3.1 BIOLOGICAL RESOURCES

This chapter provides a discussion of existing natural resources, their functions and values, and potential effects to them resulting from the proposed action. Information in this section was gathered through literature review, examination of available databases, field reconnaissance, and biological surveys. In accordance with the procedures of the Significant Ecological Area Technical Advisory Commission (SEATAC), a Biological Constraints Analysis was prepared by EDAW in February 2007. SEATAC is a 7 member technical advisory committee comprised of members with professional expertise, including biological resource professionals. SEATAC reviews proposed development within Significant Ecological Areas (SEAs). The Joint Powers’ Authority participation in the SEATAC review process was voluntary; it is not required to obtain SEATAC’s approval of the proposed project. Four meetings were held on the proposed project over 14 months. The first meeting held in March 2007 reviewed the Biological Constraints Analysis. Biological surveys of the lease boundary and surrounding area were performed in late 2006 and early 2007. Additional surveys were conducted by EDAW in late 2007. A Biota Report/Biological Assessment, including methods, types of surveys, survey dates, personnel, and all survey results, was prepared for the proposed project by EDAW in late 2007 in accordance with SEATAC procedures. Three subsequent SEATAC meetings considered the Biota Report/Biological Assessment. Each meeting was also attended by members of the public who commented on the project. SEATAC members raised concerns about the Discovery Center project, which focused on the size of the interpretive center, alternative sites for the project, and the content of the EIR. Even though the proposed interpretive center is not within the SEA, and would be located entirely within the footprint of the existing building, lawn and landscaping, questions about the size and design of the building were answered at each meeting by project staff and consultants, and with supplemental memoranda (see Appendix B). Questions about the site selection process, and why some proposed alternative sites were unsuitable were also answered, even though these topics are not part of SEATAC review. Throughout the SEATAC review process, the Authority submitted all of the required review materials and responded to every question posed by SEATAC members. The Biota Report/Biological Assessment was revised to include additional information following the May 2007 meeting. SEATAC members were also provided with additional memoranda from the project architects and biological consultants in response to their inquiries at the January 2008 meeting. These memoranda supplemented responses provided at the May 2007 and January 2008 meeting (see Appendix B). Final review of the Biota Report/Biological Assessment was conducted by SEATAC in on May 5, 2008. Three of 7 SEATAC members participated. Two members recommended finding that the proposed project is not compatible with the Whittier Narrows Dam Recreation Area SEA (SEA No. 42). One member recommended finding that the proposed project is compatible with the SEA.

To capture a second year of survey data, a summer bird survey was conducted by Cooper Ecological Monitoring, Inc. in June and early July 2008. The Summer Bird Survey Report was prepared in November 2008. In addition, a biological assessment of the eastern Natural Area, including the lease boundary and adjacent portions of the Natural Area, was conducted in July 2008 by Cooper Ecological
3.1 Biological Resources

Monitoring, Inc. These reports prepared by Cooper Ecological Monitoring, Inc. were used to supplement the Biota Report/Biological Assessment prepared by EDAW due to the lapse in time between biological surveys. Clarifications to the Biota Report/Biological Assessment were made based on the reports prepared by Cooper Ecological Monitoring, Inc. and incorporated within this EA. The revised Biota Report/Biological Assessment (December 2007) that was submitted to SEATAC is included in its entirety in Appendix B. A clarifications section has been added at the beginning of Appendix B that reflects changes made to the analysis based on the Summer Bird Survey and Biological Assessment prepared by Cooper Ecological Monitoring, Inc. Although new information has been provided, no changes to the mitigation measures approved by SEATAC have been made. Complete copies of all the reports prepared by Cooper Ecological Monitoring, Inc. are also included as Appendix B. Impacts to biological resources associated with the proposed project were determined from the results presented in these reports.

3.1.1 Affected Environment

Vegetation

Three general types of natural vegetation communities occur within the sublease boundary: walnut woodland, elderberry scrub, southern cottonwood willow riparian forest, and non-native vegetation (see Figure 3.3-2 Biological Resources Map). Other cover types within the sublease boundary include landscaped and developed areas. Acreages for these cover types within the sublease boundary and the construction impact area are provided in Table 3.3-1.

<table>
<thead>
<tr>
<th>Table 3.1-1 Vegetation Communities and Acreages Within the Construction Impact Area and Sublease Boundary</th>
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<tr>
<td>Vegetation Communities</td>
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<td>Walnut Woodland</td>
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<td>Walnut woodland</td>
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<td>Disturbed walnut woodland</td>
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<td>Elderberry Scrub</td>
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<td>Elderberry Scrub Subtotal</td>
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<td>Other Cover Types</td>
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<td>Ruderal</td>
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<tr>
<td>Ruderal with some trees</td>
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<tr>
<td>Landscaped/Developed (including paved road)</td>
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<td>Unsurfaced Trail</td>
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<td><strong>Other Cover Types Subtotal</strong></td>
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<td>TOTAL ACRES</td>
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Figure 3.1-1
Biological Resources Map

Legend
- Sublease Boundary
- Construction Impact Area
- Robert S. Joe Commemorative Ditch
- Cooper's hawk locations (2007 survey)

Vegetation Communities
- Walnut Woodland
- Disturbed Walnut Woodland
- Elderberry Scrub
- Ornamental/Developed
- Paved Road
- Ruderal
- Ruderal (with occasional mature trees)
- Unsurfaced Trail

Source: EDAW 2006; Psomas 2008
3.1 Biological Resources

The southern (Fremont) willow riparian habitat occurs adjacent to, but not within, the sublease boundary. It should be noted that the sublease boundary and the surrounding areas were used for agricultural purposes prior to the acquisition by the USACE in 1937. Much of the disturbance and introduction of exotic species occurred when the site was being used for agricultural purposes.

Walnut Woodland

A portion of the lease boundary contains a stand of walnut trees that are defined as a walnut woodland for the purposes of this analysis. The walnut woodland designation corresponds to the walnut series described by Sawyer and Keeler-Wolf (1995). Holland describes California walnut woodland community as occurring on the south side of the San Gabriel Mountains, on relatively moist, fine-textured soils of the valley slopes and bottoms (1986). California walnut woodland is dominated by walnut (Juglans californica), a California endemic, deciduous tree that grows from 20 to 49 feet tall (Krochmal and Krochmal 1982). California walnut woodland can be defined as having California walnut as the sole or dominant tree in the canopy. Occasionally, coast live oak (Quercus agrifolia) codominates in the California walnut woodlands (Keeley 1990). However, it should be noted that in the Whittier Narrows area, the original walnut trees that make up the walnut woodland community in the lease boundary may have been planted for cultivation; historically, the neighborhood contained orchards, home sites, and dairies that may have held walnut trees. As a result, the walnut trees within the lease boundary are of hybrid origin involving California walnut and either black walnut (J. nigra) and/or English walnut (J. regia). Because the walnut trees in the lease boundary are hybrids, they are not considered a rare and sensitive vegetation community, like the California walnut woodland community defined by Sawyer and Keeler-Wolf.

Within the USACE-owned portion of the sublease boundary there are 6 walnut woodland stands separated by disturbed/ruderal habitat. Of these six stands, 3 are disturbed and 3 are relatively undisturbed. Stands with signs of previous soil disturbance and/or a high percentage of nonnative species are classified as disturbed. There is a total of 1.81 acres of walnut woodland within the USACE-owned portion of the sublease boundary, 1.65 acres of which are classified as disturbed. Of these 1.65 acres, 0.21 acres are located in the construction impact area, 0.21 acres of which are classified as disturbed. The largest stand of walnut woodland in the USACE-owned portion of the sublease boundary consists of 1.65 acres and occurs in the north-central portion of the construction impact area. This area is dominated by walnut, elderberry, mature, non-native ornamental trees, has a ruderal understory and signs of previous soil disturbance. A 0.21-acre patch of disturbed walnut woodland occurs in the far northeastern portion of the construction impact area. This patch contains a ruderal understory composed primarily of mustard (Hirschfeldia incana).

Elderberry Scrub

A portion of the sublease boundary contains an area of elderberry scrub. Approximately 0.46 acres of this community occur within the USACE-owned portion of the sublease boundary. No elderberry scrub is
located within the construction impact area. Elderberry scrub grows on intermittently fresh-water flooded soils in floodplains. Elderberry scrub is characterized by a dominance of blue elderberry with a grassy ground layer. The elderberry scrub within the sublease boundary is south of the existing parking loop, and is bordered on the west and east sides by native landscaping. Within the sublease boundary, elderberry scrub has substantial cover of mustard. Occasional trees are also present.

**Ruderal**

A portion of the sublease boundary contains areas dominated by ruderal vegetation. Approximately 4.20 acres of this community occur within the sublease boundary, 2.04 acres of which contain mature native trees. All of ruderal area is located within the USACE-owned portion of the sublease boundary. Of these 4.20 acres, 3.22 acres are in the construction impact area and 1.72 acres contain mature native trees. Ruderal vegetation communities grow on highly disturbed sites and are characterized primarily by invasive or weedy forbs. The ruderal areas of the sublease boundary are east of the WNNC and driveway and south of the woodland area. Dominant ruderal species in the sublease boundary include mustard and poison hemlock (*Conium maculatum*). Some ruderal areas contain sparse, occasional mature native trees, including Mexican elderberry, and mature nonnative trees, including London plane and walnut species. Also present are occasional coastal sage scrub species such as black sage, California buckwheat (*Eriogonum fasciculatum*), and western prickly pear (*Opuntia littoralis*). Some annual non-native grasses were present adjacent to trails and roads. However, these species are not present in sufficient quantity or density to comprise their own vegetation community. This area serves as foraging area for small terrestrial species and raptors.

