

## **6.22 BALBOA NATURAL AREA**

### **GENERAL DESCRIPTION AND LOCATION**

The Balboa Natural Area (also known as Parcel 4) is a small, 1.8-acre site at the corner of Balboa Street and the Great Highway in western San Francisco (Figure 1-1). This Natural Area is located in the southern corner of the Sutro Heights Park and across the Great Highway from Ocean Beach and the Pacific Ocean. Because the site is entirely sand, public access is provided via an elevated boardwalk that helps to keep people out of the sensitive dune vegetation. The Balboa Natural Area is one of only a few foredune communities in San Francisco and the only one within the Natural Areas System. This Natural Area provides: recreational trail use on an elevated boardwalk; trail connections to neighboring Golden Gate National Recreation Area; views of the Pacific Ocean; diverse foredune plant community; and suitable habitat for dune-dependent animals.

### **GEOLOGY, HYDROLOGY, AND TRAILS**

This Natural Area consists of a beach and dune sand terrace at the base of a Franciscan sandstone bluff (Figure 6.22-2). Most of the Balboa Natural Area is a restored dune. Prior to restoration, the site had been used for construction staging for the Richmond Transport Project and subsequently became available for recreational use. The boardwalk and dune construction began in 2002. Sand from beneath the De Young Museum was used to create dune mounds. Fore dune and back dune vegetation was planted by contractors and volunteers in 2003, 2004, and 2005.

There is no surface water at the site, although moisture collects during the night adjacent to the plastic boardwalks in the south half of the parcel. Although imported sand was graded and mixed with the compacted construction site surface as part of the dune restoration, some compacted areas, which form hard pans below the sandy fines, may remain (L. Wayne 2005). This may cause poor drainage in some areas. Drainage of the area is by percolation and overland flow. Rainfall and runoff from the slopes percolates into the sand, although sufficiently heavy or long-lasting rain will cause the lower portions of the parcel to saturate, leading to rapid runoff. A short network of plastic boardwalks has been constructed in the south half of the parcel. Informal earthen trails down the slopes have eroded into deep channels in the consolidated sand and underlying sandstone. Natural runoff-formed gullies have become deep erosion channels on the slopes where foot traffic has removed the vegetation.

### **VEGETATION**

The vegetation of the Balboa Natural Area has been classified into two series, central dune scrub and other herbaceous (Table 6.22-1). There is one subformation within the Natural Area for each of these series (Figure 6.22-3). Most of the Natural Area is covered by the native-dominated

beach bur sand verbena series (1.09 acres). The remaining 0.75 acres of the Natural Area is iceplant. This Natural Area is the only place within the Natural Areas System where the native-dominated beach bur sand verbena series can be found.

### **Sensitive Plant Species**

Three species of sensitive plants have been reported from the Balboa Natural Area (Table 6.22-2; Figure 6.22-4). Of these, San Francisco gumplant (*Grindelia hirsutula* var. *maritima*) is the most sensitive because it is considered a species of concern by the U.S. Fish and Wildlife Service and listed by the California Native Plant Society (CNPS) as a List 1B species (rare, threatened or endangered in California or elsewhere). Other sensitive plants that occur within the Natural Area include beach paintbrush (*Castilleja wightii*) and dune tansy (*Tanacetum camphoratum*). All three of these species are found in the southern half of the Natural Area, the portion that is not covered with iceplant (*Carpobrotus edulis*). All of these species were introduced as part of the Natural Area construction.

### **Invasive Plant Species**

The area covered by invasive iceplant accounts for approximately 0.75 acres of the land within the Natural Area and is the only invasive species dominated area within this Natural Area.

## **WILDLIFE**

### **Birds**

The scrub dune vegetation in the southern portion of the Natural Area could provide habitat for species such as white-crowned sparrow (*Zonotrichia leucophrys*), savanna sparrow (*Passerculus sandwichensis*), and song sparrow (*Melospiza melodia*). The open sandy areas that are interspersed with this vegetation may support ground-nesting species such as killdeer (*Charadrius vociferus*). No sensitive species are known from this Natural Area. No important bird habitat has been designated for this Natural Area.

