
4.11 Endangered and Threatened Species of Flora and Fauna

4.11.1 Introduction

This analysis addresses the potential for the Master Plan alternatives to affect endangered and threatened species of flora^{205,206} and fauna,^{207,208} as defined by the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG), as more fully described in Section 4.11, *Endangered and Threatened Species of Flora and Fauna* (subsection 4.11.1), of the Draft EIS/EIR. These species are protected under the state and federal Endangered Species Acts. An analysis of potential indirect impacts from airport operations to American Peregrine Falcon from light emissions, air emissions, and noise has been added since publication of the Draft EIS/EIR.

As required by Section 7 of the Federal Endangered Species Act and FAA Order 5050.4A,²⁰⁹ in conjunction with preparation of the Draft EIS/EIR, the FAA prepared a Biological Assessment addressing the Riverside fairy shrimp and the El Segundo blue butterfly. This assessment is provided in Appendix J1, *Biological Assessment*, of the Draft EIS/EIR. To account for ongoing consultation among LAWA, FAA, and USFWS pertinent to endangered species, and to address Alternative D (proposed since publication of the Draft EIS/EIR), an amendment to the Biological Assessment has been prepared. This amendment is provided in Appendix S-H, *Updated Biological Assessment*, of this Supplement to the Draft EIS/EIR.

Detailed information regarding the results of directed surveys for endangered and threatened flora and fauna is found in Technical Report 7, *Biological Resources - Memoranda for the Record on Floral and Faunal Surveys*, of the Draft EIS/EIR.

Other sensitive species of flora and fauna not listed as endangered or threatened are addressed in Section 4.10, *Biotic Communities*, of the Draft EIS/EIR and this Supplement to the Draft EIS/EIR. The characterization of ephemeral wetted area within the Airport Operations Area (AOA) is addressed in Section 4.12, *Wetlands*, of the Draft EIS/EIR and this Supplement to the Draft EIS/EIR.

4.11.2 General Approach and Methodology

The analysis of endangered and threatened species presented below is based on the general approach and methodology described in Section 4.11, *Endangered and Threatened Species of Flora and Fauna* (subsection 4.11.2), of the Draft EIS/EIR. In addition, the analysis completed for this Supplement to the Draft EIS/EIR includes consideration of changes to baseline conditions (see Section 4.11.3 below), using the same methodology applied to the 1996 baseline analysis. Updated surveys and additional analyses incorporated into this Supplement to the Draft EIS/EIR include the following:

- ◆ Updated surveys of the American Peregrine Falcon were conducted in late 2002 and early 2003.
- ◆ Surveys of the endangered El Segundo blue butterfly are conducted annually by LAWA. The results of these surveys through 2002 are reported in this section.
- ◆ Review of the California Natural Diversity Database (CNDDDB)²¹⁰ for the topographic quadrangle in which the project occurs (Venice), as well as adjacent quadrangles (Torrance, Inglewood, San Pedro, Redondo Beach, Beverly Hills, and Hollywood) was undertaken in 2002. The review did not identify any additional endangered or threatened species beyond those evaluated in the Draft EIS/EIR.

²⁰⁵ Flora is defined as "all of the plant species that make up the vegetation of a given area." Michael Allaby, ed., *The Concise Oxford Dictionary of Botany*, 161, 1992.

²⁰⁶ For the purpose of this section, the definition of flora has been limited to those species designated as endangered, threatened, or candidate by CDFG or USFWS.

²⁰⁷ Fauna is defined as "animals as a group, especially of a given time or region," including crustaceans, insects, amphibians and reptiles, birds, and mammals. Howard Webber, ed., *Webster's II New Revised Dictionary*, 254, 1984.

²⁰⁸ For the purpose of this section, the definition of fauna has been limited to those species designated as endangered or threatened by CDFG or USFWS.

²⁰⁹ Federal Aviation Administration, "Airport Environmental Handbook," FAA Order 5050.4A.

²¹⁰ California Department of Fish and Game, California Natural Diversity Database - Rarefind 2, Sacramento, 1999.

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- ◆ The Draft EIS/EIR included an analysis of indirect effects of jet exhaust emissions, fugitive dust, and light and glare on the El Segundo blue butterfly. (Impacts from noise were not evaluated as the El Segundo blue butterfly has no auditory organ and therefore no sense of hearing.) This Supplement to the Draft EIS/EIR includes a similar analysis of potential indirect impacts to American Peregrine Falcon. The analysis addresses light emissions, air emissions, and noise associated with airport operations. Details regarding the methodology used in this analysis are provided in Section 4.10, *Biotic Communities*, of this Supplement to the Draft EIS/EIR.
- ◆ The Biological Assessment in support of formal Section 7 consultation has been updated to include all relevant information regarding Alternative D and is provided in Appendix S-H, *Updated Biological Assessment*, of this Supplement to the Draft EIS/EIR.

4.11.3 Affected Environment/Environmental Baseline

The affected environment/environmental baseline related to endangered and threatened species used in this Supplement to the Draft EIS/EIR is the same as described in Section 4.11, *Endangered and Threatened Species of Flora and Fauna* (subsection 4.11.3), of the Draft EIS/EIR, with the following exceptions identified below that reflect current conditions and new information pertaining to the additional analysis of potential indirect impacts from air emissions, light emissions, and noise associated with airport operations. The updated information pertaining to the affected environment/environmental baseline does not materially alter the conclusions of the Draft EIS/EIR. Additional conclusions related to indirect impacts are provided in Section 4.11.6, *Environmental Consequences*, below.

Riverside Fairy Shrimp

In May 2001, the USFWS issued a final rule designating critical habitat for the Riverside fairy shrimp. The portion of the critical habitat that was located at LAX was identified in Figure 4.11-5, Proposed Designation of Critical Habitat for the Riverside Fairy Shrimp, of the Draft EIS/EIR. In October 2002, the United States District Court for the District of Columbia vacated these final rules.²¹¹ As a result, the El Segundo Dunes do not currently contain designated critical habitat for the Riverside fairy shrimp.

