each survey area is briefly described below including general location, land use, and nesting observations from prior surveys.

Admiralty Way

The Admiralty Way nesting area is the northern-most area, located on the northern boundary of Marina del Rey. Admiralty Way is a heavily traveled, four-lane road bordered by Yvonne B. Burke Park and residences to the north. The 10.7-acre Oxford Basin is located on the northwest corner of Admiralty Way.

Figure 1 Regional Location



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Project Location

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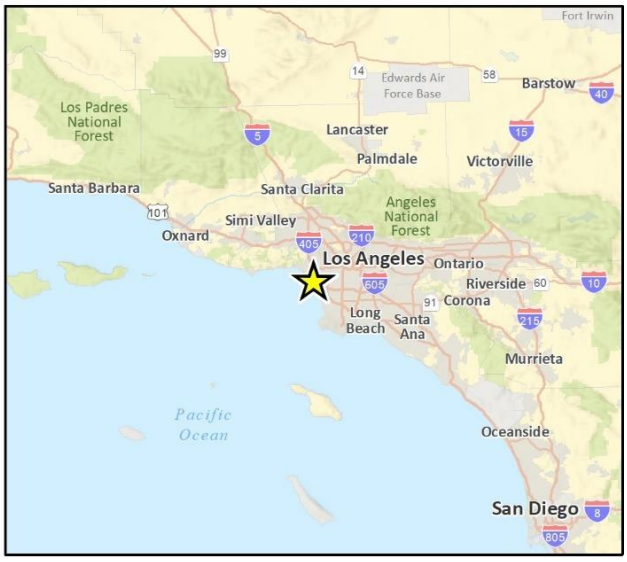

Figure 2 Project Location and Nesting Areas

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Fig 2 Project Location

The southern side of Admiralty Way consists of residential areas, a fire station, and commercial area. The harbor is directly south of this area. A black-crowned night-heron (*Nycticorax nycticorax,* BCNH) colony has previously been documented at this location, and Peregrine falcons (*Falco peregrinus*, PEFA) have also been documented nesting in this area. No other nesting waterbird colonies have been documented within the Admiralty Way area since 2016.

Bali Way

Bali Way nesting area is located southwest of Admiralty Way, one street east of Mindanao Way, and provides access to the Marina del Rey Hotel and Harbor Basins F and G, on the east side of the Marina. Suitable nesting/roosting trees line Bali Way; however, no colonial waterbird nesting has been documented in this area since annual surveys began in 2009.

Bora Bora Way

The Bora Bora Way nesting area is south of Tahiti Way along Via Marina. This area is primarily residential with harbor waters located to the north and east. Great blue heron (*Ardea herodias*, GBHE) nesting was documented in the eastern portion of Bora Bora Way last year.

Fiji Way

Fiji Way is located south of Burton Chace Park, across the main channel from Bora Bora Way and Mariner's Village. This area consists of a mix of commercial and residential uses, with several large parking lots. Directly south and east of Fiji Way is Ballona Creek and the Ballona Wetlands Ecological Preserve, a 600-acre conservation site. One active GBHE nest was observed in 2021 on a pine tree. Prior to this 2021 sighting, no active colonial waterbird nests have been documented since 2012.

Mariner's Village

The Mariner's Village nesting area is a primarily residential area with some commercial uses interspersed between apartment complexes. Harbor waters are located to the east and south. Historically, GBHE and DCCO nest colonies have been documented at this location since annual surveys began in 2009.

Marquesas Way

The Marquesas Way nesting area is south of Panay Way. It is primarily a residential area, with several apartment complexes and harbor waters to the north, east, and south. Snowy egret (*Egretta thula*, SNEG) and BCNH nest colonies have been observed here each year since annual surveys began in 2009.

Mindanao Way (Burton Chace Park)

The Burton Chace Park nesting area is located east from Marquesas Way across the main channel, The area contains a 10-acre public park that frequently hosts fairs, festivals, and concerts for the community. Harbor waters are located to the north, south and west of the park. DCCO and BCNH nesting colonies were documented previously in this area in 2011, and 2017 through 2021. Cooper's hawk (*Accipiter cooperii,* COHA) nests were documented in 2018 and 2019.

Palawan Way

Palawan Way nesting area is south of Admiralty Way and is located along the access to Wayfarer Apartments and Basins D and E. Suitable nesting/roosting trees line Palawan Way and are incorporated into the Wayfarer Apartments landscape. No historic nesting by colonial waterbirds has been documented in this area.

Panay Way

The Panay Way nesting area is south of the Palawan Way nesting area and includes trees interspersed throughout the residential and commercial areas, including the parking areas for the Marina. There is a public beach north of this area and harbor waters to the north, east, and south. No nesting waterbird colonies have been documented within the Panay Way area.

Tahiti Way

Tahiti Way nesting area is primarily residential and consists of trees along the access to numerous residential complexes and Basins A and B. The 1.46-acre Wetland Park is located on the northeast corner of Tahiti Way and Via Marina. The palm trees along Tahiti Way could be suitable nesting/roosting trees for GBHE, however most of the trees are along the far north and south sides of the street completely exposed to prevailing winds. Nesting by colonial waterbirds last occurred in this area in 2018.

General Observations

Overall, the survey area conditions were similar as to previously documented, but with increased human activity compared to 2021. Observations of pedestrian and vehicle traffic were considerably higher in 2022 while colonial waterbird nesting appeared to start earlier than prior years, as also seen in the 2021 surveys. Minor construction activities including sidewalk maintenance and emergency tree trimming occurred within Burton Chace Park during the 2022 surveys. The park was cleared of most equipment by the July 7, 2022, survey.

1.2 Local Jurisdiction

The Marina del Rey Land Use Plan (LUP) is a component of the Marina del Rey Local Coastal Program (LCP), which was adopted in 1996, and amended in 2012. The LUP guides development in the 804-acre County-owned marina. The LUP was developed to address future land use, new access, recreation and resource protection areas, and improvement of existing facilities. The implementation program for the LUP is the Marina del Rey Specific Plan, which is contained in County Code Title 22 (Planning and Zoning Code). According to the LUP, despite the area being completely urbanized and man-made, colonial waterbirds and their nests exist within the bounds of Marina del Rey which require policy protection as coastal resources per Coastal Act sections 30230, 30231, 30233, and 30250. This protection is also intended to be consistent with the California Environmental Quality Act. Marina del Rey is also bordered by several Environmentally Sensitive Habitat Areas (ESHA) including the Ballona Wetlands, Ballona Lagoon, and the California least tern (*Sterna antillarum browni*, CLTE) roosting area on Venice Beach. As such, Tree Management Policies 23 and 34 from the LUP of the LCP require an annual survey of breeding and nesting for federal and state-listed species, California Species of Special Concern, and waterbirds on all properties (including private leasehold properties) within the unincorporated area of Marina del Rey that are covered by the LCP.

2 Methodology

2.1 Literature Review

A literature review was conducted that included information on the target species as defined by DBH. The LUP defines colonial waterbirds as the following five species: double-crested cormorant, great blue heron, great egret (*Ardea alba*, GREG), snowy egret, and black-crowned night-heron. These species have likely been nesting in Marina del Rey since the mid-1990s (Hamilton Biological 2010).

Annual nesting reports for the survey area from previous years were also reviewed:

- Final Report on Nesting Waterbirds and Raptors, Marina Del Rey, Los Angeles County, CA (Hamilton Biological 2014)
- Final Report on Nesting Waterbirds and Raptors, Marina Del Rey, Los Angeles County, CA (Hamilton Biological 2015)
- Final 2016 Report on Nesting Colonial Waterbird and Raptor Survey Results for Marina del Rey, Los Angeles County, California (Rincon 2016)
- Final 2017 Report on Nesting Colonial Waterbird and Raptor Survey Results for Marina del Rey, Los Angeles County, California (Rincon 2017)
- Final Nesting Bird Survey Report Marina del Rey, Los Angeles County, California (Environmental Intelligence 2018)
- Final Nesting Bird Survey Report Marina del Rey, Los Angeles County, California (Environmental Intelligence 2019).
- Final 2020 Nesting Bird Survey Report Marina del Rey, Los Angeles County, California, Los Angeles County, California (Rincon 2020)
- Final 2021 Nesting Bird Survey Report Marina del Rey, Los Angeles County, California, Los Angeles County, California (Rincon 2021)

2.2 Nesting Surveys

The nesting bird surveys for colonial waterbirds were conducted by Rincon Biologist Benson Truong and Gayle McDermott between April 5 and July 7, 2022. Table 1 provides specific details on the timing of and environmental conditions during the surveys.