### **Mammals/Reptiles/Amphibians/Invertebrates**

Mammals that may use the Balboa Natural Area are likely typical of those found in the surrounding areas. It is expected that small animals such as the house mouse (*Mus musculus*) and western fence lizard (*Sceloporus occidentalis*) may use the area. The sandy substrate does not support aquatic features that would create suitable habitat for amphibians. No sensitive species vertebrates were reported in California Natural Diversity Database (CNDDB) for this Natural Area (2005)

### Sensitive Invertebrate Species

At least four special-status species of butterflies potentially occur within the City of San Francisco: mission blue butterfly (*Icaricia icarioides missionensis*), bay checkerspot butterfly (*Euphydryas editha bayensis*), San Bruno elfin butterfly (*Incisalia mossii bayensis*), and San Francisco silverspot (*Speyeria callippe callippe*) (CNDDDB 2005). Larval host plants for the mission blue and bay checkerspot butterflies are relatively common (various lupines, plantain, owl's clover, etc.) (Garth and Tilden 1986). The larval host plant for the San Bruno elfin butterfly is stonecrop (*Sedum spathulifolium*). The larval host plant for the silverspot is Johnny-jump-up (*Viola pedunculata*). These butterflies are not known to occur within this Natural Area and larval host plants for these sensitive species are not abundant at Balboa Natural Area; therefore, none of these species are presumed to exist there.

### **MANAGEMENT AREAS**

Two Management Areas (MAs) have been designated for the Balboa Natural Area (Figure 6.22-5). The MA-1 area (MA-1a) includes all of the restored dune scrub areas and the sensitive species within that area. The MA-2 area (MA-2a) includes area sandy substrate with potential for expansion of the dune community. Also, it functions as a buffer for the MA-1 area. The following text presents issues and recommended management actions by Management Area.

### **ISSUES AND RECOMMENDATIONS**

Several conservation and recreation-related issues have been identified for the Balboa Natural Area. Recommendations developed for each of these issues will guide restoration, enhancement, and maintenance work. In the following discussion, system-wide issues and recommendations (GR-1 for example; see Chapter 5) that apply to the entire Natural Area are presented first, followed by site-specific issues and recommendations. Site-specific recommendations are keyed to the Management Area in which they should occur.

**Site Improvements** – Implementation of management recommendations at the Balboa Natural Area would not change significantly the overall look of the Natural Area and would result in:

- preservation and enhancement of the foredune plant community;
- increased and more sustainable populations of sensitive plants; and
- increased habitat diversity for local wildlife

Restoration of this Natural Area will create a small yet functional dune ecosystem. This area will be unique within the Natural Areas System and therefore capable of supporting plants and animals that are unique to San Francisco. Perhaps this area will someday resemble a fragment of the outer dunes found at the Point Reyes National Seashore.

## Vegetation

Issues relating to vegetation management at the Balboa Natural Area involve the protection of sensitive species and habitats, typically through the control of invasive plants (GR-1) and management of sensitive species and vegetation series of limited distribution (GR-2). Issues relating to the general safety of visitors and surrounding homes, fire hazards posed by vegetation and trees, and illicit activities must be considered during management of the Natural Areas (GR-13). In addition to these general recommendations, the following site-specific issues should be addressed.

**Issue BA-1:** The Balboa Natural Area supports the only occurrence of beach bur sand verbena within the Natural Areas System. This foredune community supports three species of sensitive plants and is itself also extremely sensitive to disturbance. The mass of iceplant that is growing in the northern portion of the Natural Area as well as the sea rocket (*Cakile maritima*), Bermuda buttercup (*Oxalis pes-caprae*), and California burclover (*Medicago polymorpha*) that grow throughout the site represent a threat to the dune community and sensitive species at the Balboa Natural Area.

