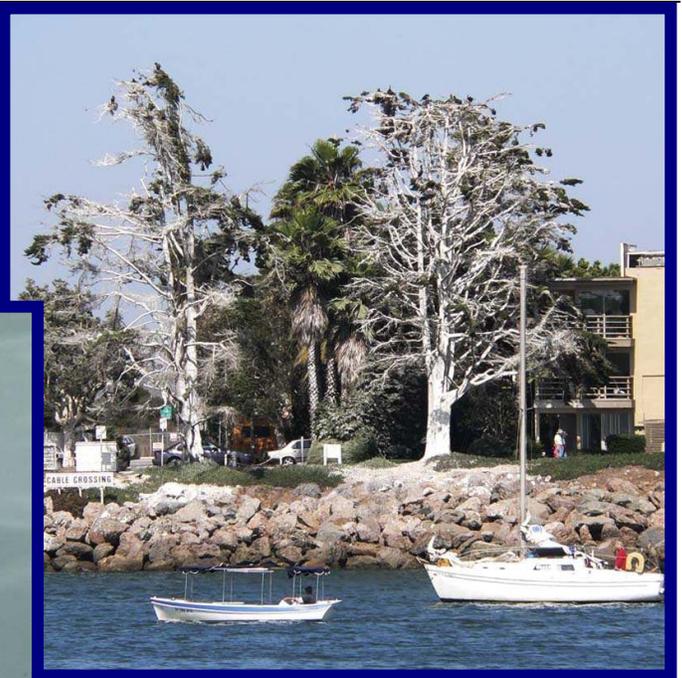


**Conservation & Management Plan
for Marina del Rey,
Los Angeles County, California
March 23, 2010**



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We, the authors of this conservation and management plan, attest that we believe all information in this document to be true, and that both of us support the findings and recommendations presented herein.

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TABLE OF CONTENTS

Executive Summary	i
1.0 Introduction & Purpose	1-1
1.1 Introduction	1-1
1.2 Purpose	1-1
2.0 Methods	2-1
2.1 Historical Research	2-1
2.2 Recent & Current Research in the Ballona Area	2-3
2.2.1 Recent Research of the Authors & Collaborators	2-3
2.2.2 Current Research of the Authors	2-4
3.0 Setting	3-1
3.1 Overview of Marina del Rey	3-1
3.2 History of Marina del Rey	3-4
3.2.1 Biocentric (Natural) History	3-4
3.2.1 Anthropocentric (Human-centered) History	3-6
3.2.3 An Historical Review of Nesting Herons & Egrets at Marina del Rey	3-8
3.2.4 The Future of Nesting Herons & Egrets at Marina del Rey	3-13
3.3 Marina del Rey Heronries and Regional Context	3-14
3.4 Waterbird Nesting Colonies in Marina del Rey	3-17
3.4.1 Admiralty Way Nesting Colony	3-19
3.4.2 Marquesas Way Nesting Colony	3-21

3.4.3	Nesting Colony Near Fuel-Bait Dock on Bora Bora Way	3-23
3.4.4	Mariner’s Village Nesting Colony	3-25
3.4.5	Villa Venetia Nesting Colony/Ballona Wetlands (Area A).....	3-26
3.5	Waterbird Foraging & Roosting Locations in the Local Area	3-29
3.5.1	Oxford Basin	3-29
3.5.2	Ballona Lagoon.....	3-32
3.5.3	Del Rey Lagoon.....	3-33
3.5.4	Ballona Wetlands (Area B).....	3-34
3.5.5	Ballona Freshwater Marsh.....	3-35
3.5.6	Centinela Confluence	3-36
3.6	Summary & Analysis of Waterbird Observations at Foraging & Roosting Locations.....	3-38
3.7	Bird Species of Conservation Concern in Marina del Rey	3-40
4.0	Management Concerns with Colonial Waterbirds & Sensitive Species at Marina del Rey	4-1
4.1	Review of the Potential for Human Disturbances of Waterbird Nesting Colonies in Marina del Rey	4-1
4.2	Potential Effects of Colonial Waterbirds Upon Other Species in the Marina del Rey Area.....	4-4
4.3	Potential Conflicts Between Humans & Colonial Waterbirds in Marina del Rey.....	4-6
4.3.1	Nuisances & Costs to Residents, Workers, Lessees, and the Land Owner.....	4-6
4.3.2	Death of Trees Through Guantrophy	4-6
4.3.3	Potential Health Risks	4-7

4.3.4	Potential Conflicts with Natural Resource Management.....	4-7
4.3.5	Potential Conflicts with Planned Human Land Uses	4-8
4.4	Effects of Human Disturbance on Sensitive Species.....	4-8
5.0	Marina-wide Management Recommendations	5-1
5.1	Management Recommendations for Waterbird Colonies	5-1
5.1.1	Outline of Management Assumptions & Concepts	5-3
5.1.2	Recommended Approach to Evaluating Land Use Conflicts.....	5-5
5.1.3	Tree Management Recommendations	5-6
5.1.4	Waterbird Monitoring Recommendations	5-7
5.2	Recommendations for Biological Reports & Construction Monitoring.....	5-7
5.2.1	Qualified Biologist	5-7
5.2.2	Biological Reports	5-7
5.2.3	Construction Timing.....	5-9
5.2.4	Construction Near Waterbird or Raptor Nesting Sites	5-9
5.2.5	Additional Controls on Construction Impacts	5-11
6.0	Potential for Habitat Restoration in Marina del Rey	6-1
6.1	Open Spaces in Marina del Rey with Highest Potential for Habitat Improvement.....	6-1
6.1.1	Oxford Basin	6-1
6.1.2	Proposed Wetland Park at Parcel 9	6-3
6.1.3	Margin of Ballona Wetlands (Area A)	6-4
6.2	Conservation Policies for Potential Restoration Areas.....	6-6
6.2.1	Conservation Policies for Oxford Basin.....	6-6

6.2.2	Conservation Policies for Wetland Park at Parcel 9.....	6-8
6.2.3	Conservation Policy for Margin of Ballona Wetlands (Area A).....	6-10
7.0	Literature Cited	7-1

DRAFT

TABLES

3-1: Nesting Summary for Colonial Herons, Egrets, and Cormorants in Los Angeles County, Excluding Marina Del Rey	3-14
3-2: Nesting Summary for Colonial Herons, Egrets, and Cormorants in Marina Del Rey, 2009	3-18
3-3: Summary of Maximum Counts of Colonial Waterbirds at Foraging and Roosting Sites in Late June/July 2009	3-38
3-4: Counts of Colonial Waterbirds in Late June/July 2009 by Age Class and Tide.....	3-39
3-5: Bird Species of Conservation Concern in Marina del Rey and Surroundings	3-43

APPENDICES

A. CURRICULA VITAE FOR PLAN AUTHORS

B. COPIES OF FIELD NOTES

C. MAPS & PHOTOS OF OTHER LOS ANGELES COUNTY HERONRIES

D. MARINA DEL REY AVIAN COMMUNITIES

EXECUTIVE SUMMARY

Sixty years ago, the area around lower Ballona Creek comprised a vast wetland of saltmarsh and mudflats, teeming with birds and wildlife, and characterized by low scrub with virtually no trees. Marina del Rey was established here in the early 1960s, and today the area represents an active recreation hub and residential community, centered on one of the largest marinas on the Pacific Coast. In recent decades, the marina's arboreal landscaping has matured into an "urban forest" that has been adopted as nesting habitat for a variety of colonial waterbirds (in this area, herons, egrets, and cormorants), and other wildlife species adapted to urban coastal settings. Our research indicates that colonial waterbirds did not nest at the historical Ballona Wetlands, including the area now occupied by Marina del Rey. During the decades before breeding colonies were established, these birds occurred regularly in the local area as winter visitors and migrants, although typically in smaller numbers than we see today. Since the late 1990s, several species of nesting colonial waterbirds have undergone major population increases statewide, exploiting human activities at numerous harbors, marinas, reservoirs, and similar settings, where non-native landscape trees are typically used for nesting. Playing a role in this large-scale phenomenon, Marina del Rey now supports a combined total of more than 100 breeding pairs of Double-crested Cormorants, Black-crowned Night-Herons, Great Blue Herons, Great Egrets, and Snowy Egrets.

Some waterbird species that nest at the marina are widespread in the Los Angeles area, but a few are much more localized, and their local populations depend on the artificial and natural habitats provided by Marina del Rey and the nearby Ballona Wetlands. In parts of Marina del Rey, the waste that accumulates beneath nesting colonies has become a nuisance and potential human health hazard, and conflicts between waterbirds and human users of the marina have been increasing. In recent years, nesting waterbirds have concentrated in three main areas at the marina, the largest being within the tall eucalyptus and ficus trees along Admiralty Way between Oxford Basin and the Ritz-Carlton Hotel, including those around a large parking lot at Yvonne B. Burke Park. Other large nesting colonies are found around the Coast Guard Station and Fisherman's Village at the end of Fiji Way, and on the opposite/western side of the marina entrance, near Mariner's Village. Birds from these colonies, as well as from smaller ones scattered around Marina del Rey, forage and roost widely in the marina and the adjacent Ballona Wetlands, but are concentrated during the spring/summer nesting season around their food sources: Oxford Basin and the two bait docks on either side of the marina channel entrance.

In southern California, mild winters and year-round food supplies mean that the “nesting season” is not well-defined, although activity is typically highest in spring and summer, and lowest in late fall. In most cases, trees with nesting herons and egrets may be readily identified by large white stains on the ground below, resembling spilled paint (called “whitewash” or “guano”). All of Marina del Rey’s landscape trees, including those used by nesting birds, require occasional pruning or, in some cases, removal. In recent years these actions have been guided by the Department of Beaches and Harbor’s Policy No. 23, “Tree Pruning in Marina del Rey and on County Beaches in Accordance with Native Bird Breeding Cycles.” Either coincidentally or not, Marina del Rey’s waterbird colonies have generally expanded and diversified during the years this policy has been in place, and we believe that the policy effectively supports the continued existence of colonial waterbirds in the marina. The policy is consistent with State and federal laws that prohibit the disturbance of nesting birds except in consultation with the California Department of Fish and Game and the U.S. Fish and Wildlife Service.

We recognize, however, that most waterbird colonies in Marina del Rey are in some degree of conflict with intended human uses of the marina, and that the public and regulators seek assurance that such conflicts will not eventually lead to persecution of the birds through disturbance of their nesting trees. We recommend that the County provide this assurance by (1) extending the County’s existing tree-pruning policy to cover all leaseholders in Marina del Rey, and (2) amending the policy to include review and approval by a biologist before any waterbird nest could be removed or rendered unusable as a result of non-emergency pruning deemed necessary by an arborist or other landscape specialist. We further recommend that the County conduct waterbird population surveys, preferably on an annual basis, to track the status of colonies and to provide current information on the locations of active nests to the public, the County, resource agencies, and other regulators.

This plan also recommends that surveys for nesting colonial waterbirds be conducted on the coastal slope of Los Angeles County at regular intervals (e.g., every 3–5 years), in order to be able to establish a regional context for the Marina del Rey colonies.

This plan recommends against establishing additional non-native trees or man-made structures for nesting waterbirds at Marina del Rey, taking into consideration (a) lack of evidence that these species nested in the local area historically; (b) the potential for conflict between colonial waterbirds and species of conservation concern in the local area, especially the California Least Tern; and (c) the potential for conflict between colonial waterbirds and established human uses of the marina. We also recommend against replacing nesting trees if they should be rendered unusable through natural/normal

use by the birds. Rather, to the extent possible, we believe that natural processes should guide habitat management decisions marina-wide.

The management approaches recommended in this plan are subject to modification based on the findings of local, State and federal biologists and applicable environmental law. For example, if the State were to declare the Great Egret (one of the locally nesting colonial waterbirds) a Species of Special Concern, this could necessitate greater protection for that species. Or, if it were learned that individuals of a particular heron colony at the marina were preying on California Least Tern chicks at nearby Venice Beach, State or federal wildlife agencies might intervene to remove "problem" individuals or otherwise limit the colony size.

This plan also provides management goals and recommendations for the two remaining quasi-natural areas in Marina del Rey: Oxford Basin, a flood-control facility located between Washington Boulevard and Admiralty Way that is operated and maintained by the Los Angeles County Flood Control District (LACFCD), and "Wetland Park," a small parcel of open space at the corner of Via Marina and Tahiti Way, both of which have been selected for enhancement projects with public use and habitat benefits. Both areas (as well as the adjacent Ballona Wetlands Ecological Reserve along Fiji Way) have the potential to support a variety of bird and wildlife species that visitors to the marina and local residents and their children would enjoy observing. As Oxford Basin serves a critical flood protection role for the surrounding community, all proposed enhancements and policies for Oxford Basin must be consistent with the operation and maintenance needs of the LACFCD.

Finally, this plan identifies several additional "species of conservation concern" that were displaced by the development of the marina, evaluates their potential for re-establishment, and provides recommendations for where and how habitat restoration may benefit them.

1.0 INTRODUCTION & PURPOSE

1.1 Introduction

The County of Los Angeles (County) commissioned Robert A. Hamilton, president of Hamilton Biological, Inc., to prepare this Conservation and Management Plan (Plan). Hamilton Biological teamed with a second biologist, Daniel S. Cooper, president of Cooper Ecological Monitoring, Inc., who participated in all aspects of fieldwork, historical research, development, and authorship of the Plan. Both authors possess extensive experience studying the avifauna of the Los Angeles Area, including the Ballona Valley, and are highly qualified to provide the conservation and management recommendations contained in this Plan. Appendix A provides their Curricula Vitae.

1.2 Purpose

The County has commissioned this Plan in response to the Periodic Review by the California Coastal Commission (Commission) of Marina del Rey's certified Local Coastal Program (LCP). This review was initiated in 2005, its final findings were adopted in October 2008, and the findings were received by the County on 30 April 2009¹. The Commission submitted to the County recommendations for actions to be considered that would more fully implement the Coastal Act. Within a year following submission of any recommendations, the County is required, if the recommended action is not taken, to forward to the Commission a report setting forth its reasons for not taking the recommended action. The County has elected to respond to Recommendations 43-62, concerning "Biological Resources and Environmentally Sensitive Habitat Areas (ESHA)," (the "Recommendations") by initiating this Plan and including related new resource protection and management policies in an LCP amendment.

For Marina del Rey, many of the Commission's Recommendations refer specifically to nesting colonies of herons, egrets, and cormorants (collectively referred to in this document as "colonial waterbirds") and the non-native trees they use for nesting. A review conducted by the authors (this study) has found that these colonial waterbird species are generally increasing in number and breeding range in Los Angeles County and elsewhere along the coastal slope of southern California, described below. Their recent and ongoing colonization of Marina del Rey has precipitated conflicts between the birds, which produce conspicuous accumulations of guano, and such existing land uses as swimming pools, parking lots, and restaurants with outdoor seating. Guanotrophy (poisoning of the soil and scalding of plant life through guano accumu-

¹Adopted Revised Findings to support the Commission's January 9, 2008 approval of the Los Angeles County's Marina del Rey Periodic LCP Review staff report and recommendations. Published online at <http://www.coastal.ca.gov/recap/mdr/mdr-adopted-5-mm9.pdf>

lation below nesting or roosting trees) apparently caused one nesting tree to topple and crush an automobile in Marina del Rey in 2008 (A. Culbertson, pers. comm.), and airborne particles of guano could pose a health risk through psittacosis, a bacterial infection that can cause severe pneumonia and other serious health problems for humans (Harkinezhad et al. 2009). Land-use/bird conflicts remain a concern at Marina del Rey, though planned redevelopment efforts that could involve removal of trees used by colonial waterbirds on some parcels have recently been suspended or scaled back due to economic concerns. The County is using this time to study the issue and the Recommendations, and to develop this Plan, which includes a number of ecologically sound policies designed to responsibly resolve conflicts between birds and humans, and which provide for long-term accommodation and enhancement of biological resources throughout Marina del Rey.

Members of the public and the Coastal Commission, through their recommendations, regard colonial nesting birds as important components of the local natural community for several reasons: they are native species that are protected by law (as are all nesting birds), and they are “high-order predators” that prey upon and otherwise interact with other species of wildlife in the local area, including fish, small mammals, and potentially other birds. Not insignificantly, they are conspicuous, charismatic birds with a strong “following” in the local community. A necessary outcome of the County’s ongoing planning and management processes is to develop and implement policies that protect existing waterbird colonies while acknowledging the pressures such colonies may place upon other sensitive natural resources and the need to strike an appropriate balance between native wildlife populations, colonial waterbirds, and continued human uses of Marina del Rey. Thus, this Plan considers colonial waterbirds in detail, which has entailed:

- Using historical information to reconstruct the historical status and distribution of colonial waterbirds in the local area;
- Researching and describing the current status and distribution of colonial waterbirds elsewhere on the coastal slope of Los Angeles County to evaluate the relative importance of local colonies;
- Identifying and describing the principal breeding locations of the various colonial waterbird species in Marina del Rey;
- Conducting field work to understand how each colonial waterbird species uses different parts of the local landscape to fulfill such basic ecological requirements as roosting and foraging;
- Reviewing the published literature concerning potential human disturbances upon nesting colonial waterbirds;

- Evaluating how these medium- and large-sized predators could potentially interact with listed/protected or otherwise biologically “sensitive” species in the local area;
- Identifying areas within Marina del Rey that have good potential to provide increased biological value for native plants and wildlife following appropriate restoration and habitat enhancement actions; and
- Developing appropriate restoration, conservation, and management policies to address the wildlife-related issues we have identified in Marina del Rey and surroundings.

The purpose of this Plan is outlined as follows:

1. To catalog all native bird species that regularly occur, or that are known to have historically occurred regularly at Marina del Rey, focusing on documenting the historical and current status of species of conservation concern².
2. To describe the current and historical status of colonial waterbirds (herons, egrets, and cormorants) that nest at Marina del Rey.
3. To document and describe how colonial waterbirds are utilizing habitats in Marina del Rey and surrounding areas, including the adjacent Ballona Wetlands.
4. To evaluate the range of effects that nesting populations of colonial waterbirds at Marina del Rey could have upon other species that occur in the local area.
5. To identify known or potential conflicts that have arisen, or that may arise, between wildlife and existing or planned human uses of Marina del Rey.
6. To identify areas within Marina del Rey where the potential exists to restore or re-establish appropriate native habitats.
7. To provide a management strategy that encourages the perpetuation of Marina del Rey’s existing colonial waterbird populations at self-sustaining and ecologically appropriate levels, recognizing (a) that state and/or federal resource agencies may have valid reasons to place limits on the size and/or location of a given waterbird colony, and (b) that colonies are likely to naturally shift and fluctuate over time for reasons outside of human control.

² For purposes of this Plan, such species include federally and state-listed species, California Species of Special Concern, and any other native bird species known to have experienced serious declines in, or extirpation from, the local area.

8. To establish a planning framework that takes into account relevant information about and analyses of wildlife at Marina del Rey, and that establishes best management practices appropriate for its unique landscape, resources, and surrounding land uses.

This planning framework referred to above has two overarching goals: a) to promote the long-term conservation of all native species that exist in, or that may be expected to return to, Marina del Rey, including surrounding open space areas, focusing especially on the most vulnerable, globally-scarce, and otherwise biologically sensitive species; and b) to diminish the potential for conflicts between wildlife populations and both existing and planned human uses of Marina del Rey (to the benefit of humans and wildlife alike).

In developing this Plan, the project biologists have carefully considered concerns and recommendations expressed by the Coastal Commission and its staff, and the Plan contains numerous resource protection elements derived directly from those recommendations. However, certain recommendations we have reviewed do not comport with the facts as we have observed them at Marina del Rey during the course of this study and in our prior experience, and some past recommendations have overlooked how management actions that favor one group of species may disfavor other species that are more threatened on a global level, or that require greater legal protection (see memorandum from Hamilton to Andi Culbertson, August 22, 2007). For example, we do not believe that non-native, deliberately-planted trees at Marina del Rey that support nesting colonial waterbirds rise to the level of ESHA as described in Section 30107.5 of the Coastal Act (nor do they satisfy the criteria given in Section 4.3.B in the City of Malibu LCP/LIP). Nevertheless, we recognize that the area's waterbird colonies represent ecological assets that warrant conservation and a well-considered approach to resource management. We believe that the conservation and management strategies described in this Plan are ecologically sound, being supported by our field observations as well as a thorough review of the published literature (see Section 7.0). For this reason, we expect the policies recommended here to be approved and supported by regulatory agencies both now and in the future.

2.0 METHODS

Robert A. Hamilton (RAH) and Daniel S. Cooper (DSC) prepared this draft Conservation and Management Plan, and our work builds upon previous and concurrent work by Dr. Jeffrey B. Froke, who has been studying colonial-nesting waterbirds in Marina del Rey and elsewhere in the region for several years. We have also considered Section 4.4.2 of the City of Malibu LCP Local Implementation Plan (LIP), which describes methods to be followed for biological reports prepared in conjunction with specific development projects in or near biologically sensitive areas (although we do not consider those methods directly applicable to the development of this marina-wide conservation and management plan, which is not part of a permit application).

2.1 Historical Research

RAH compiled the anthropocentric (human-centered) history of Marina del Rey from three main sources:

County of Los Angeles, Department of Beaches and Harbors. Undated. The History of Marina del Rey. Available online: <<http://beaches.co.la.ca.us/BandH/Marina/MdRhistory.htm>>.

Marinadelrey.com. 2009. *The complete guide to Marina del Rey*. A history of the area prepared by marina delrey.com. Available online: <<http://www.marinadelrey.com/history.html>>.

Wikipedia entry for "Marina del Rey." Available online: <http://en.wikipedia.org/wiki/Marina_del_Rey,_California>.

DSC compiled and interpreted the known historical conditions and bird communities in and around the Ballona Valley. For many years, DSC has been researching and studying the current and historical bird communities of the region, and the Ballona/Venice/Marina del Rey area in particular; see Cooper (2006, 2008). The bio-centric history of Marina del Rey and surrounding areas, contained in Section 3.2.2 of this plan, represents a synthesis of relevant information from the following sources:

Boland, J.M., and J.B. Zedler. 1991. *The functioning of Ballona Wetland in relation to tidal flushing: Part I - Before tidal restoration*. Pp. 1-53 in City of Los Angeles. 1992. Draft environmental impact report for first phase project for Playa Vista; master plan project for Playa Vista: Technical Appendices. Vol. X, Appendix J: Biotic Resources. City of Los Angeles, Los Angeles, Calif.

Chambers, W.L. 1936. *The hunter in southern California versus wild animal life*. Condor 38:199-202.

Cooke, T.D. 1946. *The proposed bird sanctuary at Playa del Rey*. Western Tanager 13:5.