**Landscaped/Developed**

Landscaped areas in the sublease boundary occupy much of the area around the WNNC and parking lot, including the 0.63-acre parcel owned by LACDPR. Approximately 4.44 acres of this community occur within the sublease boundary, 3.30 acres of which occur within the construction impact area. Approximately 3.94 acres of landscaped/developed area is located within the USACE-owned portion of the sublease boundary. Landscaped areas immediately adjacent to the WNNC consist of grassy lawns (*Stenotaphrum secundatum*) and non-native ornamental species with occasional planted mature native trees including redwood (*Sequoia sempervirens*), London plane (*Platanus hispanica*), white alder, and walnut. There are 3 coast live oak trees (*Quercus agrifolia*) located within the landscaped area south of the parking lot.

The island within the existing parking lot, south of the WNNC, contains an isolated landscaped area of planted California native species. The plants occur naturally in a variety of habitats throughout California and include, but are not limited to, western sycamore, coffeeberry (*Rhamnus californica*), toyon (*Heteromeles arbutifolia*), California wild rose (*Rosa californica*), western redbud (*Cercis occidentalis*), matilija poppy (*Romneya coulteri*), holly-leaved cherry (*Prunus ilicifolia* ssp. *ilicifolia*), sugar bush (*Rhus ovata*), and catsclaw (*Acacia greggii*). This area also contains two cultivated Nevin’s barberry (*Berberis*
3.1 Biological Resources

*nevinii*) shrubs. Native plant demonstration gardens adjacent to the WNNC outbuilding/restrooms contain many of the same species, including one Nevin’s barberry shrub.

Developed areas are occupied by buildings or paved areas such as roads and parking lots. Developed areas in the sublease boundary include approximately 5,435 sf of existing buildings. These include the WNNC, County Police Substation, outbuildings containing restrooms and storage, picnic shelter containing a metal barbecue and prep table, approximately 12 picnic tables, parking lot with approximately 33 spaces for cars (including 2 handicap spaces) and 2 spaces for buses (occupies 0.58 acres), storage building, and a garage. The sublease boundary also contains approximately 0.30 acres of unsurfaced (bare) trails, 0.23 acres of which occur within the construction impact area.

**Wildlife Species Observed**

A total of 47 animal species were observed or detected on or adjacent to the sublease boundary, including 8 invertebrate species, 2 reptile species, 32 bird species, and 5 mammal species. A complete list of the animal species observed or detected within and adjacent to the study area is included in Appendix B. Wildlife species relating to the vegetation communities described above are noted below. Additionally, a total of 44 bird species were observed in or around the sublease boundary during the 2008 summer bird surveys. A complete list of the animal species observed or detected within and adjacent to sublease boundary during 2008 summer bird surveys is included in Appendix B of this EA.

Some wildlife species observed or detected within the walnut woodland habitat within the sublease boundary included American crow (*Corvus brachyrhynchos*), black phoebe (*Sayornis nigricans*), bushtit (*Psaltriparus minimus*), house wren (*Troglodytes aedon*), mourning dove (*Zenaida macroura*), red-shouldered hawk (*Buteo lineatus*), red-tailed hawk (*Buteo jamaicensis*), song sparrow (*Melospiza melodia*), yellow-rumped warbler (*Dendroica coronata*), and eastern fox squirrel (*Sciurus niger*).

Wildlife associated with the ruderal habitats included common side-blotched lizard (*Uta stansburiana*), cabbage white butterfly, skipper butterfly (*Hesperiidae*), black phoebe, bushtit, Cooper’s hawk, house finch, mourning dove, rock pigeon, song sparrow, white-crowned sparrow, Audubon’s cottontail, California ground squirrel (*Spermophilus beecheyi*), and coyote.

Wildlife species observed or detected within landscaped or developed areas of the sublease boundary included western fence lizard (*Sceloporus occidentalis*), cabbage white butterfly, American robin (*Turdus migratorius*), Anna’s hummingbird, black phoebe, Cooper’s hawk, great horned owl (*Bubo virginianus*) (captive), house finch, house wren, mourning dove, red-tailed hawk, rock dove, song sparrow, white-crowned sparrow, Audubon’s cottontail, California ground squirrel, and eastern fox squirrel.

Some animal species observed or detected in natural areas adjacent to the sublease boundary included American crow, black phoebe, Cassin’s kingbird (*Tyranus vociferans*), cliff swallow (*Petrochelidon pyrrhonota*), Cooper’s hawk, belted kingfisher (*Ceryle alcyon*), great blue heron (*Ardea herodias*), great egret (*Ardea alba*), house finch, killdeer (*Charadrius vociferus*), long-billed dowitcher (*Limnodromus"
3.1 Biological Resources

scolopaceus), red-crowned parrot (Amazona viridigenalis), red-shouldered hawk, red-tailed hawk, song sparrow, snowy egret (Egretta thula), yellow-rumped warbler, Audubon’s cottontail, California ground squirrel, and coyote. Merlin (Falco columbarius) and white-tailed kite (Elanus caeruleus) are also known to occur widely in the Whittier Narrows Recreation Area.

SENSITIVE BIOLOGICAL RESOURCES

Special status plant and wildlife species, commonly referred to as sensitive species, include species that are legally protected under the Federal Endangered Species Act (FESA), the California Endangered Species Act (CESA), the California Native Plant Protection Act, or other local conservation agencies and organizations. Included are plant species listed by the California Native Plant Society, wildlife species that are of special concern to the U.S. Fish and Wildlife Service (USFWS), the California Department of Fish and Game (CDFG), and bird species protected by the Migratory Bird Treaty Act (MBTA). Special status species are also those that are considered by the scientific community to be sufficiently rare to qualify for such protection. This project is being reviewed by USFWS and CDFG.

The California Natural Diversity Database (CNDDB) was reviewed to determine the potential for special-status species to occur within or near the sublease boundary. The sublease boundary is located within the USGS El Monte 7.5-minute topographic quadrangle. The CNDDB for the El Monte quadrangle and 8 adjacent quadrangles – Pasadena, Mt. Wilson, Azusa, Baldwin Park, La Habra, Whittier, South Gate, and Los Angeles. The CNDDB identified three special-status plant species and six special-status wildlife species with recorded occurrences in the El Monte quadrangle. Special-status plants include Orcutt’s linanthus (Linanthus orcuttii), a California Native Plant Society (CNPS) List 1B plant; Brand’s phacelia (Phacelia stellaris), candidate for federal listing and a CNPS List 1B species; and Parish’s gooseberry (Ribes divaricatum var. parishii), a CNPS List 1 B species. Special-status wildlife species include the USFWS Candidate for listing and state-endangered western yellow-billed cuckoo (Coccyzus americanus occidentalis); the federally and state-endangered southwestern willow flycatcher (Empidonax traillii extimus); the federally threatened and state Species of Special Concern, the coastal California gnatcatcher (Polioptila californica californica); and federally and state-endangered least Bell’s vireo (Vireo bellii pusillus). There are also two state Species of Special Concern, the southwestern pond turtle (Emys marmorata pallida) and coast (San Diego) horned lizard (Phrynosoma coronatum blainvillii) (CDFG 2006).

The CNDDB identified the following additional special-status species with recorded occurrences in one or more of the 8 quadrangles surrounding El Monte: Braunton’s milk-vetch (Astragalus brauntonii), Greata’s aster (Aster greatae), Davidson’s saltscale (Atriplex serenana var. davidsonii), Nevin’s barberry (Berberis nevinii), slender mariposa lily (Calochortus clavatus var. gracilis), Plummer’s mariposa lily (Calochortus plummerae), southern tarplant (Centromadia parryi ssp. australis), Parry’s spineflower (Chorizanthe parryi var. parryi), slender-horned spineflower (Dodecahema leptoceras), San Gabriel River dudleya (Dudleya cymosa ssp. crebifolia), San Gabriel Mountains dudleya (Dudleya densiflora), many-stemmed dudleya (Dudleya multicaulis), San Gabriel bedstraw (Galium grande), Los Angeles
3.1 Biological Resources

sunflower (*Helianthus nuttallii* ssp. *parishii*), mesa horkelia (*Horkelia cuneata* ssp. *puberula*), Coulter’s goldfields (*Lasthenia glabra* ssp. *coulteri*), Robinson’s pepper-grass (*Lepidium virginicum* var. *robinsonii*), San Gabriel linanthus (*Linanthus concinnus*), prostrate navarretia (*Navarretia prostrata*), California Orcutt grass (*Orcuttia californica*), southern skullcap (*Scutellaria bolanderi* ssp. *austromontana*), and Sonoran maiden fern (*Thelypteris puberula* var. *sonorensis*). Wildlife species known for these eight quadrangles include arroyo chub (*Gila orcutti*), Santa Ana sucker (*Catostomus santaanae*), Santa Ana speckled dace (*Rhinichthys osculus* ssp. 3), western spadefoot (*Spea hammondii*), Coast Range newt (*Taricha torosa torosa*), rosy boa (*Charina trivirgata*), two-striped garter snake (*Thamnophis hammondii*), Cooper’s hawk (*Accipiter cooperii*), American peregrine falcon (*Falco perigrinus anatum*), mountain yellow-legged frog (*Rana muscosa*), coastal western whiptail (*Aspidoscelis tigris stejnegeri*), burrowing owl (*Athene cunicularia*), coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*), black swift (*Cypseloides niger*), yellow-breasted chat (*Icteria virens*), western yellow bat (*Lasiurus xanthinus*), big free-tailed bat (*Nyctinomops macrotis*), southern grasshopper mouse (*Onychomys torridus ramona*), San Diego black-tailed jackrabbit (*Lepus californicus bennettii*), Nelson’s bighorn sheep (*Ovis canadensis nelsoni*), and American badger (*Taxidea taxus*). Additionally, the unarmored threespine stickleback (*Rhinichthys osculus* ssp. 3) and southwestern pond turtle (*Clemmys marmorata pallida*) have the potential to occur within the vicinity of the proposed action, although they are not expected to occur within the sublease boundary due to the lack of suitable aquatic habitat (CDFG 2006). A complete list of these species, descriptions, and their potential occur within the sublease boundary is provided in Appendix B.

