

## **6.23 INTERIOR GREENBELT**

### **GENERAL DESCRIPTION AND LOCATION**

Interior Green Belt is located on Mount Sutro south of Golden Gate Park and north of Twin Peaks (Figure 1-1). Interior Green Belt is made up of two disconnected parcels (Figure 6.23-1). The northernmost parcel borders and is owned by the University of California, San Francisco, Medical Center, and access is provided to the Natural Area at the end of Edgewood Street and at the corner of Stanyan Street and Belgrave Avenue. The southern parcel is just to the south, across Clarendon Street from the northern parcel, at the ends of Mt. Spring and Saint Germain streets. Both parcels of this Natural Area are entirely covered with urban forests. The values of this Natural Area include the extensive urban forest, populations of sensitive plant species, and suitable habitat for a variety of bird species.

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

This Natural Area is underlain by Franciscan bedrock including chert and sandstone. The northern and eastern slopes are covered with sandy soil, but chert and sandstone outcrop in knobs and small scarps even in these areas. At the core of the hill, loamy soil mantles the bedrock and is mapped as “loamy soil, varying thickness over bedrock” (Figure 6.23-2). A prominent valley along the northwest boundary of the Natural Area marks the location of an ancient fault or shear zone, which has eroded during millions of years to form a narrow, straight cleft in the bedrock. Shallow soil slips occur along the walls of this valley, but most are covered by vegetation.

The only surface water in the area is in the bottom of the valley, which drains the higher slopes of Mount Sutro. This may be characterized as a seasonal creek that likely only flows in the early spring or following substantial rainfall. Otherwise, there is no surface water at the site. Drainage of the park is by overland flow. Some rainfall percolates into fissures in the rock, but runoff generally is rapid. Natural runoff-formed furrows on the slopes are not extensively eroded because there is ground cover, but gullies have developed along the trails denuded of vegetation by foot traffic.

There is a well-defined earthen trail at the northwest edge of the park, crossing the valley, and similar trails in the southeast corner of the park. Foot traffic has worn through the thin soils over to the underlying bedrock. Runoff channeled along these trails increases erosion, but the density of the vegetation resists off-trail erosion.

## VEGETATION

Vegetation mapped within this Natural Area is almost entirely blue gum forest (16.5 acres) (Figure 6.23-3). A minor amount of Cape ivy (*Delairea odorata*) (0.03 acres) constitutes the only other vegetation series within this Natural Area. Both of these are invasive species.

### Sensitive Plant Species

Small remnant plant populations exist here in the eucalyptus understory including three species of sensitive plants (Table 6.23-1; Figure 6.23-4). The sweet cicely (*Osmorhiza chilensis*) that occurs here is one of only two known populations in the City. One of the other species, fairy bells (*Disporum hookeri*), is found in close association with the cicely on the southwestern border of the northern parcel. The other species reported from Interior Greenbelt is thimbleberry (*Rubus parviflorus*), but the specific location of this species is not known.

## WILDLIFE

### Birds

The bird species expected to occur here are those typically found in eucalyptus forests (Appendix Table C-4). In San Francisco this includes species such as American crow (*Corvus brachyrhynchos*), common raven (*Corvus corax*), American robin (*Turdus migratorius*), and dark-eyed junco (*Junco hyemalis*). The trees may provide roosting and nesting habitat for hawks and owls, but use by these species has not been documented. Of the birds considered sensitive for this plan, two have been reported from this Natural Area (Table 6.23-1). Pygmy nuthatch (*Sitta pygmaea*) has been reported to nest within this area. The other species reported from the Natural Area is white-throated swift (*Aeronautes saxatalis*). This species, which tends to nest on cliffs or tall buildings, is only expected to use this Natural Area for foraging. No important bird habitat has been designated for this Natural Area.

### Mammals/Reptiles/Amphibians/Invertebrates

Small vertebrates that may use the Interior Greenbelt 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 black rat (*Rattus rattus*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), and Virginia opossum (*Didelphis virginiana*) use the area (Scudder 2005). California slender salamanders (*Batrachoseps attenuatus*) and coast range newt (*Taricha torosa*) likely occur in the duff on the forest floor. The forests of this Natural Area do not provide suitable habitat for sensitive butterflies.

