



HAMILTON BIOLOGICAL

August 31, 2015

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Department of Beaches & Harbors
13837 Fiji Way
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SUBJECT: FINAL REPORT ON NESTING WATERBIRDS AND RAPTORS MARINA DEL REY, LOS ANGELES COUNTY, CA

Dear Michael,

This letter provides the final results of surveys for nesting waterbirds and raptors that Hamilton Biological, Inc., has conducted in collaboration with Cooper Ecological Monitoring, Inc., at Marina del Rey in 2015. We found a maximum of 149 active nests of colonial waterbirds, comparable to the 2014 total of 152 active nests. The following species were involved: Black-crowned Night-Heron (*Nycticorax nycticorax*, 73 nests), Double-crested Cormorant (*Phalacrocorax auritus*, 19 nests), Snowy Egret (*Egretta thula*, 25 nests), Great Blue Heron (*Ardea herodias*, 14 nests), as well as 16 “unknown small” active nests (presumed to belong to Black-crowned Night-Heron and/or Snowy Egret) and 2 “unknown large” active nests (presumed to belong to Great Blue Herons). We did not document nesting by the Great Egret (*Ardea alba*) in 2015. The 149 active nests were placed in 31 trees, located in three main areas, Admiralty Way (5 trees), Mariner’s Village (10 trees), and Marquesas Way (16 trees). Fresh whitewash observed at several other locations provided evidence of roosting by waterbirds in additional trees not used for nesting. The single raptor nest found in 2015 belonged to a pair of Peregrine Falcons (*Falco peregrinus*), marking the second nesting of this species in Marina del Rey in modern times (the first, likely involving the same pair, was in 2014).

METHODS

Dan Cooper conducted initial surveys on 21 April 2015, covering all parts of Marina del Rey accessible to the public. Cooper was able to closely examine all suitable nesting sites in Marina del Rey searching for suitable nesting trees and whitewash on the vegetation and ground. He recorded the locations of all trees with suspected waterbird and raptor nests using a GPS iPhone application. Cooper plotted these locations onto aerial photography using Google Earth, and Jennifer Mongolo (Streamscape, Inc.) transferred them to GIS layers using ArcView. Mr. Cooper conducted a second round of surveys during what appeared to be the peak of nesting activity, on 26 May, and another round on 2 July 2015, each time attempting to cover all areas containing nesting herons, egrets, or cormorants. Mr. Cooper completed a final round of surveys on 31 August.

Nests were confirmed as active based upon observation of at least one adult constructing or attending (typically incubating) the nest, or at least one juvenile bird in the nest. Nests were considered to have likely been active (in 2015) based upon freshness and quantity of whitewash in and below the nest, and often by the presence of an adult bird standing near (but not in) the nest. Some of these nests appeared to have been used prior to the start of the first nesting survey on 21 April whereas others appeared to have been used during the periods between survey rounds in 2015. The same methods of identifying “likely active” nests were used for the Marina-wide surveys in 2009, 2011, 2012, and 2014, allowing results to be compared from year to year. In general, we have combined “active” and “likely active” in this report unless otherwise noted.

Two nests in Mariner’s Village that we recorded as “unknown large” almost certainly belonged to Great Blue Herons, although Great Egrets could not be ruled out by our survey methods. However, biologists working for the lessee monitored Mariner’s Village regularly during the first few months of 2015, and recorded only Great Blue Herons nesting there. Nests recorded as “unknown small” were presumed to belong either to Black-crowned Night-Herons or Snowy Egrets. These smaller species often nest in the same trees and sometimes use the same nest in succession through the season.

Nomenclature of nesting locations follows the “Conservation & Management Plan for Marina del Rey” (Hamilton and Cooper 2010) unless otherwise noted. Nest counts may be compared with those from similar waterbird nesting surveys conducted at Marina del Rey in 2009 (Hamilton and Cooper 2010), 2011 (Hamilton Biological 2011), 2012 (Point Blue Conservation Science, unpubl. data), and 2014 (Hamilton Biological 2014).

As in 2014, we compared our findings for Mariner’s Village with those of biologist Richard Erickson of LSA Associates, who has been mapping and monitoring waterbird nests in that part of Marina del Rey on behalf of the lessee. This conversation resulted in refinement of a small number of our nest locations. LSA’s survey effort involved weekly visits to Mariner’s Village throughout the entire nesting season, with personnel accessing rooftops and other vantage points to see into nests. To allow the results of our marina-wide survey to be compared with those of other years, we did not “transfer” LSA’s specific outcomes for each nest to our report. Whereas the counts of successful nests for each species in Mariner’s Village may differ somewhat due to LSA’s more intensive monitoring effort, the locations of nest trees found by the two surveys should match.

RESULTS

As summarized in Table 1, on the following page, we confirmed a total of 149 nests found during our four Marina-wide visits in 2015.

Several nests deemed to have been likely inactive during 2015, or which appeared to be nests of American Crows (*Corvus brachyrhynchos*) or Eastern Fox Squirrels (*Sciurus niger*) are not included here; nor are partial or degraded nests. These nests are not discussed further in this report.

Policy No. 23 requires that trees be left in place where possible if nesting by waders or raptors has been confirmed in the past five years, and therefore we offer a comparison of prior year’s findings with respect to nesting trees. It is impossible to directly compare the nests themselves from year to year, since they are typically dismantled and rebuilt annually. Please refer to Appendix A for maps of all nesting trees documented in the past five years (2011-2015), and to Appendix B for a table of all nests found in 2014 and 2015 (Table B1) and a summary of nesting trees since 2011 (i.e., five years prior to 2015), including a cross-reference column with new (2015) tree numbers for County-owned sections of the Marina (Table B2).

Note that, in prior years, the emphasis had been in determining changes in numbers of birds from year to year for each subcolony; thus, the exact locations of individual nesting trees were not recorded prior to 2014. Reviewing prior years’ data, in some cases, it was clear which individual trees were or were not being used; when it was unclear (e.g., within Mariner’s Village), we used results from other years (including 2009) to infer whether a particular tree was likely active or inactive in 2011. These inferences involve only a handful of trees within certain groves, and therefore they do not affect (1) our estimates of the numbers of nesting pairs each year; (2) our understanding of the general locations where nesting has taken place over the years; or (3) our understanding overall trends.

TABLE 1: SUMMARY OF ACTIVE & “LIKELY ACTIVE” NESTS

This table lists the numbers of active and “likely active” nests observed at each site. Please refer to the following discussions, and to Appendix B, for additional details.