El Segundo Blue Butterfly

Counts of El Segundo blue butterflies in 2001 rendered estimates of the total population ranging from 24,134 to 79,109 individuals, as shown in **Table S4.11-1**, El Segundo Blue Butterfly Population Figures. Counts in 2002 rendered estimates of the total population ranging from 17,789 to 54,002, with a peak number of 2,750 individuals recorded as a result of block counts conducted in that year.²¹² Fluctuations of this magnitude are not unusual among insects, especially those that have but a single generation per year, such as the El Segundo blue butterfly. Indeed, several moths that are routinely monitored because they are forest pests can exhibit a 10-fold increase in population numbers within a few generations or may decline just as rapidly.²¹³ Factors such as seasonal weather conditions, increased parasitism and predation, a higher incidence of disease, or a decline in food plant numbers (or flowerhead numbers in the case of the El Segundo blue butterfly), may individually or collectively affect population numbers.

²¹¹ Building Industry Legal Defense Foundation v. Norton, F. Supp. 2d (D.D.C. 2002).

²¹² Arnold, R.A., Prepared for: Alfred W. Tong and Andrew Huang, Report of El Segundo Blue Monitoring Activities in 2002 at the Los Angeles International Airport, November 2002.

²¹³ Varley, G.C.; G.R. Gradwell, and M.P. Hassell, Insect Population Ecology, University of California Press, Berkeley, CA, 212, 1974.

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Table S4.11-1

EI Segundo Blue Butterfly Population Figures

Year	Acreage	Block ¹	Historic Transect ²	Estimated Population
1995	200	Not Performed	1,240	Not Performed
1996 ³	200	2,063	1,455	7,092 to 31,000
1997	200	723	126	Not Performed
1998	200	4,069	2,129	16,978 to 87,000
1999	200	2,125	1741	9,867 to 39,000
2000	200	2,933	2,104	18,000 to 69,500
2001	200	4,736	2,652	24,134 to 79,109
2002	200	2,750	1,236	17,789 to 54,002

¹ Block counts are peak numbers taken during one week of the butterfly's flight season (June 1 through September 30).

² Historic transects represent numbers of butterflies observed along specific transect lines crossing the EI Segundo Blue Butterfly Habitat Restoration Area during the entire flight season.

³ Prior to 1996, only historic transect counts were performed. Block counts were begun during the 1996 flight season.

Source: Sapphos Environmental, Inc., 2000, 2003.

American Peregrine Falcon

The American Peregrine Falcon, a California state-listed endangered species, was not observed to be present within the Master Plan study area as a result of directed surveys²¹⁴ undertaken in 2002/2003.²¹⁵

Considerations Related to Indirect Effects

As indicated previously, indirect effects on EI Segundo blue butterfly were addressed in Section 4.11, *Endangered and Threatened Species of Flora and Fauna* (subsections 4.11.2 and 4.11.6.2), of the Draft EIS/EIR. This Supplement to the Draft EIS/EIR considers similar effects on the American Peregrine Falcon.

Air

The American Peregrine Falcon is one of several raptor species that has successfully adapted to living within urban environments. The American Peregrine Falcon has been recorded nesting on human-built structures in cities and towns since the Middle Ages, and in the 20th century, reintroduced peregrines have adapted to tall buildings in urban areas of North America and Europe.²¹⁶ Urban nesting by peregrine falcons in the United States has been a significant factor in the recovery of mid-western and eastern regional populations.²¹⁷ Although peregrine falcons have adapted to living in urban environments, the supporting scientific research and documentation of the effects of air pollutants on peregrine falcons is lacking. In fact, there is very little research on the effects of air pollutants on raptors and birds in general.²¹⁸ Studies conducted on laboratory animals show that ozone (O₃), sulfur dioxide (SO₂), and nitrogen dioxide (NO₂) may irritate the lining of the lungs and cause respiratory stress, although little is known about the direct effects of these gaseous pollutants on animals living in the wild.²¹⁹ Peregrine falcons are present as a migrant bird at Owens Lake, in Inyo County California, the largest single source of fugitive dust (PM₁₀) emissions in the United States with annual emission estimates ranging up to hundreds of thousands of tons annually and 24-hour concentrations as high as 130 times

²¹⁴ A directed survey is a survey which is designed to determine the presence or absence of a particular species of plant or animal and takes place at the optimum time to observe that species.

²¹⁵ Sapphos Environmental, Inc., Memorandum for the Record 1049-002.M30, Results of 2002/2003 Directed Surveys for American Peregrine Falcon at LAX/EI Segundo Dunes, February 13, 2003.

²¹⁶ Cade, T.J.; M. Martell, P. Redig, G. Septon and H. Tordoff, "Peregrine Falcons in Urban North America," Raptors in Human Landscape, Edited by D. Bird, D. Varland and J. Negro, Academic Press Inc., San Diego, California, 1996.

²¹⁷ Cade, T.J.; M. Martell, P. Redig, G. Septon and H. Tordoff, "Peregrine Falcons in Urban North America," Raptors in Human Landscapes, Edited by D. Bird, D. Varland and J. Negro, Academic Press Inc., San Diego, California, 1996.

²¹⁸ Bloom, Peter, Peter Bloom Consulting Services, Personal Communication, April 15, 2003.

²¹⁹ Maniero, T.G., The Effects of Air Pollutants on Wildlife and Implications in Class I Areas, National Park Service Air Resources Division, Contact: PO Box 25287 Denver, CO 80225.

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the federal air quality standard.²²⁰ Within the LAX Master Plan boundaries, there is no evidence that current air emissions result in adverse effects to the American Peregrine Falcon.