Table 1 Survey Details

Survey Date	Time	Observers	Weather
April 05, 2022	0700-1530	Benson Truong	54-67°F, 0-10 mph, 0% cloud cover AM – 0% cloud cover PM
May 03, 2022	0700-1430	Benson Truong	60-66°F, 0-5 mph, 40% cloud cover AM – 0% cloud cover PM
June 15, 2022	0900-1400	Gayle McDermott	70-78°F, 3-5 mph, 0% cloud cover AM – 0% cloud cover PM
July 07, 2022	0800-1430	Gayle McDermott	72-79°F, 0-5 mph, 0% cloud cover AM – 0% cloud cover PM

The nesting survey area included all 10 nesting areas identified in Figure 2, including the entire Survey Boundary as shown. The biologists surveyed for both active and inactive colonial waterbird

nests in accordance with the requirements outlined in Policies 23 and 34 in the Marina Del Rey LCP. All suitable and historic nesting sites in Marina del Rey were closely examined. The biologist made observations from the ground, surveying for existing and remnant nest structures, whitewash, birds exhibiting breeding/nesting behavior (i.e., courtship displays, copulation, vegetation or food carries, and territorial displays), and the presence of fledglings. Where nests or young were suspected, close physical inspection of the tree was conducted to confirm presence or absence of nests or birds. Binoculars (8x35) were used to aid in the identification of birds and nests. Inaccessible areas (i.e., fenced construction zones and private properties) were also surveyed from the nearest accessible vantage point with the aid of binoculars. The locations of all trees containing waterbird nests were recorded using a Samsung Tablet Geographic Information System (GIS) tracker and Collector application.

Nests were identified as "active" based on observations of at least one adult constructing or attending the nest, including incubation, brooding, and nest maintenance. Nests with at least one offspring were also considered "active", as were nests that appeared to be recently constructed (new nesting material and recent whitewash present on or under the nest) with an adult bird perching nearby. The survey methods documented in the 2009, 2011, 2012, and 2014 – 2021 reports for determining "active" or "likely active" nests were referenced to compare the previously documented nesting trends from 2009 onward. "Roost" trees are those that did not contain nest structures but were observed with a significant amount of white-wash underneath and/or a colonial waterbird was observed sitting on a branch.

Where possible, waterbird nests observed during the surveys were identified by avian species. Smaller waterbird colonial nests were presumed to belong to BCNH and/or SNEG if the bird was not directly observed, and larger waterbird colonial nests were presumed to belong to GBHE or GREG. Other indicators that waterbird nesting was occurring on these unoccupied nest structures include feather and guano deposits, other avian activity, and/or presence of broken eggs or dead fledglings. Incidental and non-waterbird nests were also documented during the surveys per Los Angeles County DBH request. Some nests were unable to be determined down to species due to inactiveness, degradation, and isolation from other colonial nests. Unspecified small nests were classified as unknown passerine while unspecified large nests were classified as unknown corvid nests. Nest counts were compared with those from similar waterbird nesting surveys conducted at Marina del Rey, including: 2009 (Hamilton Biological 2010), 2014 (Hamilton Biological 2014), 2015 (Hamilton Biological 2015), 2016 (Rincon 2016), 2017 (Rincon 2017), 2018 (Environmental Intelligence 2018), 2019 (Environmental Intelligence 2019), 2020 (Rincon 2020), and 2021 (Rincon 2021). Birds are referred to by their four-letter species acronym throughout this report as described in Table 2 below.

Table 2 Species Acronyms

Species Name	Acronym
black-crowned night heron	BCNH
snowy egret	SNEG
great blue heron	GBHE
great egret	GREG
double-crested cormorant	DCCO
American crow	AMCR
song sparrow	SOSP

Species Name	Acronym
dark-eyed junco	DEJU
Cooper's hawk	COHA
peregrine falcon	PAFA
red-tailed hawk	RTHA
small colonial waterbird	SNEG/BCNH
large colonial waterbird	GBHE/GREG

3 Survey Results

3.1 Results

During the 2022 breeding season, 133 active colonial waterbird and 48 incidental passerine and corvid species nests were detected. The following species were observed: BCNH, SNEG, DCCO, and GBHE, including several small unknown colonial waterbird nests (Table 3). The 133 active nests were in 29 trees within four nesting areas: Bora Bora Way (one tree), Marquesas Way (18 trees), Mariner's Village (eight trees), and Mindanao Way (Burton Chace Park) (two trees) (Table 3). No active nests were observed in the Admiralty Way, Bali Way, Fiji Way, Palawan Way, Panay Way, or Tahiti Way nesting areas in 2022. No nesting GREG were observed during the 2022 surveys. Additionally, several non-colonial waterbird nests were observed as depicted on Figure 3. As shown, one COHA nest was observed along the parking lot west of Mariner's Village and five American crow (*Corvus brachyrhynchos*, AMCR) nests were observed, four within Mariner's Village and one along Bora Bora Way. An additional 41 unknown passerine nests and seven unknown corvid nests were observed within the survey area. See Appendix A for a list of all avian species observed through all surveys, Appendix B for nest photos, and Appendix C for tree numbers, locations, and descriptions.

Table 3 Active Colonial Waterbird Nests in 2022

Location	GBHE	BCNH	SNEG	DCCO	Large Unknown	Small Unknown	Total
Bora Bora Way	1	0	0	0	0	0	1
Mariner's Village	7	3	0	18	0	0	28
Marquesas Way	0	38	21	0	0	32	93
Mindanao Way (Burton Chace Park)	0	0	0	11	0	0	11
Total	**8**	**41**	**21**	**29**	**0**	**32**	**133**

Bora Bora Way

One active GBHE nest was observed in the Bora Bora Way nesting area (Figure 4). The GBHE nest was in a pine tree at the eastern end of Bora Bora Way. In 2021, this pine tree had one active BCNH nest along with two adjacent neighboring roosting trees, one pine and one fig (Figure 3). The last active GBHE nest was observed in 2016 on a pine tree and was approximately 180 ft southeast of the GBHE nest observed this year. An active AMCR nest was also observed between apartment buildings during the July survey.

Mariner's Village

A total of 28 active nests were detected in the Mariner's Village nesting area in 2022 (Figure 5). Of these 28 nests, seven were confirmed to be GBHE nests, three were confirmed to be BCNH nests, and 18 were confirmed to be DCCO nests. The seven confirmed GBHE nests were located within three different trees: two pines and one blue gum. The 18 confirmed DCCO nests were in two different blue gum trees, and the BCNH nests were observed within two different trees: one pine and one blue gum. A total of four active AMCR nest was also observed on the northeastern side of Mariner's Village throughout the 2022 survey.

Marquesas Way

A total of 93 active waterbird nests were observed in the Marquesas Way nesting area (Figure 6). Most of the waterbird nests were in trees along the road median toward the eastern end of Marquesas Way. Several nests were also in an adjacent private property. The biologist determined that 38 of these nests belonged to BCNH,21 belonged to SNEG, and 32 nests were undetermined, but presumed to have been used by either BCNH or SNEG. Most nests were in broad-leaved paperbark, while twelve nest were in rubber fig trees, three nests were in pine trees, and two nest were in common olive trees.

Mindanao Way (Burton Chace Park)

Ten DCCO nests were observed in a single gum tree on the east side of Burton Chace Park, northeast of the boathouse building at 13640 Mindanao Way (Figure 7). Construction within the northwestern parking lot and adjacent Santa Monica Windjammers Yacht Club during the 2020 surveys was concluded with all the fencing removed. Several large inactive corvid and small inactive passerine nests were observed throughout the park. An active AMCR nest withing a sycamore tree identified in 2021 is no longer active this year.