Corey, K.C. 1992. *Bird survey of Ballona Wetland, Playa del Rey, California 1990-1991*. Pp. 1-41 in City of Los Angeles. 1992. Draft environmental impact report for first phase project for Playa Vista; master plan project for Playa Vista: Technical Appendices. Vol. X, Appendix J: Biotic Resources. City of Los Angeles, Los Angeles, CA.

- County of Los Angeles, Department of Beaches and Harbors. Undated. The History of Marina del Rey. Available online: <<http://beaches.co.la.ca.us/BandH/Marina/MdRhistory.htm>>.
- County of Los Angeles, Department of Small Craft Harbors. 1976. Draft Environmental Impact Report, Proposed Japanese-American cultural garden, Marina del Rey. August 19, 1976.
- Crockett, M. Undated. Westchester history. Available online: <<http://www.laxcoastal.com/EN/ComResources/Overview/WestHist.shtml>>.
- Dock, C. F., and Schreiber, R. W. 1981. *The Birds of Ballona*. in R.W. Schreiber, ed. 1981. *The Biota of the Ballona Region, Los Angeles County* (Supplement I of Marina del Rey/Ballona Local Coastal Plan). Los Angeles County Natural History Museum Foundation.
- Froke, J. B. 2007. *Marina del Rey heronry report for 2005-2006*. Report dated 1 February 2007 prepared for the County Of Los Angeles Dept. of Beaches & Harbors and Lyon Capital Management, Newport Beach, CA.
- Fuller, B.T. 1955. *Help! Cry the Los Angeles County waterbirds*. Western Tanager 22:17.
- Garrett, K.L. 2001. *Birds of the Baldwin Hills*. Pp. 77-126 in K. Molina, ed., *Biota of the Baldwin Hills, Los Angeles County, California*. Community Conservancy International and Natural History Museum of Los Angeles County Foundation, Los Angeles, CA.
- Garrett, K., and J. Dunn. 1981. *Birds of southern California: status and distribution*. Los Angeles Audubon Society, Los Angeles, CA.
- Grinnell, J. 1898. *Birds of the Pacific slope of Los Angeles County*. Pasadena Academy of Sciences No. 2.
- Jurek, R.M. 1992. *Nonnative Red Foxes in California*. California Department of Fish and Game, Wildlife Management Division, Nongame Bird and Mammal Section Report 92-04.
- Mattoni, R., and T.R. Longcore. 1997. *The Los Angeles coastal prairie, a vanished community*. *Crossosoma* 23:71-102.
- Robinson, W.W. 1939. *Culver City: a calendar of events, in which is included, also, the story of Palms and Playa del Rey together with Rancho La Ballona and Rancho Rincon de los Bueyes*. Available online: <<http://www.cheviot hills.org/Ranchos.htm>>.
- Schreiber, R. W., and Dock, C. F. 1980. *The birds of the bird conservation area, Marina del Rey, Los Angeles County*. Report to Department of Small Craft Harbors, County of Los Angeles, Marina del Rey, CA.
- Splitter, H.W. 1951. *Birds in Los Angeles County seventy-five years ago*. Western Tanager 18:3.
- von Bloeker, J. C. 1943. *The fauna and flora of the El Segundo sand dunes: Birds of El Segundo and Playa del Rey*. Bulletin of the Southern California Academy of Sciences 42:1-30 (Part 1) and 90-103 (Part 2).
- Willett, G. 1933. A revised list of the birds of southwestern California. Pacific Coast Avifauna 21.
- Worsfold, D.I. Undated. My 50 years in Palms. Available online: <<http://www.cheviot hills.org/history.htm>>.
- Zedler, J.B. 1982. The ecology of southern California coastal salt marshes: a community profile. FWS/OBS-81/54, U.S. Fish and Wildlife Service, Washington, D.C.

In addition, DSC has requested and reviewed the unpublished notes of several local birders, including Kimball Garrett, Kevin Larson, Art and Jean Pickus and Robert Shanman, and has conducted extensive museum research to determine historical habitat conditions and species assemblages in the Ballona/Marina del Rey/Venice area³.

2.2 Recent & Current Research in the Ballona Area

2.2.1 RECENT RESEARCH OF THE AUTHORS & COLLABORATORS

From 2003 to present, DSC has conducted quarterly and breeding bird surveys of Ballona Freshwater Marsh and the Playa Vista Riparian Corridor, and he has also conducted bird surveys of the Ballona Wetlands for the Ballona Wetlands Foundation and the Santa Monica Bay Restoration Foundation. In addition to this consulting work, DSC lives near the project area and has an abiding personal interest in the birds of this area, and frequently visits the area independent of any work obligations to study the local avifauna.

In 2006, RAH conducted a series of eight breeding bird surveys of the Ballona Freshwater Marsh. In 2006 and 2007, he worked with Peter H. Bloom and Terry L. Master to evaluate the situation of Great Blue Herons nesting near the Villa Venetia Apartments in southern Marina del Rey and to develop initial recommendations for conserving the birds and avoiding conflicts with the planned redevelopment of that part of the marina. Earlier, in 1996, RAH conducted a series of ten breeding bird surveys for the future Playa Vista Riparian Corridor, and in 1998 he conducted a series of eight focused surveys for Southwestern Willow Flycatchers (*Empidonax traillii extimus*) and Least Bell's Vireos (*Vireo bellii pusillus*) in the same area.

From July 2005 to present, Jeffrey B. Froke has been studying the nesting ecology and nest-site preferences of colonial waterbirds within Marina del Rey. His work is relatively constant (on a monthly basis 12 months per year) to detect pre-nesting and post-nesting colony activities. His principal study species at Marina del Rey is the Great Blue Heron. Although his work encompasses the entire marina environment, Froke particularly focuses on the sub-colony along Fiji Way, near Villa Venetia. In addition to surveys and monitoring, his activities include analyzing the potential for actively managing Great Blue Herons in Marina del Rey, and deliberating on conservation alternatives to support their continued and successful breeding in the area.

³ In addition, field notes were requested of local activists David DeLange and Robert Van de Hoek in December 2009 (by DSC), but none has been provided to date.

2.2.2 CURRENT RESEARCH OF THE AUTHORS

The following sources were used to identify endangered, threatened, or other “special status” species potentially occurring in Marina del Rey:

- California Department of Fish and Game (CDFG), Natural Diversity Data Base. 2009a. Search report dated 9 July 2009 for the Venice, Beverly Hills, Hollywood, Inglewood, Torrance, and Redondo Beach USGS quadrangles.
- CDFG, Natural Diversity Data Base. 2009b. Special Animals. List dated July 2009.
- CDFG, Natural Diversity Data Base. 2010. Special Vascular Plants, Bryophytes, and Lichens List. List dated January 2010.
- Consortium of California Herbaria, plant records from Marina del Rey, Ballona, Venice, Playa del Rey, and Del Rey Lagoon; search reports dated 17 August 2009.

RAH and DSC conducted a total of 19 field visits during spring and summer 2009. Three of these visits, between 20 May and 23 June, were conducted with the primary purpose of determining the locations and sizes of nesting colonies used by colonial waterbirds in Marina del Rey, including the Double-crested Cormorant (*Phalacrocorax auritus*), Great Blue Heron, Great Egret (*Ardea alba*), Snowy Egret (*Egretta thula*), and Black-crowned Night-Heron. We counted numbers of nests visible from the ground, marked them on aerial photographs, and made notes on the numbers of adults, fledglings, and juveniles visible at each colony⁴. Copies of our notes are provided in Appendix B.

To obtain a snapshot of habitat usage during the nesting season, RAH and DSC surveyed locally-breeding waterbird species roosting or foraging at wetland and other habitats in the Marina del Rey/Playa del Rey area on 16 dates between 29 June and 30 July. For purposes of our study, stationary birds that are not at their nest site nor are actively foraging are considered to be “roosting.” Roosting may take the form of standing on the ground (esp. Great Blue Heron) or perching in a tree or on a structure (egrets, cormorant). Birds roost in groups at especially favored sites, but can also be found roosting alone throughout the local area. Most of the surveyed sites were selected by DSC, based on six years of professional monitoring and birding experience in the area. These sites were surveyed along a route that took between two and three hours to complete. In some cases, additional time was spent obtaining photographs of birds using the sites. Sites were visited between 06:45 and 18:45, with 10 visits beginning before 12:00 noon, and six visits after noon. This allowed us to compare bird usage at

⁴ In some cases it was not possible to determine the species responsible for certain nests, as no bird was present, but we attempted to discern between nests that were likely used in 2009 versus old nests through such cues as whitewash beneath this year’s nests and cobwebs in old nests.

different tide heights across the survey, as low tide during July was typically in the early morning, and high tide in the afternoon. Most sites were small and compact, allowing for quick observation of birds. Individuals were recorded by age (i.e., adult vs. immature), but a small number of distant birds, particularly Snowy and Great egrets, were difficult to age at a distance, and were left as "age unknown."

Our 2009 field surveys did not start until late May, well into the breeding season, which for Great Blue Herons begins in late winter. We are aware that some Great Blue Herons and Black-crowned Night-Herons had already completed nesting, and that others were finishing up nesting, by the time our surveys started. Still, all species surveyed had at least some active nests during the entire survey period, and Double-crested Cormorants, Great Egrets, and Snowy Egrets generally seemed to be in the middle of nesting when our surveys commenced. We generally counted nests as having been active in 2009 if we found accumulations of recent whitewash below them, even if nesting at the location had been completed. What is important, for purposes of developing this plan, is not that we were able to find every active nest or closely monitor nesting activities, but that we were able to find all nesting-season concentrations and to evaluate how the adults and juveniles were utilizing the landscape in and around Marina del Rey during and after the nesting season. We thus believe that we gathered enough information from our field visits in spring/summer 2009 to estimate population sizes, characterize how the various species were using the resources of Marina del Rey and surrounding areas, and to recommend appropriate measures to safeguard those uses in the future. The current waterbird survey efforts by RAH, DSC, and J. B. Froke are important because, as documented by Cooper (2006, 2008), colonial waterbirds are recent colonists of Marina del Rey and no comparable research effort has been undertaken to document the status of their populations or their patterns of habitat usage.

A secondary focus of our colonial waterbird assessment was to determine the locations and at least the approximate sizes of other waterbird colonies on the coastal slope of Los Angeles County, to serve as a comparison to the Marina del Rey colonies. We accomplished this with field visits to known or likely areas during July and August 2009, and by making inquiries (including posts on the Los Angeles County birding listserve) with colleagues and birders in the Los Angeles County area who may have monitored colonies, or who may have had knowledge of colonies not known to us. Through this process, we believe that we obtained a reasonably complete understanding of the current status and distribution of colonial-nesting herons, egrets, and cormorants on the coastal slope of Los Angeles County. We are unaware of any comparable effort to document the current status of these birds in the County, including the Los Angeles County Breeding Bird Atlas effort (unpublished), which ended fieldwork in 1999, before the recent surge of nesting colonial waterbirds in the region.

Part of our work involved evaluating the County's existing policy for *Tree Pruning in Marina del Rey and on County Beaches in Accordance with Native Bird Breeding Cycles*,

which has been in effect since 5 December 2006. As part of this effort, we reviewed the April 2009 version of the Los Angeles Audubon Society's *Guide to Bird-friendly Tree and Shrub Trimming and Removal* (Los Angeles Audubon Society 2009).

DRAFT

3.0 SETTING

3.1 Overview of Marina del Rey

Marina del Rey is an 807-acre enclave located on the central coast of Los Angeles County (Figure 3-1). The County of Los Angeles (County) owns Marina del Rey and leases out its land and water resources to private individuals and corporations on long-term lease agreements. Open water accounts for half of Marina del Rey's acreage, and the community is strongly associated with boating and other coastal-recreation activities. The area includes boat slips, rental apartments, condominiums, hotels, offices, restaurants, and retail space.

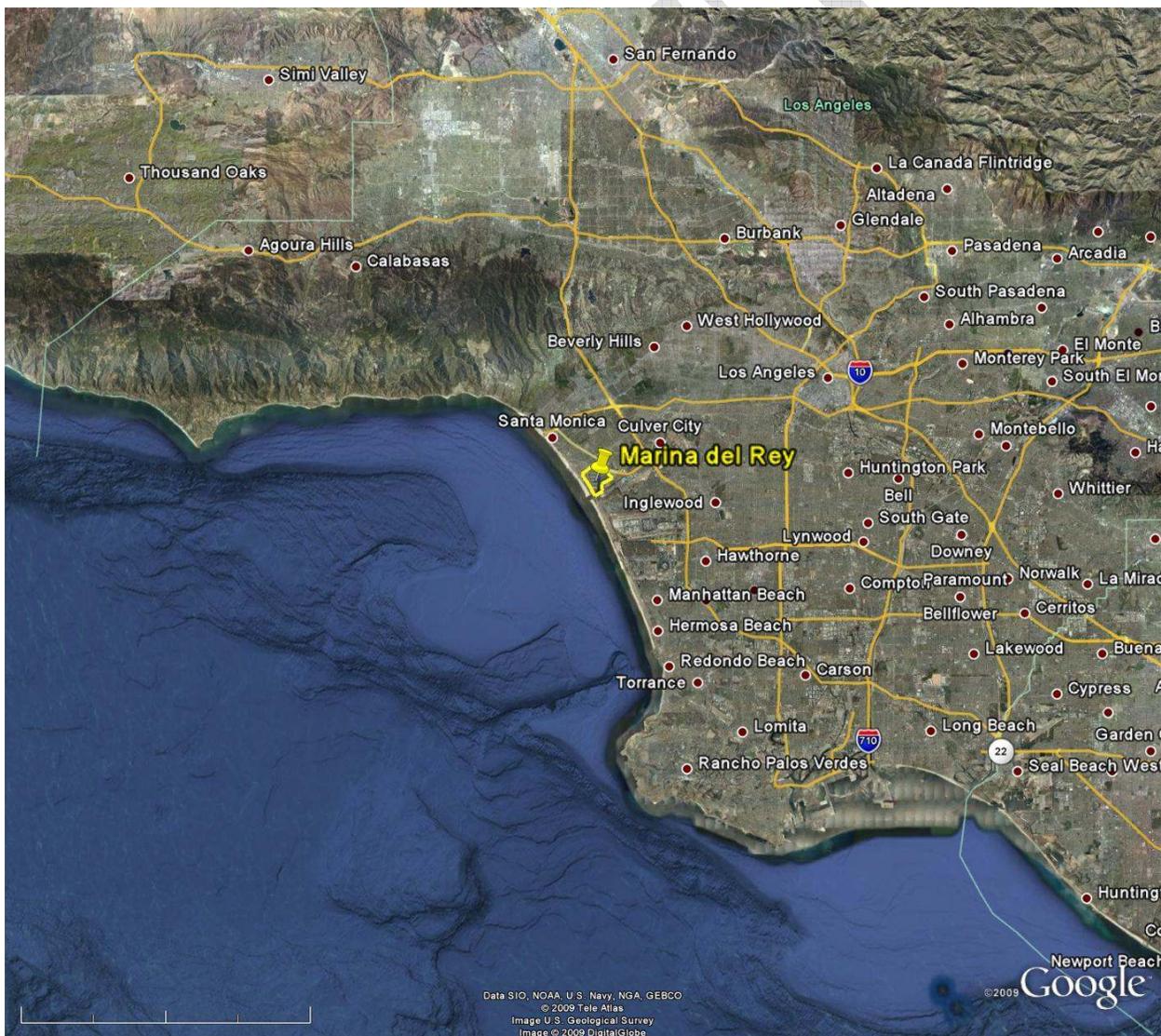


Figure 3-1. Regional location of Marina del Rey, on the central coast of Los Angeles County.

Marina del Rey is roughly bounded by Washington Boulevard to the north, Lincoln Boulevard to the east, Fiji Way and the south jetty of the entrance to Marina del Rey the south, and Via Marina to the west (Figure 3-2).

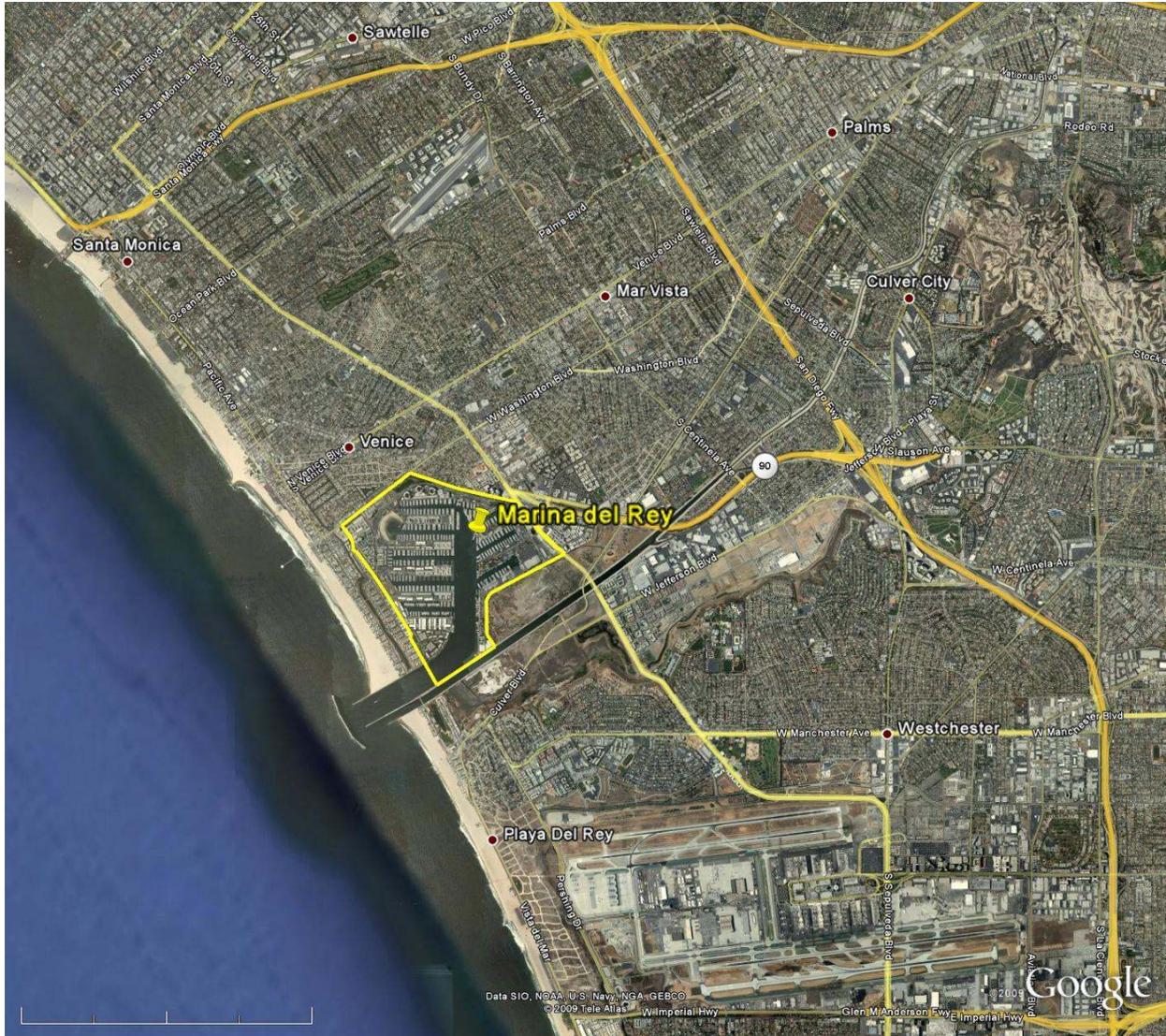


Figure 3-2. Local setting. Surrounding communities, all within the City of Los Angeles, include Playa del Rey, Westchester, Mar Vista, and Venice. Los Angeles International Airport is visible in the southern part of this aerial image.

Figure 3-3, below, shows (in red) the five principal nesting sites used by large numbers of colonial waterbirds in Marina del Rey during 2009. Additional minor nesting areas, and roosting areas, used by smaller numbers of birds, are scattered around the marina.

Based on our research in 2009, the most important *foraging* areas for herons and egrets in Marina del Rey itself are Oxford Basin and two live-bait tanks used by sport-fishermen, one located on the west side of the marine entrance to Marina del Rey at the southern end of Bora Bora Way, and the other on the east side at Fisherman's Village. Herons and egrets were found to routinely roost and forage in other areas, as well, including in Area A of the Ballona Wetlands, adjacent to Marina del Rey; Ballona Lagoon, which is the southern extension of the "Grand Canal" at Venice; Del Rey Lagoon; Ballona Wetlands (Area B); Ballona Freshwater Marsh; and Ballona Creek (esp. the "Centinela Confluence," where the Centinela Channel feeds into Ballona Creek). Just north of the mouth of Marina del Rey, on Venice Beach, is a fenced-off nesting area for the federally and state-listed California Least Tern.



Figure 3-3. Areas of biological interest in and around Marina del Rey. The yellow outline represents the Marina del Rey LCP boundary.

3.2 History of Marina del Rey

Marina del Rey is a man-made feature that occupies the historical estuary at the mouth of Ballona Creek. The history of Marina del Rey in relation to its natural resources may be addressed in two parallel narratives, one anthropocentric (human-centered) and the other biocentric (natural).

3.2.1 BIOCENTRIC (NATURAL) HISTORY

Essential to the task of evaluating and addressing the conservation and management needs of Marina del Rey is understanding the history of the natural resources of the original site, and how they have changed with the transformation of a former natural estuary into a largely man-made marina. Prior to the arrival of Europeans, the Ballona area was an ancient estuary of the Los Angeles River, with the mouth of the river entering the Pacific Ocean north of the Westchester Bluffs, forming a broad coastal plain with seasonal and permanent wetlands extending north and east toward higher ground in present-day Santa Monica (description in Cooper 2008). A long range of natural sand dunes cut off the ocean from the majority of the low-lying ground, which featured a network of tidal channels and extensive salt marsh (i.e., the historical “Venice Marshes” or “Ballona Wetlands”). Until a flood in the early 1800s, the Los Angeles River emptied at Santa Monica Bay, along the current course of Ballona Creek (Gumprecht 2001).

For the past several hundred years, Ballona Creek has fed the Ballona/Venice wetlands, and water from Ballona Creek helped support agriculture in the region, which peaked in the early 1900s and continued locally into the late 1980s. By the mid-1900s, however, much of Ballona Creek had been excavated and routed through a channel, at first earthen (1920s), then cement-lined (late 1930s), principally to control floods in the Ballona Valley, which regularly destroyed cropland and generally hindered development.



Figure 3-4. Photo taken in 1941 (prior to construction of Marina del Rey), view northwest, showing flooded conditions along the lower reach of (channelized) Ballona Creek, with Venice and Santa Monica in the background. Photo published online at <http://ballona-news.blogspot.com/>



Figure 3-5. Photo taken some time around 1950 showing the "Venice Marshes." The view is to the southeast, toward Westchester Bluffs. The route of Lincoln Boulevard through the bluffs is visible behind the telephone pole. Photo from the personal collection of Herbert Clark, used with permission.