- BCNH = Black-crowned Night-Heron
- SNEG = Snowy Egret
- GBHE = Great Blue Heron
- GREG = Great Egret
- DCCO = Double-crested Cormorant

Location	BCNH	SNEG	BCNH/SNEG	GBHE	GBHE/GREG	DCCO	Total
Admiralty Way	5	0	12	0	0	0	17
Marquesas Way	68	25	4	0	0	0	97
Panay Way	0	0	0	0	0	0	0
Mariner’s Village	0	0	0	14	2	19	35
Bora Bora Way	0	0	0	0	0	0	0
Fiji Way	0	0	0	0	0	0	0
Chace Park	0	0	0	0	0	0	0
Total	73	25	16	14	2	19	149

The following sections discuss the results from each of the current/former colony locations in Marina del Rey.

Admiralty Way

See Figure 1. We detected a total of 17 active or likely active waterbird nests in one main area along Admiralty Way, along the edge of the Ritz-Carlton Hotel facing Admiralty Way (Leaseholder Parcel 125). All of the nests were in fig trees (*Ficus* sp.). Five nests were confirmed as being used by Black-crowned Night-Herons (noted during the April and May visits only); 12 were recorded as “unknown small” (heron/egret species) and “likely active” based on large quantities of whitewash in and around the nests. As in 2014, a pair of Peregrine Falcons used the side of the Ritz-Carlton Hotel for a nesting site, with territorial adults and a juvenile observed on several dates here during spring 2015.

Based on results from previous surveys (Hamilton and Cooper 2010, Hamilton Biological 2011), most or all of the “unknown small” nests belonged to Black-crowned Night-Herons or Snowy Egrets; however, we did not detect any Snowy Egret nests (nor Great Egret nests) here, suggesting that this subcolony was used exclusively by Black-crowned Night-Herons in 2015.

Unlike in previous years, we did not find any evidence of active nesting at Yvonne Brathwaite Burk Park (County Parcel Q) nor along the bicycle path on the east side of Oxford Basin (County Parcel P).

Marquesas Way

See Figure 2. We detected a total of 97 active nests in several trees along the road median toward the eastern end of Marquesas Way and in adjacent private parcels. Active nests, with adults nest-building and/or attending to young, were observed during each visit in April, May and early July. By the last (July) visit, a maximum of 68 nests had been confirmed as having been used by Black-crowned Night-Herons, 25 nests by Snowy Egrets, and 4 “unknown small” nests were presumed to have been used by either of these two species (or both), based on their placement within the colony and the amount of whitewash in and under the nests. The vast majority of nests were placed in 13 paperbark melaleucas (*Melaleuca quinquenervia*); five nests were placed in three pines (*Pinus* sp.) and three nests were placed in a fig tree. The three pines and fig tree had not been documented as nesting trees during previous years of monitoring, nor had one of the paperbark melaleucas. All of these “new” nesting trees were located on the edges of the road (including on adjacent parcels), rather than along the median strip.

Panay Way

No active nests were found here in 2014 or 2015.

Mariner's Village

Note: nests along the northern fence-line overhang onto the parking lot at the end of Bora Bora Way. Some nests along the fence-line were treated as part of the Bora Bora Way/Fuel-Bait Dock colony in 2010.

See Figure 3. During the 2015 survey, 16 nests known or likely to belong to Great Blue Herons were observed within Mariner's Village (Leaseholder Parcel 113). Of these, 14 were confirmed as active and belonging to Great Blue Heron, and the other two most likely belonged to Great Blue Herons and were likely active in 2015, but this could not be confirmed (these were coded "unknown large"). As in 2014, the Double-crested Cormorant nesting tree again held 19 active nests, with most activity over by the 2 July visit (when only a handful of large juveniles were observed). The 35 nests at Mariner's Village occupied a total of 10 trees, of which 6 were gums (including *Eucalyptus globulus* and *E. citriodora*), 3 were Italian stone pines (*Pinus pinea*), and one was a fig. Several additional trees at Mariner's Village apparently serve as roosting, but not nesting, sites for colonial waterbirds, including a dense grove of low pines near the eastern edge of the complex associated with a cascading water feature.

Bora Bora Way

Note: this site is directly adjacent to the following one (Mariner's Village), and several nests in trees located on Mariner's Village overhang onto the Bora Bora Way parcel. Some of these nests, along the fenceline, were treated as part of the Bora Bora Way/Fuel-Bait Dock colony in the 2009 survey and in subsequent years.

See Figure 3. One of the two nesting trees that held Double-crested Cormorants in 2014, located at the head of boat channel A (Leaseholder Parcel 111) was removed at some point prior to the start of the 2015 survey (Figure 4), due to public health/safety concerns. It had 11 active nests on 5 May 2014.

Fiji Way

Note: this site was called "Villa Venetia" by Hamilton and Cooper (2010). No active nests were noted here in 2015. See Figure 5.

Burton Chace Park

No active nests were detected here in 2015. See Figure 6.

TABLE 2: SUMMARY OF PAIRS, BY YEAR

This table lists the numbers of active and “likely active” nests observed in the entire Marina del Rey colony. Please refer to the following discussions, and to Appendix B, for additional details.

BCNH = Black-crowned Night-Heron

SNEG = Snowy Egret

GBHE = Great Blue Heron

GREG = Great Egret

DCCO = Double-crested Cormorant

Species	2009	2011	2012 ¹	2014	2015	Trend
BCNH ²	43	81	64	81	89	Increase
SNEG	35	24	10	18	25	Mixed
GBHE ³	32	25	28	22	16	Decline
GREG	5	1	1	0	0	Decline
DCCO	19	22	24	30	19	Mixed
Total	134	153	127	151	149	

TABLE 3: SUMMARY OF SUBCOLONY SIZES, BY YEAR

This table lists the numbers of active and “likely active” nests observed at each subcolony. Please refer to the following discussions, and to Appendix B, for additional details.

Admiralty Way = Including vic. Oxford Basin, Yvonne Brathwaite Burk Park (County of Los Angeles), and vic. Ritz-Carlton hotel.

Marquesas Way = Road median and adjacent sidewalk areas along Marquesas Way.

Mariner’s Village = Mariner’s Village complex, and adjacent Boat Basin A to the north, along Bora Bora Way.

Fiji Way = South end of Fiji Way, including trees vic. the Department of Beaches and Harbors, U.S. Coast Guard Station, Villa Venetia apartments, and UCLA boathouse.

Chace Park = Burton Chace Park (County of Los Angeles), end of Mindanao Way.