**Recommendation BA-1a:** To protect the existing sensitive species and foredune habitat, contain and reduce herbaceous invasive plants such as iceplant, bur clover, Bermuda buttercup, pampas grass (*Cortaderia selloana*), sea rocket and European grasses in MA-1a and MA-2a. Although the site is essentially free of trees now, seeds could easily disperse from nearby forests; therefore, invasive tree species will also be prevented from establishing within the Natural Area.

**Recommendation BA-1b:** In areas where invasive plants have been removed, revegetate using appropriate native plants (MA-1a and MA-2a). Using diversity, cover, and density targets generated from reference sites within and around San Francisco, plant native foredune species while leaving open sandy areas for annual plant recruitment (see Appendix B).

**Recommendation BA-1c:** In order to prevent extinction of existing rare or uncommon plant species, consider augmenting existing populations of sensitive plants such as paintbrush, San Francisco gumplant, and dune tansy.

**Recommendation BA-1d:** In order to reduce the potential for local extinction of sensitive species in San Francisco, consider reintroduction of rare plants such as California croton (*Croton californicus*), San Francisco spineflower (*Chorizanthe cuspidata* var. *cuspidata*), San Francisco wallflower (*Erysimum franciscanum*) in both Management Areas.

## **Wildlife**

Wildlife issues at the Balboa Natural Area focus on habitat, food sources, and shelter. The reduction in invasive vegetation species, and planting a diversity of native plants to replace them, will enhance wildlife habitat (BA-1). Vegetation management during the breeding season can impact nesting birds (GR-4); however, vegetation management also can provide materials to create artificial habitat for ground-dwelling birds, small mammals, and reptiles (GR-9). Finally reduction in predation pressures will benefit all animals within the Natural Area (GR-7). Implementation of the general recommendations will enhance the wildlife habitat present; therefore, no site-specific wildlife-related issues have been identified for this Natural Area.

## **Soils, Erosion, and Public Use**

Most of the erosion issues at the Balboa Natural Area relate to the trail system and public use. The existing boardwalk serves to minimize social trail related impacts because most visitors use the designated boardwalk. This plan proposes to maintain 547 linear feet of trail and close approximately 90 linear feet of social trails in this Natural Area. However, should social trails develop, they could have dramatic impacts on the resources of this Natural Area. The issue of erosion and habitat impacts related to social trails that may develop is addressed through implementation of GR-11 and GR-12. Interpretive signs regarding the ecosystem of the Balboa Natural Area should also be considered (GR-14). Implementation of the general recommendations will be sufficient to reduce erosion-related issues. No site-specific issues have been identified for this Natural Area.

**Table 6.22-1. Vegetation series mapped at Balboa Natural Area**

	<b>Vegetation Series</b>	<b>Total Acreage</b>
<b>Central Dune Scrub</b>	beach bur sand verbena*	<b>1.09</b>
<b>Grassland</b>	iceplant herbaceous	<b>0.75</b>
<b>Grand Total</b>		<b>1.84</b>

\* Indicates vegetation type is dominated by native species.

**Table 6.22-2. Sensitive species presently and historically known to occur at the Balboa Natural Area.**

Species	Common Name	Status Federal, State, CNPS, Local	Local Significance
<b><i>No Sensitive animal species have been reported from this Natural Area.</i></b>			
<b>Plants</b>			
<i>Castilleja wightii</i>	Paintbrush	LS	Presently occurs
<i>Grindelia hirsutula</i> var. <i>maritima</i>	San Francisco Gumplant	FSC, CNPS List 1B	Presently occurs
<i>Tanacetum camphoratum</i>	Dune Tansy	-	Presently occurs

**Status Key:**

- Federal Status**
- Endangered. Species in danger of extinction throughout all or significant portion of its range.
  - FT* Threatened. Species likely to become endangered within foreseeable future throughout all or a significant portion of its range.
  - FPE* Proposed for listing as endangered.
  - FC* Candidate for listing as endangered. Candidate information now available indicates that listing may be appropriate with supporting data currently on file.
  - FSC* Species of Concern. Former Category 2 Candidate for listing as endangered.
  - FPD* Proposed de-listing.

