

**Appendix N1 PBS&J Candlestick Point/Hunters  
Point Shipyard Project Biological  
Resources Technical Report,  
December 2008,  
Updated November 2009**



# **Candlestick Point/ Hunters Point Shipyard Project Biological Technical Report**

San Francisco County, California

Prepared for:

San Francisco Redevelopment Agency  
San Francisco Planning Department

Prepared by:

PBS&J

December 11, 2008  
(Updated November 2, 2009)



# Candlestick Point/Hunters Point Shipyard Project Biological Technical Report

## TABLE OF CONTENTS

<i>Executive Summary</i> .....	1
<i>Introduction</i> .....	3
<i>Methodology</i> .....	3
Biological Resources Study .....	3
Survey Methodology.....	6
<i>Results</i> .....	9
Observed Plant Species.....	9
Vegetation Communities.....	10
Common Aquatic Habitats.....	14
Common Wildlife .....	15
Common Aquatic Resources.....	19
Sensitive/Jurisdictional Vegetation Communities and Habitats.....	21
Special-Status and Sensitive Species.....	24
Other Sensitive Habitats.....	66
Wildlife Movement.....	68
Regulatory Framework.....	70
<i>Discussion</i> .....	83
<b>APPENDIX A</b> CNDDDB Special-Status Species List	
<b>APPENDIX B</b> CNPS Special-Status Species List	
<b>APPENDIX C</b> USFWS Special-Status Species List	
<b>APPENDIX D</b> Plant Species Observed in the Study Area	

## LIST OF TABLES

Table 1	Vegetation Communities within the Study Area.....	11
Table 2	Wetlands and Other Waters of the United States (Section 404) within the Study Area.....	24
Table 3	Special-Status Species Potentially Occurring within the Study Area.....	26
Table 4	Life Cycle Stages and Periods of Freshwater Residency for Chinook Salmon.....	61

## LIST OF FIGURES

Figure 1	Study Area.....	4
Figure 2	Study Area Habitats.....	5
Figure 3	Sensitive Species Occurrences within a 5 Mile Radius.....	7
Figure 4	Wetlands and Other Waters.....	23
Figure 5	Pacific Herring Spawning Habitat in the Bayview Waterfront Study Area.....	67



## EXECUTIVE SUMMARY

The Candlestick Point–Hunters Point Shipyard Phase II (CPHPS) Development Plan (Project) is located on approximately 702-acre area east of US 101 in the southeast area of the City and County of San Francisco (City). It occupies the waterfront area from south of India Basin to Candlestick Cove. The Project proposed by Lennar Urban includes a mixed-use community with a wide range of residential, retail, office, research and development, civic and community uses, and parks and recreational open space. A major component would be a new stadium for the San Francisco 49ers National Football League (NFL) team. Additionally, new transportation and utility infrastructure would serve the Project including a bridge across Yosemite Slough. The description of the Project is organized under two major sub-components: Candlestick Point and Hunters Point Shipyard (HPS) Phase II.

For the purpose of this biological study, PBS&J reviewed conditions in the Project Site, as shown in Figure 1, Study Area. In addition, the study includes a more general review of conditions and in aquatic areas adjacent to the Project Site shoreline. The Project Site and the aquatic areas, including Yosemite Slough, are referred to as the “Study Area” in this report. PBS&J completed a biological study of the Project during the summer of 2007 and during 2008. This study included a field survey of the parcels, documenting existing habitats, the plants and animals occurring in those habitats, and any significant habitat types that may be protected by state and federal law. Additional studies reviewed by PBS&J for this project included a delineation of wetlands and other waters of the U.S. and a tree survey prepared by H. T. Harvey & Associates, and information on biological resources of the area described in other reports.

As shown in Figure 2, the Study Area supports six vegetation communities, in addition to urban/developed areas:

1. landscaped areas/ornamental plants;
2. non-native grassland;
3. freshwater wetland;
4. tidal salt marsh
5. nontidal salt marsh; and
6. mudflats/open water.

Landscaped/ornamental and non-native annual grassland habitats occupy much of Candlestick Point, while HPS Phase II and much of Candlestick Point consist largely of urban/developed areas. Small areas of freshwater wetlands and nontidal salt marsh are present on HPS Phase II, and

narrow strips of tidal salt marsh are present along the shoreline at scattered places on Candlestick Point and portions of HPS Phase II.

Although the vegetation of the Project area is largely dominated by non-native plants, native plants and a number of native wildlife species are present on the site. No special-status plants have been recorded, and none are expected to occur, on the site, although several species of special-status animals are present.

Jurisdictional wetlands and other waters of the U.S./State are present on the site, including the tidal and non-tidal wetlands and the aquatic habitats that surround the site. Eelgrass beds and Essential Fish Habitat, both sensitive biological habitats, are also present on/adjacent to the site.



## **INTRODUCTION**

The Candlestick Point–Hunters Point Shipyard Phase II (CPHPS) Development Plan (Project) is located on approximately 702-acre area east of US 101 in the southeast area of the City and County of San Francisco (City; see Figure 1). It occupies the waterfront area from south of India Basin to Candlestick Cove. The Project proposed by Lennar Urban includes a mixed-use community with a wide range of residential, retail, office, research and development, civic and community uses, and parks and recreational open space. A major component would be a new stadium for the San Francisco 49ers National Football League (NFL) team. Additionally, new transportation and utility infrastructure would serve the Project including a bridge across Yosemite Slough. The description of the Project is organized under two major sub-components: Candlestick Point and Hunters Point Shipyard (HPS) Phase II.

This report discusses biological resources present on and potentially affected by the proposed Project. Biological resources surveys were conducted to identify existing biological resources present on the site and to determine if habitats present on the site could support any special-status plant or wildlife species present in the region, and to document any occurrences of those species, if observed during the field survey. In addition, this report includes a summary of the applicable laws and regulations related to biological resources and the resource agencies responsible for their implementation.

## **METHODOLOGY**


### **BIOLOGICAL RESOURCES STUDY**

In order to assess existing conditions and potential Project-related impacts, PBS&J staff biologists conducted reconnaissance-level surveys of the Project site on August 9, 2007, May 5, 2008, and July 8, 2008. The Study Area for this biological resources analysis includes both developed and undeveloped portions of HPS Phase II and Candlestick Point, including the entire Candlestick Point State Recreation Area (CPSRA), as well as off-site open waters adjacent to the Project site that could be impacted by Project components (Figures 1 and 2). The off-site aquatic resources discussed include Yosemite Slough, the open water area between Candlestick Point and HPS Phase II (known as South Basin), and adjacent open waters that could be impacted by Project components. For purposes of the evaluation of sensitive species, the Study Area is defined as the Project site and a radius of up to 5 miles beyond the Project site. Surveys of Candlestick Point included the Candlestick Park stadium, Alice Griffith housing, the Candlestick Park State Recreation Area (including Yosemite Slough), Jamestown Avenue, and 16 acres near Gilman Avenue and Aurelious Walker Drive. Surveys of HPS Phase II included the Hunters Point Shipyard (Parcels A-E).



HT Harvey, 2009; LSA Associates, 2004.

PBS&J 10.27.09

**FIGURE 1**  **Candlestick Point - Hunters Point Shipyard Phase II EIR**  
**BIOLOGICAL RESOURCES STUDY AREA**

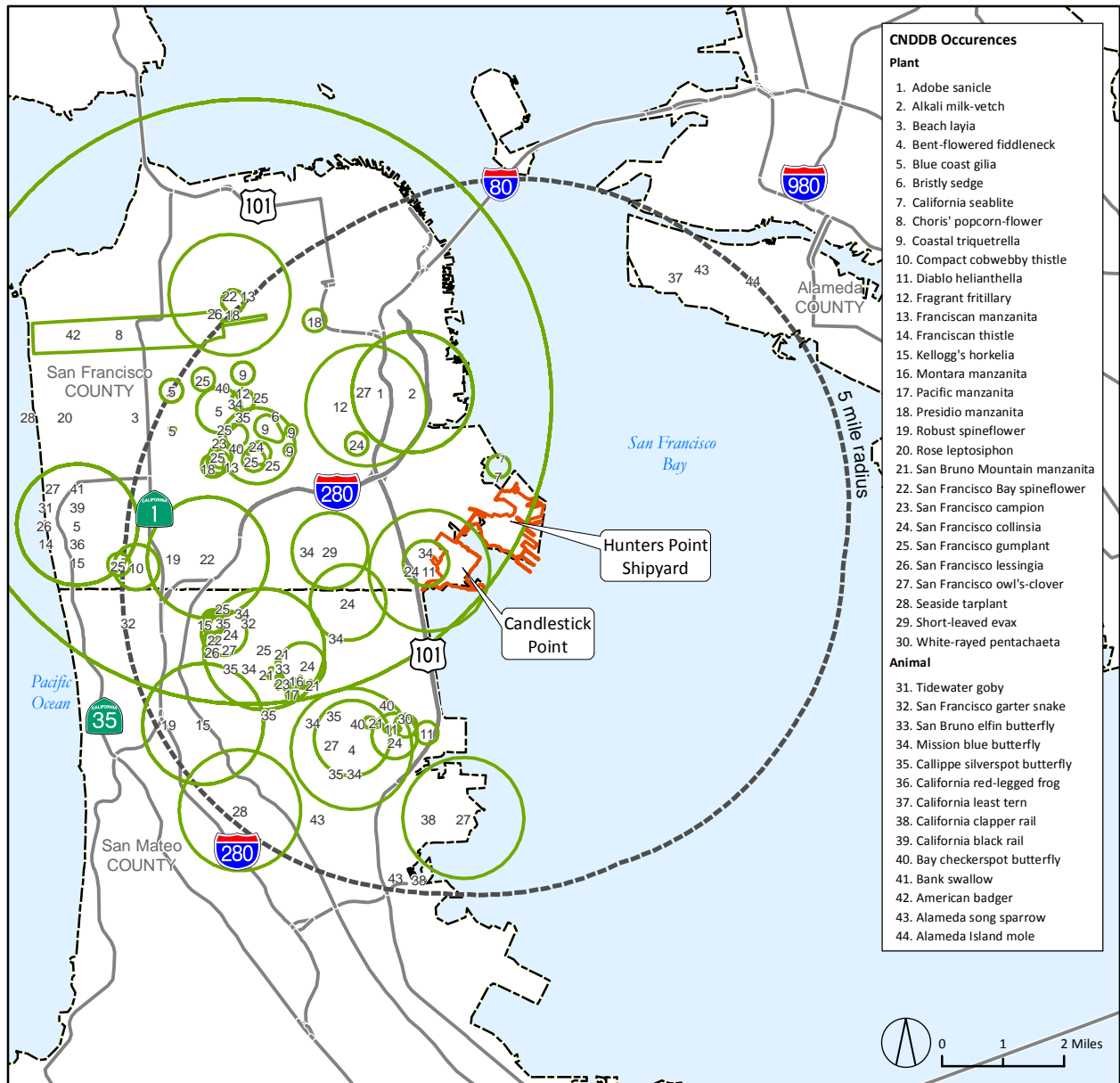


Prior to visiting the Study Area, PBS&J biologists compiled a list of special-status plant and wildlife species that have the potential to occur in the vicinity of the Study Area. Sources consulted include the California Department of Fish and Game's (CDFG) Natural Diversity Database (CNDDDB) for the US Geological Survey's (USGS) 7.5-minute San Francisco South and Hunters Point quadrangles; the California Native Plant Society (CNPS) electronic inventory for the USGS 7.5-minute San Francisco South and Hunters Point quadrangles; the US Fish and Wildlife Service (USFWS) Endangered and Threatened Species list for the USGS 7.5-minute San Francisco South and Hunters Point quadrangles; the *Final Report Yosemite Slough Watershed Wildlife Survey*, LSA, July 2004; the *Final Draft Significant Natural Resource Areas Management Plan*, Sections 6.17 and 6.18, San Francisco Recreation And Park Department, February 2006; the *Draft Wetlands Mitigation and Monitoring Plan*, Navy Base Realignment and Closure Program, November 2006; the *Hunters Point Shipyard and Candlestick Point State Recreation Area, Natural Environment Study Report for the Bayview Transportation Improvements Project*, Jones & Stokes, July 2007; the *Final Delineation of Wetlands and Other Waters*, H.T. Harvey & Associates, Revised 13 July 2009 and October 13, 2009; the *Draft Sustainability Plan* for the Project, Arup North America Ltd, March 2009; and Project plans and graphic renderings.

The CNDDDB was re-checked in July 2009, and CNDDDB records were mapped (Figure 3). Special-status species lists from the CNDDDB, USFWS, and CNPS were re-checked on November 2, 2009 to determine whether any species that could potentially occur on the site were added to these databases between the date of initial consultation of these lists and the preparation of the updated report on November 2, 2009.

## **SURVEY METHODOLOGY**

Surveys focused on identification of vegetation communities, special-status species or their potential habitat, and other biotic resources (i.e., potential wetlands or "other waters" of the US). During surveys, biologists walked transects through each habitat type while recording plant and wildlife species observed in field notes. On July 8, 2008, Navy personnel escorted a PBS&J staff biologist through HPS Phase II. The August 2007 and July 2008 surveys were in the dry season, when most annual, biennial, and perennial herbaceous plant species were dormant or had already died back, leaving only dried plant parts (i.e., leaves, stems, fruits) for identification. Lastly, a rare plant survey was conducted in May 2008. The survey was conducted by walking representative transects through the survey area while recording every plant species observed. Although the survey was conducted within the flowering window for the special-status species that could occur within the Project site, the unusually dry weather resulted in a shorter flowering period and thus, most annual, biennial, and perennial herbaceous plant species were dormant or had already died back for the growing season, leaving only dried plant parts (i.e., leaves, stems, fruits) for identification. If a plant species could not be identified in the field, diagnostic plant structures (i.e., fruits or morphology)



SOURCE: California Department of Fish & Game, California Natural Diversity Database, July 2009.

PBS&J 8.04.09

**FIGURE 3** Candlestick Point - Hunters Point Shipyard Phase II EIR  
**SPECIAL-STATUS SPECIES OCCURENCES WITHIN 5 MILE RADIUS**

were collected for further analysis. Some plants observed during the survey could only be identified to the Genus level.<sup>1</sup> Floristic references for identification included *The Jepson Manual: Higher Plants of California*<sup>2</sup>, *Plants of the San Francisco Region*<sup>3</sup>, and specimens documented during previous CNPS surveys.<sup>4</sup>

Information from the sources listed above and from PBS&J's reconnaissance-level surveys was used to identify and characterize existing conditions at the Project site, and accordingly, was substantially relied upon for this analysis. In particular, LSA's Yosemite Slough Watershed Wildlife Survey (2004) and the Final Delineation of Wetlands and Other Waters conducted by H.T. Harvey & Associates (2009) provided specific information about the Study Area. LSA coordinated a wildlife survey of the Yosemite Slough Watershed between January 2003 and April 2004.<sup>5</sup> The survey of the Yosemite Slough Watershed included both the entire CPSRA and adjacent open water areas between HPS Phase II and the peninsula that forms the eastern extension of CPSRA.<sup>6</sup> From north to south, the Yosemite Slough Watershed Wildlife Survey Study Area is roughly bordered by Thomas Avenue, Ingalls Street, Carroll Avenue, Fitch Street, Arelious Walker Drive, and the Hunters Point Expressway (Figure 1). Although this survey covered only a portion of the Project site, it provides the most comprehensive data set available regarding the occurrence of wildlife in the area, and is thus cited heavily in the descriptions of existing conditions in this section. Also, because the majority of the Project site that was not covered by the Yosemite Slough Watershed Wildlife Survey is developed, we expect wildlife communities elsewhere on the Project site to be similar or depauperate in comparison to, those documented within the Yosemite Slough Survey's study area.

H.T. Harvey & Associates prepared a delineation of wetlands and other jurisdictional waters potentially meeting the regulatory definition of Waters of the United States within a majority of the Project site (February 2009 and revised on July 13 and October 13, 2009).<sup>7</sup> Surveys were conducted in 2008 on September 25 and 26; November 5 and 6; and December 4, 5, and 19; and in 2009 on

---

<sup>1</sup> Plants that were identified to the Genus level are not special-status or rare plants, and, therefore, this taxonomic unit of classification does not affect the findings of this report.

<sup>2</sup> Hickman, J. (ed.). *The Jepson Manual: Higher Plants of California*. University of California Press, Berkeley, 1993.

<sup>3</sup> Beidleman, L.H. and Kozloff, E.N. *Plants of the San Francisco Bay Region: Mendocino to Monterey*. University of California Press, Berkeley, 2003.

<sup>4</sup> California Native Plant Society (CNPS), *Electronic plant list; Hunters Point Serpentine Hillside*, R. Hunter and J. Sigg, 2005.

<sup>5</sup> Golden Gate Audubon Society, *Final Report Yosemite Slough Watershed Wildlife Survey 2003–2004*, prepared by LSA, July 27, 2004.

<sup>6</sup> Ibid.

<sup>7</sup> H.T. Harvey & Associates, *Hunters Point Shipyard and Candlestick Point State Recreation Area Final Delineation of Wetlands and Other Waters*, San Francisco, California, February 2009 and revised July 13, 2009 and October 13, 2009

January 29 and 30 and May 20. The delineation included the examination of the above-mentioned areas for wetlands using the routine determination method outlined in the US Army Corps of Engineers (USACE) Wetlands Delineation Manual. H.T. Harvey assessed topographic features, drainages, potential alterations to site hydrology, and areas of significant recent disturbance, and mapped the High Tide Line (HTL). The USACE verified the findings of the delineation with a Jurisdictional Determination dated August 31, 2009. The study area for H.T. Harvey's original wetland delineation did not include several limited areas that are now considered part of the Project site. As a result, H.T. Harvey expanded its original delineation by inspecting these additional areas in the field on October 8, 2009. H.T. Harvey & Associates has amended its wetland delineation report, and verification of jurisdictional boundaries in these additional areas by the USACE is pending. In addition, a tree survey<sup>8</sup> was conducted for the Project by H. T. Harvey & Associates within all of the Project site except the portion of CPSRA that is not subject to the land transfer and is not expected to be substantially modified.

Existing conditions are described with respect to observed plant species, vegetation communities, common aquatic habitats (i.e., mud flats, open water, and eelgrass (*Zostera marina*) beds), common wildlife (i.e., invertebrates, reptiles and amphibians, birds, and mammals), common aquatic resources (i.e., fish, shellfish, and mollusks), and sensitive species and habitats (sensitive plants, sensitive vegetation communities, sensitive wildlife [invertebrates, birds, terrestrial mammals, and marine mammals], and sensitive aquatic resources [mollusks, fish, and Essential Fish Habitat (see Sensitive Aquatic Resources)]).

## RESULTS

### OBSERVED PLANT SPECIES

As listed in Appendix D, a total of 187 vascular plant species were observed within the Project site during all of the biological surveys listed in the Setting section above, 103 of which are non-native. In addition, 66 of the non-native vascular plant species are considered to be invasive plant species.<sup>9</sup> Invasive plants are defined as those that were "moved by humans to another region." These invasive plants have a competitive advantage because they are no longer controlled by their natural predators, and can quickly spread out of control.<sup>10</sup> Widely scattered trees are present and appear to either be horticultural plantings associated with landscaping or represent locally naturalized

---

<sup>8</sup> H.T. Harvey & Associates, *Candlestick Point/Hunters Point Shipyard Tree Survey*. October 16, 2009.

<sup>9</sup> California Invasive Plant Council (Cal-IPC) Invasive plant definitions 2009. Website: <http://www.cal-ipc.org/ip/definitions/index.php>. Accessed July 2009.

<sup>10</sup> California Invasive Plant Council (Cal-IPC) Invasive plant definitions 2009. Website: <http://www.cal-ipc.org/ip/definitions/index.php>. Accessed July 2009.

specimens. Calflora's on-line Plant Name Library was used for the scientific nomenclature for plant names in this section.<sup>11</sup>

## VEGETATION COMMUNITIES

For purposes of the biological resources analysis, the Study Area is first described in terms of the vegetation communities it supports, as reflected by Table 1 (Vegetation Communities within the Study Area) and further discussed below. The vegetation communities are defined according to CDFG Wildlife and Habitat Data Analysis Branch List of California Terrestrial Natural Communities<sup>12</sup> and H.T. Harvey & Associates' wetland delineation for HPS Phase II and Candlestick Point.<sup>13</sup>

Figure 2, Study Area Habitats, presents a summary of the vegetation communities observed in the Study Area. This map is a compilation of previously prepared figures for the Study Area and field surveys conducted by PBS&J.<sup>14,15</sup> As depicted on Figure 2, the Study Area contains four non-aquatic vegetation communities: non-native annual grassland, landscaped areas/ornamental plants, salt marsh, and seasonal freshwater wetland. In addition, approximately 568.80 acres of the Study Area is "urban." This habitat is not classified as a "vegetation community" and is thus not included in the "vegetation communities" table. Urban habitat includes developed or paved areas. The Study Area also contains three aquatic habitats: mud flats, eelgrass beds, and open waters. Table 1 provides the total acreages of each vegetation community within the Study Area. A description of each of the vegetation communities follows this table.

In some cases, vegetation communities may also be considered sensitive vegetation communities. In those cases, and there are three such cases in this analysis, they are also discussed under Sensitive Vegetation Communities, which follows this discussion. The three sensitive communities within the Study Area include salt marsh, eelgrass beds, and seasonal freshwater wetland habitats (also discussed under Sensitive Vegetation Communities).

---

<sup>11</sup> Calflora, 2009. Website: <http://www.calflora.org/index.html>. Accessed July 2009.

<sup>12</sup> California Department of Fish and Game (CDFG), *The Vegetation Classification and Mapping Program: List of Terrestrial Natural Communities Recognized by the California Natural Diversity Database*, Wildlife and Habitat Data Analysis Branch, Sacramento, California, September 2003 edition.

<sup>13</sup> H.T. Harvey & Associates, *Hunters Point Shipyard and Candlestick Point State Recreation Area Final Delineation of Wetlands and Other Waters*, San Francisco, California, February 2009 and revised July 13, 2009 and October 13, 2009.

<sup>14</sup> Caltrans, Biological Assessment for the Bayview Transportation Improvements Project, Jones and Stokes, July 2007.

<sup>15</sup> Golden Gate Audubon Society, Final Report Yosemite Slough Watershed Wildlife Survey, LSA, July 2004.



**TABLE 1 VEGETATION COMMUNITIES WITHIN THE STUDY AREA**

Habitat Type	Candlestick Point	Hunters Point Shipyard	Yosemite Slough	Total Acreage
Non-native Annual Grassland	30.53	44.19	—	74.72
Landscaped Areas/Ornamental Plants <sup>a</sup>	44.67	—	—	44.67
Salt Marsh <sup>a</sup>	0.93	3.56	0.06	4.55
Seasonal Freshwater Wetland <sup>b</sup>	—	0.20		0.20
Mud Flats/ Open Water <sup>*</sup>	21.82	169.29	4.43	195.54
<b>Totals</b>	<b>97.95</b>	<b>217.24</b>	<b>4.49</b>	<b>319.68</b>

## SOURCES:

a. H.T. Harvey & Associates, *Hunters Point Shipyard and Candlestick Point State Recreation Area Final Delineation of Wetlands and Other Waters*, San Francisco, California, February 2009 and revised July 13 and October 13, 2009.

Acreage discrepancies between the data contained herein and the total approximate acreage of the Study Area are due to the conversion of data from non-GIS to GIS data.

This table does not include the acreage for developed/urban areas (568.80 acres) because this classification is not a recognized vegetation community for purposes of this EIR.

\* The open waters located outside of the Project boundary include those adjacent to Candlestick Point, Hunters Point Shipyard, and Yosemite Slough.

### Non-native Annual Grassland

Patches of non-native annual grassland habitat are found throughout the Project site and comprise 74.72 acres. Invasive, non-native grasses characterize this community, particularly at HPS Phase II due to the intensive disturbance associated with the Navy's ongoing remediation efforts. The vegetation within this grassland consists of a mixture of invasive annuals such as wild oat (*Avena fatua*), rip-gut brome (*Bromus diandrus*), soft chess (*B. hordeaceus*), rat-tail fescue (*Vulpia myuros*), and hare barley (*Hordeum murinum var. leporinum*). Broad-leaf species occurring within the grasslands consist of wild radish (*Raphanus sativus*), painted charlock (*R. raphanistrum*), black mustard (*Brassica nigra*), Mediterranean linseed (*Bellardia trixago*), cut-leaf plantain (*Plantago coronopus*), spring vetch (*Vicia sativa*), red valerian (*Centranthus ruber*), and Italian thistle (*Carduus pycnocephalus*). Additionally, garland chrysanthemum (*Chrysanthemum coronarium*) has naturalized across much of the grasslands and showy stands of these flowers are present throughout the entire CPSRA.

Small distinct colonies of native perennial bunch grasses grow in a few areas at HPS Phase II. Clusters of single species or a combination of species including purple needle grass (*Nassella pulchra*), blue wild rye (*Elymus glaucus*), and red fescue (*Festuca rubra*) grow sporadically throughout the Project site. These small isolated occurrences of native grasses are not large enough to warrant identification as a separate vegetation community. Portions of the Study Area, including uplands along Yosemite Slough, include ruderal vegetation such as fennel (*Foeniculum vulgare*) intermixed with non-native grasses such as wild oats and Italian rye (*Lolium multiflorum*). Shrubs, mainly coyote brush (*Baccharis pilularis*), are scattered throughout the upland surrounding Yosemite Slough area.

## Landscaped Areas/Ornamental Plants

Landscaped areas make up about 44.67 acres of Candlestick Point and include areas landscaped with native and non-native ornamental shrubs and trees, particularly near the walking paths along the shoreline of Candlestick Point. The tree survey<sup>16</sup> was conducted for the Project identified trees primarily in areas mapped as “Landscaped/Ornamental”, “Urban”, and “Non-Native Annual Grassland” on Figure 2. For the purpose of this survey, a “tree” was defined as any stem of a woody plant with a tree-like (as opposed to shrubby) growth habit measuring at least 2 inches in diameter at a height of 4.5 feet above the ground. As a result, single trees with multiple stems measuring at least 2 inches in diameter were represented as multiple “trees,” and the high number of trees recorded during this survey was driven largely by such multi-stemmed individuals. The tree survey recorded approximately 1,876 tree stems at least 2 inches in diameter on 1,027 individual plants on Candlestick Point and 724 tree stems at least 2 inches in diameter on 283 individual plants on HPS Phase II.

On Candlestick Point, the vast majority of these trees consisted of multi-stemmed lollypop trees (*Myoporum laetum*); eucalyptus (*Eucalyptus* spp.), pines (*Pinus* spp.), and olives (*Olea europaea*) were also well represented on Candlestick Point. All four of these species are non-natives. The most common native trees on Candlestick Point are California live oak (*Quercus agrifolia*), flannel bush (*Fremontodendron californicum*), and California buckeye (*Aesculus californica*). Monterey pine (*Pinus radiata*) and ornamental cypress (*Cupressus* spp.) are also common, although neither is native to San Francisco. There are several specimens of the native California bay (*Umbellularia californica*) and blue elderberry (*Sambucus nigra* ssp. *caerulea*) as well. Non-native, ornamental lollypop trees (*Myoporum laetum*) grow along the northwestern edge of Candlestick Point, and Australian tea trees (*Leptospermum laevigatum*) are scattered along the trails of the CPSRA. Native shrubs include coyote bush, ornamental buckbrush (*Ceanothus* spp.), firethorn (*Pyracantha* spp.), coffeeberry (*Rhamnus californica*), hummingbird sage (*Salvia spathacea*), and black sage (*S. mellifera*) which grow along the paths in clusters that are a combination of planted and volunteer specimens. Non-native evergreen shrubs such as rockrose (*Cistus* spp.) are common throughout the Project site and in some locations have naturalized.<sup>17</sup>

On HPS Phase II, trees recorded during the tree survey were dominated by small, multi-stemmed toyon (*Heteromeles arbutifolia*; a native species, though the trees on HPS appear to be of an ornamental variety) and several non-natives, including London planetree (*Platanus x acerifolia*) and acacia (*Acacia* spp.).

---

<sup>16</sup> H.T. Harvey & Associates, *Candlestick Point/Hunters Point Shipyard Tree Survey*. October 16, 2009.

<sup>17</sup> Naturalized plants are those that were originally installed as ornamental plantings but are now found growing ‘naturally’ in a variety of habitats.

## Salt Marsh

Salt marsh habitat forms along the margins of estuaries and bays whose shorelines are shallow and protected. In the Study Area, it totals approximately 4.50 acres on site and 0.05 acre in areas of off-site (i.e., areas of Yosemite Slough outside of the Project boundary) Project work.<sup>18</sup> It occurs in limited areas along the shoreline where riprap does not extend to the waterline and prohibit the growth of vegetation, and in several nontidal areas in the southwestern portion of HPS. Narrow patches of salt marsh habitat, varying in length from 20 to 100 feet, occur sporadically along the shoreline of the Project site, and throughout Yosemite Slough.<sup>19</sup>

Salt marshes are often subject to tidal influences, and species composition of tidal salt marsh vegetation varies along gradients based on elevation. The amount of time an area is inundated determines the primary species of plants found there. The highest elevations typically support almost pure stands of pickleweed (*Salicornia virginica*), which also dominates the patches of nontidal salt marsh on HPS. Associated species that occur in the zone around the high tide elevation include salt grass (*Distichlis spicata*), European sea rocket (*Cakile maritima*), coastal gumweed (*Grindelia stricta*), and sea lavender (*Limonium californicum*). Slightly lower areas above the Mean High Water (MHW) elevation support cord grass (*Spartina* spp.). In the area above the HTL, common iceplant (*Carpobrotus edulis*) grows in some locations, carpeting the upland margins in a dense monoculture. The low growing shrub silver beach bur (*Ambrosia chamissonis*) also grows in the upland areas along the shoreline.

## Seasonal Freshwater Wetland

Seasonal freshwater wetland habitat occupies 0.20 acre in two linear features at the southern and west-central margins of HPS Phase II. These wetlands are characterized by the presence of annual wetland grasses and forbs in depressions that hold water for a short to medium duration during the rainy season. One of these wetlands, in the southwestern portion of HPS Phase II, consists of pools that pools are shallow basins that lack drainage outlets. Seasonal water inundation in these pools creates a condition favoring hydrophytic (water-loving) plants such as spearscale (*Atriplex triangularis*), salt grass, bird's-foot trefoil (*Lotus corniculatus*), prickly ox-tongue (*Picris echioides*), saltmarsh bulrush (*Bolboschoenus robustus*), Italian ryegrass (*Lolium multiflorum*), rabbit's foot grass (*Polypogon monspeliensis*), and willow dock (*Rumex salicifolius*), as observed in HPS Phase II. The

---

<sup>18</sup> H.T. Harvey & Associates, *Hunters Point Shipyard and Candlestick Point State Recreation Area Final Delineation of Wetlands and Other Waters*, San Francisco, California, February 2009 and revised July 13, 2009 and October 13, 2009.

<sup>19</sup> H.T. Harvey & Associates, *Hunters Point Shipyard and Candlestick Point State Recreation Area Final Delineation of Wetlands and Other Waters*, San Francisco, California, February 2009 and revised July 13, 2009 and October 13, 2009.

second seasonal freshwater wetland, in the west-central part of HPS Phase II, consists of a narrow swale/ditch that is apparently fed by groundwater seepage.

## COMMON AQUATIC HABITATS

### Mudflats

Mud flats are the broad expanses of the San Francisco Bay bottom that are exposed during low tides. These areas are comprised of very soft sediments and do not support any vegetation other than eelgrass beds, which may occur within mud flats. Mud flats are an important habitat because they support a vast array of crustaceans, worms, and other invertebrates that are important food sources for resident and migratory shorebirds and waterfowl. Mud flats are exposed at low tides once or twice a day along the shore south of CPSRA and along the shorelines of Yosemite Slough and South Basin. These mud flats are relatively limited in extent compared to the vast mud flats present in other parts of San Francisco Bay, and as a result, numbers of shorebirds using these mud flats are low except for occasional, brief migratory pulses of birds.

### Open Water (San Francisco Bay)

San Francisco Bay (also referred to as “the Bay” in this section) is the largest estuary on the California Coast, covering between 400 and 1,600 square miles depending on which bays are included.<sup>20</sup> Fresh water enters primarily through the Sacramento-San Joaquin Delta and mixes with seawater that enters via the Golden Gate. Tidal action and freshwater runoff determine the salinity of the Bay. For the purpose of this assessment, the term “open water” refers to unvegetated tidal areas located below the MHW elevation, which in this area is approximately 5.87 feet relative to the North American Vertical Datum of 1988 (NAVD88)<sup>21</sup> or 11.80 relative to the San Francisco City Datum (SFCD).<sup>22</sup> This is the same area regulated by the USACE under Section 10 of the *Rivers and Harbors Act*. These areas are subject to the normal ebb and flood of the tide. For example, mud flat habitats described above are a subset of open water aquatic habitats since these areas are inundated for at least half the tidal cycle; for this reason, acreages of mud flat and open water habitats are not distinguished in Table 1. Open water habitats support an array of relatively common estuarine/marine species from encrusting tunicates, sponges, and algae to bottom-dwelling fish such

---

<sup>20</sup> The Bay Institute, *About the Bay*. 2008. Website: [http://www.bay.org/about\\_the\\_bay.htm](http://www.bay.org/about_the_bay.htm). Accessed October 28, 2008.