Location	2009	2011	2012	2014	2015	Trend
Admiralty Way	71	64	25	33	17	Decline
Marquesas Way	9	38	49	66	97	Increase
Mariner’s Village	29	18	41	53	35 ⁴	Mixed
Fiji Way	25	29	12	0	0	Decline
Chace Park	0	4	0	0	0	N/A
Total	134	153	127	152	149	

¹ Single-day survey (Point Blue Conservation Science, unpubl. data), so likely an undercount for several species.

² Includes “unknown small” wader nests that were either Snowy Egret or Black-crowned Night-Heron (see text).

³ Includes “unknown large” wader nests that were either Great Blue Heron or Great Egret (see text).

⁴ Much of this decline (11 nests) was due to the removal of a single tree at Bora Bora Way, which was combined with Mariner’s Village in prior reports.

SUMMARY AND CONCLUSION

The overall total of 149 active/"likely active" nests in 2015 is comparable to previous marina-wide totals recorded by Hamilton Biological and Cooper Ecological Monitoring starting in 2009 (Tables 2 and 3). A pair of Peregrine Falcons ("PEFA" in Table A1) nested on the Ritz-Carlton Hotel for the second year in a row, providing the only modern-era nesting records of this species in Marina del Rey.

Totals of approximately 150 colonial waterbird nests have now been recorded on three of the five survey years since 2009. Our data also show a continuing decline in the number of nesting Great Blue Herons and Great Egrets (Table 2), though the latter was never numerous here (1-5 nests from 2009 to 2012, none since then). Numbers of Black-crowned Night-Herons doubled between 2009 and 2011, and have remained in the 80-90 pair range since then, while trends in the Snowy Egret and Double-crested Cormorant appear to be mixed, or at least not clearly increasing or decreasing. It is possible that our attribution of all "unknown small" wader to the Black-crowned Night-Heron has inflated numbers of that species while undercounting the number of the Snowy Egret nests, but any such effects are expected to be small.

The 2015 results indicate that nesting waterbirds continue their trend in recent years of a wholesale shift of Great Blue Heron and Double-crested Cormorant colonies away from locations along Fiji Way, on the eastern side of the marina, to Mariner's Village, and a shift of Black-crowned Night-Herons and Snowy Egrets from Admiralty Way to Marquesas Way on the western side of the marina, where the nesting colony has increased more than ten-fold since 2009 (Table 3). At Mariner's Village/Bora Bora Way, total nests increased from 29 nests in 2009 to 53 nests in 2014, then decreased to 35 nests in 2015. Additional years of monitoring are needed to clarify whether this is the start of a long-term decline or a single-year phenomenon.

Fiji Way has not supported significant waterbird nesting (by Double-crested Cormorant/Great Blue Heron) since 2012/2013, when several dying cypress trees were removed and remodeling/construction was initiated on the nearby Breakwater (formerly Villa Venetia) apartment complex. Although palms in this area have not been removed or disturbed, Great Blue Herons no longer nest in them, the colony having moved across the marina to Mariner's Village. On 27 March 2015, Hamilton incidentally observed a pair of Great Blue Herons starting to build a nest in a palm near the UCLA Rowing Center, at the southern end of Fiji Way, but these birds did not follow through on the nesting attempt.

Similarly, Black-crowned Night-Herons and Snowy Egrets have largely abandoned their colony along Admiralty Way, with just a handful of trees adjacent to the Ritz-Carlton now in use. No herons or egrets were observed nesting at Yvonne Brathwaite Burke Park or in the row of eucalyptus near Oxford Basin; the latter location was last used by nesting waterbirds in 2009 (Hamilton and Cooper 2010). It is possible that tree-pruning activity has increased here from prior years, or that recent roadwork and restoration work at Oxford Basin might have increased low-level disturbance; however, our census data show that this subcolony has been shrinking since 2009, with numbers de-

clining by more than 50% as of 2012. The trees around the parking lot at Burke Park are pruned to some degree each year, but we have no quantitative data on the intensity or timing of tree-trimming in this area over the years. We note that the birds have stopped using many trees that have *not* been pruned for several years, including two large eucalyptus in the Burke Park parking lot and several ficus trees on the Ritz-Carlton property across the street (R.A. Hamilton and D.S. Cooper, pers. obs.). Furthermore, we observe that the local decline in this area started prior initiation of roadwork along Admiralty Way and the major restoration project at nearby Oxford Basin (which began in 2014).

Our observations here, and elsewhere in the region, suggest that colonial waterbirds in urban areas are prone to shifting colony locations every several years. Such shifts could occur in response to perceived disturbances, and might also reflect changes in tree structure resulting either from pruning or the poisonous effects of accumulating guano. Regardless of the cause, our observations suggest that, once a critical mass has moved out of one area and taken up residence in elsewhere, the remaining birds tend to eventually follow, either during the same year or in subsequent years. Thus, the local populations of Double-crested Cormorant and Great Blue Herons have moved from Fiji Way west to the Mariner's Village area, and most of the Black-crowned Night-Herons and Snowy Egrets have moved from Admiralty Way to Marquesas Way. So long as the trees along Fiji Way and Admiralty Way remain in suitable condition to support nests, we see no reason why colonial waterbirds would not return to use those areas at some point in the future.

The trend toward consolidation in fewer colonies may be cause for some concern, particularly if existing conditions at these two areas should substantially change. For example, 65% of all nests found in 2015 were at a single subcolony (Marquesas Way), and 89% of all nests were at just two sites, Marquesas Way and Mariner's Village. All species (except for the Great Egret, which has nested at only very low levels during certain years) have shown flexibility in shifting to new colonies around the Marina over time, particularly between 2012 and 2014. We expect they will continue to nest successfully throughout Marina del Rey as the character of the marina community continues to evolve. There has been a decline of nesting Great Blue Heron numbers since 2009 (averaging a 12% drop per year, from 32 nests in 2009 to 16 nests in 2015), and the entire nesting population of this species is now located at Mariner's Village. If the removal of documented nesting trees within any particular parcel in Marina del Rey were to be proposed, such removal may be phased to allow a transition period for the birds to move. If Great Blue Heron numbers continue to drop, the Department may consider exploring concepts such as the construction of nesting platforms for Great Blue Herons and/or Double-crested Cormorants in protected portions of the marina suitable for long-term occupancy by nesting waterbirds.

The Department should work with the relevant resource agencies, including the California Coastal Commission, California Department of Fish & Wildlife, and U.S. Fish & Wildlife Service.