**California State Status**

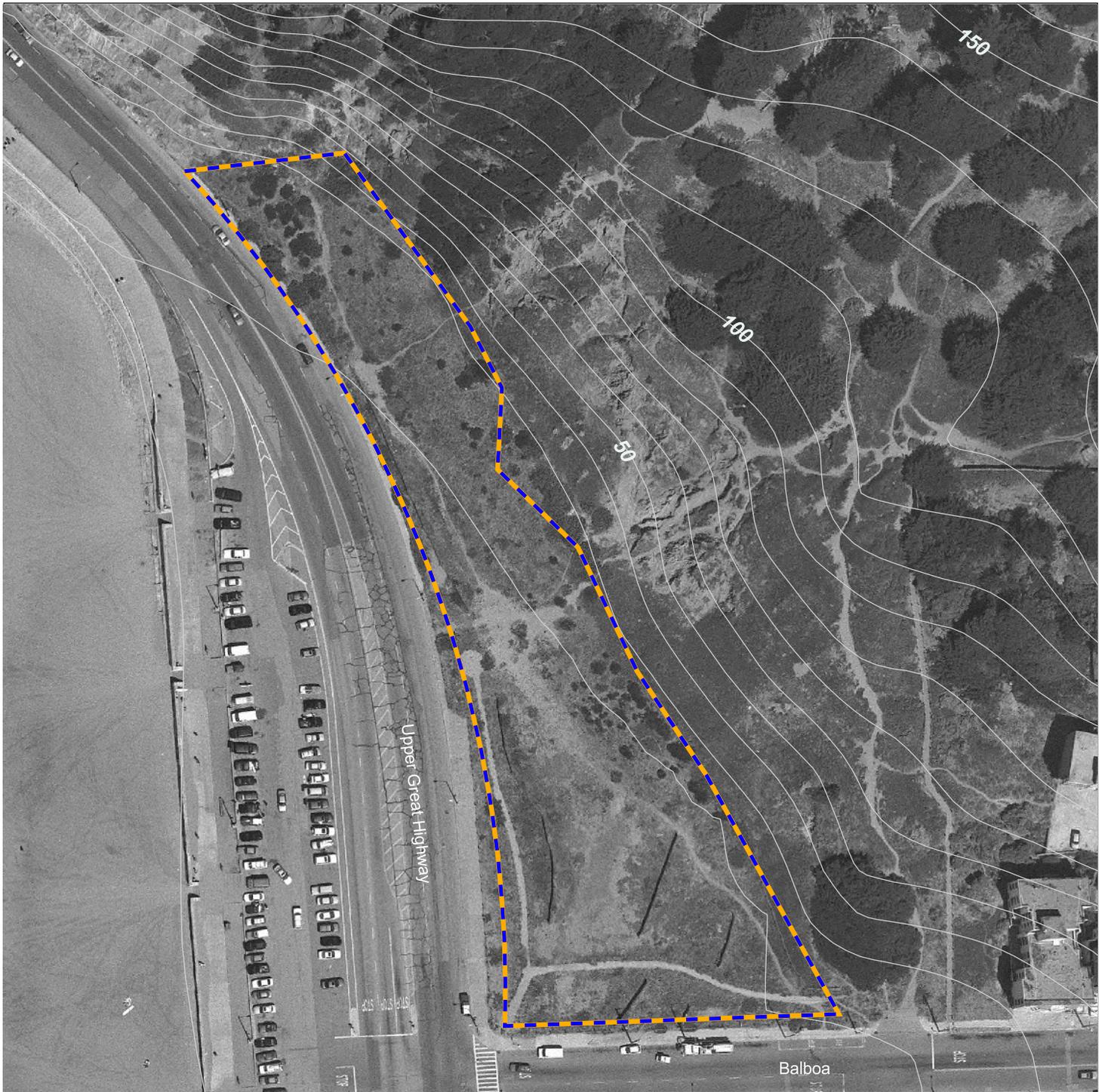
- SE* Endangered. Species whose continued existence in California is jeopardized.
- ST* Threatened. Species, although not presently threatened with extinction, that is likely to become endangered in the foreseeable future.
- SSC* Species of Concern.
- SFP* State Fully Protected under Sections 3511 and 4700 of the Fish and Game Code.
- Sens* Considered a sensitive species by the California Department of Forestry.