Light Emissions

Measurements of existing lighting conditions within the southern half of the Habitat Restoration Area found illuminance values (the light energy incident at a given point, measured in foot candles) that ranged from 0.004 to 0.26 foot candles. Details regarding environmental baseline conditions for illuminance are provided in Section 4.10, *Biotic Communities* (subsection 4.10.3), of this Supplement to the Draft EIS/EIR. The American Peregrine Falcon hunts in the daytime; therefore, existing nighttime lighting conditions do not affect its roosting or foraging behaviors.

Noise

Details regarding environmental baseline conditions for noise are provided in Section 4.10, *Biotic Communities* (subsection 4.10.3), of this Supplement to the Draft EIS/EIR. Based on existing noise levels within the Los Angeles/El Segundo Dunes and the western AOA, and the presence of American Peregrine Falcon within these areas, it was determined that current noise conditions do not affect this species. According to a literature synthesis produced by the USFWS on the effects of aircraft noise and sonic booms on domestic animals and wildlife, the American Peregrine Falcon responses to extremely frequent and nearby jet aircraft were often minimal and never associated with reproductive failure; although there were alarm responses to the stimuli, the negative responses were brief and not productivity limiting.²²¹

4.11.4 Thresholds of Significance

4.11.4.1 CEQA Thresholds of Significance

A significant impact to endangered and threatened species would occur if the direct or indirect changes in the environment that may be caused by a particular build alternative would eventually result in one or more of the following future conditions listed below. These thresholds have been revised since publication of the Draft EIS/EIR, as noted below.

- ◆ Substantial interference with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impedance with the use of native wildlife nursery sites.
- ◆ A conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plans.
- ◆ A violation of federal, state, or local statutes or regulations imposed for the protection of federally- or state-listed, threatened, endangered, or candidate species of flora or fauna, specifically the Federal Endangered Species Act of 1973 and the State Endangered Species Act.²²² (Modified since publication of the Draft EIS/EIR to conform to statutory language).
- ◆ A substantial adverse effect, either directly or through habitat modifications of existing habitat of a federally- or state-listed endangered, threatened, or candidate species of flora and fauna that would result in a net reduction in occupied habitat.²²³ (Modified since publication of the Draft EIS/EIR to conform to statutory language).

²²⁰ Great Basin Unified Air Pollution Control District, Owens Valley PM₁₀ Planning Area Demonstration of Attainment State Implementation Plan Final Environmental Impact Report, SCH No. 96122077, Contact: 157 Short Street, Suite 6, Bishop, CA 93514-3537, 1997.

²²¹ U.S. Fish and Wildlife Service, Effects of Aircraft Noise and Sonic Booms on Domestic Animals and Wildlife: A Literature Synthesis, U.S. Department of the Interior, Engineering and Services Center, U.S. Air Force, June 1988.

²²² The California Endangered Species Act (CESA) protects endangered, threatened, and candidate species. As stated in Fish and Game Code 2067, "...Any animal determined by the Commission as 'rare' on or before January 1, 1985 is a 'threatened' species. Under CESA, plants are designated as 'rare' although afforded no protection." Plants designated as rare pursuant to Section 1904 of the Native Plant Protection Act and Sections 2074.2 and 2075.5 of the CESA are afforded protection under the Native Plant Protection Act.

²²³ Bass, Ronald E., Albert I. Herson, and Kenneth M. Bogdan, CEQA Deskbook, Second Edition, Point Arena, California: Solano Press Books, 1999.

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- ◆ A net loss of federally- or state-listed endangered, threatened, or candidate species of flora or fauna. (Modified since publication of the Draft EIS/EIR to conform to statutory language).

These thresholds were utilized because they address the potential concerns associated with the Master Plan alternatives relative to endangered, threatened, and rare species.

4.11.4.2 Federal Standards

As stated in Section 4.11, *Endangered and Threatened Species of Flora and Fauna* (subsection 4.11.4.2), of the Draft EIS/EIR, the FAA is required to consult with USFWS or the National Marine Fishery Service (NMFS) if the proposed action would have either of the following results:

- ◆ Likely jeopardize the continued existence of a threatened or endangered species.
- ◆ Result in the destruction or adverse modification of federally critical habitat as determined by USFWS or NMFS.

4.11.5 Master Plan Commitments

No Master Plan commitments for endangered or threatened species of flora or fauna are proposed.

4.11.6 Environmental Consequences

4.11.6.1 No Action/No Project Alternative

The environmental impacts to endangered and threatened species under the No Action/No Project Alternative have not materially changed from those described in Section 4.11, *Endangered and Threatened Species of Flora and Fauna* (subsection 4.11.6.1), of the Draft EIS/EIR. Effects on the Riverside fairy shrimp associated with this alternative are clarified below.

Riverside Fairy Shrimp

Under the No Action/No Project Alternative, 1.3 acres of degraded wetland habitat containing embedded cysts of the Riverside fairy shrimp would remain within the AOA. The 1.3 acres would be subject to continued operations and maintenance activities in compliance with Title 14, CFR Part 139. As described in detail in the Draft EIS/EIR, Title 14, CFR, Part 139 mandates that the AOA be maintained in a condition to minimize or eliminate public safety hazards that would result from wildlife utilization of the AOA. Such routine maintenance activities may include mowing or discing of vegetation to reduce its attractiveness to wildlife and elimination of standing water. Long-term operations and maintenance activities within the western AOA, which includes the 1.3 acres of habitat containing the embedded cysts, would continue to result in the loss of habitat values for the Riverside fairy shrimp.

4.11.6.2 Alternatives A, B, and C

Riverside Fairy Shrimp

The environmental impacts to Riverside fairy shrimp under Alternatives A, B, and C have not changed from those described in Section 4.11, *Endangered and Threatened Species of Flora and Fauna* (subsections 4.11.6.2, 4.11.6.3, and 4.11.6.4), of the Draft EIS/EIR.

While implementation of Alternative A, B, or C would result in the elimination of the degraded wetland habitat that contains embedded cysts, consequently eliminating the existing habitat, the ongoing airfield operations and maintenance activities that would continue under the No Action/No Project Alternative would also result in the loss of habitat values. As such, the impact to Riverside fairy shrimp habitat resulting from any of the subject build alternatives are considered to be comparable to that of the No Action/No Project Alternative.