The most serious and final impact to lower Ballona Creek and the majority of its natural wetlands came in the early 1960s, with the completion of Marina del Rey, which eliminated nearly all the functional wetlands north of the Ballona Creek channel and left only a small remnant to the south, along Culver Boulevard. However, just as the creation of Marina del Rey development entailed the elimination of certain natural habitats, it created novel ones, with the addition of hundreds of evergreen, semi-tropical, trees, as well as irrigated lawns and man-made structures.

As reviewed by Cooper (2008), many bird species associated with freshwater marsh, coastal lagoon, and riparian habitats were lost from the Ballona area during the early period of development (pre-1930s); many saltmarsh species, including waterfowl and shorebirds that occurred in large flocks, suffered heavy losses during the middle period (1940s to 1960s); and since the 1960s, many open-country species, particularly those of agricultural fields and extensive grasslands, have either been extirpated or experienced serious declines.

Cooper (2006) documented the ongoing colonization of the local area by bird species that require tall trees for breeding and/or foraging, and by species frequently associated with human habitation. This colonization phenomenon has intensified as the Marina's non-native landscaping has matured, providing much more structural complexity than was present formerly, but at the expense of numerous species that depend on natural, wild habitats for their persistence in the landscape or for refueling during long migrations.

This plan does not seek to eliminate or reduce the local populations of any such "recent-colonist" species, but it does recognize that, in most cases, the local and regional populations of these species are expanding without any targeted conservation measures

(beyond, for example, the generic protections offered by the federal Migratory Bird Treaty Act, which prohibits the interruption of active nesting by nearly any native bird species). Thus, this plan is careful not to overemphasize the protection of popular but well-adapted species, such as colonial waterbirds, at the expense of locally native species that have fared poorly in the (artificially) tree-filled landscape that has characterized the Marina del Rey area since the 1960s. Rather, it draws attention to native species that still depend on the relict natural habitats in and around the Marina as well as those extirpated species that could become re-established here with modest restoration of their habitats.

3.2.2 ANTHROPOCENTRIC (HUMAN-CENTERED) HISTORY

Following a long history of usage by native peoples, the Playa del Rey Estuary was a popular destination for duck-hunters and small numbers of beach-goers from Los Angeles until the late 1800s and early 1900s, after which time its popularity increased greatly, and human usage of the beaches soared. Well into the 1900s, areas of the wetlands and coastal plain were used for oil extraction, particularly in the historical dune system west of present-day Marina del Rey. Still, vast areas of wetland remained, and duck-hunting continued at several freshwater impoundments along Washington Boulevard into the 1950s, near the present-day Oxford Basin (Cooper 2005).

After a failed attempt by the Ballona Development Company to convert the estuary into a commercial harbor between 1887 and 1890, and despite a series of governmental reports that found the area unsuitable for the establishment of a major commercial harbor, the U.S. Army Corps of Engineers (Corps) ultimately determined in 1949 that the area could be feasibly developed into a recreational marina. In 1953 the Los Angeles County Board of Supervisors sponsored State legislation that resulted in the County receiving a \$2 million loan from State tidelands oil revenues to pursue purchase of the new harbor site. In 1954, President Dwight D. Eisenhower signed legislation that committed the federal government to provide matching funds to the County to create the marina's main navigational features. Two years later, County voters approved a bond that financed the remainder of the project, and project construction commenced in December 1957.

During the winter of 1962-63, shortly after the harbor's initial opening, Marina del Rey suffered severe storm damage that prompted an emergency program to implement corrective measures already being developed and tested by the Corps. As an interim measure, the County constructed temporary protective sheet-pile baffles at the harbor's entrance, but ultimately the project required a permanent, offshore breakwater. With the federal government and County splitting the \$4.2 million cost, construction of the breakwater began in October 1963 and was completed in January 1965. April 10, 1965, marked the formal dedication of Marina del Rey Harbor.



Figure 3-6. Photo from around 1960 showing the recently-completed Marina prior to construction of the offshore breakwater. Photo published online at <http://beaches.co.la.ca.us/BandH/Marina/MdRhistory.htm>

Today, Marina del Rey contains more than 4,700 recreational boat slips, numerous restaurants, and boat launching ramps that provide access to tens of thousands of trailer-class boats annually. The County operates the marina to provide a wide range of coastal recreational opportunities to County residents and visitors from all over the world. The area is home to Burton W. Chace Park, Yvonne B. Burke Park, Marina Beach, and Oxford Basin (formerly dedicated by the County as a “Bird Conservation Area”), and supports regattas, crew races, boat parades, sailing races, park concerts, harbor cruises, handicapped swim ramps, a playground, boat rentals and sailing instruction. In addition, the Marvin Braude Bike Trail (part of a 20-mile coastal bicycle path) crosses the Marina, and the north jetty promenade and view piers, fishing docks, sportfishing concessions, a Marina Information Center, and a County Library with a large nautical section are among the popular public amenities. The County is continually planning the future of Marina del Rey, and this marina-wide conservation and management plan represents an integral part of the County’s comprehensive and ongoing planning of the marina environment.

3.2.3 AN HISTORICAL REVIEW OF NESTING HERONS & EGRETS AT MARINA DEL REY

In order to evaluate reports that colonial-nesting herons and egrets once nested at the historical Ballona Wetlands, and are now “re-colonizing⁵,” we conducted an extensive review of the scientific record and museum records, as well as a review of historical information on the types of vegetation that were (and were not) present at the historical estuary and surrounding wetlands and coastal bluffs (see also Cooper 2008). Our review of the scientific record reveals no recorded history of heronries in the Ballona/Venice area, nor any indication that such phenomena might have been overlooked by the area’s naturalists in historical times. Although wintering and migrant herons and egrets have a long history of occurrence in this area, the pre-Marina del Rey landscape was characterized by such habitats as wide tidal channels and mudflats, salt marshes, coastal dunes, and pockets of freshwater marsh and riparian scrub, none of which would have been suitable to support nesting colonies of these species. Whereas historical photographs and descriptions are few, they do exist (Figures 3-4 and 3-5, for example), and none shows or mentions groves of tall trees within the wetlands (these riparian communities were present upstream, along upper Ballona Creek, in what is now part of Culver City, but no evidence of nesting herons/egrets exists for these upstream areas, either).

It is our conclusion that if areas with colonially nesting herons or egrets existed in the area prior to the construction of Marina del Rey, or prior to the rise of plume-hunting in the early 1900s, this would imply that a) they were somehow unknown to the many naturalists who took field notes on and collected nests and eggs from a wide array of species here; and b) trees required as nesting substrates were once present but are now gone. This assumption is problematic, as it could lead to inappropriate modification of what little natural habitat remains in area. For example, by this logic, a well-meaning restoration biologist could then conclude that planting more trees in Marina del Rey and the Ballona Wetlands would lead to the “recovery” of nesting waders, a necessary step toward the restoration of historical conditions in the Marina del Rey/Ballona/Venice area. Species and the natural communities that actually were present in the area would therefore be displaced by tree-dwelling species, following a pattern throughout the region of open-country species losing ground to human-adapted woodland species.

⁵ See, for example, page 175 of the *Adopted Revised Findings to support the Commission’s January 9, 2008 approval of the Los Angeles County’s Marina del Rey Periodic LCP Review staff report and recommendations*: “It is remarkable that these opportunistic birds have returned to this urban setting and have been able to re-establish successful nests in non-native, ornamental trees. The birds have re-established in these trees, not only because such trees are all that remains in the area . . .”

In fact, only a handful of tree-associated birds were collected or observed at the historical Ballona/Venice wetlands. Most are species such as the Yellow-breasted Chat (*Icteria virens*), which are associated with low, brushy vegetation and not groves of tall trees; there is little or no local mention of several riparian woodland species that were fairly abundant through most of the Los Angeles Basin historically, such as the Downy Woodpecker (*Picoides pubescens*). Not coincidentally, a similar situation persists today, where even common woodland species (such as most woodpeckers) are still extremely rare in the Ballona Valley, even as they are common in nearby Santa Monica and at inland sites (see Cooper 2006).

It should be noted that several species of colonial waders do nest in habitats other than groves of trees, including extensive freshwater reedbeds, and it is possible that in the distant past, out of the range of memory or knowledge of ornithologists of the late Nineteenth Century, these reedbeds may have supported nesting waders in the Ballona area. Unfortunately, any of this habitat that might have been suitable nesting habitat for certain colonial waders (e.g., Black-crowned Night-Heron, White-faced Ibis *Plegadis chihi*) was largely lost by the late 1920s, when Ballona Creek was channelized through the eastern Ballona Valley (see Cooper 2008).

It should also be noted that the major decline of these waders for the plume trade occurred around 1900, at the height of the fad. Therefore, if the birds were nesting here, or in other parts of the state, into the late 1800s, older ornithologists/oologists (egg collectors) of that era would have known of nesting locations prior to the rise of plume-hunting, which they apparently did not (see Grinnell 1898, Dawson 1915, and Grinnell and Wythe 1927).

Aside from an intriguing account involving the White-faced Ibis (see below), now a rare transient through the area, historical (late 1800s/early 1900s) egg-collectors and ornithologists described wading birds at Ballona exclusively as rare transients, and no accounts mention nesting or over-summering. Even by the 1940s, prior to the development of Marina del Rey and several decades after the waning of the plume trade, large waders were still scarce and did not nest in the Ballona area (von Bloeker 1943). For example, by the early 1900s, only one nesting colony of the Snowy Egret was known in California, in Merced County (Dawson 1915). Today, dozens of colonies containing thousands of breeding pairs of the Snowy Egret are found the length of the state, consistent with their adaptation to urban and modified habitats rather than suggesting a decline because of them.

Indeed, the only Los Angeles County nesting sites for herons and egrets known during the late 1800s and early 1900s consisted of a colony of Great Blue Herons at a site "north of Santa Monica" (in sycamores, per Grinnell 1898; listed by Froke [2007] as "Zuma Canyon," which is near Malibu, approximately 15 miles northwest of Santa Monica), and another "near Cerritos on the San Gabriel River" in 1895 (one nest, per Grinnell

1898). Willett (1933) confirmed that the Santa Monica Great Blue Heron colony had vanished some time around 1901, and added a record for the Black-crowned Night-Heron ("until about 1906 a small colony nested at Bixby [= Long Beach"]⁶). Cooper (2006) provided a summary of the known historical status of the Great Blue Heron in the Ballona Valley:

This heron's historical breeding status is unknown, but it was only a transient and winter visitor by the 1920s (e.g., *Bird-Lore* 26:347), and breeding was not mentioned by von Bloeker (1943), who considered it "frequently observed in the meadow area and in the salt marsh," nor was it mentioned as a breeder on subsequent surveys (e.g., Dock and Schreiber 1981; Corey 1992).

Both Grinnell and Willett (among other authors and collectors) reported many nesting records of species *other than waders* from Venice, Ballona, Playa del Rey, Del Rey, and other local sites. The Western Foundation of Vertebrate Zoology in Camarillo, California, contains dozens of egg sets collected from this area during the late 1800s and early 1900s, including several of the elusive, and now locally-extirpated, Light-footed Clapper Rail (*Rallus longirostris levipes*) found in extensive saltmarsh and brackish wetlands. Thus if colonial waterbirds were present and nesting, we may reasonably infer that they would have been at least noted, if not collected.

In light of our research findings, and considering the rarity of heron and egret colonies in the region even prior to 1900, we regard it as very unlikely that nesting herons and egrets were overlooked as breeding here. Rather, these birds probably simply did not occur as nesters, at least during the 70+ years prior to the construction of Marina del Rey, and possibly for decades if not centuries prior to this, assuming the vegetation was similar (i.e., extensive saltmarsh, small clumps of willows and scrub).

Evidence suggests that, whereas coastal wetlands in Los Angeles County and southern California provided important habitat for large waders in the non-breeding seasons (during winter and migration periods), birds generally moved either inland, or farther up the coast into central California and beyond, during the spring and summer nesting season⁷. This is logical, given that the streams of central and northern California carry more water year-round, which in turn supports taller riparian vegetation, including sycamore and tall willow groves that extend down to the coast. The few coastal south-

⁶ In addition, Grinnell (op. cit.) also mentioned a second-hand report that the White-faced Ibis had been over-summering at the "Ballona Marshes" recently [= late 1800s] and that "it may breed here." This species is now rare in southern California away from the Imperial Valley in the extreme southeast.

⁷ From many sources (e.g., Grinnell and Miller 1944), the main historical nesting sites for these birds in southern California appears to have been inland, at places like San Jacinto Lake, as well as in the southern San Joaquin Valley (e.g., Buena Vista Lake). Both these areas featured extensive reedbeds and have been well known to hunters and naturalists alike for more than a century.

ern California sites known to have historically supported nesting herons and egrets were along the few major coastal streams with groves of large sycamores or other trees extending to the ocean (at the mouth of San Onofre Creek in northern San Diego County, for example) and not those with the extensive mudflats and salt marshes that existed on broad, flat coastal plains, habitats that were characteristic of the Los Angeles Basin, including the Ballona area.

A similar situation persists today at several wetland sites in southern California (e.g., Mugu Lagoon, Alamitos Bay/Bolsa Chica) and northwestern Baja California, Mexico (e.g., Bahia de San Quintin, Bahia de Todos Santos). For example, Mugu Lagoon in southern Ventura County presents one of the best-preserved examples of coastal saltmarsh near Marina del Rey, (located within Pt. Mugu Naval Weapons Station) and supports an avifauna that is probably similar to that of the historical Ballona Wetlands, based on comparison of specimen records and historical sightings from both sites. It, too, is characterized by broad tidal channels through low saltmarsh, surrounded by a broad coastal plain (Oxnard Plain) with coastal sage scrub, and is separated from the sea by a low range of coastal dunes (see Figure 3-7).

Though Mugu Lagoon is fed by a coastal stream, Calleguas Creek, the combination of low summer flows, saline soil, and persistent coastal winds has likely prevented tall trees from developing, as they probably did at the historical Ballona Wetlands, and at wetlands elsewhere in the region. As at Marina del Rey, the main nesting area today for herons and egrets in the Pt. Mugu area is not at Mugu Lagoon, but within groves of planted trees, including non-native eucalyptus (*Eucalyptus* spp.), around nearby marinas and other coastal development. This is a recurring scenario up and down the coast in locations where native coastal saltmarsh and other wetlands occur near artificially landscaped marinas and other built environments.



Figure 3-7. Mugu Lagoon, showing a typical southern California dune, saltmarsh, and coastal scrub ecosystem. Oxnard Plain (not visible) is behind hill to the right. Photo published online at www.modernhiker.com.

Whereas a surge in the number and extent of nesting herons in southern California is relatively recent, the phenomenon of herons nesting in non-native eucalyptus trees is not, suggesting that the birds are not “adapting” to this habitat, but rather using it to colonize new nesting areas. Froke (2007) listed several California nesting records from the early 1900s in eucalyptus groves, from a time (*circa* 1920s) when coastal wetlands were still very extensive, roads were mainly dirt, and the human population in the state was a fraction of that of today. During that time, as now, herons apparently took advantage of these tall trees as suitable nest sites and became breeding residents in areas where they had formerly been exclusively non-breeding residents or visitors.

Despite their exotic appearance and their unfamiliarity to the general public, by all accounts (see especially Unitt 2004), most nesting species of herons/egrets in coastal southern California are urban-tolerant animals that will quickly take advantage of novel habitats, provided their numbers in spring are high enough for males to attract mates, and that suitable foraging areas are nearby. Appendix C to this plan provides maps and photos of additional extant heronries on the coastal slope of Los Angeles County, demonstrating the propensity of these birds to select sites in heavily urbanized locations vegetated almost entirely with non-native arboreal landscaping. In the case of Great Blue Herons, vegetation need not be present, as this species will use various forms of man-made platforms in developed settings, such as cranes, lighting standards, and navigational warning structures in harbors (see, for example, Figures C-8 through C-11). As far as we can tell, conditions in the Ballona/Marina del Rey area have never been appropriate for nesting herons until three factors converged:

- a) Trees planted at Marina del Rey in the 1960s reached sufficient height to support large, tree-nesting birds.
- b) Regional population numbers of certain heron and egret species were high enough in spring to allow individuals to find mates.
- c) Prey levels (including fish, non-native rats, and other food items) in the Marina del Rey/Ballona area were high or concentrated enough during the nesting season to support birds feeding young.

The putative scenario described previously, in which herons and egrets maintained nesting colonies in the “pre-marina” Venice Marshes, or anywhere in the area prior to the 1990s, and to which they have now “returned” to use non-native trees as a substitute for lost habitats, is simply not supported by any form of available evidence. Rather, the recent and ongoing colonization of non-native landscaping trees at Marina del Rey by colonial waterbirds fits a wider pattern of these same species becoming newly established in non-native trees (or, in some cases, man-made structures), typically at urbanized locations along the coast, including several parts of Los Angeles County (see Table 3-1, Figure 3-8, and Appendix C).

3.2.4 THE FUTURE OF NESTING HERONS & EGRETS AT MARINA DEL REY

It has become clear that virtually all of the hundreds of medium and large landscape trees in Marina del Rey have potential to be colonized by nesting herons or egrets, so long as they retain enough structure to support a nest (Great Blue Heron and Double-crested Cormorant will nest even in leafless snags). The trees selected as nesting sites can and do change from year-to-year, or even within the same year. For example, several dozen Black-crowned Night-herons had nested in the eucalyptus row northeast of Oxford Basin for several years, but in 2009 only a few trees at the eastern end of the row were used, though the others showed no sign of disturbance. No one can say whether or when large numbers might return to use this site, or whether the birds breeding elsewhere along Admiralty Way (including at Yvonne B. Burke Park) may choose to move to yet another part of Marina del Rey, such as Burton Chace Park. The propensity of colonial waterbirds to engage in such shifts from year to year must be taken into account in any strategy developed for the purpose of managing their local breeding populations.

Planting new trees may even be detrimental to the recovery of the lost natural community at Marina del Rey and the Ballona Wetlands; in a recent review of bird species known to have been lost from the Ballona Wetlands since the early 1900s and still not recovered, Cooper (2006) found that nearly all extirpated species required either grassland, saltmarsh, or dune habitats⁸. Few tolerate even tall scrub habitat, much less wooded areas or stands of tall trees. In short, the bird species that depend on critically threatened coastal wetland systems in southern California and adjacent Baja California, Mexico, have adapted over millennia to large, open wetland systems that lack tall trees, and to low prairies, coastal dunes, and coastal scrub habitats. These species do not respond positively to trees, and in fact many are driven out of areas when trees are planted.

Cooper (2006) also found that birds colonizing the Ballona area in recent years include several woodland-adapted species, including those that nest in built structures, such as freeway overpasses with holes that resemble tree cavities, as well as colonial herons and egrets (and now cormorants) that nest in tall trees. This group of new colonists now thrives in the Marina del Rey/Ballona area as a result of major, purposeful changes to the natural landscape that humans have made over a period of decades. Heartening as it is to see certain native species thriving in a human-dominated landscape, it can mask the fact that those species adapted to the natural, treeless landscape that are now in greatest need of protection and habitat restoration are being precluded from occurring.

⁸ A large group of species that require freshwater marsh has been effectively re-established locally with the creation of a single habitat feature, the Ballona Freshwater Marsh, in 2003 (Cooper 2008, D. S. Cooper, unpubl. data).

The restoration of these extirpated species would not be possible under a conservation approach that emphasizes a perceived need to protect non-native landscape trees (or a need to plant trees) for the benefit of species that show no sign of needing extra help to become successfully established—and that are actually increasing in number—in the local area and wider region.

3.3 Marina del Rey Heronries and Regional Context

Colonial waterbirds that previously did not nest on the coastal slope of southern California, or that did so only very locally or rarely, have become much more widespread in the past two decades. It would be beyond the scope of this plan to list every nesting colony of herons, egrets, and/or cormorants in the entire region, but we provide a reasonably complete summary for the coastal slope of Los Angeles County. Table 3-1, below, lists the waterbird nesting colonies in the county that are known to us, from south to north; Figure 3-8, on the following page, shows their locations.

TABLE 3-1: NESTING SUMMARY FOR COLONIAL HERONS, EGRETS, AND CORMORANTS IN LOS ANGELES COUNTY, EXCLUDING MARINA DEL REY

Species	Pairs (approx.)	Location	Year/Citation
Great Blue Heron	14	Naples/Alamitos Bay, Long Beach	2009/RAH pers. obs.
	3	Port of Long Beach/Navy Mole	2009/RAH pers. obs.
	5	Port of Los Angeles/Pier 400	2009/RAH pers. obs.
	2	Port of Los Angeles/Signal Street	2009/RAH pers. obs.
	9	Pico Rivera/San Gabriel River	2009/L. Schmahl, via email
	10	Sepulveda Basin/Encino G.C.	2009/DSC pers. obs.
	4	Los Angeles/Echo Park Reservoir	2009/J. Raskin, via email
	35	Legg Lake	2009/DSC, pers. obs.
	3	Cogswell Res. (San Gabriel Mtns.)	2009/M. San Miguel
	Great Egret	10 ⁹	Malibu Country Mart Parking Lot (adj. to Malibu Lagoon)
Snowy Egret	55	Belmont Shore/Ocean Blvd.	2009/RAH pers. obs.
Black-crowned Night-Heron ¹⁰	1	Alamitos Bay	2009/RAH pers. obs.
	55	Belmont Shore/Ocean Blvd.	2009/RAH pers. obs.
	35	Shoreline Drive, Long Beach	2009/RAH pers. obs.
	22	Queen Mary, Long Beach	2009/RAH pers. obs.

⁹ Possibly many more nests, including different species, just north of parking lot site at Malibu. An apparently large colony of Great Egrets at Legg Lake in South El Monte observed on Google Maps aerial image but not confirmed in field (DSC pers. obs.).

¹⁰ Possibly also nests at Malibu Country Mart, in a grove of tall eucalyptus north of the parking lot, based on whitewash and juveniles in the area in fall, 2009 (DSC per obs.).

Species	Pairs (approx.)	Location	Year/Citation
	20	Terminal Island/Customhouse	2009/RAH pers. obs.
	10	Sepulveda Basin/Encino G.C.	2009/DSC, pers. obs.
Double-crested Cormorant	89	vic. Heim Bridge, Terminal Island	2008/K. Keane pers. comm.
	20	Sepulveda Basin Wildlife Area	2009/DSC, pers. obs.
	15	Legg Lake	2009/DSC, pers. obs.

Most of these colonies have become established within the past 10 years (K. L. Garrett, Los Angeles County Breeding Bird Atlas, unpubl. data), following a similar pattern of recent expansion in San Diego County (Unitt 2004) and Orange County (RAH pers. obs.). Additional colonies undoubtedly exist in Los Angeles County, particularly on golf courses and around reservoirs that are off-limits to the general public. Please see also Appendix C, which provides more detailed maps of nesting and roosting areas, as well as photos of some of these locations.