## MANAGEMENT AREAS

Two Management Areas (MAs) have been designated at Interior Greenbelt (Figure 6.23-5). The areas in the northern parcel that support sensitive plants have been delineated as MA-2 areas. Also an MA-2 (MA-2c) has been designated around the seasonal creek area described above. The remaining urban forests of this Natural Area are MA-3 areas. 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 Interior Greenbelt. 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 Interior Greenbelt would not change significantly the overall look of the park and would result in:

- improved public access on designated trails;
- restoration of a creek riparian corridor;
- improved and more structurally diverse urban forest habitat for wildlife; and
- increased and more sustainable populations of sensitive plant species.

In general, implementation of the following recommendations could enhance a portion of the historic creek riparian corridor at Interior Greenbelt. Furthermore, an improved and structurally complex urban forest will provide enhanced wildlife habitat. In the long term, the creek riparian corridor may resemble the upper watershed of San Francisquito Creek.

### Vegetation

Issues relating to vegetation management at Interior Greenbelt involve the protection of sensitive species 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 eucalyptus trees, and illicit activities must be considered during management of the Natural Areas (GR-13). Management of the urban forests at Interior Greenbelt will follow the general urban forest management practices (GR-15). In addition to these general recommendations, the following site-specific issues should be addressed.

**Issue IG-1:** The Interior Greenbelt Natural Area supports the only occurrence of sweet cicely within the Natural Areas System. Additionally, populations of fairy bells and thimbleberry are found within this Natural Area. Because of habitat loss and invasive species, especially Himalayan blackberry (*Rubus discolor*) and Cape ivy, the long-term survival of the species is threatened.

**Recommendation IG -1a:** To protect the existing sensitive species contain and reduce herbaceous invasive plants such as Himalayan blackberry, Cape ivy, and Algerian ivy (*Hedera canariensis*) in all MA-2 areas. Additionally, these species should be controlled within other understory areas of the urban forest in MA-3a. Prevent invasive tree species from becoming established within MA-2 areas to help preserve these species by allowing more light to reach the forest floor.

**Recommendation IG-1b:** In order to enhance the seasonal creek and sensitive species habitat that persists in the urban forest understory, invasive blue gum eucalyptus trees will be removed in select areas. Approximately 140 of an approximate overall stand of 5,800 trees in Interior Greenbelt would be removed from in MA-2 areas (Appendix F). Not all trees in MA-2 areas will be removed. Some scattered large individuals will remain in order to minimize large-scale disturbance and disruption to wildlife habitat and to promote a gradual conversion to creek riparian and scrub habitats. As part of the gradual conversion to a more open environment, eucalyptus seedlings and saplings will not be allowed to establish in these MA-2 areas. In MA-2 areas an average of 100-200 square feet of basal area per acre will be retained.<sup>1</sup> The short- and long-term impacts of tree removal are discussed in Appendix F. Below is a description of where tree removal would occur (Figure 6.23-5):

- Remove approximately 100 small and medium-sized eucalyptus trees in MA-2a as part of the creek enhancement.
- No trees will be removed from MA-2b because sensitive plants in this area require a more shaded environment.
- Remove approximately 40 eucalyptus from MA-2c, leaving some trees for structural diversity.
- The urban forests in MA-3a will be managed as per GR-13 and GR-15.

**Recommendation IG-1c:** In all MA-2 areas where invasive plants have been removed, revegetate using appropriate native plants that will maintain and enhance the existing scrub mosaic communities. Native species shall be planted to approximate the diversity, cover, and density (generated from relative importance values) of adjacent habitat or reference plots in similar habitats at other parks (Appendix B).

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<sup>1</sup> For comparison, 25 square feet of basal area per acre could equate to 11 trees with diameters of 20 inches, or 45 trees with diameters of 10 inches, in a single acre.