EI Segundo Blue Butterfly

The indirect environmental impacts to EI Segundo blue butterfly under Alternatives A, B, and C have not materially changed from those described in Section 4.11, *Endangered and Threatened Species of Flora and Fauna* (subsections 4.11.6.2, 4.11.6.3, and 4.11.6.4), of the Draft EIS/EIR.

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Alternative A would result in the conversion of 8,514 square feet (0.20 acre)²²⁴ of occupied habitat of the El Segundo blue butterfly within the Habitat Restoration Area from installation of navigational aids and associated service roads for Runway 24L/6R. Alternative B would also result in the conversion of 2,316 square feet (0.05 acre) of occupied habitat of the El Segundo blue butterfly within the Habitat Restoration Area from installation of navigational aids and associated service roads for Runway 24L/6R.²²⁵ These are considered to be significant impacts based on the CEQA significance thresholds presented above, and the FAA has determined that this conversion would trigger the need for Section 7 consultation with USFWS to determine whether the impacts would jeopardize the continued existence of the species. As described in greater detail below in subsection 4.11.6.3 relative to Alternative D, the FAA has determined that this conversion would not result in an adverse impact to the federally listed El Segundo blue butterfly because the recommended mitigation measure, calling for creation of new replacement habitat, would be fully implemented prior to the conversion occurring (i.e., replacement habitat would be planted three years prior to the installation of new navigational aids and, with new habitat being fully established prior to the conversion of existing habitat, there would be no net loss of habitat).

Implementation of Alternative A or B would result in the conversion of occupied habitat that would not otherwise occur under the No Action/No Project Alternative. As such, the potential for impacts to the El Segundo blue butterfly under Alternatives A and B would be greater than under the No Action/No Project Alternative.

American Peregrine Falcon

The direct environmental impacts to American Peregrine Falcon under Alternatives A, B, and C have not changed from those described in Section 4.11, *Endangered and Threatened Species of Flora and Fauna* (subsections 4.11.6.2, 4.11.6.3, and 4.11.6.4), of the Draft EIS/EIR. A discussion of the potential indirect impacts to this species from air emissions, light emissions, and noise associated with airport operations is provided below.

There are no indirect impacts to this species as a result of changes in light, noise, and air emissions. The American Peregrine Falcon hunts in the daytime; therefore, the increase in nighttime light associated with Alternatives A, B, and C would not have a significant impact on its roosting and foraging behaviors. As indicated in Section 4.11.3, *Affected Environment/Environmental Baseline*, the American Peregrine Falcon is not adversely affected by noise from extremely frequent and nearby jet aircraft.²²⁶ As stated in Section 4.10, *Biotic Communities* (subsection 4.10.6), of this Supplement to the Draft EIS/EIR, under Alternatives A, B, and C there would be an increase in carbon monoxide (CO), nitrogen oxides (NO_x), SO₂, and PM₁₀; however, there is no evidence that such increases would result in adverse effects to the American Peregrine Falcon.

4.11.6.3 Alternative D - Enhanced Safety and Security Plan

A complete description of the facilities associated with Alternative D is provided in Chapter 3, *Alternatives* (subsection 3.3.2), of this Supplement to the Draft EIS/EIR. The features of Alternative D that are relevant to the analysis of endangered and threatened species are summarized herein. Most notable is the proposed construction of the west employee parking garage on the west side of LAX, and other project-related activities, which are expected to affect 1.3 acres of degraded wetland habitat containing embedded cysts of the Riverside fairy shrimp. In addition, Alternative D would result in the installation of new navigational aids and associated service roads within the El Segundo Dunes, including areas of habitat occupied by the El Segundo blue butterfly. The impacts associated with this alternative are described below.

Riverside Fairy Shrimp

As discussed in Section 4.12, *Wetlands*, of this Supplement to the Draft EIS/EIR, under Alternative D, 1.3 acres of degraded wetland habitat, in nine distinct sites, containing embedded cysts of the Riverside fairy

²²⁴ Modified since publication of the Draft EIS/EIR to account for buffer area and essential access roads. This modification alters the conclusions of the Draft EIS/EIR.

²²⁵ Revised since publication of the Draft EIS/EIR to account for navigational aids, buffer area, and essential access roads. This revision alters the conclusions of the Draft EIS/EIR.

²²⁶ U.S. Fish and Wildlife Service, *Effects of Aircraft Noise and Sonic Booms on Domestic Animals and Wildlife: A Literature Synthesis*, U.S. Department of the Interior, Engineering and Services Center, U.S. Air Force, June 1988.

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shrimp would be affected, either directly (e.g., wetlands are filled) or indirectly (e.g., wetland hydrology is altered). Four of the nine sites (EW006, EW009, EW012, and EW013) would be adversely affected due to changes in upland hydrology resulting from construction of the west employee parking garage. Five of the sites (EW001, EW002, EW014, EW015, and EW016) are located within, or adjacent to, proposed construction staging areas. Should avoidance measures be implemented such that these sites would not be affected by construction staging activities or development of the west employee parking garage, all nine sites would nevertheless continue to be subject to long-term operations and maintenance activities in support of airport operations (i.e., removal of standing water and discing or mowing to manage vegetation) pursuant to Title 14, CFR Part 139. These activities would result in the loss of habitat values and functions associated with these sites. This is considered to be a significant impact and would trigger the need for Section 7 consultation with USFWS to determine whether the impact would jeopardize the continued existence of the species.

This impact would also occur under the No Action/No Project Alternative as a result of long-term operations and maintenance activities.