**California Native Plant Society**

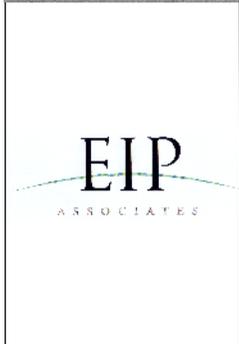
- 1A Plants presumed extinct in California
- 1B Plants that are rare or endangered in California and elsewhere.
- 2 Plants that are endangered in California, but more common elsewhere.
- 3 Plants about which more information is needed.
- 4 Plants of limited distribution (a watch list).
- LS Locally Significant.

**Golden Gate Audubon Society**

- SLC* Species of Local Concern



 Natural Area Boundary and SFRPD Jurisdiction (SF City Property)  
 10-Foot contour line



Source: Aerial photography San Francisco Department of Public Works, 2002, Orthophoto - San Francisco - 1-foot resolution, 2001; property boundary data derived by San Francisco Recreation and Park Department (RPD) 2005 from data provided by San Francisco Department of Telecommunications and Information Services, 2002; natural area boundary data created by San Francisco State University Institute for GISc from information provided by RPD's Natural Areas Program (NAP), 2005; contour lines provided by San Francisco Department of Conservation; all data are California State Plane Zone III, NAD 83.

Created by Debra Dwyer, San Francisco State University Institute for GISc June 7, 2005.



0 50 100  
 Feet

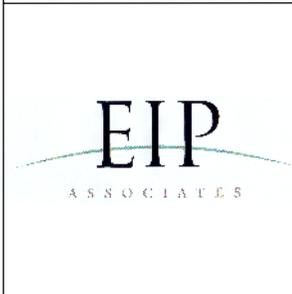
**FIGURE 6.22 - 1**  
**AERIAL PHOTOGRAPH,**  
**PROPERTY BOUNDARIES,**  
**AND NATURAL AREAS**

**Balboa Natural Area**  
**Significant Natural Resource Areas**  
**Management Plan**  
**San Francisco, California**



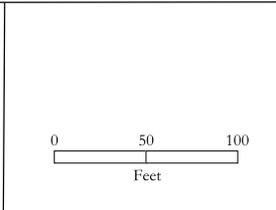
Soils, Land Features and Trails

- 16 sandy soil
- bridge or boardwalk
- closed earthen trail
- Natural Area boundary
- vegetation series boundary