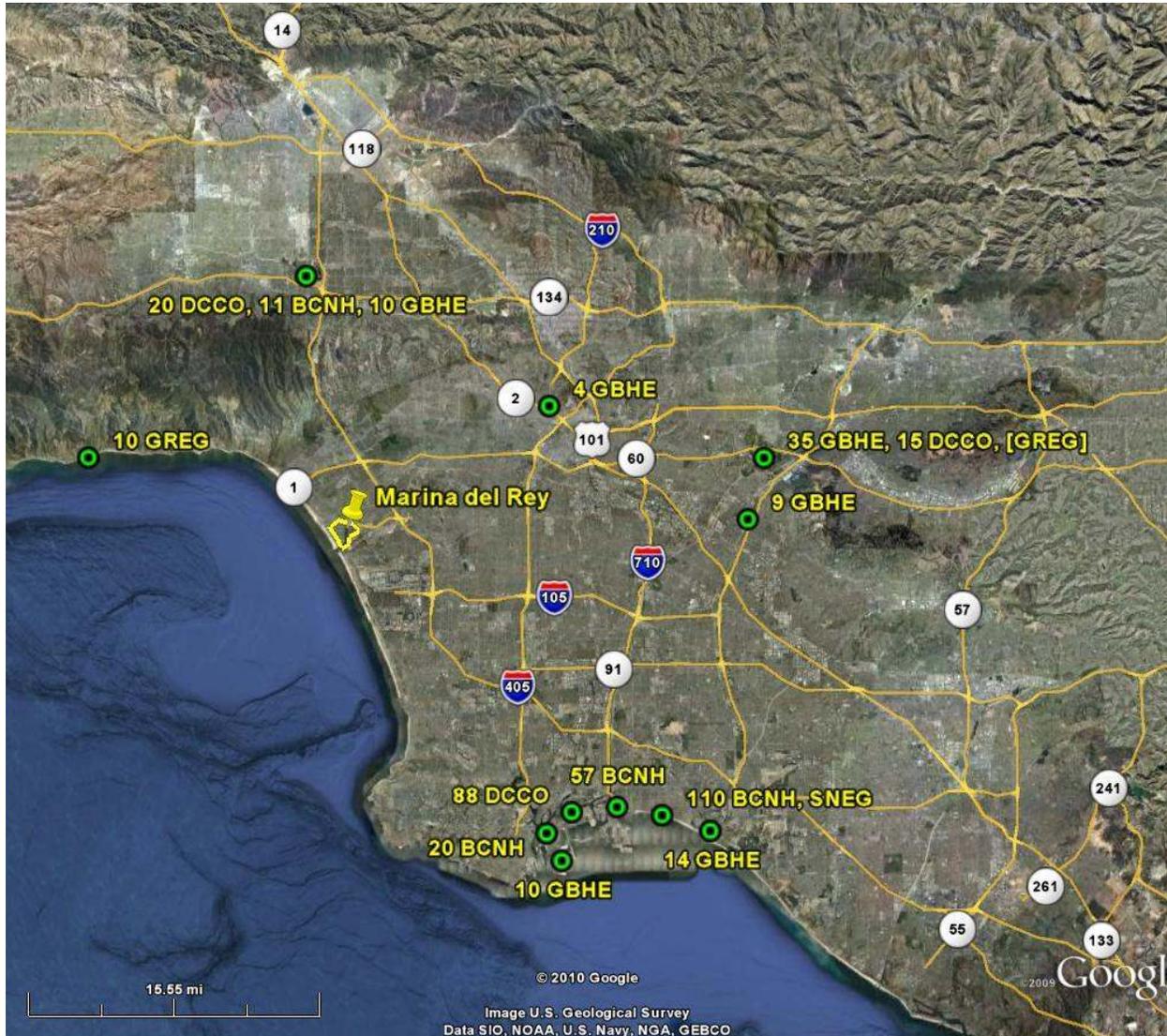


Figure 3-8. Locations and approximate numbers of pairs at known nesting colonies of Double-crested Cormorants (DCCO), Great Blue Herons (GBHE), Great Egrets (GREG), Snowy Egrets (SNEG), and Black-crowned Night-Herons (BCNH) on the coastal slope of Los Angeles County in 2009. Please refer to Appendix C, which provides more details on these colonies, including recent photos.

3.4 Waterbird Nesting Colonies in Marina del Rey

Five main waterbird nesting colonies in Marina del Rey were active in 2009 (Figure 3-9), at Admiralty Way, Marquesas Way, Mariner's Village, in the vicinity of the fuel-bait dock at the end of Bora Bora Way, and Villa Venetia; these colonies are summarized in Table 3-2 and described on the following pages. It should be mentioned that Burton Chace Park, located on the east side of the marina, contains many mature trees, some of which were used for nesting in 2009 (we saw one Black-crowned Night-Heron fledgling, a Green Heron *Butorides virescens* at a nest, and a possible Snowy Egret nest), and herons and egrets undoubtedly roost in the park, to some degree. We also noted several recently-active (based on whitewash on the ground) nests in ficus trees (*Ficus* spp.) at Del Rey Lagoon Park south of Marina del Rey, just north of the parking lot along the west side of the lagoon. We saw no evidence that either Burton Chace or Del Rey Lagoon parks were among the local area's main nesting colonies in 2009, but this could change in the future.



Figure 3-9. Map of Marina del Rey showing the five main waterbird colonies in red. BCNH = Black-crowned Night-Heron; DCCO = Double-crested Cormorant; GBHE = Great Blue Heron; GREG = Great Egret; SNEG = Snowy Egret. The fence around the California Least Tern nesting colony on Venice Beach is shown in green.

Table 3-2, below, provides summary information on the waterbird colonies that we studied in Marina del Rey during 2009.

TABLE 3-2: NESTING SUMMARY FOR COLONIAL HERONS, EGRETS, AND CORMORANTS IN MARINA DEL REY, 2009

Species	Pairs (approx.)	Nesting Substrate	Main Nesting Locations
Great Blue Heron	33	palms, pines, eucalyptus	Bora Bora Way, Mariner's Village, Villa Venetia
Great Egret	5	eucalyptus, pines	Admiralty Way, Bora Bora Way
Snowy Egret	35	figus, eucalyptus, coral tree	Admiralty Way
Black-crowned Night-Heron	45	eucalyptus, ficus, melaleuca, coral tree	Admiralty Way, Marquesas Way
Double-crested Cormorant	19	cypress snags	Villa Venetia

3.4.1 ADMIRALTY WAY NESTING COLONY

In 2009 we found approximately 69 nests of Snowy Egrets and Black-crowned Night-Herons—divided approximately equally between these two species—in eucalyptus, Indian laurel (*Ficus microcarpa*), and coral trees (*Erythrina* sp.) located on both sides of Admiralty Way, generally between Oxford Basin to the west and Yvonne B. Burke Park to the east. The night-herons tend to nest earlier in the season than the egrets, and by the time we started surveying most of the herons had fledged whereas the egrets were still in the middle of nesting. The 12 “old nests” located in eucalyptus trees just north of Oxford Basin did not appear to have been active in 2009 (e.g., no whitewash on bike path below). Also in this area were two nests of the Great Egret.



Figure 3-10. Locations of approximately 69 nests of Snowy Egrets Black-crowned Night-Herons along Admiralty Way that were active in 2009. More than half of the nests (approximately 38) were in two large landscape trees (eucalyptus and Indian laurel) in a parking lot near the eastern end of the colony; see Figure 3-11. The eastern end of Oxford Basin is visible in the upper left corner of this aerial image.



Figure 3-11. Photo taken on 14 July 2009 showing the two main nesting trees along Admiralty Way – a eucalyptus on the left containing ~15 nests, including that of a Great Egret (adult egret visible, flying in from left) and an Indian laurel on the right containing ~23 nests (with Snowy Egrets visible in the canopy). This and other photos in this plan showing current conditions were taken by RAH in 2009, unless otherwise noted.

Figure 3-12. Juvenile Black-crowned Night-Heron photographed in the Indian laurel tree shown above on 23 June 2009. This bird was probably just barely capable of flight at the time of this photo. This appears to have been one of the later Black-crowneds to have fledged in the area in 2009.



Figure 3-13. Photo taken on 23 June 2009 showing an adult Snowy Egret feeding a nearly-grown nestling in the Indian laurel shown in Figure 3-11.



Figures 3-14, 3-15. This juvenile Black-crowned Night-Heron, photographed in the median of Admiralty Way on 20 May 2009, did not appear to be disturbed by the photographer or by traffic passing below. Whitewash on the limbs suggests that this tree was used by herons with some regularity in 2009.

3.4.2 MARQUESAS WAY NESTING COLONY

In 2009 we documented nine Black-crowned Night-Heron nests in melaleuca trees (*Melaleuca* sp.) along the median of Marquesas Way (Figure 3-16). We regularly observed adult night-herons roosting in these trees and in sycamore/plane trees (*Platanus* sp.) that also line the road. Four large coral trees at the eastern end of this street have considerable amounts of guano beneath them, indicating that roosting birds regularly use those trees as well, and may eventually initiate nesting in them.

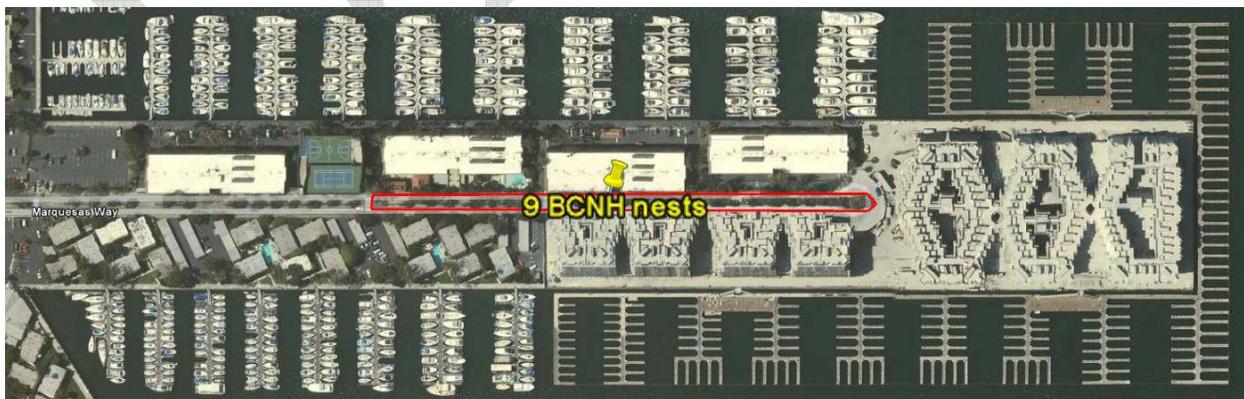


Figure 3-16. Locations of nine nests of Black-crowned Night-Herons (BCNH) along the median strip of Marquesas Way that were active in 2009.



Figure 3-17. Photo taken on 30 July 2009 showing the nesting and roosting trees along Marquesas Way.



Figure 3-18. Photo taken on 22 June 2009 of an adult Black-crowned Night-Heron roosting in a sycamore/plane tree on the shoulder of Marquesas Way.

3.4.3 NESTING COLONY NEAR FUEL-BAIT DOCK ON BORA BORA WAY

In recent years Great Blue Herons and Great Egrets have colonized the southwestern portion of Marina del Rey, taking advantage of large eucalyptus and pine trees, as well as a bait tank that provides a source of supplemental food for many birds.



Figure 3-19. Great Blue Herons (GBHE) and Great Egrets (GREG) nest in pine and eucalyptus trees at the end of Bora Bora Way, near the fuel-bait dock shown above. At least two nests of the Great Egret were confirmed at this location, and it is possible that one or more of the 12 other large nests that were empty at the time of our surveys could have been built by this species. The default assumption, however, is that most or all of these nests were of the more numerous Great Blue Heron.



Figure 3-20. Photo taken on 20 May 2009 showing a Great Egret nesting in the top of a large pine (*Pinus sp.*) close to the fuel and bait dock.

Figure 3-21. Photo taken on 22 June 2009 showing a concentration of eight Great Blue Heron nests at the top of eucalyptus trees a short distance south of the fuel-bait dock.



Figure 3-22. When this juvenile Black-crowned Night-Heron, foraging at the bait tank on 30 July 2009, lost a baitfish it had caught, the bird dove into the water in an unsuccessful attempt to recapture the fish.

3.4.4 MARINER'S VILLAGE NESTING COLONY

Great Blue Herons, and possibly some Great Egrets, have colonized a small grove of pines at the Mariner's Village apartment complex in the southwestern part of Marina del Rey.



Figure 3-23. Great Blue Herons (GBHE), and possibly some Great Egrets (GREG), nested in pines at the Mariner's Village complex in 2009. As noted previously, the default assumption is that most or all of the 15 large nests in these trees were made by Great Blue Herons, the only species of colonial waterbird we saw in these trees during our surveys.

3.4.5 VILLA VENETIA NESTING COLONY/AREA A ROOSTING & FORAGING SITE

In 2009, Great Blue Herons nested in various trees around the Villa Venetia grounds. One of the three Monterey cypress (*Cupressus macrocarpa*) trees that have been used by nesting Great Blue Herons in recent years fell over in 2008, leaving two severely stressed (and nearly leafless) trees that were largely taken over Double-crested Cormorants in 2009.

Area A of the Ballona Wetlands is located east of Villa Venetia and north of the Ballona Creek channel (see Figure 3-24, below). We observed roosting Great Blue Herons in this area, both on the ground and in tall eucalyptus trees along the east side of Fiji Way (slightly north of the area shown below). This area appears to be important for roosting and foraging Great Blue Herons, particularly adults; we recorded as many as 12 of these birds there during our surveys. It is closed to normal public access by a high chain-link fence, which may allow herons to roost here unmolested.



Figure 3-24. Locations of 19 nests of the Double-crested Cormorant (DCCO) and six nests of the Great Blue Heron (GBHE) that were active in the Villa Venetia area in 2009. The count of 19 cormorant nests was made by Jeff Froke (2009) and represents the total number of active nests he observed by following nesting activity from March through September.



Figure 3-25. Photo taken on 22 June 2009 showing the two remaining Monterey cypress trees with numerous Double-crested Cormorants in the canopies. The trees are white with guano and are nearly dead. Villa Venetia is on the right in this view and the Coast Guard Station is on the left.

Figure 3-26. Photograph taken on 23 June 2009 showing Double-crested Cormorants at several nests in the cypress trees near Villa Venetia.



Figure 3-27. Photo taken on 20 May 2009 showing the car assigned to park at space #7 at Villa Venetia.



Figure 3-28. Photo taken on 20 May 2009 showing an adult Great Blue Heron at a nest in a fan palm (*Washingtonia filifera*) between Villa Venetia and the UCLA Rowing Center.

Figure 3-29. Photo taken on 30 July 2009 showing a group of adult Great Blue Herons roosting/foraging in highway iceplant (*Carpobrotus edulis*) in Area A.



Figure 3-30. Photo taken on 30 July 2009 showing four adult Snowy Egrets, a juvenile Black-crowned Night-Heron, several California Brown Pelicans (*Pelecanus occidentalis californicus*), and a Western Gull (*Larus occidentalis*) loitering at one of the bait tanks that service the sportfishing boats at Fisherman's Village, a short distance north of Villa Venetia.

3.5 Waterbird Foraging & Roosting Locations in the Local Area

The main foraging and roosting areas for colonial waterbirds within Marina del Rey proper were at Oxford Basin and at the docks and trees around bait tanks located at the end of Bora Bora Way (see Figure 3-19) and Fisherman's Village (see Figure 3-30). Away from Marina del Rey proper, our 2009 surveys found that most locally-nesting colonial waterbirds forage and roost at Del Rey Lagoon, the Ballona Wetlands, Ballona Freshwater Marsh, and at the juncture of the Centinela Channel and Ballona Creek (the "Centinela Confluence") during the breeding season. Figure 3-9 provides a map of these locations; our observations at each site are summarized in the following discussions.

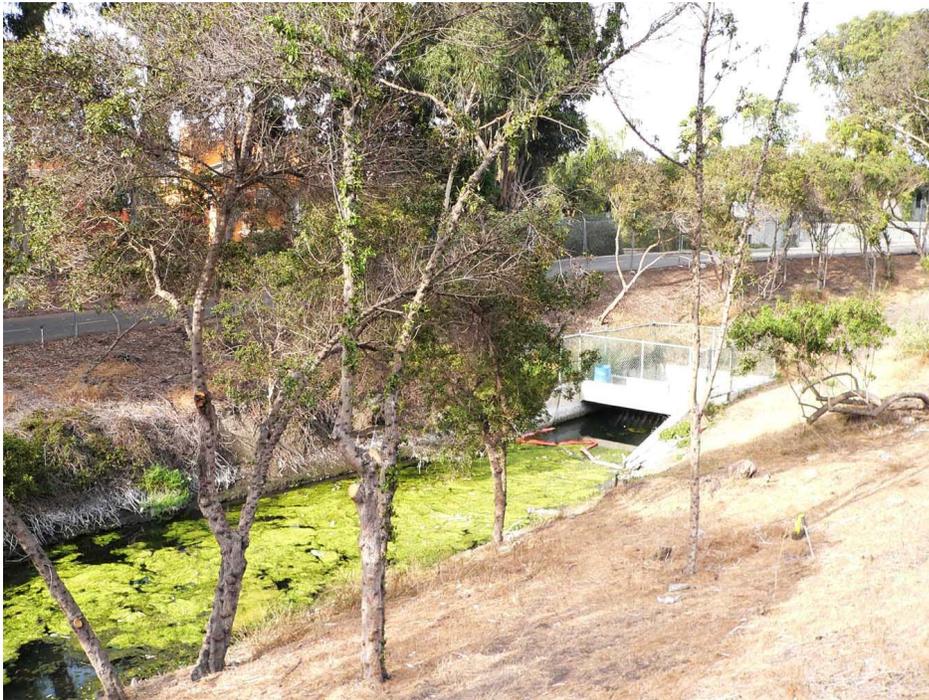
3.5.1 OXFORD BASIN

Located adjacent to the large nesting colony along Admiralty Way, Oxford Basin lies near the northern edge of the historical Ballona/Venice marshes (based on review of historical photos). Today's basin was apparently constructed out of a natural tidal basin in 1962 as Marina del Rey was built out. Fed by storm drains and influenced by tides through an automatic tide gate at the west end (estimated to have a tidal range of five feet in 1976), the basin was designed to "receive storm runoff at such times as the state of the tide within the harbor precluded its discharge causing inundation of low-lying lands adjacent to the north section of the harbor" (County of Los Angeles 1976:2). Oxford Basin was designated as a "Bird Conservation Area" by the County of Los Angeles in January 1963, as requested of the Board of Supervisors by "various naturalist organizations" (County of Los Angeles, op. cit.). In June 1973, the Board of Supervisors adopted an agreement providing for the LACFCD to assume the responsibility for the operation and maintenance of Oxford Basin as a flood control facility. It was subsequently landscaped extensively with non-native trees and shrubs, especially small-flowered myoporum (*Myoporum laetum*), a practice now recognized as being contrary to sound ecological principals. The myoporum landscaping is now in poor health, presumably due to an infestation of the myoporum thrip (*Klambothrips myopori*), which is taking a heavy toll on this plant across the region.

Oxford Basin supported the highest numbers of foraging and roosting Great Egrets, Snowy Egrets and Black-crowned Night-Herons of any site in our 2009 study, and this area was particularly important for young of these species, with up to 16 juvenile Snowy Egrets recorded on each visit; the next highest counts of juvenile Snowy Egrets were of 3 birds per site, made at Ballona Wetlands (Area B) and the Ballona Freshwater Marsh. In addition, no other site saw such high usage by large waders during afternoon (high tide) visits. Young Black-crowned Night-Herons were similarly common here, with an average of 5.8/visit during afternoon visits (adults were scarce everywhere, since they primarily forage at night). For Great Egret, Oxford Basin was the only site averaging more than 1 bird per visit, and young Great Egrets were nearly unrecorded at all the other sites (the exception was Ballona Lagoon, where we recorded one bird,

once). Interestingly, Great Blue Herons were almost completely absent from Oxford Basin. We observed that foraging waterbirds tended to congregate around the storm drains and the tide gate, in particular the eastern storm drain along Washington Boulevard, adjacent to the bike path.

Figure 3-31. This photo, taken on 8 July 2009, shows the typical condition of the southeastern,



channelized portion of Oxford Basin. A thick, persistent film of bright green algae indicates eutrophication. The sparse growth of diseased, non-native myoporum above bare ground provides poor quality habitat for native plants and wildlife.

Figure 3-32. This adult Great Egret, photographed on 14 July 2009, was foraging

at the western tidal inlet to Oxford Basin. Herons and egrets routinely forage amid the trash that collects along floating debris booms at the lagoon's inlets.





Figure 3-33. These two recently fledged Black-crowned Night-Herons were roosting among grape vines (*Vitis* sp.) at the western end of Oxford Basin on 8 July 2009.

Figure 3-34. This photo, taken on 15 July 2009, shows a Snowy Egret foraging intently at the western inlet to Oxford Basin.



Figure 3-35. This adult Black-crowned Night-Heron, photographed on 14 July 2009, was roosting in myoporum at Oxford Basin.



Figure 3-36. Perhaps the most popular foraging area at Oxford Basin is near the eastern storm drain, off Washington Boulevard. This photo, taken on 23 July 2009, shows three Snowy Egrets and an apparent family group of Great Egrets.

3.5.2 BALLONA LAGOON

The northern extent of the former coastal lagoon at the mouth of the Ballona Wetlands, and now the southern extension of the “Grand Canal” in Venice (adjacent to and just west of Marina del Rey) this site has been known as “Ballona Lagoon” since 1996 when extensive habitat restoration was completed in an effort to bring back a native coastal scrub community. The lagoon is tidal, and a band of mudflat is usually exposed around the entire lagoon, but only the upper/northern end drains completely except during the most extreme low tides. Saltmarsh vegetation forms a ring around the upper mudflat, below the coastal scrub. We encountered only Snowy Egrets here in numbers (mainly in the morning, during low tide), but even this species was not especially common at this location (12 birds recorded on 27 July was an exceptional count). This area may be more heavily used in the non-breeding season, especially during fall migration, when dozens of egrets (both Snowy and Great) have been observed fishing in the shallow water of the mudflats (C. Almdale, unpubl. data).

Figure 3-37. This photo, taken by DSC on 10 July 2009, shows Ballona Lagoon at mid-tide.

The view is to the northwest, from Via Marina. Herons and egrets forage here most frequently at low tide, when water levels are lower than shown here. A small area of restored coastal scrub is visible at right; slopes along the western side of the lagoon, at left, are dominated by highway iceplant and other non-natives.