The San Gabriel River Corridor Master Plan Program EIR identified 8 additional species with the potential to occur within or near the sublease boundary: Parish’s brittlescale (*Atriplex parishii*), Lewis’s evening primrose (*Camissonia lewisii*), Davidson’s bush mallow (*Malacothamnus davidsonii*), pale big-eared bat (*Corynorhinus townsendii pallenscens*), spotted bat (*Euderma maculatum*), California mastiff bat (*Eumops perotis californicus*), Yuma myotis (*Myotis yumanensis*), and long-eared myotis (*Myotis evotis*) (LACDPW 2006).

The California Native Plant Society *Inventory of Rare and Endangered Plants* was also reviewed for any additional species that require consideration. Intermediate mariposa lily (*Calochortus weedii* var. *intermedius*) was identified as occurring in the La Habra quadrangle and San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*) was identified as occurring in the Mt. Wilson quadrangle (CNPS 2006).

**Sensitive Plant Species**

The CNDDDB query results and an assessment of habitat requirements for each species were used to determine target species with the potential to occur on the project site. Biological surveys were conducted for the entire 11.21-acre sublease boundary. In addition, because knowledge of the biological resources immediately adjacent to the sublease boundary is relevant to an understanding of the resources at the subject location, surveys were also conducted within a zone surrounding the sublease boundary.
3.1 Biological Resources

General biological surveys were conducted on July 21, 2006, October 19, 2006, and January 16, 2007 in accordance with protocols recommended by CNPS and CDFG. A rare plant survey was conducted on March 22, 2007.

All sensitive plant species that were determined to have a potential to occur within the sublease boundary are listed in Table 2 of Appendix B. Only one sensitive plant species, Nevin’s barberry (*Berberis nevinii*) was detected within the construction impact area during any of the surveys. Three shrubs are located in landscaped areas of the construction impact area. Natural areas of the sublease boundary lack suitable soils and significantly mesic areas on which to support this species. This species has a low potential to occur in natural habitats of the sublease boundary. See Table 2 in Appendix B for information on habitat affinities and notes on why these species were considered to have low or no potential to occur within the project site.

**Sensitive Wildlife Species**

No sensitive fish, amphibians, or mammals are expected to occur within the sublease boundary due to lack of suitable habitat. One sensitive reptile, the coastal western whiptail, was determined to have a moderate potential to occur, since some suitable habitat occurs within the sublease boundary and the coastal western whiptail is known to adjacent regions. It was not observed or detected within the sublease boundary during general wildlife or focused surveys. However, there is moderate potential for this species to occur. The nearest known occurrence (reported in the CNDDB) of a coastal western whiptail is approximately 8 miles northeast of the Recreation Area.

Cooper’s hawk (*Accipiter cooperi*) (CDFG Species of Special Concern) was observed within the sublease boundary during surveys conducted for this project. During a site visit on August 15, 2006, a juvenile was seen in the trees surrounding the existing parking lot. Additional sightings of adult birds were made in February 2007, in trees adjacent to the Robert S. Joe Commemorative Ditch and in trees within the existing parking lot. One adult bird was observed hunting near the start of the paved Nature Trail on June 9, 2008. Presumably the same bird was seen a few minutes later doing display flight over tall trees near the start of the Nature Trail. A single bird was also seen flying over the sublease boundary on July 2, 2008 (see Appendix B).

Another bird species, least Bell’s vireo (*Vireo billii pusillus*) (CDFG Endangered, USFWS Endangered) has the potential to occur in the project vicinity. Least Bell’s vireo was not observed within the sublease boundary or detected within the sublease boundary during general wildlife surveys in 2007. On June 9, 2008, however, one potentially nesting individual was detected during summer bird surveys along the southern end of Robert S. Joe Commemorative Ditch (Appendix B). Presumably the same bird, sometimes paired with another least Bell’s vireo, was periodically observed by WNNC staff and volunteers within or in the vicinity of the WNNC from early May to mid July of 2008. Additionally, in 2001, 2005, 2006, and 2007, breeding pairs and individuals were detected in riparian habitat approximately one mile west of the WNNC. In 2005, 2 sightings were observed approximately 1,200 feet
3.1 Biological Resources

from the western edge of the WNNC. One singing migrant was seen approximately 600 feet southeast of the WNNC in 2005 (see Appendix B). In 2009 local birders have also sighted least Bell’s vireo in the vicinity of previous sightings. There is moderate potential for this species to occur within the sublease boundary as individuals migrate through the area; however, it is not expected to nest within the sublease boundary due to the absence of suitable nesting habitat.

Two other sensitive bird species, the yellow-breasted chat (Icteria virens) (CDFG Species of Special Concern), and yellow warbler (Dendroica petechia) (CDFG Species of Special Concern) were detected during 2008 summer bird surveys. A potentially breeding pair of yellow-breasted chat was observed in June near the start of the Nature Trail at the southwest corner of the sublease boundary, outside of the construction impact area. These birds were not observed again in July however, an individual was detected along the lowermost portion of Robert S. Joe Commemorative Ditch, outside of the sublease boundary. Yellow warblers were present during 2008 summer bird surveys, mostly along lower Robert S. Joe Ditch. There is moderate potential for these species to occur within the sublease boundary as individuals migrate through the area; however, they are not expected to nest within the construction impact area due to the absence of suitable nesting habitat.

Wildlife Corridors and Habitat Linkages

In an urban context, a wildlife migration corridor can be defined as a linear landscape feature of sufficient width and buffer to allow animal movement between two comparatively undisturbed habitat fragments, or between a habitat fragment and some vital resources thereby encouraging population growth and diversity. Habitat fragments are isolated patches of habitat separated by otherwise foreign or inhospitable areas, such as urban/suburban tracts, agricultural lands, or highways. Habitat fragments can isolate species populations by limiting migration, foraging, and breeding opportunities. Isolation of populations can have many harmful effects and may contribute significantly to local species extinction.

Two types of wildlife migration corridors seen in urban settings are regional corridors, defined as those linking two or more large areas of natural open space, and local corridors, defined as those allowing resident animals to access critical resources (food, cover, and water) in a smaller area that might otherwise be isolated by urban development. Wildlife migration corridors are essential in geographically diverse settings, and especially in urban settings, for the sustenance of healthy and genetically diverse animal communities. At a minimum, they promote colonization of habitat and genetic variability by connecting fragments of like habitat and help sustain individual species distributed in and among habitat fragments. They are also important features for dispersal, seasonal migration, foraging, and breeding.

A viable wildlife migration corridor consists of more than a path between fragmented habitats. A wildlife migration corridor must also include adequate vegetative cover and food sources for transient species as well as resident populations of less mobile animals to survive. They must be extensive enough to allow large animals to pass relatively undetected, be free of obstacles, and lack any other distraction that may hinder wildlife passage such as lights or noise.
3.1 Biological Resources

The sublease boundary is located in the northeastern corner of the Natural Area and is bound by Durfee Avenue to the north, institutional uses to the east, a commercial/industrial parcel to the west, and natural areas to the south. The Natural Area itself is considered an isolated terminal segment of the Puente-Chino Hills Wildlife Corridor, which is a peninsula of mostly undeveloped hills jutting about 26 miles from the Santa Ana Mountains into the densely urbanized Los Angeles Basin. It occurs at the very western terminus of this important regional corridor. The Natural Area is an isolated portion of the Puente-Chino Hills Wildlife Corridor, effectively disconnected by major roads and urban barriers. Therefore, this regional corridor is not contiguous with the site. Although the Natural Area is considered an isolated portion and unable to support large focal species (such as the mule deer and bobcat), it is likely to support some coyotes.

Currently, the site may function as part of a local corridor for reptiles, amphibians, small mammals, and some coyotes as tracks and sign were detected within the sublease boundary during surveys. Local movement is also facilitated by the nearby soft-bottom channel San Gabriel River, as animals may use the riverbed to move throughout undeveloped habitat in this isolated fragment of habitat surrounded by urban development. The San Gabriel River occurs approximately 0.25 miles to the south of the sublease boundary. Chain-link and tubular steel fences are located between the sublease boundary and the San Gabriel River, which acts as a physical barrier for larger animals such as the coyote to utilize the riverbed for movement. Although the continuation of the fence along the river off-site is not known, it likely there are areas off-site where the fence is not present or there are openings in the fence for coyotes to use the river for movement.