We further observe that the relative lack of major disturbances along Marquesas Way and in Mariner's Village has allowed for continuation of the nesting colonies in these locations, even as several large apartment buildings have undergone renovation during recent years. These projects have been closely monitored by biologists, and no trees have been significantly trimmed or removed. Thus, impacts to nesting colonies have likely been minimal. As reported here, the Marquesas Way colony has expanded to include nesting over sidewalks, in addition to those in the road median. Nesting and roosting over sidewalks and parking lots increases the potential for human-bird conflicts, presenting another situation to be closely monitored over time.

Dan Cooper and I appreciate the opportunity to continue our monitoring of raptor and colonial waterbird populations in Marina del Rey. If you have any questions, please call me at (562) 477-2181 or send e-mail to robb@hamiltonbiological.com.

Sincerely,



Robert A. Hamilton
President, Hamilton Biological, Inc.
<http://hamiltonbiological.com>

cc: Dan Cooper, Cooper Ecological Monitoring, Inc.

LITERATURE CITED

- Hamilton, R. A., and Cooper, D. S. 2010. Conservation & Management Plan for Marina del Rey, Los Angeles County, California. Report dated 16 September 2010 prepared for County of Los Angeles, Dept. of Beaches & Harbors and Dept. of Regional Planning.
- Hamilton Biological, Inc. 2011. Surveys of nesting colonial waterbirds, Marina Del Rey, Los Angeles County, CA. Report dated 30 August 2011. Prepared for County of Los Angeles, Dept. of Beaches & Harbors, Marina del Rey, CA.
- Hamilton Biological, Inc. 2014. Final report on nesting waterbirds and raptors, Marina Del Rey, Los Angeles County, CA. Report dated 11 September 2011. Prepared for County of Los Angeles, Dept. of Beaches & Harbors, Marina del Rey, CA.
- Point Blue Conservation Science. 2012. Unpublished data from surveys of colonial waterbirds nesting in Marina del Rey conducted in May and June 2012 by Daniel S. Cooper.

Appendix A

Maps

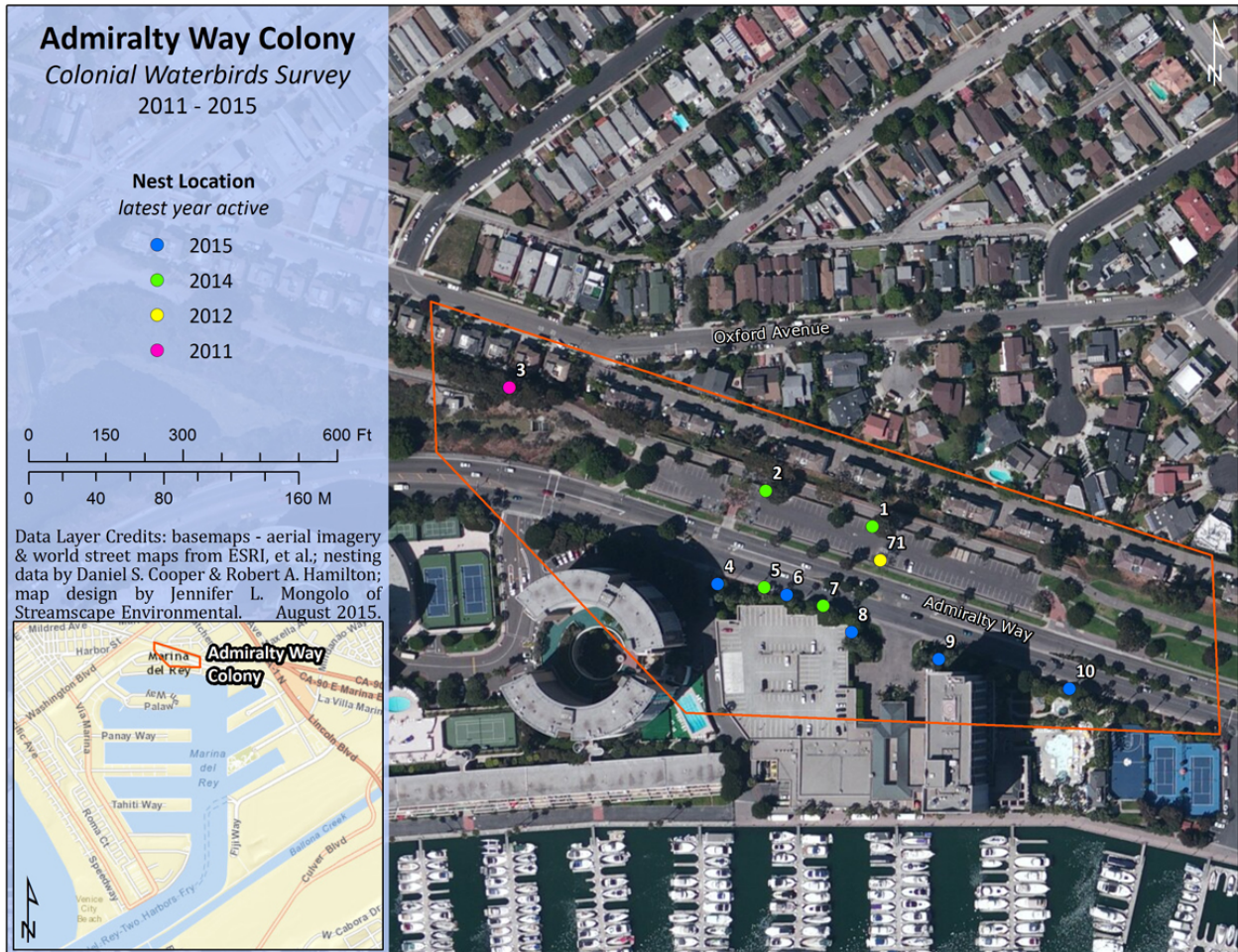


Figure 1, Admiralty Way Subcolony. Numbers next to symbols correlate with the tree numbers in Appendix B. In addition, an active Peregrine Falcon nest was again found on a high ledge of the Ritz-Carlton Hotel.