3.5.3 DEL REY LAGOON

This wetland area provides resources for the herons and egrets that nest to the north in Marina del Rey; however, some ficus trees (*Ficus* sp.) on the lagoon's west side held a few nests that may have been used by Black-crowned Night-Herons and/or Snowy Egrets in 2009. In late summer 2009, small numbers of these birds roosted in these and several small acacia trees (*Acacia* sp.) along the western shore, mainly during the late afternoon and evening. Del Rey Lagoon had the second-highest usage by Snowy Egret of any site (after Oxford Basin), with birds recorded roughly twice as often during the morning as in the afternoon (4.3/visit vs. 2.2/visit), presumably due to lower tides in the morning. Unlike Oxford Basin, young egrets were infrequently noted here (maximum count of two per visit); this site, and the nearby lower Ballona Creek channel, were used primarily by adult birds.



Figure 3-38. Photo taken on 2 September 2009 showing the southwestern part of Del Rey Lagoon. The ficus trees on the right side of the photo support small numbers of roosting Black-crowned Night-Herons and Snowy Egrets. A few recently used nests observed in these trees during 2009 may have belonged to one or both of these species.

Figure 3-39. Photo taken on 23 July 2009 showing Snowy Egrets roosting in non-native acacia at Del Rey Lagoon.



3.5.4 BALLONA WETLANDS (AREA B)

This, the main tidal marsh area remaining at Ballona, is located between the Ballona Creek channel and Culver Boulevard. It features extensive pickleweed (*Salicornia* spp.) marsh habitat, muddy tidal channels, and a large saltpan that is irregularly moistened by rain, dense fog, and high tides. We found that, during the 2009 breeding season, herons and egrets made use of both the marsh and the tidal channels, but were most often found along tidal channels at the western edge of the saltpan; the rest of the saltmarsh, and all of the saltpan habitat, including that south of Culver Boulevard, was not used by herons or egrets during our observation period, nor were the drier areas of the Ballona Wetlands east along Culver Boulevard toward Lincoln Boulevard.

The Ballona Wetlands (Area B) was by far the most important site for roosting and foraging Great Blue Herons, with up to 22 birds seen per visit, and was the only site where counts of juvenile Great Blue Herons exceeded one bird per visit. Interestingly, counts of adults were higher during the afternoon, at high tide, than during the morning (4.8/visit vs. 3.2/visit) while the opposite usage pattern held true for young birds (0.8/visit vs. 3.6/visit).



Figure 3-40. This photo, taken on 23 July 2009, shows a typical collection of Great Blue Herons (presumably from Marina del Rey colonies) standing out in the pickleweed marsh in the Ballona Wetlands (Area B). Such groups often include smaller numbers of egrets, and birds are frequently seen foraging along the channels themselves. The view is to the southwest from the Ballona Creek channel dike, with Culver Boulevard in the background.

3.5.5 BALLONA FRESHWATER MARSH

This marsh, constructed in 2003 at the corner of Lincoln and Jefferson Boulevards, just south of Marina del Rey, supports modest numbers of foraging and roosting herons and egrets that presumably nest at Marina del Rey. Several freshwater marsh-obligate species, including the Least Bittern (*Ixobrychus exilis*), a California Species of Special Concern, have colonized this area as large expanses of tules, cattails, and other marsh vegetation have rapidly become established. During spring/summer 2009, we typically encountered no more than five herons or egrets at this location, almost always at the west end. In many cases, most of these waders were roosting in the dense stands of tules (*Scirpus* sp.) rather than foraging, presumably because of the dearth of shallow water or open shoreline habitat.



Figure 3-41. Photo taken on 23 July 2009 showing two Great Blue Herons and a Great Egret roosting in tules at the west end of Ballona Freshwater Marsh.



Figure 3-42. This adult Great Blue Heron was foraging at the west end of the Ballona Freshwater Marsh on 15 July 2009.

3.5.6 CENTINELA CONFLUENCE

This refers to the tidally-influenced confluence of Ballona Creek at the Centinela Channel, just south of the 90 Freeway bridge (see Figure 3-43, below). A patch of tall, lush grasses serves as a consistent roosting and foraging location for Great Blue Herons and both species of egrets, including young birds presumably from nests at Marina del Rey (see Figure 3-44 on the following page). These birds were frequently noted flying in from the northwest, and at least Great Blue Herons occurred in slightly larger numbers during afternoon visits (high tide) than morning (3.2/visit vs. 2.4/visit). The area is also used regularly by numbers of roosting (and occasionally foraging) Brown Pelicans, gulls, terns, and shorebirds.



Figure 3-43. Aerial photo showing the Centinela Confluence in detail. Great Blue Herons and the two egret species frequently roost in the area labeled “Grassy Roost,” outlined in red. Many other bird species roost and forage elsewhere in the channel areas shown, mainly during middle and low tides when mudflats become exposed.



Figure 3-44. In this photo, taken on 14 July 2009, several Great Blue Herons and a Snowy Egret roost and forage in the tall grasses at the Centinela Confluence.

Figure 3-45. This photo, taken on 15 July 2009, shows a few dozen adult Caspian Terns (*Sterna caspia*) roosting along the concrete bank at the Centinela confluence together with some gulls, Mallards (*Anas platyrhynchos*), and a Brown Pelican.



3.6 Summary & Analysis of Waterbird Observations at Foraging & Roosting Locations

We found usage of the greater Marina del Rey/Ballona area by foraging and day-roosting herons and egrets to be highly variable across sites, depending on species (Table 3-3). As a general statement, Oxford Basin appears to be most important foraging habitat for egrets and night-herons in the study area, Ballona Wetlands (Areas A and B) are particularly valuable for Great Blue Herons, and Del Rey Lagoon is moderately important, especially for Snowy Egrets.

TABLE 3-3: SUMMARY OF MAXIMUM COUNTS OF COLONIAL WATERBIRDS AT FORAGING & DAY-ROOSTING SITES IN LATE JUNE/JULY 2009

Numbers represent the highest counts of each species made on a single visit at each site.

Species	Oxford Basin	Ballona Lagoon	Del Rey Lagoon	Ballona Wetlands Area A	Ballona Wetlands Area B	Ballona Freshwater Marsh	Centinela Confluence	Lower Ballona Creek
Great Blue Heron	1	2	1	12	22	5	9	0
Great Egret	6	3	3	1	1	3	1	1
Snowy Egret	19	12	15	0	8	5	8	4
Black-crowned Night-Heron	14	1	0	1	3	3	0	1
Double-crested Cormorant	1	0	2	0	1	3	0	3

For Great Blue Herons, the most important sites were the Ballona Wetlands (Area A and Area B), and to a lesser extent, the Centinela Confluence. Great Egrets, scarce everywhere, favored Oxford Basin, the only place we saw apparent family groups of this species. Snowy Egrets were most common at Oxford Basin, also the primary foraging area for young of this species; Del Rey Lagoon was also regularly used by foraging and roosting Snowy Egrets. Black-crowned Night-Herons, especially young birds, were seen much more commonly at Oxford Basin than at any other site. Double-crested Cormorants were scarce everywhere, and we expect that most of these birds forage in marine environments offshore.

Table 3-4, on the next page, shows usage broken down by time of day/tide and age. Additional surveys at times of the year when these birds are more abundant would help clarify trends, but three areas appear to be important afternoon foraging/roosting areas for locally-nesting waders: the Centinela Confluence, the Ballona Wetlands, and Oxford Basin.

3.7 Bird Species of Conservation Concern in Marina del Rey

Building on the research of Cooper (2006), we developed a catalog of bird species that have been recorded in Marina del Rey and elsewhere in the lower Ballona Valley (Appendix D). We then identified 24 regularly-occurring species that have “special status,” such as state or federal listing or recognition as California Species of Special Concern, plus another 16 species that we regard as being of local concern (see the following Table 3-5).

As discussed in the table, not all of the special-status species are known to currently occur in the local area, and others do not occur locally in the roles in which they are considered protected. For example, the Yellow Warbler (*Dendroica petechia*) is a common migrant in the Ballona Valley in spring and fall but does not breed locally and did not breed historically; since only breeding individuals are considered Species of Special Concern, it would require a different management approach than a species known to have bred historically. Of the species that occur in the local area regularly, only a few use any contemporary habitats within Marina del Rey proper on a regular basis, such as at Oxford Basin, the northern edge of “Area A,” and the harbor itself; far more use the nearby Ballona Wetlands and Ballona Creek.

We have excluded some special-status species that occur as rare or uncommon migrants or winter visitors in the local area (e.g., Olive-sided Flycatcher *Contopus borealis*, and Southwestern Willow Flycatcher *Empidonax traillii extimus*) if no evidence suggests that the species ever did, or realistically could, breed, regularly overwinter, or regularly oversummer at Marina del Rey.

The Ferruginous Hawk *Buteo regalis* is now considered a California WatchList species (formerly a California Species of Special Concern, but was since dropped from this list due to population stability or population increase). Cooper (2006) found few historical records, but individuals have occurred in the Ballona area in some recent winters. However, it is unlikely that the Ballona Wetlands, restored or not, will ever support more than one wintering Ferruginous Hawk on a regular basis due to the area’s small size (its occurrence at Marina del Rey is even less likely), so it is not regarded as a species of conservation concern in this document.

The Large-billed Savannah Sparrow (*Passerculus sandwichensis rostratus*) was formerly a locally-common winter visitor to the Ballona area but is now essentially a vagrant in Los Angeles County (e.g., Cooper 2006). Its future occurrence in the Ballona area is possible, but not likely, and probably would not be in response to local habitat change. Therefore, it is not regarded as a species of conservation concern here.

We note that the several non-avian special-status species are known from areas surrounding Marina del Rey, at least historically (CDFG, Natural Diversity Data Base 2009a). These include the following:

- Southern California Saltmarsh Shrew (*Sorex ornatus salicornicus*). California Species of Special Concern.
- Pacific Pocketmouse (*Perognathus longimembris pacificus*). Federally listed as endangered; California Species of Special Concern.
- South Coast Marsh Vole (*Microtus californicus stephensi*). California Species of Special Concern.
- Pacific Pond Turtle (*Actinemys marmorata*). California Species of Special Concern.
- Silvery Legless Lizard (*Anniella pulchra pulchra*). California Species of Special Concern.
- Coast Horned Lizard (*Phrynosoma blainvillii*). California Species of Special Concern.

The pocketmouse is considered extirpated from Los Angeles County, and the turtle is localized and now occurs only in foothill drainages. While recent (post-1980) records of a *Sorex* shrew and a *Microtus* vole exist from the nearby Ballona Wetlands, they would not be expected to occur in the small, degraded remnant habitats at Marina del Rey (i.e., at Oxford Basin or the Wetland Park). The legless lizard and possibly the horned lizard occur at the nearby El Segundo Dunes, and at least the legless lizard is known to persist at the Ballona Wetlands/Westchester Bluffs (DSC pers. obs.). However, as is the case with the other animals listed above, they almost certainly would not be found in the small, disturbed habitats at Marina del Rey. Nesting colonial waterbirds would not likely use any of these scarce, cryptic species as important food sources, especially given the "easy prey" of abundant pocket-gophers and rats in the area, but nestlings of protected birds like the California Least Tern which nests on nearby Venice Beach, and, if it resumes nesting in the future, the Western Snowy Plover, would be vulnerable to avian predators, including tree-nesting herons and, especially, the American Crow.

Our highest level of concern is for special-status bird species that a) are not urban-adapted (i.e., that require undeveloped, natural habitat), b) have been extirpated from the Ballona area, and c) could occur again at Marina del Rey in the future if key areas of remaining open space are restored to resemble the area's historical habitats. We conclude that four species best meet these criteria: White-faced Ibis, Long-billed Curlew, California Least Tern, and Clark's Marsh Wren (see Table 3-5 for scientific names). Efforts to promote habitat for these species should be given highest conservation priority and not subjugated to measures geared toward increasing populations of human-tolerant species, including colonial waterbirds or other urban-adapted animals thriving in the local area under existing management practices.

An additional 16 species identified as “local interest species” in Table 3-5 consist of birds that do not have any special status, as they are still widely distributed elsewhere in Los Angeles County and the wider region, but are known to have been extirpated or greatly reduced in number in the Ballona/West Los Angeles area. Such birds may also be regarded as target species for conservation action, although their local recovery would not have the same importance for regional conservation efforts that recovery of the special-status species would have. Among these 16 species, we conclude that the following ten have the highest chance of benefiting from habitat restoration at Marina del Rey: Northern Shoveler, Northern Pintail, Cinnamon Teal, Redhead, Ruddy Duck, Sora, American Coot (breeding population only; common in winter), Black-necked Stilt, American Avocet, and American Goldfinch.

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TABLE 3-5. BIRD SPECIES OF CONSERVATION CONCERN IN MARINA DEL REY & SURROUNDINGS

The following abbreviations are used in Table 3-5:

- CSC: California Species of Special Concern
- FP: California Fully-protected
- MdR: Marina del Rey
- WL: California WatchList (formerly CSC, but since dropped from this list due to population stability/increase).
- LACBSSC: Los Angeles County Bird Species of Special Concern (see *Western Tanager* Vol. 75, No. 3, Jan./Feb. 2009)

References to a “Wetland Park” in Table 3-5 pertain to a plan by the County to restore wetland habitats on a 1.46-acre portion of Parcel 9, at the corner of Via Marina and Tahiti Way; please refer to the map and detailed discussion of this area in Section 6.1.2 of this plan.

Special-Status Species	Protection Status	Recent Occurrence at MdR	Restoration Potential at MdR	Projected negative impacts from development/existing uses of MdR
Brant <i>Branta bernicla</i>	CSC	Rare transient to open saltwater (<5 records each year).	Low; requires extensive, shallow beds of eelgrass.	None
Least Bittern <i>Ixobrychus exilis</i>	CSC	No records.	Low; may occur with introduction of freshwater reedbeds (cattails <i>Typha</i> spp., bulrush <i>Scirpus</i> spp.)	None
Light-footed Clapper Rail <i>Rallus longirostris levipes</i>	Endangered (CA/Fed)	No records.	Low, but possible (with re-introduction?) at Oxford Basin if restored with saltmarsh vegetation.	None
California Brown Pelican <i>Pelecanus occidentalis californicus</i>	Endangered (CA) Delisted (Fed)	Common year-round resident, especially summer and fall; roosts on docks, forages for fish in open saltwater.	N/A - already common, and likely to remain so.	None

Special-Status Species	Protection Status	Recent Occurrence at MdR	Restoration Potential	Projected negative impacts from development/existing uses of MdR
Double-crested Cormorant <i>Phalacrocorax auritus</i>	WL	Has nested in rookery at Villa Venetia/Coast Guard station since 2007; common breeding and non-breeding visitor throughout MdR, roosting on docks and in trees near rookery.	N/A - already common.	Confined while nesting to a small area, so removal/disruption of nesting trees requires establishment of alternative nesting sites.
Osprey <i>Pandion haliaetus</i>	WL	Uncommon year-round visitor, generally single birds remaining for up to several months. No nesting records, and only considered sensitive when nesting.	High; this species is highly-adaptable to urban/built environments, and appears to be increasing as a nester statewide where appropriate habitat exists (e.g., unused cranes and structures over water).	None
White-faced Ibis <i>Plegadis chihi</i>	WL	No records, but still occurs in migration in Ballona-area wetlands.	Moderate; could occur at Oxford Basin/Wetland Park in migration/winter (Aug. - May) with establishment of shallow-water wetlands, though generally uncommon in region.	None
Virginia Rail <i>Rallus limicola</i>	LACBSSC	No records, but occurs year-round at Ballona Freshwater Marsh and recently (2009) bred at Playa Vista (Cooper unpubl. data)	Moderate; could occur at Oxford Basin/Wetland Park in migration/winter (Aug. - May) with establishment of shallow-water wetlands.	None
Cooper's Hawk <i>Accipiter cooperii</i>	WL	Probably an uncommon year-round visitor, but few records in MdR proper. May initiate nesting in any mature tree, particularly tall conifers and eucalyptus.	N/A - increasing in area.	Removal of large trees should be accompanied by a raptor nesting survey.

Special-Status Species	Protection Status	Recent Occurrence at MdR	Restoration Potential	Projected negative impacts from development/existing uses of MdR
Northern Harrier <i>Circus cyaneus</i>	CSC	No records from MdR proper, but occurs regularly at Area A of Ballona Wetlands adjacent to MdR (mainly fall/winter)	Removal of trees in and around Area A (Ballona Wetlands) would improve foraging habitat for this species; Oxford Basin/Wetland Park probably too small to support this species, even in migration.	None
White-tailed Kite <i>Elanus leucurus</i>	FP	No records from MdR proper, but occurs regularly at Area A of Ballona Wetlands adjacent to MdR (mainly fall/winter, but bred once in 2002)	Removal of trees in and around Area A (Ballona Wetlands) would improve foraging habitat for this species; Oxford Basin/Wetland Park probably too small to support this species, even in migration.	None
Merlin <i>Falco columbarius</i>	WL	No records from MdR proper, but occurs regularly in Ballona Valley and urban Los Angeles Basin (winter).	N/A - this species is a recent colonizer to the Ballona area, and is thriving.	None
Peregrine Falcon <i>Falco peregrinus anatum</i>	Endangered (CA); FP	1-2 winter at MdR and forage widely; also occurs as uncommon transient nearly year-round. Often perches on high-rises in MdR.	Restoration of Oxford Basin/Wetland Park would increase foraging opportunities locally.	None - this species is (now) urban-adapted in Los Angeles area, particularly near high-rise buildings.
Western Snowy Plover <i>Charadrius alexandrinus nivosus</i>	Endangered (Fed); CSC	No records, but occurs on sandy beaches in area, and (rarely) at saltpan of Ballona Wetlands (Area B).	Low; prefers sandy beach and alkali flat habitat; Marina Beach probably too small, isolated to support this species.	None
Long-billed Curlew <i>Numenius americanus</i>	WL LACBSSC	No records, but occurs as uncommon transient at Ballona Wetlands, Del Rey Lagoon.	Moderate; could occur in migration and (less likely) winter at Oxford Basin/Wetland Park with restoration of mudflat and low saltmarsh (e.g., <i>Salicornia</i> spp.) vegetation.	None

Special-Status Species	Protection Status	Recent Occurrence at MdR	Restoration Potential	Projected negative impacts from development/existing uses of MdR
California Least Tern <i>Sternula antillarum browni</i>	Endangered (CA/Fed); FP	During breeding season (late Apr. - Aug.), birds from nesting colony at south Venice Beach adj. to MdR forage in open saltwater of marina; possibly also occurs at Oxford Basin.	Moderate; could occur at Oxford Basin, esp. with removal of trees/conversion to a lower-profile habitat and improvement in water quality/populations of small fish (should be investigated).	None
Burrowing Owl <i>Athene cunicularia</i>	CSC	No (recent) records.	Could be re-established at edge of Ballona Wetlands Area A provided large trees and shrubs (esp. non-natives like eucalyptus) are removed, shorter vegetation is maintained, and California Ground-squirrels <i>Spermophilus beecheyi</i> are retained. Oxford Basin/Wetland Park probably too small to support this species, though transients could occur, esp. in fall.	None

Special-Status Species	Protection Status	Recent Occurrence at MdR	Restoration Potential	Projected negative impacts from development/existing uses of MdR
Short-eared Owl <i>Asio flammeus</i>	CSC	No records from MdR proper, but occurs regularly at Area A of Ballona Wetlands adjacent to MdR (mainly fall/winter)	Removal of trees in and around Area A (Ballona Wetlands) would improve foraging habitat for this species; Oxford Basin/Wetland Park probably too small to support this species, even in migration.	None
Loggerhead Shrike <i>Lanius ludovicianus</i>	CSC	Occurs regularly as a post-breeding visitor (July-Jan.) at Ballona Wetlands Area A; formerly occurred year-round throughout (incl. Oxford Basin), and bred widely.	Removal of trees in and around Area A (Ballona Wetlands) would improve foraging habitat for this species.	None
Clark's Marsh Wren <i>Cistothorus palustris clarkii</i>	CSC	No records.	Moderate; could occur in non-breeding season (Aug. - Mar.) at Oxford Basin with removal of non-native myoporum and establishment of lower-profile vegetation; could occur as a breeder at either Oxford Basin or Wetland Park with establishment of reedbeds.	None
Yellow Warbler <i>Dendroica petechia brewsteri</i>	CSC	No breeding records; very common in migration, when not considered sensitive.	N/A - this species did not historically occur as a nester in the Ballona area (Cooper 2006), and therefore its restoration would not be appropriate.	None

Special-Status Species	Protection Status	Recent Occurrence at Mdr	Restoration Potential	Projected negative impacts from development/existing uses of Mdr
Yellow-breasted Chat <i>Icteria virens</i>	CSC	No records, though historically bred in Venice Marshes (Cooper 2006).	Small numbers likely occur during migration at Oxford Basin/Wetland Park, especially with introduction of low, dense riparian vegetation; nesting requirements far more strict (extensive riparian scrub near grassland), and unlikely to occur as a breeder.	None
Belding's Savannah Sparrow <i>Passerculus sandwichensis beldingi</i>	Endangered (CA)	No records in Mdr proper, though maintains a small resident population (c. 12 pr) at Area B of Ballona Wetlands and occurs as a non-breeding visitor to Area A.	Establishment of any tidal marsh at Area A could attract this species as a breeding resident; unrecorded at Ballona Lagoon, so probably unlikely to occur at Oxford Basin/Wetland Park even with restoration.	None
Western Meadowlark <i>Sturnella neglecta</i>	LACBSSC	Probably a regular transient/winterer, if not resident, at Area A of Ballona Wetlands; breeding resident in Area B. One record (fall 2009) from Oxford Basin (Cooper unpubl. data).	Removal of trees in and around Area A (Ballona Wetlands) would improve foraging habitat for this species; Planting of low scrub and grassland at Oxford Basin/Wetlands Park should support this species in migration.	None

Local Interest Species	Protection Status	Recent Occurrence at MdR	Restoration Potential	Projected negative impacts from development/existing uses of MdR
Northern Shoveler <i>Anas clypeata</i>	—	No records; common at Ballona Freshwater Marsh (BFM).	High; could occur at Oxford Basin/Wetland Park (Sept. - Apr.) with establishment of shallow-water wetlands. Likely at restored Ballona Wetlands.	None
Northern Pintail <i>Anas acuta</i>	—	No records; uncommon at BFM.	High; could occur at Oxford Basin/Wetland Park (Sept. - Apr.) with establishment of shallow-water wetlands. Likely at restored Ballona Wetlands.	None
Cinnamon Teal <i>Anas cyanoptera</i>	—	No records from MdR; common at BFM, uncommon at Ballona Lagoon and Del Rey Lagoon.	High; could occur at Oxford Basin/Wetland Park (Aug. - May.) with establishment of shallow-water wetlands; breeding possible (Apr. - June) at either site with addition of reedbeds. Likely at restored Ballona Wetlands.	None
Redhead <i>Aythya americana</i>	—	No records; uncommon at BFM.	Med.; could occur at Oxford Basin/Wetland Park (Sept. - Apr.) with establishment of shallow-water wetlands, though generally uncommon in region.	None