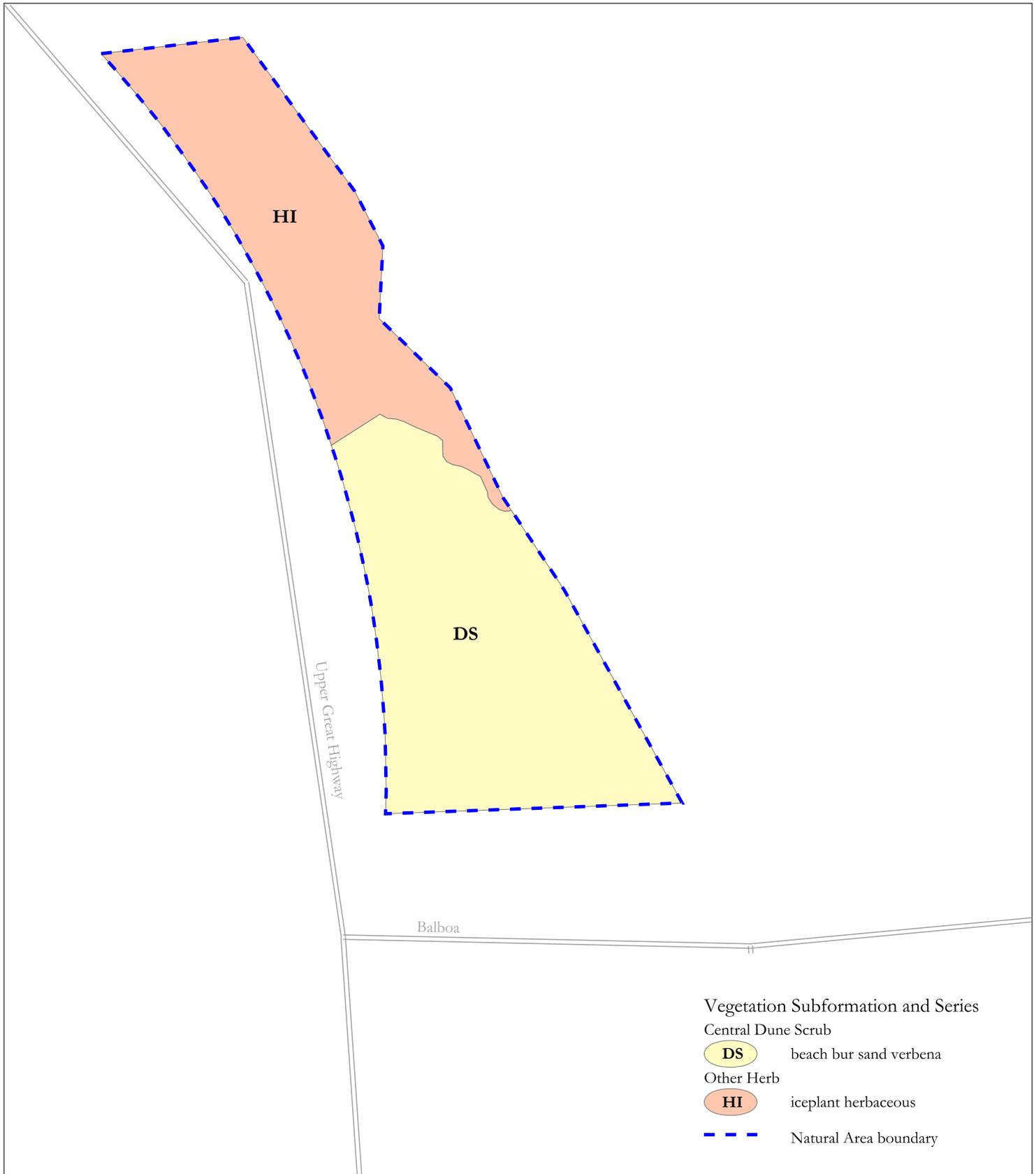


Source: Soils and land features data collected by EIP Associates, 2005; trails and vegetation data collected by San Francisco Recreation and Park Department Natural Areas Program (NAP), 2005; vegetation data collected by NAP, 2005; data layers digitized by San Francisco State University Institute for GISc (SFSUIGIS), 2005; natural area boundary created by SFSUIGIS using data determined by NAP, 2005; streets data excerpted from ArcView StreetMap 2000 Data, copyright 1998-2000, Environmental Systems Research Institute, Inc. (ESRI).

Created by D. Dwyer, San Francisco State University Institute for GISc, May 30, 2005, revised June 4, 2005.



**FIGURE 6.22 - 2**  
**SOILS, LAND FEATURES, AND TRAILS**  
**Balboa Natural Area**  
 Significant Natural Resource Areas Management Plan  
 San Francisco, California



Vegetation Subformation and Series

Central Dune Scrub

**DS** beach bur sand verbena

Other Herb

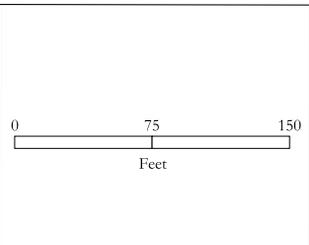
**HI** iceplant herbaceous

- - - Natural Area boundary

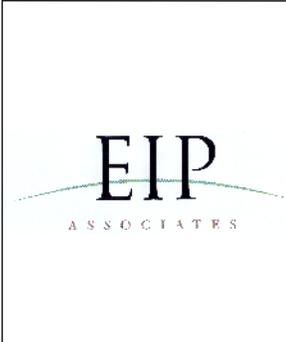


Source: Vegetation data collected by San Francisco Recreation and Park Department Natural Areas Program (NAP), digitized by digitized by San Francisco State Institute for GISc (SFSU IGIS), 2005; natural area boundary created by SFSU IGIS from data provided by NAP, 2005.