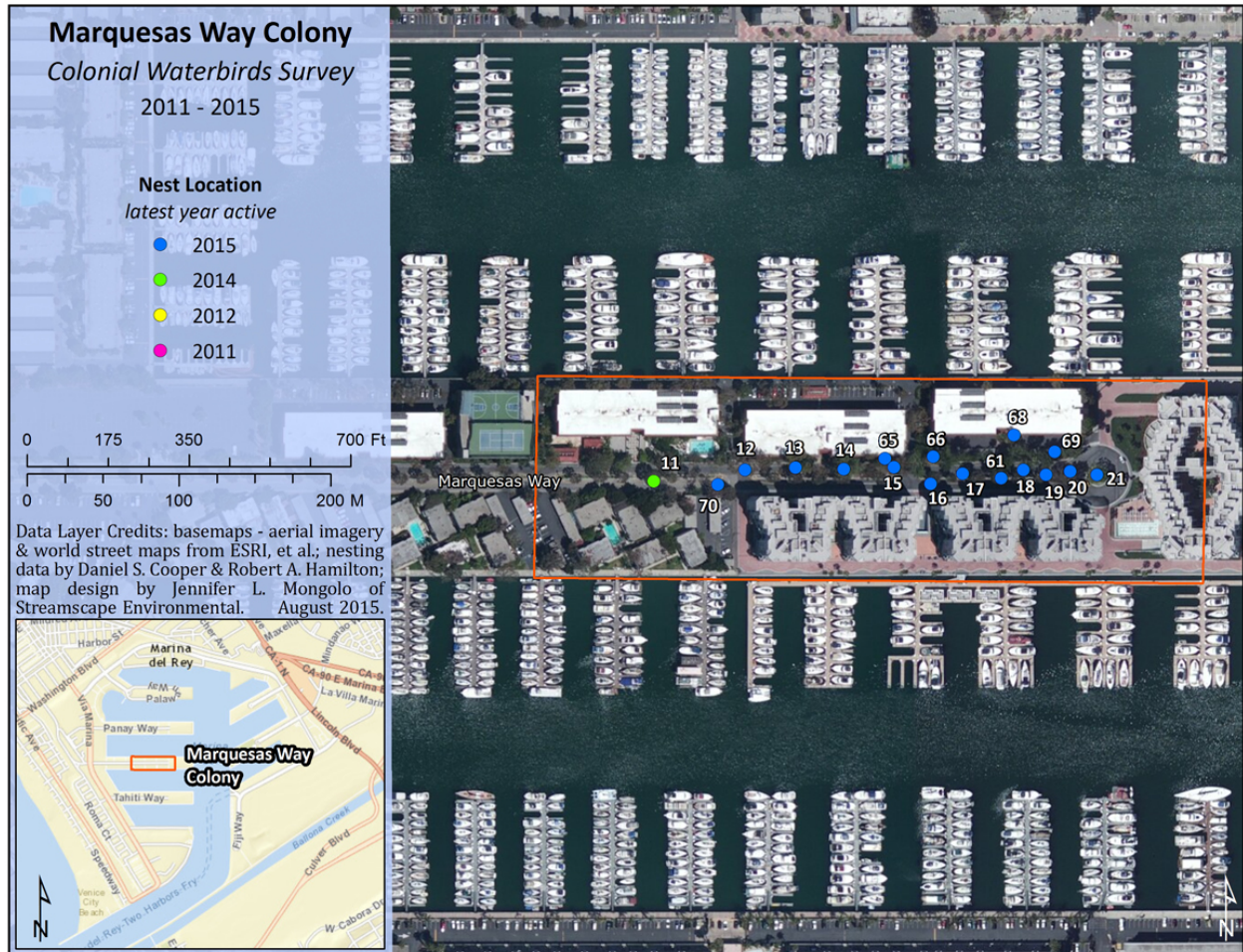


Figure 2. Marquesas Way Subcolony. Numbers next to symbols correlate with the tree numbers in Appendix B.

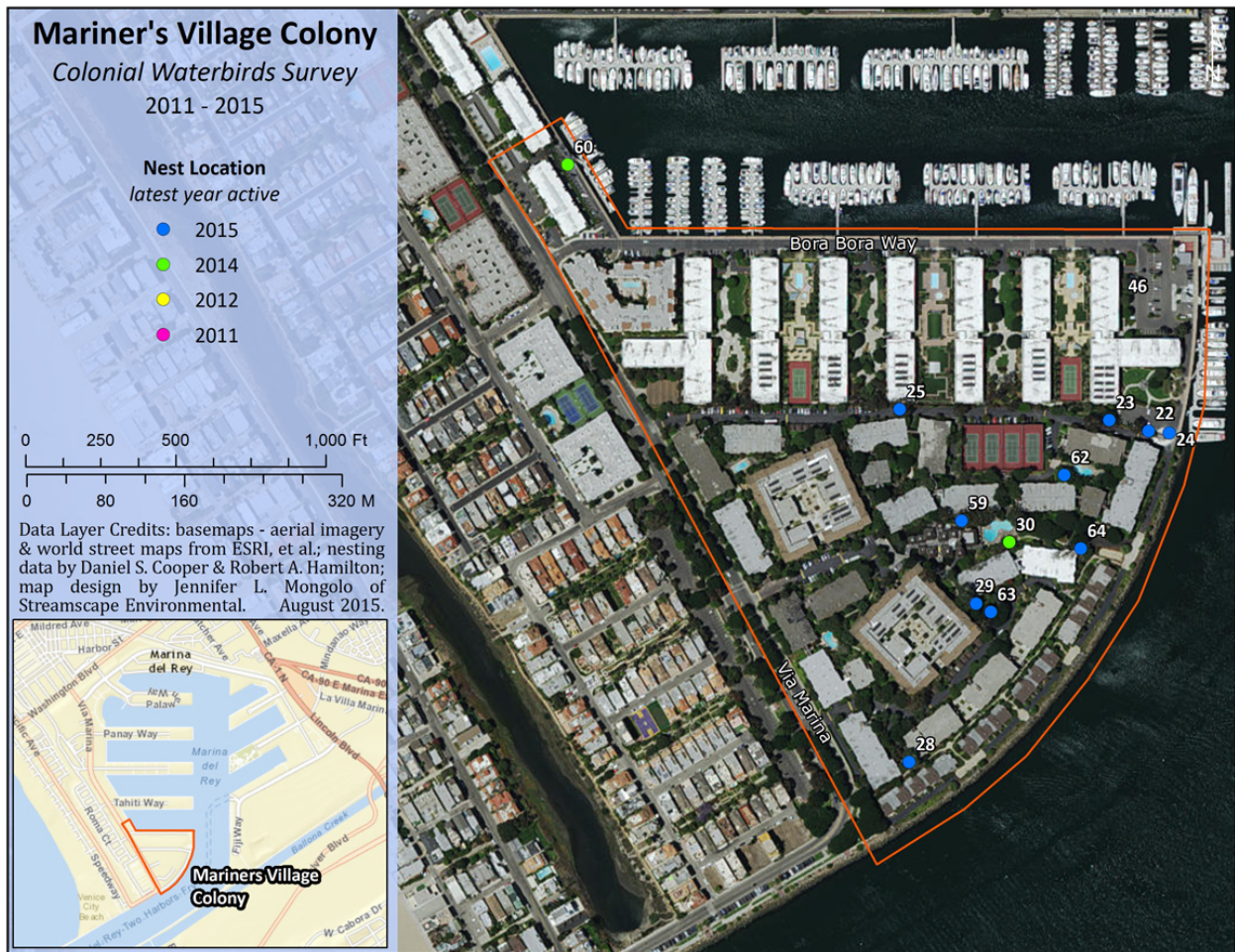


Figure 3. Mariner's Village/Bora Bora Way Subcolony. Numbers next to symbols correlate with the tree numbers in Appendix B.