3.1.2 REGULATORY FRAMEWORK

Federal Endangered Species Act

Under the FESA, the USFWS has direct regulatory authority over specially designated organisms and their habitats. USFWS defines sensitive biological resources as organisms that have regional declining populations that may become extinct if decreasing population trends continue. Habitats are considered sensitive if they have limited distributions, have high wildlife value, support sensitive species, or are particularly sensitive to disturbance. USACE will coordinate with USFWS related to the application of the FESA and other federal biological issues.

Migratory Bird Treaty Act

The MBTA restricts the killing, taking, collecting, and selling or purchasing of native bird species or their parts, nests, or eggs. Certain game bird species are allowed to be hunted for specific periods determined by federal and state governments. The intent of the MBTA is to eliminate any commercial market for migratory birds, feathers, or bird parts, especially for eagles and other birds of prey. Construction of the interpretive center is likely to occur during the nesting season. Although no permit is issued under the MBTA, if vegetation removal within the proposed action area occurs during the breeding season for raptors and migratory birds (February 15 through September 15), the USFWS requires that surveys be
3.1 Biological Resources

conducted to locate active nests within the construction area. If active raptor or migratory bird nests are detected, proposed action activities may be temporarily curtailed or halted. A qualified biologist would perform the pre-construction surveys and would monitor construction activities that occur within the breeding season.

3.1.3 CRITERIA FOR SIGNIFICANCE OF EFFECTS

Implementation of the proposed action would result in both direct and indirect effects to biological resources. These effects are either permanent or temporary in nature, as defined below.

**Direct:** Any alteration, disturbance, or destruction of biological resources that would result from action-related activities is considered a direct effect. Examples include clearing vegetation, encroaching into wetlands, diverting surface water flows, and the loss of individual species and/or their habitats.

**Indirect:** As a result of action-related activities, biological resources may also be affected in a manner that is not direct. Examples include elevated noise and dust levels, soil compaction, increased human activity, decreased water quality, and the introduction of invasive wildlife (domestic cats and dogs) and plants.

The proposed action would have a significant effect on biological resources if it would:

- Conflict with local, state, or federal policies protecting sensitive species and habitat resources;
- Adverse effect on rare or endangered species of animal or plant or on a habitat of the species;
- Creation of a barrier that prevents the migration of any resident or migratory fish and wildlife species; or
- Loss of valuable habitat for fish, wildlife, or plants for more than five years.

3.1.4 PROJECT EFFECTS ON BIOLOGICAL RESOURCES

3.1.4.1 NO ACTION ALTERNATIVE

Potential effects associated with the proposed action would be avoided because no major development would occur within the sublease boundary under this alternative. Because no changes would occur within the sublease boundary, no substantial direct, indirect, or cumulative effects related to biological resources would occur. Potential benefits associated with the proposed action and restoration/revegetation of the site with native vegetation would not occur.
3.1.4.2 18,230 SF ALTERNATIVE

Impacts to Sensitive Habitat

Sensitive habitats are those that are regulated by the USFWS and USACE, and those considered sensitive by the CDFG. As discussed above, there is no sensitive habitat located within the lease boundary. However, the existing vegetation within the lease boundary provides habitat for birds and other wildlife species, including sensitive species. Direct impacts would occur during vegetation removal as part of site preparation and grading activities to walnut woodland, disturbed walnut woodland, developed, and ruderal habitat. Implementation of the 18,230 sf Alternative would result in the loss of habitat or land cover types within the sublease boundary as shown in Table 3.1-2.

**Table 3.1-2 18,230 SF ALTERNATIVE: DIRECT IMPACTS TO VEGETATION COMMUNITIES OR LAND COVER TYPES**

<table>
<thead>
<tr>
<th>Vegetation Association</th>
<th>Existing Cover (acres)</th>
<th>Direct Impacts (acres)</th>
<th>Cover Remaining (acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Walnut Woodland</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walnut woodland</td>
<td>0.16</td>
<td>&lt;0.01</td>
<td>0.16</td>
</tr>
<tr>
<td>Disturbed walnut woodland</td>
<td>1.65</td>
<td>0.21</td>
<td>1.44</td>
</tr>
<tr>
<td><strong>Walnut Woodland Subtotal</strong></td>
<td>1.81</td>
<td>0.21</td>
<td>1.60</td>
</tr>
<tr>
<td><strong>Elderberry Scrub</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Elderberry Scrub Subtotal</strong></td>
<td>0.46</td>
<td>&lt;0.01</td>
<td>0.46</td>
</tr>
<tr>
<td><strong>Other Cover Types</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ruderal</td>
<td>2.16</td>
<td>1.50</td>
<td>0.75</td>
</tr>
<tr>
<td>Ruderal with some trees</td>
<td>2.04</td>
<td>1.72</td>
<td>0.32</td>
</tr>
<tr>
<td>Landscaped/Developed</td>
<td>4.44</td>
<td>3.30</td>
<td>1.14</td>
</tr>
<tr>
<td>Unsurfaced Trail</td>
<td>0.30</td>
<td>0.23</td>
<td>0.07</td>
</tr>
<tr>
<td><strong>Other Cover Types Subtotal</strong></td>
<td>8.94</td>
<td>6.75</td>
<td>2.34</td>
</tr>
<tr>
<td><strong>Total Acres</strong></td>
<td>11.21</td>
<td>6.96</td>
<td>4.34</td>
</tr>
</tbody>
</table>

Implementation of the 18,230 sf Alternative would result in less than one acre of impact to walnut woodland and an additional 0.16 acres of impacts to disturbed walnut woodland. The direct impact to walnut woodland would be less than significant because the walnut woodland community was subsequently determined to be nonnative, and therefore, is not a sensitive vegetation community (see Appendix B). However, for the purposes of a conservative analysis, mitigation measures were proactively developed by the Authority to reduce impacts to this vegetation type. Mitigation measure BIO-A requires site restoration/replanting for impacts to walnut woodland at a ratio of 2:1 and restoration/replanting for impacts to disturbed walnut woodland at a ratio of 1:1. It should be noted that these mitigation ratios were developed assuming that the walnut trees are native, and therefore, are rare and a sensitive vegetation community. However, as stated above, this community was subsequently determined to be nonnative (see Appendix B). As such, the mitigation ratios more than compensate for
impacts to this land cover type. Based on these ratios, a total of 0.23 acres of walnut woodland would be replanted within the sublease boundary on the USACE-portion of land close to Durfee Avenue.

Implementation of the 18,230 sf Alternative would result in impacts to 3.22 acres of ruderal habitat. Non-native communities, including ruderal, landscaped, and unsurfaced trails, are not considered sensitive by state or federal agencies. As such, direct impacts to these communities would not be significant; therefore, no mitigation is required for these areas. As part of the 18,230 sf Alternative, undeveloped areas of the construction impact area and sublease boundary area that are not used for mitigation of impacts to walnut woodland and disturbed walnut woodland would be replanted with native species of the San Gabriel River area. However, removal of ruderal habitat would result in removal of 1.72 acres that contain mature trees. Mature trees are defined as those trees measuring 8 inches dbh or higher. The mature trees located within the construction impact area that would be impacted by the 18,230 sf Alternative include elderberry, London plane, walnut species, lemonade berry, California bay, coast redwood, white alder, Chinese magnolia, pine, and eucalyptus, among others. Due to hybridization, it has become increasingly difficult to distinguish London plane trees (nonnative species) from western sycamore (native species) and the hybridized walnut species (nonnative) from California walnuts (native). The trees within the sublease boundary were originally characterized as western sycamores and California walnuts by EDAW in 2007 (see Appendix B). Additional surveys conducted by Cooper Ecological Monitoring, Inc. in 2008 subsequently revealed that these trees are London planes and hybridized walnut trees (see Appendix B). Due to the difficulty of distinguishing between the two, the Authority has proactively chosen to treat all London plane and walnut trees as native species for the purposes of providing the most conservative impact analysis. As such, implementation of the 18,230 sf Alternative would result in the removal of 29 mature trees, including 19 native trees (including London plane trees and hybrid walnut species) and 10 nonnative trees, in both the landscaped and undeveloped portions of the construction impact area. One of the construction best management practices requires that the Authority to protect the two large London plane trees on the main lawn south of the WNNC main building. This would reduce the number of trees impacted to 27, including 17 native trees and 10 nonnative trees. An additional 13 mature trees, including 9 native (including London planes and hybrid walnut species) and 4 nonnative trees, would potentially be damaged during construction due to root damage through soil compaction and/or trimming required to accommodate construction equipment. Every effort would be made during the development of final construction documents to avoid impacts to these 13 trees. Further, implementation of the 18,230 sf Alternative would result in the removal of 10 immature native trees and 19 immature nonnative trees. Immature trees are defined as those measuring less than 8 inches dbh. The direct impacts associated with tree removal of mature trees would be significant. Salvageable trees include those that are regionally native trees with a dbh of 8 inches or less and a health and vigor ranking of 4 or 5 (see Appendix B for these parameters). Based on these parameters, it was determined that 4 potentially impacted native trees within the construction impact area are salvageable. Salvage of these trees is described in mitigation measure BIO-B. In addition, mitigation measure BIO-C requires replacement of mature native and nonnative trees. Native trees (redwood, elderberry, oak, etc.) 8 inches dbh or larger would be replaced in-kind at a ratio of 2:1. Each nonnative
mature tree would be replaced with a native species known to the floodplains of the San Gabriel River at a ratio of 1:1. With implementation of mitigation measures BIO-A and BIO-C, a total of 58 native trees would be replanted within the sublease boundary to mitigate for impacts of up to 36 mature native and nonnative trees. With implementation of mitigation measures, the direct impacts to mature native and nonnative trees would be reduced to a less than significant level.