**Recommendation IG-1d:** In order to prevent extinction of existing rare or uncommon plant species, consider augmenting existing populations of sensitive plants such as fairy bells and thimbleberry. This action should occur in all MA-2 areas.

**Recommendation IG-1e:** In order to reduce the potential for local extinction of sensitive species in San Francisco, consider reintroduction of rare plants such as silk tassel bush (*Garrya elliptica*) (MA-2a), Islais cherry (*Prunus ilicifolia*) (MA-2b and MA-2c), western choke cherry (*Prunus virginiana* var *demissa*) (MA-2b and MA-2c), canyon gooseberry (*Ribes menziessi*) (MA-2b), alumroot (*Heuchera micrantha*) (MA-2c), and giant chain fern (*Woodwardia fimbriata*) (MA-2c)

## Wildlife

Wildlife issues at Interior Greenbelt focus on habitat, food sources, and shelter. 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). Enhancement of the urban forest described in GR-15 will improve wildlife habitat. Implementation of recommendations in IG-1 and the general recommendations above will diversify and improve wildlife habitat. No site-specific wildlife-related issues have been identified for this Natural Area.

## Soils, Erosion, and Public Use

Most of the erosion issues at Interior Greenbelt relate to the trail system and public use. This plan proposes to retain 547 feet of unimproved trail and create approximately 600 feet of new trail. 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 Interior Greenbelt Natural Area should also be considered (GR-14). In addition to these general recommendations, the following site-specific issues should be addressed.

**Issue IG-2:** Public access to this Natural Area is limited to two separate paths.

**Recommendation IG-2a:** Consider developing a new trail linking existing secondary trails with trails on the University of California property. As part of the planning effort for the Mount Sutro Open Space Reserve, University of California has identified potential trail linkages between the two properties (University of California and the San Francisco Recreation and Park Natural Area) that would enhance recreation use of the area.

**Recommendation IG-2b:** Formalization of existing social trails that are to remain would minimize erosion and help protect the creek habitat (MA-2c).

**Table 6.23-1. Sensitive species presently and historically known to occur at the Interior Greenbelt.**

Species	Common Name	Status Federal, State, CNPS, Local	Local Significance
<b>Vertebrates</b>			
<i>Sitta pygmaea</i>	Pygmy Nuthatch	SLC	Presently breeds
<i>Aeronautes saxatalis</i>	White-throated Swift	SLC	Presently occurs
<b>Plants</b>			
<i>Disporum hookeri</i>	Fairy Bells	LS	Presently occurs
<i>Osmorhiza chilensis</i>	Sweet Cicely	LS	Presently occurs
<i>Rubus parviflorus</i>	Thimbleberry	LS	Presently occurs