Created by D. Dwyer, San Francisco State University, Institute for GISc, August 21, 2005.

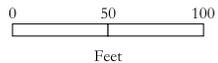


**FIGURE 6.22 - 3**  
**VEGETATION**  
**Balboa Natural Area**  
Significant Natural Resource Areas  
Management Plan  
San Francisco, California

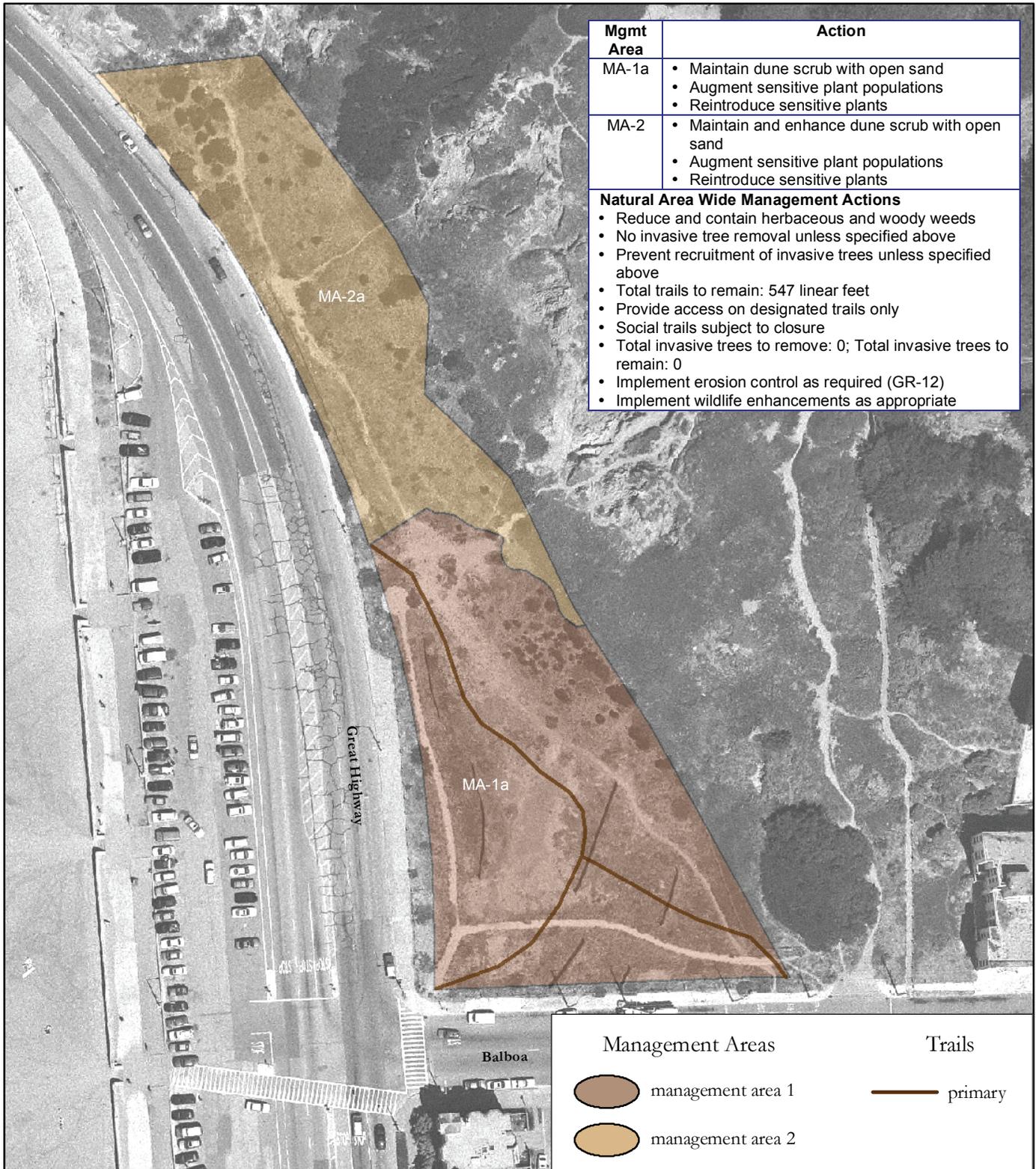


Source: Sensitive species data collected by San Francisco Recreation and Park Department Natural Areas Program (NAP), 2005; vegetation data collected by NAP, San Francisco State University Biology Department, and EIP Associates, 1999 - 2000; data layers digitized by Geotopo, Inc., 2000, edited and corrected by San Francisco State University Institute for GISc (SFSUGIS), 2000 - 2005; natural area boundary created by SFSUGIS based on a determination by NAP, 2005; streets data excerpted from ESRI's StreetMap 2000 data, copyright ESRI 1998-2000.

Created May 23, 2005 by Debra Dwyer, San Francisco State University Institute for GISc Center. Revised June 5, 2005.



**FIGURE 6.22 - 4**  
**SENSITIVE SPECIES**  
**Balboa Natural Area**  
**Significant Natural Resource Areas**  
**Management Plan**  
**San Francisco, California**

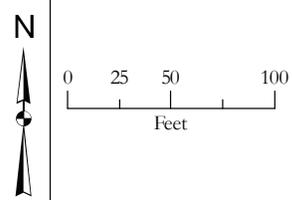


Mgmt Area	Action
MA-1a	<ul style="list-style-type: none"> <li>• Maintain dune scrub with open sand</li> <li>• Augment sensitive plant populations</li> <li>• Reintroduce sensitive plants</li> </ul>
MA-2	<ul style="list-style-type: none"> <li>• Maintain and enhance dune scrub with open sand</li> <li>• Augment sensitive plant populations</li> <li>• Reintroduce sensitive plants</li> </ul>