Figure 4. Gum (*Eucalyptus* sp.) at head of Boat Basin A on 5 May 2014; this tree was subsequently removed, prior to the start of the 2015 survey.

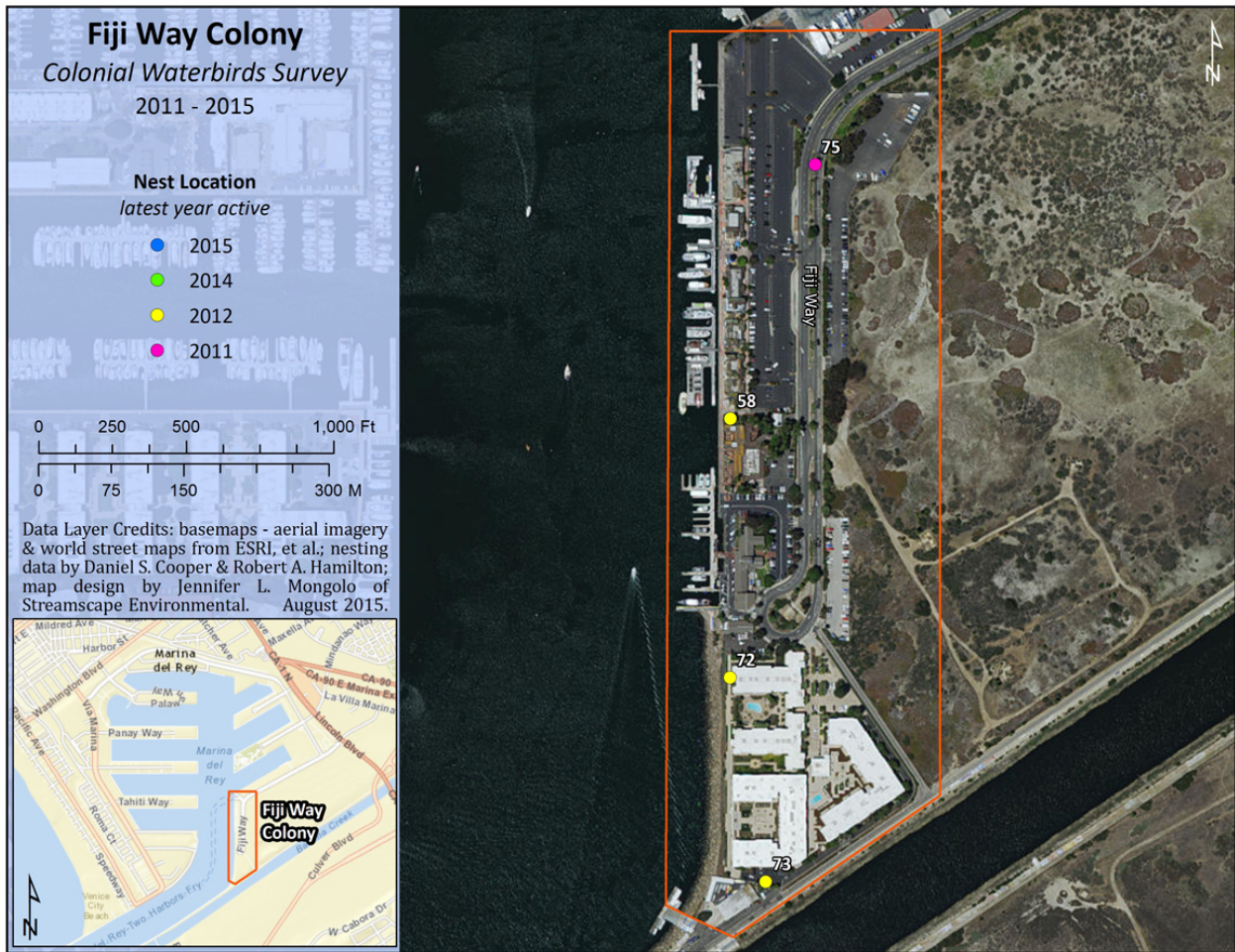


Figure 5. Fiji Way Subcolony. No active nests of colonial waterbirds or raptors were found near Fiji Way in 2015. Numbers next to symbols correlate with the tree numbers in Appendix B.