<sup>21</sup> H.T. Harvey & Associates, *Hunters Point Shipyard and Candlestick Point State Recreation Area Final Delineation of Wetlands and Other Waters*, San Francisco, California, February 2009 and revised July 13, 2009 and October 13, 2009.

<sup>22</sup> San Francisco City Datum (SFCD) is a local vertical geodetic reference system specific to the City and County of San Francisco and formally established in 1964 as 8.616 feet above the National Geodetic Vertical Datum of 1929 (NGVD29), making it about 8.13 feet above mean sea level. The North American Vertical Datum was established in 1988 (NAVD88) and generally has replaced NGVD29 as a standard reference. Elevations expressed in NGVD29 may be converted to NAVD88 by adding 2.69 feet.

as the Pacific halibut (*Hippoglossus stenolepis*), flounder, and sole, to more open water fish such as the Pacific herring (*Clupea pallasii*), Pacific sardine (*Sardinops sagax*), and anchovies (*Anchoa* spp.). The on-site open waters are those nearshore areas below the MHW elevation where Project work could occur (i.e., sea wall enhancements and marina improvements). Off-site open waters within a 5-mile radius of the Project site were also considered for their potential to support sensitive species (as described under “Sensitive Species and Habitats” below). These areas are considered here because most of the sensitive species potentially occurring there have the ability to move to and from the Study Area at any time.

## **Eelgrass Beds**

Eelgrass is an aquatic plant found on soft mud-bottom bays and estuaries along the Pacific coast. It occurs in both subtidal and intertidal areas of San Francisco Bay and approximately 1.99 acres of it occur within the Study Area.<sup>23</sup> Eelgrass beds are considered a sensitive resource and, therefore, are discussed in detail under Sensitive Species and Habitats.<sup>24</sup>

## **COMMON WILDLIFE**

### **Invertebrates**

Fourteen butterfly species were observed during the Yosemite Slough Watershed Wildlife Survey.<sup>25</sup> Common butterflies observed during that survey included cabbage whites (*Pieris rapae*), anise swallowtails (*Papilio zelicaon*), and common checkered skippers (*Pyrgus communis*). Other butterflies observed include mustard white (*Pieris napi*), orange sulphur (*Colias eurytheme*), California hairstreak (*Satyrrium californicum*), gray hairstreak (*Strymon melinus*), western pygmy-blue (*Brephidium exile*), spring azure (*Celastrina ladon*), west coast lady (*Vanessa annabella*), red admiral (*Vanessa atalanta*), common buckeye (*Junonia coenia*), and common ringlet (*Coenonympha tullia*). Numerous other invertebrate species, including insects, crustaceans, worms, and other taxa, occur on the site as well.

### **Reptiles and Amphibians**

The Yosemite Slough Watershed Wildlife Survey recorded three snake species, two lizard species, and one amphibian.<sup>26</sup> Reptiles and amphibians observed included California slender salamander

---

<sup>23</sup> California Department of Fish and Game (CDFG), *The Vegetation Classification and Mapping Program: List of Terrestrial Natural Communities Recognized by the California Natural Diversity Database*, Wildlife and Habitat Data Analysis Branch, Sacramento, California, September 2003 edition.

<sup>24</sup> California Department of Fish and Game (CDFG), *The Vegetation Classification and Mapping Program: List of Terrestrial Natural Communities Recognized by the California Natural Diversity Database*, Wildlife and Habitat Data Analysis Branch, Sacramento, California, September 2003 edition.

<sup>25</sup> Golden Gate Audubon Society, *Final Report Yosemite Slough Watershed Wildlife Survey 2003–2004*, prepared by LSA, July 27, 2004.

<sup>26</sup> Ibid.

(*Batrachoseps attenuatus*), southern alligator lizard (*Elgaria multicarinata*), western fence lizard (*Sceloporus occidentalis*), gopher snake (*Pituophis melanoleucus*), ring-necked snake (*Diadophis punctatus*), and western garter snake (*Thamnophis elegans*). The western fence lizard, California slender salamander, and southern alligator lizard were found in relatively high numbers, with survey maxima (i.e., the maximum number of individuals observed on a single survey) of 49, 43, and 21 individuals, respectively. However, the other species were represented by few individuals, suggesting that populations of these other species are sparse in the area.

Amphibians had the lowest diversity within the Yosemite Slough Watershed Survey area, with only one species observed (the California slender salamander).<sup>27</sup> The California slender salamander frequents grassland, chaparral, woodland, forest, and yards and vacant lots in some suburban areas. It takes refuge under logs, boards, bark, and in damp leaf litter and rotting logs. It lays its eggs in late fall and winter, often in communal nests.<sup>28</sup> The San Francisco Bay and the small seasonal wetlands on the site do not provide suitable aquatic habitat for amphibians, primarily due to high salinity. The few freshwater habitats on or near the Project site do not provide breeding habitat for amphibians such as frogs or toads, likely because of their very shallow and/or ephemeral nature.<sup>29</sup>

Reptiles also appeared to have relatively low diversity, with only five species observed. The abandoned fields, extensive debris (providing cover), and presence of prey (i.e., mice, invertebrates, salamanders) provide suitable habitat for these five species.<sup>30</sup> The upland areas, dominated by disturbed vegetation and non-native grassland, support the snake and lizard species.<sup>31</sup>

During one survey, 21 southern alligator lizards were observed in silvery beachweed along the shoreline of the South Basin (refer to Map 2 of the Yosemite Slough Watershed Wildlife Survey for a graphic representation of the location of the South Basin).<sup>32</sup> The lizards were all juveniles and may have been from a single clutch that had been laid in the silvery beachweed.<sup>33</sup>

Although the Yosemite Slough Watershed Wildlife Survey covered only Candlestick Point and the southern shoreline of HPS Phase II, it is expected that a lower abundance of these common reptile and amphibian species would be found within the disturbed areas within HPS Phase II than at Candlestick Point. Recent, intensive disturbance due to ongoing remediation activities has undoubtedly reduced populations of these species on HPS Phase II. A few individuals of these

---

<sup>27</sup> Ibid.

<sup>28</sup> Stebbins, R., Peterson, *Field Guides: Western Reptiles and Amphibians*, Houghton Mifflin Company, 1966.

<sup>29</sup> Golden Gate Audubon Society, *Final Report Yosemite Slough Watershed Wildlife Survey 2003–2004*, prepared by LSA, July 27, 2004.

<sup>30</sup> Ibid.

<sup>31</sup> Ibid.

<sup>32</sup> Ibid.

<sup>33</sup> Ibid.

reptiles and amphibians may occur within the developed portions of the Project site, which represents approximately 80 percent of the overall acreage of the site, but numbers are expected to be very low in such low-quality habitat.

## **Birds**

One hundred and eighteen bird species (which are named herein according to the American Ornithologists' Union Checklist of North American Birds<sup>34</sup> except for sensitive subspecies recognized by CDFG or USFWS) were observed during the Yosemite Slough Watershed Wildlife Survey.<sup>35</sup> Of these, 51 species were represented by a maximum count of five or fewer individuals, indicating that, for many bird species, the site is used by relatively low numbers of individuals.<sup>36</sup> The majority of the species observed were terrestrial species, followed by shorebirds, waterfowl, gulls and terns, and raptors (in descending order). Terrestrial habitats supported large numbers of some common bird species such as white-crowned sparrows (*Zonotrichia leucophrys*), western meadowlarks (*Sturnella neglecta*), and house finches (*Carpodacus mexicanus*). The landbirds that are most abundant on the site are those associated with the weedy, ruderal habitats dominating the Project site and those tolerant of the urbanization and associated disturbance resulting from the site's location. In contrast, very few Neotropical and other long-distance migrant songbirds were recorded during this study. Studies have documented that bird species diversity is closely associated with structural habitat complexity. Bird species diversity (a measure of the number of species in a given area) increases with increasing foliage height diversity (a measure of the number and diversity of vertical layers of vegetation in that area).<sup>37,38</sup> While this has been best studied in breeding birds, the structural complexity of habitat also influences the degree to which an area provides resources to migrant birds. Multi-layered vegetation, with well-developed ground, understory, and canopy layers, would support greater diversity of migrants than the structurally simple vegetation that dominates most of Candlestick Point and HPS Phase II. Also, breeding bird abundance is often closely associated with the density or volume of vegetation, with increasingly dense vegetation supporting more individual birds<sup>39</sup>. The sparse vegetation present on most of the Project site limits the value of the site to breeding and migratory birds. Numbers and diversity of landbirds on HPS Phase II are likely lower than on Candlestick Point owing to the recent, intensive disturbance and even lower abundance of trees and shrubs on HPS Phase II.

---

<sup>34</sup> American Ornithologists' Union (AOU), *Check-list of North American Birds (1998)* through Forty-ninth Supplement, July 2008.

<sup>35</sup> *Ibid.*

<sup>36</sup> *Ibid.*

<sup>37</sup> MacArthur, R. H. and J. W. MacArthur. 1961. On bird species diversity. *Ecology* 42:594-598.

<sup>38</sup> Karr, J. R. 1968. Habitat and avian diversity on strip-mined land in east-central Illinois. *Condor* 70:348-357.

The waters of the South Basin and the Bay surrounding the Study Area are used by a variety of waterbirds, some of which are fairly abundant. Common waterbirds observed in these waters include double-crested cormorant (*Phalacrocorax auritus*), California gull (*Larus californicus*), greater scaup (*Aythya affinis*), ruddy duck (*Oxyura jamaicensis*), surf scoter (*Melanitta perspicillata*), and bufflehead (*Bucephala albeola*). While these birds forage primarily or solely in aquatic habitats, some species, such as cormorants, California brown pelicans (*Pelecanus occidentalis californicus*), gulls, and possibly terns roost in large numbers on piers on HPS Phase II. Small numbers (fewer than 10 pairs) of western gulls (*Larus occidentalis*) nest on two rocks in South Basin known as Double Rock. Shorebirds such as the western sandpiper (*Calidris mauri*), least sandpiper (*Calidris minutilla*), and dunlin (*Calidris alpina*) forage on intertidal mud flats and along the shoreline of Candlestick Point and the southern part of HPS Phase II, typically in low numbers but occasionally in higher numbers when migratory pulses of shorebirds are present in the Bay. The majority of the Study Area is developed or urbanized and supports relatively few species of birds.

In addition to the 118 bird species recorded during the Yosemite Slough Watershed Wildlife Survey, that survey's report listed an additional 36 species that had been recorded by a local birder, Mr. Alan Hopkins, over the past 20 years.<sup>40</sup>

## Mammals

The most abundant mammal observed during the Yosemite Slough Watershed Wildlife Survey was the California ground squirrel (*Spermophilus beecheyi*). This species was observed along the shoreline and riprap areas of HPS Phase II and Candlestick Point, as well as in grassland and ruderal habitats and under trees and shrubs on Candlestick Point. The substrate along the shoreline is composed mostly of small rubble such as broken bricks that had been used as fill. Riprap composed of large rocks was placed along exposed sections of the shoreline, providing refugia for small mammals.<sup>41</sup> Other mammals observed during the survey included feral domestic cat (*Felis silvestris*), feral domestic dog (*Canis familiaris*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), harbor seal (*Phoca vitulina*), black-tailed jackrabbit (*Lepus californicus*), Botta's pocket gopher (*Thomomys bottae*), California vole (*Microtus californicus*), and Norway rat (*Rattus norvegicus*). Of the 10 species recorded by the LSA study, three are non-natives (domestic dog, domestic cat, and Norway rat); two are common urban-adapted species (raccoon and striped skunk); and one occurs infrequently in aquatic areas (harbor seal). Of the remaining four species, the Botta's pocket gopher and California vole were represented by no more than one individual on a given survey and thus may be uncommon

---

<sup>39</sup> Mills, G. S., J. B. Dunning, Jr., and J. M. Bates. 1991. The relationship between breeding bird density and vegetation volume. *Wilson Bulletin* 103:468-479.

<sup>40</sup> Golden Gate Audubon Society, *Final Report Yosemite Slough Watershed Wildlife Survey 2003–2004*, prepared by LSA, July 27, 2004.

<sup>41</sup> *Ibid.*



on the site. As mentioned for reptiles and amphibians above, mammal diversity and abundance on HPS Phase II are expected to be lower than on Candlestick Point, as recent, intensive disturbance by remediation activities has likely reduced mammal populations there. The shorelines, vacant lots, and undeveloped ruderal/non-native grassland areas of HPS Phase II and CPSRA are surrounded by urban and industrial development, which limits the potential for dispersal of mammals in and out of the site. There are no CNDDDB reports of the occurrence of any special-status mammal species in the Study Area.

## COMMON AQUATIC RESOURCES

### Fish, Crabs, and Mollusks

San Francisco Bay supports a diverse assemblage of fish species. These vary from resident fish such as assorted flat fish (flounder and sole) to a variety of rockfish (*Sebastes* spp.) and to migratory species such as Pacific herring, Pacific sardines, anchovies, and salmonids (*Oncorhynchus* spp.) which spend varying portions of their life cycle in the Bay. Estuaries provide important spawning habitat for fish and the San Francisco Bay is no exception. Pacific herring spawn in the Bay and support a small commercial fishery. Other fish for which adults spawn in the Bay include flounder, sole, and Pacific halibut. Juvenile sturgeon (*Acipenser* spp.) rear in the Bay for an undetermined length of time before moving to the ocean.

Shellfish found in the Bay and within the vicinity of the Study Area include Dungeness crab (*Cancer magister*), other rock crab, and shrimp. Dungeness are the target of an important commercial fishery in the open ocean and the Bay is important rearing habitat for young crab. Crab hatch in the Gulf of the Farallones and after several larval stages, migrate into the Bay and rear primarily in San Pablo and Suisun bays,<sup>42</sup> over 20 miles north of the Study Area.

The Bay also supports a variety of mollusks. These include native clams, mussels, oysters, and snails (gastropods). Some of these are native (i.e., bent-nosed macoma [*Macoma nasuta*], Olympia oyster [*Ostrea conchaphila*], and limpets [*Acmaea* spp.]) while others have been introduced either intentionally such as the Atlantic oyster (*Crassostrea virginica*) or unintentionally such as overbite clam (a.k.a. Asian clam; *Corbula amurensis*). Many of the clams use soft-bottom sediments and could be found on the seafloor near the Project site. Most oysters require a solid substrate for attachment. Suitable habitat for oysters and mussels is found throughout the Study Area on bulkheads, pilings, and riprap associated with the shoreline.

---

<sup>42</sup> California Department of Fish and Game (CDFG), 2009. Dungeness crabs (*Cancer magister*). Website: <http://www.delta.dfg.ca.gov/baydelta/monitoring/cmag.asp>. Accessed July 16, 2009.

In addition to the native fish and shellfish, the Bay supports a vast array of introduced species. Most of these have been introduced in ballast water of trans-Pacific traveling cargo ships. Species suspected of being ballast water introductions include Chinese mitten crab (*Eriocheir sinensis*), yellowfin goby (*Acanthogobius flavimanus*), and overbite clam. Other species, including striped bass (*Morone saxatilis*) and American shad (*Alosa sapidissima*), have been introduced to support sport fisheries. The complex interaction between introduced and native species within the Bay continues to be the topic of much debate and study.

The open water of the Study Area is part of or directly connected to the Bay and all of the Bay fish species can move freely into and out of the Study Area at any time. Because of this, the species assemblage within and adjacent to the Project site is expected to be representative of the central Bay as a whole.

The portion of the San Francisco Bay immediately adjacent to the Project site has been highly modified over the years to support commercial shipping, industrial uses, and US Naval activities, and virtually the entire shoreline of the Study Area is composed of fill of various kinds. As a result, the shorelines are almost exclusively comprised of bulkheads and riprap. Dredging of shipping channels has occurred within the nearshore areas. All of these actions have combined to reduce the aquatic habitat complexity. Reductions in habitat complexity reduce the number of species that routinely utilize a particular area,<sup>43</sup> and, therefore, the numbers of resident fish species within the Study Area are expected to be similar to other developed areas of the Bay.

## **Marine Mammals**

The most common marine mammals within San Francisco Bay are harbor seals (*Phoca vitulina*) and California sea lions (*Zalophus californianus*), both of which are protected under the *Marine Mammal Protection Act*. The *Marine Mammal Protection Act* does not bestow a particular status designation for the species it protects, which is similar to the *Migratory Bird Treaty Act*. Instead, the *Marine Mammal Protection Act* and the *Migratory Bird Treaty Act* equally protect all marine mammals and native birds, respectively.

### **Harbor Seal (*Phoca vitulina*)**

Harbor seals are year-round residents found throughout the Bay. They use haulouts scattered through the Bay to bask, rest, and use as pupping sites. The most frequently used pupping sites are in the North (Castro Rocks) and South bays (Mowry Slough); both sites are over 15 miles from the Study Area. Pupping season begins in late March and peaks in early May.<sup>44</sup> The closest haulout site

---

<sup>43</sup> Moyle, P.B. *Inland Fishes of California, 2<sup>nd</sup> Edition*, University of California Press.

<sup>44</sup> Richmond Bay Bridge Harbor Seal Team. No date. Harbor Seal. Website:  
<http://userwww.sfsu.edu/~halmark/educati.htm>. Accessed October 31, 2008.

is on Yerba Buena Island, about 6 miles from the Project site.<sup>45</sup> There are no known haulout locations within the Study Area. During the 2003–2004 Yosemite Slough Watershed Wildlife Survey, LSA observed nine harbor seals in the outer South Basin (open water between Candlestick Point and HPS Phase II); however, no haulouts were detected during the survey.<sup>46</sup> No harbor seals or haulouts were observed during surveys by PBS&J biologists for this Project.

### **California Sea Lion (*Zalophus californianus*)**

California sea lions do not breed in the Bay, preferring offshore islands such as the Channel Islands near Santa Barbara or the Farallon Islands, but sea lions forage and rest at various locations around the San Francisco Peninsula.<sup>47</sup> They are relatively social animals, frequently seen basking or foraging in large groups. On May 2, 2003, a total of ten sea lions were observed hauled out on a flat, floating structure in the outer South Basin.<sup>48</sup> Sea lions may occur in the Study Area, but the site does not support any known haulout locations.

## **SENSITIVE/JURISDICTIONAL VEGETATION COMMUNITIES AND HABITATS**

### **Waters of the United States/State and Navigable Waters**

The Study Area contains several categories of jurisdictional waters of the United States, including jurisdictional wetlands that are subject to Section 404 of the *Clean Water Act* (Section 404). The types of wetlands include salt marsh and seasonal freshwater wetlands. In addition, the Study Area also contains open waters of the San Francisco Bay, which are subject to both Section 404 of the *Clean Water Act* and Section 10 of the *Rivers and Harbors Act of 1899* (Section 10). Section 404 regulates the placement of fill into any “waters of the United States.” Waters of the United States are broadly defined to include navigable waterways, their tributaries, lakes, ponds, and wetlands, including tidal waters and wetlands from the HTL seaward. Section 10 regulates the placement of fill into navigable waters of the United States, including tidal waters from the MHW elevation seaward. All of these wetlands and other waters are also regulated by the State under Section 401 of the *Clean Water Act* and under the *Porter-Cologne Water Quality Control Act*. A more detailed discussion of the regulations protecting wetlands and other waters is provided in the Regulatory Framework section below.

---

<sup>45</sup> San Francisco State University. No date. *Richmond Bridge Harbor Seal Survey Site Map*. Website: <http://userwww.sfsu.edu/~halmark/map.htm>. Accessed October 31, 2008.

<sup>46</sup> Golden Gate Audubon Society, *Final Report Yosemite Slough Watershed Wildlife Survey 2003–2004*, prepared by LSA, July 27 2004.

<sup>47</sup> Marine Mammal Center 2002. *California Sea Lion information sheet*. Website: <http://www.marinemammalcenter.org/learning/education/pinnipeds/casealion.asp>. Accessed October 31, 2008.

<sup>48</sup> Golden Gate Audubon Society, *Final Report Yosemite Slough Watershed Wildlife Survey 2003–2004*, prepared by LSA, July 27 2004.

A wetland delineation was conducted by H.T. Harvey & Associates for the Study Area that distinguished jurisdictional wetlands and other waters of the United State/State.<sup>49</sup> The revised H.T. Harvey & Associates wetland delineation was submitted to the USACE in July 2009 and was verified in August 2009. The study area for that delineation included the Project site and the off-site areas where Project activities would occur (Figure 4). As indicated on Figure 4, the study area for H.T. Harvey's original wetland delineation did not include several limited areas that are now considered part of the Project site. As a result, H.T. Harvey expanded its original delineation by inspecting these additional areas in the field on October 8, 2009. H.T. Harvey & Associates has amended its wetland delineation report, and verification of jurisdictional boundaries in these additional areas by the USACE is pending.

According to USACE regulations and guidance, other waters may include lakes, seasonal ponds, channels, tributary waters, non-wetland linear drainages, and seasonal springs. Such areas are identified by the (seasonal or perennial) presence of standing or running water and generally lack hydrophytic vegetation.

In tidal waters, Section 404 other waters extend to the landward extent of vegetation associated with salt or brackish water or the HTL. The HTL is defined as the line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The HTL may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gauges, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm. Confirmation of this definition and approach used by the San Francisco District of the USACE in determining the MHW and HTL locations was obtained from the Regulatory Branch of the USACE on January 29, 2009.<sup>50</sup> The HTL represents the upper limit of Section 404 other waters and is approximately 1.5 to 2 vertical feet above the MHW mark.<sup>51</sup>

---

<sup>49</sup> H.T. Harvey & Associates, *Hunters Point Shipyard and Candlestick Point State Recreation Area Final Delineation of Wetlands and Other Waters*, San Francisco, California, February 2009 and revised July 13, 2009 and October 13, 2009.

<sup>50</sup> Ibid.

<sup>51</sup> Ibid.



SOURCE: HT Harvey, 2009; Moffat & Nichol, 2009; PBS&J, 2009.

PBS&J 10.27.09

**FIGURE 4** Candlestick Point - Hunters Point Shipyard Phase II EIR  
**WETLANDS AND OTHER WATERS**

Table 2 (Wetlands and Other Waters of the United States [Section 404] within the Study Area) presents the acreage of waters of the United States (including jurisdictional wetlands) that were delineated for the Study Area. The acreages of jurisdictional wetlands and waters identified in Table 2 include the HT Harvey study area boundary as identified in Figure 4 (which includes open waters adjacent to Candlestick Point and HPS Phase II), as well as off-site areas of Yosemite Slough that are located outside of this boundary.

**TABLE 2 WETLANDS AND OTHER WATERS OF THE UNITED STATES (SECTION 404) WITHIN THE STUDY AREA**

Jurisdictional Feature (Waters of the United States)	Area		Yosemite Slough		Total Acreage
	Candlestick Point	Hunters Point Shipyard	On Site	Off Site	
Freshwater Wetland	—	0.20	—	—	0.20
Non-tidal Salt Marsh	—	1.81	—	—	1.81
Tidal Salt Marsh	0.93	1.75	0.01	0.05	2.74
“Other 404 Waters”	<u>21.82</u>	<u>169.29</u>	<u>1.66</u>	<u>2.77</u>	<u>195.54</u>
<b><i>Totals for Section 404 Wetlands and Waters of the US</i></b>	<b>22.75</b>	<b>173.05</b>	<b>1.67</b>	<b>2.82</b>	<b>200.29</b>

SOURCE: H.T. Harvey & Associates, *Hunters Point Shipyard and Candlestick Point State Recreation Area Final Delineation of Wetlands and Other Waters, San Francisco, California, February 2009 and revised July 13, 2009 and October 13, 2009.*

- a. Total equals sum of Freshwater Wetland, Non-tidal Salt Marsh, Tidal Salt Marsh, and Other 404 Waters
- b. On-site areas within Yosemite Slough refer to areas within the Study Area. Off-site areas within Yosemite Slough are those areas adjacent to the slough that are outside of the Study Area boundary.

## SPECIAL-STATUS AND SENSITIVE SPECIES

The potential for special-status plant and wildlife species to occur within the Study Area was determined by assessing habitat suitability information collected during biological reconnaissance surveys conducted in August 2007 and July 2008, a rare plant survey conducted in May 2008, and a review of the CNDDDB, CNPS Inventories, and USFWS databases, as previously described. In addition, approximately 29 wildlife surveys were conducted in the vicinity of Yosemite Slough between January 2003 and April 2004 (in association with the Yosemite Slough Watershed Wildlife Survey), and that survey’s report included a list of additional bird species that had been observed by Mr. Alan Hopkins over the past 20 years.<sup>52</sup> The list of potentially occurring special-status species provided in Table 3 (Special-Status Species Potentially Occurring within the Study Area) is informed by all of these sources, as well as a search of known sensitive species occurrences within a 5-mile radius of the Project site.

<sup>52</sup> Golden Gate Audubon Society, *Final Report Yosemite Slough Watershed Wildlife Survey 2003–2004*, prepared by LSA, July 27 2004.

- Special-status species are defined as follows:
- Species listed, proposed, or candidate for listing as Threatened or Endangered by the USFWS pursuant to the federal *Endangered Species Act of 1973* (FESA), as amended
- Species designated by the USFWS as Species of Conservation Concern
- Species designated by the National Marine Fisheries Service (NMFS) as Species of Special Concern
- Species listed as Rare, Threatened, or Endangered by the CDFG pursuant to the *California Endangered Species Act of 1984* (CESA), as amended
- Species designated as Fully Protected under Sections 3511 (birds), 4700 (mammals), and 5050 (reptiles and amphibians) of the *California Fish and Game Code*
- Species designated by the CDFG as California Species of Special Concern
- Plant species listed as Category 1B and 2 by the CNPS; CNPS Category 3 and 4 species were not considered special-status species for the sake of this assessment, as they are not considered sufficiently rare on a regional level to warrant such status, though no such plants were recorded in the Study Area.
- Species not currently protected by statute or regulation, but considered rare, threatened or endangered under Section 15380 of the CEQA Guidelines (such as the Olympia oyster and Pacific herring)

Table 3 identifies the special-status plant and wildlife species that have been recorded or could occur within five miles of the Study Area, along with a description of their habitat requirements, protection status, and a brief description of each species' likelihood to be present within the Study Area. Several species known to occur within five miles of the Study Area and listed in Table 3 were determined not likely to occur or to be absent from the Study Area because (1) the site lacks suitable habitat or is outside of the species' range and, (2) no instances of such species were observed during any of the field surveys). Consequently, the detailed species' discussions and impact analysis in this technical report address only those species in Table 3 that have a "Low" or better probability to occur within the Study Area. Those species or habitats with a "Not Likely" or "Absent" likelihood of occurrence in Table 3 are not addressed further because they are not expected to occur on the Study Area or be affected by Project implementation.

Special-status species lists from the CNDDDB, CNPS, and USFWS, originally consulted in 2008, appear in Appendices A, B, and C, respectively. These lists were re-checked on November 2, 2009 to determine whether any species that could potentially occur on the site were added to these databases between the date of initial consultation of these lists and the preparation of the updated

**TABLE 3 SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Status<sup>a</sup> Fed/ CA/ other</b>	<b>Habitat and Seasonal Distribution in California</b>	<b>Likelihood of Occurrence Within the Study Area</b>
<b>Plants</b>				
Adobe sanicle	<i>Sanicula maritima</i>	none/SR/1B.1	Chaparral, coastal prairie, meadows and seeps, and valley and foothill grasslands in association with clay or serpentine soils. 98–787 feet (30–240 meters); blooms February–May	<b>Not Likely.</b> Suitable habitat for this species occurs in the Study Area. However, there are no recorded occurrences of this species within 5 miles of the Study Area, and none were observed during rare plant surveys of suitable habitat in 2007 and 2008 by PBS&J.
Alkali milk-vetch	<i>Astragalus tener</i> var. <i>tener</i>	none/none/1B.2	Playas, valley and foothill grassland with adobe clay, and vernal pools with alkaline soils. 0–2051 feet (0–625 meters); blooms May–September.	<b>Not Likely.</b> Suitable habitat for this species does not occur in the Study Area.
Arcuate bush-mallow	<i>Malacothamnus arcuatus</i>	none/none/1B.2	Chaparral and cismontane woodland. 82–295 feet (25–90 meters); blooms April–September.	<b>Not Likely.</b> Suitable habitat for this species does not occur in the Study Area.
Beach layia	<i>Layia carnososa</i>	FE/SE/1B.1	Coastal dunes and coastal scrub with sandy soils. 0–197 feet (0–60 meters); blooms March–July.	<b>Not Likely.</b> Coastal scrub does not occur in the Study Area. This species was not observed during surveys conducted by PBS&J in 2007 and 2008.
Bent-flowered fiddleneck	<i>Amsinckia lunaris</i>	none/none/1B.2	Coastal bluff scrub, cismontane woodland, and valley and foothill grassland habitats. 10–1,640 feet (3– 500 meters); blooms March–June	<b>Not Likely.</b> Although there is one recorded occurrence of this species within 5 miles of the Study Area, no species of <i>Amsinckia</i> were observed during floristic surveys conducted in 2005 by CNPS <sup>53</sup> and in 2007 and 2008 by PBS&J.

<sup>53</sup> California Native Plant Society (CNPS), Yerba Buena Chapter, Electronic plant list; Hunters Point Serpentine Hillside, R. Hunter and J. Sigg, 2005.



**TABLE 3 SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Status<sup>a</sup> Fed/ CA/ other</b>	<b>Habitat and Seasonal Distribution in California</b>	<b>Likelihood of Occurrence Within the Study Area</b>
Big-scale balsamroot	<i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i>	none/none/1B.2	Occurs in chaparral, cismontane woodland, and valley and foothill grassland, sometimes in serpentine soil substrates at elevations ranging from 295–4,593 feet (90–1,400 meters); blooms March–June.	<b>Not Likely.</b> Although potentially suitable habitat and soil substrates are present, there are no recorded occurrences of this species within 5 miles of the Study Area; no species of <i>Balsamorhiza</i> were observed during floristic surveys conducted in 2005 by CNPS <sup>54</sup> and in 2007 and 2008 by PBS&J.
Blue coast gilia	<i>Gilia capitata</i> ssp. <i>chamissonis</i>	none/none/1B.1	Coastal dunes and coastal scrub. 7–656 feet (2–200 meters); blooms April–July.	<b>Not Likely.</b> Coastal scrub does not occur in the Study Area. There are no recorded occurrences of this species within 5 miles of the Study Area.
Bristly sedge	<i>Carex comosa</i>	none/none/2.1	Coastal prairie, marshes and swamps (along lake margins), and valley and foothill grassland. 0–2,051 feet (0–625 meters); blooms May–September.	<b>Not Likely.</b> Marsh habitat in the Study Area has been highly degraded. This species was not observed during surveys conducted by Caltrans in 2007. <sup>55</sup>
California seablite	<i>Suaeda californica</i>	FE/none/1B.1	Marshes and swamps with coastal salt marsh. 0–49 feet (0–15 meters); blooms July–October.	<b>Not Likely.</b> Marsh habitat in the Study Area has been highly degraded. This species was not observed during surveys conducted by Caltrans in 2007. <sup>56</sup>
Coastal triquetrella	<i>Triquetrella californica</i>	none/none/1B.2	A moss that occurs in coastal bluff scrub and coastal scrub. 33–328 feet (10–100 meters).	<b>Not Likely.</b> Coastal scrub does not occur in the Study Area.

<sup>54</sup> Ibid.

<sup>55</sup> Caltrans, Natural Environmental Study Report for the Bayview Transportation Improvements Project, Jones and Stokes, July 2007.

<sup>56</sup> Caltrans, Biological Assessment for the Bayview Transportation Improvements Project, Jones and Stokes, July 2007.