Figure 3 Incidental Nest Locations and Waterbird Roosts

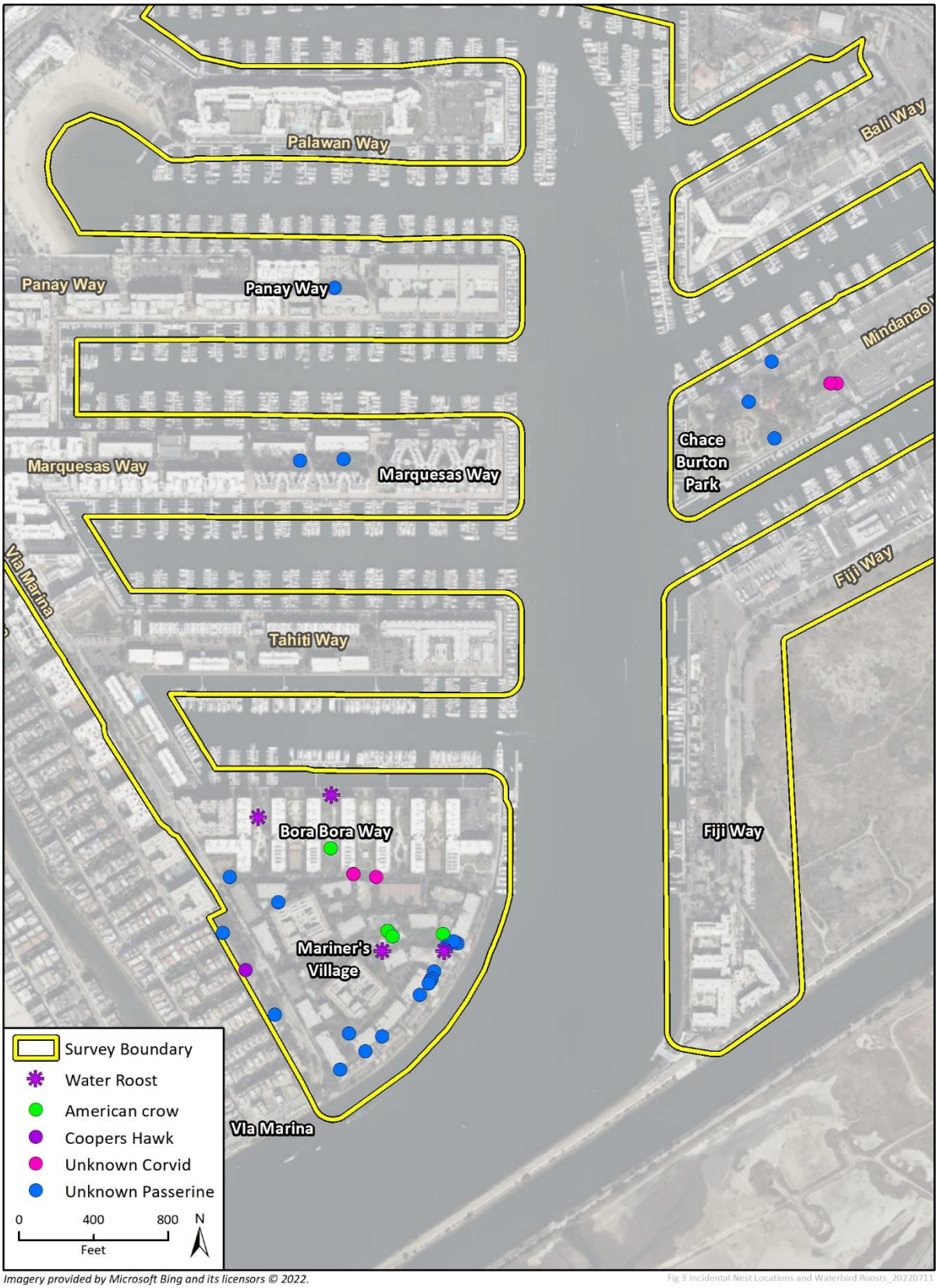

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Fig 3 Incidental Nest Locations and Waterbird Roosts_20220711

Figure 4 Bora Bora Way Nesting Area

Figure 5 Mariner's Village Nesting Area

Figure 6 Marquesas Way Nesting Area

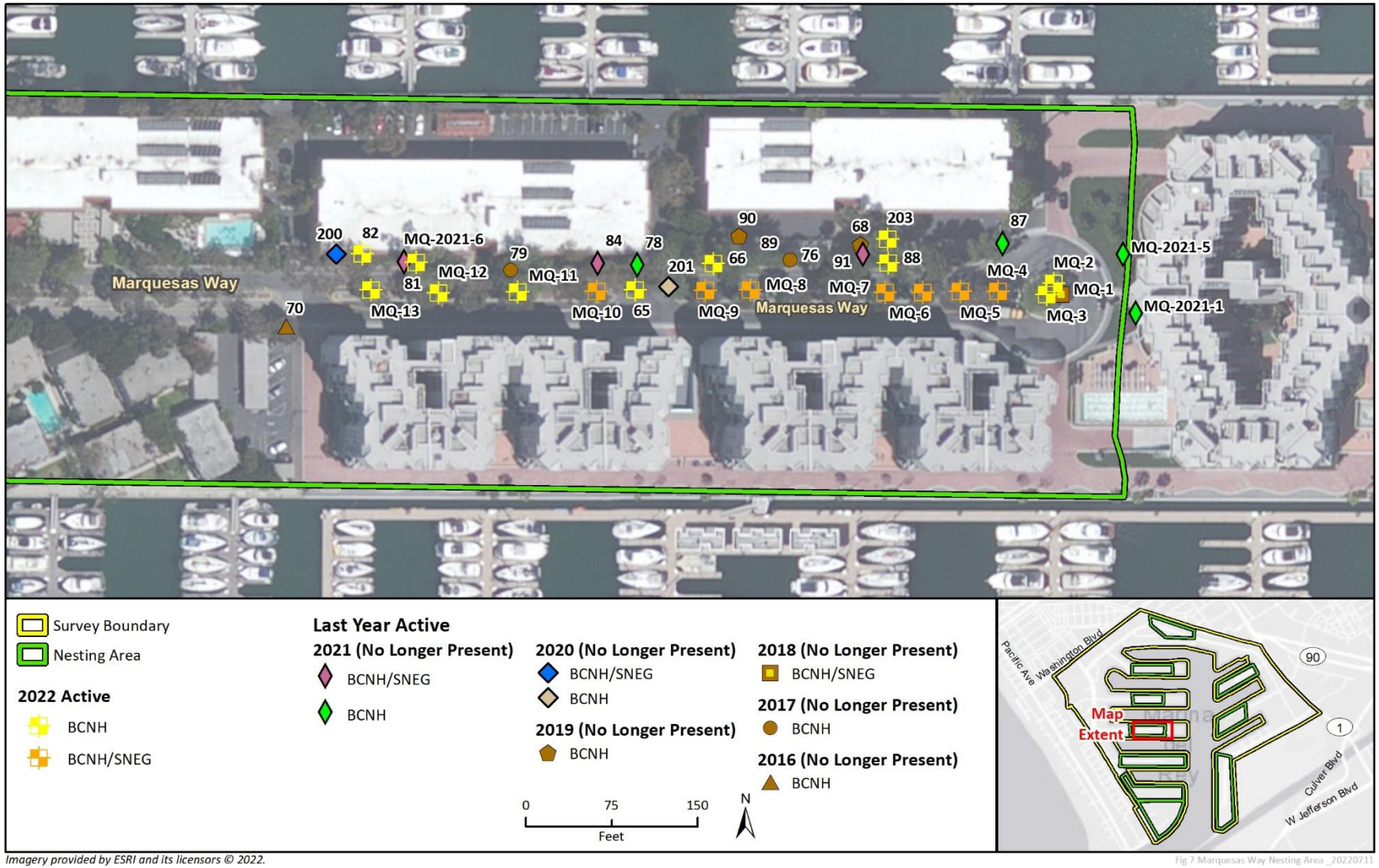

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Fig 7 Marquesas Way Nesting Area _20220711

Figure 7 Mindanao Way (Burton Chace Park) Nesting Area

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Fig 8 Mindanao Way (Burton Chace Park) Nesting Area_20220711

Figure 8 Panay Way Nesting Area

4 Conclusions

Similar to previous years, nesting waterbird colonies were concentrated within three nesting areas during the 2022 nesting season: Marquesas Way, Mariners Village, and Mindanao Way (Burton Chace Park). However, one waterbird nest was also recorded at Bora Bora Way. Avian activity during all four surveys was lower compared to the 2021 nesting season as the number of active nests for all colonial waterbird species decreased from 176 in 2021 to 133 in 2022. Like the 2021 surveys, nesting activity appeared to occur earlier in the season in 2022 compared to previous years, especially for BCNH, DCCO, and SNEG. High levels of small waterbird activity and several fledglings were observed during the first survey on April 5. As the survey period continued, waterbird activity decreased significantly as fledglings left the nests. During the July survey, very few adults were observed sitting on nests and/or feeding chicks. In 2022, 48 unknown passerine and corvid nests were observed within the survey area, in comparison to 42 in 2021.

Table 4 provides waterbird population trends by species between 2009 and 2022. BCNH populations generally increased from 2009 to 2015, then declined from 2017 to 2022. Although they have decreased slightly in the last year, BCNH numbers have remained relatively stable since the initial decline seen from 2012 to 2014. Populations of SNEG have continued to fluctuate. No GREG have nested in any areas since 2012, after a decline from an already low population. GBHE nesting has declined by about 60 percent since 2012. DCCO populations appear to be increasing since 2016 with a slight dip in population during the 2019 surveys. The survey area supported fewer nesting waterbirds than in 2021, and the 133 active nests identified represent a similar observation in 2020, during which 136 active nests were recorded.

Table 5 provides waterbird population trends at each nesting area between 2009 and 2022. Results continue to indicate that GBHE and DCCO are selecting nest sites in Mariner's Village and Burton Chace Park over Fiji Way. The DCCO nesting tree near Burton Chace Park contained slightly fewer nests than in 2021 (Appendix C). Trends in BCNH and SNEG populations continue to show a shift away from the Admiralty Way nest area to the Marquesas Way nest area. Bora Bora Way recorded minor nesting activity for the first time since 2016. Nesting activity trends in each of the ten nesting areas is described in detail below.

Bora Bora Way

One GBHE nest was observed in the Bora Bora Way nesting area in 2022. In the previous year, one active BCNH nest was observed on the same tree, no. 46 (Appendix C), and the last GBHE documented within the nesting area was in 2016. Historically, DCCOs previously nested in this location but have not been observed in the area since 2014. Due to the low amount of waterbird nesting in this area over the past eight years, should conditions within the project area remain the same, this area will likely continue to support a small amount of nesting waterbirds in future years.