**Status Key:**

- Federal Status**
- FE* 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**

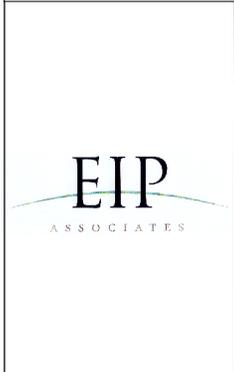
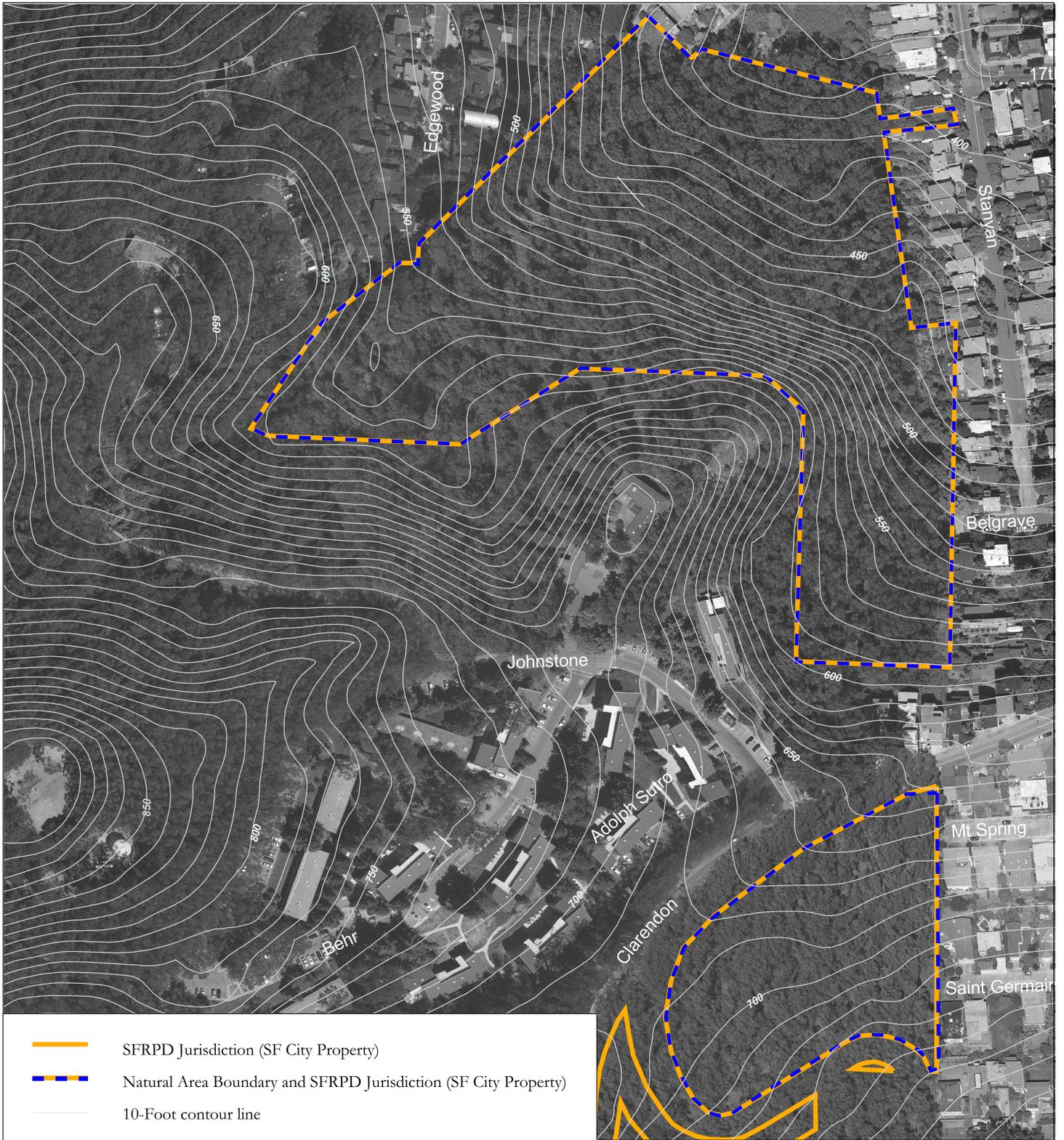
- SE* Endangered. Species whose continued existence in California is jeopardized.
- ST* Threatened. Species, although not presently threatened with extinction, that is likely to become endangered in the foreseeable future.
- SSC* Species of Concern.
- SFP* State Fully Protected under Sections 3511 and 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.