**TABLE 3 SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Status<sup>a</sup> Fed/ CA/ other</b>	<b>Habitat and Seasonal Distribution in California</b>	<b>Likelihood of Occurrence Within the Study Area</b>
Compact cobwebby thistle	<i>Cirsium occidentale</i> var. <i>compactum</i>	none/none/1B.2	Chaparral, coastal dunes, coastal prairie, and costal scrub. 16–492 feet (5–150 meters); blooms April–June.	<b>Not Likely.</b> Coastal scrub does not occur in the Study Area. No native species of <i>Cirsium</i> were observed during floristic surveys conducted in 2005 by CNPS <sup>57</sup> and in 2007 and 2008 by PBS&J.
Crystal Springs lessingia	<i>Lessingia arachnoidea</i>	none/none/1B.2	Cismontane woodland, coastal scrub, and valley and foothill grassland habitats, in association with serpentinite soils along roadsides. 197–656 feet (60–200 meters); blooms July–October	<b>Not Likely.</b> Although potentially suitable habitat and soil substrates are present, there are no recorded occurrences of this species within 5 miles of the Study Area; no species of <i>Lessingia</i> were observed during floristic surveys conducted by CNPS <sup>58</sup> and PBS&J in 2007 and 2008.
Diablo helianthella	<i>Helianthella castanea</i>	none/none/1B.2	Broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, and valley and foothill grassland. 197–4,265 feet (60–1,300 meters); blooms March–June.	<b>Not Likely.</b> Chaparral or oak woodland absent in Study Area.
Fountain thistle	<i>Cirsium fontinale</i> var. <i>fontinale</i>	FE/SE/1B.1	Openings in chaparral habitats; valley and foothill grassland habitats in association with serpentinite seeps. 295–574 feet (90–175 meters); blooms June–October	<b>Not Likely.</b> Although potentially suitable habitat and soil substrates are present, there are no recorded occurrences of this species within 5 miles of the Study Area; no native species of <i>Cirsium</i> were observed during floristic surveys conducted by CNPS <sup>59</sup> and PBS&J in 2007 and 2008.

<sup>57</sup> California Native Plant Society (CNPS), Yerba Buena Chapter, Electronic plant list; Hunters Point Serpentine Hillside, R. Hunter and J. Sigg, 2005.

<sup>58</sup> Ibid.

<sup>59</sup> Ibid.

**TABLE 3 SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Status<sup>a</sup> Fed/ CA/ other</b>	<b>Habitat and Seasonal Distribution in California</b>	<b>Likelihood of Occurrence Within the Study Area</b>
Fragrant fritillary	<i>Fritillaria liliacea</i>	none/none/1B.2	Cismontane woodland, coastal prairie, coastal scrub, and valley and foothill grassland habitats often in association with serpentinite soils. 10–1,345 feet (3–410 meters); blooms February–April	<b>Not Likely.</b> Although there is one recorded occurrence of this species within 5 miles of the Study Area, no species of <i>Fritillaria</i> were observed during floristic surveys conducted by CNPS <sup>60</sup> and PBS&J in 2007 and 2008.
Franciscan manzanita	<i>Arctostaphylos hookeri</i> ssp. <i>franciscana</i>	none/none/1A	Coastal scrub with serpentinite soil substrates. 197–984 feet (60–300 meters); blooms February–April.	<b>Not Likely.</b> Serpentinite soil substrates do not occur within Study Area. No recorded occurrences of this species within 5 miles of the Study Area. No species of <i>Arctostaphylos</i> were observed during surveys conducted by Caltrans in 2007 <sup>61</sup> and PBS&J in 2007 and 2008.
Franciscan onion	<i>Allium peninsulare</i> var. <i>franciscanum</i>	SLC/none/1B.2	Clay and serpentine soils on dry hillsides in woodlands and valley and foothill grasslands 170–984 feet (52–300 meters); blooms May–June.	<b>Not Likely.</b> Although potentially suitable habitat and soil substrates are present, there are no recorded occurrences of this species within 5 miles of the Study Area; no species of <i>Allium</i> were observed during floristic surveys conducted by CNPS <sup>62</sup> and PBS&J in 2007 and 2008.
Franciscan thistle	<i>Cirsium andrewsii</i>	none/none/1B.2	Broadleaved upland forest, coastal bluff scrub, coastal prairie, and coastal scrub habitats, often in association with serpentinite soils. 0–492 feet (0–150 meters); blooms March–July	<b>Not Likely.</b> Although potentially suitable habitat and soil substrates are present, there are no recorded occurrences of this species within 5 miles of the Study Area; no native species of <i>Cirsium</i> were observed during floristic surveys conducted by CNPS <sup>63</sup> and PBS&J in 2007 and 2008.

<sup>60</sup> Ibid.

<sup>61</sup> Caltrans, Natural Environmental Study Report for the Bayview Transportation Improvements Project, Jones and Stokes, July 2007.

<sup>62</sup> California Native Plant Society (CNPS), Yerba Buena Chapter, Electronic plant list; Hunters Point Serpentine Hillside, R. Hunter and J. Sigg, 2005.

<sup>63</sup> Ibid.

**TABLE 3 SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Status<sup>a</sup> Fed/ CA/ other</b>	<b>Habitat and Seasonal Distribution in California</b>	<b>Likelihood of Occurrence Within the Study Area</b>
Hillsborough chocolate lily	<i>Fritillaria biflora</i> var. <i>ineziana</i>	none/none/1B.1	Cismontane woodland and valley and foothill grassland habitats in association with serpentinite soils. 492 feet (150 meters); blooms March–April	<b>Not Likely.</b> Known only from the Hillsborough area. Although potentially suitable habitat and soil substrates are present, there are no recorded occurrences of this species within 5 miles of the Study Area; no native species of <i>Fritillaria</i> were observed during floristic surveys conducted by CNPS <sup>64</sup> and PBS&J in 2007 and 2008.
Kellogg’s horkelia	<i>Horkelia cuneata</i> ssp. <i>sericea</i>	none/none/1B.1	Closed-cone coniferous forest, chaparral, coastal dunes, and coastal scrub with sandy or gravelly openings. 33–656 feet (10–200 meters); blooms April–September.	<b>Not Likely.</b> Coastal scrub does not occur in the Study Area.
Marin western flax	<i>Hesperolinon congestum</i>	FT/ST/1B.1	Chaparral and valley and foothill grassland habitats in association with serpentinite soils. 16–1214 feet (5–370 meters); blooms April–July	<b>Not Likely.</b> Although there are recorded occurrences of this species within 5 miles of the Study Area, no species of <i>Hesperolinon</i> were observed during floristic surveys conducted by CNPS and PBS&J in 2007 and 2008.
Montara manzanita	<i>Arctostaphylos montaraensis</i>	none/none/1B.2	Chaparral and coastal scrub. 492–1,640 feet (150–500 meters); blooms January–March.	<b>Not Likely.</b> Coastal scrub does not occur in the Study Area. No species of <i>Arctostaphylos</i> were observed during surveys conducted by Caltrans in 2007 <sup>65</sup> and PBS&J in 2007 and 2008.
Most beautiful jewel-flower	<i>Streptanthus albidus</i> ssp. <i>permoenus</i>	none/none/1B.2	Chaparral, cismontane woodland, valley and foothill grasslands, often on serpentine soils. 361–3,281 feet (110–1,000 meters); blooms April–June.	<b>Not Likely.</b> Although potentially suitable habitat and soil substrates are present, there are no recorded occurrences of this species within 5 miles of the Study Area; no species of <i>Streptanthus</i> were observed during floristic surveys conducted by CNPS and PBS&J in 2007 and 2008.

<sup>64</sup> Ibid.

<sup>65</sup> Caltrans, Natural Environmental Study Report for the Bayview Transportation Improvements Project, Jones and Stokes, July 2007.

**TABLE 3 SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Status<sup>a</sup> Fed/ CA/ other</b>	<b>Habitat and Seasonal Distribution in California</b>	<b>Likelihood of Occurrence Within the Study Area</b>
Pacific manzanita	<i>Arctostaphylos pacifica</i>	none/SE/1B.2	Chaparral and coastal scrub. 1,083 feet (330 meters); blooms February–April.	<b>Not Likely.</b> Coastal scrub does not occur in the Study Area. Species of <i>Arctostaphylos</i> not identified during surveys.
Point Reyes bird’s-beak	<i>Cordylanthus maritimus</i> ssp. <i>palustris</i>	none/none/1B.2	Coastal salt marsh. 0–33 feet (0–10 meters); blooms June–October.	<b>Not Likely.</b> Marsh habitat in the Study Area is of marginal quality and has been highly degraded. This species was not observed during surveys conducted by Caltrans in 2007. <sup>66</sup> Observed in adjacent off-site locations to the Yosemite Slough area according to the Yosemite Slough IS/MND. <sup>67</sup> Was not observed in the Yosemite Slough area during 2005 surveys conducted by LSA.
Presidio clarkia	<i>Clarkia franciscana</i>	FE/SE/1B.1	Occurs in coastal scrub and valley and foothill grassland, often on serpentine soils. 82–1,099 feet (25–335 meters); blooms May–July	<b>Not Likely.</b> Known from fewer than five occurrences. The closest two known populations are in the San Francisco Presidio approximately 6 miles northwest. Although potentially suitable habitat and soil substrates are present, there are no recorded occurrences of this species within 5 miles of the Study Area; no species of <i>Clarkia</i> were observed during floristic surveys conducted by CNPS <sup>68</sup> and PBS&J in 2007 and 2008.
Presidio manzanita	<i>Arctostaphylos hookeri</i> ssp. <i>ravenii</i>	FE/SE/1B.1	Chaparral, coastal prairie, and coastal scrub with serpentinite outcrops. 148–705 feet (45–215 meters); blooms February–March.	<b>Not Likely.</b> Serpentinite soil substrates do not occur within Study Area; however, there are no recorded occurrences of this species within 5 miles of the Study Area. Species of <i>Arctostaphylos</i> not identified during surveys.

<sup>66</sup> Caltrans, Biological Assessment for the Bayview Transportation Improvements Project, Jones and Stokes, July 2007.

<sup>67</sup> California State Parks Foundation, Draft Initial Study –Mitigated Negative Declaration for the Candlestick Point State Recreation Area Yosemite Slough Restoration Project, December 2005.

<sup>68</sup> California Native Plant Society, California Native Plant Society, Yerba Buena Chapter, Electronic plant list; R. Hunter and J. Sigg, 2005.

**TABLE 3 SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Status<sup>a</sup> Fed/ CA/ other</b>	<b>Habitat and Seasonal Distribution in California</b>	<b>Likelihood of Occurrence Within the Study Area</b>
Robust spineflower	<i>Chorizanthe robusta</i> var. <i>robusta</i>	FE/none/1B.1	Chaparral, cismontane woodlands (in openings), coastal dunes, coastal scrub with sandy or gravelly soil. 10–984 feet (3–300) meters; blooms April–September.	<b>Not Likely.</b> Coastal dunes are absent from the Study Area. Remnant dunes in the Study Area are disturbed habitat. This species was not observed during surveys conducted by PBS&J in 2007 and 2008.
Rose leptosiphon	<i>Leptosiphon rosaceus</i>	none/none/1B.1	Coastal bluff scrub. 0–328 feet (0–100 meters); blooms April–July.	<b>Not Likely.</b> Suitable habitat for this species does not occur in the Study Area.
San Bruno Mountain manzanita	<i>Arctostaphylos imbricata</i>	none/SE/1B.1	Chaparral and coastal scrub with rocky substrate. 902–1,214 feet (275–370 meters); blooms February–May.	<b>Not Likely.</b> Coastal scrub does not occur in the Study Area. Species of <i>Arctostaphylos</i> not identified during surveys.
San Francisco Bay spineflower	<i>Chorizanthe cuspidate</i> var. <i>cuspidata</i>	none/none/1B.2	Coastal bluff scrub, coastal dunes, coastal prairie, and coastal scrub with sandy soils. 10–705 feet (3–215 meters); blooms April–July (uncommon in August).	<b>Not Likely.</b> Coastal scrub does not occur in the Study Area.
San Francisco campion	<i>Silene vercunda</i> ssp. <i>vercunda</i>	none/none/1B.2	Coastal bluff scrub, chaparral, coastal prairie, coastal scrub, and valley and foothill grassland with sandy soil. 98–2,116 feet (30–645 meters); blooms March–June (uncommon in August).	<b>Not Likely.</b> Coastal scrub does not occur in the Study Area.
San Francisco Collinsia	<i>Collinsia multicolor</i>	none/none/1B.2	Closed-cone coniferous forest and coastal scrub (sometimes with serpentinite soil). 98–820 feet (30–250 meters); Blooms March–May.	<b>Not Likely.</b> Coastal scrub does not occur in the Study Area.
San Francisco gumplant	<i>Grindelia hirsutula</i> var. <i>maritima</i>	none/none/1B.2	Coastal bluff scrub, coastal scrub, and valley and foothill grassland habitats in association with sandy or serpentinite soils. 49–1,312 feet (15–400 meters); blooms June–September	<b>Not Likely.</b> Although there are a number of recorded occurrences of this species within 5 miles of the Study Area, this species was not observed during floristic surveys conducted by CNPS <sup>69</sup> and PBS&J in 2007 and 2008.

<sup>69</sup> Ibid.

**TABLE 3 SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Status<sup>a</sup> Fed/ CA/ other</b>	<b>Habitat and Seasonal Distribution in California</b>	<b>Likelihood of Occurrence Within the Study Area</b>
San Francisco Lessingia	<i>Lessingia germanorum</i>	FE/SE/1B.1	Coastal scrub (remnant dunes). 82–295 feet (25–90 meters); blooms July–November (uncommon in June).	<b>Not Likely.</b> Coastal scrub does not occur in the Study Area. This species was not observed in sandy soil areas during surveys; no species of <i>Lessingia</i> were observed during floristic surveys conducted by CNPS <sup>70</sup> and PBS&J in 2007 and 2008.
San Francisco owl’s-clover	<i>Triphysaria floribunda</i>	none/none/1B.2	Coastal prairie, coastal scrub, and valley and foothill grassland habitats in association with serpentinite soils. 33–525 feet (10–60 meters); blooms April–June	<b>Not Likely.</b> Although there is one recorded occurrence of this species within 5 miles of the Study Area, no species of <i>Triphysaria</i> has been observed during floristic surveys conducted by CNPS <sup>71</sup> and PBS&J in 2007 and 2008.
San Francisco popcornflower	<i>Plagiobothrys diffusus</i>	None/SE/ 1B.1	Occurs in coastal prairie and valley and foothill grassland. 197–1,181 feet (60–360 meters); blooms March–June.	<b>Not Likely.</b> Known from fewer than ten occurrences. Although potentially suitable habitat and soil substrates are present, there are no recorded occurrences of this species within 5 miles of the Study Area; no species of <i>Plagiobothrys</i> were observed during floristic surveys conducted by CNPS <sup>72</sup> and PBS&J in 2007 and 2008.
SanMateo thorn- mint	<i>Acanthomintha duttonii</i>	FE/SE/1B.1	Chaparral and valley and foothill grassland habitats, often on serpentinite soil substrates. 164–984 feet (50–300 meters); blooms April–June	<b>Not Likely.</b> Serpentinite soil substrates do not occur within Study Area, however there are no recorded occurrences of this species within 5 miles of the Study Area; species of <i>Acanthomintha</i> were not observed during floristic surveys conducted by CNPS <sup>73</sup> and PBS&J in 2007 and 2008.

<sup>70</sup> Ibid.

<sup>71</sup> Ibid.

<sup>72</sup> Ibid.

<sup>73</sup> Ibid.

**TABLE 3 SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA**

Common Name	Scientific Name	Status <sup>a</sup> Fed/ CA/ other	Habitat and Seasonal Distribution in California	Likelihood of Occurrence Within the Study Area
Santa Cruz microseris	<i>Stebbinsoseris decipiens</i>	none/none/1B.2	Openings in broadleaved upland forest, closed-cone coniferous forest, chaparral, coastal prairie, coastal scrub, valley and foothill grasslands, sometimes on serpentine soils. 33–1,640 feet (10–500 meters); blooms April–May.	<b>Not Likely.</b> Although potentially suitable habitat and soil substrates are present, there are no recorded occurrences of this species within 5 miles of the Study Area; no species of <i>Stebbinsoseris</i> were observed during floristic surveys conducted by CNPS <sup>74</sup> and PBS&J in 2007 and 2008.
Short-leaved evax	<i>Hesperevax sparsiflora</i> var. <i>brevifolia</i>	none/none/2.2	Coastal bluff with sandy soil and coastal dunes. 0–705 feet (0–215 meters); blooms March–June.	<b>Not Likely.</b> Suitable habitat for this species does not occur in the Study Area.
White-rayed pentachaeta	<i>Pentachaeta bellidiflora</i>	FE/SE/List 1B.1	Occurs in cismontane woodland and valley and foothill grassland, often in serpentinite. 115–2034 feet (35–620 meters); blooms March–May	<b>Not Likely.</b> Although there is one recorded occurrence of this species within 5 miles of the Study Area, no species of <i>Pentachaeta</i> were observed during floristic surveys conducted by CNPS <sup>75</sup> and PBS&J in 2007 and 2008.

**Sensitive Natural Communities**

Coastal brackish marsh (salt marsh)	CDFG Sensitive Habitat			<b>Known.</b> The Study Area supports representative assemblages of plant species associated with this community type. Degraded occurrences of this sensitive natural community are present along the southern portion of HPS Phase II site, along Yosemite Slough, and patches along the Candlestick Point shoreline. <sup>76</sup>
-------------------------------------	------------------------	--	--	--

**Invertebrates**

<sup>74</sup> Ibid.

<sup>75</sup> Ibid.

<sup>76</sup> H.T. Harvey & Associates, Hunters Point Shipyard and Candlestick Point State Recreation Area Final Delineation of Wetlands and Other Waters, San Francisco, California, February 2009 and revised July 13, 2009 and October 2, 2009.



**TABLE 3 SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Status<sup>a</sup> Fed/ CA/ other</b>	<b>Habitat and Seasonal Distribution in California</b>	<b>Likelihood of Occurrence Within the Study Area</b>
Bay checkerspot butterfly	<i>Euphydryas editha bayensis</i>	FT/none/none Critical habitat	All habitats for the bay checkerspot are on shallow, serpentine-derived, or similar soils. These soils support the plants on which the caterpillars (larvae) feed the primary larval host plant is dwarf plantain ( <i>Plantago erecta</i> ). In many years, the plantain dries up and the larvae transfer to a second host plant, Indian paintbrush, or purple owl's clover ( <i>Castilleja exserta</i> spp. <i>exserta</i> ), which remains edible later in the season.	<b>Not Likely.</b> It is not likely that there is a sufficient population of plantain to support Bay checkerspot in the Study Area. <sup>77</sup> Sites that support this species provide greater topographic heterogeneity than the serpentine grassland in the Study Area. Although there are a number of recorded occurrences for this species within 5 miles of the Study Area, this species was extirpated from the closest location of historical occurrence (San Bruno Mountain) in the 1980's.
Callippe silverspot butterfly	<i>Speyeria callippe callippe</i>	FE/none/none	Occurs in grassland habitats around the northern Bay Area containing Johnny jump-up ( <i>Viola pedunculata</i> ), which is the larval host plant for this species.	<b>Not Likely.</b> Although there are a number of recorded occurrences within 5 miles of the Study Area, <i>V. pedunculata</i> has not been observed within the Study Area. In addition, although there are nearby occurrences, there is an insufficient population of this species' host plant within the Study Area to sustain a population of this species. <sup>78</sup>

<sup>77</sup> Kobernus, P., Senior Biologist, TRA Environmental Sciences, Inc., email to PBS&J, August 30, 2007.

<sup>78</sup> Ibid.

**TABLE 3 SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Status<sup>a</sup> Fed/ CA/ other</b>	<b>Habitat and Seasonal Distribution in California</b>	<b>Likelihood of Occurrence Within the Study Area</b>
Mission blue butterfly	<i>Plebejus [Icaricia] icarioides missionensis</i>	FE/none/none	The adults feed on hairy false goldenaster ( <i>Heterotheca villosa</i> ), blue dicks ( <i>Dichelostemma capitatum</i> ), and seaside buckwheat ( <i>Eriogonum latifolium</i> ). They do not wander far from the three species of lupine that are the larval food plant: silver lupine ( <i>Lupinus albifrons</i> ), summer lupine ( <i>L. formosus</i> ), and many-colored lupine ( <i>L. versicolor</i> ). Females lay eggs throughout the mating flight. The eggs are laid singly on leaves, stems, flowers, and seedpods of lupine species.	<b>Not Likely.</b> Although there are a number of recorded occurrences for this species within 5 miles of the Study Area, including one from the Bayview Hill area, the Study Area does not support a substantial stand of lupine ( <i>Lupinus</i> spp.) to support this species. <sup>79</sup> Isolated lupine plants intermixed within ruderal vegetation was observed along the Candlestick Point area, near Yosemite Slough. One or two lupine plants were observed in this area during the May 5, 2008 survey, but this would not constitute habitat for this species.
Monarch butterfly (wintering) <sup>80</sup>	<i>Danaus plexippus</i>	none/none/ESHA	Occur in many open habitats including fields, meadows, weedy areas, marshes, and roadsides. Adults migrate from August to October, flying south to hibernate along the California coast and in central Mexico. During migration and wintering, butterflies roost in trees and form huge aggregations. Caterpillars feed exclusively on milkweed ( <i>Asclepias</i> spp.); early in the season, adults sip nectar from dogbane ( <i>Apocynum</i> spp.), lilac ( <i>Ceanothus</i> spp.), red clover ( <i>Trifolium pratense</i> ), <i>Lantana</i> spp., and thistles ( <i>Cirsium</i> spp.). In the fall adults visit composites including goldenrods ( <i>Solidago californica</i> ), blazing stars ( <i>Liatris spicata</i> ), ironweed ( <i>Vernonia</i> spp.), and tickseed sunflower ( <i>Bidens</i> spp.).	<b>Known, but Not Likely roosting.</b> Although individuals have been observed on the site, there is no record of monarch butterfly autumnal (i.e., temporary bivouac site) or over-wintering use of the Study Area in the CNDDDB and other records, including anecdotal observations. The nearest observations of such roosts are at Fort Mason, the Presidio of San Francisco, and Stern Grove. The modification of Hunters Point and Candlestick Park would not affect those sites. <sup>81</sup>

<sup>79</sup> United States Fish and Wildlife Service (USFWS), Endangered and Threatened Wildlife and Plants: *Proposed Determination of Critical Habitat for Six Butterflies and Two Plants*, 42 Federal Register 7972, February 8, 1977.

<sup>80</sup> Wintering habitat is considered an Environmentally Sensitive Habitat Area by the California Coastal Commission.

**TABLE 3 SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Status<sup>a</sup> Fed/ CA/ other</b>	<b>Habitat and Seasonal Distribution in California</b>	<b>Likelihood of Occurrence Within the Study Area</b>
Myrtle's silverspot butterfly	<i>Speyeria zerene myrtleae</i>	FE/none/none	Occurs in grassland habitats around the northern Bay Area. The larval host plant is hookspur violet ( <i>Viola adunca</i> ). Adults feed on nectar from flowers including hairy gumweed, coastal sand verbena ( <i>Abronia latifolia</i> ), mints (or monardella) ( <i>Monardella</i> spp.), bull thistle ( <i>Cirsium vulgare</i> ), and seaside fleabane ( <i>Erigeron glaucus</i> ).	<b>Not Likely.</b> There are no recorded occurrences of this species within 5 miles of the Study Area. The Study Area does not support the suitable host plants for this species.
San Bruno elfin butterfly	<i>Callophrys [Incisalia] mossii bayensis</i>	FE/none/none	Endemic to the coastal mountains near San Francisco Bay. Eggs are laid in small clusters or strings on the upper or lower surface of broadleaf stonecrop ( <i>Sedum spathulifolium</i> ). The adult food plants have not been fully determined but Montara Mountain colonies are suspected to use Montara manzanita ( <i>Arctostaphylos montaraensis</i> ) and California huckleberry ( <i>Vaccinium ovatum</i> ).	<b>Not Likely.</b> There are a number of recorded occurrences for this species within 5 miles of the Study Area. However, the San Bruno elfin is found in the fog-belt of steep north facing slopes that receive little direct sunlight. It lives near prolific growths of the larval food plant, stonecrop, which is a low growing succulent. The Study Area does not support suitable larval and adult host plants. <sup>82</sup>
<b>Mollusks</b>				
Black abalone	<i>Haliotes cracherodii</i>	FC/none/none	Endemic to Santa Barbara Channel Islands.	<b>Absent.</b> The Study Area is outside the range of this species.
White abalone	<i>Haliotes sorenseni</i>	FE/none/none	Rocky marine subtidal (to 200 feet deep) and extreme lower intertidal (below 15 feet deep) habitats. Current population extremely depleted.	<b>Absent.</b> The Study Area is too shallow and modified to provide suitable habitat.

<sup>81</sup> Monroe, M., Ranger, Muir Woods National Monument, telephone conversation with Todd Wong, July 16, 2008.

<sup>82</sup> Kobernus, P., Senior Biologist, TRA Environmental Sciences, Inc., email to PBS&J, August 30, 2007.

**TABLE 3 SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Status<sup>a</sup> Fed/ CA/ other</b>	<b>Habitat and Seasonal Distribution in California</b>	<b>Likelihood of Occurrence Within the Study Area</b>
Olympia oyster	<i>Ostreola conchaphila</i>	none/none/CEQA	Native Olympia oysters were historically abundant in San Francisco Bay, and small populations of native oysters have been documented within the Bay. Suitable substrate includes solid surfaces to which the larvae can easily attach.	<b>High.</b> Because the larval forms of oysters are free-floating in the Bay and a large population exists south of the Study Area at Oyster Point Marina, native oysters are likely present on suitable substrate throughout the Study Area.
<b>Fish</b>				
Pacific herring	<i>Clupea pallasii</i>	none/none/CEQA	Pacific herring generally enter the Bay from November through April of each year and spawn in intertidal and sub-tidal habitats.	<b>Known.</b> According to NMFS, known herring spawning areas within the Study Area include several piers and areas of shoreline both north and south of the proposed marina.
Chinook salmon –Spring-run ESU	<i>Oncorhynchus tshawytscha</i>	FT/ST/none	Central Valley streams with stable water supply, clean gravel, and good quality riparian habitat. Spawning occurs only in tributaries to the Sacramento River.	<b>Low.</b> The Study Area is outside the migratory corridor for this species. Adults migrate from the Golden Gate into the Sacramento River.
Chinook salmon –Winter-run ESU	<i>Oncorhynchus tshawytscha</i>	FE/ST/none Critical habitat	Central Valley streams with stable water supply, clean gravel, and good quality riparian habitat. Spawning occurs upstream of the Red Bluff Diversion Dam.	<b>Low.</b> The Study Area is generally outside the migratory corridor for this species. Adults migrate from the Golden Gate into the Sacramento River. Study Area is outside of designated critical habitat.
Chinook salmon –Fall/Late Fall-run ESUs	<i>Oncorhynchus tshawytscha</i>	SC/SSC/none	The most abundant Chinook in the Central Valley. Fall/Late fall-run fish spawn in streams with stable water supply, clean gravel, and good quality riparian habitat.	<b>Low.</b> The Study Area is generally outside the migratory corridor for this ESU. A population exists in the South Bay that would migrate past the Study Area on the way to and from the ocean. The origin and status of this population is unclear (refer to text).

**TABLE 3 SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Status<sup>a</sup> Fed/ CA/ other</b>	<b>Habitat and Seasonal Distribution in California</b>	<b>Likelihood of Occurrence Within the Study Area</b>
Coho salmon— Central California ESU	<i>Oncorhynchus kisutch</i>	FE/SE/none	Spawning in accessible coastal streams, generally in areas with complex instream habitat, heavy forest cover, and high quality water. Juveniles rear in these areas for two years before migrating to the ocean.	<b>Absent.</b> This species does not currently exist in the San Francisco Bay. <sup>83</sup>
Delta smelt	<i>Hypomesus transpacificus</i>	FT/SE/none	Endemic to the Sacramento-San Joaquin Delta. Adults spawn in freshwater in the upper Delta. The rest of the year, they reside primarily in the interface between salt and freshwater of the Sacramento-San Joaquin Delta at salinities less than 2 parts per million.	<b>Absent.</b> The Study Area is outside the known range of this species.
Longfin Smelt	<i>Spirinchus thaleichthys</i>	none/ST/none	Native to San Francisco Bay. Adults spawn in upper estuary in early winter. Larvae are dispersed by downstream flow and distribution is determined by outflow. Adults found outside the Bay in some years.	<b>Moderate.</b> Based on a 2009 status review, distribution of larval fish is determined by outflow from the Sacramento-San Joaquin River Estuary where adults spawn. <sup>84</sup> As they develop swimming ability, they could disperse into the Study Area. They are captured as by-catch in the Bay for bay shrimp ( <i>Crangon franciscorum</i> ).
Green sturgeon	<i>Acipenser medirostris</i>	FT/SSC/none Proposed Critical Habitat	Migrates through the San Francisco Bay to spawning grounds in the upper Sacramento River. Juveniles move into the estuary and likely rear in San Francisco Bay.	<b>High.</b> The species likely forages in the Bay including the area near the Study Area. The Study Area is within proposed critical habitat for this species.

<sup>83</sup> Caltrans, Biological Assessment for the Bayview Transportation Improvements Project, Jones and Stokes, July 2007.

<sup>84</sup> California Department of Fish and Game (CDFG), *A Status Review of the Longfin Smelt (Spirinchus thaleichthys) in California, January 2009.*

**TABLE 3 SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Status<sup>a</sup> Fed/ CA/ other</b>	<b>Habitat and Seasonal Distribution in California</b>	<b>Likelihood of Occurrence Within the Study Area</b>
Steelhead— Central California Coast DPS	<i>Oncorhynchus mykiss</i>	FT/none/none Critical habitat	Spawns in cool, clear, well-oxygenated streams. Juveniles remain in fresh water for one or more years before migrating to the ocean.	<b>High.</b> Juveniles and adult steelhead could be found in the open waters adjacent to the Study Area as they migrate to and from streams in the San Francisco Bay. Populations are known from relatively nearby creeks on the peninsula (i.e., San Francisquito Creek). The Study Area is within designated critical habitat for this DPS.
Steelhead— Central Valley DPS	<i>Oncorhynchus mykiss</i>	FT/none/none Critical habitat	Spawns in cool, clear, well-oxygenated streams. Juveniles remain in freshwater for one or more years before migrating to the ocean.	<b>Low.</b> Even though their primary migratory pathway is into the Sacramento River, juveniles and adult steelhead could potentially be found in the Bay near the Project. The Study Area is outside of designated critical habitat for this DPS.
Tidewater goby	<i>Eucyclogobius newberryi</i>	FE/SSC/none	Brackish water habitats along coast, fairly still but not stagnant water and high oxygen levels.	<b>Absent.</b> The shoreline of the Study Area is influenced by tidal activity. Brackish water habitat absent. Due to degradation lagoon/estuary habitat does not exist. <sup>85</sup>
<b>Amphibians</b>				
California red- legged frog	<i>Rana aurora draytonii</i>	FT/SSC/none	Permanent and semi-permanent freshwater habitats, such as creeks and cold-water ponds, with emergent and submergent vegetation.	<b>Not Likely.</b> Perennial freshwater habitat is absent from the Study Area. There are no CNDDDB records for this species in the vicinity of the Study Area.
<b>Reptiles</b>				
Green turtle	<i>Chelonia mydas</i>	FT/none/none	Shallow water with sufficient submergent vegetation. Breeds on islands often but also on mainland sandy beaches.	<b>Absent.</b> Suitable habitat for this species does not occur in the Study Area.

<sup>85</sup> Caltrans, *Biological Assessment for the Bayview Transportation Improvements Project*, Jones and Stokes, July 2007.

**TABLE 3 SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Status<sup>a</sup> Fed/ CA/ other</b>	<b>Habitat and Seasonal Distribution in California</b>	<b>Likelihood of Occurrence Within the Study Area</b>
Leatherback turtle	<i>Dermochelys coriacea</i>	FE/none/none	Marine, open ocean often near continental shelf. Nests on sloped sandy beaches often near deep water.	<b>Absent.</b> Suitable habitat for this species does not occur in the Study Area.
Loggerhead turtle	<i>Caretta caretta</i>	FT/none/none	Open ocean up to 500 miles off shore. Nests on sandy beaches seaward of well developed dunes.	<b>Absent.</b> Suitable habitat for this species does not occur in the Study Area.
Olive (=Pacific) ridley sea turtle	<i>Lepidochelys olivacea</i>	FT/none/none	Near shore less and 15 km. bottom dwelling sea turtle, nests on sandy beaches.	<b>Absent.</b> Suitable habitat for this species does not occur in the Study Area.
San Francisco garter snake	<i>Thamnophis sirtalis tetrataenia</i>	FE/ST/FP	Inhabits ponds, streams, rivers, and reservoirs, typically with riparian or emergent vegetation. Requires upland areas for aestivation and nesting, usually within 100 yards of permanent water source.	<b>Not Likely.</b> Suitable habitat for this species does not occur in the Study Area. There are no CNDDDB records for this species in the vicinity of the Study Area.
Western pond turtle	<i>Actinemys marmorata</i>	none/SSC/none	Typically inhabit ponds, slow-moving streams and rivers, irrigation ditches, and reservoirs with abundant emergent and/or riparian vegetation.	<b>Not Likely.</b> Suitable habitat for this species does not occur in the Study Area. There are no CNDDDB records for this species in the vicinity of the Study Area.
<b>Birds</b>				
Alameda song sparrow	<i>Melospiza melodia pusillula</i>	none/SSC/none	Tidal salt marsh habitats along the edge of the Bay and streams where tidal flow effects the vegetation.	<b>Low.</b> Salt marsh along Yosemite Slough and the HPS shoreline provides marginal habitat for this species due to its limited extent. Song sparrows were observed between January 2003 and April 2004 along Yosemite Slough, however it is unknown whether these were Alameda song sparrows.
American peregrine falcon (nesting)	<i>Falco peregrinus anatum</i>	Delisted/SE (proposed delisted)/FP	Frequents bodies of water in open areas with cliffs and canyons nearby for cover and nesting. Known to nest on artificial substrates (bridges, buildings, etc)	<b>Known.</b> A pair of American Peregrine falcons was observed nesting in the Gantry Crane on Parcel D of the HPS Phase II site. The pair has raised several young at this location. <sup>86</sup>

<sup>86</sup> Nelson, G., Facility Coordinator, Navy, field visit with PBS&J, July 8, 2008.