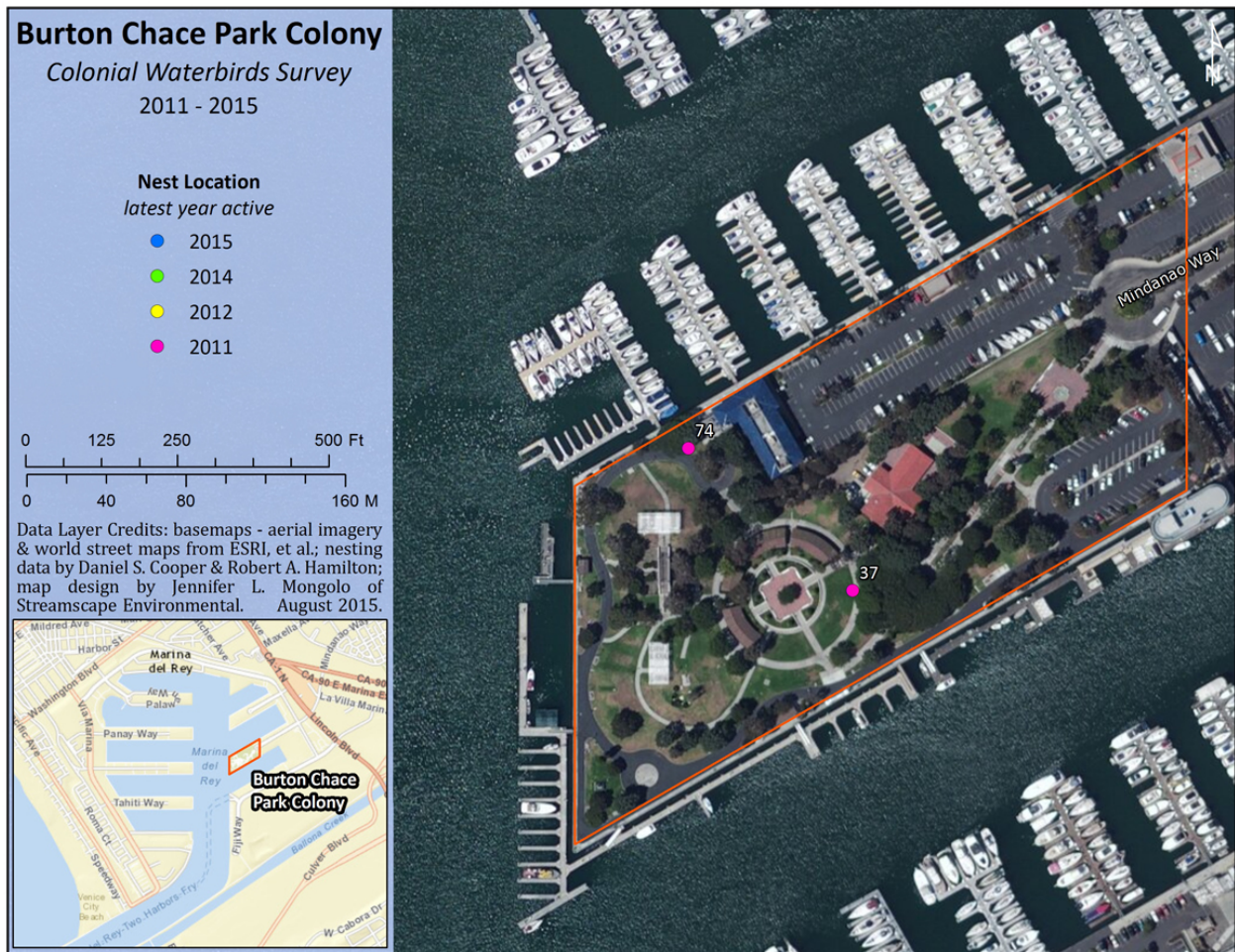


Figure 6. Burton Chace Park Subcolony. No active nests of colonial waterbirds or raptors were found at Burton Chace Park in 2015. Numbers next to symbols correlate with the tree numbers in Appendix B.

Appendix B

Data Tables

Table B1. Nest activity, by tree, 2014-2015. AW = Admiralty Way; MV = Mariner's Village/Bora Bora Way; MW = Marquesas Way. See also Table A2.

Tree	Colony name	Parcel	2014	2014	2014	2014	2014	2014	2014	2014	2014	2015	2015	2015	2015	2015	2015	2015	2015	2015
			Active?	GBHE	BCNH	SNEG	DCCO	Unk Large	Unk Small	Spp 1	Spp 2	Active?	GBHE	BCNH	SNEG	DCCO	Unk Large	Unk Small	Spp 1	Spp 2
1	AW	Q	1	0	1	0	0	1	0	Unk. Large	BCNH	0	0	0	0	0	0			
2	AW	Q	1	0	1	0	0	0	11	BCNH	Unk. Small	0	0	0	0	0	0	Unk. Small		
4	AW	125	0	0	0	0	0	0	4	Unk. Small		1	0	1	0	0	0	3	BCNH	Unk. Small
5	AW	125	1	0	1	0	0	0	0	BCNH		0	0	0	0	0	0			
6	AW	125	1	0	1	0	0	0	2	BCNH	Unk. Small	1	0	0	0	0	0	1	Unk. Small	
7	AW	125	1	0	1	0	0	0	0	BCNH		0	0	0	0	0	0	0	Unk. Small	
8	AW	125	1	0	2	0	0	0	0	BCNH		1	0	3	0	0	0	3	BCNH	Unk. Small
9	AW	125	1	0	1	0	0	0	3	BCNH	Unk. Small	1	0	1	0	0	0	3	BCNH	Unk. Small
10	AW	125	1	0	2	0	0	0	0	BCNH		1	0	0	0	0	0	2	Unk. Small	
42	AW	125	1							PEFA		1	0	0	0	0	0	0	PEFA	
43	AW	Q	0	0	0	0	0	0	1	Unk. Small		0	0	0	0	0	0	0	Unk. Small	
46	MV	112	0	0	0	0	0	1	0	Unk. Large		0	0	0	0	0	0	0	N/A	
24	MV	113	1	0	0	0	19	0	0	DCCO		1	0	0	0	19	0	0	DCCO	
22	MV	113	1	2	0	0	0	0	0	GBHE		1	2	0	0	0	0	0	GBHE	
23	MV	113	1	2	0	0	0	1	0	GBHE	Unk. Large	1	3	0	0	0	0	0	GBHE	
25	MV	113	1	1	0	0	0	1	0	GBHE		1	2	0	0	0	0	0	GBHE	
28	MV	113	1	4	0	0	0	1	0	GBHE		1	1	0	0	0	0	0	GBHE	
29	MV	113	1	3	0	0	0	1	0	GBHE		1	2	0	0	0	2	0	GBHE	
30	MV	113	1	1	0	0	0	0	0	GBHE		0	0	0	0	0	0	0	N/A	
59	MV	113	1	0	0	0	0	2	0	Unk. Large		1	1	0	0	0	0	0	GBHE	
62	MV	113	1	0	0	0	0	1	0	GBHE		1	1	0	0	0	0	0	Unk. Large	
63	MV	113	1	0	0	0	0	1	0	GBHE		1	1	0	0	0	0	0	GBHE	