El Segundo Blue Butterfly

Alternative D would result in the conversion of 10,597 square feet (0.24 acre) of occupied habitat of the El Segundo blue butterfly in the Habitat Restoration Area from installation of replacement navigational aids and associated service roads for Runway 6R/24L. This conversion is considered to be a significant impact based on the CEQA significance thresholds presented above. The FAA has determined that this conversion may affect this federally listed species and would require formal Section 7 consultation with USFWS to determine whether the impact would jeopardize the continued existence of the species.

For Alternative D, FAA and LAWA would implement Mitigation Measure ET-4, as described in Section 4.11.8 below, that would result in a zero net loss of habitat for the butterfly. Mitigation Measure ET-4 provides that coast buckwheat be planted a minimum of three years prior to the impact of the installation of the replacement nav aids. This would be accomplished to allow for establishment of the plants and to ensure that the plants are mature enough to bloom. Further, creation of new replacement habitat prior to the impact would result in no temporal loss of habitat. The plantings of coast buckwheat would be located within the southwest corner of Subsite 23 of the Habitat Restoration Area, as depicted in Figure 4.11-7, Mitigation Site for El Segundo Blue Butterfly Relocation, of the 2001 Draft EIS/EIR. Subsite 23 is located just south of the southern most east-west paved roadway in the Habitat Restoration Area.

Since the mitigation measures would be implemented and in effect prior to the installation of the replacement navigational aid along with any salvaged plants and El Segundo blue butterfly larvae, FAA has determined that the conversion would not result in an adverse impact to the federally listed El Segundo Blue Butterfly. The conclusion of the formal Section 7, consultation with the USFWS is a Biological Opinion. FAA and LAWA will incorporate the Service's Biological Opinion into the Final EIS/EIR.

Under the No Action/No Project Alternative, there would be no changes to navigational aids; therefore, no impacts to El Segundo blue butterfly habitat would occur.

As discussed for Alternatives A, B, and C, in Section 4.11, *Endangered and Threatened Species of Flora and Fauna* (subsection 4.11.6), of the Draft EIS/EIR, analysis of the potential effects of jet exhaust emissions has determined that there would be no significant impact to the El Segundo blue butterfly. Impacts to the El Segundo blue butterfly from increases in light would be similar to those for the other build alternatives. As with those alternatives, because the El Segundo blue butterfly is a diurnal species, does not exhibit flight-to-light behavior, and remains perched around the coast buckwheat foodplant at night, the anticipated increase in light levels under Alternative D would not result in significant impacts to the El Segundo blue butterfly.

Compared to the No Action/No Project Alternative, under Alternative D, the El Segundo blue butterfly would be exposed to slightly greater air and light emissions. However, this increased exposure would not jeopardize the continued existence of the species.

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American Peregrine Falcon

Alternative D would not affect the continued existence of the American Peregrine Falcon because this species does not occupy habitat in the proposed developed facilities, construction staging, or associated support activities areas. Moreover, there are no breeding sites within, or adjacent to, LAX.

Potential impacts to the American Peregrine Falcon from changes in light, air quality, and noise are similar to those associated with Alternatives A, B, and C. As with those alternatives, the anticipated changes in light, air quality, and noise levels under Alternative D would not result in significant impacts to the American Peregrine Falcon.

Compared to the No Action/No Project Alternative, under Alternative D, the American Peregrine Falcon would be exposed to slightly greater light, air emissions, and noise. However, this increased exposure would not jeopardize the continued existence of the species.

4.11.7 Cumulative Impacts

4.11.7.1 No Action/No Project Alternative

The cumulative impacts to endangered and threatened species associated with the No Action/No Project Alternative, in combination with other past, present, and probable future projects, have not materially changed from those described in Section 4.11, *Endangered and Threatened Species of Flora and Fauna* (subsection 4.11.7.1), of the Draft EIS/EIR.

4.11.7.2 Alternatives A, B, and C

Riverside Fairy Shrimp

The cumulative impacts to Riverside fairy shrimp under Alternatives A, B, and C, in combination with other past, present, and probable future projects, have not materially changed from those described in Section 4.11, *Endangered and Threatened Species of Flora and Fauna* (subsection 4.11.7.2), of the Draft EIS/EIR.

EI Segundo Blue Butterfly

Conclusions regarding cumulative impacts to the EI Segundo blue butterfly under Alternatives A and C, in combination with other past, present, and probable future projects, have not changed from Section 4.11, *Endangered and Threatened Species of Flora and Fauna* (subsection 4.11.7.2), of the Draft EIS/EIR.

The following discussion provides revised information regarding the impacts to occupied habitat of the EI Segundo blue butterfly associated with Alternative B. This information alters the conclusion of the cumulative impacts analysis related to the EI Segundo blue butterfly for Alternative B as described in Section 4.11, *Endangered and Threatened Species of Flora and Fauna* (subsection 4.11.7.2), of the Draft EIS/EIR.

Under Alternative B, the potential loss 2,316 square feet (0.05 acre) of occupied habitat of the EI Segundo blue butterfly would result from the installation of navigational aids and associated service roads. In the immediate project area, the Playa Vista and Catellus Residential Group projects would not affect habitat of the EI Segundo blue butterfly. Nevertheless, the impacts associated with Alternative B, combined with past projects that have reduced occupied or potential habitat for this species, would contribute to a cumulative impact to the EI Segundo blue butterfly. Mitigation for impacts associated with Alternative B are provided in Section 4.11.8, *Mitigation Measures*, below.

American Peregrine Falcon

The cumulative impacts to American Peregrine Falcon under Alternatives A, B, and C, in combination with other past, present, and probable future projects, have not materially changed from those described in Section 4.11, *Endangered and Threatened Species of Flora and Fauna* (subsection 4.11.7.2), of the Draft EIS/EIR.