**TABLE 3 SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Status<sup>a</sup> Fed/ CA/ other</b>	<b>Habitat and Seasonal Distribution in California</b>	<b>Likelihood of Occurrence Within the Study Area</b>
Bank swallow (nesting)	<i>Riparia riparia</i>	none/ST/none	Nests in steep sandy banks where it excavates burrows.	<b>Not Likely.</b> Although individuals have been observed in the vicinity, the Study Area does not provide suitable nesting habitat.
Barrow's goldeneye	<i>Bucephala islandica</i>	none/SSC/none	Breeds in high central & northern Sierra Nevada Mountains, near wooded mountain lakes or large streams. Nest in tree cavities, such as a deserted nest-hole of a pileated woodpecker or flicker; also use nest boxes.	<b>Known.</b> Although observed near the site during migration and winter, the Study Area does not provide suitable nesting habitat and is well outside the species' breeding range.
Bryant's savannah sparrow	<i>Passerculus sandwichensis alaudinus</i>	none/SSC/none	Frequents low tidally influenced habitats, adjacent to ruderal areas, moist grasslands within and just above the fog belt, and grasslands.	<b>Low.</b> Salt marsh along Yosemite Slough and the HPS shoreline provides marginal habitat for this species due to its limited extent. Savannah sparrows were observed between January 2003 and April 2004 along Yosemite Slough, however it is unknown whether these were Bryant's savannah sparrows.
Burrowing owl	<i>Athene cunicularia</i>	none/SSC/none	Found in open, dry grasslands, deserts, and ruderal areas. Requires suitable small mammal burrows.	<b>Known.</b> This species has been observed in the past on Candlestick Point and at HPS, and suitable foraging habitat is present on the site. Although suitable conditions for nesting are present, the species is not known to have nested on the site. Currently, it is either absent, or it occurs sporadically as a non-breeding visitor.
California black rail	<i>Laterallus jamaicensis coturniculus</i>	none/ST/FP	Inhabits tidal salt marshes bordering larger bays, or other freshwater and brackish marshes, at low elevations.	<b>Not Likely.</b> Small mats of pickleweed adjacent to brackish wetlands are too limited in extent and too highly disturbed to provide suitable habitat. Tidal zone is very narrow.



**TABLE 3 SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Status<sup>a</sup> Fed/ CA/ other</b>	<b>Habitat and Seasonal Distribution in California</b>	<b>Likelihood of Occurrence Within the Study Area</b>
California brown pelican (rookery and communal roosts)	<i>Pelecanus occidentalis californicus</i>	FPD/SPD <sup>87</sup> /FP	Typically in littoral ocean zones, just outside the surf line; nests on offshore islands.	<b>Known.</b> This species was observed roosting on piers within the Study Area. However, suitable nesting habitat for this species does not occur in the Study Area. The Study Area is outside this species' current breeding range.
California clapper rail	<i>Rallus longirostris obsoletus</i>	FE/SE/FP	Restricted to salt marshes and tidal sloughs; usually associated with heavy growth of pickle-weed; feeds on mollusks removed from the mud in sloughs.	<b>Not Likely.</b> Suitable habitat does not occur in the Study Area. Salt marsh is highly disturbed and limited in the Study Area. Yosemite Slough is a tidal slough, but suitable habitat for the rail is absent because the existing salt marsh in Yosemite Slough is very narrow and unsuitable. The lack of tidal channels within those marshes, feeding into Yosemite Slough further reduce habitat quality.
California least tern (nesting colony)	<i>Sternula antillarum browni</i>	FE/ST/FP	Nests on sandy, upper ocean beaches, and occasionally uses mud flats; forages on adjacent surf line, estuaries, or the open ocean.	<b>Not Likely.</b> Suitable nesting habitat does not occur in the Study Area. Individuals may forage in the open water adjacent to the Study Area.
Common loon	<i>Gavia immer</i>	none/SSC/none	Nesting locations at certain large lakes & reservoirs in interior of state, primarily in northeastern plateau region. Bodies of water regularly frequented are extensive, fairly deep, and produce quantities of large fish.	<b>Known.</b> Although observed near the site during migration and winter, the Study Area does not provide suitable nesting habitat and is well outside the species' breeding range.

<sup>87</sup> California Department of Fish and Game (CDFG) news release: *Fish and Game Commission votes to remove California brown pelican from State Endangered Species List*. February 17, 2009.

**TABLE 3 SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Status<sup>a</sup> Fed/ CA/ other</b>	<b>Habitat and Seasonal Distribution in California</b>	<b>Likelihood of Occurrence Within the Study Area</b>
Harlequin duck (nesting)	<i>Histrionicus histrionicus</i>	none/SSC/none	Usually nests along shores of shallow, swift rivers with plentiful aquatic invertebrates. <sup>88</sup>	<b>Known.</b> This species was observed perching on the piers in the HPS Phase II site. However, the Study Area does not provide suitable nesting habitat for this species. The Study Area is outside this species' current breeding range.
Loggerhead shrike	<i>Lanius ludovicianus</i>	none/SSC/none	Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting. Typically nests in broken woodlands, savannah, pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, scrub, and wash.	<b>Known.</b> Non-native grasslands provide suitable foraging habitat. Loggerhead shrike has been observed by Alan Hopkins at the CPSRA. <sup>89</sup> Although suitable conditions for nesting are present, the species is not known to have nested on the site. Currently, it is either absent, or it occurs sporadically as a non-breeding visitor.
Marbled murrelet	<i>Brachyramphus marmoratus</i>	FT/SE/none	Mature, coastal coniferous forests for nesting; nearby coastal water for foraging; nests in conifer stands greater than 150 years old and may be found up to 35 miles inland; winters on subtidal and pelagic waters often well offshore.	<b>Absent.</b> Suitable habitat not present in the Study Area.
Northern harrier	<i>Circus cyaneus</i>	none/SSC/none	Coastal salt & fresh-water marsh. Nest & forage in grasslands, from salt grass in desert sink to mountain cienegas. Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas.	<b>Known.</b> Salt marsh and ruderal habitats provide suitable foraging habitat for this species, which has been observed by Alan Hopkins at the CPSRA. <sup>90</sup> However, suitable breeding habitat is absent due to the limited extent of marsh, human disturbance, and vulnerability of this ground-nesting species to predation.

<sup>88</sup> California Department of Fish and Game (CDFG). Website: <http://www.dfg.ca.gov/whdab/html/B096.html>. Accessed April 6, 2005.

<sup>89</sup> Golden Gate Audubon Society, *Final Report Yosemite Slough Watershed Wildlife Survey 2003–2004*, prepared by LSA, July 27 2004.

<sup>90</sup> Ibid.

**TABLE 3 SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Status<sup>a</sup> Fed/ CA/ other</b>	<b>Habitat and Seasonal Distribution in California</b>	<b>Likelihood of Occurrence Within the Study Area</b>
San Francisco yellowthroat	<i>Geothlypis trichas sinuosa</i>	none/SSC/none	Inhabits emergent wetland habitat, and is a resident and summer visitor in the San Francisco Bay area. Nests are usually placed on or within 8 cm (3 inches) of ground; and may be positioned over water in emergent aquatic vegetation, dense shrubs, or other dense growth.	<b>Moderate.</b> Salt marsh along Yosemite Slough and the HPS shoreline provides potential habitat for this species. The existing salt marsh provides marginal habitat due to its limited extent. Common yellowthroats were observed between January 2003 and April 2004 along Yosemite Slough, however it is unknown whether these were San Francisco yellowthroats. <sup>91</sup>
Short-eared owl	<i>Asio flammeus</i>	none/SSC/none	Found in swamplands, both fresh and salt; lowland meadows; irrigated alfalfa fields. Tule patches/tall grass needed for nesting/daytime seclusion. Nests on dry ground in depression concealed in vegetation.	<b>Known.</b> Salt marsh and ruderal habitats provide suitable foraging habitat for this species, which has been observed by Alan Hopkins at the CPSRA. <sup>92</sup> However, suitable breeding habitat is absent due to the limited extent of marsh, human disturbance, and vulnerability of this ground-nesting species to predation.
Short-tailed albatross	<i>Phoebastria albatrus</i>	FE/none/none	Pelagic; nests on offshore islands in north Pacific.	<b>Absent.</b> Suitable habitat does not occur in the Study Area.
Tricolored Blackbird	<i>Agelaius tricolor</i>	none/SSC/none	Highly colonial species, most numerous in central valley & vicinity. Largely endemic to California. Requires open water, protected nesting substrate, & foraging area with insect prey within a few km of the colony.	<b>Known.</b> Ruderal and developed areas on the site provide potential foraging habitat for this species, and the tricolored blackbird has been observed by Alan Hopkins at the CPSRA. <sup>93</sup> However, suitable nesting habitat is absent due to the lack of extensive freshwater marsh vegetation.

<sup>91</sup> Ibid.

<sup>92</sup> Ibid.

<sup>93</sup> Ibid.

**TABLE 3 SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Status<sup>a</sup> Fed/ CA/ other</b>	<b>Habitat and Seasonal Distribution in California</b>	<b>Likelihood of Occurrence Within the Study Area</b>
Vaux's swift	<i>Chaetura vauxi</i>	none/SSC/none	Redwood, Douglas fir, & other coniferous forests. Nests in large hollow trees & snags. Often nests in flocks. Forages over most terrains & habitats.	<b>Known.</b> Suitable nesting habitat does not occur in the Study Area. However, individuals may forage aerially over the Study Area.
Western snowy plover (nesting)	<i>Charadrius alexandrinus nivosus</i>	FT/SSC/none	Coastal beaches above the normal high tide line in flat, open areas with sandy or saline substrates; vegetation and driftwood are usually sparse or absent.	<b>Not Likely.</b> Extensive, open sandy substrate to provide nesting habitat within the Study Area is absent.
White-tailed kite	<i>Elanus leucurus</i>	none/none/FP	Preferred habitat is marshes and waste fields in the Central Valley and coastal plains of California.	<b>Known.</b> Non-native grasslands provide suitable foraging habitat. Large trees in the Study Area provide suitable nesting habitat for this species, although the species is not known to nest there.

**Mammals**

Blue whale	<i>Balaenoptera musculus</i>	FE/none/none	Coastal and pelagic environments frequently found on the continental shelf off the California coast.	<b>Absent.</b> Suitable habitat does not occur in the Study Area.
Finback whale	<i>Balaenoptera physalus</i>	FE/none/none	Pelagic; usually found 25 miles or more off shore.	<b>Absent.</b> Suitable habitat does not occur in the Study Area.
Guadalupe fur seal	<i>Arctocephalus townsendii</i>	FT/ST/FP	Rocky insular shorelines and sheltered coves.	<b>Absent.</b> Suitable habitat does not occur in the Study Area.
Right whale	<i>Eubalaena glacialis</i>	FE/none/none	Pelagic, occurs mainly over continental shelf in the Pacific Ocean.	<b>Absent.</b> Suitable habitat does not occur in the Study Area.
Salt marsh harvest mouse	<i>Reithrodontomys raviventris</i>	FE/SE/FP	Salt marshes with a dense plant cover or pickleweed or fat hen; adjacent to an upland site.	<b>Not Likely.</b> Small mats of pickleweed adjacent to brackish wetlands and salt marsh habitat in the Study Area are highly disturbed. This species has not been recorded on the Peninsula north of the Foster City/ San Mateo Bridge area in decades.
Sei whale	<i>Balaenoptera borealis</i>	FE/none/none	Pelagic; generally in deep water along continental shelf.	<b>Absent.</b> Suitable habitat does not occur in the Study Area.

**TABLE 3 SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Status<sup>a</sup> Fed/ CA/ other</b>	<b>Habitat and Seasonal Distribution in California</b>	<b>Likelihood of Occurrence Within the Study Area</b>
Sperm whale	<i>Physeter catodon</i>	FE/none/none	Pelagic; prefers deep water but is sometimes found around islands or in shallow shelf waters.	<b>Absent.</b> Suitable habitat does not occur in the Study Area.
Steller sea-lion	<i>Eumetopias jubatus</i>	FT/none/none Critical habitat	Near shore, pelagic when in water. Otherwise on shore, talus or bare rocks. Critical habitat has been defined for stellar sea lion as a 20 nautical mile buffer around all major haulouts and rookeries, as well as associated terrestrial, air and aquatic zones, and three large offshore foraging areas. <sup>94</sup>	<b>Not Likely.</b> Suitable habitat does not occur in the Study Area. Designated critical habitat does not occur in the Study Area. The closest designated critical habitat for this species is the Farallon Islands, approximately 33 air miles east of the Study Area.
Western red bat	<i>Lasiurus blossevillii</i>	none/SSC/none	Roosts primarily in trees, less often in shrubs, adjacent to streams, fields, or urban areas. Preferred roost sites are protected from above, open below, and located above dark ground cover.	<b>Moderate.</b> Trees (such as eucalyptus) provide potential roost sites for solitary migrant individuals.

*SOURCE: CDFG Natural Diversity Database (CNDDB), July 2008 for the US Geological Survey's (USGS) 7.5-minute San Francisco South and Hunters Point quadrangles. California Native Plant Society (CNPS), July 2008 for the USGS 7.5-minute San Francisco South and Hunters Point quadrangles. US Fish and Wildlife Service (USFWS), July 2008 for the USGS 7.5-minute San Francisco South and Hunters Point quadrangles*

a. *Status:*

**Federal**

*FE* Federally listed as Endangered

*FT* Federally listed as Threatened

*FC* Federal candidate species

*FPD* Federally Proposed Delisted

*SC* National Marine Fisheries Service designated Species of Concern. Species of Concern status does not carry any procedural or substantive protections under the FESA.

**State**

*SE* State listed as Endangered

*ST* State listed as Threatened

*SPD* State Proposed for Delisting

*SR* State Rare

*FP* California Department of Fish and Game designated "Fully Protected"

*SSC* California Department of Fish and Game designated "Species of Special Concern"

<sup>94</sup> National Marine Fisheries Service (NMFS), *Designated Critical Habitat; Stellar Sea Lion*, 58 Federal Register 45269, 1993.

TABLE 3 SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA

Common Name	Scientific Name	Status <sup>a</sup> Fed/ CA/ other	Habitat and Seasonal Distribution in California	Likelihood of Occurrence Within the Study Area
<i>Other</i>				
ESHA	Environmentally Sensitive Habitat Area by the California Coastal Commission			
SLC	California Native Plant Society (CNPS) Ranking Species of Local Concern			
1B	California Native Plant Society (CNPS) Ranking. Defined as plants that are rare, threatened, or endangered in California and elsewhere.			
2	California Native Plant Society (CNPS) Ranking. Defined as plants that are rare, threatened, or endangered in California, but more common elsewhere.			
3	California Native Plant Society (CNPS) Ranking. Plants About Which More Information is Needed—A Review List.			
CEQA	Species not currently protected by statute or regulation, but considered rare, threatened or endangered under Section 15380 of the CEQA Guidelines.			

Recent modifications to the CNPS Ranking System include the addition of a new Threat Code extension to listed species (i.e., List 1B.1, List 2.2 etc.). A Threat Code extension of .1 signifies that a species is seriously endangered in California; .2 is fairly endangered in California; and .3 is not very endangered in California.

b. Likelihood of occurrence evaluations

A rating of “**Known**” indicates that the species/natural community type has been observed on the site.

A rating of “**High**” indicates that the species has not been observed, but sufficient information is available to indicate suitable habitat and conditions are present in the Study Area and the species is expected to occur in the Study Area.

A rating of “**Moderate**” indicates that it is not known if the species is present, but suitable habitat exists in the Study Area.

A rating of “**Low**” indicates that species was not found during biological surveys conducted to date on the Project site and may not be expected given the species’ known regional distribution or the quality of habitats located in the Study Area.

A rating of “**Not Likely**” indicates that the taxon would not be expected to occur in the Study Area because the Study Area does not include the known range or does not support suitable habitat.

A rating of “**Absent**” indicates that no recorded occurrences or suitable habitat(s) occur within the Study Area to support this species. These species are not discussed further in this document.

report on November 2, 2009. As indicated by the updated lists, which are also included in the aforementioned appendices (with 2009 database results following the 2008 results), no new special-status species known or expected to occur on the Project site were identified by the updated database searches.

### **Special-status Plants**

The USFWS, CNDDDB, and CNPS reported 41 special-status plant species as potentially occurring within the US Geological Survey's 7.5-minute San Francisco South and Hunters Point quadrangles.

The Study Area is largely developed and most vegetation in the area was introduced as landscape plants and turf grass. Much of the Study Area, including virtually all of CPSRA, is located on Bay fill. Ruderal (disturbed) habitats and ornamental landscaping predominate in those portions that are not landscaped. Jones & Stokes conducted botanical habitat assessments of the Candlestick Point and HPS on October 29, 2004; March 1, 2006; October 6, 2006; and May 17, 2007.<sup>95</sup> PBS&J botanists conducted rare plant surveys for the Candlestick Point area in May 2008. The general absence of suitable habitat over a majority of the Study Area in conjunction with the absence of observed special-status plants, either as observed during focused surveys or cited in CNDDDB species accounts, supports the conclusion that no sensitive plant species occur within the Study Area.

### **Special-status and Sensitive Wildlife**

#### Invertebrates

##### Monarch Butterfly (*Danaus plexippus*)

Monarch butterflies gather in winter roosting sites along the California coast in relatively few locations, and thus roost sites that are used traditionally by large numbers of individuals are considered sensitive biological resources. Wintering sites in California are associated with wind-protected groves of large trees (primarily eucalyptus or pine) with nectar and water sources nearby, generally near the coast.

A total of seven monarch butterflies were observed during the Yosemite Slough Watershed Wildlife Survey.<sup>96</sup> Ms. Mia Monroe, a Ranger with the Muir Woods National Monument (US National Parks Service) and co-coordinator of the Monarch Campaign for the past 15 years, was contacted in July 2008 and July 2009 to inquire about any known monarch wintering roosts that occur in the Project

---

<sup>95</sup> Caltrans, *Natural Environmental Study Report for the Bayview Transportation Improvements Project*, Jones and Stokes, July 2007.

<sup>96</sup> Golden Gate Audubon Society, *Final Report Yosemite Slough Watershed Wildlife Survey 2003–2004*, prepared by LSA, July 27, 2004.

site. Ms. Monroe consulted with local monarch butterfly specialists and the Monarch Campaign Thanksgiving counts. The Monarch Campaign conducts surveys for peak monarch butterfly wintering population around the Thanksgiving holiday. Ms. Monroe reported there are no records of monarch butterfly autumnal (i.e., temporary bivouac site) nor over-wintering use of the Project site in the CNDDDB or reported in other records, including anecdotal observations. The nearest observations of monarch butterfly roosts are at Fort Mason, the Presidio of San Francisco, and Stern Grove.<sup>97</sup>

Using the likelihood of occurrence definitions provided in Table 3, although individual monarch butterflies were observed, the sensitive winter roosting habitat is “not likely” to occur within the Study Area.

### Birds

While the CNDDDB reports no occurrences of any special-status bird species in the Study Area, special-status bird species have been recorded in the Study Area during the Yosemite Slough Watershed Wildlife Survey and by Alan Hopkins, as documented in that survey’s report. Special-status bird species with potential to occur on the site are described below and are also summarized in Table 3. Although the harlequin duck (*Histrionicus histrionicus*), Barrow’s goldeneye (*Bucephala islandica*), common loon (*Gavia immer*), yellow warbler (*Dendroica petechia*) and Vaux’s swift (*Chaetua vauxi*) have all been observed within the site, these species are considered California Species of Special Concern only when breeding.<sup>98</sup> As they only occur within the site as non-breeders, none of them are discussed below, as they would be present only when they would not be considered Species of Concern.

### Alameda Song Sparrow (*Melospiza melodia pusillula*)

The Alameda song sparrow is a CDFG Species of Special Concern. The Alameda song sparrow occurs only in the marshlands of the southern San Francisco Bay Region.<sup>99</sup> The primary range of the Alameda song sparrow extends from Coyote Creek, at the southern extremity of the Bay, northward along the west shore of South San Francisco Bay to Belmont Slough (south of the Study Area) and along the east shore to San Lorenzo. Song sparrows nest in dense riparian thickets,

---

<sup>97</sup> Monroe, M., Ranger, Muir Woods National Monument, telephone conversation with Todd Wong, PBS&J, July 16, 2008 and July 20, 2009.

<sup>98</sup> California Department of Fish and Game (CDFG). Electronic file: <http://www.dfg.ca.gov/wildlife/nongame/ssc/birds.html>, accessed on July 30, 2009.

<sup>99</sup> Walton, B., 1974. *Salt Marsh Song Sparrow Study*. California Department of Fish and Game (CDFG), 1974. Available at: <http://nrm.dfg.ca.gov/FileHandler.ashx?DocumentVersionID=4696>. Accessed July 21, 2008.



emergent wetlands (including salt marshes), and dense thickets of other vegetation.<sup>100</sup> The Alameda song sparrow uses tidal salt marsh habitats along the edge of the Bay and streams where tidal flow affects the vegetation. Candlestick Point and HPS Phase II provide potential habitat for this species in salt marshes along the shoreline, but due to the very narrow nature of tidal salt marsh in the Study Area, such habitat is marginal at best for this species. Song sparrows were observed between January 2003 and April 2004 along Yosemite Slough, but the observed sparrows may or may not be Alameda song sparrows.<sup>101</sup> Observations in April may be of breeding birds although nesting has not been documented. Given the marginal quality of habitat on the site, the site's isolation from more extensive marshes that may serve as source populations for Alameda song sparrows, and the sedentary nature of Alameda song sparrows, it is possible that these are the more widespread race *gouldii* or that they represent migrants or wintering individuals from other races that occur in the region during the non-breeding season. The CNDDDB does not report occurrences of Alameda song sparrow in the Study Area.

Using the likelihood of occurrence definitions provided in Table 3, this species has a "low" likelihood to occur within the Study Area.

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

The American peregrine falcon is a state-listed endangered species and a CDFG fully protected species pursuant to Section 3511 of the *California Fish and Game Code*; however, the California Fish and Game Commission voted to remove the species from the state endangered species list on August 6, 2009. The bird has experienced a remarkable resurgence in California and other parts of North America. This striking recovery is due in large measure to the ban on the use of DDT in many places. The peregrine has recovered in North America to the point that the USFWS removed the species from the federal Endangered Species List on August 25, 1999.<sup>102</sup> A pair of American peregrine falcons has nested in the Gantry Crane on Parcel D of the Shipyard, and has raised several broods at this location over the years.<sup>103</sup> These birds forage widely over the entire Study Area, likely feeding primarily on rock pigeons (*Columba livia*) and waterbirds.

Using the likelihood of occurrence definitions provided in Table 3, this species is "known" to occur within the Study Area.

---

<sup>100</sup> Madrone Audubon Society, *Sonoma County Breeding Bird Atlas*, 1995.

<sup>101</sup> Golden Gate Audubon Society, *Final Report Yosemite Slough Watershed Wildlife Survey 2003–2004*, prepared by LSA, July 27, 2004.

<sup>102</sup> United States Fish and Wildlife Service (USFWS), *Endangered and Threatened Wildlife and Plants; Final Rule To Remove the American Peregrine Falcon From the Federal List of Endangered and Threatened Wildlife, and To Remove the Similarity of Appearance Provision for Free-Flying Peregrines in the Conterminous United States*; Final Rule, 64 Federal Register 46542, August 1999.

<sup>103</sup> Nelson, G., Facility Coordinator, Department of the Navy, field visit with PBS&J, July 8, 2008.

### Bryant's Savannah Sparrow (*Passerculus sandwichensis alaudinus*)

Bryant's savannah sparrow is a CDFG Species of Special Concern. Bryant's savannah sparrow is a California endemic restricted to a narrow coastal strip from Humboldt Bay south to the Morro Bay; its center of abundance appears to be the San Francisco Bay area.<sup>104</sup> This sparrow occupies low tidally influenced habitats, adjacent ruderal areas, moist grassland within and just above the fog belt, and infrequently, drier grasslands. Adjacent to salt marshes this sparrow also occupies weedy spoil areas, canal banks, and bottomland pastures. In South San Francisco Bay, it nests mainly on levee tops grown to grasses and in areas of high pickleweed on levee banks. Bare ground, whether provided by tidal mud flats or upland interstitial areas between clumps of vegetation, appears to be an important component of occupied habitat. The Study Area provides potential habitat for this species in salt marshes along the shoreline, but because of the very narrow nature of tidal salt marsh in the Study Area only marginal quality habitat is available. Savannah sparrows were observed between January 2003 and April 2004 along Yosemite Slough, although the observed sparrows may or may not be Bryant's savannah sparrows.<sup>105</sup> Observations in April 2004 may be of breeding birds although nesting has not been documented. Given the marginal quality of habitat on the site and the site's isolation from more extensive marshes that may serve as source populations for savannah sparrows, it is possible that these represent migrants or wintering individuals from other races that occur in the region during the non-breeding season. The CNDDDB does not report occurrences of the Bryant's savannah sparrow bird in the Study Area.

Using the likelihood of occurrence definitions provided in Table 3, this species has a "low" likelihood to occur within the Study Area.

### Burrowing Owl (*Athene cunicularia*)

Burrowing owl, a CDFG Species of Special Concern, is an owl that dwells in generally flat, open, dry grasslands, pastures, deserts, and shrub lands, and in grass, forbs and open-shrub stages of pinyon-juniper and ponderosa pine habitats. Burrowing owls use communal ground squirrel and other small mammal burrows for nesting and cover, as well as artificial structures such as roadside embankments, levees, and berms. They can exhibit high site fidelity, often reusing burrows year after year. Occupancy of suitable burrowing owl habitat by breeding birds can be verified at a site by observation of a pair of burrowing owls during their breeding season (March to August) or, alternatively, by the presence of molted feathers, cast pellets, prey remains (rodents, small reptiles,

---

<sup>104</sup> California Department of Fish and Game (CDFG). *California Birds Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California*. Studies of Western Birds 1. 2008.

<sup>105</sup> Golden Gate Audubon Society, *Final Report Yosemite Slough Watershed Wildlife Survey 2003–2004*, prepared by LSA, July 27, 2004.

and large insects), eggshell fragments, or whitewash (guano), at or near a burrow. Burrowing owls are fairly tolerant of human activity near their nest burrows as long as suitable foraging habitat exists nearby. Owl populations have declined sharply in some portions of California during the past two decades (i.e., the San Francisco Bay Area, Sacramento County, San Joaquin County, etc.), but they have increased greatly in some agricultural counties (particularly Imperial). Field work for the *San Francisco Breeding Bird Atlas* in 1991-1993 did not detect breeding evidence by this species anywhere in the City.<sup>106</sup> The CNDDDB does not report occurrences of this species in the area, but burrowing owls have been recorded previously on the site. Historically, they occurred in a rubble pile in the northeastern corner of Candlestick Point, and there have been sporadic sightings of the species in various locations on HPS as well. Breeding is not known to have occurred in the Study Area, and these individuals may all have been migrants and wintering individuals.<sup>107</sup> The frequency of occurrence has apparently declined in recent years, and although suitable breeding, roosting, and foraging habitat is present within the Study Area, the species does not currently breed here and occurs sporadically and in low numbers, at best.

Using the likelihood of occurrence definitions provided in Table 3, this species is “known” to occur within the Study Area.

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

The California brown pelican is on the verge of recovery. It has been proposed for delisting by the Fish and Game Commission<sup>108</sup> and also recently proposed for delisting under the FESA.<sup>109</sup> It is fully protected by CDFG under Section 3511 of the *California Fish and Game Code*. The California brown pelican is found in estuarine, marine sub-tidal, and marine pelagic (deep) waters along the California coast. Pelicans nest from the Channel Islands of Southern California southward along the Baja California coast and in the Gulf of California to coastal southern Mexico.<sup>110</sup> The pelican builds nests of sticks on the ground, typically on islands or offshore rocks. Post-breeding adults and immature birds are found along the Pacific Coast from Oregon south into Baja, Mexico. This species has been observed perching on piers within HPS Phase II, particularly the three piers in the southeastern corner of HPS Phase II, and it forages within San Francisco Bay; however, the species has never nested as far north as the Bay and nesting habitat for this species is not present in the

---

<sup>106</sup> San Francisco Field Ornithologists. 2003. *San Francisco Breeding Bird Atlas*.

<sup>107</sup> Personal Communication between Alan Hopkins to Steve Rottenborn, July 10, 2009.

<sup>108</sup> California Department of Fish and Game (CDFG) news release: *Fish and Game Commission votes to remove California brown pelican from State Endangered Species List*. February 17, 2009.

<sup>109</sup> United States Fish and Wildlife Service (USFWS), *Endangered and Threatened Wildlife and Plants; Species Account: California Brown Pelican (*Pelecanus occidentalis californicus*)*; Classification: Proposed for delisting; Federal Register 73:9407; February 20, 2008.

<sup>110</sup> California Department of Fish and Game (CDFG) B043, *Brown Pelican*. Website: <http://www.dfg.ca.gov/whdab/html/B043.html>. Accessed April 19, 2005.

Study Area. In addition, CNDDDB does not report occurrences of California brown pelican communal roosts in the Study Area.

Using the likelihood of occurrence definitions provided in Table 3, this species is “known” to occur within the Study Area.

#### Loggerhead Shrike (*Lanius ludovicianus*)

The loggerhead shrike, a CDFG Species of Special Concern, is a common resident and winter visitor in lowlands and foothills throughout California and prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches. Highest density occurs in open-canopied valley foothill hardwood, valley foothill hardwood-conifer, valley foothill riparian, pinyon-juniper, juniper, desert riparian, and Joshua tree habitats. It occurs only rarely in heavily urbanized areas, but is often found in open cropland. The *San Francisco Breeding Bird Atlas*, for which field work was conducted in 1991-1993, reported a record of possible breeding in the atlas block that included HPS and referred to a historical breeding record in the atlas block that includes Candlestick Point.<sup>111</sup> Low numbers of loggerhead shrikes have been observed on Candlestick Point and HPS by Alan Hopkins, and non-native grasslands provide suitable foraging habitat and on-site trees provide suitable nesting habitat for this species. However, there is no evidence of confirmed breeding in recent years, and the species currently occurs as an uncommon migrant and winter resident.<sup>112</sup>

Using the likelihood of occurrence definitions provided in Table 3, this species is “known” to occur within the Study Area. However, this species is considered a California Species of Special Concern only when breeding. Because it is currently known to occur in the Study Area only as a non-breeder, it would not be considered a Species of Special Concern in the Study Area.

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

The northern harrier, a CDFG Species of Special Concern, prefers coastal prairies, marshes, grasslands, swamps and other open areas. Although this species primarily eats small rodents (mice and voles), amphibians, small reptiles, small rabbits, and other birds, northern harriers will eat some invertebrates as well. Northern harriers usually return to the same area to nest in consecutive years. They nest on the ground in well-concealed locations, often near low shrubs or in tall clumps of vegetation. Nesting locations are usually in abandoned fields, wet meadows, and coastal and inland marshes. Wetlands and non-native grasslands provide suitable foraging habitat for small numbers of this species on the site, and northern harriers have been observed by Alan Hopkins in the Study

---

<sup>111</sup> San Francisco Field Ornithologists. 2003. *San Francisco Breeding Bird Atlas*.

<sup>112</sup> Personal Communication between from Alan Hopkins to Steve Rottenborn, July 10, 2009.

Area.<sup>113</sup> However, due to the extent of disturbance by humans and pets, the lack of extensive wetlands suitable for nesting, and the vulnerability of ground-nesting birds to predation in upland portions of the Study Area, harriers are not expected to nest there. Field work for the *San Francisco Breeding Bird Atlas* in 1991-1993 did not detect breeding evidence by this species anywhere in the City.<sup>114</sup>

Using the likelihood of occurrence definitions provided in Table 3, this species is “known” to occur within the Study Area. However, this species is considered a California Species of Special Concern only when breeding. Because it is currently known to occur in the Study Area only as a non-breeder, it would not be considered a Species of Special Concern in the Study Area.