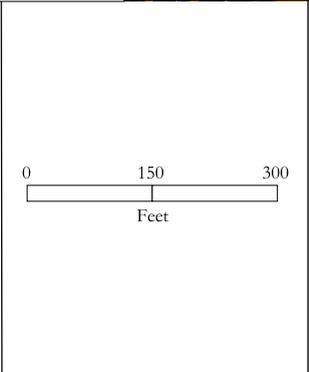
**Golden Gate Audubon Society**

- SLC* Species of Local Concern

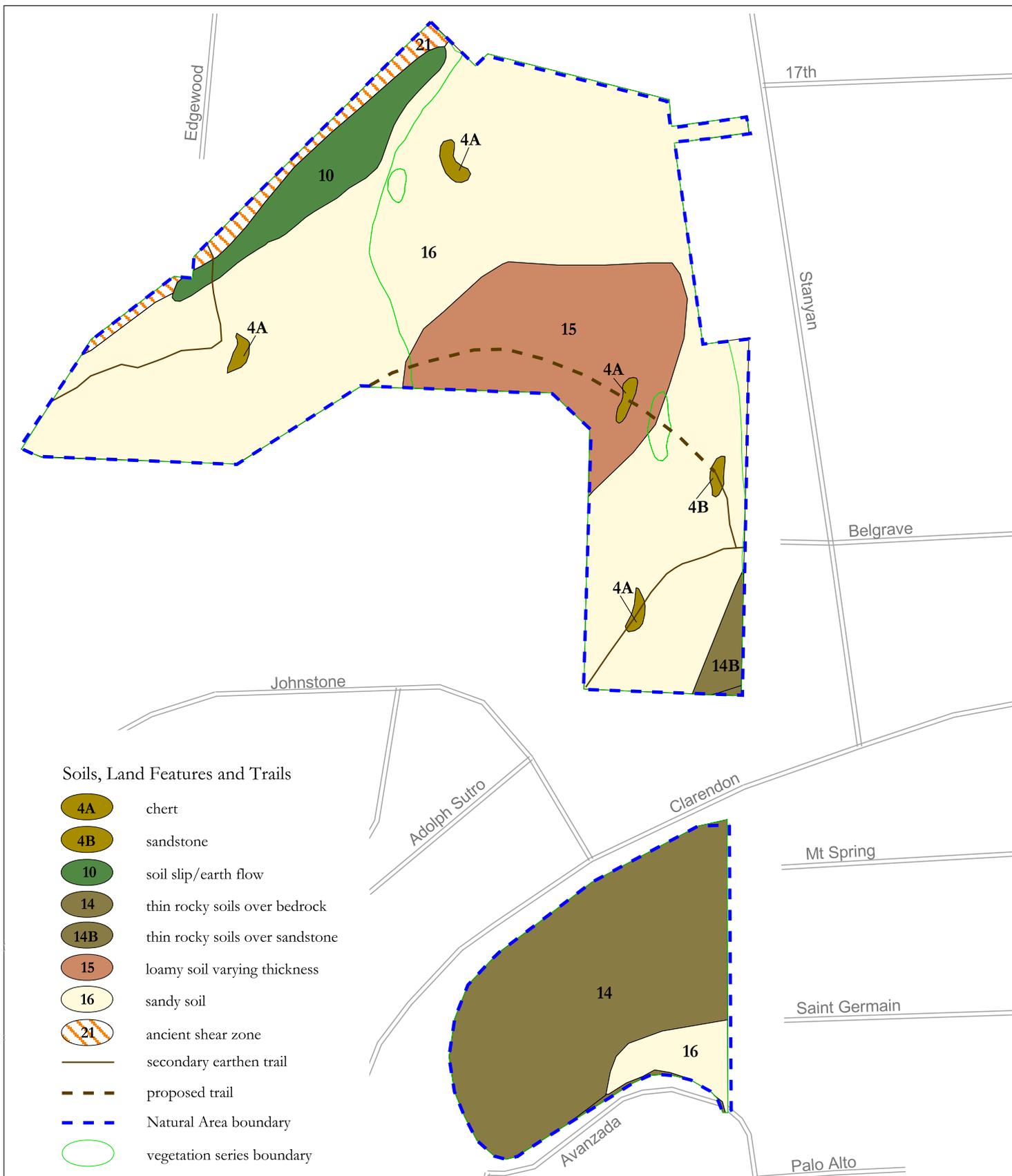


Source: Aerial photography San Francisco Department of Public Works, 2002, Orthophoto - San Francisco - 1-foot resolution, 2001; property boundary data derived by San Francisco Recreation and Park Department (RPD) 2005 from data provided by San Francisco Department of Telecommunications and Information 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, May 3, 2002, revised June 10, 2005.