Table 4 Population Trends by Species, Based on Number of Active Nests[1]

Species	2009	2011[1]	2012[3]	2014	2015	2016	2017	2018	2019	2020	2021	2022	Trend
Black-crowned night-heron (BCNH)[2]	43	81	64	81	73	57	56	41	48	64	51[5]	41	Increase, then decrease
Snowy egret (SNEG)	35	24	10	18	25	26	18	33	14	32	34	21	Mixed
Great blue heron (GBHE)	32	25	28	22	14	16	17	13	19	12	12	8	Decrease
Great egret (GREG)[4]	5	1	1	0	0	0	0	0	0	0	0	0	Decrease, then absent
Double-crested cormorant (DCCO)	19	22	24	30	19	22	20	26	17	26	32	29	Increase, then relatively stable
Small Unknown	N/A	N/A	N/A	N/A	16	14	24	0	0	2	42	32	Increased, then consistently low. Rebounded in past two years
Large Unknown	N/A	N/A	N/A	N/A	2	0	0	0	0	0	1	0	Stable
Total	**134**	**153**	**127**	**151**	**149**	**135**	**135**	**113**	**98**	**136**	**176**	**133**	

[1] This data does not include 2010 and 2013 because surveys were not conducted in those years

[2] Consistent with previous year's surveys, this data includes undetermined small colonial waterbird nests (SNEG/BCNH)

[3] Based on Hamilton Biological (2015) that noted this was from a single day survey (Point Blue Conservation Science 2012, unpublished data), so likely undercount for several species

[4] Includes undetermined large colonial waterbird nests (GBHE/GREG)

[5] An early nesting season led to a high number of unknown small waterbird nests, many of these were likely BCNH

Table 5 Population Trends by Nesting Area, based on Number of Active Nests[1]

Location[1]	2009	2011	2012	2014	2015	2016	2017	2018	2019	2020	2021	2022	Trend
Admiralty Way	71	64	25	33	17	2	0	0	0	0	0	0	Decrease
Bora Bora Way[2]	N/A	N/A	N/A	11	0	1	0	0	0	0	1	1	Decrease
Fiji Way	25	29	12	0	0	0	0	0	0	0	1	0	Decrease
Mariners Village	29	18	41	53	35	37	49	38	34	32	31	28	Mixed, then stable
Marquesas Way	9	38	49	66	97	96	85	74	62	95	127	93	Overall increase, then stable
Mindanao Way (Burton Chace Park)	0	4	0	0	0	0	1	1	2	9	16	11	Recent increase

Location[1]	2009	2011	2012	2014	2015	2016	2017	2018	2019	2020	2021	2022	Trend
Tahiti Way	0	0	0	0	0	0	0	1	0	0	0	0	Anomaly observation in 2018 only
Total	**134**	**153**	**127**	**163**	**149**	**136**	**135**	**113**	**98**	**136**	**176**	**133**	

[1] Bali Way, Palawan Way, Panay Way, and Tahiti Way are not included as no active colonial waterbird nests were observed in those nesting areas during any of the survey years.

[2] No data was recorded for Bora Bora Way during the 2009, 2011, and 2012 surveys conducted by Hamilton Biological.

Mariner's Village

Mariner's Village continues to be the most active GBHE and DCCO nesting area within the survey area. The number of nests in 2022 was similar to previous years, while the number of GBHE continues to decrease as it has since 2014. A grove of pine trees at the eastern end of an apartment complex, along with decorative water features, serve as active roosting and foraging habitat. This nesting area supports larger waterbird species, which likely benefit from the mature pine tree canopy that birds tend to prefer for roosting habitat. DCCO nesting activity remained stable, with DCCO's utilizing blue gum trees on the northeast end of Mariner's Village. All GBHE nesting activity was concentrated in the three pine trees and one eucalyptus tree near the center of Mariner's Village. While construction on Via Marina was not observed during the 2022 surveys, the number of total GBHE nests declined to an all-time low of eight. GBHE are less likely to have nest tree fidelity, so it is possible they naturally shifted to other trees in the survey area. However, other factors such as competition with other species, predators, and preferred foraging habitat may also be the reason in this decline.

Marquesas Way

The Marquesas Way nest area continues to be the most active SNEG and BCNH nesting area within the survey area. Despite the activity, the total number of nests in 2022 decreased by 30 percent relative to 2021; however, the total number of nests returned to 2020 levels. Survival rates of fledglings on Marquesas Way is still affected by the amount of traffic-related fledgling mortalities, however these numbers have not been quantified. Fledgling carcasses were observed on the 3rd and 4th surveys along Marquesas Way and several residents and nearby delivery workers reported witnessing birds being run over by local traffic once they have fallen out of or fledged their nests.

Consistent with 2021 survey observations, increased rate of nest development (construction, incubation, brooding, etc.) was observed early in the 2022 survey period. Fledglings were observed during the first survey in April and consistently throughout the subsequent three surveys. This indicates that early nesting at this area does not negatively impact the hatch fate of SNEG and BCNH nests. BCNH young leave the nest at approximately one month of age to forage on the ground, despite their inability to fly until they are six weeks old (Hothem et.al 2010). Likewise, SNEG young are capable of leaving the nest as early as ten days of age when disturbed, although they typically return to the nest if feasible (Parsons and Master 2000). SNEG fledglings typically remain near the colony for approximately seven to eight weeks. The behavior of these two species presents a challenge at this particular nesting area due to the high level of vehicle and pedestrian traffic. The number of nests on Marquesas Way peaked in 2021 at 127 but remained high in 2022 at 93. This is almost the exact same number of nests as in 2020. Increased vehicle and residential traffic in 2022 compared to 2021 (when less vehicles were on the road due to COVID-19 restrictions) may be one factor in the decreased number of nests in 2022.

To reduce vehicle strikes, the County installed traffic caution signs in early July 2016 along Marquesas Way to encourage drivers to slow down and watch for birds. Additional enforcement of posted speed limits and general community education/outreach may help decrease the death toll of young birds in this area.

Mindanao Way (Burton Chace Park)

A total of 11 active DCCO nests were observed in two trees. Ten nests were clustered in one gum tree located on the east side of the park adjacent to a busy parking lot. This tree was observed to be

used by DCCO nesters in 2019 and has remained active every year since. One new DCCO nest was observed on tree CP-2022-4 during the 2022 survey (Appendix C). Previous nesting trees identified in the 2011, 2012, and 2017-2019 surveys located northwest of the active trees were unoccupied in 2022. Several locations in the park had signs of roosting (guano deposits), but no waterbirds or nests were observed throughout the surveys. Waterbird nest numbers have decreased from 2021 but overall nesting trends in this area have increased since 2009. This may be due to increased prey availability and absence of competition or predators. The COHA nests identified in 2018 and 2019 were no longer intact. Construction occurred at the park throughout the survey period, but incidental and waterbird activity/nesting continued.

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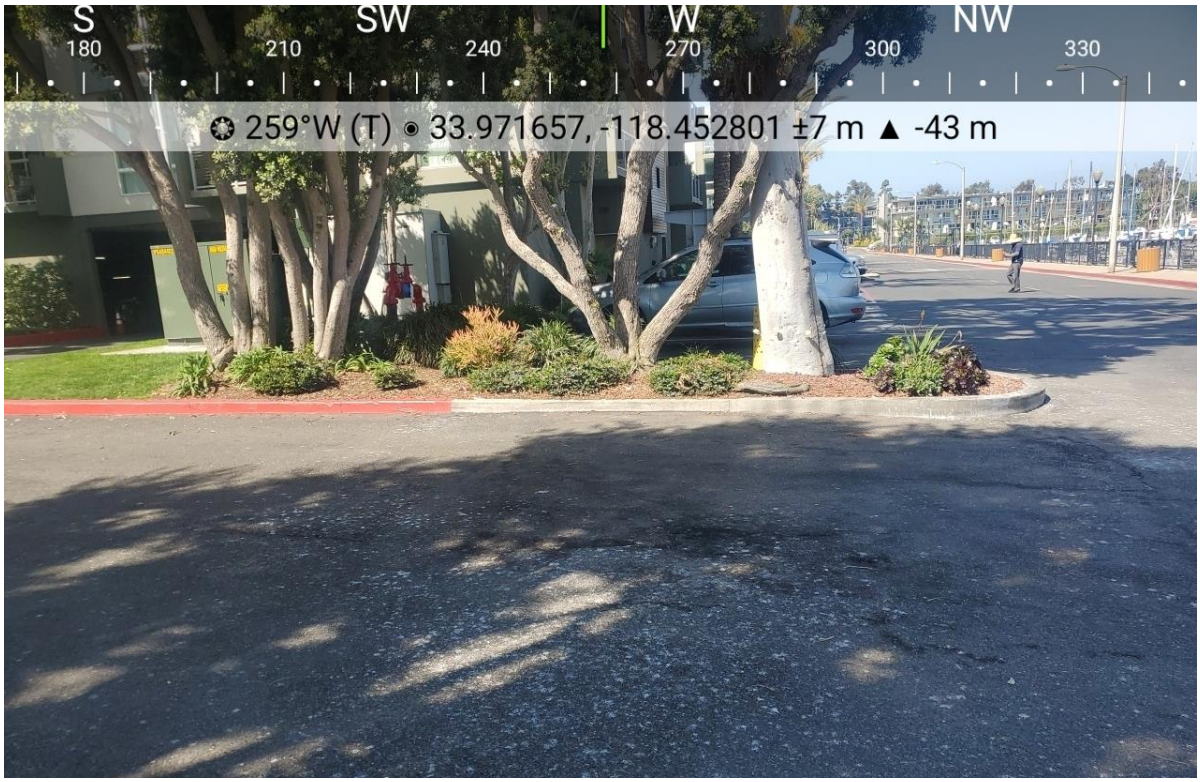
Appendix A