#### San Francisco Common Yellowthroat (*Geothlypis trichas sinuosa*)

The San Francisco common yellowthroat is a California Species of Concern and is one of four subspecies of common yellowthroat that breed in California. The breeding range of the San Francisco common yellowthroat as described by Foster is bounded by Tomales Bay on the north, Carquinez Strait on the east, and Santa Cruz County on the south, which would include the Study Area.<sup>115</sup> Yellowthroats are found in freshwater marshes, coastal swales, swampy riparian thickets, brackish marshes, salt marshes, and the edges of disturbed weed fields and grasslands that border soggy habitats.<sup>116</sup> In the San Francisco Bay region as a whole, about 60 percent of yellowthroats breed in brackish marsh, 20 percent in riparian woodland/swamp, 10 percent in freshwater marsh, 5 percent in salt marsh, and 5 percent in upland vegetation.<sup>117</sup> The brackish marsh in the Study Area provides potential habitat for this species, although the limited extent of such habitat limits the possibility that the species currently breeds here. Common yellowthroats were observed between January 2003 and April 2004 during surveys along Yosemite Slough, though it is unknown whether these were San Francisco common yellowthroats or migrants/wintering birds of other races.<sup>118</sup> Field work for the *San Francisco Breeding Bird Atlas* in 1991-1993 did not detect breeding evidence by this species anywhere in the eastern part of the City, including the Project vicinity.<sup>119</sup>

---

<sup>113</sup> Golden Gate Audubon Society, *Final Report Yosemite Slough Watershed Wildlife Survey 2003–2004*, prepared by LSA, July 27, 2004.

<sup>114</sup> San Francisco Field Ornithologists. 2003. *San Francisco Breeding Bird Atlas*.

<sup>115</sup> Foster, M. L., *Status of the salt marsh common yellowthroat (*Geothlypis trichas sinuosa*) in the San Francisco Bay Area, California 1975–1976*, California Department of Fish and Game (CDFG), 1977.

<sup>116</sup> Shuford, W.D., *The Marin County breeding bird atlas*. Bushtit Books. Bolinas, California. pp. 479, 1993.

<sup>117</sup> Hobson, K., P. Perrine, E.B. Roberts, M.L. Foster and P. Woodin, *A breeding season survey of salt marsh common yellowthroats (*Geothlypis trichas sinuosa*) in the San Francisco Bay Region*. Report of the San Francisco Bay Bird Observatory to the US Fish and Wildlife Service, 1986.

<sup>118</sup> Golden Gate Audubon Society, *Final Report Yosemite Slough Watershed Wildlife Survey 2003–2004*, prepared by LSA, July 27, 2004.

<sup>119</sup> San Francisco Field Ornithologists. 2003. *San Francisco Breeding Bird Atlas*.

Using the likelihood of occurrence definitions provided in Table 3, this species has a “moderate” likelihood to occur within the Study Area.

#### Short-eared owl (*Asio flammeus*)

The short-eared owl, a California Species of Concern, is usually found in open areas with few trees such as annual and perennial grasslands, prairies, meadows, dunes, irrigated lands, and saline and fresh emergent marshes. Its prey consists of small mammals, marsh birds, insects, reptiles, and amphibians.<sup>120</sup> The short-eared owl will usually nest on dry ground in a depression that is concealed in vegetation; occasionally the nest will be placed in a burrow. It requires dense vegetation for roosting and resting cover. This includes tall grasses, brush, ditches, and wetlands. Open, treeless areas containing elevated sites for perching are also needed. This species was observed by Alan Hopkins on the site<sup>121</sup> and the Study Area provides suitable foraging habitat for this species. As a result, short-eared owls are expected to forage occasionally in low numbers on the site. However, due to the extent of disturbance by humans and pets, the lack of extensive wetlands suitable for nesting, and the vulnerability of ground-nesting birds to predation in upland portions of the Study Area, short-eared owls are not expected to nest there. Field work for the *San Francisco Breeding Bird Atlas* in 1991-1993 did not detect breeding evidence by this species anywhere in the City.<sup>122</sup>

Using the likelihood of occurrence definitions provided in Table 3, this is “known” to occur within the Study Area. However, this species is considered a California Species of Special Concern only when breeding. Because it is currently known to occur in the Study Area only as a non-breeder, it would not be considered a Species of Special Concern in the Study Area.

#### Tricolored Blackbird (*Agelaius tricolor*)

The tricolored blackbird, a California Species of Concern, is a highly social, marsh-nesting bird that lives in flocks numbering from less than one hundred to many thousands. Tricolored blackbirds are permanent residents of California, but birds make extensive migrations and movements, both in the breeding season and in winter, within their restricted range.<sup>123</sup> Tricolored blackbirds live in large colonies, and they prefer open accessible water, a protected nesting substrate such as flooded, thorny or spiny vegetation, and a suitable foraging space providing insect prey within a few miles of nesting colonies. Nesting habitat includes cattails and bulrushes or ungrazed grasslands

---

<sup>120</sup> <http://www.delta.dfg.ca.gov/gallery/shearowl.asp>.

<sup>121</sup> Golden Gate Audubon Society, *Final Report Yosemite Slough Watershed Wildlife Survey 2003–2004*, prepared by LSA, July 27, 2004.

<sup>122</sup> San Francisco Field Ornithologists. 2003. *San Francisco Breeding Bird Atlas*.

<sup>123</sup> Shuford, W. D., and Gardali, T., editors. 2008. *California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in*

containing tall grasses. Other plant species that are used for nesting include young willow thickets and wild rose. This species has been observed by Alan Hopkins on the Study Area<sup>124</sup> and the site provides suitable foraging habitat for the species. However, no suitable breeding habitat is present, no colonies are known to occur in the area, and the *San Francisco Breeding Bird Atlas* did not confirm breeding by this species anywhere in the City.<sup>125</sup>

Using the likelihood of occurrence definitions provided in Table 3, this species is “known” to occur within the Study Area. However, this species is considered a California Species of Special Concern only when breeding. Because it is currently known to occur in the Study Area only as a non-breeder, it would not be considered a Species of Special Concern in the Study Area.

#### White-tailed Kite (*Elanus leucurus*)

The white-tailed kite is listed as a fully protected species under Section 3511 of the *California Fish and Game Code*. White-tailed kites feed on rodents, small reptiles, and large insects in fresh emergent wetlands, annual grasslands, pastures, and ruderal vegetation. They breed between February and October. Kites often roost, and occasionally nest, communally especially during the non-breeding season. Therefore, disturbance of a relatively small roost or nesting area could affect a large number of birds. The white-tailed kite can commonly be observed foraging in extensive open grasslands throughout most of the San Francisco Bay region. While white-tailed kites were not observed during surveys conducted by PBS&J biologists on the Project site, small numbers of individuals were observed during the Yosemite Slough Wildlife surveys.<sup>126</sup> The species is not known to nest on the site<sup>127</sup>, but the grasslands and ruderal habitats on the Project site provide suitable foraging habitat for small numbers of non-breeding individuals that occasionally occur there.

Using the likelihood of occurrence definitions provided in Table 3, this species is “known” to occur within the Study Area.

---

*California*. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.

<sup>124</sup> Golden Gate Audubon Society, *Final Report Yosemite Slough Watershed Wildlife Survey 2003–2004*, prepared by LSA, July 27, 2004.

<sup>125</sup> San Francisco Field Ornithologists. 2003. *San Francisco Breeding Bird Atlas*.

<sup>126</sup> Golden Gate Audubon Society, *Final Report Yosemite Slough Watershed Wildlife Survey 2003–2004*, prepared by LSA, July 27 2004.

<sup>127</sup> Personal Communication between from Alan Hopkins to Steve Rottenborn, July 20, 2009.

## Terrestrial Mammals

### Western Red Bat (*Lasiurus blossevillii*)

The only special-status bat species likely to occur within the Study Area is the western red bat (*Lasiurus blossevillii*). The western red bat is not known to breed in San Francisco, but the species is migratory, and red bats occur here during migration and possibly during winter. Western red bats are not colonial, and, thus, the species is expected to occur in the Study Area only in small numbers. They are known to roost in the foliage of a number of tree species, including eucalyptus. Potential habitat for this species is present within the eucalyptus and other mature trees within the Project site. However, most bat species are sensitive to human-generated disturbance. Identification of bats requires special surveys that were not conducted for this analysis. Therefore, the conservative assumption is that this species of sensitive bat is present within the Study Area.

Using the likelihood of occurrence definitions provided in Table 3, this species has a “moderate” likelihood to occur within the Study Area.

## Mollusks

### Olympia Oyster (*Ostreola conchaphila*)

Native Olympia oysters were historically abundant in San Francisco Bay. Oyster beds are a cornerstone in the benthic habitat, improving water quality, and providing habitat complexity that favors fish and vegetation. They also provide an important link between pelagic and benthic food webs. Their function in the estuarine food web—oyster beds generally increase fish abundance and thus make up an essential part of the Essential Fish Habitat (EFH)<sup>128</sup>—they are considered an important resource for the purposes of this technical report as only a few relict populations remain in the Bay.<sup>129</sup>

Recently, small populations of native oysters have been documented within the Bay.<sup>130,131</sup> Detailed surveys for native oysters were not conducted as part of this Project. Suitable habitat is distributed

---

<sup>128</sup> National Marine Fisheries Service (NMFS). 2006. Fisheries Management Plan (FMP) Species Distributions In San Francisco, San Pablo and Suisun Bays. Website: <http://swr.nmfs.noaa.gov/hcd/loclist.htm#South%20SF%20Bay>. Accessed October 29, 2008.

<sup>128</sup> National Marine Fisheries Service (NMFS). Essential Fish Habitat (EFH) for Pacific Coast Groundfish. Map dated July 26, 2008.

<sup>129</sup> National Marine Fisheries Service (NMFS), No Date. *Native Oyster Habitat Restoration, Program Briefing Document*. Fisheries Southwest Region.

<sup>130</sup> Harris, H.E., 2004. *Distribution and limiting factors of *Ostrea conchaphila* in San Francisco Bay*, MS Thesis, San Francisco State University.

<sup>131</sup> Latta, M., 2006. Personal communication with Marilyn Latta, Habitat Restoration Director, Save the Bay, with D. Ebert and others at a meeting on October 18, 2006.



throughout the shoreline of Study Area. Suitable substrate is solid surfaces to which the larvae can easily attach.<sup>132</sup> Because the larval forms of oysters are free-floating in the Bay and a large population exists south of the Study Area at Oyster Point Marina,<sup>133</sup> native oysters are likely present on suitable substrate throughout the Study Area.

## Fish

### Green Sturgeon (*Acipenser medirostris*)

The southern distinct population segment of green sturgeon (including those that reside in the Sacramento River) was listed as threatened under the FESA by NMFS on April 7, 2006.<sup>134</sup> Green sturgeon is a long-lived, anadromous, native fish that occurs in low numbers in the San Francisco Estuary and Sacramento River. Adults spawn in freshwater rivers from British Columbia south to the Sacramento River. In the Sacramento River, spawning occurs near Red Bluff and possibly in the Feather River. Larvae develop within these freshwater systems, migrate downstream, and remain in the estuaries for between 1 and 4 years before migrating to the ocean. Mature adults move into estuaries in the spring and spawning adults move up the rivers of their origins in late spring/early summer. Post spawning adults return to the estuary before migrating back to the ocean in late fall. Sub-adult fish also are thought to enter estuaries during summer and fall months. The Study Area is along the San Francisco Bay, which is a saltwater habitat; the Study Area does not support the necessary freshwater spawning habitat for adult fish.<sup>135</sup> Juvenile fish and sub-adults may rear in the adjacent waters of San Francisco Bay.

The NMFS designated critical habitat for green sturgeon on October 2009.<sup>136</sup> Specific areas designated as critical habitat include: coastal US marine waters within 60 fathoms depth (360 feet) from Monterey Bay, California, north to Cape Flattery, Washington, including the Strait of Juan de Fuca, Washington, to its United States boundary; the Sacramento River, lower Feather River, and lower Yuba River in California; the Sacramento-San Joaquin Delta and Suisun, San Pablo, and San Francisco bays in California; and certain coastal bays and estuaries in California, Oregon, and Washington. The areas designated comprise approximately 320 miles of freshwater river habitat, 897 square miles of estuarine habitat (including the San Francisco Bay), 11,421 square miles of

---

<sup>132</sup> Harris, H.E., 2004. *Distribution and limiting factors of Ostrea conchaphila in San Francisco Bay*, MS Thesis, San Francisco State University.

<sup>133</sup> MACTEC Engineering and Consulting, Inc. 2008. *Oyster Point Marina Olympia Oyster Surveys Pre- and Post-Dredging February 2008, Oyster Point Marina, South San Francisco, California*. Prepared for PBS&J.

<sup>134</sup> National Marine Fisheries Service (NMFS), *Endangered and Threatened Species: Threatened Status for Southern Distinct Population Segment of North American Green Sturgeon*, 71 Federal Register 17757, 2006.

<sup>135</sup> Moyle, Peter B. *Inland Fishes of California*, 2002, University of California Press.

<sup>136</sup> National Marine Fisheries Service (NMFS), *Endangered and Threatened Wildlife and Plants: Final Rulemaking to Designate Critical Habitat for the Threatened Southern Distinct Population Segment of North American Green Sturgeon*. 74 Federal Register 52300, October 9, 2009.

marine habitat, and 135 square miles of habitat within the Yolo and Sutter bypasses.<sup>137</sup> Under the FESA, critical habitat includes those areas necessary to support the continued existence and recovery of this species. Critical habitat for green sturgeon includes all of San Francisco Bay. Critical habitat designations include the specific habitat and habitat functions that are necessary for the survival and recovery of the species; these are called primary constituent elements (PCEs). Within the estuarine category of critical habitat, the PCEs include food, flow, water quality, migratory pathways, depth, and sediment quality.<sup>138</sup> Food is an abundance of prey items, benthic invertebrates and shrimp, within the substrate upon which sturgeon can forage. Flow refers to ample movement of water within the estuary to allow adults to orient to the Sacramento River during their spawning migrations. Water quality refers to adequate levels of dissolved oxygen, salinity, and temperatures to allow for survival and growth. Water quality also includes low levels of contaminants that could affect survival or reproductive fitness. A migratory pathway refers to the fact that sturgeon migrate through the Bay to and from upstream spawning areas. The PCE for migratory pathways allows for safe and timely passage of fish between the ocean and upstream spawning areas, but it also includes localized movement of rearing and holding sturgeon within the Bay. The depth PCE refers to the variety of water depths required to provide suitable foraging, holding, and migratory areas. Sediment quality is important because sturgeons are benthic foragers (bottom feeders) and contaminant-free sediments support higher quality prey that do not affect the survival or reproductive fitness of the fish. The Study Area includes elements of all these PCEs. However, the sediment quality may be impaired by decades of industrial use, which has resulted in contamination. This in turn probably reduces the foraging quality.

Using the likelihood of occurrence definitions provided in Table 3, this species has a “high” likelihood to occur within the Study Area.

#### Chinook Salmon (*Oncorhynchus tshawytscha*)

Populations of Chinook salmon potentially found adjacent to the Project site fall into three Evolutionary Significant Units (ESUs): Winter-run, Spring-run, and Fall/late-Fall-run<sup>139</sup> Chinook salmon. The runs of Chinook are distinguished based on the timing of the adult return to freshwater on their spawning migration. At almost any time of year, there are Chinook at some life cycle stage or another within San Francisco Bay (Table 4 [Life Cycle Stages and Periods of Freshwater Residency for Chinook Salmon]). The occurrence of Chinook adjacent to the Project site could involve any of those life stages. Juvenile fish are more likely to be found adjacent to the Project site than adults because they are moving downstream from their natal streams and do not have the

---

<sup>137</sup> Ibid.

<sup>138</sup> Ibid.

<sup>139</sup> Fall and late-fall run Chinook are treated as a single ESU by NMFS.

same swimming ability as adults. Juvenile fish from the Sacramento River populations would be expected to occur in low numbers as they stray south of the Golden Gate. Small numbers of Chinook have also recently appeared in Coyote Creek and Guadalupe River, which are both tributaries to south San Francisco Bay near Alviso; these fish are derived from hatchery releases within the native range of the species, which did not include the South Bay.<sup>140,141</sup> Adult or juvenile fish from either of these populations would be expected to migrate through or past the Study Area on their way to and from the Pacific Ocean because the Study Area is between the Pacific Ocean and spawning sites in the South Bay. The overall likelihood of finding a substantial number of Chinook salmon within or adjacent to the Project site at any one time is relatively low because the open water of the Study Area is not considered suitable rearing habitat for either life stage. The residence time that either life stage may spend within or adjacent to the Project site is unknown.

**TABLE 4 LIFE CYCLE STAGES AND PERIODS OF FRESHWATER RESIDENCY FOR CHINOOK SALMON**

<b>Species</b>	<b>Adult Migration (peak)</b>	<b>Spawning (peak)</b>	<b>Juvenile Freshwater Residency</b>	<b>Outmigration (peak)</b>
<b>Winter Run</b>	Dec–July (Mar)	Apr–Aug (May–June)	5–10 months	July Oct
<b>Spring Run</b>	Mar–Sep (May–June)	Aug–Oct (Sep)	3–15 months	Nov–Mar (Jan–Mar)
<b>Fall Run</b>	June–Dec (Sep–Oct)	Sep–Dec (Oct–Nov)	1–7 months	Dec–Mar
<b>Late Fall Run</b>	Oct–Feb (Dec)	Jan–Apr (Feb–Mar)	7–13 months	Apr–June (Dec–Mar)

SOURCE: Moyle, 2002.

Winter-run Chinook are listed as endangered under the California and federal *Endangered Species Acts*. They spawn in the Sacramento River upstream of Red Bluff Diversion Dam and are distinguishable from other Chinook runs based on the timing of both upstream migration and the spawning season (Table 4). Prior to the construction of Shasta and Keswick dams in 1943 and 1955, respectively, winter-run Chinook spawned in the upper reaches of the Sacramento, McCloud, and

<sup>140</sup> Santa Clara County, *Santa Clara County Habitat Plan, 1<sup>st</sup> Administrative Draft* August 2008. Website: [http://www.scv-habitatplan.org/www/site/alias\\_\\_default/292/1st\\_administrative\\_draft\\_hcp.aspx](http://www.scv-habitatplan.org/www/site/alias__default/292/1st_administrative_draft_hcp.aspx). Accessed July 2009.

<sup>141</sup> National Marine Fisheries Service (NMFS). No Date. *Central Valley Chinook Salmon Distributions*. Southwest Regional Office. Website: <http://swr.nmfs.noaa.gov/hcd/dist2.htm>. Accessed July 17, 2009.

lower Pit rivers,<sup>142</sup> and Battle Creek. Presently, the majority of winter-run Chinook spawning occurs on the main stem of the Sacramento River between Keswick Dam and the Red Bluff Diversion Dam.<sup>143</sup> Designated critical habitat extends from Keswick Dam, Shasta County (River Mile 302) to Chipps Island (River Mile 0) at the westward margin of the Sacramento-San Joaquin Delta; all waters from Chipps Island westward to Carquinez Bridge, including Honker Bay, Grizzly Bay, Suisun Bay, and Carquinez Strait; all waters of San Pablo Bay westward of the Carquinez Bridge; and all waters of San Francisco Bay (north of the San Francisco/Oakland Bay Bridge) from San Pablo Bay to the Golden Gate Bridge. Critical habitat does not extend into the Study Area.

Spring-run Chinook salmon are listed as a threatened species under the California and federal ESAs. Spring-run Chinook enter the Sacramento River between March and September and move upstream into the headwaters, where they hold in pools until they spawn between August and October. Juveniles emigrate from the tributaries from mid-November through June; however, some juveniles spend a year in the streams and emigrate as yearlings the following October.<sup>144</sup> Typically, spring-run Chinook salmon use mid- to high-elevation streams that provide appropriate low water temperatures and sufficient flow, cover, and pool depth to allow over summering. Spawning occurs between August and October and, depending on water temperature, emergence occurs between November and March. Although Spring-run Chinook salmon emigration is highly variable, the emigration period extends from November to early May, with up to 69 percent of young-of-the-year out migrants passing through the lower Sacramento River between mid-November and early January.<sup>145</sup> Designated critical habitat extends from Keswick Dam, Shasta County (River Mile 302) to Chipps Island (River Mile 0) at the westward margin of the Sacramento-San Joaquin Delta; all waters from Chipps Island westward to Carquinez Bridge, including Honker Bay, Grizzly Bay, Suisun Bay, and Carquinez Strait; all waters of San Pablo Bay westward of the Carquinez Bridge; and all waters of San Francisco Bay (north of the San Francisco/Oakland Bay Bridge) from San Pablo Bay to the Golden Gate Bridge. Critical habitat does not extend into the Study Area.

Central Valley Fall and Late Fall-run Chinook salmon are not listed under the state or federal endangered species act but are classified as a Species of Special Concern. Fall-run Chinook salmon is the most abundant ESU, documented to comprise about 80 percent of the Sacramento Basin stock in the early 1980s. The ESU includes all naturally spawned populations of fall-run Chinook salmon in the Sacramento and San Joaquin River basins and their tributaries, east of Carquinez Strait,

---

<sup>142</sup> Moyle, P. B. 2002. *Inland Fishes of California*, University of California Press. 2002.

<sup>143</sup> Ibid.

<sup>144</sup> Ibid

<sup>145</sup> Snider, B., and R.G. Titus. 2000. *Timing, composition, and abundance of juvenile anadromous salmonid emigration in the Sacramento River near Knights Landing*, October 1996.

California. Juvenile fall and late fall-run fish could stray into open waters within and adjacent to the Project site if they miss the entrance to the Golden Gate and the Pacific Ocean.

A small population of Chinook salmon has become established in recent years in Coyote Creek and the Guadalupe River.<sup>146</sup> The regulatory status of this population is unclear because the fall/late fall-run ESU only includes naturally spawned fish from upstream of Carquinez Strait. There is not an ESU that includes fish spawning within the tributaries of San Francisco Bay. These fish exhibit a fall-run pattern similar to the fall-run ESU of the Central Valley, and are apparently derived from wandering individuals, likely hatchery-released fish, from that ESU.<sup>147</sup> Regardless of where they came from or what their regulatory status may be, these fish would pass the Study Area on their way to and from the ocean.

Using the likelihood of occurrence definitions provided in Table 3, the spring-run, winter-run/ and fall/late fall-run of this species has a “High” likelihood to occur within the Study Area.

#### Central Valley Steelhead (*Oncorhynchus mykiss*)

Central Valley steelhead (rainbow trout) were federally listed as a threatened species in 1998<sup>148</sup> and this status was reaffirmed in 2006.<sup>149</sup> The Central Valley steelhead population is a Distinct Population Segment (DPS; aka ESU) that includes all naturally spawned populations of steelhead in the Sacramento and San Joaquin rivers and their tributaries. Final critical habitat, designated in September 2005 for this species, does not include the Study Area.<sup>150</sup> Critical habitat is designated by hydrologic unit, the closest of which to the Study Area is the Sacramento Delta Hydrologic Unit, over 25 miles north of the Project site.<sup>151</sup> Central Valley steelhead, especially juveniles, may occasionally stray into the South Bay during their migration to the ocean, but the area adjacent to the Project site is generally outside their migratory pathway.

Using the likelihood of occurrence definitions provided in Table 3, this species has a “low” likelihood to occur within the Study Area.

---

<sup>146</sup> Santa Clara County, *Santa Clara County Habitat Concept Plan, 1<sup>st</sup> Administrative Draft* August 2008.

Website: [http://www.scv-habitatplan.org/www/site/alias\\_\\_default/292/1st\\_administrative\\_draft\\_hcp.aspx](http://www.scv-habitatplan.org/www/site/alias__default/292/1st_administrative_draft_hcp.aspx). Accessed July 2009.

<sup>147</sup> National Marine Fisheries Service (NMFS), *Endangered and Threatened Species: Threatened Status for Two ESUs of Steelhead in Washington, Oregon, and California*, 63 Federal Register 13347, 1998.

<sup>148</sup> Ibid.

<sup>149</sup> National Marine Fisheries Service (NMFS), *Endangered and Threatened Species: Final Listing Determinations for 10 Distinct Population Segments of West Coast Steelhead*; Final Rule, 71 Federal Register 834, 2006.

<sup>150</sup> National Marine Fisheries Service (NMFS), *Endangered and Threatened Species: Designation of Critical Habitat for Seven Evolutionarily Significant Unites of Pacific Salmon and Steelhead in California*; Final Rule, 70 Federal Register 52488, 2005.

<sup>151</sup> Ibid.

### Central California Coast Steelhead (*Oncorhynchus mykiss*)

The Central California Coast DPS of steelhead is a federally threatened species.<sup>152</sup> This DPS includes all naturally spawned populations of steelhead from the Russian River south to, and including, Aptos Creek and includes the populations within San Francisco Bay.<sup>153</sup> Steelhead begin their migration from the ocean when winter rains provide large amounts of cold water for migration and spawning. Peak migration period for adult fish is in mid-winter. They typically spawn in smaller streams and tributaries to mainstream rivers. Juvenile steelhead generally spends one to three years in freshwater before migrating to the ocean.<sup>154</sup>

It is highly likely that both adults and juvenile steelhead from this DPS could be found adjacent to the Project site. The closest potential steelhead spawning streams in South San Francisco Bay are San Mateo Creek (approximately 10 miles south of the Study Area), Alameda Creek (approximately 16 miles south of the Study Area), and San Francisquito Creek (approximately 22 miles south of the Study Area). Other South Bay watersheds that support populations of steelhead include the Coyote Creek and Guadalupe River watersheds. Because the Study Area is between their spawning and rearing streams and the Pacific Ocean, fish from any of these streams could be found in the Bay adjacent to the Project site during adult migrations from the Pacific Ocean to spawning sites or during juvenile migrations from their natal streams to the Pacific Ocean.

The final critical habitat designation for the Central California Coast steelhead DPS was issued on September 2, 2005.<sup>155</sup> The specific primary constituent elements considered in the designation were freshwater spawning sites, freshwater rearing sites, freshwater migration corridors, estuarine areas, nearshore marine areas, and offshore marine areas. The lateral extent of critical habitat in estuarine areas is the area inundated by extreme high tide. The Study Area is within the designated critical habitat for this species.

Using the likelihood of occurrence definitions provided in Table 3, this species has a “high” likelihood to occur within the Study Area.

---

<sup>152</sup> National Marine Fisheries Service (NMFS), *Endangered and Threatened Species: Threatened Status for Two ESUs of Steelhead in Washington, Oregon, and California*, 63 Federal Register 13347, 1998.

<sup>153</sup> National Marine Fisheries Service (NMFS). *Endangered and Threatened Species: Final Listing Determinations for 10 Distinct Population Segments of West Coast Steelhead*; Final Rule. 71 FR 834

<sup>154</sup> Moyle, P. B. *Inland Fishes of California*, 2002, University of California Press, 2002.

<sup>155</sup> National Marine Fisheries Service (NMFS), *Endangered and Threatened Species: Designation of Critical Habitat for Seven Evolutionarily Significant Units of Pacific Salmon and Steelhead in California*; Final Rule, 70 Federal Register 52488, 2005.

### Longfin Smelt (*Spirinchus thaleichthys*)

Longfin smelt were listed under the California Endangered Species account as a threatened species in March 2009. This species is endemic to the west coast of North America with small populations likely still present in the Klamath River and Russian River estuaries.<sup>156</sup> However, the bulk of the longfin smelt population appears to be in San Francisco Bay.<sup>157</sup> Adults spawn in the Sacramento-San Joaquin Estuary almost as far upstream as the City of Sacramento on the Sacramento River and to Turner Cut on the San Joaquin River.<sup>158</sup> Adults spawn in these upstream freshwater locations in early winter. The larval smelt are distributed downstream by natural river flow. Because of this, the higher the outflow of freshwater from the Sacramento-San Joaquin Delta, the greater the distribution of smelt in the Bay. As they mature, swimming ability improves and their distribution expands. Adults occur into the South Bay and are also found in the ocean just outside the Golden Gate.<sup>159</sup> This species could be found in the Study Area from spring to fall before adults return upstream to spawn.

Using the likelihood of occurrence definitions provided in Table 3, this species has a “moderate” likelihood to occur within the Study Area.

### Pacific Herring (*Clupea pallasii*)

San Francisco Bay supports a small, yet productive commercial Pacific herring fishery. Pacific herring are not protected by either the state or the federal government; however, because herring are harvested for their roe, they are an important species in the economy of the San Francisco Bay Area and their populations are closely monitored by CDFG. Pacific herring are also an important species in the ecology of San Francisco Bay because herring, along with sardines and anchovies, are a primary food source for salmon and other sport fish. Pacific herring generally enter the Bay from November through April<sup>160</sup> of each year and spawn in intertidal and sub-tidal habitats.<sup>161</sup> The actual sites where Pacific herring spawn in San Francisco Bay change from year to year and spawning may occur within numerous locations around the Bay. The North Bay is typically the preferred spawning

---

<sup>156</sup> Moyle, P. B. *Inland Fishes of California*, 2002, University of California Press, 2002.

<sup>157</sup> California Department of Fish and Game (CDFG), A Status Review of the Longfin Smelt (*Spirinchus thaleichthys*) in California, January 2009.

<sup>158</sup> Ibid.

<sup>159</sup> Ibid.

<sup>160</sup> National Oceanic and Atmospheric Administration (NOAA). 2008. San Francisco Bay Project Impact Evaluation System—Pile Driving. Coastal Restoration and Protection Division. Interactive GIS mapping software Website: <http://mapping2.orr.noaa.gov/website/portal/pies/naturalhistory.html>. Accessed December 2, 2008.

<sup>161</sup> Barnhart, R.A. 1988. *Species profiles: life histories and environmental requirements of coastal fishes and invertebrates (Pacific Southwest)—Pacific herring*. US Fish and Wildlife Service Biol. Rep. 82(11.79). US Army Corps of Engineers, TR EL-82-4. 14 pp.

area, although limited spawning has historically been observed at San Mateo Point.<sup>162</sup> The preferred substrate for herring spawning is eelgrass, followed by rocky seafloors, and lastly flat surfaces such as marina pilings, retaining walls, and bulkheads along the San Francisco Bay waterfront.<sup>163</sup> According to NMFS, known herring spawning areas within the area immediately adjacent to the Project site include several piers and areas of shoreline both north and south of the proposed marina (refer to Figure 5 [Pacific Herring Spawning Habitat]).<sup>164</sup> Where Figure 5 shows habitat as including piers, this refers to in-water portions of those structures. Also, the mapping data left gaps between the shoreline and the delineated habitat that is an artifact of the mapping. Spawning grounds could extend to the shoreline, especially in those areas where bulkheads define a vertical shoreline. The open channel to the northwest of the proposed marina between Blandy and E streets may be used by herring even though NMFS does not map it as spawning habitat.

## **OTHER SENSITIVE HABITATS**

### **Essential Fish Habitat**

The tidal aquatic habitats adjacent to the Project site are considered EFH by the NMFS for a species assemblage that includes anchovies, sardines, rockfish, sharks, sole, and flounder. Areas supporting the native Olympia oyster found in San Francisco Bay are also considered EFH by NMFS because oyster beds generally increase fish abundance. A more detailed discussion of the provisions of the Magnuson-Stevens Fisheries Conservation Act, by which effects on EFH are regulated, is provided below in the “Regulatory Framework” section.