**Impacts to Special Status Species**

The permanent direct effects on vegetation communities noted above would translate to direct and cumulative losses of habitat suitable for sensitive species known to occur in the sublease boundary, including the 10.58-acre portion owned by USACE. If the vegetation communities are occupied by sensitive species when vegetation removal is conducted, species of concern would be directly and permanently impacted as part of the 18,230 sf Alternative. Indirect effects due to construction activities, such as increased noise disturbance to birds during the breeding season would affect all species within the sublease boundary. Other effects, such as increased human presence (i.e., construction workers), erosion and siltation into adjacent areas, and dust would adversely affect species. Indirect effects due to operation of the 18,230 sf Alternative, such as parking lot lighting and increase human activity, would also adversely affect species. Sensitive species impacts are discussed below.

**Sensitive Plant Species**

As a result of general and focused surveys, three cultivated Nevin’s barberry, a federal and state endangered species, were detected in landscaped areas within the construction impact area on land owned by USACE. The Nevin’s barberry is located in the landscaped median of the existing parking lot. This area would remain intact during construction and operation of the 18,230 sf Alternative. Further, because these plants are cultivated and do not occur in natural habitat in the project site, direct and indirect effects to this species from construction or operation of the 18,230 sf Alternative would not be adverse.

**Sensitive Wildlife Species**

Several sensitive wildlife species have moderate potential to occur or have been observed within the sublease boundary. The coastal western whiptail (CDFG Special Animal) has a moderate potential to occur within the USACE-owned portion of the sublease boundary as some suitable habitat exists in the walnut woodland. Some of this habitat may be affected during construction and operation of the 18,230 sf Alternative, which would result in a significant adverse effect. Pre-construction surveys would be conducted as outlined in mitigation measure BIO-C to determine if the coastal western whiptail is present within the construction impact area at the time of construction. If the species is present, it would be relocated to an approved location as determined by CDFG. With implementation of mitigation, the effect to coastal western whiptail would be reduced to a less than significant level.

The Cooper’s hawk (CDFG Species of Special Concern) was detected within the USACE-owned portion of the sublease boundary. The site offers habitat for foraging, roosting, and nesting for this species and
3.1 Biological Resources

various other raptor species. As such, the removal of mature native and landscape trees within the sublease boundary would create permanent, direct effects to suitable nesting habitat for this species. The effect would be adverse. Mitigation measure BIO-E requires pre-construction surveys for tree removal and construction work that would occur within the breeding season (generally March 1 to September 1, but as early as February 1 and as late as September 15 for raptors) to determine the presence of native birds in the trees to be removed. Construction monitoring would be required to ensure that construction activity does not occur within 500 feet of active raptor nests until the nest is vacated. With implementation of mitigation measure BIO-E, this alternative would not create a substantial adverse effect to Cooper’s hawk. Restoration and planting, as outlined in mitigation measure BIO-A and BIO-C, would provide increased habitat for Cooper’s hawk other raptors during operation.

The least Bell’s vireo (CDFG Endangered, USFWS Endangered) was determined to occur in the vicinity of the sublease boundary, and marginally suitable habitat is present within and near the Robert S. Joe Commemorative Ditch. This species prefers riparian habitat, which does not exist within the construction impact area. The closest portion of the Robert S. Joe Commemorative Ditch is located approximately 200 feet east of the sublease boundary. The ditch would not be disturbed during project construction. Least Bell’s vireo is not expected to nest/breed within the 18,230 sf Alternative, however, it may use parts of the sublease boundary for refuge or feeding. Mitigation measure BIO-E requires pre-construction surveys for tree removal and construction work that would occur within the breeding season (generally March 1 to September 1, but as early as February 1 and as late as September 15 for raptors) to determine the presence of native birds in the trees to be removed. Construction monitoring would be required to ensure that construction activity does not occur within 300 feet of active nests until the nest is vacated. Mitigation measure BIO-F requires protocol surveys if work is required within 300 feet of least Bell’s vireo habitat during the breeding season (April 10 and July 31) and avoidance of a buffer area around any nests until such nests are abandoned. With implementation of mitigation measures BIO-E and BIO-F, this alternative would not create a substantial adverse effect to least Bell’s vireo. There would be no permanent, direct effects on habitat for this species. Implementation of the 18,230 sf Alternative with the mitigation measures BIO-A through BIO-C would increase sensitive habitats for use for refuge and foraging within the project site and create a riparian/wetland area that would potentially attract sensitive bird species to the site.

The yellow-breasted chat (CDFG Species of Special Concern) was detected within the USACE-owned portion of the sublease boundary. Yellow-breasted chat is not expected to nest/breed within the construction impact area; however, it may use parts of the sublease boundary for refuge or feeding. Mitigation measure BIO-E requires pre-construction surveys for tree removal and construction work that would occur within the breeding season (generally March 1 to September 1, but as early as February 1 and as late as September 15 for raptors) to determine the presence of native birds in the trees to be removed. Construction monitoring would be required to ensure that construction activity does not occur within 300 feet of active nests until the nest is vacated. With implementation of mitigation measure BIO-E, this alternative would not create a substantial adverse effect to yellow-breasted chat. Restoration and
planting, as outlined in mitigation measure BIO-A and BIO-C, would increase sensitive habitats within the sublease boundary and create a constructed riparian/wetland area that would have a beneficial impact to the species in the long-term.

Indirect effects due to construction activities, such as increased ambient noise levels, human disturbance, and dust accumulation on surrounding vegetation, may disrupt the natural breeding patterns, including breeding vocalizations or nest-building activities for protected avian species. The USFWS and other agencies limit the level of noise permissible at habitats inhabited by sensitive listed species. In addition to the Cooper’s hawk, it is assumed that several bird species protected by the MBTA use the project site and surrounding areas for nesting; therefore indirect effects from construction noise and tree removal occurring during the nesting season. Direct and indirect impacts to nesting birds covered by the MBTA would be adverse. With implementation of mitigation measure BIO-E, this effect would be mitigated.

Other indirect effects would include fugitive dust deposition on the native vegetation during construction, soil compaction within the critical root zone of native trees, increased soil erosion, increased runoff into the San Gabriel River, noise impacts during construction, and improperly stockpiling materials within sensitive areas. These effects would be adverse. Indirect effects to sensitive habitats would be avoided or minimized through the use of appropriate BMPs and implementation of the environmental commitments. In addition, mitigation measures BIO-F through BIO-L would reduce effects during construction of the 18,230 sq Alternative. Mitigation measure BIO-F requires the Authority to inform construction contractors about the biological constraints on the site prior to the start of the bidding process because the construction contract would be responsible for impacts to sensitive species and vegetation communities. A qualified biologist would flag sensitive areas prior to the start of construction. Mitigation measure BIO-G requires the Authority to implement a construction contractor education program prior to the start of construction. Mitigation measure BIO-H would schedule construction in or adjacent to sensitive areas in a manner that would minimize potential impacts to biological resources. Topsoil would be stored and equipment would be staged in disturbed areas (mitigation measures BIO-I and BIO-J). Fueling of equipment would be prohibited within or adjacent to drainages or native habitats, except within existing paved roads (see mitigation measure BIO-K). In addition, the authority would be required to develop and implement a storm water pollution prevention plan (SWPPP) (see mitigation measure BIO-L). With implementation of these mitigation measures, the indirect adverse effects of the 18,230 sq Alternative would be reduced to a less than significant level.

Indirect effects to sensitive wildlife species would occur during proposed action operation of the 18,230 Alternative from lighting and increased human activity within the Natural Area. During operation, noise generated from site visitors, human trampling, graffiti, trash and increased invasion by exotic species due to soil disturbances within the sublease boundary would occur. Indirect effects to sensitive species would be significant. In ecology, carrying capacity is a term referring to the maximum number of individuals that a given environment can support without detrimental effects. For the proposed action, carrying capacity refers to the number of visitors that may visit the Natural Area without negatively affecting its biological resources or diminishing the quality of visitors’ satisfaction. There is no threshold for
3.1 Biological Resources

establishing the carrying capacity of the Natural Area; it is determined by LACDPR staff during the ongoing management of the Natural Area. Since 1994, a Management Plan for the Whittier Narrows Natural Area has been utilized to assure that required maintenance activities are geared to the needs and sensitivity of the biological resources of the site. Implementation of the proposed action would attract additional visitors to the Natural Area; therefore, more comprehensive management would be necessary. Indirect effects to sensitive habitats would be minimized through the implementation of mitigation measures BIO-N through BIO-Q. Mitigation measure BIO-M requires that all nighttime lighting be shielded downward and face inward away from sensitive native vegetation. Mitigation measure BIO-N requires the Authority to post signs near sensitive biological resources and sensitive habitat areas to avoid disturbance of these areas. Mitigation measure BIO-O requires development and implementation of a Resource Management Plan to guide all phases of Natural Area management and maintenance. Mitigation measure BIO-P requires closure and restoration of any redundant trails. Mitigation measure BIO-Q allows closure of sensitive habitat areas for rest or restoration at the discretion of LACDPR staff. With implementation of these mitigation measures, sensitive habitat areas would be removed from use by the public until such time that they can rehabilitate or be permanently closed. Thus, the indirect adverse effects would be reduced.