Species Compendium

Species Name	Acronym	Scientific Name
black-crowned night heron	BCNH	*Nycticorax nycticorax*
snowy egret	SNEG	*Egretta thula*
great blue heron	GBHE	*Ardea herodias*
great egret	GREG	*Ardea alba*
double-crested cormorant	DCCO	*Phalacrocorax auritus*
American crow	AMCR	*Corvus brachyrhynchos*
song sparrow	SOSP	*Melospiza melodia*
dark-eyed junco	DEJU	*Junco hyemalis*
Cooper's hawk	COHA	*Accipiter cooperii*
common raven	CORA	*Corvus corax*
house sparrow	HOSP	*Passer domesticus*
house finch	HOFI	*Haemorhous mexicanus*
Allen's hummingbird	ALHU	*Selasphorus sasin*
red-tailed hawk	RTHA	*Buteo jamaicensis*
common yellowthroat	COYE	*Geothlypis trichas*
California gull	CAGU	*Larus californicus*
Rufous hummingbird	RUHU	*Amazilia tzacatl*
mallard	MALL	*Anas platyrhynchos*
Anna's hummingbird	ANHU	*Calypte anna*
rock pigeon	ROPI	*Columba livia*
European starling	EUST	*Sturnus vulgaris*
northern mockingbird	NOMO	*Mimus polyglottos*
western gull	WEGU	*Larus occidentalis*
mourning dove	MODO	*Zenaida macroura*
Eurasian collared dove	ECDO	*Streptopelia decaocto*

Appendix B

Site Photographs

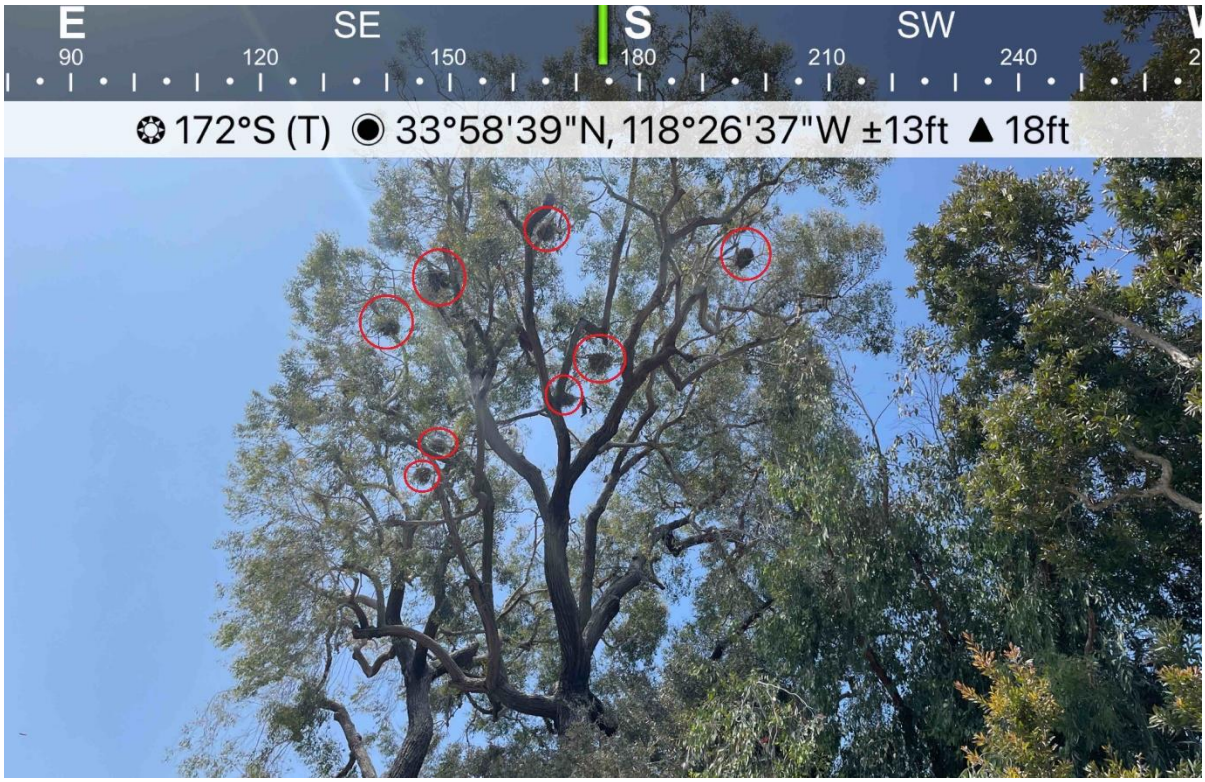


Photograph 1. Guano deposits on Bora Bora Way during April 05, 2022, survey facing west.

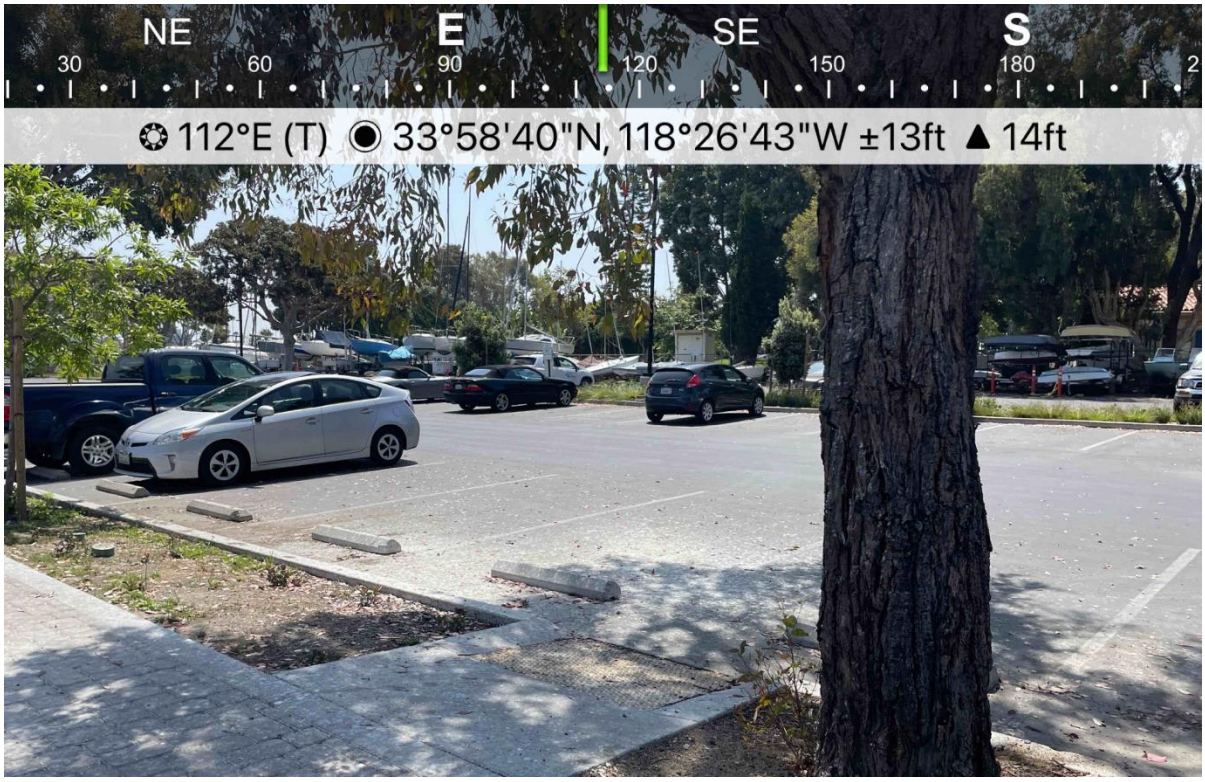
Photograph 2. Construction activities at Burton Chace Park during April 05, 2022, survey facing northeast.

Photograph 3. GBHE nest in tree 46 during May 3, 2022, survey at Bora Bora Way facing northwest.

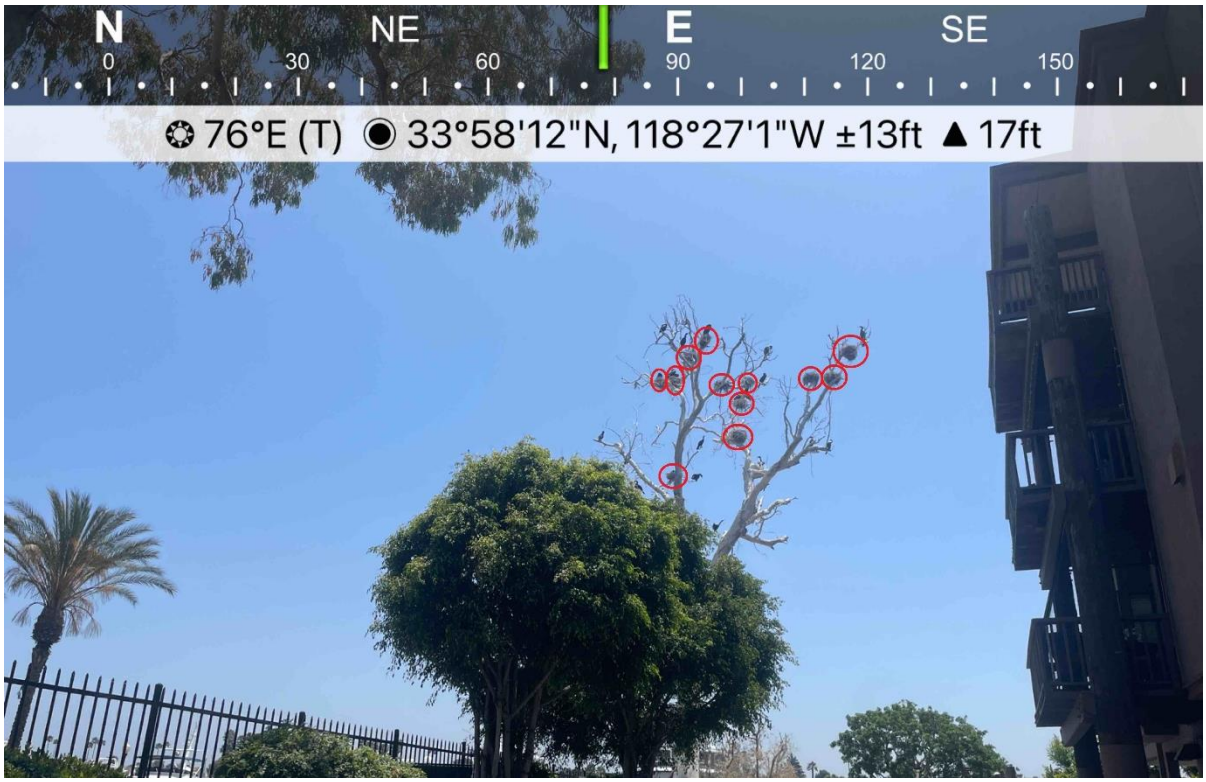
Photograph 4. Guano deposits at Burton Chace Park during June 15, 2022, survey facing northwest.