### **Eelgrass Beds**

Eelgrass occurs in both subtidal and intertidal areas of San Francisco Bay. The distribution of eelgrass has been mapped relatively recently (in 2003) and the results of this effort indicate that low-density eelgrass beds are found on the north side of Hunters Point peninsula offshore from the end of Earl Street and in a small patch in the South Basin.<sup>165</sup> Eelgrass beds form areas of important habitat for birds, fish, and crustaceans and are one of the preferred spawning habitats of Pacific

---

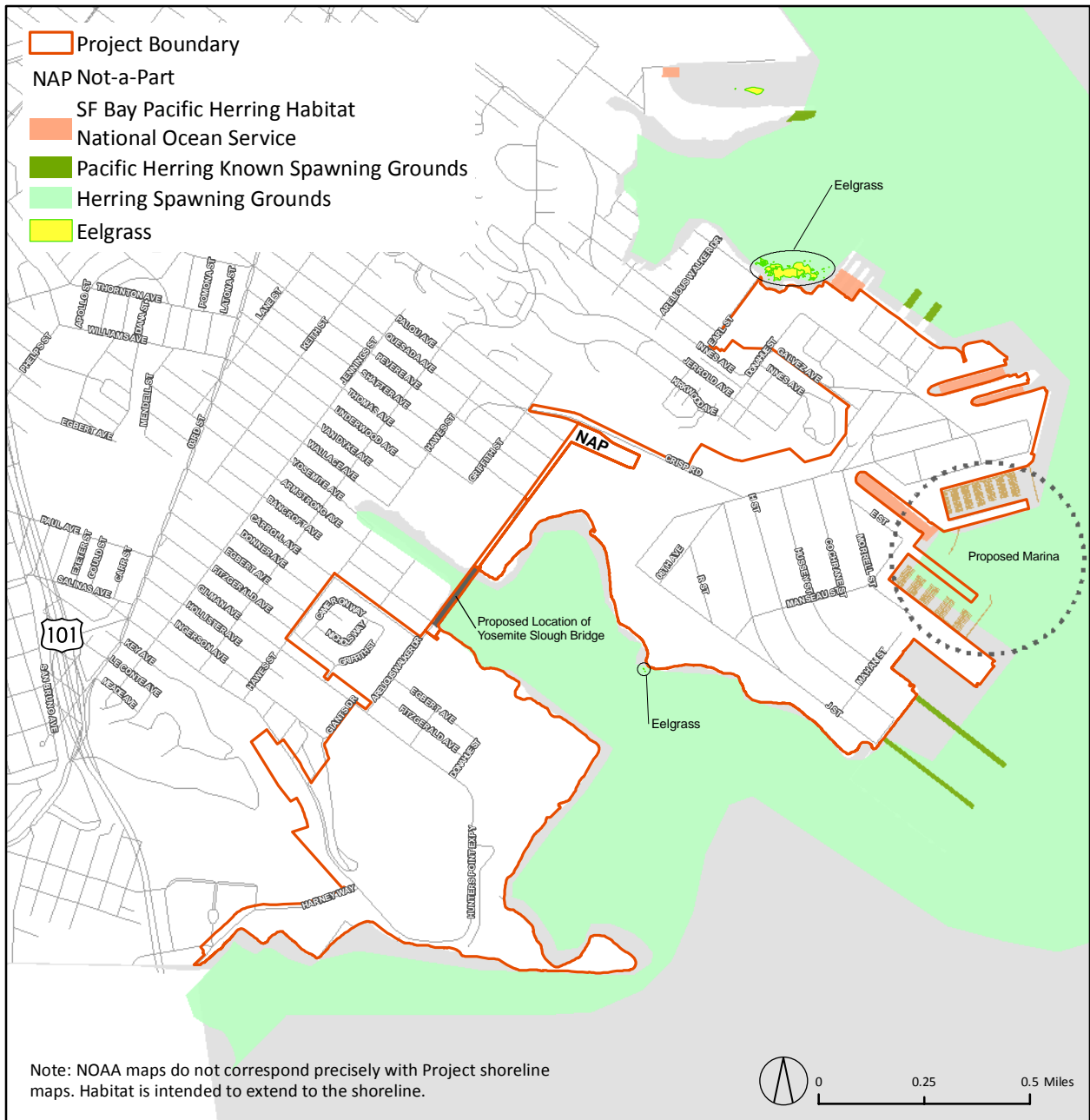
<sup>162</sup> Miller, D. J. and J. Schmidtke. 1956. *Report on the distribution and abundance of Pacific herring (Clupea pallasii) along the coast of Central and Southern California*. California Fish and Game (CDFG) 42(3):163-187.

<sup>163</sup> Barnhart, R.A. 1988. *Species profiles: life histories and environmental requirements of coastal fishes and invertebrates (Pacific Southwest) – Pacific herring*. US Fish and Wildlife Service Biol. Rep. 82(11.79). US Army Corps of Engineers, TR EL-82-4. 14 pp.

<sup>164</sup> National Oceanic and Atmospheric Administration (NOAA). 2008. *San Francisco Bay Project Impact Evaluation System – Pile Driving*. Coastal Restoration and Protection Division. Interactive GIS mapping software Website: <http://mapping2.orr.noaa.gov/website/portal/pies/naturalhistory.html>. Accessed December 2, 2008..

<sup>165</sup> San Francisco Bay Eelgrass Inventory, June-October 2003. Prepared for Caltrans and NOAA Fisheries. Prepared by Merkel and Associates, 2003.





SOURCE: NOAA PIES Website, 2008, Merkel and Associates 2003 SF Bay eelgrass survey.

PBS&J 10.27.09

**FIGURE 5** Candlestick Point - Hunters Point Shipyard Phase II EIR  
**PACIFIC HERRING SPAWNING HABITAT**

herring.<sup>166</sup> These plants also support grazing crustaceans, shrimp, and amphipods. Because it requires light for photosynthesis, eelgrass is limited by water clarity to depths of about 6 feet or less. Because little accurate information exists about the historic distribution of eelgrass beds, and because of their current relative scarcity and importance in the overall ecology of the Bay, both the USACE and CDFG consider eelgrass beds a sensitive resource.

## WILDLIFE MOVEMENT

Wildlife movement activities usually fall into one of three movement categories: (1) dispersal (i.e., juvenile animals from natal areas, or individuals extending range distributions); (2) seasonal migration; and (3) local movements related to home range activities (foraging for food or water, defending territories, searching for mates, breeding areas, or cover). A number of terms have been used in various wildlife movement studies, such as “wildlife corridor,” “travel route,” “habitat linkage,” and “wildlife crossing,” to refer to areas in which wildlife move from one area to another. To clarify the meaning of these terms and facilitate the discussion of wildlife movement in this analysis, these terms are defined as follows:

- **Travel route**—A landscape feature (such as a ridgeline, drainage, canyon, or riparian strip) within a larger natural habitat area that is used frequently by animals to facilitate movement and provide access to necessary resources (i.e., water, food, cover, den sites). The travel route is generally preferred because it provides the least amount of topographic resistance in moving from one area to another. It contains adequate food, water, and/or cover while moving between habitat areas and provides a relatively direct link between target habitat areas.
- **Wildlife corridor**—A patch of habitat, usually linear in nature, that connects two or more habitat patches that would otherwise be fragmented or isolated from one another. Wildlife corridors are usually bounded by urban land areas or other areas unsuitable for wildlife. The corridor generally contains suitable cover, food, and/or water to support species and facilitate movement while in the corridor.
- **Habitat linkage**—Larger, landscape-level movement features (often referred to as “habitat or landscape linkages”) can provide both transitory and resident habitat for a variety of species to a more substantial, or wider, land connection between two habitat areas. Habitat linkages allow for the periodic exchange of animals between habitat areas, which is essential to maintain adequate gene pools.
- **Wildlife crossing**—A small, narrow area, relatively short in length and generally constricted in nature, that allows wildlife to pass under or through an obstacle or barrier that otherwise hinders or prevents movement. Crossings may be manmade and include culverts, underpasses, drainage pipes, and tunnels to provide access across or under roads,

---

<sup>166</sup> Wyllie-Echeverria, S. and M. Fonseca. Eelgrass (*Zostera marina*) research in San Francisco Bay, California from 1920 to the Present. 2003.

highways, pipelines, or other physical obstacles. These often represent “choke points” along a movement corridor.

Surveys of the Project site did not identify any major or regional wildlife corridor/travel route. The Project site is surrounded by open water and urban development that isolate habitats in the Study Area from large expanses of similar habitats in undeveloped areas elsewhere along the San Francisco Bay shoreline and in the San Bruno Mountain State Park (approximately 2 miles to the southwest). There is localized movement, as ground-dwelling animals forage for food, mate, and move between habitat patches within the Project site. Although there is localized movement between Bayview Hill and the CPSRA, Bayview Hill is also isolated from larger expanses of habitat, and movement by mammals, reptiles, and amphibians between the site and any larger expanses of natural habitat (such as San Bruno Mountain to the southwest) is severely impeded by US-101 and other roads and urban development.

In addition, although bird flyways are not traditionally considered “wildlife movement corridors,” the San Francisco Bay’s wetlands and tidal lands serve as important habitat for bird species during migration through the Pacific Flyway. Many bird species use these areas as an annual stopover location for several days of rest and feeding prior to continuing migration. These habitats also provide critical staging areas for migratory species. Thus, the Study Area is a minor, but important component of the much larger Bay system that provides habitat for migratory birds.

## REGULATORY FRAMEWORK

### Federal

#### Section 404 of the Clean Water Act

Section 404 of the *Clean Water Act (CWA)* (33 *United States Code* [USC] §§ 1344) requires that a permit be obtained from the USACE prior to the discharge of dredged or fill materials into any “waters of the United States or wetlands.” Waters of the United States are broadly defined in the USACE regulations to include navigable waterways, their tributaries, lakes, ponds, and wetlands. Wetlands are defined as: “Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that normally do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.”<sup>167</sup> Wetlands that are not specifically exempt from Section 404 regulations (such as drainage channels excavated on dry land) are considered to be “jurisdictional wetlands.” The USACE is required to consult with the USFWS, NMFS, Environmental Protection Agency, and State Regional Water Quality Control Board (SWRCB) in carrying out its discretionary authority under Section 404.

The USACE grants three types of permits: individual, general, and nationwide. Project-specific individual permits are required for certain activities that may have a potential for more than a minimal impact and necessitate a detailed application. A permit from the USACE would be required for any placement of fill in waters of the US as part of the Project.

#### Section 402 of the Clean Water Act

The primary mechanism in the CWA regulating the discharge of pollutants is the National Pollutant Discharge Elimination System (NPDES), which is administered by the Environmental Protection Agency (EPA). Under the NPDES program, a permit is required from EPA or an authorized state for the discharge of any pollutant from a point source into the waters of the US (33 USC §§1342). Storm water pollution prevention plans must be prepared for construction activities as part of the NPDES permitting process.

#### Section 401 of the Clean Water Act

Section 401 of the CWA (33 USC §§ 1341) requires a state-issued Water Quality Certification for all projects requiring a Section 404 permit, or other federal permit or license. There are nine Regional Water Quality Control Boards (RWQCBs) across the state that issue Water Quality Certifications for various actions within their respective region. The RWQCB, San Francisco Bay Region, issues

---

<sup>167</sup> US Army Corps of Engineers, *Definition of Waters of the United States*, 33 CFR 328, November 1986.

Section 401 Water Quality Certifications for the City and County of San Francisco. A Section 401 certification requires a determination that the Project will comply with all state water quality standards.

### Federal Endangered Species Act (FESA)

The FESA was enacted in 1973. Under the FESA, the Secretary of the Interior and the Secretary of Commerce have the authority to list a species as threatened or endangered (16 USC 1533[c]). The FESA is administered by both the NMFS and the USFWS. The NMFS is accountable for animals that spend most of their lives in marine waters, including marine fish, most marine mammals, and anadromous fish such as Pacific salmon. The USFWS is accountable for all other federally listed plants and animals.

Pursuant to the requirements of FESA, a federal agency authorizing, funding or carrying out a project within its jurisdiction must determine whether any federally listed threatened or endangered species may be present within the Study Area and determine whether the agency's action could affect any federally listed species (16 USC 1536(a)(2), (3).) If the action would likely affect a listed species, the agency must consult with the USFWS or NMFS under Section 7 of the FESA to determine whether the action is likely to jeopardize the continued existence of the species or result in the destruction or adverse modification of designated critical habitat (16 USC 1536(a)(2).) Project-related adverse effects to these species or their habitats are typically considered significant under CEQA and thus would require mitigation.

The USFWS Regional Office in Sacramento maintains a list of "species of concern" that receive special attention from other federal agencies (i.e., NMFS) during environmental review, although they are not protected under FESA. Project-related impacts to such species could be considered significant under CEQA Guidelines section 15380 and could require mitigation.

Section 9 of the FESA prohibits any person or federal agency from "taking" endangered or threatened wildlife. The definition of "take" includes harassing, harming, hunting, shooting, wounding, killing, trapping, capturing, or collecting, or attempting to engage in any such conduct. A notable component of this definition is the definition of "harm." "Harm" in the definition of "take" means an act that actually kills or injures protected wildlife. Such acts may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavior patterns, including breeding, feeding, or sheltering.

Projects that would result in "take" of any federally listed threatened or endangered species are required to obtain incidental take authorization from NMFS or USFWS through either the Section 7 (interagency consultation) process described above or Section 10(a) (incidental take permit) of FESA. The Section 7 authorization process is used to determine if a project with a federal nexus would

jeopardize the continued existence of a listed species and what mitigation measures would be required to avoid jeopardizing the species. The Section 10(a) process allows take of endangered species or their habitat when no other federal government action is involved. Because the Project could affect a federally listed species and would require a federal (Section 404) permit, pursuant to Section 7 of the FESA, the USACE must initiate consultation with USFWS or NMFS prior to carrying out its discretionary authority under Section 404 of the CWA.

#### Migratory Bird Treaty Act (MBTA)

The federal *Migratory Bird Treaty Act* (MBTA; 16 USC, Sec. 703, Supp. I, 1989) prohibits killing, possessing, or trading in any native bird that may occur within the Study Area except in accordance with regulations prescribed by the Secretary of the Interior. It is an international treaty for the conservation and management of bird species that migrate through more than one country, and is enforced in the United States by the USFWS. This act encompasses whole birds, parts of birds, and bird nests and eggs and provides protection to over 800 species in the United States. All native birds in the Study Area are protected by the MBTA.

#### Marine Mammal Protection Act

The *Marine Mammal Protection Act* (MMPA) was enacted in 1972 and amended through 2007 (16 USC 1631). All marine mammals are protected by the MMPA, which prohibits their take in US Waters. Take is defined in the MMPA as “harass, hunt, capture, kill or collect, or attempt to harass, hunt, capture, kill or collect” [16 USC 1631 Section 3(13)]. This is a slightly different definition than the FESA, which also encompasses “attempts” to engage in these activities. Under the MMPA, “harassment” is further defined as any action that of pursues, torments, or annoys a marine mammal and which has the potential to injure or disturb a marine mammal or marine mammal stock in the wild including alteration of behavior patterns including migration, breathing, nursing, breeding, feeding, or sheltering [16 USC 1631 Section 3(18(A))].

Species that occur within San Francisco Bay on a regular basis that are protected by the MMPA include the harbor seal and the California sea lion. The MMPA would apply to the Project, because in-water construction activities such as pile driving could harass these animals.

#### Magnuson-Stevens Fisheries Conservation Act and Management Act

The NMFS has the authority to implement the *Magnuson-Stevens Fisheries Conservation and Management Act* (Public Law 94-264; MSA). The *Magnuson-Stevens Act* (MSA) was amended and reauthorized on January 12, 2007, by the *Magnuson-Stevens Fisheries Conservation and Management Reauthorization Act* (PL 109-479). The MSA was put into place to promote conservation and management of the Nation’s fishery resources. The MSA established the Pacific Fishery

Management Council, which was tasked with creating the Pacific Coast Groundfish Fishery Management Plan (FMP).<sup>168</sup> The most recent amendment to the FMP was adopted by NMFS in May 2006.<sup>169</sup> The FMP develops recommendations for the management of groundfish fisheries, and in some cases, it contains specific fishery management recommendations.<sup>170</sup> In addition, the FMP addresses provisions in the MSA relating to EFH to ensure that fishery resources are managed through the regulation of EFH. The MSA defines EFH as “... those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity” [16 USC 1802 MSA Section 3(10)]. The terms in this definition have been further defined to include:<sup>171</sup>

- Aquatic habitat and associated physical, chemical, and biological properties that are used by fish (historically used areas may be included)
- Sediment, stream substrates, instream structure, and associated biological communities
- The habitat required to support a sustainable fishery including that particular species’ place in a properly functioning ecosystem
- The habitat required to support a full life cycle for the species under consideration

The tidal aquatic habitats adjacent to the Project site are considered EFH by NMFS for a species assemblage that includes anchovies, sardines, rockfish, sharks, sole, and flounder.<sup>172,173</sup> Areas supporting the native Olympia oyster found in San Francisco Bay are also considered EFH by NMFS because oyster beds generally increase fish abundance. The NMFS consults with federal action agencies under the MSA in a process similar and often parallel to the Section 7 FESA consultation. Because the Project would modify designated EFH, consultation with NMFS under the MSA is anticipated and would be initiated by the USACE during the permitting process for the Project.

---

<sup>168</sup> PFMC (Pacific Fisheries Management Council) 2006. *Pacific Coast Groundfish Fishery Management Plan as revised through Amendment 19* (March 2006).

<sup>169</sup> National Marine Fisheries Service (NMFS). 2006. *Magnuson-Stevens Act Provisions; Fisheries off West Coast States; Pacific Coast Groundfish Fishery: Final Rule*. 71 FR 27408.

<sup>170</sup> National Marine Fisheries Service (NMFS). 2006. *Magnuson-Stevens Act Provisions; Fisheries off West Coast States; Pacific Coast Groundfish Fishery: Final Rule*. 71 FR 27408.

<sup>171</sup> Pacific Fisheries Management Council (PFMC) 2003. *Pacific Coast Salmon Plan – Fishery management plan for commercial and recreational salmon fisheries off the coast of Washington, Oregon, and California as revised through Amendment 14* (adopted March 1999).

<sup>172</sup> National Marine Fisheries Service (NMFS). 2006. Fisheries Management Plan (FMP) *Species Distributions In San Francisco, San Pablo and Suisun Bays*. Website: <http://swr.nmfs.noaa.gov/hcd/loclist.htm#South%20SF%20Bay>. Accessed October 29, 2008.

<sup>173</sup> National Marine Fisheries Service (NMFS). Essential Fish Habitat (EFH) for Pacific Coast Groundfish. Map dated July 26, 2008.

### Section 10 of the Rivers and Harbors Act of 1899

Section 10 of the *Rivers and Harbors Act of 1899* (33 USC 403) gives the USACE jurisdiction over tidal waters of the US from the MHW elevation seaward (33 USC 403.382.4b). Specifically, it prohibits the construction, dredging, or fill of any navigable water without a permit from the USACE. This includes construction of breakwaters or marinas, installation of pilings, docks, or bridges, and excavation of existing substrates.

The Project would require placement of fill for bridge construction, shoreline revetments, breakwaters, installation of pilings and marina floats, and installation of gangways for access to the docks. All of these activities would be subject to the USACE jurisdiction under Section 10 of the *Rivers and Harbors Act*, and USACE authorization of these activities must be obtained through the permitting process for the Project.

### **State**

#### California Endangered Species Act (CESA)

The CESA was enacted in 1984. Under the CESA, the California Fish and Game Commission has the responsibility for maintaining a list of threatened and endangered species. Pursuant to the requirements of CESA, an agency reviewing a project within its jurisdiction must determine whether any state-listed endangered or threatened species may be present in the Study Area and determine whether the Project would have an adverse affect on such species. In addition, CDFG encourages informal consultation on any project that may impact a candidate species. Peregrine falcons nest within the Study Area, as noted above, and are listed as endangered under the CESA, although the species is proposed to be delisted.

Section 2080 of the *California Fish and Game Code* prohibits “take” of any species that the commission determines to be an endangered species or a threatened species. Take is defined in Section 86 of the *California Fish and Game Code* as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” Sections 2081(b) and (c) of the *California Fish and Game Code* allow CDFG to issue an incidental take permit for a state-listed threatened or endangered species only if specific criteria are met, such as take incidental to an otherwise lawful activity. CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate mitigation planning to offset project-caused losses of listed species populations and their essential habitats.

#### Fish and Game Code—Sections 1602, 3503, 3503.5, 3511, 3513, 4150, 4700, 5050, and 5515

*California Fish and Game Code* Section 3503 states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by the code. Birds of prey are



further protected under *California Fish and Game Code* Section 3503.5, which states that “it is unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird, except as otherwise provided by this code or any regulation adopted pursuant thereto.” Construction disturbance during the breeding season could result in the incidental loss of eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered take by CDFG. Similarly, Section 4150 of the *California Fish and Game Code* describes protections for nongame mammals.

California Species of Special Concern is a designation used by the CDFG for some declining wildlife species that are not state candidates for listing as threatened or endangered. This designation does not provide legal protection but signifies that these species are recognized as having special status by the CDFG. Under CEQA Guidelines (Section 15380), potential impacts to these species must be assessed.

California laws relating to Fully Protected species (i.e., Section 3511) were among the first attempts in the nation to provide additional protection to animals that were rare or faced possible extinction, predating even the FESA. Most fully protected species have also been given additional protection under more recent laws and regulations, and many have been listed under state and federal versions of the FESA. Fully Protected species (such as the peregrine falcon and white-tailed kite) may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock. Four sections of the *California Fish and Game Code* list 37 fully protected species (*California Fish and Game Code* Sections 3511, 4700, 5050, and 5515). Each of these statutes (1) prohibits take or possession “at any time” of the species listed in the statute, with few exceptions, (2) states that no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to “take” the species, and (3) states that no previously issued permits or licenses for take of the species “shall have any force or effect” for authorizing take or possession.

Section 1602 of the *California Fish and Game Code* requires a Streambed Alteration Agreement for any activity that may alter the bed and/or bank of a lake, stream, river, or channel. Typical activities that require a Streambed Alteration Agreement include excavation or fill placed within a channel, vegetation clearing, structures for diversion of water, installation of culverts and bridge supports, cofferdams for construction dewatering, and bank reinforcement. A Streambed Alteration Agreement would be required as part of the permitting process for this Project.

## CEQA Guidelines Section 15380

Although threatened and endangered species are protected by specific federal and state statutes, CEQA Guidelines section 15380(b) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain criteria. These criteria have been modeled after the definition in FESA and the section of the California Fish and Game Code dealing with rare or endangered plants and animals, and allows a public agency to undertake a review to determine if a significant effect on species that have not yet been listed by either the USFWS or CDFG (i.e., species of concern) would occur. Whether a species is rare, threatened, or endangered can be legally significant because, under CEQA Guidelines Section 15065, an agency must find an impact to be significant if a project would “substantially reduce the number or restrict the range of an endangered, rare, or threatened species.” Thus, CEQA provides an agency with the ability to protect a species from a project’s potential impacts until the respective government agencies have an opportunity to list the species as under an endangered species act, if warranted.

The CEQA Guidelines for biological resources are influenced by the California Native Plant Society’s inventory of special-status plant species. CNPS maintains four species lists of varying rarity.<sup>174</sup> Vascular plants listed as rare or endangered by the CNPS,<sup>175</sup> but which have no designated status or protection under federal or state-endangered species legislation, are defined as follows:

- List 1A       Plants Believed Extinct.
- List 1B       Plants Rare, Threatened, or Endangered in California and elsewhere.
- List 2       Plants Rare, Threatened, or Endangered in California, but more numerous elsewhere.
- List 3       Plants About Which More Information is Needed - A Review List.
- List 4       Plants of Limited Distribution - A Watch List.

In general, plants appearing on CNPS List 1 or 2 are considered to meet CEQA Guidelines section 15380 criteria and project effects to these species may be considered significant.

It is this section that provides for the inclusion of the various species of special concern and CNPS List 1 and 2 plants presented previously (Table 3).

---

<sup>174</sup> Recent modifications to the CNPS Ranking System include the addition of a new Threat Code extension to listed species (e.g., List 1B.1, List 2.2 etc.). A Threat Code extension of .1 signifies that a species is seriously endangered in California; .2 is fairly endangered in California; and .3 is not very endangered in California.

<sup>175</sup> California Native Plant Society, *California Native Plant Society’s Inventory of Rare and Endangered Vascular Plants of California* (sixth edition), Sacramento, CA., 2001.

## Porter-Cologne Water Quality Control Act

The *Porter-Cologne Water Quality Control Act* (California Water Code Sections 13000 et seq.) charges the SWRCB and the nine RWQCBs statewide with protecting water quality throughout California. Typically, the SWRCB and RWQCB act in concert with the USACE under Section 401 of the *Clean Water Act* in relation to permitting fill of federally jurisdictional waters. The US Supreme Court has acted to limit the regulatory jurisdiction of the USACE under Section 404 of the *Clean Water Act*.<sup>176</sup> This action did not limit the State's regulatory jurisdiction over Waters of the State.<sup>177</sup> Waters of the State are defined in Section 13050(e) of the *Porter-Cologne Water Quality Control Act* as "...any surface water or groundwater, including saline waters, within the boundaries of the state."

Wetlands are delineated in accordance with methodology presented in the 1987 *Corps of Engineers Wetlands Delineation Manual*<sup>178</sup> and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region*.<sup>179</sup> Applicants have this delineation verified by the USACE and, in cases where an area meets the criteria to be considered a wetland, but the USACE does not have jurisdiction, the applicant is referred to the appropriate RWQCB. For the Study Area, the San Francisco Bay Regional Water Quality Control Board (SFRWQCB) could exercise its jurisdiction over wetlands where a project does not require a federal permit, but involves removal or placement of material into Waters of the State. The USACE has indicated that the waters and wetlands potentially impacted by the Project are subject to its jurisdiction. A Section 401 clean water certification or waiver would be required as part of the permitting process for this Project.

## **Regional and Local**

### The McAteer-Petris Act (California Government Code 66600–66682)

The *McAteer-Petris Act* created the San Francisco Bay Conservation and Development Commission (BCDC) in 1965. BCDC's mission is the preservation of San Francisco Bay from indiscriminate filling. BCDC's first task was compilation of a comprehensive study of the Bay and determination of how future development of the Bay should occur. This effort resulted in the San Francisco Bay Plan in 1968. In 1969 the findings and policies of the Bay Plan were incorporated into the *McAteer-Petris*

---

<sup>176</sup> United States Supreme Court (USSC), *Solid Waste Agency of Northern Cook County v. US Army Corps of Engineers*. 531 US 159(2001), also known as the "SWANCC decision."

<sup>177</sup> Guzy, G.S. and R.J. Andersen., *Memorandum from the Corps regarding: Supreme Court ruling concerning CWA jurisdiction over isolated waters*. Website: <http://www.spn.usace.army.mil/regulatory/swancc.pdf>, 2001.

<sup>178</sup> Environmental Laboratory, *Corps of Engineers Wetlands Delineation Manual*. Technical Report Y-87-1, US Army Engineer Waterways Experiment Station. Vicksburg, Miss., 1987.

<sup>179</sup> US Army Corps of Engineers, *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)*, Wetlands Regulatory Assistance Program, Vicksburg, Miss., September 2008.

*Act*, which was amended making BCDC a permanent state agency. The Bay Plan continues to evolve and remains the guiding document for BCDC's actions. Section 66610 of the *McAteer-Petris Act* establishes the boundaries of San Francisco Bay in relation to BCDC's jurisdiction. Essentially, all areas below the mean high tide line and an area within a shoreline band that extends landward for 100 feet from the mean high tide line are subject to their jurisdiction. Section 66632 of the *McAteer-Petris Act* establishes the permitting process for projects that would place fill in, on, or over any part of BCDC's jurisdiction as defined in Section 66610. Some aspects of the Project would be in the water or within the shoreline band and, therefore, subject to BCDC's jurisdiction.

### Long Term Management Strategy for the Placement of Dredged Material in the San Francisco Bay Region (LTMS) Management Plan

In 1999, under the authority of the federal FESA, NOAA Fisheries and the USFWS, and the CDFG, under the CESA, completed a programmatic consultation for the Long Term Management Strategy for the Placement of Dredged Material in the San Francisco Bay Region (LTMS) Management Plan<sup>180</sup>. NOAA Fisheries, USFWS and CDFG concluded that the LTMS program was not likely to jeopardize the continued existence of listed species under their jurisdiction. The respective biological opinions provided an incidental take statement, which authorized the take of listed species that may inadvertently occur during dredging and dredged material disposal activities that adhere to the environmental work windows set forth in the LTMS Management Plan. Therefore, permitted dredging activities that conform to the Environmental Work Windows can be completed without the need to consult with the resource agencies under the FESA and the CESA. Any project proposing to conduct dredging activities outside of the LTMS environmental work windows is required to undertake either informal or formal consultation with the appropriate resource agencies (NOAA Fisheries, USFWS, and CDFG).

### San Francisco Bay Trail Plan

Environmental Protection Policies of the San Francisco Bay Trail Plan relevant to the Project are listed below.<sup>181</sup>

23. The Committee is aware of the ecological value of wetlands; in many cases, they provide habitat for a variety of endangered species. In the San Francisco Bay Area, these areas serve as a vital link in the Pacific flyway for feeding, breeding, nesting and cover for migratory birds. To

---

<sup>180</sup> LTMS Environmental Work Windows Work Group. LTMS Informal work windows, Informal consultation preparation packet. Draft version 1.4. February 2004. Website: <http://www.spn.usace.army.mil/conops/informal.pdf>.

<sup>181</sup> Bay Trail Plan. 1999. Electronic file: <http://baytrail.abag.ca.gov/baytrailplan.html#designguidelines>. July 30.

avoid impacts in wetlands habitats, the Bay Trail should not require fill in wetlands, and should be designed so that use of the trail avoids adverse impacts on wetland habitats.

24. Future support facilities serving the Bay Trail should be designed and constructed in such a manner that they do not impact fish and wildlife resources, especially wetlands. These facilities should be located and designed in a way that no fill of wetlands will be required.

26. The path will not always follow the Bay shoreline; inland reaches may be more appropriate, especially for bicycle travel, in some parts of the San Francisco Bay region.

28. Where the alignment of the Bay Trail may more appropriately be located away from the shoreline in order to protect particularly sensitive habitats, access to shoreline areas may be possible by connecting the Bay Trail to existing loop trails and other interpretive facilities. These access points should be planned and designed to make clear the distinction between the continuous Bay Trail and the interpretive trail. (Features may include different trail surfaces, marked entry points to interpretive areas, expanded facilities for education and shoreline interpretation, signage, regulation and enforcement of regulations.)

29. Provision of land or funds for Bay Trail planning or construction shall not be considered mitigation for wetland losses.

### Candlestick Point State Recreation Area General Plan

The following excerpt from the CPSRA General Plan is related to natural resource management:<sup>182</sup>

It is the policy of the department to protect the scenic values and to enhance, manage, and protect the biotic and natural resources of the area, while fully realizing the potential of the area for fulfillment of outdoor recreation needs. A wetland restoration and management plan shall be developed for the area north and east of the extension of Yosemite Avenue to the Bay, an area known as the Nature Area. The plan shall include provisions for natural restoration and removal of debris, design of a shoreline configuration that provides a healthy intertidal action, revegetation, and wildlife habitat enhancement. This plan shall be developed in coordination with local, Bay protection, and wildlife agencies.

### San Francisco Bay Plan

A summary of the policies of the San Francisco Bay Plan related to biological resources is provided below.

---

<sup>182</sup> State Department of Parks and Recreation. Candlestick Point State Recreation Area General Plan, March, 1988.

*Policies Concerning Fish, Other Aquatic Organisms and Wildlife in the Bay, Tidal Marshes and Tidal Flats Around the Bay, and Subtidal Areas in the Bay*<sup>183</sup>

The SFBCDC shall protect native fish species, other aquatic organisms, other listed wildlife species and their specific habitats under the *California Endangered Species Act* or federal *Marine Mammal Protection Act* within the Bay's tidal marshes, tidal flats, and subtidal habitat. To the greatest extent feasible, specific habitats such as tidal marsh, tidal flats, and subtidal habitats shall be conserved, restored, and increased. Specific habitats that are needed to conserve, increase or prevent the extinction of any native species, species threatened or endangered, species that the CDFG has determined are candidates for listing as endangered or threatened under the *California Endangered Species Act*, or any species that provides substantial public benefits, should be protected, whether in the Bay or behind dikes. In reviewing or approving habitat restoration programs the SFBCDC should follow the recommendations in the Baylands Ecosystem Habitat Goals and provide a diversity of habitats for native aquatic and terrestrial plant and animal species. For projects that may adversely affect an endangered or threatened plant, fish, other aquatic organism or wildlife species the SFBCDC should consult and give appropriate consideration to the recommendations of the California Department of Fish and Game and the US Fish and Wildlife Service or the National Marine Fisheries Service and not authorize projects that would result in the "taking" of any plant, fish, other aquatic organism or wildlife species listed as endangered or threatened pursuant to the state or federal endangered species acts, or species that are candidates for listing under the CESA, unless the project applicant has obtained the appropriate "take" authorization from the US Fish and Wildlife Service, National Marine Fisheries Service or the California Department of Fish and Game. However, the SFBCDC may permit a minor amount of fill or dredging in wildlife refuges, shown on the Plan Maps, necessary to enhance fish, other aquatic organisms and wildlife habitat or to provide public facilities for wildlife observation, interpretation and education.

*Policies Concerning Shoreline Protection around the Bay*<sup>184</sup>

New shoreline erosion control projects and the maintenance or reconstruction of existing erosion control facilities should be authorized if (a) the project is necessary to protect the shoreline from erosion; (b) the type of the protective structure is appropriate for the project site and the erosion conditions at the site; and (c) the project is properly designed and constructed. Professionals knowledgeable of the Commission's concerns, such as civil engineers experienced in coastal processes, should participate in the design of erosion control projects.

*Policies Concerning Dredging in the Bay*<sup>185</sup>

---

<sup>183</sup> SFBCDC, San Francisco Bay Plan, Reprinted February 2008.

<sup>184</sup> Ibid.

<sup>185</sup> Ibid.

Dredging and dredged material disposal should be conducted in an environmentally and economically sound manner. Dredgers should reduce disposal in the Bay and certain waterways over time to achieve the LTMS goal of limiting in-Bay disposal volumes to a maximum of one million cubic yards per year. The LTMS agencies should implement a system of disposal allotments to individual dredgers to achieve this goal only if voluntary efforts are not effective in reaching the LTMS goal. In making its decision regarding disposal allocations, the Commission should confer with the LTMS agencies and consider the need for the dredging and the dredging projects, environmental impacts, regional economic impacts, efforts by the dredging community to implement and fund alternatives to in-Bay disposal, and other relevant factors. Small dredgers should be exempted from allotments, but all dredgers should comply with the SFBCDC policies.