Wildlife Corridors

Although there is a physical barrier between the WNNA and the soft-bottom San Gabriel River in the form of chain link and tubular steel fences, it is likely that there are openings or an ending to the fence that would allow wildlife to use the river for movement. Therefore, the undeveloped portions of within the site provide habitat connectivity beneficial to broader wildlife movement in the area. The project site is a local corridor to small, terrestrial species, and it may be utilized for avian refuge and small animal local movement. As the construction impact area includes development closer to the road and does not further fragment open space areas that contribute to local wildlife movement, the development of the 18,230 sf Alternative would not directly or indirectly adversely affect the local wildlife movement corridor. Although trees within the construction footprint would be removed, thus eliminating potential dispersal habitat for birds, impacts to avian movement would be minimal as birds would use other trees in the vicinity. Additionally, these landscaped areas where trees would be removed are not suitable to support sensitive species such as least Bell’s vireo or coastal California gnatcatcher.

An analysis was conducted by the Conservation Biology Institute on the wildlife corridor linkages in the Puente-Chino Hills includes the Recreation Area. It was determined that the WNNA was an “isolated terminal segment” (Spencer 2005). Thus, the WNNA and the site do not function as part of a larger regional corridor. Indirect effects would occur from the increased number of visitors to the site, nighttime lighting, and reduction in vegetative cover. In addition, the proposed facilities would attract more visitors to the site and the adjacent WNNA than currently visit the site. However, visitors would be asked to stay on the existing trails and no dogs would be allowed off-leash within the sublease boundary or within the Recreation Area. School children and other groups would be led on guided nature walks. These activities would have an adverse effect on wildlife corridor functions, as many wildlife species are highly secretive.
and nocturnal, relying on the cover of darkness to forage and move between areas. The sublease boundary does not function as a primary regional wildlife corridor. The footprint of the 18,230 sf Alternative would not reduce the functionality of the local corridor; the indirect impact to local wildlife corridor movement would be adverse. Effects to the wildlife corridor within the sublease boundary would be mitigated via the habitat preservation/avoidance and restoration plan for sensitive animals (see mitigation measures BIO-A through BIO-C). This habitat-based mitigation would also compensate for potential direct effects to individual wildlife species that may utilize the corridor. With implementation of mitigation, the adverse effect to local wildlife movement from the 18,230 sf Alternative would be reduced.

3.1.4.3 14,000 SF ALTERNATIVE (PROPOSED ACTION)

As with the 18,230 sf Alternative, implementation of the 14,000 sf Main Alternative would result in the loss of habitat or land cover types as shown in Table 3.1-3.

<table>
<thead>
<tr>
<th>Table 3.1-3 14,000 SF ALTERNATIVE: DIRECT IMPACTS TO VEGETATION COMMUNITIES OR LAND COVER TYPES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vegetation Association</strong></td>
</tr>
<tr>
<td>---------------------------</td>
</tr>
<tr>
<td><strong>Walnut Woodland</strong></td>
</tr>
<tr>
<td>Walnut woodland</td>
</tr>
<tr>
<td>Disturbed walnut woodland</td>
</tr>
<tr>
<td><strong>Walnut Woodland Subtotal</strong></td>
</tr>
<tr>
<td><strong>Elderberry Scrub</strong></td>
</tr>
<tr>
<td>Elderberry Scrub Subtotal</td>
</tr>
<tr>
<td><strong>Other Cover Types</strong></td>
</tr>
<tr>
<td>Ruderal</td>
</tr>
<tr>
<td>Ruderal with some trees</td>
</tr>
<tr>
<td>Landscaped/Developed</td>
</tr>
<tr>
<td>Unsurfaced Trail</td>
</tr>
<tr>
<td><strong>Other Cover Types Subtotal</strong></td>
</tr>
<tr>
<td><strong>Total Acres</strong></td>
</tr>
</tbody>
</table>

No impacts to sensitive vegetation communities would occur as a result of the 14,000 sf Alternative. Implementation of the 14,000 sf Alternative would result in less than one acre of permanent impacts to walnut woodland. Approximately 0.20 acres of disturbed walnut woodland would be permanently impacted by the 14,000 sf Alternative. The direct impact to walnut woodland would be less than significant because the walnut woodland community was subsequently determined to be nonnative, and therefore, is not a sensitive vegetation community (see Appendix B). However, for the purposes of a conservative analysis, mitigation measures were proactively developed by the Authority to reduce impacts to this vegetation type. Impacts to walnut woodland (i.e., 0.01 acres of walnut woodland and 0.20 acres of disturbed walnut woodland) would be mitigated at a ratio of 2:1 and 1:1, respectively.
3.1 Biological Resources

Based on these ratios, a total of 0.22 acres of walnut woodland would be replanted within the sublease boundary. To compensate for the loss of undisturbed habitat, mitigation shall include restoration of some areas of walnut woodland currently disturbed. It should be noted that these mitigation ratios were developed assuming that the walnut trees are native, and therefore, are rare and a sensitive vegetation community. As such, the mitigation ratios more than compensate for impacts to the walnut woodland community.

Implementation of the 14,000 sf Alternative would result in impacts to 1.87 acres of ruderal habitat, of which approximately 1.17 acres contains mature trees. Mature trees are defined as those trees measuring 8 inches dbh or higher. Due to the difficulty of distinguishing London planes from western sycamores and hybrid walnuts from California walnuts, the Authority has proactively chosen to treat all London plane and walnut trees as native species for the purposes of providing the most conservative impact analysis. As such, the 14,000 sf Alternative would require the removal of 19 mature native trees and 10 mature nonnative trees. The construction best management practices require that the Authority to protect the two large London plane trees on the main lawn south of the WNNC main building. This would reduce the number of trees impacted by the 14,000 sf Alternative to 27, including 17 native trees and 10 nonnative trees. Additionally, implementation of the 14,000 sf Alternative would potentially damage 9 mature native trees and 3 mature nonnative trees due to root damage through soil compaction and/or trimming required to accommodate construction equipment. It was determined that 4 potentially impacted native trees within the construction impact area are salvageable. Salvage of these trees is described in mitigation measure BIO-B. In addition, mitigation measure BIO-C requires replacement of mature native and nonnative trees. Native trees (redwood, elderberry, oak, etc.) 8 inches dbh or larger would be replaced in-kind at a ratio of 2:1. Each nonnative mature tree would be replaced with a native species known to the floodplains of the San Gabriel River at a ratio of 1:1. With implementation of mitigation measures BIO-A and BIO-C, a total of 58 native trees would be replanted within the lease boundary to mitigate for impacts of up to 36 mature native and nonnative trees. With implementation of mitigation measures, the direct impacts to mature native and nonnative trees would be reduced to a less than significant level.

Tree and habitat removal during construction of the 14,000 sf Alternative would significantly impact sensitive wildlife species that use the sublease boundary and migratory species. Thus, implementation of mitigation measures BIO-D and BIO-E would be required to reduce impacts to a less than significant level. Mitigation measure BIO-D requires focused pre-construction surveys for coastal western whiptail. If discovered, this species shall be relocated in consultation with CDFG. Mitigation measure BIO-E requires completion of weekly bird surveys for construction that is planned to occur during the breeding season (generally March 1 to September 1, as early as February 1 and as late as September 15). In addition, the 14,000 sf Alternative would be required to implement mitigation measures BIO-F through BIO-L during construction to ensure that construction impacts to sensitive biological resources are minimized. Implementation of mitigation measures BIO-M through BIO-Q would be required during operation of the 14,000 sf Alternative to minimize operational impacts associated with nighttime lighting.
and trampling in sensitive areas. The 14,000 sf Alternative would result in less significant impacts to the biological resources with implementation of mitigation.

### 3.1.4.4 10,000 SF ALTERNATIVE

Implementation of the 10,000 sf Alternative would result in the loss of habitat or land cover types as shown in Table 3.1-4.