4.11.7.3 Alternative D - Enhanced Safety and Security Plan

Riverside Fairy Shrimp

Under Alternative D, a significant impact to degraded wetland habitat containing embedded cysts of Riverside fairy shrimp located to the east of Pershing Drive is anticipated. This impact would result from habitat modification associated with construction staging activities and development of the employee parking garage on the west side of LAX. Since the 1.3 acres of LAX property occupied by Riverside fairy shrimp cysts does not currently support their full life cycle, loss of this site would not contribute to a cumulative loss of habitat for this species. However, destruction of the individual cysts could contribute to cumulative impacts to the continued existence of the species if other populations are extirpated. Mitigation for project-related impacts to Riverside fairy shrimp cysts are provided in Section 4.11.8, *Mitigation Measures*, below.

The Playa Vista project and the Catellus Residential Group Project would not contribute to cumulative impacts to Riverside fairy shrimp as neither the Ballona Wetlands nor the Ballona Bluffs have been identified as sites that support Riverside fairy shrimp. However, proposed development of the Ballona Bluffs could eliminate potential sites suitable for habitat restoration.

EI Segundo Blue Butterfly

Under Alternative D, the potential loss of 10,597 square feet (0.24 acre) of occupied habitat of the EI Segundo blue butterfly would result from the installation of navigational aids and associated service roads. In the immediate project area, the Playa Vista and Catellus Residential Group projects would not affect habitat of the EI Segundo blue butterfly. Nevertheless, the impact associated with Alternative D, combined with past projects that have reduced occupied or potential habitat for this species, would contribute to a cumulative impact to the EI Segundo blue butterfly. Mitigation for impacts associated with Alternative D are provided in Section 4.11.8, *Mitigation Measures*, below.

American Peregrine Falcon

Under Alternative D, no impacts to the American Peregrine Falcon would occur. Therefore, this alternative would not contribute to cumulative impacts to the American Peregrine Falcon.

4.11.8 Mitigation Measures

The following mitigation measure has been modified since publication of the Draft EIS/EIR to reflect the results of ongoing consultation among LAWA, FAA, and USFWS regarding the mitigation ratio and potential sites for the relocation of soils containing cysts of the Riverside Fairy Shrimp.

◆ **MM-ET-1. Riverside Fairy Shrimp Habitat Restoration (Alternatives A, B, C, and D).**

LAWA or its designee shall undertake mitigation for impacts to 1.3 acres of degraded wetland habitat containing embedded cysts of Riverside fairy shrimp. Habitat occupied by embedded cysts of Riverside fairy shrimp shall be replaced at no less than two suitable alternate locations at a ratio of not more than 3:1. The FAA shall oversee the development of a Riverside Fairy Shrimp Wetland Habitat Restoration Program for the embedded cysts to ensure that the selected development alternative would be consistent with the recommendations provided in the *Recovery Plan for Vernal Pools of Southern California*.²²⁷ LAWA or its designee, in conjunction with the USFWS, shall identify the suitable locations for the creation of high-quality habitat to which soils containing embedded cysts can be relocated.

Ongoing Section 7 consultation among LAWA, FAA, and USFWS is necessary to identify suitable mitigation sites pursuant to Section 7 of the Endangered Species Act. As a result, extensive research has been conducted to identify sites that historically or currently support vernal pools or vernal pool-associated species in southern California. Information was gathered from the *Recovery Plan for Vernal Pools of Southern California*, the California Natural Diversity Database (CNDDDB), and coordination with recognized experts in the field. This information was augmented through a review of geologic maps of the coastal portions of Los Angeles and topographic quadrangles for locations

²²⁷ U.S. Fish and Wildlife Service, *Vernal Pools of Southern California Recovery Plan*, U.S. Department of the Interior, Fish and Wildlife Service, Region One, Portland, Oregon, 1998.

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known to have historically supported vernal pools. A total of 35 potential relocation sites were identified for further site characterization.

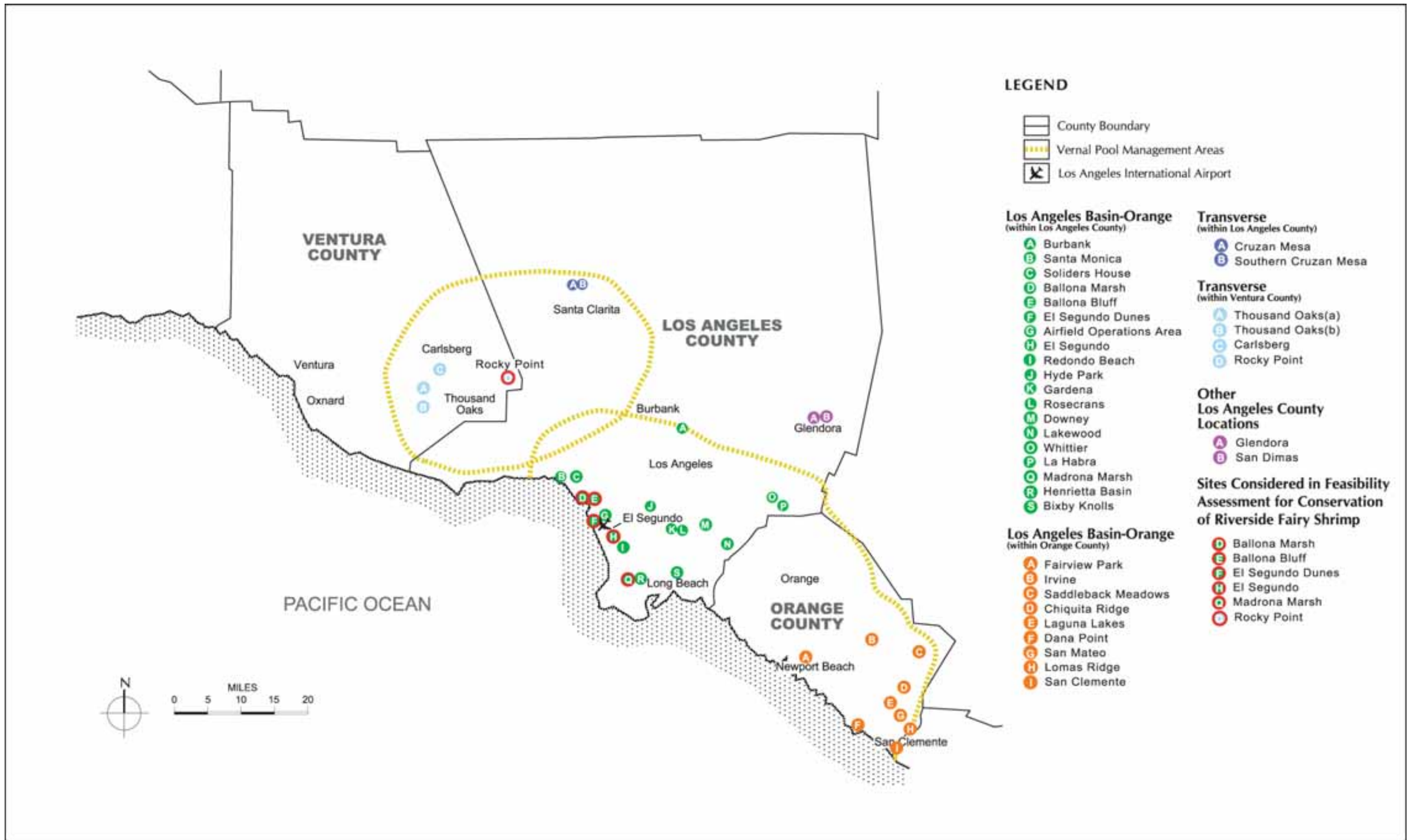
Each of the 35 sites was visited and inspected by teams of biologists and environmental analysts. Analysis of site topography, historic or extant vernal pools, historic or extant vernal pool species, drainage features, climate, and parent material (from regional geologic maps) was conducted. Hazardous materials databases were consulted for information on known potential sources of contamination for those sites. In-field soil texture analysis was conducted, followed by laboratory analysis of collected soil samples. Land use at the site and surrounding the site was characterized, plant communities were characterized, and the presence or absence of suitable hydrology was determined.