Local Interest Species	Protection Status	Recent Occurrence at MdR	Restoration Potential	Projected negative impacts from development/existing uses of MdR
Ruddy Duck <i>Oxyura jamaicensis</i>	—	No records; common at BFM.	High; could occur at Oxford Basin/Wetland Park (Aug. - May.) with establishment of shallow-water wetlands; breeding possible (Apr. - June) at either site with addition of reedbeds. Likely at restored Ballona Wetlands.	None
California Quail <i>Callipepla californica</i>	—	Few recent records; formerly resident at Ballona Wetlands Area A (into 1980s, Cooper 2006).	Highly sedentary, but could be re-established (through reintroduction?) at Area A; Oxford Basin too small to support a population.	None
Green Heron <i>Butorides virescens</i>	—	Year-round resident at MdR, currently nesting in small numbers in ornamental trees, especially near fresh water.	N/A - already occurs	Removal (or trimming) of any dense-foliaged tree in MdR during nesting season should be surveyed for this species.
Sora <i>Porzana carolina</i>	—	No records, but occurs in migration and winter in Ballona-area wetlands.	High; could occur at Oxford Basin/Wetland Park (Aug. - May.) with establishment of shallow-water wetlands.	None
Common Moorhen <i>Gallinula chloropus</i>	—	No records, but resident in Ballona-area wetlands, recently (since 2008) breeding.	Low; strictly occurs in freshwater, so unless this habitat is created somewhere at MdR (along with reedbeds), unlikely to occur.	None
American Coot <i>Fulica americana</i> (breeding)	—	Though common in winter, it is scarce in late spring/summer, and probably does not nest.	Breeding possible (Apr. - June) at Oxford Basin/Wetland Park with addition of reedbeds.	None

Local Interest Species	Protection Status	Recent Occurrence at MdR	Restoration Potential	Projected negative impacts from development/existing uses of MdR
Black-necked Stilt <i>Himantopus mexicanus</i>	—	Few (no?) records; common elsewhere in Ballona area (esp. upper Ballona Creek).	High; could occur at Oxford Basin/Wetland Park with establishment of shallow-water wetlands. Breeding possible with construction of sand/mud islet (surrounded by water). Likely at restored Ballona Wetlands.	None
American Avocet <i>Recurvirostra americana</i>	—	No records; uncommon transient in Ballona area.	High; could occur at Oxford Basin/Wetland Park with establishment of shallow-water wetlands. Breeding possible with construction of sand/mud islet (surrounded by water). Likely at restored Ballona Wetlands.	None
Hutton's Vireo <i>Vireo huttoni</i>	—	Few records, but has recently wintered (1 bird) at Oxford Basin.	Low; plantings of native willows could result in additional wintering birds.	None
Black-headed Grosbeak <i>Pheucticus melanocephalus</i> (breeding)	—	No recent breeding records, though common in migration.	Low; tends to nest in mature willow woodland; however, it is possible that a small number could nest in dense, lush ornamental vegetation.	None
American Goldfinch <i>Carduelis tristis</i> (breeding)	—	No records, though common in fall, winter in Ballona area.	High; introduction of native willow scrub could result in its re-establishment as a nester.	None
Yellow-headed Blackbird <i>Xanthocephalus xanthocephalus</i>	—	No records, though uncommon transient in Ballona-area wetlands.	Low; strictly occurs in freshwater, so unless this habitat is created somewhere at MdR (along with reedbeds), unlikely to occur.	None

4.0 MANAGEMENT CONCERNS WITH COLONIAL WATERBIRDS & SENSITIVE SPECIES AT MARINA DEL REY

4.1 Review of the Potential for Human Disturbances of Waterbird Nesting Colonies in Marina del Rey

A substantial body of research exists around the topic of human disturbance of colonial waterbirds (e.g., Parnell et al. 1988, Rodgers and Smith 1995, Carney and Sydeman 1997, Skagen et al. 2001, Naylor and Watt 2004). Nearly all studies have evaluated colonies in wilderness areas, natural parks, and other non-urban areas, and they have generally found that human intrusions near colonies adversely affect nesting birds. The impact of pedestrians is reportedly greater than the impact of vehicles, and disturbances early in the nesting season generally have greater impacts compared with disturbances later in the season. In a lengthy and detailed commentary, however, Nisbet (2000) discussed various lines of evidence indicating that nesting waterbirds generally tolerate various forms of disturbance in areas where humans are regularly present without posing an immediate threat of harm. He argued that previous studies and overviews concerning putative human disturbance of nesting colonial waterbirds generally lacked scientific rigor, and one of his conclusions was that, "Contrary to prevailing opinions, there is little or no scientifically acceptable evidence that gulls or herons are substantially affected by human disturbance."

In a study by Grubb (1979), existing noise levels were measured in a large mixed species heron rookery in St. Paul, Minnesota. As summarized on Page 53:

A small plane then flew over the rookery at elevations ranging from 150 to 800 feet above the ground. Calculated maximum noise levels from this plane were 9 dBA greater than calculated existing maximum noise levels from aircraft and 20 dBA greater than measured existing maximum noise levels. There was no response from the nesting birds to either the increased noise levels or the presence of the aircraft. The fact that these birds are currently residing in an urbanized environment may have resulted in their habituation to noise disturbances.

Traut and Hostetler (2003) reported significantly less alert/fleeing behavior for Great Blue Herons and other waterbirds along developed versus undeveloped shorelines in central Florida, indicating habituation to human presence.

The Great Blue Heron colonies of southern coastal British Columbia have been the subject of the most detailed studies and ongoing monitoring programs anywhere on the Pacific coast of North America¹¹. Vennesland (2000) was the first to show experi-

¹¹ See, for example: <http://www.stanleyparkecology.ca/programs/conservation/urbanWildlife/herons/monitoringReports/SPHeronryReport2008.pdf>

mentally that herons habituate to non-threatening human activity near breeding areas through the season (i.e, herons become more difficult to disturb as the nesting season wears on, presumably reflecting increased investment of time and resources toward nesting). This had been suggested earlier by Vos et al. (1985), who studied Great Blue Heron response to human disturbance in Colorado.

Vennesland (2000) and Vennesland and Butler (2004) studied the effects of disturbances from humans and predators (mainly Bald Eagles *Haliaeetus leucocephalus*) at 35 Great Blue Heron breeding colonies in the Vancouver area during 1998 and 1999. As noted by Vennesland (2000:82), "Most colonies were located away from roadways, so the dominant form of human disturbance at heron colonies was therefore of a pedestrian nature." Breeding abandonment accounted for 96% of the variation in productivity among colonies, and was due to eagle disturbance and, to a lesser degree, human disturbance. The level of response varied significantly among colonies, indicating different perceptions of risk, and varied significantly with the level of urbanization near colonies. Only a few episodes of nest abandonment were identified as being human-caused, or were indirectly related to novel human activities near colonies:

[Colony 10] was disturbed by chain sawing and lawn mowing on 31 March, 6 April and 27 May, 1999, and breeding herons abandoned the site for the remainder of the season when heavy land-clearing machinery was operated within 50m of the colony edge on 30 June. Novel human disturbance was indirectly linked to the abandonment of one colony in 1998 (Colony 33, Appendix 1) and one colony in 1999 (Colony 4, Appendix 1). A golf course was built within 100m of Colony 33 in 1996 and 1997, and this event was followed by colony abandonments in 1997 and 1998 (directly linked to eagles in 1998). At Colony 4 in 1999, the cutting of trees occurred within 50m of the colony edge in the week prior to the abandonment of the colony, although this event was not directly observed, and eagles attacked the colony closer to the date of abandonment. Two other novel disturbances were documented, but the original response of the herons to the disturbance was not witnessed. Propane powered bird scare devices were set up within 100m of Colony 14 in 1999, and dike repairs were conducted within 100m of Colony 27 in 1998. In both cases the herons apparently habituated to these repeated and mechanical disturbances because they continued to breed after these events. Apart from Colony 10, no nest abandonment due directly to human disturbance was documented. Other human disturbances that had no obvious impact, beyond provoking a response from herons, included gunshots (n=3), a rock concert, and low flying planes (n=2). (Vennesland 2000:32).

Discussing a more focused investigation of the effects of human pedestrians upon ten Great Blue Heron nesting colonies in the same part of British Columbia, Vennesland (2000:70) reported that the herons at one colony "never responded to any human disturbance, presumably due to the continuous human presence below and around the colony."

All of the waterbird colonies at Marina del Rey are located near busy roads, apartment complexes, and other distinctly urban features, and the area lacks Bald Eagles or other comparable predators on adult or nestling tree-nesting waterbirds. Thus, conditions at

Marina del Rey are much different than the typical conditions in British Columbia or in most other areas that have been selected for scientific evaluation of disturbance effects upon waterbird colonies.

A thorough review of the literature shows that the great majority of studies have examined the typical situation of people influencing bird behavior at nesting colonies outside of urban areas. For example, Carney and Sydeman (1997) "reviewed 64 published investigations concerning effects of human disturbance on nesting colonial waterbirds" and identified "three main categories of human disturbance": scientific investigators, ecotourists, and recreators. In addition to several pointed criticisms of their review by Nisbet (2000), we note that the categories identified by Carney and Sydeman make sense only because the studies in their review were limited to evaluating disturbances resulting from people intruding upon largely natural areas. The inclusion of urban-adapted colonies would necessitate identification of a fourth category of potential human disturbance, from people going about their normal business in an urban setting. As discussed by Nisbet (2000), there is no reason to suspect that such routine, non-threatening activities represent significant sources of disturbance to urban-adapted colonies (at least not in coastal southern California, where such colonies are generally thriving and proliferating, and where such serious heron predators as Bald Eagles are absent).

In San Diego County, Unitt (2004) noted that "the Great Blue Heron has become thoroughly integrated into the domesticated environment. Many colonies are directly over places heavily trafficked by people, the nesting birds being indifferent to human activity below." With respect to the Black-crowned Night-Heron, Unitt noted, "All the major colonies are in planted trees in areas heavily used by people [and] the night-herons are surprisingly indifferent to people, especially while they are foraging at night." In a monitoring report on the Great Blue Heron colony near Villa Venetia in Marina del Rey, Keane Biological Consulting (2007) reported, "Dredging activities observed in February 2003 within 200 feet of heron nests located in pine trees west of the U.S. Coast Guard Station did not result in visible disturbances or nest abandonment." Echoing the earlier findings of Grubb (1979), biologists from the Chambers Group (2008) found that the herons and egrets nesting along Admiralty Way in Marina del Rey "successfully breed in situations that regularly exceed 110 dB."

Colonial waterbirds in Marina del Rey may tolerate high levels of noise and human activity associated with pedestrians, cyclists, boats, vehicles (including delivery trucks), and tall buildings because this flexibility enables them to nest in a wide variety of tree types and to forage and roost in various suitable habitats located close to their nesting trees (cf. Francis et al. 2009). It should be emphasized that these birds have necessarily habituated to various non-threatening human activities as a *precondition* of successfully colonizing Marina del Rey, where no location is far removed from routine human presence. Only the height of the trees in which the birds nest affords them effective

separation from fairly constant human activity. The necessity of tolerating human activity around and below the nesting colony represents a fundamental difference between members of urban-adapted populations and individuals of the same species that breed in natural areas. Colonies in natural areas may include many members that are relatively sensitive to human intrusions, and those birds may abandon a colony to seek a more remote location if the colony experiences elevated levels of noise or human activity, especially early in the nesting season. Such relocation options are generally irrelevant to urban-adapted populations, whose members choose to nest in settings characterized by elevated levels of noise and human activity, such as parking lots, apartment complexes, and busy harbors and marinas. Birds easily disturbed by elevated levels of noise and/or human activity are unlikely to select urban nesting sites in the first place.

In natural (non-urban) areas, such as large refuges, managers typically attempt to avoid potential adverse effects of human activities upon waterbird colonies by establishing and enforcing a large “buffer zone” or “set-back” around the colony in which human activities are prohibited or strictly limited during the nesting season. For example, Vennesland (2000) recommended “a calculated set-back distance of 165m [to] protect heron colonies from pedestrian disturbance.” Not only would enforcing this type of set-back be infeasible in an urban setting, it is almost certainly unnecessary in the case of urban sites like Marina del Rey since the colonial waterbirds in question are finding food and successfully raising young despite high “background levels” of human activity. In fact, the very act of limiting non-threatening human presence around urban colonies could have the unintended consequence of causing the birds to react more strongly to the occasional—and inevitable—human intrusion than they currently do when such intrusions are routine and the birds become habituated to them. Such a scenario could lead to increased colony abandonment and reduced nesting success (see Nisbet 2000:327).

4.2 Potential Effects of Colonial Waterbirds Upon Other Species in the Marina del Rey Area

The literature on Great Egrets, Snowy Egrets, and Double-crested Cormorants does not identify any particular cause for concern that nesting populations of these species could have adverse effects upon other species found in and around Marina del Rey. Great Blue Herons and Black-crowned Night-Herons, however, are omnivores that are known to regularly consume other birds, including terns and shorebirds, in addition to their typical diet of fish and other aquatic prey. The literature contains many references to the opportunistic feeding habits of these herons, especially those of the night-heron, and several representative examples are summarized below.

- Wolford and Boag (1971) inspected regurgitations from 96 nestling Black-crowned Night-Herons and found that 55% consisted of young birds, mainly Franklin's Gulls (*Larus pipixcan*).
- Collins (1970) reported on both the confirmed and apparent predation by Black-crowned Night-Herons of chicks belonging to Common Terns (*Sterna hirundo*) and Roseate Terns (*S. dougallii*) in New York in 1967 and 1968, including the disappearance of 33 chicks less than three days old in 1968.
- Hall and Kress (2008) evaluated the impact of Black-crowned Night-Heron predation on a restored tern colony in Maine. They found bird remains (Common Tern, Common Eider *Somateria mollissima*, gull (*Larus* sp.), and the legs of an unknown wading bird) in five out of 18 night-heron nests examined (28%). Nestling night-herons from three nests were fed tern chicks, but 92% of tern chicks known to have been eaten were fed to nestling Black-crowned Night-herons in one nest, including a degree of specialization among individual birds. No tern chicks fledged during the year of their study (1992) and night-herons were observed in the tern colony on multiple occasions. The results of this study suggest that individual night-herons within a single colony can pose a major threat to locally-nesting nesting waterbirds.
- The U.S. Fish and Wildlife Service, in a 2007 review of the Comprehensive Conservation Plan for the Seal Beach National Wildlife Refuge in northern coastal Orange County, California, stated, "The week of June 25, a great blue heron was observed taking four least tern chicks within the NASA Island colony" at the refuge.
- Marschalek (2008), reporting on monitoring of California Least Tern colonies statewide in 2007, stated, "The main predators of least terns in 2007 were unknown species, black-crowned night-herons (*Nycticorax nycticorax*) and gull-billed terns (*Gelochelidon nilotica*)." Appendix B-6 in this report indicates that Black-crowned Night-Herons were documented as taking 168 Least Tern chicks at the Bolsa Chica colony in Orange County, with Great Blue Herons taking another six tern chicks at that location. Great Blue Herons and coyotes (*Canis latrans*) together took a total of 50 chicks at the Seal Beach National Wildlife Refuge. Great Blue Herons were documented or suspected of taking small numbers of chicks at additional colonies in San Diego County.
- Marschalek (2009) reported 20 documented or likely Great Blue Heron depredations of California Least Terns and 16 by Black-crowned Night-Herons.

These cases illustrate potentially serious problems that expansion of Great Blue Heron and Black-crowned Night-Heron colonies at Marina del Rey could cause for the existing California Least Tern colony at Venice Beach, a short distance southwest of Marina del

Rey (see Figures 3-3, 3-9), or for ongoing efforts to re-establish another listed species, the Western Snowy Plover (*Charadrius alexandrinus nivosus*), as a nesting bird on local beaches. For these reasons, and because both heron species are highly adaptable and currently increasing in abundance as breeders in the Los Angeles region (including at Marina del Rey), this plan allows for biologists from State or federal resource agencies to potentially intervene (e.g., through tree pruning or removal, or through removal of "problem" individuals) if monitoring of the local ecosystem indicates that such management is clearly advisable.

4.3 Potential Conflicts Between Humans & Colonial Waterbirds in Marina del Rey

Ongoing colonization of Marina del Rey by various colonial waterbirds has produced conflicts, and potential conflicts, between humans and birds (and between humans and humans) that the County seeks to resolve, to the extent possible, through development of this conservation and management plan. In the interest of identifying and understanding such issues, five main sources of potential conflict are briefly summarized here.

4.3.1 NUISANCES & COSTS TO RESIDENTS, WORKERS, LESSEES, AND THE LAND OWNER

Colonial waterbirds invariably produce considerable volumes of white, pungent guano, which is deposited beneath nesting and roosting trees and which may also form a fine mist and be carried some distance downwind. Apart from the adverse visual and olfactory effects on people who live or work near occupied trees, the guano is known to foul such land uses as swimming pools, lawns, planter beds, parking lots, and restaurants. Maintenance costs are incurred by the County and by those leaseholders who must constantly clean up after the birds, and some designated land uses, such as the parking lot between Villa Venetia and the Coast Guard Station, have essentially been given over to the birds. As shown in Figure 3-27 on Page 3-26, however, some residents are still assigned to park in this lot, which means that their vehicles are perpetually misted and splattered with guano.

4.3.2 DEATH OF TREES THROUGH GUANOTROPHY

Directly associated with the deposition of guano is the phenomenon of guanotrophy, a pathogenic condition in soils beneath heronries that has resulted from the excessive deposition and accumulation of bird excrement. Froke (2007) described the phenomenon in some detail, starting on Page 8.3:

Stemming from heavy concentrations of excrement, guanotrophic soils adversely affect the welfare of the trees that uphold heronries. Generally marked as an excessive build-up of nutrients (e.g., potassium, ammonium) in underlying soils (or freshwater), the condition achieves phytotoxic levels as decreased pH generates (and donates) excess hydrogen

ions, which in turn decrease the absorption of anions (e.g., phosphide, nitride, and chloride). Because of the lacking buffer capacity, vegetation growth is slowed and regeneration is inhibited (see Salisbury and Ross 1969). Further, increased soluble salts will adversely affect water potential at the roots of trees (Wiese 1978); also see Gillham (1956) and Weseloh and Brown (1971). And very recently, from DNA microarray analysis, Hess *et al.* 2006 have offered new insights to the interaction of potassium and ammonium in soils that help explain the troubling toxicity associated with guanotrophism underneath heronries. For discussion of the specific effects of *cormorants* on heronry vegetation, see for example Cuthbert *et al.* 2002.

Froke's report also reviewed several case studies in which heronries have been seriously compromised by the killing of trees through guanotrophy. At the Villa Venetia parking lot, one large Monterey cypress that Great Blue Herons had used for nesting for several years apparently succumbed to guanotrophy in 2008, toppling over and crushing an automobile. As shown in Figures 3-25 and 3-26 on Page 3-24, the two remaining cypress trees used by nesting herons and cormorants have been nearly reduced to leafless snags; one of them is now leaning dangerously toward the Villa Venetia structure. Both trees appear to be doomed. Other nesting trees in the marina (ficus, eucalyptus, melaleuca) do not appear to be as susceptible to guanotrophy as do the three cypresses discussed above, so this problem may prove to be limited in scope.

4.3.3 POTENTIAL HEALTH RISKS

Airborne particles of guano could pose a health risk to local residents or workers through psittacosis, a bacterial infection that can cause severe pneumonia and other serious health problems for humans (Harkinezhad *et al.* 2009). Froke (2007) addressed this topic starting on Page 8.7:

Psittacosis, also known as Parrot Fever and Ornithosis, is a bacterial infection of humans that can cause severe pneumonia and other serious health problems. It is caused by *Chlamydophila psittaci*, formerly known as *Chlamydia psittaci*. In birds, psittaci infection is referred to as AVIAN CHLAMYDIOSIS (AC). Chlamydial infections have been reported from at least 159 species of wild birds in 20 orders, but most isolates have been made from six groups of birds. Although Psittacine birds such as parrots and macaws are most popularly identified with this disease, pigeons, waterfowl, and herons are the most commonly infected wild birds in North America.

The *Chlamydophila* organism is excreted in the nasal discharges and feces of infected birds and can remain infective for several months. Human infection commonly occurs from inhaling the bacteria in airborne particles from feces or respiratory exudates. Because of the organism's resistance to drying, infected guano at roosts is especially hazardous. Ornithologists who study wild parrots and are exposed to airborne fecal particles that can be transported with neonates' powder down, and persons who are excessively exposed to heronries, cormorant rookeries and other wading bird colonies where there may be infected birds are among those with a particular risk of psittaci infection.

4.3.4 POTENTIAL CONFLICTS WITH NATURAL RESOURCE MANAGEMENT

As reviewed in Section 4.4, Great Blue Herons and Black-crowned Night-Herons are known to prey upon smaller birds, including the endangered California Least Tern, which maintains a nesting colony on Venice Beach. Predatory herons or egrets could also potentially hinder ongoing efforts to encourage re-establishment of a nesting colony of another listed species, the Western Snowy Plover, on one or more local beaches. These threats may or may not be so serious as to warrant efforts to actively limit the local heron nesting populations, but this plan allows for the possibility of actively managing heron (or egret) populations (e.g., through tree pruning or removal, or through removal of “problem” individuals) if monitoring of the local ecosystem indicates that such management is clearly advisable.

Additional possible conflict might arise between one theoretical group of people seeking to encourage the establishment of heron, egret, and cormorant nesting colonies across as large an area of Marina del Rey as possible and others, including the authors of this plan, who consider it more ecologically appropriate and desirable to work toward establishing habitats that will allow for the perpetuation of existing waterbird nesting populations while also encouraging the re-establishment of species that have been extirpated, or nearly extirpated, from the Marina del Rey area.

4.3.5 POTENTIAL CONFLICTS WITH PLANNED HUMAN LAND USES

Marina del Rey represents a nearly pure example of a “built environment.” Its non-native landscape requires constant upkeep, including irrigation, and the area is subject to periodic redevelopment as buildings become obsolete, trees die, and planners and managers reevaluate land use priorities. Waterbird nesting colonies also shift and potentially expand over time, in many cases unpredictably, and there must be a mechanism in place to enable County personnel to effectively manage the marina without taking on an unacceptable level of risk that a shift in the location of a colonial waterbird nesting colony will indefinitely forestall the implementation of costly and needed redevelopment plans.