**Table 3.1-4 10,000 SF ALTERNATIVE: DIRECT IMPACTS TO VEGETATION COMMUNITIES OR LAND COVER TYPES**

<table>
<thead>
<tr>
<th>Vegetation Association</th>
<th>Existing Cover (acres)</th>
<th>Direct Impacts (acres)</th>
<th>Cover Remaining (acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Walnut Woodland</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walnut woodland</td>
<td>0.16</td>
<td>&lt;0.01</td>
<td>0.16</td>
</tr>
<tr>
<td>Disturbed walnut woodland</td>
<td>1.65</td>
<td>0.05</td>
<td>1.60</td>
</tr>
<tr>
<td><em>Walnut Woodland Subtotal</em></td>
<td>1.81</td>
<td>0.06</td>
<td>1.76</td>
</tr>
<tr>
<td><strong>Elderberry Scrub</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Elderberry Scrub Subtotal</em></td>
<td>0.46</td>
<td>&lt;0.01</td>
<td>0.46</td>
</tr>
<tr>
<td><strong>Other Cover Types</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ruderal</td>
<td>2.16</td>
<td>0.56</td>
<td>1.50</td>
</tr>
<tr>
<td>Ruderal with some trees</td>
<td>2.04</td>
<td>1.17</td>
<td>0.87</td>
</tr>
<tr>
<td>Landscaped/Developed</td>
<td>4.44</td>
<td>2.49</td>
<td>1.95</td>
</tr>
<tr>
<td>Unsurfaced Trail</td>
<td>0.30</td>
<td>0.17</td>
<td>0.13</td>
</tr>
<tr>
<td><em>Other Cover Types Subtotal</em></td>
<td>8.94</td>
<td>4.39</td>
<td>4.70</td>
</tr>
<tr>
<td><strong>Total Acres</strong></td>
<td>11.21</td>
<td>4.46</td>
<td>6.84</td>
</tr>
</tbody>
</table>

No impacts to sensitive vegetation communities would occur as a result of the 10,000 sf Alternative. Implementation of the 10,000 sf Alternative would result in 0.07 acres of permanent impacts to walnut woodland and approximately 0.05 acres of disturbed walnut woodland. The direct impact to walnut woodland would be less than significant because the walnut woodland community was subsequently determined to be nonnative, and therefore, is not a sensitive vegetation community (see Appendix B). However, for the purposes of a conservative analysis, mitigation measures were proactively developed by the Authority to reduce impacts to this vegetation type. With implementation of mitigation measure BIO-A, impacts to walnut woodland and disturbed walnut woodland would be mitigated at a ratio of 2:1 and 1:1, respectively. Based on these ratios, a total of 0.07 acres of walnut woodland would be replanted. To compensate for the loss of undisturbed habitat, mitigation would include restoration of some areas of walnut woodland currently disturbed. It should be noted that these mitigation ratios were developed assuming that the walnut trees are native, and therefore, are rare and a sensitive vegetation community. As such, the mitigation ratios more than compensate for impacts to the walnut woodland community.

Implementation of the 10,000 sf Alternative would result in impacts to 1.73 acres of ruderal habitat, of which approximately 1.17 acres contains mature trees. Mature trees are defined as those trees measuring 8 inches dbh or higher. Due to the difficulty of distinguishing London planes from western sycamores
and hybrid walnuts from California walnuts, the Authority has proactively chosen to treat all London plane and walnut trees as native species for the purposes of providing the most conservative impact analysis. As such, the 10,000 sf Alternative would result in the removal of 16 mature native and 9 mature nonnative trees in both landscaped and natural areas. The construction best management practices require that the Authority to protect the two large London plane trees on the main lawn south of the WNNC main building. This would reduce the number of trees impacted by the 10,000 sf Alternative to 23, including 14 native trees and 9 nonnative trees. Additionally, implementation of the 10,000 sf Alternative would potentially damage 6 mature native and 3 mature nonnative trees due to root damage through soil compaction and/or trimming required to accommodate construction equipment. It was determined that 4 potentially impacted native trees within the construction impact area are salvageable. Salvage of these trees is described in mitigation measure BIO-B. In addition, mitigation measure BIO-C requires replacement of mature native and nonnative trees. Native trees (redwood, elderberry, oak, etc.) 8 inches dbh or larger would be replaced in-kind at a ratio of 2:1. Each nonnative mature tree would be replaced with a native species known to the floodplain of the San Gabriel River at a ratio of 1:1. With implementation of mitigation measures BIO-A and BIO-C, a total of 44 native trees would be replanted within the lease boundary to mitigate for impacts of up to 28 mature native and nonnative trees. With implementation of mitigation measures, the direct impacts to mature native and nonnative trees would be reduced to a less than significant level.

Tree and habitat removal during construction of the 10,000 sf Alternative would significantly impact sensitive wildlife species that use the sublease boundary and migratory species. Thus, implementation of mitigation measures BIO-D and BIO-E would be required to reduce impacts to a less than significant level. Mitigation measure BIO-D requires focused pre-construction surveys for coastal western whiptail. If discovered, this species shall be relocated in consultation with CDFG. Mitigation measure BIO-E requires completion of weekly bird surveys for construction that is planned to occur during the breeding season (generally March 1 to September 1, as early as February 1 and as late as September 15). In addition, the 10,000 sf Alternative would be required to implement mitigation measures BIO-F through BIO-L during construction to ensure that construction impacts to sensitive biological resources are minimized. Implementation of mitigation measures BIO-M through BIO-Q would be required during operation of the 10,000 sf Alternative to minimize operational impacts associated with nighttime lighting and trampling in sensitive areas. The 10,000 sf Alternative would result in less than significant impacts to the biological resources with implementation of mitigation.

3.1.4.5 2,800 SF ALTERNATIVE

Implementation of the 2,800 sf Alternative would result in the loss of land cover types as shown in Table 3.1-5.
Table 3.1-5 2,800 sf Alternative: Direct Impacts to Vegetation Communities or Land Cover Types

<table>
<thead>
<tr>
<th>Vegetation Association</th>
<th>Existing Cover (acres)</th>
<th>Direct Impacts (acres)</th>
<th>Cover Remaining (acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walnut Woodland</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walnut woodland</td>
<td>0.16</td>
<td>0.00</td>
<td>0.16</td>
</tr>
<tr>
<td>Disturbed walnut woodland</td>
<td>1.65</td>
<td>0.00</td>
<td>1.65</td>
</tr>
<tr>
<td>Walnut Woodland Subtotal</td>
<td>1.81</td>
<td>0.00</td>
<td>1.81</td>
</tr>
<tr>
<td>Elderberry Scrub</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elderberry Scrub Subtotal</td>
<td>0.46</td>
<td>0.00</td>
<td>0.46</td>
</tr>
<tr>
<td>Other Cover Types</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ruderal</td>
<td>2.16</td>
<td>0.17</td>
<td>2.08</td>
</tr>
<tr>
<td>Ruderal with some trees</td>
<td>2.04</td>
<td>0.00</td>
<td>2.04</td>
</tr>
<tr>
<td>Landscaped/Developed</td>
<td>4.44</td>
<td>0.00</td>
<td>4.44</td>
</tr>
<tr>
<td>Unsurfaced Trail</td>
<td>0.30</td>
<td>0.00</td>
<td>0.30</td>
</tr>
<tr>
<td>Other Cover Types Subtotal</td>
<td>8.94</td>
<td>0.17</td>
<td>8.92</td>
</tr>
<tr>
<td>Total Acres</td>
<td>11.21</td>
<td>0.17</td>
<td>11.13</td>
</tr>
</tbody>
</table>

Implementation of the 2,800 sf Alternative would not result in impacts to walnut woodland or disturbed walnut woodland. This alternative would not be required to implement mitigation measure BIO-A. Mature trees are defined as those trees measuring 8 inches dbh or higher. Due to the difficulty of distinguishing London planes from western sycamores and hybrid walnuts from California walnuts, the Authority has proactively chosen to treat all London plane and walnut trees as native species for the purposes of providing the most conservative impact analysis. As such, the 2,800 sf Alternative would result in the removal of 4 mature native and 1 mature nonnative trees in the landscaped areas. Additionally, 2 mature native and 1 mature nonnative trees would be potentially damaged during construction due to root damage through soil compaction and/or trimming required to accommodate construction equipment. Implementation of mitigation measures BIO-C would be required to reduce the level of impact to less than significant. These mitigation measures specify the replacement ratios for native and nonnative trees. Mature native trees removed for non-landscaped areas would be replaced in-kind at a ratio of 2:1 with a minimum 15-gallon tree planted in clusters of 3 or 4. Mature native and nonnative trees removed from the landscaped portions of the site would be replaced at a ratio of 1:1 with 36-inch box tree in clusters of 3 to 5. Replacement trees would be of a species native and known to the floodplains of the San Gabriel River.

Tree removal and heavy equipment operation during construction of the 2,800 sf Alternative would significantly impact sensitive wildlife species that use the sublease boundary and migratory species. Thus, implementation of mitigation measures BIO-D and BIO-E would be required to reduce impacts to a less than significant level. Mitigation measure BIO-D requires focused pre-construction surveys for coastal western whiptail. If discovered, this species shall be relocated in consultation with CDFG. Mitigation measure BIO-E requires completion of weekly bird surveys for construction that is planned to occur during the breeding season (generally March 1 to September 1, as early as February 1 and as late as
3.1 Biological Resources

September 15). In addition, the 2,800 sf Alternative would be required to implement mitigation measures BIO-F through BIO-L during construction to ensure that construction impacts to sensitive biological resources are minimized. Implementation of mitigation measures BIO-M through BIO-Q would be required during operation of the 2,800 sf Alternative to minimize operational impacts associated with nighttime lighting and trampling in sensitive areas. The 2,800 sf Alternative would result in less than significant impacts to the biological resources with implementation of mitigation.