Prioritization of the potential sites for the relocation of soils containing cysts of the Riverside fairy shrimp was based solely on the presence of physical and biological characteristics provided in the *Recovery Plan for Vernal Pools of Southern California* and did not reflect planning constraints indicated by current land uses. LAWA and FAA, in consultation with the USFWS, have recommended the relocation of cysts to alternate locations within the Los Angeles County portion of the Los Angeles-Orange Management Area for vernal pools. Potential sites within the Los Angeles County portion of the Los Angeles-Orange Management Area are depicted in **Figure S4.11-1**, Vernal Pool Restoration Opportunities Considered. Should use of these sites within Los Angeles County be determined infeasible, LAWA shall evaluate the feasibility of vernal pools or vernal pool complexes located in the Orange County portion of the Los Angeles Basin-Orange Management Area and the Ventura County portion of the Transverse Management Area.

Once suitable mitigation sites are identified and secured, vernal pool creation shall be undertaken by LAWA or its designee, in consultation with the USFWS. Methods of vernal pool creation may vary depending on the physical and biological characteristics of the selected sites. LAWA or its designee, in conjunction with the USFWS and a qualified wildlife biologist, shall develop a program to monitor the progress of vernal pool creation. LAWA or its designee shall undertake the relocation of soils containing embedded cysts of Riverside fairy shrimp from the western portion of the airfield to the vernal pool mitigation sites. Soil salvage shall be undertaken from all sites containing embedded cysts of the Riverside fairy shrimp. The top 6 to 12 inches of soil containing the cysts shall be transplanted during the dry season to minimize damage to the cysts during transport. The soil shall then be deposited and spread out in small basins or pool-like areas of similar size without active mechanical compaction to minimize potential damage to the cysts. Any potential indirect environmental impacts resulting from vernal pool construction activities shall be compliant with best management practices and terms and conditions stipulated by the permitting agencies.

LAWA or its designee, in conjunction with the USFWS and a qualified wildlife biologist, shall also develop a program to monitor created habitat for the presence of Riverside fairy shrimp annually for a period of not more than five years.

Implementation of Mitigation Measure MM-ET-1 would provide for replacement of 1.3 acres of degraded wetland habitat containing embedded cysts of the Riverside fairy shrimp, with estimated habitat value of 0.15, with 3.9 acres with estimated habitat value of 0.75 (see **Table S4.11-2**, Mitigation Land Evaluation Procedure for the Mitigation Site). By relocating embedded cysts to habitat restoration sites that are managed for the existence of the species, the opportunity for embedded cysts to complete the adult phase of their life cycle would be enhanced.



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Table S4.11-2

Mitigation Land Evaluation Procedure for the Mitigation Site

	Habitat Reference Sites	Riverside Fairy Shrimp Wetland Habitat Mitigation Site
Topography/Hydrology	0.20	0.20
Mound-Depression Microrelief	0.05	0.05
Native Soils w/Slope <10%	0.05	0.05
Areas w/Period of Inundation ≥30 days	0.05	0.05
Summer Desiccation	0.05	0.05
Flora	0.20	0.20
>10% Vegetative Cover	0.05	0.05
Native Grasses >10%	0.05	0.05
Vernal Pool Associated Species	0.05	0.05
Listed Vernal Pool Associated Species	0.05	0.05
Fauna	0.20	0.15
Dominated by Native Fauna (reproducing)	0.05	0.05
Grassland-Associated Species (reproducing)	0.05	0.05
Sensitive Vernal Pool-Associated Species (reproducing)	0.05	0.05
Listed Vernal Pool-Associated Species (reproducing)	0.05	0.00
Ecosystem Functional Integrity	0.40	0.20
Contiguous w/Wetland and State-designated Sensitive Terrestrial Habitat Under Regulatory Conservation	0.10	0.00
Variety of Pollinator/Dispersal Mechanisms Present (Wind, Wildlife)	0.10	0.10
Contiguous Native Habitat >40 acres	0.10	0.00
Total Habitat Value (HV)	1.00	0.75

Source: Sapphos Environmental, Inc. 2003.