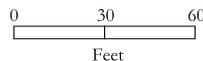


**FIGURE 6.23 - 1**  
**AERIAL PHOTOGRAPH, PROPERTY BOUNDARIES, AND NATURAL AREAS**  
**Interior Greenbelt**  
 Significant Natural Resource Areas Management Plan  
 San Francisco, California



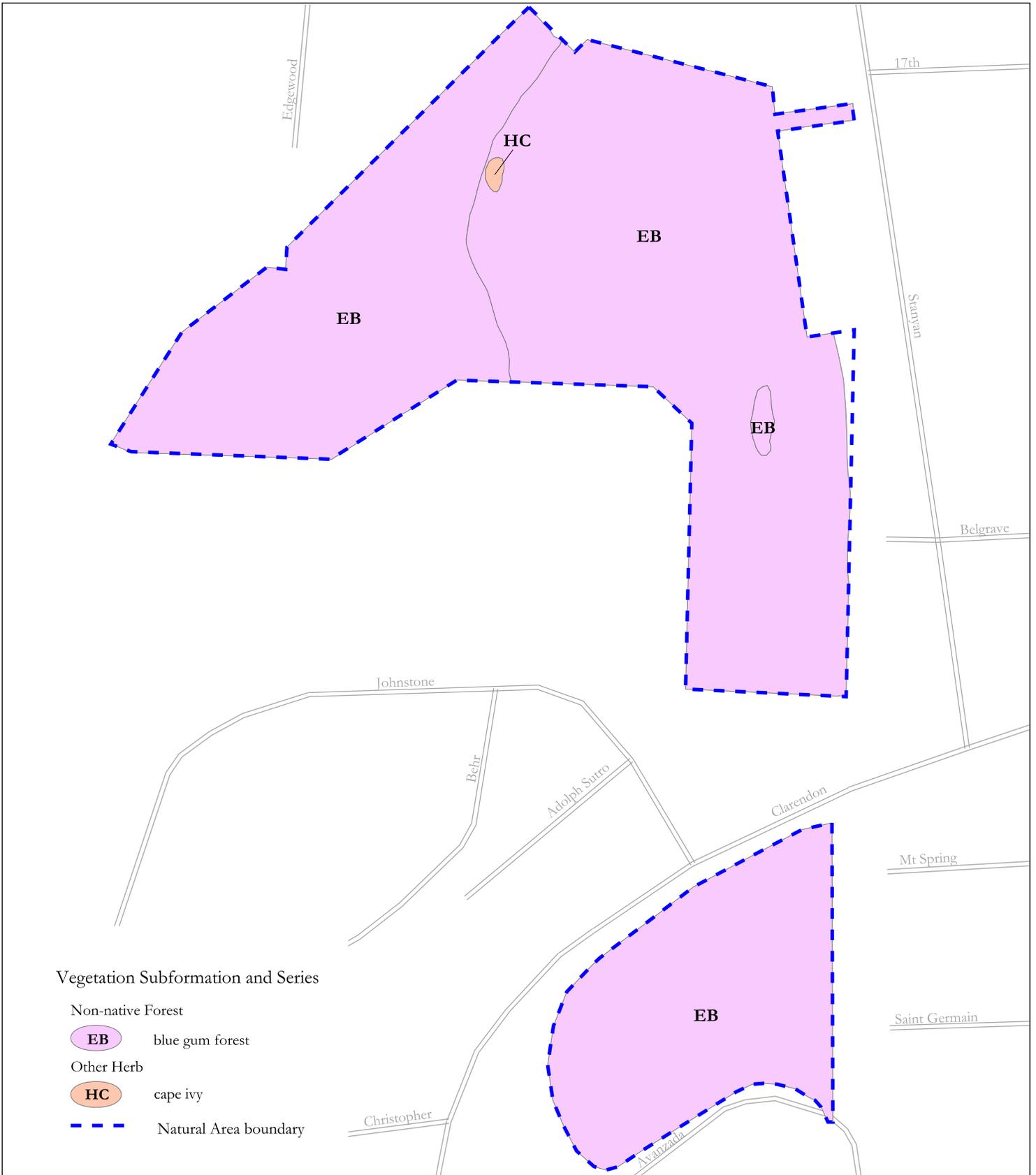
Source: Soils and land features data collected by EIP Associates, 2005; trails and vegetation data collected by San Francisco Recreation and Park Department Natural Areas Program (NAP), 2005; vegetation data collected by NAP, 2005; data layers digitized by San Francisco State University Institute for 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, December 10, 2005.



