



# United States Department of the Interior



## FISH AND WILDLIFE SERVICE

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In Reply Refer To:  
FWS-LA-08B0606-08F0704

**JUL 02 2010**

Lieutenant Colonel Van Sherwood  
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8725 John J. Kingman Road  
Suite 2639, ATTN DES-E  
Fort Belvoir, Maryland 22060-6221

Attention: Albert Owen, Naval Facilities Engineering Command, Southwest

Subject: Formal Section 7 Consultation for Routine Maintenance Operations, Defense Fuel Support Point, San Pedro, Los Angeles County, California

Dear Lieutenant Colonel Van Sherwood:

This document transmits the U.S. Fish and Wildlife Service's (Service) draft biological opinion based on our review of the Defense Logistic Agency's (DLA) proposed routine maintenance operations plan for the Defense Fuel Support Point (DFSP) San Pedro, and the effects of this proposed project on the federally endangered Palos Verdes blue butterfly (*Glaucopsyche lygdamus palosverdesensis*; "PVB") and federally threatened coastal California gnatcatcher (*Poliophtila californica californica*; "gnatcatcher"), in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Critical habitat is not currently designated for any species within the installation. We received your request for formal consultation on May 7, 2008.

This draft biological opinion is based on information provided in your letter requesting initiation of formal consultation, site visits, meetings, telephone conversations and electronic mail exchanges with personnel from your agency and other interested parties, and other sources of information available in our files. A complete project file is maintained at the Carlsbad Fish and Wildlife Office (CFWO).

### Consultation History

On April 14, 2008, your agency explained to the Service the need for section 7 consultation on operations and maintenance within DFSP San Pedro and explained the need to complete this consultation in support of an update to the installation's Integrated Natural Resources Management Plan. On April 30, 2008, we received a request for formal section 7 consultation and a description of the proposed action. We discussed details of the proposed action in a



telephone conference on June 23, 2008, and further refined the proposed action through discussions in December 2009. On June 1, 2010, we provided a draft biological opinion to your agency for review.

## **BIOLOGICAL OPINION**

### **DESCRIPTION OF THE PROPOSED ACTION**

DFSP San Pedro has a long and varied history of military land uses and currently serves the United States military as a fuel depot. However, large portions of the property still retain high biological values, as shown by the presence of two federally listed species, the PVB and gnatcatcher. Although the property must be managed to serve the military mission, the property has also been managed for the benefit of these two listed species. In fact, DFSP San Pedro, in part due to its careful land management and stewardship of the PVB, hosted the last known remaining wild population of PVB until recent reintroduction efforts. DFSP San Pedro also supports research and captive rearing, which will allow reintroduction of the PVB to other, historically occupied locations.

DFSP San Pedro requires some assurances, stability, and certainty regarding its current and future operations on the property with regards to habitat and population enhancement activities for these listed species. In the course of managing the facility, routine maintenance activities, such as fire prevention and fence, pipeline, fuel-storage tank, and road repair are required for operational readiness. Additionally, DFSP San Pedro participates in ongoing conservation and research benefiting the PVB and gnatcatcher, and while these activities are ultimately intended to benefit the species, they may impact individual PVB and gnatcatchers during their implementation. The intent of the proposed project is to identify and memorialize procedures that will avoid and minimize impacts to the PVB and gnatcatcher while allowing the installation to carry out its routine functions. For new construction projects, and extensive or non-routine repair initiatives that have the potential to affect federally listed species, DFSP San Pedro will initiate separate formal or informal consultation under section 7 of the Act. The proposal recognizes that DFSP San Pedro has provided important conservation benefits to the PVB and gnatcatcher to date and that the installation will continue to work towards conservation of natural resources.

According to 50 CFR § 402.02 pursuant to section 7 of the Act, the “action area” is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action. Subsequent analyses of the environmental baseline, effects of the action, and levels of incidental take are based upon the action area as determined by our agency. The action area for this biological opinion consists of the entire 132-hectare (ha) [327-acre (ac)] DFSP San Pedro installation.

Within the installation, 92 ha (227 ac) have little resource value for non-grassland species because they are either developed or routinely mowed for fire abatement around active fuel tanks

(Figure 1 – Operations Emphasis). An additional 9 ha (22 ac) are leased as ball fields and a firing range, and these activities effectively eliminate natural resource value as well (Figure 1 – Lease Areas). The remaining 32 ha (78 ac) provide natural resource benefits and are not subject to significant operations impacts on a regular basis (Figure 1 – PVB Management Emphasis).