The following mitigation measure has been modified since publication of the Draft EIS/EIR with respect to the acreage of impact.

◆ **MM-ET-2. El Segundo Blue Butterfly Conservation: Habitat Restoration (Alternatives A and B).**

LAWA or its designee shall take all necessary steps to avoid the flight season of the El Segundo blue butterfly (June 14 - September 30) when undertaking installation of navigational aids and associated service roads proposed under Master Plan Alternatives A and B within habitat occupied by the El Segundo blue butterfly. Installation of navigational aids within the Habitat Restoration Area should be required to take place between October 1 and May 31. The number of coast buckwheat plants impacted shall be mitigated at a ratio of 1:1, or as otherwise determined through Section 7 consultation with the USFWS. Coast buckwheat shall be planted a minimum of three years prior to the impact, not only to allow for establishment of the plants, but also to ensure that the plants are mature enough to bloom.²²⁸ The plantings of coast buckwheat shall be located within the southwest corner of subsite 23 of the Habitat Restoration Area, as depicted in Figure 4.11-7, Mitigation Site for El Segundo Blue Butterfly Relocation, of the Draft EIS/EIR. Mitigation plantings for Alternative A shall encompass 8,514 square feet (0.20 acre). Mitigation plantings for Alternative B shall encompass 2,316 square feet (0.05 acre). This area shall be the designated mitigation site for planting coast buckwheat and the site to which El Segundo blue butterfly pupae shall be relocated. Prior to navigational aid installation, a permitted and qualified biologist shall salvage El Segundo blue butterfly larvae in coordination with the USFWS to minimize impacts to the butterfly. Based on LAWA's restoration experience within the Habitat Restoration Area, occupation of restored habitat can occur within two to three years of restoration efforts. Therefore, there would be no net loss in acres or value of occupied habitat.

The following mitigation measure is materially the same as that identified in Section 4.11, *Endangered and Threatened Species of Flora and Fauna* (subsection 4.11.8), of the Draft EIS/EIR.

²²⁸ The time period of three years was determined from coast buckwheat restoration efforts previously undertaken by LAWA within the Habitat Restoration Area of the Los Angeles/El Segundo Dunes.

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◆ MM-ET-3. El Segundo Blue Butterfly Conservation: Dust Control (Alternatives A, B, C, and D).

To reduce the transport of fugitive dust particles related to construction activities, soil stabilization and/or watering to reduce fugitive dust emissions during construction shall be implemented to reduce particulate matter emissions by 90 to 95 percent (Table S4.6-20, Recommended Mitigation Measures, in Section 4.6, *Air Quality* (subsection 4.6.8), of this Supplement to the Draft EIS/EIR). In addition, to the extent feasible, no grading or stockpiling for construction activities should take place within 100 feet of occupied habitat of the El Segundo blue butterfly.

The following mitigation measure has been added since publication of the Draft EIS/EIR to address impacts associated with installation of navigation aids proposed under Alternative D.

◆ MM-ET-4. El Segundo Blue Butterfly Conservation: Habitat Restoration (Alternative D).

LAWA or its designee shall take all necessary steps to avoid the flight season of the El Segundo blue butterfly (June 14 - September 30) when undertaking installation of navigational aids and associated service roads proposed under Master Plan Alternative D within habitat occupied by the El Segundo blue butterfly. Installation of navigational aids within the Habitat Restoration Area should be required to take place between October 1st and May 31st. The number of coast buckwheat plants impacted shall be mitigated at a ratio of 1:1, or as otherwise determined through Section 7 consultation with the USFWS. Coast buckwheat shall be planted a minimum of three years prior to the impact, not only to allow for establishment of the plants, but also to ensure that the plants are mature enough to bloom.²²⁹ The plantings of coast buckwheat shall be located within the southwest corner of subsite 23 of the Habitat Restoration Area and shall encompass 10,597 square feet (0.24 acre). As possible, depending on the location and condition of individual plants, FAA and LAWA would salvage existing coast buckwheat plants and any larvae on the plant or in the soil below the plant that would be removed to accommodate the replacement navigational aids to further conserve this species. These plants would be salvaged immediately prior to the installation of the replacement navigational aids outside of the butterfly flight season. These salvaged plants would be replanted in subsite 23 near what would be the previously established mitigation measure actions. This area shall be the designated mitigation site for planting coast buckwheat and the site to which El Segundo blue butterfly pupae shall be relocated. Prior to navigational aid installation, a permitted and qualified biologist shall salvage El Segundo blue butterfly larvae in coordination with the USFWS in order to minimize impacts to the butterfly. Based on LAWA's restoration experience within the Habitat Restoration Area, occupation of restored habitat can occur within two to three years of restoration efforts. Therefore, there would be no net loss in acres or value of occupied habitat.

4.11.9 Level of Significance After Mitigation

4.11.9.1 Alternatives A and B

As stated in Section 4.11, *Endangered and Threatened Species of Flora and Fauna* (subsection 4.11.9.1), of the Draft EIS/EIR, implementation of Mitigation Measures MM-ET-1, MM-ET-2, and MM-ET-3 would reduce impacts to endangered and threatened species to a level that is less than significant.

4.11.9.2 Alternative C - No Additional Runway

As stated in Section 4.11, *Endangered and Threatened Species of Flora and Fauna* (subsection 4.11.9.2), of the Draft EIS/EIR, implementation of Mitigation Measures MM-ET-1 and MM-ET-3 would reduce impacts to endangered and threatened species to a level that is less than significant.

4.11.9.3 Alternative D - Enhanced Safety and Security Plan

Implementation of Mitigation Measures MM-ET-1, MM-ET-3, and MM-ET-4 would reduce impacts to endangered and threatened species to a level that is less than significant.

²²⁹ The time period of three years was determined from coast buckwheat restoration efforts previously undertaken by LAWA within the Habitat Restoration Area of the Los Angeles/El Segundo Dunes.