**FIGURE 6.23 - 2**  
**SOILS, LAND FEATURES,**  
**AND TRAILS**  
**Interior Greenbelt**  
 Significant Natural Resource Areas  
 Management Plan  
 San Francisco, California





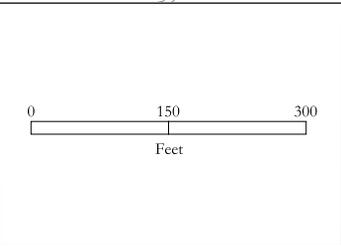
**Vegetation Subformation and Series**

- Non-native Forest
  - EB** blue gum forest
- Other Herb
  - HC** cape ivy
- - -** Natural Area boundary



Source: Vegetation data collected by San Francisco Department of Recreation and Park Natural Areas Program (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 Institute for GISc (SFSUGIS), 2000 - 2002; natural area boundary created by SFSUGIS from data provided 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, June 5, 2005.



**FIGURE 6.23 - 3**  
**VEGETATION**  
**Interior Greenbelt**  
**Significant Natural Resource Areas**  
**Management Plan**  
**San Francisco, California**



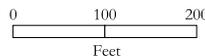
Sensitive Species

- - - Natural Area Boundary
- ✱ Fairy Bells
- ★ Sweet Cicely
- ⊕ Thimbleberry
- vegetation series boundary