Photograph 5. DCCO nests in tree CP-220on June 15, 2022, at Burton Chace Park facing south.



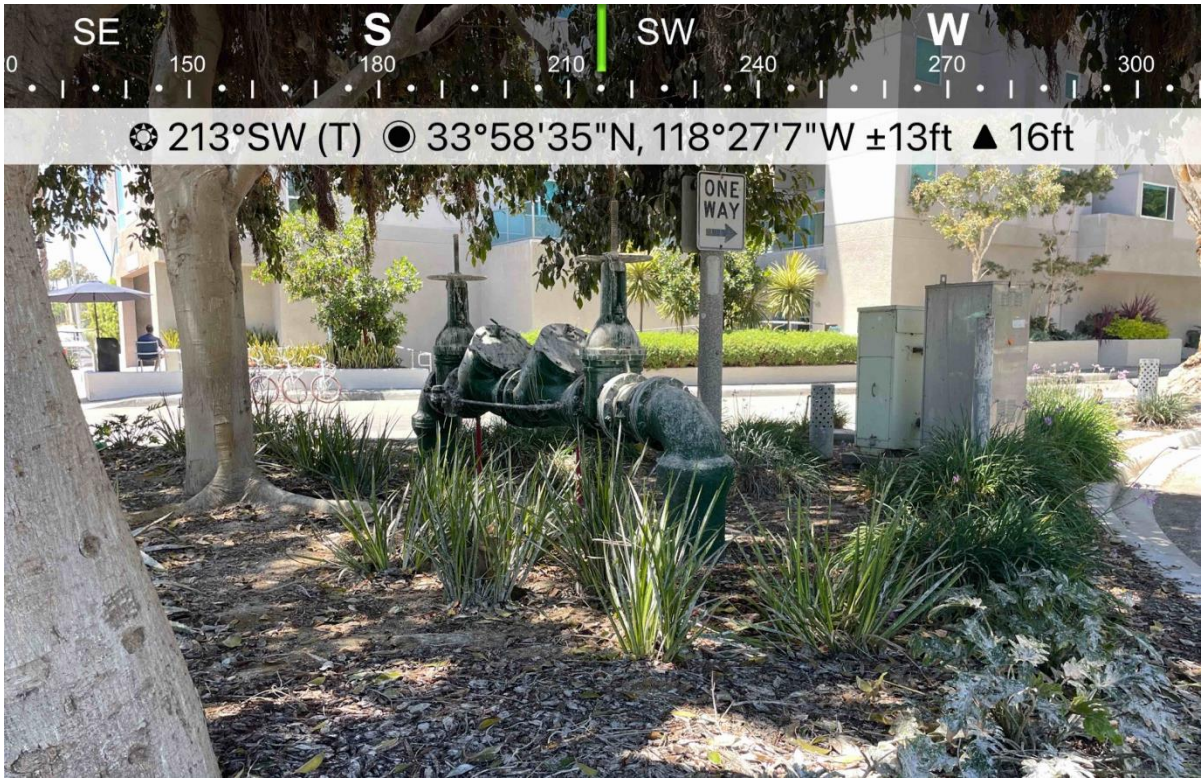
Photograph 6. Guano deposits at Burton Chace Park on June 15, 2022, facing southeast.



Photograph 7. DCCO nests in tree 24 on June 15, 2021, at Mariner's Village facing east.

Photograph 8. BCNH observed foraging at Mariner's Village during July 7, 2022, survey facing north.

Photograph 9. COHA nest observed in tree VM-126 at Mariner's Village parking lot during July 7, 2022, survey facing southeast.



Photograph 10. BCNH and SNEG guano deposits on Marquesas Way during July 7, 2022, survey facing southwest.

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Appendix C

Nest Data Table 2009-2022

Location	Tree Name	Tree Species	Year	Great Blue Heron	Large Unknown (Great Blue Heron or Great Egret)	Black-crowned Night-heron	Snowy Egret	Small Unknown (Black-crowned Night-heron or Snowy Egret)	Double-crested Cormorant	Peregrine Falcon	Cooper's Hawk
Admiralty Way	4	Ficus	2014	0	0	0	0	4	0	0	0
			2015	0	0	1	0	3	0	0	0
	5	Ficus	2011 2012 2014	x	x	x	x	x	x	x	x
			2012	x	x	x	x	x	x	x	x
			2014	0	0	1	0	0	0	0	0
	6	Ficus	2011	x	x	x	x	x	x	x	x
			2012	x	x	x	x	x	x	x	x
			2014	0	0	1	0	2	0	0	0
			2015	0	0	0	0	1	0	0	0
	7	Ficus	2009	x	x	x	x	x	x	x	x
			2011	x	x	x	x	x	x	x	x
			2012	x	x	x	x	x	x	x	x
			2014	0	0	1	0	0	0	0	0
	8	Ficus	2009	x	x	x	x	x	x	x	x
			2011	x	x	x	x	x	x	x	x
			2012	x	x	x	x	x	x	x	x
			2014	0	0	2	0	0	0	0	0
			2015	0	0	3	0	3	0	0	0
			2016	0	0	1	0	0	0	0	0
	9	Ficus	2009	x	x	x	x	x	x	x	x
			2011	x	x	x	x	x	x	x	x
			2012	x	x	x	x	x	x	x	x
			2014	0	0	1	0	3	0	0	0
			2015	0	0	1	0	3	0	0	0
			2016	0	0	1	0	0	0	0	0
	10	Ficus	2011	x	x	x	x	x	x	x	x
			2012	x	x	x	x	x	x	x	x
			2014	0	0	2	0	0	0	0	0
			2015	0	0	0	0	2	0	0	0
	42	N/A	2014	0	0	0	0	0	0	1	0
			2015	0	0	0	0	0	0	1	0
			2016	0	0	0	0	0	0	1	0
	43	Eucalyptus	2014	0	0	0	0	1	0	0	0
BP-147		Ficus	2012	x	x	x	x	x	x	x	x
BP-148		Eucalyptus sp.	2011 2012 2014	x	x	x	x	x	x	x	x
			2012	x	x	x	x	x	x	x	x

Location	Tree Name	Tree Species	Year	Great Blue Heron	Large Unknown (Great Blue Heron or Great Egret)	Black-crowned Night-heron	Snowy Egret	Small Unknown (Black-crowned Night-heron or Snowy Egret)	Double-crested Cormorant	Peregrine Falcon	Cooper's Hawk
			2014	0	0	1	0	1	0	0	0
	BP-150	Eucalyptus sp.	2012 2014	x	x	x	x	x	x	x	x
			2014	0	0	1	0	11	0	0	0
	OX-10	Eucalyptus	2011	x	x	x	x	x	x	x	x
	OX-17	Eucalyptus sp.	2018	0	0	0	0	0	0	0	1
Bali Way	BA-1	Erythrina caffra	2019	0	0	0	0	1	0	0	0
Bora Bora Way	46	Pinus	2014	0	1	0	0	0	0	0	0
			2021	0	0	1	0	0	0	0	0
			2022	1	0	0	0	0	0	0	0
	77	Pinus	2016	1	0	0	0	0	0	0	0
Fiji Way	73	Washingtonia	2012	x	x	x	x	x	x	x	x
	FJ-209	Washingtonia robusta	2012	x	x	x	x	x	x	x	x
	FJ-2021-1	Pinus	2021	1	0	0	0	0	0	0	0
Mariner's Village	22	Eucalyptus	2014	2	0	0	0	0	0	0	0
			2015	2	0	0	0	0	0	0	0
			2016	2	0	0	0	0	0	0	0
	22	Eucalyptus	2017	2	0	0	0	0	0	0	0
			2018	0	0	0	0	0	2	0	0
			2019	0	0	0	0	0	1	0	0
			2020	0	0	0	0	0	2	0	0
			2021	0	0	0	0	0	1	0	0
			2022	0	0	0	0	0	1	0	0
	23	Eucalyptus	2011	x	x	x	x	x	x	x	x
			2012	x	x	x	x	x	x	x	x
			2014	2	1	0	0	0	0	0	0
			2015	3	0	0	0	0	0	0	0
			2016	3	0	0	0	0	0	0	0
			2017	2	0	0	0	0	0	0	0
			2018	0	0	0	0	0	1	0	0
			2019	0	0	0	0	0	2	0	0
			2021	0	1	0	0	0	0	0	0
			2022	0	0	2	0	0	0	0	0
	24	Eucalyptus	2011	x	x	x	x	x	x	x	x
			2012	x	x	x	x	x	x	x	x
			2014	0	0	0	0	0	19	0	0
			2015	0	0	0	0	0	19	0	0
			2016	0	0	0	0	0	22	0	0
			2017	0	0	0	0	0	20	0	0
			2018	0	0	0	0	0	21	0	0