4.4 Effects of Human Disturbance on Sensitive Species

Table 3-5 lists bird species of conservation concern in known to occur in Marina del Rey, or that are believed to have the potential to occur there, and Section 6 describes conservation policies that could benefit some of these species. Although human actions greatly impacted local populations of many of these species historically, few sensitive species other than colonial waterbirds occur at the Marina today, and those that do either use the site only marginally (e.g., the California Least Tern) or have shown themselves to be highly tolerant of humans (e.g., the California Brown Pelican); thus, human disturbances at Marina del Rey probably have little ongoing effect upon these

species. Should future restoration result in the establishment of additional sensitive species, potential effects would have to be evaluated.

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5.0 MARINA-WIDE MANAGEMENT RECOMMENDATIONS

This section provides guidance for managing the Marina del Rey landscape and associated waterbird colonies to achieve the plan's interrelated goals of:

- 1) allowing for the effective conservation of biologically sensitive bird species that occur, or that have occurred, in the local area;
- 2) identifying management practices conducive to maintaining local breeding populations of colonial waterbirds;
- 3) eliminating or minimizing conflicts with appropriate and intended human uses of Marina del Rey; and
- 4) promoting the enjoyment of nature for residents and visitors to Marina del Rey.

These Management Recommendations would apply throughout Marina del Rey, establishing a planning framework that takes into account all of the relevant information and analyses, and that establishes best management practices tailored to Marina del Rey's resources and land uses.

5.1 Management Recommendations for Waterbird Colonies

Because of the available habitat, and itinerant and unpredictable nature of waterbird colonies, nearly all trees in Marina del Rey must be considered potential nesting habitat for colonial waterbirds. Since maintaining habitat conditions in a manner consistent with the perpetuation of existing waterbird colonies at self-sustaining and ecologically appropriate levels is a stated goal of this plan, we provide recommendations for a management approach that will help to achieve this goal.

As part of developing this plan and recommendations we reviewed the 2009 *Guide to Bird-Friendly Tree and Shrub Trimming and Removal* prepared by the Los Angeles Audubon Society. This booklet contains many accurate and useful discussions of bird-nesting, legal prohibitions against disturbing nesting birds, methods of finding nests, and other relevant topics. For this reason, we provide a current link to this online publication in the Literature Cited section of this plan. We have some concerns, however, that these guidelines characterize as "excessive" certain types of pruning that may, in some cases, legitimately be necessary to maintain the health of a tree or to ensure public safety. For example, Page 8 of the guidelines advises against "Removing dead palm fronds that drape down around the trunks of palm trees." We believe there may be valid reasons to remove dead fronds in inhabited areas where they could fall on people, cars, or buildings. It is our opinion that decisions about how to maintain healthy and safe landscape trees should typically be made by qualified arborists or other landscaping specialists, within the limits set by the Department of Beaches and

Harbor's Policy No. 23, "Tree Pruning in Marina del Rey and on County Beaches in Accordance with Native Bird Breeding Cycles." As discussed later in this plan, we have recommended strengthening this policy by requiring the review and approval of a biologist before any non-emergency pruning that would impact a waterbird nest (i.e., during the non-breeding season).

Appendix B of Audubon's guidelines, "Special Consideration, Herons & Egrets," and "Special Consideration, Cormorants," sets forth some of the claims about the putative sensitivity of all nesting colonial waterbirds to human presence. For example:

When conducting surveys or inventories, individuals should take caution to avoid walking into heronries, especially under nesting trees (indicated by the ring of white guano around the base of the tree). Should they find themselves within a heronry, one should quietly and quickly leave by the same route they entered.

As reviewed in detail in Section 4.1 of this plan, such caution may be warranted in natural areas where herons, egrets, and cormorants may seldom be approached by people, but there is no evidence that the routine, legal activities of people in urban areas have any substantial effect upon the colonial waterbirds that select such areas for nesting.

The approach to tree management presented in this conservation and management plan builds upon the Department of Beaches and Harbor's existing Policy No. 23, "Tree Pruning in Marina del Rey and on County Beaches in Accordance with Native Bird Breeding Cycles." Its stated goal is "To establish guidelines in consideration of the great blue heron (*Ardea herodias*) and other breeding bird species to reduce or eliminate impacts on their nesting habitats." This policy, which has been in place since 2006, appears to be thorough and well-conceived. Either coincidentally or not, waterbird nesting colonies have increased and spread to new parts of Marina del Rey, part of a regional phenomenon reviewed in Section 3.3 and Appendix C of this plan. Nor has pruning "pushed" birds out of old nesting areas and into new ones; for example, the apparent shift in nesting locations along Admiralty Way by Black-crowned Night-Herons does not appear to have resulted from pruning of trees nearby (and the subsequent displacement of herons), as the eucalyptus trees the birds had been using north of Oxford Basin have retained their canopies and the old nests could still be seen in these trees in 2009. Therefore, this plan does not recommend any changes to the existing tree-pruning policy, which has allowed for the expansion and diversification of waterbird colonies while accommodating needed maintenance of trees.

We recognize, however, that most waterbird colonies in Marina del Rey are in some degree of conflict with intended human uses of the marina, and that the public and regulators seek assurance that such conflicts will not eventually lead to persecution of the birds through disturbance of their nesting trees. We believe that such assurance can be provided by amending the County's existing (2006) tree pruning policy, as outlined and discussed in Sections 5.1.1 and 5.1.3.

5.1.1 SUMMARY OF MANAGEMENT ASSUMPTIONS & CONCEPTS

The following numbered points provide a concise summary of information discussed at length elsewhere in this report and outline the basic rationale behind our management recommendations. We believe this summary will be useful in helping readers understand the basis for management recommendations presented later in this section.

1. In 2009, after at least five years with increasing numbers and diversity of nesting colonial waterbirds at Marina del Rey, we conducted the first marina-wide census of nesting areas and population sizes for Double-crested Cormorants, Black-crowned Night-herons, Great Blue Herons, Great Egrets, and Snowy Egrets. These species appear to be thriving at the marina, and each of their local populations exists at relatively high levels for Los Angeles County and elsewhere along the coast of southern California.
2. Nesting herons, egrets, and cormorants, while not present historically at the marina, are thriving there now, and should be given the opportunity to continue to occur and nest so long as their presence is compatible with (a) other species of conservation concern in the local area (b) human usage of the marina.
3. Waterbird nesting colonies are scattered throughout the marina, subject to change from year to year, and do not always occur where they might be expected. This dynamism and lack of predictability prevent us from identifying the area's "sensitive" resources; only through periodic review can this question be answered at any given time. An effective management strategy should consider all trees in Marina del Rey as having potential to support nesting in the future.
4. Some species of colonial waterbirds, including the Great Blue Heron and Black-crowned Night-Heron, have been shown to negatively impact nesting of other species by preying on nestlings. This may be related to the size and proximity of the nesting colony of the depredating waterbirds. Each situation is different, which necessitates a case-by-case, adaptive-management approach.
5. We recommend against installing more non-native trees that could provide additional waterbird nesting substrates, and against providing man-made structures for nesting waterbirds at Marina del Rey due to (a) lack of evidence that these species nested in the local area historically; (b) potential conflicts between colonial waterbirds and species of conservation concern in the local area, especially the California Least Tern; and (c) potential conflicts between colonial waterbirds and established human uses of the marina. We also recommend against replacing nesting trees with new nesting trees if they should be rendered unusable through natural/normal use by the birds (e.g., "guanotrophy" of the nesting trees at the end of Fiji Way) or acts of nature. Rather, to the extent possible, we prefer allowing natural processes to guide habitat management decisions marina-wide.

6. For public safety, tree health, and to allow intended human uses of the marina, trees must occasionally be pruned or removed. This must be done in accordance with State and federal law. With regard to these activities, the colonial waterbirds that nest in Marina del Rey enjoy the same legal protections afforded to nearly all other native bird species (i.e., active nests may not be disturbed).
7. The general expansion and diversification of Marina del Rey's waterbird colonies achieved under the County's existing (2006) tree-pruning policy lead us to conclude that this bird-friendly policy effectively supports the continued existence of colonial waterbirds in the marina.
8. Nevertheless, because colonial waterbirds are extremely visible, popular, and charismatic components of Marina del Rey and nearby areas, and in light of ongoing potential for serious conflicts between nesting colonies and legitimate human uses of the marina (such as the current situation involving dying cypress trees at the end of Fiji Way), we believe that a more formalized management approach for the area's waterbird colonies is warranted.
9. First, we recommend that the County's existing (2006) tree-pruning policy be extended to cover all leaseholders in Marina del Rey (the policy currently applies only to the County itself and new or renewing leases, but not to leaseholders in good standing with the County).
10. Second, in cases where a waterbird nest might be removed or rendered unusable as a result of pruning that an arborist deems necessary to promote the health of the tree (as permitted under the County's existing tree-pruning policy), we recommend that the policy be amended to specify that a County biologist, or County-contracted biologist, review and approve the proposed pruning. The purpose would not be to second-guess the arborist, but to provide an appropriate level of administrative biological review before actions are taken that could potentially disrupt waterbird nesting in future years. Pruning deemed necessary for to alleviate an immediate threat to public safety would not be subject to this additional review.
11. We recommend that the County conduct waterbird population surveys, preferably on an annual basis, that would be needed in order to track the status of colonies and to provide current information on the locations of active nests to the public, the County, resource agencies, and other regulators.
12. We also recommend that the County conduct periodic nesting colonial waterbird surveys (e.g., every 3-5 years) throughout the coastal slope of Los Angeles County to establish a regional context for the Marina del Rey colonies. For example, the Snowy Egret is known to breed in fewer than five locations on the coastal slope of Los Angeles County, with Marina del Rey supporting one of the larger colonies.

Should this continue to be the case, special care should be taken around the marina's Snowy Egret colonies, to help preclude a regional population decline.

5.1.2 RECOMMENDED APPROACH TO EVALUATING LAND USE CONFLICTS

Currently, conflicts between nesting colonial waterbirds and designated land uses are relatively benign at all but one of the primary waterbird nesting colonies in Marina del Rey (the colony near Villa Venetia). Given that nesting waterbird populations in the local area continue to expand and occupy new trees, potential exists for conflicts between nesting waterbirds and established human land uses in the future. The general guiding principle in addressing such conflicts should be that a colony be allowed to remain in place except in situations in which the birds' presence precludes or seriously impinges upon the primary intended use of the same area. The County should evaluate each situation and determine an appropriate response, if any.

In parks and park-like settings, such as Burton W. Chace Park or around the parking lot near Oxford Basin, the nesting waterbirds should generally be allowed to continue their activities unmolested, except as future native habitat restoration and normal maintenance require the reduction of non-native trees (to be done outside the breeding season).

In many cases, birds are causing only minor conflicts with a designated land use. For example, at the lightly-used parking lot along Admiralty Way near Oxford Basin, an appropriate response to the occupation of two large trees may be to temporarily designate limited "no-parking" zones beneath those trees and to identify alternate parking spaces elsewhere in the Marina, as needed (rather than to remove the trees outright, unless this is being done as part of native habitat restoration, for example). In the future, it could make sense to reconfigure the parking lots adjacent to Oxford Basin and Yvonne B. Burke Park, relocating the parking lots away from Oxford Basin and establishing passive parkland in the area closer to the Basin that is compatible for waterbird nesting and wildlife values of a restored Basin.

The only current land use conflict that appears to be highly problematic is at the Villa Venetia colony, where guano has killed one nesting tree and nearly killed the other two (creating a potential public safety hazard), and where constant deposition of guano has caused a small parking lot to be almost completely unusable by residents and Coast Guard employees while also creating a potential health risk from psittacosis. The remaining cypress trees at this location are in very poor health. The County has not made a final determination as to their disposition at the time of this writing.

Another acceptable response to severe and irreconcilable land-use conflicts could include pruning of trees during the non-breeding season to make them unsuitable as nesting substrates. Any such "directed pruning" should be done during the non-breeding season and in compliance with the existing (2006) tree-pruning policy, which allows the affected birds an opportunity to select suitable nesting trees elsewhere in the

nearby area. We expect that annual monitoring of the marina's nesting colonies recommended in this plan would include documentation of any apparent bird-human conflicts and recommendations for how they might be resolved.

5.1.3 TREE MANAGEMENT RECOMMENDATIONS

The following numbered paragraphs provide guidance for County personnel, contractors, lessees, and anyone else potentially involved in pruning or removing trees in Marina del Rey.

Note that, for most species, the "breeding season" generally extends from February through August. For species like the Great Blue Heron, however, breeding activities may start as early as December, and both Mourning Doves (*Zenaida macroura*) and hummingbirds may nest essentially year-round. Since removal of the active nest of virtually any native species represents a violation of State and federal law, all tree pruning or removal should be done in consultation with a trained biologist familiar with the relevant statutes and with this plan and its goals.

- 1) Trees posing an immediate safety threat that cannot be avoided (e.g., falling over into traffic or fire-lane) should be pruned/removed immediately regardless of presence of nesting herons/egrets or other species. Notification should be provided to the California Department of Fish and Game (CDFG) and U.S. Fish and Wildlife Service (USFWS) before any action is undertaken that might disturb any actively nesting birds, but these agencies typically do not block emergency actions needed to protect public safety.
- 2) Trees not posing an immediate safety threat or not otherwise impacting normal human use of the marina should be maintained in accordance with the 2006 tree-trimming guidelines. If a waterbird nest might be removed or rendered unusable as a result of pruning that an arborist deems necessary to promote the health of the tree (as permitted under the County's existing tree-pruning policy), a County biologist or County-contracted biologist should review and approve the proposed pruning. The purpose would be to provide an appropriate level of administrative biological review before actions are taken that could potentially disrupt waterbird nesting in future years.
- 3) In cases where a waterbird colony is fouling cars, landscaping, etc., but not apparently endangering public health, a temporary structure, such as a tarp or a tent supported by metal poles, may be erected below the colony, but the tree itself must not be disturbed during the breeding season as long as birds are involved in nest-building, nesting, or raising young there.

5.1.4 WATERBIRD MONITORING RECOMMENDATIONS

It would be useful for the County to conduct waterbird population surveys, preferably on an annual basis, in order to track the status of colonies and to provide current information on the locations of active nests to the public, the County, resource agencies, and other regulators. This information would help the County and others to evaluate the adequacy of the conservation and management approach specified in this plan.

We also recommend that the County conduct periodic nesting colonial waterbird surveys (e.g., every 3-5 years) throughout the coastal slope of Los Angeles County to establish a regional context for the Marina del Rey colonies. For example, the Snowy Egret is known to breed in fewer than five locations on the coastal slope of Los Angeles County, with Marina del Rey supporting one of the larger colonies. Should this continue to be the case, special care should be taken around the marina's Snowy Egret colonies, to help preclude a regional population decline.

5.2 Recommendations for Biological Reports & Construction Monitoring

This section provides recommendations for measures to be implemented when construction is proposed anywhere in Marina del Rey. Our recommendations for biological reporting are patterned upon Section 4.4.2 of the City of Malibu Local Coastal Program/Local Implementation Plan. Our construction monitoring recommendations are patterned upon the conditions of Coastal Development Permit No. 5-08-242, issued by the California Coastal Commission in 2008 for the Oxford Basin low-flow diversion project.

5.2.1 QUALIFIED BIOLOGIST

Since trees capable of supporting nesting birds of many species are now established throughout Marina del Rey, many types of construction projects and maintenance in the marina area will have at least some potential to impact nesting birds. Construction within the aquatic habitats of the marina itself (e.g., in tidal basins) also entails potential impacts to biological resources, mainly in the form of potential water-quality impairment and potential impacts to foraging waterbirds. Thus, in most cases, we believe it is important that any project proponent retain a biological consultant with appropriate credentials to participate in the planning and monitoring of construction projects in Marina del Rey. Any biologist retained for this purpose should have read this plan and should possess a working knowledge of the County's resource protection policies.

5.2.2 BIOLOGICAL REPORTS

Applications for new development on property where the initial site inventory indicates the potential presence of colonial waterbirds, sensitive species, or sensitive habitat

should include a detailed biological study of the site, prepared by a qualified biologist or other resource expert. At minimum, the biological report should include the following elements:

- A study identifying biological resources, both existing on the site and with potential to occur. The biological study should focus on species identified in Table 3-5 of this plan (Bird Species of Conservation Concern in Marina del Rey & Surroundings) and on colonial waterbirds. In the absence of standard protocols, at a minimum, the area should be surveyed for two hours between dawn and 10:00 a.m. on five occasions with at least one week between surveys. If there is appropriate habitat for owls on site, at least one nocturnal survey should be conducted.
- Photographs of the site.
- A discussion of the physical characteristics of the site, including, but not limited to, topography, soil types, microclimate, and wildlife use.
- A map depicting the location of plant communities and other biological resources.
- An identification of rare, threatened, or endangered species, that are designated or are candidates for listing under State or federal law, an identification of "fully protected" species and/or "species of special concern," and identification of any other species for which there is compelling evidence of rarity, for example, plants designated "List 1B" or "List 2" by the California Native Plant Society, that are present or expected on the project site.
- An analysis of the potential impacts of the proposed development on the identified habitat or species.
- An analysis of any unauthorized development, including grading or vegetation removal that may have contributed to the degradation or elimination of habitat area or species that would otherwise be present on the site in a healthy condition.
- Project alternatives designed to avoid and minimize impacts to sensitive resources.
- Mitigation measures that would minimize or mitigate residual impacts that cannot be avoided through project alternatives.

5.2.3 CONSTRUCTION TIMING

Since many types of projects will have potential to impact nesting birds, it is generally recommended that aspects of the project that have the greatest potential for such impacts be implemented during the “non-breeding season,” which in the local area is between September 1 and November 30. This term cannot be taken literally in all cases since, for example, hummingbirds nest year-round and Great Blue Herons may exhibit breeding behaviors at virtually any time of the year. Nevertheless, the potential for substantial impacts is reduced during the specified period. If construction activities must take place near waterbird nesting sites during the nesting period, it is preferable that such impacts take place toward the end of nesting rather than toward the beginning, since waterbirds are more likely to abandon nests early in the nesting cycle.

5.2.4 CONSTRUCTION NEAR WATERBIRD OR RAPTOR NESTING SITES

Typically, the project biologist should conduct an initial reconnaissance survey to determine whether any active waterbird or raptor nesting sites exist within 300 feet of proposed construction activities. The survey should include inspection of the ground for the guano stains typically present below waterbird nesting sites, but also careful inspections of all trees where nests might be placed.

If an active waterbird or raptor nest is found within 300 feet of construction, the following measures are recommended:

1. The project biologist should either possess noise-monitoring equipment or work in conjunction with a noise-monitoring consultant to measure noise levels at active nesting sites.
2. The project biologist/noise monitor should be present at all weekly construction meetings and during all activities with potential to generate noise over a threshold of 85 dB at any nest site. This includes such activities as hardscape demolition, pile-driving, and the use of chainsaws. The purpose of monitoring should be to ensure that nesting birds are not disturbed by construction related noise. Thus, the monitor should watch for any behaviors associated with noise disturbance, including flushing or other startle movements, changes in foraging or reproductive rituals, interrupted feeding of young, or nest abandonment. If any such behaviors are observed, the monitor should have the authority to stop work immediately so that measures may be taken to avoid any further disturbance.
3. As a guideline, noise levels from construction, measured at the nest, should not exceed 85 dB. Monitoring should be especially careful and intensive, and observations should be recorded in detail, when noise levels approach this level. Nevertheless, given that levels in excess of 100 dB have been recorded at heron and egret nests near Oxford Basin with no apparent adverse effects (Chambers Group

2008), there is no empirical evidence proving that 85 dB is a valid threshold above which birds nesting in an urban environment experience substantial disturbance. Still, the burden of proof should be placed upon the project proponent to demonstrate that a higher noise level can be safely tolerated. If constant, detailed monitoring of noise levels above 85 dB demonstrates that the birds show no evidence of being disturbed, construction should be allowed to continue. In such cases, the final monitoring report should contain relevant details about (a) the types, intensities, and duration of noises the birds were subjected to, (b) any observations of stress behaviors in response to noises or other disturbances, and (c) the nesting success of those birds *relative to other birds in the nearby area that were not subjected to the same elevated levels of construction noise*. If it turns out that birds subjected to elevated noise levels appear to possibly experience reduced nesting success despite a general lack of evident stress behaviors, the project proponent should not be subject to any penalties, but the monitoring results should be incorporated into a revised construction monitoring policy that takes these important results into account. Without detailed monitoring of this nature, we will never know the actual thresholds at which different nesting bird species experience substantial disturbance at urban locations such as Marina del Rey.

4. If stress behaviors are observed from nesting birds in response to any construction activity, the project biologist should be authorized to call for the implementation of such mitigation measures as sound shields, blankets around smaller equipment, mixing concrete batches off-site, use of mufflers, and minimizing or eliminating the use of back-up alarms. If these sound mitigation measures do not reduce noise levels enough to eliminate the observed stress behaviors, construction within 300 feet of the nesting trees shall cease and shall not recommence until either new sound mitigation can be employed or until nesting is complete. To the extent possible, the biologist's monitoring report should specify the sound levels at the nest at which the birds demonstrated stress behaviors.
5. Construction staging areas or equipment should not be located under any nesting trees.
6. Construction employees should be prohibited from bringing pets (e.g., dogs and cats) to the construction site.
7. Any lights used during construction should be shielded downward.
8. Although these recommendations refer specifically to waterbirds and raptors (because they tend to be most sensitive to disturbance), virtually all native birds are legally protected from disturbance while actively nesting. Therefore, the biological monitor should take all necessary steps to ensure that no native bird species are disturbed by construction activities.

5.2.5 ADDITIONAL CONTROLS ON CONSTRUCTION IMPACTS

The project proponent should not be allowed to discharge silt or debris into coastal waters. Pursuant to this requirement, project plans should specify measures to minimize construction impacts. Plans should also identify acceptable locations for stockpiling and staging of materials; plans for control of erosion, stockpiled earth from trenches, and cement; as well as plans for the disposal of construction materials. Plans should include the following specifications, as applicable:

1. Delineation of the areas to be disturbed by grading or construction activities, including any temporary trenches, staging, and stockpile areas.
2. Best Management Practices as part of a written plan designed to control dust, concrete, demolition pavement, or pipe removed during construction, and/ or construction materials, and standards for interim control and for clean up. All sediment waste and debris should be retained on-site unless removed to an appropriate dumping location approved to receive fill.
3. Plans to monitor, contain, and clean/remediate oil or fuel leaks from vehicles or equipment.
4. Temporary erosion control measures to be employed should grading or site preparation cease for a period of more than 30 days, including but not limited to (a) filling or covering all holes in roadways such that traffic can continue to pass over disturbed areas; (b) stabilization of all stockpiled fill, disturbed soils, and trenches with shoring, sand bag barriers, silt fencing; (c) temporary drains and swales and sediment basins. These temporary measures should be monitored and maintained at least on a weekly basis until grading or construction operations resume.

Prior to commencement of construction, the project proponent should provide for the County's review and approval final plans and plan notes that conform to the County's requirements. Work should not be permitted to commence until the County approves the plans in writing.