### Yosemite Slough Restoration Plan

The Yosemite Slough Restoration Plan (2005) was developed on behalf of the State Parks Department, in accordance with the CPSRA GP. The restoration of Yosemite Slough would create the largest contiguous wetland area in San Francisco. The restoration project would help restore essential wildlife habitat, improve water quality, and prevent erosion along the shoreline of the City—an area of the bay where tidal wetlands have been most impacted and suffered the greatest loss due to urbanization.

Goals and objectives of the restoration include the following:

- Increase the area subject to tidal influence by excavating three areas that were formerly part of San Francisco Bay.
- Restore habitat diversity by adding 12 acres of tidally influenced wetlands and marsh area and remove chemically impacted soils from upland areas to improve the quality of existing habitat.
- Improve habitat for special-status species (i.e., western snowy plover and double-crested cormorants) by creating two nesting islands.
- Improve the quality of life for the surrounding community by creating a clean, beautiful local park for viewing wildlife habitat.
- Create an environmental area that local schools can use for field trips.
- Connect to the Blue Greenway, an important effort to build 13 miles of Bay Trail along the southern waterfront of the San Francisco Bay Trail.

### City of San Francisco General Plan

The following goals and policies related to biological resources protection are included in the Environmental Protection Element of the *San Francisco General Plan*, and are relevant to the Project:

*General*

- Objective 1      Achieve a proper balance among the conservation, utilization, and development of San Francisco's natural resources.
  - Policy 1.1      Conserve and protect the natural resources of San Francisco.
  - Policy 1.2      Improve the quality of natural resources.
  - Policy 1.3      Restore and replenish the supply of natural resources.
  - Policy 1.4      Assure that all new development meets strict environmental quality standards and recognizes human needs.

*Bay, Ocean, and Shorelines*

- Objective 3      Maintain and improve the quality of the bay, ocean, and shoreline areas.
  - Policy 3.1      Cooperate with and otherwise support regulatory programs of existing regional, state, and federal agencies dealing with the Bay, Ocean, and Shorelines.
  - Policy 3.2      Promote the use and development of shoreline areas consistent with the General Plan and the best interest of San Francisco.

*Land*

- Objective 7      Assure that the land resources in San Francisco are used in ways that both respect and preserve the natural values of the land and serve the best interests of all the City's citizens.
  - Policy 7.3      Require that filling of land adhere to the highest standards of soils engineering consistent with the proposed use.

*Flora and Fauna*

- Objective 8      Ensure the protection of plant and animal life in the City.
  - Policy 8.1      Cooperate with and otherwise support the California Department of Fish and Game and its animal protection programs.
  - Policy 8.2      Protect the habitats of known plant and animal species that require a relatively natural environment.
  - Policy 8.3      Protect rare and endangered species.



## San Francisco Municipal Code

### Urban Forestry Ordinance

The City provides protection for trees around the City by way of its Urban Forestry Ordinance (Ord. 165-95, App. 5/19/95), Article 16, Sections 806 (Planting and Removal of Street Trees) through 810 (Significant Trees) of the *Public Works Code*. "Significant trees" are defined as trees within 10 feet of a public right-of-way that also meet one of the following size requirements: 20 feet or greater in height; 15 feet or greater in canopy width; or 12 inches or greater diameter of trunk measured at 4.5 feet above grade. Among the factors considered in the removal of significant trees are the following: their size, age, and species; visual and aesthetic characteristics; cultural or historic characteristics; ecological and location characteristics. Street trees are also protected by the City's Urban Forestry Ordinance and both require a permit for removal. The ordinance also provides a process for designating trees as landmark trees, and protects significant, landmark, and street trees during construction activities. This ordinance applies to limited areas of the Project site where there are significant trees, street trees, and/or landmark trees.

### Planning Code

Section 143 of the San Francisco Planning Code requires the installation of one street tree for each 20 feet of property frontage along each street or alley, with any remaining fraction of 10 feet or more of frontage requiring an additional tree for the owner or developer of a new or relocated building, or a building with 20% or more floor area expansion in specified districts.<sup>186</sup> This ordinance applies to the R, SPD, RSD, NC, C-3, DTR, MUG, MUO, MUR, UMU, SLR, SLI, and SSO Districts.

## **DISCUSSION**

This Biological Technical Report describes the existing biological resources of the CPHPS Project site and vicinity and the regulatory framework under which Project activities must be conducted. The Biological Resources Chapter of the Project's EIR will analyze impacts of the Project on these resources. In addition, pursuant to the regulations described in the "Regulatory Framework" section of this report, permits from various regulatory agencies must be obtained to authorize Project impacts to regulated resources.

---

<sup>186</sup> Amended by Ord. 414-85, App. 9/17/85; Ord. 69-87, App. 3/13/87; Ord. 115-90, App. 4/6/90; Ord. 298-08, File No. 081153, App. 12/19/2008.

**APPENDIX A**  
**CNDDDB SPECIAL-STATUS SPECIES LIST**

California Department of Fish and Game  
 Natural Diversity Database  
 Selected Elements by Scientific Name - San Francisco South and Hunter's Point quads

Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1 <i>Actinemys marmorata</i> western pond turtle	ARAAD02030			G3G4	S3	SC
2 <i>Amsinckia lunaris</i> bent-flowered fiddleneck	PDBOR01070			G2	S2.2	1B.2
3 <i>Arctostaphylos hookeri ssp. franciscana</i> Franciscan manzanita	PDERI040J3			G3TXC	SX	1A
4 <i>Arctostaphylos hookeri ssp. ravenii</i> Presidio manzanita	PDERI040J2	Endangered	Endangered	G3T1	S1.1	1B.1
5 <i>Arctostaphylos Imbricata</i> San Bruno Mountain manzanita	PDERI040L0		Endangered	G1	S1.2	1B.1
6 <i>Arctostaphylos montaraensis</i> Montara manzanita	PDERI042W0			G2	S2.2	1B.2
7 <i>Arctostaphylos pacifica</i> Pacific manzanita	PDERI040Z0		Endangered	G1	S1.1	1B.2
8 <i>Astragalus tener var. tener</i> alkali milk-vetch	PDFAB0F8R1			G1T1	S1.1	1B.2
9 <i>Banksia incredula</i> incredible harvestman	ILARA14100			G1	S1	
10 <i>Caecidotea tomalensis</i> Tomales isopod	ICMAL01220			G2	S2	
11 <i>Callophrys mossii bayensis</i> San Bruno elfin butterfly	IILEPE2202	Endangered		G4T1	S1	
12 <i>Carex comosa</i> bristly sedge	PMCYP032Y0			G5	S2?	2.1
13 <i>Charadrius alexandrinus nivosus</i> western snowy plover	ABNNB03031	Threatened		G4T3	S2	SC
14 <i>Chorizanthe cuspidata var. cuspidata</i> San Francisco Bay spineflower	PDPGN04081			G2T2	S2.2	1B.2
15 <i>Chorizanthe robusta var. robusta</i> robust spineflower	PDPGN040Q2	Endangered		G2T1	S1.1	1B.1
16 <i>Cicindela hirticollis grvida</i> sandy beach tiger beetle	IICOL02101			G5T2	S1	
17 <i>Cirsium andrewsii</i> Franciscan thistle	PDAST2E050			G2	S2.2	1B.2
18 <i>Cirsium occidentale var. compactum</i> compact cobwebby thistle	PDAST2E1Z1			G3G4T2	S2.1	1B.2
19 <i>Collinsia multicolor</i> San Francisco collinsia	PDSCR0H0B0			G2	S2.2	1B.2
20 <i>Dufourea stagei</i> Stage's dufourine bee	IIHYM22010			G1?	S1?	
21 <i>Eucyclogobius newberryi</i> tidewater goby	AFCQN04010	Endangered		G3	S2S3	SC
22 <i>Euphydryas editha bayensis</i> Bay checkerspot butterfly	IILEPK4055	Threatened		G5T1	S1	
23 <i>Fritillaria liliacea</i> fragrant fritillary	PMLILOV0C0			G2	S2.2	1B.2

California Department of Fish and Game  
Natural Diversity Database  
Selected Elements by Scientific Name - San Francisco South and Hunter's Point quads

Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
24 <i>Geothlypis trichas sinuosa</i> saltmarsh common yellowthroat	ABPBX1201A			G5T2	S2	SC
25 <i>Gilia capitata ssp. chamissonis</i> blue coast gilia	PDPLM040B3			G5T2	S2.1	1B.1
26 <i>Grindella hirsutula var. maritima</i> San Francisco gumplant	PDAST470D3			G5T2	S2.1	1B.2
27 <i>Helianthella castanea</i> Diablo helianthella	PDAST4M020			G3	S3.2	1B.2
28 <i>Hesperevax sparsiflora var. brevifolia</i> short-leaved evax	PDASTE5011			G4T2T3	S2S3	2.2
29 <i>Horkelia cuneata ssp. sericea</i> Kellogg's horkelia	PDR0S0W043			G4T1	S1.1	1B.1
30 <i>Hydroporus leechi</i> Leech's skyline diving beetle	IICOL55040			G1?	S1?	
31 <i>Ischnura gemina</i> San Francisco forktail damselfly	I1ODO72010			G2	S2	
32 <i>Laslurus cinereus</i> hoary bat	AMACC05030			G5	S4?	
33 <i>Laterallus jamaicensis coturniculus</i> California black rail	ABNME03041		Threatened	G4T1	S1	
34 <i>Layia carnosa</i> beach layia	PDAST5N010	Endangered	Endangered	G2	S2.1	1B.1
35 <i>Leptosiphon rosaceus</i> rose leptosiphon	PDPLM09180			G1	S1.1	1B.1
36 <i>Lessingia germanorum</i> San Francisco lessingia	PDAST5S010	Endangered	Endangered	G1	S1.1	1B.1
37 <i>Lichnanthe ursina</i> bumblebee scarab beetle	IICOL67020			G2	S2	
38 <i>Malacothamnus arcuatus</i> arcuate bush-mallow	PDMAL0Q0E0			G2Q	S2.2	1B.2
39 <i>Melospiza melodia pusillula</i> Alameda song sparrow	ABPBXA301S			G5T2?	S2?	SC
40 <i>Pentachaeta bellidiflora</i> white-rayed pentachaeta	PDAST6X030	Endangered	Endangered	G1	S1.1	1B.1
41 <i>Phalacrocorax auritus</i> double-crested cormorant	ABNFD01020			G5	S3	
42 <i>Plebejus icarioides missionensis</i> Mission blue butterfly	IILEPG801A	Endangered		G5T1	S1	
43 <i>Rallus longirostris obsoletus</i> California clapper rail	ABNME05016	Endangered	Endangered	G5T1	S1	
44 <i>Rana draytonii</i> California red-legged frog	AAABH01022	Threatened		G4T2T3	S2S3	SC
45 <i>Riparia riparia</i> bank swallow	ABPAU08010		Threatened	G5	S2S3	
46 <i>Sanicula maritima</i> adobe sanicle	PDAP11Z0D0		Rare	G2	S2.2	1B.1

California Department of Fish and Game  
 Natural Diversity Database  
 Selected Elements by Scientific Name - San Francisco South and Hunter's Point quads

Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
47 <i>Silene verecunda ssp. verecunda</i> San Francisco campion	PDCAR0U213			G5T2	S2.2	1B.2
48 <i>Speyeria callippe callippe</i> callippe silverspot butterfly	IILEPJ6091	Endangered		G5T1	S1	
49 <i>Suaeda californica</i> California seablite	PDCHE0P020	Endangered		G1	S1.1	1B.1
50 <i>Thamnophis sirtalis tetrataenia</i> San Francisco garter snake	ARADB3613B	Endangered	Endangered	G5T2	S2	
51 <i>Trachusa gummlifera</i> A leaf-cutter bee	IIHYM80010			G1	S1	
52 <i>Triphysaria floribunda</i> San Francisco owl's-clover	PDSCR2T010			G2	S2.2	1B.2
53 <i>Triquetrella californica</i> coastal triquetrella	NBMUS7S010			G1	S1.2	1B.2
54 <i>Tryonia imitator</i> mimic tryonia (=California brackishwater snail)	IMGASJ7040			G2G3	S2S3	

California Department of Fish and Game  
Natural Diversity Database  
CNDDDB Wide Tabular Report  
Bayview 2009

Name (Scientific/Common)	CNDDDB Ranks	Other Lists	Listing Status	Total EO's	Element Occ Ranks						Population Status		Presence		
					A	B	C	D	X	U	Historic >20 yr	Recent <=20 yr	Pres. Extant	Poss. Extirp.	Extirp.
<i>Actinemys marmorata</i> western pond turtle	G3G4 S3	CDFG: SC	Fed: None Cal: None	1092 S:2	0	1	1	0	0	0	0	2	2	0	0
<i>Amsinckia lunaris</i> bent-flowered fiddleneck	G2 S2.2	CNPS: 1B.2	Fed: None Cal: None	50 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Arctostaphylos hookeri</i> ssp. <i>franciscana</i> Franciscan manzanita	G3TXC SX	CNPS: 1A	Fed: None Cal: None	3 S:1	0	0	0	0	1	0	1	0	0	0	1
<i>Arctostaphylos hookeri</i> ssp. <i>ravenii</i> Presidio manzanita	G3T1 S1.1	CNPS: 1B.1	Fed: Endangered Cal: Endangered	7 S:1	0	0	0	0	1	0	1	0	0	0	1
<i>Arctostaphylos imbricata</i> San Bruno Mountain manzanita	G1 S1.2	CNPS: 1B.1	Fed: None Cal: Endangered	3	0	0	0	0	0	3	1	2	3	0	0
<i>Arctostaphylos montaraensis</i> Montara manzanita	G2 S2.2	CNPS: 1B.2	Fed: None Cal: None	4 S:1	0	0	0	1	0	0	1	0	1	0	0
<i>Arctostaphylos pacifica</i> Pacific manzanita	G1 S1.1	CNPS: 1B.2	Fed: None Cal: Endangered	1	0	0	1	0	0	0	0	1	1	0	0
<i>Astragalus tener</i> var. <i>tener</i> alkali milk-vetch	G1T1 S1.1	CNPS: 1B.2	Fed: None Cal: None	66 S:1	0	0	0	0	1	0	1	0	0	1	0
<i>Banksula incredula</i> incredible harvestman	G1 S1	CDFG:	Fed: None Cal: None	1	0	0	0	0	0	1	0	1	1	0	0
<i>Caecidotrea tomalensis</i> Tomales isopod	G2 S2	CDFG:	Fed: None Cal: None	6 S:2	0	0	1	1	0	0	2	0	2	0	0
<i>Callophrys mossii bayensis</i> San Bruno elfin butterfly	G4T1 S1	CDFG:	Fed: Endangered Cal: None	10 S:3	0	0	0	0	0	3	2	1	3	0	0
<i>Carex comosa</i> bristly sedge	G5 S2?	CNPS: 2.1	Fed: None Cal: None	11 S:1	0	0	0	0	1	0	1	0	0	1	0
<i>Charadrius alexandrinus nivosus</i> western snowy plover	G4T3 S2	CDFG: SC	Fed: Threatened Cal: None	116 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Chorizanthe cuspidata</i> var. <i>cuspidata</i> San Francisco Bay spineflower	G2T2 S2.2	CNPS: 1B.2	Fed: None Cal: None	20 S:7	0	0	3	0	0	4	4	3	7	0	0
<i>Chorizanthe robusta</i> var. <i>robusta</i> robust spineflower	G2T1 S1.1	CNPS: 1B.1	Fed: Endangered Cal: None	23 S:2	0	0	0	0	2	0	2	0	0	2	0

California Department of Fish and Game  
Natural Diversity Database  
CNDDDB Wide Tabular Report  
Bayview 2009

Name (Scientific/Common)	CNDDDB Ranks	Other Lists	Listing Status	Total EO's	Element Occ Ranks						Population Status		Presence		
					A	B	C	D	X	U	Historic >20 yr	Recent <=20 yr	Pres. Extant	Poss. Extirp.	Extirp.
<i>Cicindela hirticollis</i> gravida sandy beach tiger beetle	G5T2 S1	CDFG:	Fed: None Cal: None	34 S:1	0	0	0	0	1	0	1	0	0	0	1
<i>Cirsium andrewsii</i> Franciscan thistle	G2 S2.2	CNPS: 1B.2	Fed: None Cal: None	27 S:1	0	0	0	0	1	0	1	0	0	1	0
<i>Cirsium occidentale</i> var. <i>compactum</i> compact cobwebby thistle	G3G4T2 S2.1	CNPS: 1B.2	Fed: None Cal: None	14 S:1	0	0	0	0	1	0	1	0	0	1	0
<i>Collinsia multicolor</i> San Francisco collinsia	G2 S2.2	CNPS: 1B.2	Fed: None Cal: None	22 S:7	0	0	0	0	0	7	7	0	7	0	0
<i>Dufourea stagei</i> Stage's dufourine bee	G1? S1?	CDFG:	Fed: None Cal: None	1	0	0	0	0	0	1	1	0	1	0	0
<i>Eucyclogobius newberryi</i> tidewater goby	G3 S2S3	CDFG: SC	Fed: Endangered Cal: None	116 S:1	0	0	0	0	1	0	1	0	0	0	1
<i>Euphydryas editha bayensis</i> Bay checkerspot butterfly	G5T1 S1	CDFG:	Fed: Threatened Cal: None	24 S:3	0	0	0	0	3	0	3	0	0	0	3
<i>Fritillaria liliacea</i> fragrant fritillary	G2 S2.2	CNPS: 1B.2	Fed: None Cal: None	59 S:1	0	0	0	0	1	0	1	0	0	1	0
<i>Geothlypis trichas sinuosa</i> saltmarsh common yellowthroat	G5T2 S2	CDFG: SC	Fed: None Cal: None	110 S:2	0	0	0	0	0	2	2	0	2	0	0
<i>Gilia capitata</i> ssp. <i>chamissonis</i> blue coast gilia	G5T2 S2.1	CNPS: 1B.1	Fed: None Cal: None	29 S:3	0	1	0	0	0	2	2	1	3	0	0
<i>Grindelia hirsutula</i> var. <i>maritima</i> San Francisco gumplant	G5T2 S2.1	CNPS: 1B.2	Fed: None Cal: None	15 S:8	0	0	1	1	1	5	8	0	7	0	1
<i>Helianthella castanea</i> Diablo helianthella	G3 S3.2	CNPS: 1B.2	Fed: None Cal: None	82 S:3	0	1	0	0	0	2	2	1	3	0	0
<i>Hemizonia congesta</i> ssp. <i>congesta</i> seaside tarplant	G5T2T3 S2S3	CNPS: 1B.2	Fed: None Cal: None	33 S:2	0	0	0	0	1	1	2	0	1	1	0
<i>Hesperavax sparsiflora</i> var. <i>brevifolia</i> short-leaved evax	G4T2T3 S2S3	CNPS: 1B.2	Fed: None Cal: None	36 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Horkelia cuneata</i> ssp. <i>sericea</i> Kellogg's horkelia	G4T1 S1.1	CNPS: 1B.1	Fed: None Cal: None	38 S:3	0	0	0	0	0	3	3	0	3	0	0

California Department of Fish and Game  
Natural Diversity Database  
CNDDDB Wide Tabular Report  
Bayview 2009

Name (Scientific/Common)	CNDDDB Ranks	Other Lists	Listing Status	Total EO's	Element Occ Ranks						Population Status		Presence		
					A	B	C	D	X	U	Historic >20 yr	Recent <=20 yr	Pres. Extant	Poss. Extirp.	Extirp.
Hydroporus leechi Leech's skyline diving beetle	G1? S1?	CDFG:	Fed: None Cal: None	13 S:1	0	0	0	0	0	1	1	0	0	1	0
Ischnura gemina San Francisco forktail damselfly	G2 S2	CDFG:	Fed: None Cal: None	6 S:2	0	0	0	0	0	2	2	0	2	0	0
Lasiurus cinereus hoary bat	G5 S4?	CDFG:	Fed: None Cal: None	235 S:4	0	0	0	0	0	4	3	1	4	0	0
Laterallus jamaicensis coturniculus California black rail	G4T1 S1	CDFG:	Fed: None Cal: Threatened	233 S:1	0	0	0	0	0	1	1	0	1	0	0
Layia carnosa beach layia	G2 S2.1	CNPS: 1B.1	Fed: Endangered Cal: Endangered	22 S:1	0	0	0	0	1	0	1	0	0	0	1
Leptosiphon rosaceus rose leptosiphon	G1 S1.1	CNPS: 1B.1	Fed: None Cal: None	25 S:1	0	0	0	0	1	0	1	0	0	1	0
Lessingia germanorum San Francisco lessingia	G1 S1.1	CNPS: 1B.1	Fed: Endangered Cal: Endangered	5 S:2	0	0	1	0	1	0	1	1	1	1	0
Lichnanthe ursina bumblebee scarab beetle	G2 S2	CDFG:	Fed: None Cal: None	8 S:2	0	0	0	0	0	2	2	0	2	0	0
Malacothamnus arcuatus arcuate bush-mallow	G2Q S2.2	CNPS: 1B.2	Fed: None Cal: None	21 S:1	0	0	0	0	0	1	1	0	1	0	0
Melospiza melodia pusillula Alameda song sparrow	G5T2? S2?	CDFG: SC	Fed: None Cal: None	38 S:3	0	0	0	0	0	3	3	0	3	0	0
Mylopharodon conocephalus hardhead	G3 S3	CDFG: SC	Fed: None Cal: None	32 S:1	0	0	0	0	0	1	1	0	1	0	0
Pentachaeta bellidiflora white-rayed pentachaeta	G1 S1.1	CNPS: 1B.1	Fed: Endangered Cal: Endangered	14 S:1	0	0	0	0	1	0	1	0	0	1	0
Phalacrocorax auritus double-crested cormorant	G5 S3	CDFG:	Fed: None Cal: None	37 S:2	0	0	2	0	0	0	0	2	2	0	0
Plebejus icarioides missionensis Mission blue butterfly	G5T1 S1	CDFG:	Fed: Endangered Cal: None	14 S:12	0	2	1	0	1	8	2	10	12	0	0
Rallus longirostris obsoletus California clapper rail	G5T1 S1	CDFG:	Fed: Endangered Cal: Endangered	90 S:2	0	0	1	0	0	1	1	1	2	0	0



California Department of Fish and Game  
 Natural Diversity Database  
 CNDDDB Wide Tabular Report  
 Bayview 2009

Name (Scientific/Common)	CNDDDB Ranks	Other Lists	Listing Status	Total EO's	Element Occ Ranks						Population Status		Presence		
					A	B	C	D	X	U	Historic >20 yr	Recent <=20 yr	Pres. Extant	Poss. Extirp.	Extirp.
<i>Rana draytonii</i> California red-legged frog	G4T2T3 S2S3	CDFG: SC	Fed: Threatened Cal: None	1238 S:6	1	2	1	0	0	2	1	5	6	0	0
<i>Riparia riparia</i> bank swallow	G5 S2S3	CDFG:	Fed: None Cal: Threatened	190 S:3	0	1	0	0	0	2	3	0	3	0	0
<i>Sanicula maritima</i> adobe sanicle	G2 S2.2	CNPS: 1B.1	Fed: None Cal: Rare	16 S:1	0	0	0	0	1	0	1	0	0	1	0
<i>Silene verecunda</i> ssp. <i>verecunda</i> San Francisco campion	G5T2 S2.2	CNPS: 1B.2	Fed: None Cal: None	12 S:2	0	0	0	0	0	2	1	1	2	0	0
<i>Speyeria callippe callippe</i> callippe silverspot butterfly	G5T1 S1	CDFG:	Fed: Endangered Cal: None	6 S:5	0	1	0	0	0	4	0	5	5	0	0
<i>Suaeda californica</i> California seablite	G1 S1.1	CNPS: 1B.1	Fed: Endangered Cal: None	17 S:2	0	0	0	0	1	1	1	1	1	0	1
<i>Thamnophis sirtalis tetrataenia</i> San Francisco garter snake	G5T2 S2	CDFG:	Fed: Endangered Cal: Endangered	41 S:2	1	0	0	1	0	0	0	2	2	0	0
<i>Trachusa gummifera</i> A leaf-cutter bee	G1 S1	CDFG:	Fed: None Cal: None	2 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Triphysaria floribunda</i> San Francisco owl's-clover	G2 S2.2	CNPS: 1B.2	Fed: None Cal: None	41 S:5	0	0	0	0	2	3	5	0	3	1	1
<i>Triquetrella californica</i> coastal triquetrella	G1 S1.2	CNPS: 1B.2	Fed: None Cal: None	11 S:1	0	0	0	0	0	1	0	1	1	0	0
<i>Tryonia imitator</i> mimic tryonia (=California brackishwater snail)	G2G3 S2S3	CDFG:	Fed: None Cal: None	34 S:1	0	0	0	0	1	0	1	0	0	0	1

**APPENDIX B**  
**CNPS SPECIAL-STATUS SPECIES LIST**



# Inventory of Rare and Endangered Plants

v7-08b 4-02-08

Status: search results for "+San Francisco South (448B) 3712264" - Mon, Jul. 7, 2008, 14:48 b

+San Francisco South (448B) 3712264

Tip: CNPS\_LIST:"List 3" (note the field name) returns only taxa on List 3. "List 3" by itself, matches the phrase wherever found. Browse the list of field names.[all tips and help.][search history]

Hits 1 to 19 of 19

Requests that specify topo quads will return only Lists 1-3.

To save selected records for later study, click the ADD button.

Selections will appear in a new window.

open	save	hits	scientific	common	family	CNPS
	<input type="checkbox"/>	1	<b>Amsinckia lunaris</b> 🌸	bent-flowered fiddleneck	Boraginaceae	List 1B.2
	<input type="checkbox"/>	1	<b>Arctostaphylos imbricata</b> 🌸	San Bruno Mountain manzanita	Ericaceae	List 1B.1
	<input type="checkbox"/>	1	<b>Arctostaphylos montaraensis</b> 🌸	Montara manzanita	Ericaceae	List 1B.2
	<input type="checkbox"/>	1	<b>Arctostaphylos pacifica</b>	Pacific manzanita	Ericaceae	List 1B.2
	<input type="checkbox"/>	1	<b>Centromadia parryi ssp. parryi</b> 🌸	pappose tarplant	Asteraceae	List 1B.2
	<input type="checkbox"/>	1	<b>Chorizanthe cuspidata var. cuspidata</b> 🌸	San Francisco Bay spineflower	Polygonaceae	List 1B.2
	<input type="checkbox"/>	1	<b>Cirsium andrewsii</b> 🌸	Franciscan thistle	Asteraceae	List 1B.2
	<input type="checkbox"/>	1	<b>Collinsia multicolor</b> 🌸	San Francisco collinsia	Scrophulariaceae	List 1B.2
	<input type="checkbox"/>	1	<b>Equisetum palustre</b> 🌸	marsh horsetail	Equisetaceae	List 3
	<input type="checkbox"/>	1	<b>Gilia capitata ssp. chamissonis</b> 🌸	blue coast gilia	Polemoniaceae	List 1B.1
	<input type="checkbox"/>	1	<b>Grindelia hirsutula var. maritima</b> 🌸	San Francisco gumplant	Asteraceae	List 1B.2
	<input type="checkbox"/>	1	<b>Helianthella castanea</b> 🌸	Diablo helianthella	Asteraceae	List 1B.2
	<input type="checkbox"/>	1	<b>Horkelia cuneata ssp. sericea</b> 🌸	Kellogg's horkelia	Rosaceae	List 1B.1
	<input type="checkbox"/>	1	<b>Lessingia germanorum</b> 🌸	San Francisco lessingia	Asteraceae	List 1B.1
	<input type="checkbox"/>	1	<b>Malacothamnus arcuatus</b>	arcuate bush-mallow	Malvaceae	List 1B.2
	<input type="checkbox"/>	1	<b>Plagiobothrys chorisianus var. chorisianus</b> 🌸	Choris' popcorn-flower	Boraginaceae	List 1B.2
	<input type="checkbox"/>	1	<b>Silene verecunda ssp. verecunda</b> 🌸	San Francisco campion	Caryophyllaceae	List 1B.2
	<input type="checkbox"/>	1	<b>Triphysaria floribunda</b> 🌸	San Francisco owl's-clover	Scrophulariaceae	List 1B.2
	<input type="checkbox"/>	1	<b>Triquetrella californica</b> 🌸	coastal triquetrella	Pottiaceae	List 1B.2

To save selected records for later study, click the ADD button.

**ADD checked items to Plant Press**

check all

check none

Selections will appear in a new window.

No more hits.







# Inventory of Rare and Endangered Plants

v7-08b 4-02-08



**Status:** search results for "+Hunters Point (448A) 3712263" - Mon, Jul. 7, 2008, 14:46 b

**Tip:** CNPS\_LIST: "List 3" (note the field name) returns only taxa on List 3. "List 3" by itself, matches the phrase wherever found. Browse the list of **field names**. [all tips and help.][search history]

**Hits 1 to 1 of 1**  
**Requests that specify topo quads will return only Lists 1-3.**

To save selected records for later study, click the ADD button.

Selections will appear in a new window.

open	save	hits	scientific	common	family	CNPS
	<input type="checkbox"/>	1	<b><u>Suaeda californica</u></b> 	California seablite	Chenopodiaceae	List 1B.1

No more hits.





# Inventory of Rare and Endangered Plants

v7-09d 10-07-09

**Status:** search results for "+San Francisco South (448B) 3712264" - Mon, Nov. 2, 2009, 18:48 b

+San Francisco South (448B) 3712264"































**Tip:** Want to search by habitat? Try the **Checkbox and Preset** search page.[\[all tips and help.\]](#)  
[\[search history\]](#)









**Hits 1 to 20 of 20**

**Requests that specify topo quads will return only Lists 1-3.**

To save selected records for later study, click the ADD button.

Selections will appear in a new window.

open	save	hits	scientific	common	family	CNPS
	<input type="checkbox"/>	1	<b>Amsinckia lunaris</b> 	bent-flowered fiddleneck	Boraginaceae	List 1B.2
	<input type="checkbox"/>	1	<b>Arctostaphylos imbricata</b> 	San Bruno Mountain manzanita	Ericaceae	List 1B.1
	<input type="checkbox"/>	1	<b>Arctostaphylos montaraensis</b> 	Montara manzanita	Ericaceae	List 1B.2
	<input type="checkbox"/>	1	<b>Arctostaphylos pacifica</b>	Pacific manzanita	Ericaceae	List 1B.2
	<input type="checkbox"/>	1	<b>Centromadia parryi ssp. parryi</b> 	pappose tarplant	Asteraceae	List 1B.2
	<input type="checkbox"/>	1	<b>Chorizanthe cuspidata var. cuspidata</b> 	San Francisco Bay spineflower	Polygonaceae	List 1B.2
	<input type="checkbox"/>	1	<b>Cirsium andrewsii</b> 	Franciscan thistle	Asteraceae	List 1B.2
	<input type="checkbox"/>	1	<b>Collinsia multicolor</b> 	San Francisco collinsia	Scrophulariaceae	List 1B.2
	<input type="checkbox"/>	1	<b>Equisetum palustre</b> 	marsh horsetail	Equisetaceae	List 3
	<input type="checkbox"/>	1	<b>Gilia capitata ssp. chamissonis</b> 	blue coast gilia	Polemoniaceae	List 1B.1
	<input type="checkbox"/>	1	<b>Grindelia hirsutula var. maritima</b> 	San Francisco gumplant	Asteraceae	List 1B.2
	<input type="checkbox"/>	1	<b>Helianthella castanea</b> 	Diablo helianthella	Asteraceae	List 1B.2
	<input type="checkbox"/>	1	<b>Hemizonia congesta ssp. congesta</b> 	pale yellow hayfield tarplant	Asteraceae	List 1B.2
	<input type="checkbox"/>	1	<b>Horkelia cuneata ssp. sericea</b> 	Kellogg's horkelia	Rosaceae	List 1B.1
	<input type="checkbox"/>	1	<b>Lessingia germanorum</b> 	San Francisco lessingia	Asteraceae	List 1B.1
	<input type="checkbox"/>	1	<b>Malacothamnus arcuatus</b>	arcuate bush- mallow	Malvaceae	List 1B.2

	<input type="checkbox"/>	1	<b><u>Plagiobothrys chorisianus</u> var. <u>chorisianus</u></b> 	Choris' popcorn-flower	Boraginaceae	List 1B.2
	<input type="checkbox"/>	1	<b><u>Silene verecunda</u> ssp. <u>verecunda</u></b> 	San Francisco campion	Caryophyllaceae	List 1B.2
	<input type="checkbox"/>	1	<b><u>Triphysaria floribunda</u></b> 	San Francisco owl's-clover	Scrophulariaceae	List 1B.2
	<input type="checkbox"/>	1	<b><u>Triquetrella californica</u></b> 	coastal triquetrella	Pottiaceae	List 1B.2

To save selected records for later study, click the ADD button.