3.1.5 MITIGATION MEASURES

BIO-A The proposed mitigation strategy is included in this report in Appendix B. Prior to commencement of proposed action construction, a qualified restoration ecologist shall prepare a formal restoration plan to implement the replanting of walnut woodland. Impacts to walnut woodland (less than 0.01 acre) shall be mitigated at a ratio of 2:1. Impacts to disturbed walnut woodland (0.21 acres) shall be mitigated at a ratio of 1:1. Based on the ratios noted above, a total of 0.23 acres of walnut woodland shall be replanted in areas near or adjacent to the existing walnut woodland that are located outside of the construction impact area. Implementation of the restoration plan shall occur within one year of completion of proposed action construction. A 3- to 5-year maintenance and monitoring program shall be conducted to ensure that a native plant cover is achieved and aggressive nonnative species do not out-compete the native species. If the sublease boundary does not contain sufficient area for proposed action mitigation, it is the responsibility of the Authority to obtain permission for replanting in an appropriate easement within the San Gabriel River Floodplain.

BIO-B Of the total 27 mature native and nonnative trees¹ that would be removed, 4 trees are potentially salvageable. No more than 33 percent of the root matrix for each tree shall be removed during the transplanting process in order to assure or contribute to recovery and survival during and after the transplant process. No subsurface disturbance shall encroach the dripline extent of the tree (dripline is the furthest margin of the crown radiating out from the main stem [tree trunk]). For transplanting trees, pragmatic and practical concerns about handling ability (among other issues) become paramount in the transplant process. Therefore, for replanting relocated trees, no more than 2 to 3 feet of dripline encroachment shall occur to ensure root disturbance and impact is kept to a minimum. After replanting, the tree’s root matrix shall be accessible 360 degrees and not asymmetrically obstructed (i.e., a tree abutting a wall or other structure), to prevent adequate rootball formation.

BIO-C The proposed mitigation strategy is included in Appendix B of this document. The native trees 8-inch inches diameter at breast height (dbh or larger) in natural areas of
construction impact area lost to project-related activities shall be replaced in-kind at a ratio of 3:1. These trees shall be replaced with a minimum 15-gallon tree replanted in clusters of 3 to 4. The landscape architect shall follow the formal restoration plan required by BIO-A, and that a qualified restoration ecologist shall oversee implementation of the landscape architect’s work to ensure compliance. Each non-native mature tree (8 -inches dbh or larger) removed from a landscaped area around the existing WNNC shall be replaced at a ratio of 2:1 with a 36-inch box tree of a species native and known to the floodplains of the San Gabriel River. The replacement trees shall be planted in small groupings (3 to 4 trees) within landscaped areas of the construction impact area near the proposed interpretive center. Salvaged materials shall be used or supplemental plantings of native species appropriate to the site (occurring within the San Gabriel River floodplain and of local genetic stock) shall be used if necessary. Post-construction monitoring shall be conducted by a qualified biologist to ensure 100 percent survival for the first year and 80 percent survival for the year after.

BIO-D

Prior to the start of construction, a qualified biologist shall conduct focused pre-construction surveys for the coastal western whiptail, least Bell’s vireo, and other state and federally endangered and sensitive species. If encountered, the species shall be relocated to an approved location based on consultation with the U.S. Fish and Wildlife Service and the California Department of Fish and Game.

BIO-E

Should tree or other vegetation clearance and/or construction work need to occur during the breeding season for migratory non-game native bird species (generally March 1-September 1, as early as February 1 and as late as September 15 for raptors), weekly bird surveys shall be performed to detect any protected native birds in the trees to be removed and other suitable nesting habitat within 300 feet of the construction work area (500 feet for raptors). The surveys shall be conducted 30 days prior to the disturbance of suitable nesting habitat by a qualified biologist with experience in conducting nesting bird surveys. The surveys shall continue on a weekly basis with the last survey being conducted no more than 3 days prior to the initiation of clearance/construction work. If a protected native bird is found, the construction contractor shall delay all clearance/construction disturbance activities in suitable nesting habitat or within 300 ft. ft of nesting habitat (within 500 feet for raptor nesting habitat) until August 31 or continue the surveys in order to locate any nests. If an active nest is located, clearing and construction within 300 feet of the nest (within 500 feet for raptor nests) shall be postponed until the nest is vacated, juveniles have fledged, and when there is no evidence of a second attempt at nesting. Limits of construction to avoid a nest shall be established in the field by a qualified biologist with flagging and stakes or construction fencing.

1 Mature trees are defined as those trees measuring 8 inches diameter at breast height or higher. Native trees are those indigenous to California.
3.1 Biological Resources

Construction personnel shall be instructed on the sensitivity of the area. The results of this measure shall be recorded to document compliance with applicable state and federal laws pertaining to the protection of native birds.

If work is necessary within 300 feet of least Bell’s vireo habitat during the breeding season (between April 10 and July 31), a qualified biologist shall perform protocol surveys in the area to determine whether any nesting least Bell’s vireo are present. If nests are absent, work shall continue. If nests are present, the U.S. Fish and Wildlife Service shall be notified of the location of the nest and a 300-foot buffer around the nest shall be fenced, and the area shall be avoided until the nest is abandoned. A biological monitor with authority to stop construction shall be present within the sublease boundary during construction within the breeding season to ensure the limits of construction are maintained.

**BIO-F**
The Authority shall inform the construction contractor(s), prior to the bidding process, about the biological constraints of this proposed action site. The construction contractor(s) shall be responsible for impacts to sensitive biological resources beyond those identified in this report that occur as a direct result of construction activities. All sensitive habitat areas to be avoided shall be clearly marked on proposed action maps provided to the contractor by a qualified biologist. These areas shall be designated as “no construction” zones. The project biologist shall flag these areas prior to the onset of construction activities. Resources may need to be fenced or otherwise protected from direct or indirect impacts.

**BIO-G**
The Authority shall implement a contractor education program to ensure that contractors and all construction personnel are fully informed of the sensitive biological resources associated with this project. This program shall focus on (a) the purpose for resource protection, (b) contractor identification of sensitive resource areas in the field (e.g., areas delineated on maps and by flags or fencing), (c) sensitive construction practices, (d) protocol to resolve conflicts that may arise at any time during the construction process, and (e) ramifications of noncompliance. This program shall be conducted by a qualified biologist.

**BIO-H**
Construction in or adjacent to sensitive areas shall be appropriately scheduled to minimize potential impacts biological resources (i.e., outside of the nesting bird season and/or blooming periods of sensitive species with the potential to occur in the vicinity of the project site).

**BIO-I**
Topsoil shall be stockpiled in disturbed areas presently lacking native vegetation. Stockpile areas shall be delineated on the grading plans and reviewed by a qualified biologist.
3.1 Biological Resources

**BIO-J**  
Staging areas shall be located in disturbed area (i.e., within the grading footprint). Staging areas are prohibited within sensitive habitat areas. Staging areas shall be delineated on the grading plans and reviewed by a qualified biologist.

**BIO-K**  
Fueling of equipment shall take place within existing paved roads and not within or adjacent to drainages or native habitats. The construction contractor shall be responsible for inspecting construction equipment for leaks prior to operation and repaired as necessary. “No-fueling zones” shall be designated on construction maps and shall be situated a minimum distance of 50 feet from all drainages.

**BIO-L**  
Erosion and siltation into off-site areas during construction shall be minimized. An erosion control plan and a Storm Water Pollution Prevention Plan shall be required of the construction contractor prior to the start of construction. The Authority shall be responsible for ensuring that the erosion control plan is developed and implemented per the requirements to the County of Los Angeles Department of Public Works. The plan shall include the use of hay bales, silt fences, siltation basins, or other devices necessary to stabilize the soil in denuded or graded areas during the construction and revegetation phases of the proposed action.

**BIO-M**  
All nighttime lighting from the project site shall be shielded. Parking lot lighting shall be located around the perimeter of the parking lot facing inward away from native vegetation located around its edges.

**BIO-N**  
Signs shall be posted near sensitive biological resources and sensitive habitat areas to educate Discovery Center staff and the public visiting the Discovery Center to avoid disturbance to these resources. The Authority shall post educational signage, both inside the interpretive center and at trail heads emphasizing the protection of all natural features within the sublease boundary.

**BIO-O**  
In conjunction with the County, the Authority shall develop and implement a Resource Management Plan to guide all phases of Natural Area management and maintenance within the sublease boundary. At a minimum, the Resource Management Plan shall include methods and provisions for: maintenance of roads, walkways, trails, and landscaping; invasive weed avoidance and removal; routine patrolling of the Natural Area within the sublease boundary for litter pick up and inspection for vandalism; and regular closure rotation of natural areas.

**BIO-P**  
Any redundant trails within the sublease boundary shall be closed and restored.
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BIO-Q  If at any time disturbance to a sensitive habitat area is suspected, the interpretive center staff shall have the authority to temporarily or permanently close the area for rest or restoration.

3.1.6 SIGNIFICANCE SUMMARY

3.1.6.1  NO ACTION ALTERNATIVE

Because no action would be taken on the project site, the No Action Alternative would have no direct, indirect, or cumulative effect on biological resources.

3.1.6.2  18,230 SF ALTERNATIVE

See Section 3.1.6.3 below.

3.1.6.3  14,000 SF ALTERNATIVE (PROPOSED ACTION)

With implementation of mitigation measures BIO-A through BIO-Q above, the direct, indirect, and cumulative effects of the 18,230 sf Alternative and 14,000 sf Alternative would not be adverse.

3.1.6.4  10,000 SF ALTERNATIVE

See Section 3.1.6.5 below.

3.1.6.5  2,800 SF ALTERNATIVE

With implementation of mitigation measures BIO-B through BIO-Q above, the direct, indirect, and cumulative effects of the 10,000 sf Alternative and the 2,800 sf Alternative would not be adverse.