Location	Tree Name	Tree Species	Year	Great Blue Heron	Large Unknown (Great Blue Heron or Great Egret)	Black-crowned Night-heron	Snowy Egret	Small Unknown (Black-crowned Night-heron or Snowy Egret)	Double-crested Cormorant	Peregrine Falcon	Cooper's Hawk
			2019	0	0	0	0	0	12	0	0
			2020	0	0	0	0	0	16	0	0
			2021	0	0	0	0	0	15	0	0
			2022	0	0	0	0	0	17	0	0
	25	Eucalyptus	2014	1	1	0	0	0	0	0	0
			2015	2	0	0	0	0	0	0	0
			2016	1	0	0	0	0	0	0	0
			2018	0	1	0	0	0	0	0	0
	28	Pinus	2011	x	x	x	x	x	x	x	x
			2012	x	x	x	x	x	x	x	x
			2014	4	1	0	0	0	0	0	0
			2015	1	0	0	0	0	0	0	0
			2016	1	0	0	0	0	0	0	0
			2017	2	1	0	0	0	0	0	0
			2018	4	0	0	0	0	0	0	0
			2019	5	0	0	0	0	0	0	0
			2020	5	0	0	0	0	0	0	0
			2022	1	0	0	0	0	0	0	0
	29	Pinus	2014	3	1	0	0	0	0	0	0
			2015	2	2	0	0	0	0	0	0
			2016	5	0	0	0	0	0	0	0
			2017	5	0	0	0	0	0	0	0
			2018	8	0	0	0	0	0	0	0
			2019	12	0	0	0	0	0	0	0
			2020	2	0	0	0	0	0	0	0
			2021	8	0	0	0	0	0	0	0
			2022	2	0	0	0	0	0	0	0
	30	Eucalyptus	2014	1	0	0	0	0	0	0	0
			2017	0	1	0	0	0	0	0	0
			2020	0	1	0	0	0	0	0	0
	59	Eucalyptus	2014	0	2	0	0	0	0	0	0
			2015	1	0	0	0	0	0	0	0
			2016	1	0	0	0	0	0	0	0
			2017	1	0	0	0	0	0	0	0
			2018	1	0	0	0	0	0	0	0
			2019	0	1	0	0	0	0	0	0
			2020	1	0	0	0	0	0	0	0
	62	Ficus	2014	0	1	0	0	0	0	0	0

Location	Tree Name	Tree Species	Year	Great Blue Heron	Large Unknown (Great Blue Heron or Great Egret)	Black-crowned Night-heron	Snowy Egret	Small Unknown (Black-crowned Night-heron or Snowy Egret)	Double-crested Cormorant	Peregrine Falcon	Cooper's Hawk
			2015	1	0	0	0	0	0	0	0
			2017	0	0	0	0	1	0	0	0
			2018	0	0	1	0	0	0	0	0
			2019	0	0	0	0	1	0	0	0
	63	Pinus	2014	0	1	0	0	0	0	0	0
			2015	1	0	0	0	0	0	0	0
			2016	1	0	0	0	0	0	0	0
			2017	2	0	0	0	0	0	0	0
			2018	1	0	0	0	0	0	0	0
			2019	1	0	0	0	0	0	0	0
			2020	4	0	0	0	0	0	0	0
			2021	3	0	0	0	0	0	0	0
			2022	3	0	0	0	0	0	0	0
	64	Eucalyptus	2015	1	0	0	0	0	0	0	0
			2016	1	0	0	0	0	0	0	0
			2017	1	0	0	0	0	0	0	0
			2018	0	0	0	0	0	1	0	0
	86	Eucalyptus	2019	1	0	0	0	0	0	0	0
			2022	1	0	0	0	0	0	0	0
	100	Eucalyptus	2020	0	0	0	0	3	0	0	0
	101	Eucalyptus	2020	0	0	0	0	4	0	0	0
	102	Eucalyptus	2020	0	0	0	0	2	0	0	0
	103	Eucalyptus	2020	1	0	0	0	0	0	0	0
	119	Pinus	2020	0	0	2	0	0	0	0	0
			2022	0	0	1	0	0	0	0	0
	MV-2021-1	Ficus	2021	0	0	2	0	0	0	0	0
Marquesas Way	65	Pinus	2015	0	0	2	0	0	0	0	0
			2016	0	0	1	0	0	0	0	0
			2017	0	0	0	0	1	0	0	0
			2021	0	0	1	0	1	0	0	0
			2022	0	0	1	0	0	0	0	0
	66	Pinus	2015	0	0	2	0	0	0	0	0
			2016	0	0	0	1	0	0	0	0
			2017	0	0	1	0	0	0	0	0
			2022	0	0	1	0	0	0	0	0
	68	Pinus	2015	0	0	0	0	1	0	0	0
			2016	0	0	2	0	0	0	0	0
			2017	0	0	1	0	2	0	0	0
			2018	0	0	4	0	0	0	0	0
			2019	0	0	1	0	4	0	0	0

Location	Tree Name	Tree Species	Year	Great Blue Heron	Large Unknown (Great Blue Heron or Great Egret)	Black-crowned Night-heron	Snowy Egret	Small Unknown (Black-crowned Night-heron or Snowy Egret)	Double-crested Cormorant	Peregrine Falcon	Cooper's Hawk
	69	Ficus	2015	0	0	3	0	0	0	0	0
	70	Melaleuca quinquenervia	2015	0	0	1	0	0	0	0	0
			2016	0	0	1	0	0	0	0	0
	76	Pinus	2016	0	0	1	0	0	0	0	0
			2017	0	0	1	0	1	0	0	0
			2019	0	0	0	0	1	0	0	0
			2020	0	0	1	0	0	0	0	0
	78	Pinus	2017	0	0	2	0	0	0	0	0
			2021	0	0	1	0	0	0	0	0
	79	Pinus	2017	0	0	2	0	0	0	0	0
	81	Olea europaea	2018	0	0	1	0	0	0	0	0
			2019	0	0	0	0	1	0	0	0
			2020	0	0	1	0	0	0	0	0
			2021	0	0	0	0	1	0	0	0
			2022	0	0	1	0	0	0	0	0
	82	Olea europaea	2018	0	0	1	0	0	0	0	0
			2021	0	0	0	0	1	0	0	0
			2022	0	0	1	0	0	0	0	0
	84	Eucalyptus	2019	0	0	0	0	1	0	0	0
			2021	0	0	0	0	1	0	0	0
	87	Pinus	2019	0	0	1	0	0	0	0	0
			2021	0	0	3	0	0	0	0	0
	88	Pinus	2019	0	0	1	0	0	0	0	0
			2021	0	0	2	0	0	0	0	0
			2022	0	0	1	0	0	0	0	0
	89	Pinus	2019	0	0	0	0	1	0	0	0
	90	Pinus	2019	0	0	1	0	0	0	0	0
	91	Ficus	2019	0	0	2	0	2	0	0	0
	200	Melaleuca quinquenervia	2020	0	0	1	0	0	0	0	0
	201	Pinus	2020	0	0	1	0	0	0	0	0
	203	Melaleuca quinquenervia	2020	0	0	1	0	0	0	0	0
			2022	0	0	2	0	0	0	0	0
	MQ-1	Ficus elastica	2018	0	0	4	0	0	0	0	0
	MQ-2	Ficus elastica	2018	0	0	4	0	0	0	0	0
			2019	0	0	2	0	2	0	0	0
			2021	0	0	0	0	4	0	0	0
			2022	0	0	3	0	3	0	0	0
	MQ-3	Ficus elastica	2011	x	x	x	x	x	x	x	x
			2012	x	x	x	x	x	x	x	x
			2014	0	0	2	0	4	0	0	0