**ADD checked items to Plant Press**

check all

check none

Selections will appear in a new window.

No more hits.







# Inventory of Rare and Endangered Plants

v7-09d 10-07-09

**Status:** search results - Mon, Nov. 2, 2009, 18:50 b

**Tip:** Having trouble with a multi-word search? Try a single word, e.g. ginger or cobra.  
[\[all tips and help.\]](#)[\[search history\]](#)

**Hits 1 to 7 of 7**

**Requests that specify topo quads will return only Lists 1-3.**


To save selected records for later study, click the ADD button.

Selections will appear in a new window.

open	save	hits	scientific	common	family	CNPS
	<input type="checkbox"/>	1	<b><u>Arctostaphylos hookeri</u></b> <b>ssp. franciscana</b>	Franciscan manzanita	Ericaceae	List 1A
	<input type="checkbox"/>	1	<b><u>Arctostaphylos hookeri</u></b> <b>ssp. ravenii</b>	Presidio manzanita	Ericaceae	List 1B.1
	<input type="checkbox"/>	1	<b><u>Astragalus tener</u> var. <u>tener</u></b> 	alkali milk-vetch	Fabaceae	List 1B.2
	<input type="checkbox"/>	1	<b><u>Chorizanthe robusta</u> var. <u>robusta</u></b>	robust spineflower	Polygonaceae	List 1B.1
	<input type="checkbox"/>	1	<b><u>Cirsium occidentale</u> var. <u>compactum</u></b>	compact cobwebby thistle	Asteraceae	List 1B.2
	<input type="checkbox"/>	1	<b><u>Hesperevax sparsiflora</u> var. <u>brevifolia</u></b>	short-leaved evax	Asteraceae	List 1B.2
	<input type="checkbox"/>	1	<b><u>Pentachaeta bellidiflora</u></b>	white-rayed pentachaeta	Asteraceae	List 1B.1

No more hits.





## Inventory of Rare and Endangered Plants

v7-09d 10-07-09

**Status:** search results for "+Hunters Point (448A) 3712263" - Mon, Nov. 2, 2009, 18:52 b



Tip: Lathyrus Astragalus returns species from both genera.[all tips and help.]  
[\[search history\]](#)

**Hits 1 to 1 of 1**





Requests that specify topo quads will return only Lists 1-3.


To save selected records for later study, click the ADD button.

Selections will appear in a new window.

open	save	hits	scientific	common	family	CNPS
	<input type="checkbox"/>	1	<b>Suaeda californica</b> 	California seablite	Chenopodiaceae	List 1B.1

No more hits.



**APPENDIX C**  
**USFWS SPECIAL-STATUS SPECIES LIST**

**Federal Endangered and Threatened Species that Occur in  
or may be Affected by Projects in the Counties and/or  
U.S.G.S. 7 1/2 Minute Quads you requested**

Document Number: 080707032523

Database Last Updated: January 31, 2008

Quad Lists

**HUNTERS POINT (448A)**

Listed Species

Invertebrates

*Icaricia icarioides missionensis*  
mission blue butterfly (E)

*Incisalia mossii bayensis*  
San Bruno elfin butterfly (E)

Fish

*Acipenser medirostris*  
green sturgeon (T) (NMFS)

*Hypomesus transpacificus*  
delta smelt (T)

*Oncorhynchus kisutch*  
coho salmon - central CA coast (E) (NMFS)

*Oncorhynchus mykiss*  
Central California Coastal steelhead (T) (NMFS)  
Central Valley steelhead (T) (NMFS)  
Critical habitat, Central California coastal steelhead (X) (NMFS)

*Oncorhynchus tshawytscha*  
Central Valley spring-run chinook salmon (T) (NMFS)  
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

*Rana aurora draytonii*  
California red-legged frog (T)

Birds

*Charadrius alexandrinus nivosus*  
western snowy plover (T)

*Pelecanus occidentalis californicus*  
California brown pelican (E)

*Rallus longirostris obsoletus*  
California clapper rail (E)

*Sternula antillarum (=Sterna, =albifrons) browni*  
California least tern (E)

Mammals

*Reithrodontomys raviventris*  
salt marsh harvest mouse (E)

**SAN FRANCISCO SOUTH (448B)**

## Listed Species

### Invertebrates

- Euphydryas editha bayensis*  
Critical habitat, bay checkerspot butterfly (X)
- Haliotes sorenseni*  
white abalone (E) (NMFS)
- Icaricia icarioides missionensis*  
mission blue butterfly (E)
- Incisalia mossii bayensis*  
San Bruno elfin butterfly (E)
- Speyeria callippe callippe*  
callippe silverspot butterfly (E)
- Speyeria zerene myrtleae*  
Myrtle's silverspot butterfly (E)

### Fish

- Acipenser medirostris*  
green sturgeon (T) (NMFS)
- Eucyclogobius newberryi*  
tidewater goby (E)
- Hypomesus transpacificus*  
delta smelt (T)
- Oncorhynchus kisutch*  
coho salmon - central CA coast (E) (NMFS)
- Oncorhynchus mykiss*  
Central California Coastal steelhead (T) (NMFS)  
Central Valley steelhead (T) (NMFS)
- Oncorhynchus tshawytscha*  
Central Valley spring-run chinook salmon (T) (NMFS)  
winter-run chinook salmon, Sacramento River (E) (NMFS)

### Amphibians

- Rana aurora draytonii*  
California red-legged frog (T)

### Reptiles

- Caretta caretta*  
loggerhead turtle (T) (NMFS)
- Chelonia mydas (incl. agassizi)*  
green turtle (T) (NMFS)
- Dermochelys coriacea*  
leatherback turtle (E) (NMFS)
- Lepidochelys olivacea*  
olive (=Pacific) ridley sea turtle (T) (NMFS)
- Thamnophis sirtalis tetrataenia*  
San Francisco garter snake (E)

### Birds

- Brachyramphus marmoratus*  
marbled murrelet (T)

*Charadrius alexandrinus nivosus*  
western snowy plover (T)

*Diomedea albatrus*  
short-tailed albatross (E)

*Pelecanus occidentalis californicus*  
California brown pelican (E)

*Rallus longirostris obsoletus*  
California clapper rail (E)

*Sternula antillarum (=Sterna, =albifrons) browni*  
California least tern (E)

## Mammals

*Arctocephalus townsendi*  
Guadalupe fur seal (T) (NMFS)

*Balaenoptera borealis*  
sei whale (E) (NMFS)

*Balaenoptera musculus*  
blue whale (E) (NMFS)

*Balaenoptera physalus*  
finback (=fin) whale (E) (NMFS)

*Eubalaena (=Balaena) glacialis*  
right whale (E) (NMFS)

*Eumetopias jubatus*  
Steller (=northern) sea-lion (T) (NMFS)

*Physeter catodon (=macrocephalus)*  
sperm whale (E) (NMFS)

*Reithrodontomys raviventris*  
salt marsh harvest mouse (E)

## Plants

*Lessingia germanorum*  
San Francisco lessingia (E)

## Candidate Species

### Invertebrates

*Haliotes cracherodii*  
black abalone (C) (NMFS)

---

## County Lists

### San Francisco County

#### Listed Species

##### Invertebrates

*Haliotes sorenseni*  
white abalone (E) (NMFS)

*Icaricia icarioides missionensis*  
mission blue butterfly (E)

*Incisalia mossii bayensis*

San Bruno elfin butterfly (E)

## Fish

*Acipenser medirostris*

green sturgeon (T) (NMFS)

*Eucyclogobius newberryi*

tidewater goby (E)

*Oncorhynchus kisutch*

coho salmon - central CA coast (E) (NMFS)

*Oncorhynchus mykiss*

Central California Coastal steelhead (T) (NMFS)

Critical habitat, Central California coastal steelhead (X) (NMFS)

Critical habitat, Central Valley steelhead (X) (NMFS)

*Oncorhynchus tshawytscha*

Critical habitat, winter-run chinook salmon (X) (NMFS)

winter-run chinook salmon, Sacramento River (E) (NMFS)

## Amphibians

*Rana aurora draytonii*

California red-legged frog (T)

## Reptiles

*Caretta caretta*

loggerhead turtle (T) (NMFS)

*Chelonia mydas (incl. agassizi)*

green turtle (T) (NMFS)

*Dermochelys coriacea*

leatherback turtle (E) (NMFS)

*Lepidochelys olivacea*

olive (=Pacific) ridley sea turtle (T) (NMFS)

## Birds

*Charadrius alexandrinus nivosus*

western snowy plover (T)

*Diomedea albatrus*

short-tailed albatross (E)

*Pelecanus occidentalis californicus*

California brown pelican (E)

*Rallus longirostris obsoletus*

California clapper rail (E)

## Mammals

*Arctocephalus townsendi*

Guadalupe fur seal (T) (NMFS)

*Balaenoptera borealis*

sei whale (E) (NMFS)

*Balaenoptera musculus*

blue whale (E) (NMFS)

*Balaenoptera physalus*

finback (=fin) whale (E) (NMFS)

*Eubalaena (=Balaena) glacialis*

right whale (E) (NMFS)

*Eumetopias jubatus*

Critical Habitat, Steller (=northern) sea-lion (X) (NMFS)

Steller (=northern) sea-lion (T) (NMFS)

*Megaptera novaeangliae*

humpback whale (E) (NMFS)

*Physeter catodon (=macrocephalus)*

sperm whale (E) (NMFS)

*Reithrodontomys raviventris*

salt marsh harvest mouse (E)

## Plants

*Arctostaphylos hookeri ssp. ravenii*

Presidio (=Raven's) manzanita (E)

*Clarkia franciscana*

Presidio clarkia (E)

*Hesperolinon congestum*

Marin dwarf-flax (=western flax) (T)

*Lessingia germanorum*

San Francisco lessingia (E)



## Candidate Species

### Invertebrates

*Haliotes cracherodii*

black abalone (C) (NMFS)

### Key:

(E) *Endangered* - Listed as being in danger of extinction.

(T) *Threatened* - Listed as likely to become endangered within the foreseeable future.

(P) *Proposed* - Officially proposed in the Federal Register for listing as endangered or threatened.

(NMFS) Species under the Jurisdiction of the [National Oceanic & Atmospheric Administration Fisheries Service](#). Consult with them directly about these species.

*Critical Habitat* - Area essential to the conservation of a species.

(PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.

(C) *Candidate* - Candidate to become a proposed species.

(V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.

(X) *Critical Habitat* designated for this species

## Important Information About Your Species List

### How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, **or may be affected by** projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

### Plants

Any plants on your list are ones that have actually been observed in the area covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the surrounding quads through the California Native Plant Society's online [Inventory of Rare and Endangered Plants](#).

### Surveying

Some of the species on your list may not be affected by your project. A trained biologist or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list.

For plant surveys, we recommend using the [Guidelines for Conducting and Reporting Botanical Inventories](#). The results of your surveys should be published in any environmental documents prepared for your project.

### Your Responsibilities Under the Endangered Species Act

All animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, then that agency must engage in a formal consultation with the Service.

During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.

- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.

Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the plan in any environmental documents you file.

## Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our critical habitat page for maps.

## Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

## Species of Concern

The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information for land management planning and conservation efforts.

[More info](#)

## Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6580.

## Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be October 05, 2008.

**U.S. Fish & Wildlife Service**  
**Sacramento Fish & Wildlife Office**  
**Federal Endangered and Threatened Species that Occur in**  
**or may be Affected by Projects in the Counties and/or**  
**U.S.G.S. 7 1/2 Minute Quads you requested**

Document Number: 091102032902

Database Last Updated: January 29, 2009

---

Quad Lists

Listed Species

Invertebrates

- Euphydryas editha bayensis*  
Critical habitat, bay checkerspot butterfly (X)
- Haliotes cracherodii*  
black abalone (E) (NMFS)
- Haliotes sorenseni*  
white abalone (E) (NMFS)
- Icaricia icarioides missionensis*  
mission blue butterfly (E)
- Incisalia mossii bayensis*  
San Bruno elfin butterfly (E)
- Speyeria callippe callippe*  
callippe silverspot butterfly (E)
- Speyeria zerene myrtleae*  
Myrtle's silverspot butterfly (E)

Fish

- Acipenser medirostris*  
green sturgeon (T) (NMFS)
- Eucyclogobius newberryi*  
tidewater goby (E)
- Hypomesus transpacificus*  
delta smelt (T)
- Oncorhynchus kisutch*  
coho salmon - central CA coast (E) (NMFS)
- Oncorhynchus mykiss*  
Central California Coastal steelhead (T) (NMFS)  
Central Valley steelhead (T) (NMFS)  
Critical habitat, Central California coastal steelhead (X) (NMFS)
- Oncorhynchus tshawytscha*  
Central Valley spring-run chinook salmon (T) (NMFS)  
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

- Rana aurora draytonii*  
California red-legged frog (T)

Reptiles

- Caretta caretta*  
loggerhead turtle (T) (NMFS)
- Chelonia mydas (incl. agassizi)*

green turtle (T) (NMFS)

*Dermochelys coriacea*

leatherback turtle (E) (NMFS)

*Lepidochelys olivacea*

olive (=Pacific) ridley sea turtle (T) (NMFS)

*Thamnophis sirtalis tetrataenia*

San Francisco garter snake (E)

## Birds

*Brachyramphus marmoratus*

marbled murrelet (T)

*Charadrius alexandrinus nivosus*

western snowy plover (T)

*Diomedea albatrus*

short-tailed albatross (E)

*Pelecanus occidentalis californicus*

California brown pelican (E)

*Rallus longirostris obsoletus*

California clapper rail (E)

*Sternula antillarum* (=Sterna, =albifrons) browni

California least tern (E)

## Mammals

*Arctocephalus townsendi*

Guadalupe fur seal (T) (NMFS)

*Balaenoptera borealis*

sei whale (E) (NMFS)

*Balaenoptera musculus*

blue whale (E) (NMFS)

*Balaenoptera physalus*

finback (=fin) whale (E) (NMFS)

*Eubalaena* (=Balaena) *glacialis*

right whale (E) (NMFS)

*Eumetopias jubatus*

Steller (=northern) sea-lion (T) (NMFS)

*Physeter catodon* (=macrocephalus)

sperm whale (E) (NMFS)

*Reithrodontomys raviventris*

salt marsh harvest mouse (E)

## Plants

*Lessingia germanorum*

San Francisco lessingia (E)

## Proposed Species

### Amphibians

*Rana aurora draytonii*

Critical habitat, California red-legged frog (PX)

### Quads Containing Listed, Proposed or Candidate Species:

HUNTERS POINT (448A)

SAN FRANCISCO SOUTH (448B)

---

## County Lists

## Listed Species

### Invertebrates

- Haliotes cracherodii*  
black abalone (E) (NMFS)
- Haliotes sorenseni*  
white abalone (E) (NMFS)
- Icaricia icarioides missionensis*  
mission blue butterfly (E)
- Incisalia mossii bayensis*  
San Bruno elfin butterfly (E)

### Fish

- Acipenser medirostris*  
green sturgeon (T) (NMFS)
- Eucyclogobius newberryi*  
tidewater goby (E)
- Oncorhynchus kisutch*  
coho salmon - central CA coast (E) (NMFS)
- Oncorhynchus mykiss*  
Central California Coastal steelhead (T) (NMFS)  
Critical habitat, Central California coastal steelhead (X) (NMFS)  
Critical habitat, Central Valley steelhead (X) (NMFS)
- Oncorhynchus tshawytscha*  
Critical habitat, winter-run chinook salmon (X) (NMFS)  
winter-run chinook salmon, Sacramento River (E) (NMFS)

### Amphibians

- Rana aurora draytonii*  
California red-legged frog (T)

### Reptiles

- Caretta caretta*  
loggerhead turtle (T) (NMFS)
- Chelonia mydas (incl. agassizi)*  
green turtle (T) (NMFS)
- Dermochelys coriacea*  
leatherback turtle (E) (NMFS)
- Lepidochelys olivacea*  
olive (=Pacific) ridley sea turtle (T) (NMFS)

## Birds

*Charadrius alexandrinus nivosus*  
western snowy plover (T)

*Diomedea albatrus*  
short-tailed albatross (E)

*Pelecanus occidentalis californicus*  
California brown pelican (E)

*Rallus longirostris obsoletus*  
California clapper rail (E)

## Mammals

*Arctocephalus townsendi*  
Guadalupe fur seal (T) (NMFS)

*Balaenoptera borealis*  
sei whale (E) (NMFS)

*Balaenoptera musculus*  
blue whale (E) (NMFS)

*Balaenoptera physalus*  
finback (=fin) whale (E) (NMFS)

*Eubalaena (=Balaena) glacialis*  
right whale (E) (NMFS)

*Eumetopias jubatus*  
Critical Habitat, Steller (=northern) sea-lion (X) (NMFS)  
Steller (=northern) sea-lion (T) (NMFS)

*Megaptera novaeangliae*  
humpback whale (E) (NMFS)

*Physeter catodon (=macrocephalus)*  
sperm whale (E) (NMFS)

*Reithrodontomys raviventris*  
salt marsh harvest mouse (E)

## Plants

*Arctostaphylos hookeri ssp. ravenii*  
Presidio (=Raven's) manzanita (E)

*Clarkia franciscana*  
Presidio clarkia (E)

*Hesperolinon congestum*

Marin dwarf-flax (=western flax) (T)

*Lessingia germanorum*

San Francisco lessingia (E)

**Key:**

(E) *Endangered* - Listed as being in danger of extinction.

(T) *Threatened* - Listed as likely to become endangered within the foreseeable future.

(P) *Proposed* - Officially proposed in the Federal Register for listing as endangered or threatened.

(NMFS) Species under the Jurisdiction of the [National Oceanic & Atmospheric Administration Fisheries Service](#). Consult with them directly about these species.

*Critical Habitat* - Area essential to the conservation of a species.

(PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.

(C) *Candidate* - Candidate to become a proposed species.

(V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.

(X) *Critical Habitat* designated for this species

## Important Information About Your Species List

### How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, **or may be affected by** projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

### Plants

Any plants on your list are ones that have actually been observed in the area covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the surrounding quads through the California Native Plant Society's online [Inventory of Rare and Endangered Plants](#).

### Surveying

Some of the species on your list may not be affected by your project. A trained biologist and/or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list. See our [Protocol](#) and [Recovery Permits](#) pages.

For plant surveys, we recommend using the [Guidelines for Conducting and Reporting Botanical Inventories](#). The results of your surveys should be published in any environmental documents prepared for your project.

### Your Responsibilities Under the Endangered Species Act



All animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, then that agency must engage in a formal [consultation](#) with the Service. During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.
  - If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.
- Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the plan in any environmental documents you file.

## Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our [Map Room](#) page.

## Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

## Species of Concern

The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These

lists provide essential information for land management planning and conservation efforts.

[More info](#)

## Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6580.

## Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be January 31, 2010.

**APPENDIX D  
PLANT SPECIES OBSERVED IN THE  
STUDY AREA**

**APPENDIX D**  
**Candlestick Point - Hunters Point Shipyard Phase II Project**  
**Plant Species Observed**

<b><i>Scientific Name</i></b>	<b>Common Name</b>	<b>Native / Introduced (*Designates Invasive)</b>
<i>Acacia melanoxydon</i>	Blackwood acacia	Introduced*
<i>Achillea millefolium</i>	Yarrow	Native
<i>Aesculus californica</i>	California buckeye	Native
<i>Agoseris grandiflora</i>	California dandelion	Native
<i>Ailanthus altissima</i>	Tree-of-heaven	Introduced*
<i>Alnus sp.</i>	ornamental Alder	
<i>Amaranthus albus</i>	tumbleweed	Introduced
<i>Ambrosia chamissonis</i>	Silver beach bur	Native
<i>Ammannia coccinea</i>	red ammannia	Native
<i>Anagallis arvensis</i>	Scarlet pimpernel	Introduced
<i>Aster sp.</i>	Perennial aster	
<i>Atriplex sp.</i>	Salt bush	
<i>Atriplex triangularis</i>	spearscale	Native
<i>Avena fatua</i>	Wild oat	Introduced*
<i>Baccharis pilularis</i>	Coyote brush	Native
<i>Bellardia trixago</i>	Mediterranean linseed	Introduced*
<i>Bolboschoenus robustus</i>	saltmarsh bulrush	Native
<i>Brassica nigra</i>	Black mustard	Introduced*
<i>Brodiaea elegans</i>	Harvest brodiaea	Native
<i>Brodiaea terrestris</i>	Dwarf brodiaea	Native
<i>Bromus carinatus</i>	California brome grass	Native
<i>Bromus carinatus var. carinatus</i>	Mountain brome	Native
<i>Bromus diandrus</i>	Rip-gut brome	Introduced*
<i>Bromus hordeaceus</i>	Soft chess brome	Introduced*
<i>Bromus madritensis ssp. rubens</i>	Red brome	Introduced*
<i>Cakile maritime</i>	European sea rocket	Introduced*
<i>Calandrinia ciliata</i>	Red maids	Native
<i>Calochortus luteus</i>	Yellow mariposa lily	Native
<i>Calystegia subacaulis</i>	Stemless morning glory	Native
<i>Capsella bursa-pastoris</i>	Shepard's purse	Introduced
<i>Carduus pycnocephalus</i>	Italian thistle	Introduced*
<i>Carpobrotus chilensis</i>	Sea fig	Introduced*
<i>Carpobrotus edulis</i>	Ice plant	Introduced*
<i>Ceanothus sp.</i>	Ornamental buck brush	
<i>Cedrus deodara</i>	Deodar cedar	Introduced
<i>Centaurea calcitrapa</i>	purple star thistle	Introduced*
<i>Centaurea melitensis</i>	Napa star thistle	Introduced*
<i>Centaurea solstitialis</i>	yellow star-thistle	Introduced*
<i>Centranthus ruber</i>	red valerian	Introduced

**APPENDIX D**  
**Candlestick Point - Hunters Point Shipyard Phase II Project**  
**Plant Species Observed**

<b><i>Scientific Name</i></b>	<b>Common Name</b>	<b>Native / Introduced (*Designates Invasive)</b>
<i>Cercis occidentalis</i>	redbud	Native
<i>Chamomilla suaveolens</i>	Pineapple weed	Introduced
<i>Chenopodium album</i>	Lamb's quarters	Introduced
<i>Chlorogalum pomeridianum</i>	Soap Root	Introduced
<i>Chrysanthemum coronarium</i>	Garland chrysanthemum	Introduced*
<i>Cirsium vulgare</i>	bull thistle	Introduced*
<i>Cistus sp.</i>	ornamental rock rose	Introduced
<i>Claytonia perfoliata</i>	Miner's lettuce	Native
<i>Conium maculatum</i>	poison hemlock	Introduced*
<i>Convolvulus arvensis</i>	field bindweed	Introduced*
<i>Conyza canadensis</i>	Horseweed	Native
<i>Cortaderia jubata</i>	Pampas grass	Introduced*
<i>Cortaderia selloana</i>	Uruguayan pampas grass	Introduced*
<i>Cotula coronopidolia</i>	Brass buttons	Introduced*
<i>Crassula connata</i>	Pygmy weed	Native
<i>Crepis vesicaria</i>	beaked hawksbeard	Introduced
<i>Cupressus ssp.</i>	Ornamental cypress	
<i>Cynodon dactylon</i>	bermuda grass	Introduced*
<i>Cyperus eragrostis</i>	tall flatsedge	Native
<i>Dactylis glomerata</i>	Orchard grass	Introduced*
<i>Danthonia californica</i>	California oatgrass	Native
<i>Dichelostemma capitatum</i>	Blue dicks	Native
<i>Distichlis spicata</i>	Salt grass	Native
<i>Elymus glaucus</i>	Blue wildrye	Native
<i>Epilobium brachycarpum</i>	Annual fireweed	Native
<i>Epilobium ciliatum ssp. ciliatum</i>	fringed willowherb	Native
<i>Epilobium sp.</i>	willowherb	Native
<i>Eriodictyon californicum</i>	Yerba Santa	Native
<i>Eriogonum latifolium</i>	coast buckwheat	Native
<i>Erodium botrys</i>	Filaree	Introduced*
<i>Erodium cicutarium</i>	Red stem filaree	Introduced*
<i>Erodium moschatum</i>	White stemmed filaree	Introduced*
<i>Eschscholzia californica</i>	California poppy	Native
<i>Festuca arundinaceae</i>	Tall Fescue	Introduced*
<i>Festuca rubra</i>	Red Fescue	Native
<i>Filago gallica</i>	narrowleaf cottonrose	Introduced
<i>Foeniculum vulgare</i>	fennel	Introduced*
<i>Frankenia salina</i>	Alkali Heath	Native
<i>Fremontodendron californicum</i>	Flannel bush	Native
<i>Fumaria capreolata</i>	White ramping fumitory	Native

**APPENDIX D**  
**Candlestick Point - Hunters Point Shipyard Phase II Project**  
**Plant Species Observed**

<b>Scientific Name</b>	<b>Common Name</b>	<b>Native / Introduced (*Designates Invasive)</b>
<i>Fumaria officinalis</i>	Fumitory	Introduced*
<i>Galium sp.</i>	Bedstraw	
<i>Genista monspessulana</i>	French broom	Introduced*
<i>Geranium carolinianum</i>	Carolina geranium	Native
<i>Geranium dissectum</i>	Cut-leaf geranium	Introduced*
<i>Geranium molle</i>	Cranesbill	Introduced*
<i>Gilia clivorum</i>	Purple spot gilia	Native
<i>Gnaphalium sp.</i>	Cudweed	
<i>Grindelia sp.</i>	gumweed	
<i>Grindelia stricta</i>	coastal gumweed	Native
<i>Heteromeles arbutifolia</i>	Toyon	Native
<i>Heterotheca grandiflora</i>	Telegraph weed	Native
<i>Hordeum marinum ssp. gussoneanum</i>	Mediterranean barley	Introduced
<i>Hordeum murinum ssp. leporinum</i>	hare barley	Introduced
<i>Hypochaeris glabra</i>	Smooth cat's ear	Introduced*
<i>Jaumea carnosa</i>	Fleshy jaumea	Native
<i>Juncus effusus</i>	Common rush	Native
<i>Lactuca serriola</i>	Prickly lettuce	Introduced*
<i>Lantana sp.</i>	Ornamental Lantana	
<i>Lasthenia californica</i>	California goldfields	Native
<i>Lepidium latifolium</i>	broad leaved pepper grass	Introduced*
<i>Lepidium nitidum</i>	Peppergrass	Native
<i>Leptospermum laevigatum</i>	Australian tea tree	Introduced*
<i>Leymus triticoides</i>	Creeping wildrye	Native
<i>Limonium californicum</i>	Sea lavender	Native
<i>Limonium perezii</i>	Perez's sea lavender	Introduced
<i>Lobularia maritima</i>	Sweet alyssum	Introduced*
<i>Lolium multiflorum</i>	Italian rye	Introduced*
<i>Lomatium caruifolium</i>	Alkali parsnip	Native
<i>Lomatium utriculatum</i>	common lomatium	Native
<i>Lotus corniculatus</i>	Bird's-foot trefoil	Introduced*
<i>Lotus wrangelianus</i>	Chile lotus	Native
<i>Lupinus albifrons</i>	Silver bush lupine	Native
<i>Lupinus arboreus</i>	Coastal bush lupine	Native*
<i>Lupinus bicolor</i>	Miniature lupine	Native
<i>Lupinus succulentus</i>	arroyo lupine	Native
<i>Lythrum hyssopifolium</i>	hyssop loosestrife	Introduced*
<i>Malva neglecta</i>	common mallow	Introduced
<i>Malva nicaeensis</i>	Bull mallow	Introduced
<i>Malva parviflora</i>	cheeseweed mallow	Introduced

**APPENDIX D**  
**Candlestick Point - Hunters Point Shipyard Phase II Project**  
**Plant Species Observed**

<b><i>Scientific Name</i></b>	<b>Common Name</b>	<b>Native / Introduced (*Designates Invasive)</b>
<i>Marah fabaceus</i>	California man-root	Native
<i>Medicago polymorpha</i>	California bur-clover	Introduced*
<i>Melica sp.</i>	Onion grass	Native
<i>Melilotus alba</i>	White sweetclover	Introduced*
<i>Melilotus indica</i>	Yellow sweet clover	Introduced
<i>Microseris douglasii</i>	Douglas' microseris	Native
<i>Muhlenbergia rigens</i>	deergrass	Native
<i>Myoporum laetum</i>	Lollypop tree	Introduced*
<i>Nassella pulchra</i>	Purple needlegrass	Native
<i>Oxalis corniculata</i>	Yellow sorrel	Introduced*
<i>Oxalis pes-caprae</i>	Bermuda buttercup	Introduced*
<i>Paspalum dilatatum</i>	Dallis grass	Introduced
<i>Picris echioides</i>	Prickly ox-tongue	Introduced*
<i>Pinus radiata</i>	Monterey pine	Native*
<i>Piptatherum miliaceum</i>	Smilo grass	Introduced*
<i>Plantago coronopus</i>	Cut leaf plantain	Introduced*
<i>Plantago erecta</i>	California plantain	Native
<i>Plantago major</i>	common plantain	Introduced
<i>Plantago maritima</i>	alkali plantain	Native
<i>Platanus racemosa</i>	California sycamore	Native
<i>Poa annua</i>	Blue grass	Introduced
<i>Polygonum arenastrum</i>	Common knotweed	Introduced
<i>Polypogon monspeliensis</i>	Rabbit's foot grass	Introduced*
<i>Pyracantha sp.</i>	Firethorn	Introduced
<i>Quercus agrifolia</i>	Live oak	Introduced
<i>Ranunculus muricatus</i>	Spiny-fruited buttercup	Introduced
<i>Raphanus raphanistrum</i>	painted charlock	Introduced
<i>Raphanus sativa</i>	Wild radish	Introduced*
<i>Rhamnus californica</i>	Coffeeberry	Native
<i>Ribes sp.</i>	Gooseberry	Native
<i>Robinia pseudoacacia</i>	Black locust	Introduced*
<i>Rubus discolor</i>	Himalayan blackberry	Introduced*
<i>Rumex acetosella</i>	Sheep sorrel	Introduced*
<i>Rumex crispus</i>	Curly dock	Introduced*
<i>Rumex pulcher</i>	Fiddle dock	Introduced
<i>Rumex salicifolius</i>	willow dock	Native
<i>Salicornia virginica</i>	Pickleweed	Native
<i>Salix lasiolepis</i>	Arroyo willow	Native
<i>Salsola kali</i>	Russian thistle	Introduced*
<i>Salsola tragus</i>	tumbleweed	Introduced*

**APPENDIX D**  
**Candlestick Point - Hunters Point Shipyard Phase II Project**  
**Plant Species Observed**

<b><i>Scientific Name</i></b>	<b>Common Name</b>	<b>Native / Introduced (*Designates Invasive)</b>
<i>Salvia mellifera</i>	Black sage	Native
<i>Salvia spathacea</i>	hummingbird sage	Native
<i>Sambucus nigra ssp. caerulea</i>	Blue elderberry	Native
<i>Sanicula bipinnatifida</i>	Purple sanicle	Native
<i>Schinus molle</i>	Peruvian peppertree	Introduced *
<i>Senecio vulgaris</i>	Common groundsel	Introduced
<i>Silene gallica</i>	Campion, Catchfly	Introduced
<i>Silybum marianum</i>	Milk thistle	Introduced*
<i>Sisyrinchium bellum</i>	Blue-eyed grass	Introduced
<i>Solanum physalifolium</i>	hoe nightshade	Introduced
<i>Soliva sessilis</i>	common soliva	Introduced
<i>Sonchus asper</i>	Sow thistle	Introduced*
<i>Sonchus oleraceus</i>	common sow thistle	Introduced
<i>Spartina sp.</i>	Cord grass	
<i>Spergularia macrotheca</i>	Large flowered sand spurry	Native
<i>Spergularia media</i>	Coast sand spurry	Introduced
<i>Stellaria media</i>	Chickweed	Introduced
<i>Tragopogon porrifolius</i>	Salsify	Introduced
<i>Trifolium campestre</i>	Hop clover	Introduced
<i>Trifolium hirtum</i>	Rose clover	Introduced*
<i>Triteleia laxa</i>	Ithuriel's spear	Native
<i>Typha latifolia</i>	Broad -leaved cattail	Native
<i>Umbellularia californica</i>	California bay	Native
<i>Vicia sativa</i>	Spring vetch	Introduced
<i>Vicia villosa</i>	Hairy vetch	Introduced*
<i>Vulpia bromoides</i>	Six week fescue	Introduced*
<i>Vulpia myuros</i>	Rattail fescue	Introduced*
<i>Vulpia myuros var. myuros</i>	False foxtail fescue	Introduced

\* California Invasive Plant Council (Cal-IPC) invasive plant

HT Harvey Wetland delineation  
 Julia's list  
 Julia's survey  
 Yosemite Slough report