The proposed project is routine maintenance and operations activities within DFSP San Pedro as described below. Areas that require routine access for military operations and maintenance include roads, water lines, wells, fuel pipelines, fuel tanks with 39-meter (m) [100-foot (ft)] buffers, valve pits with 10-m (25-ft) buffers, and fuels management zones (Figure 1). Within these areas, DFSP San Pedro will continue to conduct the following activities: road repairs, electrical system upgrades, perimeter fence-line repair and maintenance, uncovering the tops or sides of hillside tanks for repair or maintenance, pipe and valve repair and replacement, driving vehicles on established roads to conduct periodic maintenance checks (daily, weekly, monthly, etc.) and for security patrols, and other activities that support the maintenance, safety, and operation of DFSP San Pedro as defined by the facilities and public works manager, including emergency response to significant threats such as fuel or water leaks. Mowing for fire abatement will also continue throughout the Operations Emphasis area although 1.8 ha (4.4 ac) will be treated with a less intense mowing program and may provide habitat for PVB (Figure 1 – Avoidance areas). With the exception of ongoing maintenance activities, such as fuel modification and roadway maintenance, which permanently alter natural conditions, impacts from all proposed activities will be temporary.

### Conservation Measures

As part of the proposed project, DFSP San Pedro will undertake the following measures to avoid, minimize, and offset potential impacts to the PVB and gnatcatcher:

1. To maintain a captive breeding program to support PVB protection and recovery, DFSP San Pedro has committed to:
  - a. Continue to fund the existing onsite captive breeding program that was initiated during consultation for the Chevron pipeline project [Formal Section 7 Consultation for the Chevron 1-8” Pipeline and Associated Government Pipeline Projects, Defense Fuel Support Point, San Pedro, Los Angeles County, California (1-6-96-F-09)];
  - b. Provide annual reports to the CFWO that include techniques, results and proposed changes for the captive breeding program. The reports will be submitted by October 1 of each year to allow sufficient time for the Service to provide comments for the following breeding season;
  - c. Provide access to facilities and share data with public or private researchers studying captive breeding techniques;

- d. Support maintenance of secondary PVB rearing facilities to protect against catastrophe;
  - e. Continue to provide PVB from the captive rearing program for Service-approved releases throughout the historic range of the species;
  - f. Continue to allow the operation of a native plant nursery on DFSP San Pedro for providing PVB host plants and other native vegetation for habitat restoration projects within and outside the facility; and
  - g. Continue to share PVB information with others who are trying to establish habitat and PVB populations.
2. To monitor PVB in the wild, DFSP San Pedro has committed to:
    - a. Continue annual PVB surveys along transects that have been sampled since 1999 and as described in Longcore 2009;
    - b. Conduct PVB surveys throughout all habitat management areas as defined in Longcore (2007) every three years or as habitat conditions are appropriate. Survey protocol will follow the 2006 basewide sampling effort and include hostplant mapping (Longcore *et al.* 2010); and
    - c. Deviations from the established PVB survey protocol will require coordination with and approval from the Service.
3. The following measures will be used to minimize and avoid impacts to PVB eggs, larvae and adults within potentially occupied habitat as defined in Figure 1 (Figure 1 was generated using Geographical Information Systems software and can be scaled up as needed to distinguish mapped areas):
    - a. When practical, routine maintenance and operations activities listed above will avoid the flight season (February 15 to May 31);
    - b. For activities that require work within the flight season, the following measures will be implemented to minimize impacts to PVB;
      - i. Hostplants will be censused within the project footprint;
      - ii. All hostplants, including a 0.6-m (2-ft) buffer around their canopies will be avoided where possible; and
      - iii. All work will be conducted during daylight hours to allow adult PVB to escape impacts.
4. The following measures will be used to minimize and avoid impacts to gnatcatchers within potentially occupied habitat as defined in Figure 1:
    - a. The following measures are designed to eliminate impacts to active gnatcatcher nests:

- i. When practical, activities will avoid the active nesting season (February 15 to August 15);
    - ii. For activities that will require work within the nesting season, nest surveys will be conducted within the area subject to direct habitat impacts, and a 30-m (100-ft) buffer surrounding the impact area;
      1. These surveys will be conducted within the week prior to the initiation of brushing clearing, grading or other construction activities;
      2. If operations and maintenance activities will last longer than 1 week, DFSP San Pedro will coordinate with the Service to determine appropriate nest survey frequency;
    - iii. The following measures will be employed if active nest(s) are detected within the immediate area of project impacts or within the surrounding 30-m (100-ft) buffer:
      1. If practical, construction activities will be avoided within 30-m of a nest until the nest fails or juveniles successfully fledge as determined by a Service-approved biologist;
      2. If construction activities are necessary within 30-m of an active nest, project-specific minimization measures will be coordinated with the Service;
  - b. The following measures will be implemented to minimize impacts to gnatcatchers outside of the breeding season:
    - i. Immediately prior to clearing vegetation, a Service-approved biologist will survey the work area for gnatcatchers;
    - ii. If gnatcatchers are found within the work footprint, the biologist will direct workers to begin initial vegetation clearing in an area away from gnatcatchers; and
    - iii. The biologist will walk ahead of clearing/grubbing equipment to passively flush birds toward areas of appropriate vegetation that are to be avoided.
5. The following measures are designed to minimize impacts to PVB and gnatcatcher habitat:
  - a. If access to work areas cannot be provided from existing roadways, construction equipment will access work areas by rolling over (crushing) existing vegetation;
  - b. If vegetation must be cleared for equipment access, vegetation will be cut at its base to avoid uprooting shrubs;

- c. If substantial soil disturbance is necessary in high quality habitat as determined by a Service-approved biologist, topsoil will be salvaged and replaced following impact;
    - i. If additional seeding and/or planting are determined to be necessary, seeds or clippings will be collected from DFSP San Pedro to ensure appropriate plant stock is used, and the appropriate seed mix will be determined by the biologist. PVB hostplants will be included in the seed mix if surrounding areas contain suitable PVB habitat. No nonnative plant species will be included in the seed mix;
  - d. No more than 0.2 ha (0.5 ac) of suitable gnatcatcher or PVB habitat will be impacted in any 1-year period, and no more than 0.4 ha (1 ac) will be impacted over any 3-year period. DLA will initiate separate consultation for any activities that may impact larger areas;
  - e. By September 31 of each year DLA will provide the Service with an annual report that includes a table/spreadsheet that documents all habitat impacts that resulted from operations, maintenance and restoration activities implemented during the period between October 1 and September 3. The annual report will include a 3-year running cumulative table that reports and tabulates all impacts to PVB and gnatcatcher habitat from operations and maintenance activities. Habitat impacts resulting from restoration activities will be tabulated separately. The annual report will include maps and or figures that display the location of all habitat impacts from operations and maintenance and restoration activities; and
  - f. Where temporary habitat impacts are unavoidable, impacted areas will be restored and habitat restoration plans will be forwarded to the Service for review prior to implementation. If the Service does not respond within 30 days, DFSP San Pedro will assume that the Service has no concerns with the plans and proceed with the restoration.
6. The following measures will be implemented to minimize the risk of habitat degradation from the invasion of nonnative vegetation within designated habitat areas as defined in Figure 1:
- a. Vegetation characteristics will be monitored annually within habitat areas using study areas defined in Longcore (2007). Monitoring will occur following the PVB flight season each year. The following characteristics will be estimated to provide information for annual management goals:
    - i. Three permanent transects will be established in each survey area to estimate percent cover of native shrubs, native forbs, nonnative grasses, nonnative forbs, and bare ground;

- ii. For each study area, a Service-approved biologist will provide a narrative that describes which invasive species pose the most important threats to habitat;
- b. The following species will be eradicated from the habitat areas, and any new invasion will be eliminated annually: *Arundo donax* (giant reed), *Schinus molle* (Peruvian peppertree), and *Carpobrotus edulis* (Hottentot fig or iceplant). If elimination techniques avoid PVB hostplants with a 0.6-m (2-ft) buffer around hostplant canopies and follow guidelines described in gnatcatcher minimization measures, they will not require Service approval;
- c. A Service-approved biologist will maintain and continually update a list of nonnative plants that are known to quickly invade and degrade native habitat in the vicinity of DFSP San Pedro. If plant species with rapid colonization and invasion potential are observed within the habitat areas, they will be the highest priority for annual weed management. This list will initially include: *Euphorbia terracina* (spurge), *Ricinus communis* (castor bean), and *Cortaderia selloana* (pampas grass);
- d. Other nonnative plants will be managed as part of habitat maintenance using the following approaches as deemed appropriate by a Service-approved biologist:
  - i. Routine nonnative vegetation control will be implemented using hand tools, including hand-held power tools such as weed trimmers, without the use of chemicals;
  - ii. To minimize impacts to PVB adults, use of powered weed trimmers or other potentially disturbance inducing methods will be avoided during the PVB flight season (February 15 to May 31) within areas determined to be occupied by monitoring and areas mapped in Figure 1 as potentially occupied by PVB;
  - iii. In problematic areas, herbicides will be applied by certified pesticide applicators as needed using the following guidelines:
    1. A mixture of 2 percent glyphosate and 98 percent water with no surfactant will be used. Alternate herbicides or formulations may be used with Service approval;
    2. A marking dye (e.g. Blazon<sup>®</sup> Blue or Tracer<sup>™</sup>) will be added to the spray solution to help ensure that the herbicide is applied only to target plants;
    3. The herbicide solution will be sprayed through a wand that reaches down to the base of target plants where a small amount of the herbicide solution will be sprayed;
    4. Herbicide treatments will be limited to periods of low wind to reduce spray drift (unintended dispersal of herbicide through