			2014	2014	2014	2014	2014	2014	2014	2014	2014	2015	2015	2015	2015	2015	2015	2015	2015	2015	
Tree	Colony name	Parcel	Active?	GBHE	BCNH	SNEG	DCCO	Unk Large	Unk Small	Spp 1	Spp 2	Active?	GBHE	BCNH	SNEG	DCCO	Unk Large	Unk Small	Spp 1	Spp 2	
64	MV	113										1	1	0	0	0	0	0	0	GBHE	
11	MW	Road ⁵	1	0	0	0	0	0	1	BCNH		0	0	0	0	0	0	0	0	N/A	
12	MW	Road	1	0	1	0	0	0	0	BCNH		1	0	2	0	0	0	0	0	BCNH	
13	MW	Road	1	0	6	0	0	0	2	BCNH	Unk. Small	1	0	11	0	0	0	0	0	BCNH	
14	MW	Road	1	0	3	1	0	0	3	BCNH	SNEG ⁶	1	0	7	0	0	0	0	0	BCNH	
15	MW	Road	1	0	3	2	0	0	1	BCNH	SNEG ⁶	1	0	4	3	0	0	1	0	BCNH	SNEG ⁶
16	MW	Road	1	0	6	0	0	0	0	BCNH	SNEG	1	0	8	2	0	0	0	0	BCNH	SNEG
17	MW	Road	1	0	0	1	0	0	0	BCNH	SNEG	1	0	3	1	0	0	0	0	BCNH	SNEG
18	MW	road median	1	0	2	3	0	0	1	BCNH	SNEG ⁶	1	0	4	3	0	0	0	0	BCNH	SNEG
19	MW	Road	1	0	2	2	0	0	1	BCNH	SNEG ⁶	1	0	3	4	0	0	0	0	BCNH	SNEG
20	MW	Road	1	0	4	5	0	0	1	SNEG	BCNH ⁶	1	0	7	6	0	0	0	0	BCNH	SNEG
21	MW	Road	1	0	2	0	0	0	4	BCNH	Unk. Small	1	0	6	1	0	0	1	0	BCNH	SNEG
61	MW	Road	1	0	2	3	0	0	1	BCNH	SNEG ⁶	1	0	5	5	0	0	1	0	BCNH	SNEG ⁶
65	MW	13	0	0	0	0	0	0	0			1	0	2	0	0	0	0	0	BCNH	
66	MW	13	0	0	0	0	0	0	0			1	0	2	0	0	0	0	0	BCNH	
68	MW	13	0	0	0	0	0	0	0			1	0	0	0	0	0	0	1	Unk. Small	
69	MW	13	0	0	0	0	0	0	0			1	0	3	0	0	0	0	0	BCNH	
70	MW	10	0	0	0	0	0	0	0			1	0	1	0	0	0	0	0	BCNH	
TOTALS			31	13	41	17	19	10	36			32	14	73	25	19	2	16			

⁵ Road median (of Marquesas Way).

⁶ "Unknown small" wader nests also recorded here in year indicated.

Table B2. Nest tree detail, 2011-2015. Note: trees listed with question mark are assumed active in year indicated.

Old #	New #	Species	Colony name	Parcel	Active 2009 ⁷	Active 2011	Active 2012	Active 2014	Active 2015	Notes
1	BP-148	Eucalyptus	Admiralty Way	Q		1	1	1	0	
2	BP-250	Eucalyptus	Admiralty Way	Q		0	1	1	0	
3	OX-10	Eucalyptus	Admiralty Way	P		1	0	0	0	
4	N/A	Ficus	Admiralty Way	125	0	0?	0?	0	1	
5	N/A	Ficus	Admiralty Way	125	0	1?	1?	1	0	
6	N/A	Ficus	Admiralty Way	125	0	1?	1?	1	1	
7	N/A	Ficus	Admiralty Way	125	1	1?	1?	1	0	
8	N/A	Ficus	Admiralty Way	125	1	1?	1?	1	1	
9	N/A	Ficus	Admiralty Way	125	1	1?	1?	1	1	
10	N/A	Ficus	Admiralty Way	125	0	1?	1?	1	1	
11	MQ-16	Melaleuca	Marquesas Way	Road median		1?	1?	1	0	
12	MQ-13	Melaleuca	Marquesas Way	Road median		1?	1?	1	1	
13	MQ-12	Melaleuca	Marquesas Way	Road median		1?	1?	1	1	
14	MQ-11	Melaleuca	Marquesas Way	Road median		1?	1?	1	1	
15	MQ-10	Melaleuca	Marquesas Way	Road median		1?	1?	1	1	
16	MQ-9	Melaleuca	Marquesas Way	Road median		1?	1?	1	1	
17	MQ-8	Melaleuca	Marquesas Way	Road median		1?	1?	1	1	
18	MQ-6	Melaleuca	Marquesas Way	Road median		1?	1?	1	1	
19	MQ-5	Melaleuca	Marquesas Way	Road median		1?	1?	1	1	
20	MQ-4	Melaleuca	Marquesas Way	Road median		1?	1?	1	1	
21	MQ-3	Melaleuca	Marquesas Way	Road median		1?	1?	1	1	
22	N/A	Eucalyptus	Mariner's Village	113	0	0?	0	1	1	
23	N/A	Eucalyptus	Mariner's Village	113	1	1?	0	1	1	
24	N/A	Eucalyptus	Mariner's Village	113	1	1?	1	1	1	
25	N/A	Eucalyptus	Mariner's Village	113	0	0?	0	1	1	
28	N/A	Pinus	Mariner's Village	113	1	1?	1	1	1	

⁷ Only listed as such for trees active in 2011 (for reference only).

Old #	New #	Species	Colony name	Parcel	Active 2009 ⁸	Active 2011	Active 2012	Active 2014	Active 2015	Notes
29	N/A	Pinus	Mariner's Village	113	0	0?	0	1	1	
30	N/A	Eucalyptus	Mariner's Village	113	0	0?	0	1	0	
37	CP-109	Pinus	Burton Chase	EE		1	0	0	0	
43	N/A	Eucalyptus	Admiralty Way	Q		0	0	0	0	
43	N/A	Ficus	Admiralty Way	125	0	0?	0?	0	0	
46	TBD	Pinus	Bora Bora Way	112		0	0	0	0	
58	N/A	Washingtonia	Fiji Way	61		1	1	0	0	Including more than 1 tree (cluster of Washingtonia)
59	N/A	Eucalyptus	Mariner's Village	113	0	0?	0	1	1	
60	N/A	Eucalyptus	Bora Bora Way	111		0	1	1	0	Tree removed
61	MQ-7	Melaleuca	Marquesas Way	Road median		1?	1?	1	1	
62	N/A	Ficus	Mariner's Village	113	0	0?	0	1	1	
63	N/A	Pinus	Mariner's Village	113	0	0?	0	1	1	
64	N/A	Eucalyptus	Mariner's Village	113	0	0	0	0	1	
65	TBD	Pinus	Marquesas Way	13		0	0	0	1	
66	TBD	Pinus	Marquesas Way	13		0	0	0	1	
68	TBD	Pinus	Marquesas Way	13		0	0	0	1	
69	TBD	Ficus	Marquesas Way	13		0	0	0	1	
70	TBD	Melaleuca	Marquesas Way	10		0	0	0	1	
71	TBD	Ficus	Admiralty Way	Q		1	1	0	0	
72	N/A	Cupressus	Fiji Way	64		1	1	0	0	Trees removed by 2014
73	TBD	Washingtonia	Fiji Way	65		1	1	0	0	
74	TBD	Pinus	Burton Chase	EE		1	0	0	0	
75	TBD	Washingtonia	Fiji Way	TBD		1	0	0	0	

⁸ Only listed as such for trees active in 2011 (for reference only).