<b>Natural Area Wide Management Actions</b>	
<ul style="list-style-type: none"> <li>• Reduce and contain herbaceous and woody weeds</li> <li>• No invasive tree removal unless specified above</li> <li>• Prevent recruitment of invasive trees unless specified above</li> <li>• Total trails to remain: 547 linear feet</li> <li>• Provide access on designated trails only</li> <li>• Social trails subject to closure</li> <li>• Total invasive trees to remove: 0; Total invasive trees to remain: 0</li> <li>• Implement erosion control as required (GR-12)</li> <li>• Implement wildlife enhancements as appropriate</li> </ul>	

Management Areas		Trails	
	management area 1		primary
	management area 2		

Source: Management areas and trails data collected by San Francisco Department of Recreation and Park Natural Areas Program (NAP), 2005; trails data digitized by San Francisco State University Institute for GISc (SFSUGIS), 2005; streets data excerpted from Environmental Systems Research Institute (ESRI), Inc.'s Street-Map 2000 data copyright ESRI 1998-2001; aerial photography San Francisco Department of Public Works, 2002, Orthophoto - San Francisco - 1 Foot Resolution - 2001; all data are in California State Plane Zone III projection, NAD 1983; map produced using ArcGIS 9.0 software by ESRI.

Map created May 28, 2005 by Debra Dwyer, San Francisco State University, Institute for Geographic Information Science; revised August 23, 2005.



**FIGURE 6.22 - 5**  
**MANAGEMENT AREAS AND TRAIL PLAN**  
**Balboa Natural Area**  
 Significant Natural Resource Areas Management Plan  
 San Francisco, California