- currents of air). Herbicide will not be used if conditions become windy (maximum gusts of 11 kilometers per hour (km/h) [7 miles per hour (mph)]);
5. No herbicide will be applied within 0.6 m (2 ft) of any coast locoweed (*Astragalus trichopodus* var. *lonchus*) or deerweed (*Lotus scoparius*) canopy;
- iv. Using data from vegetation sampling, each study area will be assessed to determine whether or not it meets the following criteria in regards to the severity of nonnative plant dominance.
    1. If the relative ratio of nonnative plant cover to native plant cover for any study area exceeds 1:1, the biologist will initiate vegetation management for that study area during the same calendar year; and
    2. If nonnative vegetation remains above this threshold 2 years later, the biologist will contact the Service and DFSP San Pedro to coordinate remedial actions, which may include supplemental seeding to enhance success.
7. The following measures will be implemented to restore PVB habitat in vegetation communities that have matured to a point that they no longer include open patches with PVB hostplants and support few or no PVB:
- a. For restoration activities, there will be an appropriate plan with existing conditions, methods, monitoring, maintenance (3-5 years), success criteria, reporting, and remedial actions. These plans will be forwarded to the Service for approval;
  - b. Restoration priority will be given to the edges and outside of existing gnatcatcher habitat as shown on Figure 1;
  - c. Priority will be given to areas that have relatively low PVB abundance according to recent survey data;
  - d. The basic strategy will be to mimic natural disturbance events that historically maintained PVB habitat, but specific techniques will be determined on a project-specific basis; and
  - e. No more than 0.4 ha (1 ac) will be disturbed for the purpose of habitat restoration in any 1-year period, and this acreage will not be included in the limit described in Conservation Measure 5d.
8. Consistent with our biological opinion issued in 2005 regarding mowing within DFSP San Pedro (FWS-LA-1-6-06-RF-4022), the following measures will be implemented to minimize and avoid impacts to PVB and its habitat within the designated mowing areas as shown in Figure 1:



- a. No mowing will be conducted between February 15<sup>th</sup> and May 31<sup>st</sup>, when PVB eggs, larvae or adults are likely to be present; and
- b. No heavy equipment will be used for vegetation clearing in the 1.8 ha (4.4 ac) of Avoidance areas shown in Figure 1, and no clearing or mowing will occur between February 15<sup>th</sup> and May 31<sup>st</sup>. Where appropriate, bright colored flagging and tape will be used to demark the Avoidance areas.

## STATUS OF THE SPECIES

### Palos Verdes Blue Butterfly

#### *Listing Status and Critical Habitat*

The Service listed the PVB as endangered and designated critical habitat on July 2, 1980 (Service 1980). The PVB was listed because all known populations were small, limited in range, and threatened by urban development and/or weed control practices. The PVB was thought to be extinct in 1983 when the only known population was lost due to development (Arnold 1987); however, the species was rediscovered in 1994 on DFSP San Pedro (Mattoni 1992). A recovery plan for the PVB was published in 1984 (Service 1984), and a 5-year review was published in 2008 (Service 2008).

#### *Species Description*

The PVB was recognized as one of 11 subspecies of the silvery blue butterfly (*Glaucopsyche lygdamus*; Lepidoptera: Lycaenidae) in 1977 (Perkins and Emmel 1977; Mattoni 1992). The PVB is a small butterfly with a wingspan of about 25-30 millimeters (1-1.2 inches) (Arnold 1987). The dorsal wing surfaces of the males are silvery-blue with narrow black borders and brownish-grey in the females with blue iridescence. Ventral wing surfaces of both sexes are chalky grey with several round, white-ringed, black spots.