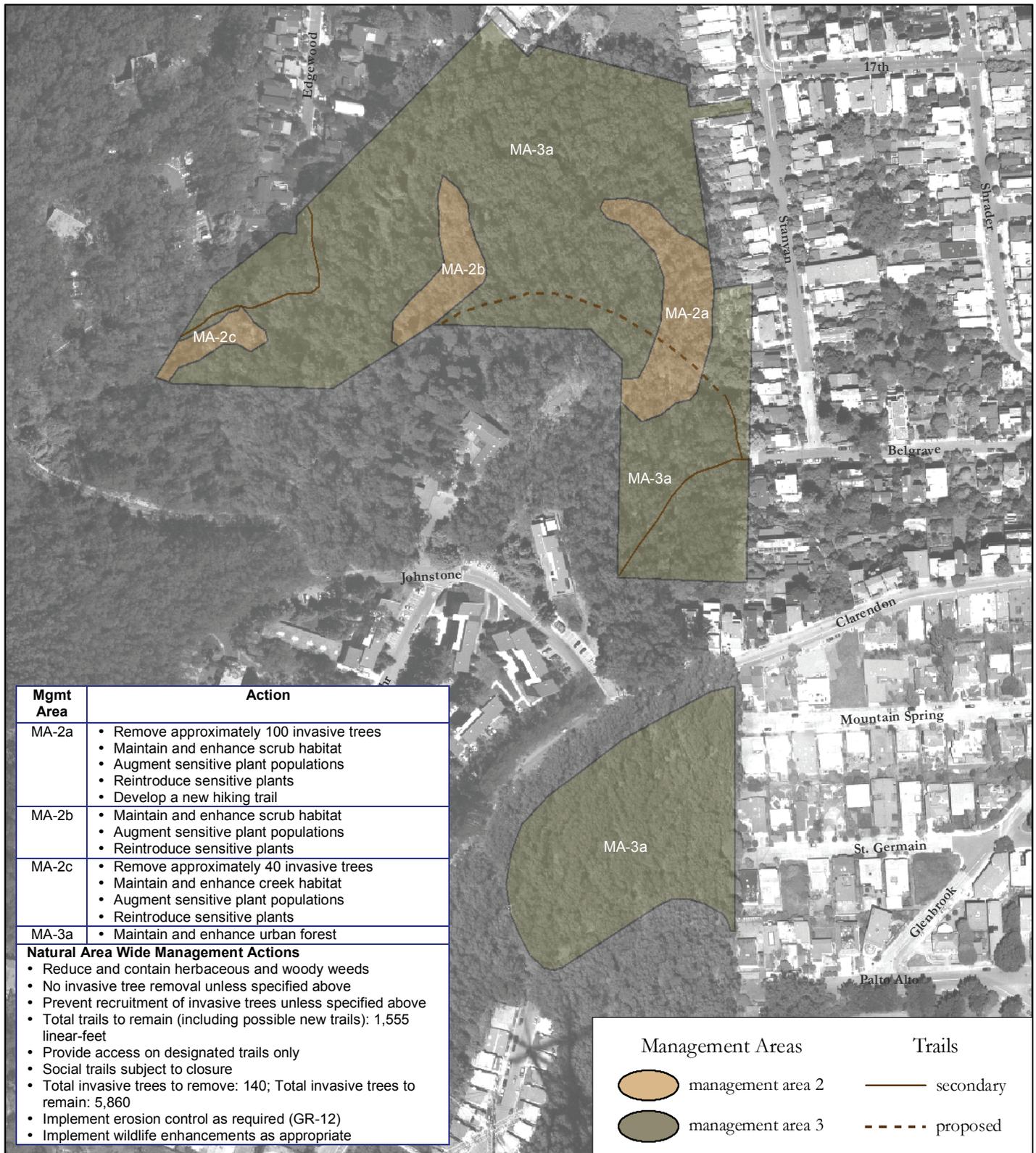


Source: Sensitive species data collected by San Francisco Recreation and Park Department Natural Areas Program (NAP), 2005; vegetation data collected by NAP, San Francisco State University Biology Department, and EIP Associates, 1999 - 2000; data layers digitized by Geotopo, Inc., 2000, edited and corrected 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 August 22, 2005.



**FIGURE 6.23 - 4**  
**SENSITIVE SPECIES**  
**Interior Greenbelt**  
**Significant Natural Resource Areas**  
**Management Plan**  
**San Francisco, California**



Mgmt Area	Action
MA-2a	<ul style="list-style-type: none"> <li>Remove approximately 100 invasive trees</li> <li>Maintain and enhance scrub habitat</li> <li>Augment sensitive plant populations</li> <li>Reintroduce sensitive plants</li> <li>Develop a new hiking trail</li> </ul>
MA-2b	<ul style="list-style-type: none"> <li>Maintain and enhance scrub habitat</li> <li>Augment sensitive plant populations</li> <li>Reintroduce sensitive plants</li> </ul>
MA-2c	<ul style="list-style-type: none"> <li>Remove approximately 40 invasive trees</li> <li>Maintain and enhance creek habitat</li> <li>Augment sensitive plant populations</li> <li>Reintroduce sensitive plants</li> </ul>
MA-3a	<ul style="list-style-type: none"> <li>Maintain and enhance urban forest</li> </ul>

**Natural Area Wide Management Actions**

- Reduce and contain herbaceous and woody weeds
- No invasive tree removal unless specified above
- Prevent recruitment of invasive trees unless specified above
- Total trails to remain (including possible new trails): 1,555 linear-feet
- Provide access on designated trails only
- Social trails subject to closure
- Total invasive trees to remove: 140; Total invasive trees to remain: 5,860
- Implement erosion control as required (GR-12)
- Implement wildlife enhancements as appropriate

**Management Areas**

- management area 2
- management area 3

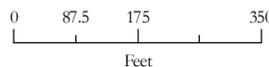
**Trails**

- secondary
- proposed



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 (SFSU IGIS), 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 29, 2005 by Debra Dwyer, San Francisco State University, Institute for Geographic Information Science; revised November 15, 2005.



**FIGURE 6.23 - 5**  
**MANAGEMENT AREAS**  
**AND TRAIL PLAN**  
**Interior Greenbelt**  
**Significant Natural Resource Areas**  
**Management Plan**  
**San Francisco, California**