Location	Tree Name	Tree Species	Year	Great Blue Heron	Large Unknown (Great Blue Heron or Great Egret)	Black-crowned Night-heron	Snowy Egret	Small Unknown (Black-crowned Night-heron or Snowy Egret)	Double-crested Cormorant	Peregrine Falcon	Cooper's Hawk
			2015	0	0	6	1	1	0	0	0
			2016	0	0	14	0	0	0	0	0
			2017	0	0	11	0	0	0	0	0
			2018	0	0	4	0	0	0	0	0
			2019	0	0	4	0	1	0	0	0
			2020	0	0	6	0	0	0	0	0
			2021	0	0	1	1	4	0	0	0
			2022	0	0	2	0	4	0	0	0
	MQ-4	Melaleuca quinquenervia	2011	x	x	x	x	x	x	x	x
			2012	x	x	x	x	x	x	x	x
			2014	0	0	4	5	1	0	0	0
			2015	0	0	7	6	0	0	0	0
			2016	0	0	4	6	3	0	0	0
			2017	0	0	0	10	4	0	0	0
			2018	0	0	1	7	0	0	0	0
			2019	0	0	4	3	4	0	0	0
			2020	0	0	5	4	0	0	0	0
			2021	0	0	1	5	3	0	0	0
			2022	0	0	3	6	3	0	0	0
	MQ-5	Melaleuca quinquenervia	2011	x	x	x	x	x	x	x	x
			2012	x	x	x	x	x	x	x	x
			2014	0	0	2	2	1	0	0	0
			2015	0	0	3	4	0	0	0	0
			2016	0	0	2	4	0	0	0	0
			2017	0	0	2	2	0	0	0	0
			2018	0	0	1	4	0	0	0	0
			2019	0	0	5	1	0	0	0	0
			2020	0	0	2	4	0	0	0	0
			2021	0	0	3	4	3	0	0	0
			2022	0	0	2	2	3	0	0	0
	MQ-6	Melaleuca quinquenervia	2011	x	x	x	x	x	x	x	x
			2012	x	x	x	x	x	x	x	x
			2014	0	0	2	3	1	0	0	0
			2015	0	0	4	3	0	0	0	0
			2016	0	0	4	4	1	0	0	0
			2017	0	0	6	0	1	0	0	0
			2018	0	0	1	4	0	0	0	0
			2019	0	0	3	3	0	0	0	0

Location	Tree Name	Tree Species	Year	Great Blue Heron	Large Unknown (Great Blue Heron or Great Egret)	Black-crowned Night-heron	Snowy Egret	Small Unknown (Black-crowned Night-heron or Snowy Egret)	Double-crested Cormorant	Peregrine Falcon	Cooper's Hawk
			2020	0	0	6	5	5	0	0	0
			2021	0	0	6	5	5	0	0	0
			2022	0	0	2	4	2	0	0	0
	MQ-7	Melaleuca quinquenervia	2012	x	x	x	x	x	x	x	x
			2014	0	0	2	3	1	0	0	0
			2015	0	0	5	5	1	0	0	0
			2020	0	0	4	6	0	0	0	0
			2021	0	0	5	3	3	0	0	0
			2022	0	0	3	2	1	0	0	0
	MQ-7	Melaleuca quinquenervia	2016	0	0	4	4	2	0	0	0
			2017	0	0	8	1	3	0	0	0
			2018	0	0	1	6	0	0	0	0
			2019	0	0	3	3	3	0	0	0
	MQ-8	Melaleuca quinquenervia	2011	x	x	x	x	x	x	x	x
			2012	x	x	x	x	x	x	x	x
			2014	0	0	0	1	0	0	0	0
			2015	0	0	3	1	0	0	0	0
			2016	0	0	3	2	2	0	0	0
			2017	0	0	2	2	1	0	0	0
			2018	0	0	3	0	0	0	0	0
			2019	0	0	4	1	0	0	0	0
			2020	0	0	4	2	0	0	0	0
			2021	0	0	3	3	3	0	0	0
			2022	0	0	2	3	3	0	0	0
	MQ-9	Melaleuca quinquenervia	2011	x	x	x	x	x	x	x	x
			2012	x	x	x	x	x	x	x	x
			2014	0	0	6	0	0	0	0	0
			2015	0	0	8	2	0	0	0	0
			2016	0	0	4	2	3	0	0	0
			2017	0	0	9	1	1	0	0	0
			2018	0	0	2	6	0	0	0	0
			2019	0	0	5	1	0	0	0	0
			2020	0	0	3	5	0	0	0	0
			2021	0	0	4	7	2	0	0	0
			2022	0	0	5	1	4	0	0	0
	MQ-10	Melaleuca quinquenervia	2011	x	x	x	x	x	x	x	x
			2012	x	x	x	x	x	x	x	x
			2014	0	0	3	2	1	0	0	0

Location	Tree Name	Tree Species	Year	Great Blue Heron	Large Unknown (Great Blue Heron or Great Egret)	Black-crowned Night-heron	Snowy Egret	Small Unknown (Black-crowned Night-heron or Snowy Egret)	Double-crested Cormorant	Peregrine Falcon	Cooper's Hawk
			2015	0	0	4	3	1	0	0	0
			2016	0	0	4	1	2	0	0	0
			2017	0	0	3	2	4	0	0	0
			2018	0	0	3	2	0	0	0	0
			2019	0	0	3	1	5	0	0	0
			2020	0	0	8	2	0	0	0	0
			2021	0	0	2	4	2	0	0	0
			2022	0	0	2	3	2	0	0	0
	MQ-11	Melaleuca quinquenervia	2011	x	x	x	x	x	x	x	x
			2012	x	x	x	x	x	x	x	x
			2014	0	0	3	1	3	0	0	0
			2015	0	0	7	0	0	0	0	0
			2016	0	0	5	1	0	0	0	0
			2017	0	0	4	0	1	0	0	0
			2018	0	0	7	0	0	0	0	0
			2019	0	0	3	0	1	0	0	0
			2020	0	0	7	1	4	0	0	0
			2022	0	0	3	0	3	0	0	0
	MQ-12	Melaleuca quinquenervia	2011	x	x	x	x	x	x	x	x
			2012	x	x	x	x	x	x	x	x
			2014	0	0	6	0	2	0	0	0
			2015	0	0	11	0	0	0	0	0
			2016	0	0	4	1	1	0	0	0
			2017	0	0	4	0	2	0	0	0
			2018	0	0	2	4	0	0	0	0
			2019	0	0	4	1	2	0	0	0
			2020	0	0	3	2	0	0	0	0
			2021	0	0	4	1	3	0	0	0
			2022	0	0	3	0	3	0	0	0
	MQ-13	Melaleuca quinquenervia	2011	x	x	x	x	x	x	x	x
			2012	x	x	x	x	x	x	x	x
			2014	0	0	1	0	0	0	0	0
			2015	0	0	2	0	0	0	0	0
			2016	0	0	2	0	0	0	0	0
			2017	0	0	0	0	1	0	0	0
			2018	0	0	2	0	0	0	0	0
			2019	0	0	2	0	2	0	0	0
			2020	0	0	3	0	0	0	0	0

Location	Tree Name	Tree Species	Year	Great Blue Heron	Large Unknown (Great Blue Heron or Great Egret)	Black-crowned Night-heron	Snowy Egret	Small Unknown (Black-crowned Night-heron or Snowy Egret)	Double-crested Cormorant	Peregrine Falcon	Cooper's Hawk
			2021	0	0	2	0	0	0	0	0
			2022	0	0	1	0	1	0	0	0
	MQ-16	Melaleuca quinquenervia	2011	x	x	x	x	x	x	x	x
			2012	x	x	x	x	x	x	x	x
			2014	0	0	0	0	1	0	0	0
	MQ-new	Melaleuca quinquenervia	2020	0	0	2	0	0	0	0	0
	MQ-2021-1	Ficus	2021	0	0	1	0	0	0	0	0
	MQ-2021-5	Ficus	2021	0	0	3	0	0	0	0	0
	MQ-2021-6	Eucalyptus	2021	0	0	0	0	1	0	0	0
Mindanao Way	80	Metrosideros	2017	0	0	1	0	0	0	0	0
	CP-8	Metrosideros excelsa	2012	x	x	x	x	x	x	x	x
	CP-66	Pinus	2012	x	x	x	x	x	x	x	x
	CP-111	Ficus rubiginosa	2019	0	0	0	0	0	0	0	1
			2020	0	0	1	0	0	0	0	0
	CP-113	Pinus pinea	2012	x	x	x	x	x	x	x	x
	CP-160	Erythrina caffra	2018	0	0	0	0	0	0	0	1
			2019	0	0	0	0	0	0	0	1
	CP-170	Metrosideros excelsa	2018	0	0	0	0	0	0	0	1
			2019	0	0	0	0	0	0	0	1
	CP-220	Eucalyptus sideroxylon	2020	0	0	0	0	0	12	0	0
			2021	0	0	0	0	0	16	0	0
			2022	0	0	0	0	0	10	0	0
	CP-2022-4	Sycamore	2022	0	0	0	0	0	1	0	0
	MN-23	Eucalyptus polyanthemos	2019	0	0	0	0	0	1	0	0
	MN-24	Eucalyptus sideroxylon	2018	0	0	0	0	0	1	0	0
			2019	0	0	0	0	0	1	0	0
Panay Way	49	Melaleuca	2009	x	x	x	x	x	x	x	x
	51	Melaleuca	2009	x	x	x	x	x	x	x	x
	52	Melaleuca	2009	x	x	x	x	x	x	x	x
	PN-1	Ficus elastica	2019	0	0	0	0	1	0	0	0
	PN-6	Melaleuca quinquenervia	2020	0	0	0	0	3	0	0	0
Tahiti Way	58	Washingtonia	2012	x	x	x	x	x	x	x	x
	83	Eucalyptus	2018	0	0	0	0	1	0	0	0

x = species and/or number of nests undetermined

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