6.0 POTENTIAL FOR HABITAT RESTORATION IN MARINA DEL REY

Section 3.7 identified bird species of conservation concern, including four “target species” (White-faced Ibis, Long-billed Curlew, California Least Tern, and Clark’s Marsh Wren) that should be given highest conservation priority when conducting habitat restoration and habitat management in Marina del Rey. We also identified 16 “local interest species” that are known to have been extirpated or greatly reduced in number in the Ballona/West Los Angeles area, 10 of which have the highest chance of benefiting from habitat restoration at Marina del Rey: Northern Shoveler, Northern Pintail, Cinnamon Teal, Redhead, Ruddy Duck, Sora, American Coot (breeding), Black-necked Stilt, American Avocet, and American Goldfinch. Section 6.1 describes three open space areas that have good potential for improving habitat conditions for these identified “target” and “local interest” bird species, and Section 6.2 provides recommendations for how this may be accomplished.

We are not treating here the whole of Area A of the Ballona Wetlands east of Fiji Way, which some maps include as part of Marina del Rey, because its restoration and management is being contemplated by the State of California as part of larger Ballona Wetlands restoration. However, we acknowledge that Marina del Rey shares a border with this key open space parcel, and provide recommendations for the management of this border below.

6.1 Open Spaces in Marina del Rey with Highest Potential for Habitat Improvement

6.1.1 OXFORD BASIN

The Oxford Basin covers 10.7 acres on the north side of Marina del Rey (see Figures 3-3, 3-9). Its resources have never been adequately studied or assessed, though an early bird survey (1978-79) documented foraging by the endangered California Least Tern, and recent surveys (by the authors) indicate still-high usage by waterfowl in winter. The basin is brackish, fed by both storm drains and by a tide gate/culvert from the Marina del Rey basins, and is best considered “muted-tidal” (some tidal action, but never completely drains). Apparently a relict of the larger Ballona/Venice marshes, a narrow band of native saltmarsh vegetation (visible in Figure 6-1) has developed along its edges. Restoration that includes shallow-water wetland and coastal scrub communities would significantly improve both water quality and habitat conditions for wildlife in the marina. It would also greatly improve wildlife-viewing opportunities in the area; a very popular bike path runs along the eastern edge of the site, and hundreds of visitors a day could enjoy a restored Oxford Basin.



Figure 6-1. Photograph of Oxford Basin, view to the east, taken by DSC on 10 September 2009. Features visible in this photo include non-native myoporum shrubs (at left and on far shore), native pickleweed vegetation at water's edge, "redundant" fencing (foreground), algae on surface of water (lack of drainage encourages this during summer), and telephone poles along north side of lagoon. Nesting trees for herons and egrets are visible in distance.

Oxford Basin is an important foraging area for locally-nesting herons and egrets, and small flocks of waterfowl winter on the lagoon (November–March), especially American Wigeon (*Anas americana*) and Lesser Scaup (*Aythya affinis*). Landbird usage is light due to dominance of dense, non-native vegetation, but songbirds overwinter at the site and also occur during migration. While it is recognized that no other site in Marina del Rey has the potential to support significant usage by the "target species" and "local interest species" identified in this plan, all efforts to enhance habitat at Oxford Basin shall be coordinated with the LACFCD and shall not in any way compromise the operation of the basin as a flood control facility.

6.1.2 PROPOSED WETLAND PARK AT PARCEL 9

Figure 6-2, below, shows the location of a proposed 1.46-acre “wetland park” at the corner of Via Marina and Tahiti Way, in the southern portion of a 3.8-acre area known as Parcel 9.

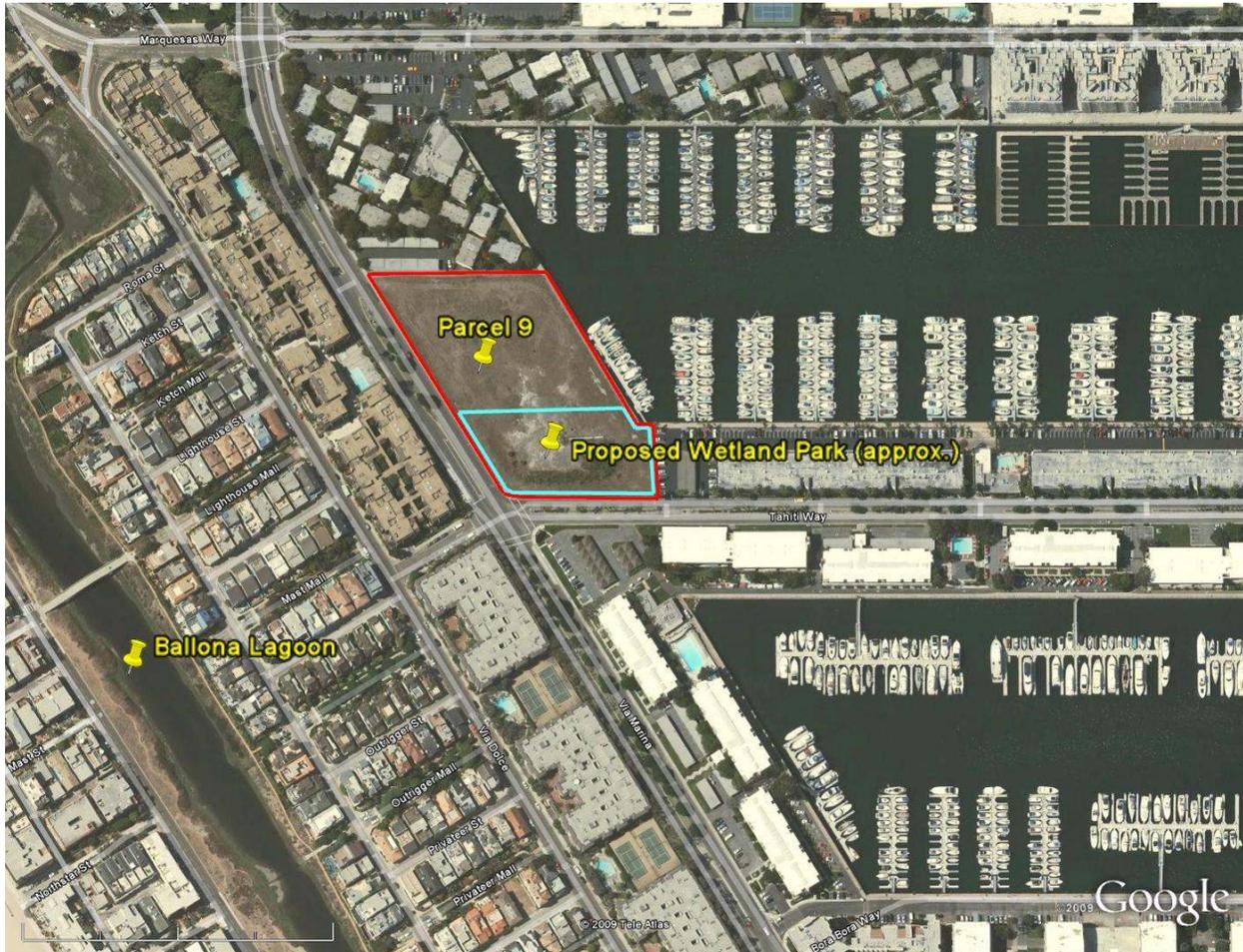


Figure 6-2. Parcel 9, including the proposed “wetland park,” is located on the west side of Marina del Rey, at the northeastern corner of Via Marina and Tahiti Way. A hotel is proposed for the northern 2.34 acres of this parcel.

Parcel 9 was the subject of a recent draft biological technical report, including a wetland delineation and fairy shrimp survey (Glenn Lukos Associates 2006a). Their report found that the parcel’s northern part, a proposed hotel site, is vegetated primarily with upland ruderal species. The southern portion of the parcel includes an excavated depression, the site of a previous hotel project that went bankrupt early in construction. Dominant plant species in the excavated area are predominantly wetland indicators, both native and non-native, such as alkali weed (*Cressa truxillensis*), five-hook bassia (*Bassia hyssoipifolia*), sickle grass (*Parapholis incurva*), red brome (*Bromus madritensis* ssp. *rubens*), Bermuda grass (*Cynodon dactylon*), toad rush (*Juncus bufonius*), and alkali bulrush (*Scirpus maritimus*). At the southern margin of the basin is a berm made of spoil materials

excavated from the basin, and this berm supports a stand of native narrow-leaved willow (also a wetland indicator) with an understory of non-native yellow sweet clover (*Melilotus officianalis*) and slender wild oat (*Avena barbata*).



Figure 6-3. Photograph taken on 30 July 2009 of the proposed wetland park area, in the southern portion of Parcel 9. View is to the west, toward Via Marina. The stand of narrow-leaved willow is visible at left, and the excavated area is at center. The concrete foundation of the unfinished hotel is also visible in this photo.

Glenn Lukos Associates identified a total of 0.26 acre in the southern part of the parcel that they regarded as potential jurisdictional wetlands under the U. S. Army Corps of Engineers' three-parameter wetland delineation methodology, and 0.47 acre that they regarded as potentially satisfying the California Coastal Commission's one-parameter wetland delineation methodology. They did not find fairy shrimp or any other biologically sensitive species on the parcel.

6.1.3 MARGIN OF BALLONA WETLANDS (AREA A)

The open space of the Ballona Wetlands, Area A, lies south and east of a long border of Marina del Rey, along Fiji Way. This border is fenced (at times redundantly), and is characterized by open space, including native saltmarsh and coastal scrub elements on the east side, and ornamental landscaping on the Marina del Rey side (Figure 6-4).



Figure 6-4. Photograph taken by DSC on 10 September 2009, view to south from the shoulder of Fiji Way, showing the Ballona Wetlands (Area A) at left and Marina del Rey at right. Visible vegetation includes non-native and invasive castor bean (*Ricinus communis*) along the fence in the foreground, and mature eucalyptus and palms in the background. Clearly, actions taken to reduce the non-native vegetation along this margin would improve the ecological function of the open space on the left side of the fence.

The non-native trees and shrubs along the shoulder of Fiji Way detract from the ecological integrity of Area A, both by changing the landscape profile (causing it to be more woodland-like and less prairie- or marsh-like), and by sending out volunteer plants into the open space, where they multiply and invade what was once a native landscape.

The Ballona Wetlands (including Area A) could support both the Western Snowy Plover and Light-footed Clapper Rail, listed species that historically occurred in the local area, with the restoration of two habitat types: a regularly-wet saltpan (for the plover) and tidal saltmarsh (for the rail). Numerous other “target species” and “species of local interest” identified in this plan find their only habitat in the West Los Angeles area at the Ballona Wetlands, and these species typically favor low-profile, shallow-wetland and grassland habitats, rather than urban or otherwise built-up landscapes. Such open-country birds as the Burrowing Owl, Loggerhead Shrike, and Western Meadowlark would benefit from removal of the tall, non-native ornamental vegetation that exists along this interface.

Although it would be beyond the scope of this plan to anticipate specific future management of Area A, it is appropriate to highlight the potential ecological significance of Marina del Rey’s border with the Ballona Wetlands, and to identify relevant issues as restoration proceeds in Area A. Thus, Section 6.2.3.2 includes recommendations for County maintenance crews to be made aware of CDFG recommended procedures when working at Ballona Wetlands Ecological Reserve to help ensure the success of ecological restoration actions in Area A and elsewhere in the Ballona Wetlands.

6.2 Conservation Policies for Potential Restoration Areas

This section provides guidance for how “habitat improvement” should be approached in each of the areas identified in Section 6.1. More detailed recommendations will be made in the future, once focused biological investigations are undertaken and the County’s specific plans for each area have been refined, but the following policies provide guidelines for conservation actions that would help to achieve the overall conservation goals identified in this plan.

6.2.1 CONSERVATION POLICIES FOR OXFORD BASIN

Oxford Basin’s primary role is to receive storm runoff from and to provide flood control for the Marina and surrounding communities. As such, the Basin must be regularly maintained, including periodic removal of sediments. Opportunities exist to increase habitat values of Oxford Basin for various native plant and wildlife species, and to promote its enjoyment by residents and visitors to Marina del Rey. All efforts to enhance habitat, public enjoyment, or other aspects of Oxford Basin shall be subordinate to its primary role as a flood control facility.

6.2.1.1 Restore functional saltmarsh habitat

Most of the intertidal zone at Oxford Basin is currently vegetated with such native saltmarsh plants as pickleweed, sandmarsh sand-spurry (*Spergularia marina*), and salt grass (*Distichlis spicata*). Because these plants were not mentioned in earlier assessments (e.g., Schreiber and Dock 1980), it appears that they are naturally occurring here, temporarily displaced by the construction of Marina del Rey, and now regenerating within the Basin. Therefore, we recommend that this vegetation be preserved in place or stockpiled for later replanting during any reworking of the basin’s sides.

The term “functional saltmarsh habitat” implies regular and, if possible, natural tidal flushing (corresponding to timing and magnitude of natural tidal cycles). A functional saltmarsh at Oxford Basin would, ideally, support a healthy sedimentary invertebrate fauna, to provide habitat for ducks and shorebirds, and a predictable population of small fish during the May–July nesting season for the California Least Tern, a listed species that maintains a large nesting colony on Venice Beach and that has been documented foraging at Oxford Basin in past years. Many other migratory and resident waterbirds would also benefit from the enhancement of this habitat, including those that currently utilize the nearby restored Ballona Lagoon.

To the extent possible, the Oxford Retention Basin Flood Protection Multiuse Enhancement Project (currently in design) should maintain the natural characteristics of the site. Once the final contours are established, habitat should be established to include areas of emergent native marsh vegetation exposed during high tide, to serve as refugia for animals, and areas of exposed mud (“mudflats”) at low tide, to serve as foraging areas for migratory and resident birds. Although the extent of mudflats may be limited

by engineering constraints, including at least a band of this habitat at low tide would be valuable, considering how much mudflat habitat was lost during construction of Marina del Rey, and how vital such areas are for a wide variety of native wildlife, including birds, mollusks, and other intertidal invertebrates.

Subsurface debris, including chunks of concrete and asphalt, and sections of pipe, should be removed from the basin where possible, as these would interfere with ecological functions of the mudflat.

6.2.1.2 Establish the primacy of habitat values over recreation as part of restoration

Removing non-native landscaping and increasing passive recreation potential along the margins of Oxford Basin are worthwhile improvements, but the existing dense vegetation and fencing currently provide considerable security for the herons and egrets that use the basin's existing habitats in large numbers. Improving public access to the basin and replacing the tall myoporum with low-growing scrub will be of little or no practical value (for wildlife or the public) if increased human activity causes the herons, egrets, and other wildlife species to stay away from Oxford Basin. Therefore, the basin must be managed carefully for its wildlife habitat values, along with providing for flood protection and water quality improvement. Levels of passive recreation and other non-essential human uses should not conflict with these main purposes.

It should be noted that from the 1970s through the 1990s, Oxford Basin served as a "dumping ground" for unwanted pets, mainly ducks, chickens, and domestic rabbits (often exchanged at Easter). These animals were thrown over the fence, which was lower at the time, creating a public nuisance and degrading the area's ecology (Schreiber and Dock 1980). With plans for new fencing and increased public access to the basin, care must be given to ensure that the old pattern does not recur, perhaps by the creation and support of a local stewardship organization (including a volunteer ranger/docent program) and clear, vandal-resistant (and easily-replaced/repared) signage.

Any new development at Oxford Basin should be evaluated for its role in promoting natural wildlife habitat, vs. degrading or hindering this habitat. As the site is restored and public access improves, the County may receive proposals from groups to make various uses of the area (e.g., filming, special events, trash clean-up). The County should establish a mechanism for handling such requests, or should include appropriate provisions in a contract with an outside resource management group or a local Audubon chapter.

Following restoration, care should be taken to communicate effectively with all relevant users and managers that Oxford Basin, although first and foremost a flood-control facility, can be managed simultaneously as a habitat for native plants and wildlife without affecting flood-control capabilities. Therefore, activities like dumping compost

or construction material, planting inappropriate vegetation, and feeding wildlife or domesticated birds, should not be tolerated.

6.2.1.3 Management considerations for upper slopes

Non-native vegetation should be removed from all parts of Oxford Basin on a regular, continuing basis under the supervision of a qualified professional, except where demonstrated to be critical to fulfilling an important natural process (e.g., retention of a small number of eucalyptus, ficus, or other non-native trees with regularly-nesting herons/egrets), consistent with the operation and maintenance requirements of the LACFCD. However, no new non-native vegetation, or even “California native” (but not locally-native) vegetation inappropriate for the Ballona Wetlands, should be introduced.

The establishment of appropriate native landscaping will probably require a complete removal of all existing ground cover and weeds, and could also require eradication of the weed seedbank (e.g., through “solarization” or appropriate means).¹²

All vegetation above the high-tide line to be preserved, promoted, and restored/re-created should consist only of the two habitat types native to the historical Ballona Wetlands area (from Cooper 2008): 1) coastal scrub (a low-profile, summer-deciduous community dominated by such species as California sagebrush *Artemisia californica*, California sunflower *Encelia californica*, and coast goldenbush *Isocoma menziesii*), and 2) willow scrub (a low thicket-like community dominated by narrow-leaved willow *Salix exigua*). A professional firm, or firms, specializing in southern California native plant restoration, installation, and maintenance is recommended to prepare the site for planting, and to achieve successful establishment of these native communities.

Unnecessary and derelict concrete structures currently on the site (such as old wildlife watering troughs) and redundant fencing should be removed from the upper slopes where feasible.

Telephone lines that currently cut across the northern part of Oxford Basin may be re-routed along Washington Boulevard or Admiralty Way, as they could conflict with future wildlife use of the site (and lead to collisions with flying birds, including the listed California Brown Pelican, especially on foggy days).

¹² The term *solarization* refers to sterilization of soil by covering it with plastic sheeting for roughly six weeks during warm weather. The sun’s radiation is converted to heat by absorption, heating the material above 60°C, hot enough to kill seeds and pathogens in the soil.

6.2.2 CONSERVATION POLICIES FOR WETLAND PARK AT PARCEL 9

A conceptual restoration plan has been prepared for this site in conjunction with a hotel project that is proposed for the northern (non-wetland) portion of Parcel 9 (Glenn Lukos Associates 2006b). The following policies are generally consistent with the conceptual restoration plan (hereafter the "GLA Plan") but with some recommended modifications.

6.2.2.1 Restore saltmarsh habitat with tidal influence

Tidally influenced "restored coastal salt marsh" habitat should be restored and enhanced at the Wetland Park, as outlined in the GLA Plan. Once the final contours of the development are established, habitat should be established that includes areas of emergent native marsh vegetation, exposed even during high tide, to serve as refugia for animals, and areas of exposed mud ("mudflats") at low tide, to serve as foraging areas for migratory and resident birds. The potential area of mudflats may be limited by engineering constraints.

Debris, including a concrete slab that was installed as part of the abandoned hotel project, should be removed, as these would interfere with ecological functions of the Wetland Park.

6.2.2.2 Establish the primacy of habitat values over recreation as part of restoration

The conceptual design depicted on Page 26 of the GLA Plan devotes a large proportion of the proposed habitat area to picnic tables, meeting areas, and a meandering path encircling the wetland area. Apart from the lost habitat acreage, the trail and hardscape areas would require ongoing maintenance, which typically entails the use of power equipment (including gas-powered blowers) and vehicles with back-up chimes and other disturbances, thus introducing substantial levels of noise and other disturbance on a regular basis. The Wetland Park, as envisioned, will be a very small area (less than 1.5 acre) effectively surrounded by development. To provide habitat useful to wildlife other than the most human-tolerant species, this area must be designed and managed primarily for its wildlife habitat values. Passive recreation and other human uses at the Wetland Park, for which there are several other sites in the Marina del Rey complex, including Burton Chace Park and Marina Beach, should follow from this main purpose. For these reasons, we recommend a truncated trail system and a smaller area, if any, devoted to hardscape than is called for in the GLA Plan.

Maintenance and management activities should be compatible with managing the site as a native wildlife sanctuary. The routine use of power equipment (e.g., trimmers and electric blowers), dumping of compost, or feeding of wildlife or domesticated birds, cannot be tolerated.

6.2.2.3 Management considerations for upper slopes

Non-native vegetation should be professionally removed from all parts of the Wetland Park on a regular, continuing basis. No non-native vegetation, or “California native” (but not locally-native) vegetation inappropriate for the Ballona Wetlands, should be introduced.

All vegetation above the high-tide line should consist of two habitat types: 1) coastal scrub (a low-profile, summer-deciduous community dominated by such species as California sagebrush (*Artemisia californica*), California sunflower (*Encelia californica*), and coast goldenbush (*Isocoma menziesii*), and 2) willow scrub (a low thicket-like community dominated by narrow-leaved willow *Salix exigua* that already exists at the Wetland Park site). Large shrubs, such as big saltbush (*Atriplex lentiformis*) and coyote brush (*Baccharis pilularis*) should be avoided due to the small size of the site; however, screening of the park site from adjacent roads and developed areas, as desired, could be accomplished using limited amounts of coyote brush and narrowleaf willow. Plant species from GLA’s “coastal sage scrub and coastal bluff scrub” and “coastal prairie” community would be appropriate for incorporating into the coastal scrub plantings, but GLA’s “maritime chaparral” community includes several plant species not native to the Marina del Rey/Ballona area, and therefore would not be appropriate for inclusion in the restoration plan¹³. A professional firm, or firms, specializing in southern California native plant restoration, installation, and maintenance should be retained to prepare the site for planting, and to achieve successful establishment of these native communities.

6.2.3 CONSERVATION POLICY FOR MARGIN OF BALLONA WETLANDS (AREA A)

6.2.3.1 Phase out non-native trees along southeastern shoulder of Fiji Way

The eastern shoulder of Fiji Way should be managed to promote the natural, open-country features along the northern margin of Ballona Wetlands Area A, especially as the Ballona Wetlands are restored to a more natural condition, as is proposed. In particular, non-native trees and shrubs along the shoulder of Fiji Way adjacent to Area A, including oleander (*Nerium oleander*), juniper (*Juniperus* sp.), and eucalyptus should be carefully removed, in a manner that ensures no significant negative impacts to nesting or roosting colonial waterbirds.

6.2.3.2 Coordinate maintenance practices with CDFG Managers

County maintenance crews should work with CDFG managers at the Ballona Wetlands Ecological Reserve to ensure the success of future ecological restoration actions in Area A and elsewhere in the Ballona Wetlands. For example, County staff should be made

¹³ Maritime chaparral is restricted in southern California to coastal San Diego County and limited parts of southern Orange County, and would not have occurred in the Marina del Rey/Ballona area.

aware that landscaping and maintenance practices along Fiji Way, such as garbage storage (which attracts non-native predators, including rats [*Rattus* spp.] that prey on bird eggs), tree-trimming during the nesting season, and rodent abatement using poison, would conflict with ecological restoration and/or wildlife management goals for the Ballona Wetlands.

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