This subspecies is differentiated from other silvery blues by size, wing color, spot pattern, geographic range, flight characteristics, and flight period (Service 1984; Arnold 1987; Mattoni 1992). Coast locoweed (*Astragalus trichopodus* var. *lonchus*) was once thought to be the exclusive larval hostplant for the PVB; however, PVB larvae on DFSP are also known to feed on deerweed (*Lotus scoparius*), which is a known hostplant for the southern blue (*Glaucopsyche lygdamus australis*). Therefore, hostplant use is not a reliable character for distinguishing these subspecies.

#### *Habitat Affinities*

The PVB was historically and is currently restricted to the Palos Verdes peninsula, Los Angeles County, California. It is found in open coastal sage scrub (CSS) vegetation that includes coast locoweed or deerweed. PVB require suitable larval hostplants for oviposition and larval

development. Both coast locoweed and deerweed are naturally distributed within disturbed patches in CSS communities on the Palos Verdes peninsula. Both plant species invade cleared areas following disturbance, and coast locoweed can sometimes persist in more mature scrub. PVB likely require some minimum number of larval hostplants and nectar resources to successfully exploit a habitat patch over extended periods (Mattoni and Longcore 2002). Mattoni and Longcore (2002) suggest that slope and azimuth may also affect habitat quality; however, this hypothesis has not been adequately tested.

### *Life History*

The PVB is a univoltine (single brood) species with a flight period that extends from approximately late January to early May (Arnold 1987; Lipman *et al.* 1999). Eggs are generally laid individually on flowerheads of the larval hostplants, where larvae eclose (hatch) and feed. In coast locoweed, PVB larvae eventually enter into and feed on seedpods (Arnold 1987). Later instar larvae are known to be tended by ants. These larvae secrete a sweet fluid or “honeydew,” which is taken by ants. Based on studies with an unspecified subspecies of *G. lygdamus*, silvery blue fitness is likely increased through reduced predation, parasitism and drop-off (larvae that drop off hostplants) associated with ant-tending (Pierce and Eastseal 1986).

Mature larvae probably crawl into leaf litter surrounding hostplants, where they are thought to pupate (Lipman *et al.* 1999). Pupae associated with coast locoweed have been seen in seedpods (Arnold 1987); however, deerweed seedpods are too small to contain pupae, and pupae that feed on deerweed are most likely to remain at the base of their hostplant (Arnold 2004). Pupae are known to remain in diapause for one or more years under laboratory conditions. It is thought that PVB pupae are capable of prolonged diapause under natural conditions as well, and annual variation in population estimates supports this contention. Multiple year diapause is a common strategy among butterflies and is considered an adaptive response to annual or seasonal variation in resource availability (Scott 1986).

The adult flight period is tied to hostplant flowering and generally occurs between late January and early May (Arnold 1987; Lipman *et al.* 1999). PVB adults are thought to be relatively poor dispersers (Mattoni 1992). Initial studies suggest that males are more likely to disperse among habitat patches than females (Lipman *et al.* 1999). Oviposition (egg-laying) occurs throughout the flight season, and eggs are laid on the flowerheads or leaves of coast locoweed or deerweed.

### *Abundance and Population Dynamics*

Researchers conducted surveys for the PVB on DFSP San Pedro, from 1994 to 2009 and on the adjacent former Palos Verdes Navy housing area from 1999 to 2009 (Longcore *et al.* 2010). Based on population estimation methods described in Mattoni *et al.* (2001), combined population sizes for DFSP San Pedro and Palos Verdes Navy housing area from 1994 to 2008 were estimated at 69, 105, 247, 109, 199, 209, 132, 139, 215, 30, 282, 204, 219, 211, 45, and 214. These results suggest that Palos Verdes blue butterfly populations fluctuate dramatically under natural conditions.

Relative estimates of annual abundance varied substantially among habitat patches in an 8-year study at DFSP San Pedro (Mattoni *et al.* 2002a). This spatial and temporal variation suggests that no single patch provides consistently high-quality habitat for the Palos Verdes blue butterfly over the long-term. Patches with few or no PVB in a given year may support high abundances in other years. Long term population viability may rely on dispersal among habitat patches or subpopulations. This dynamic is termed a metapopulation, wherein the overall population is maintained through the extinction-recolonization dynamics among a number of habitat patches or subpopulations (Gilpin and Hanski 1991).

In 2000, pupae from a captive rearing program were released into two unoccupied areas within DFSP in an effort to reintroduce the PVB into areas with suitable host plants (Mattoni *et al.* 2002b). The reintroduction effort was considered successful because several adults emerged with typical flight and mating behavior in each area in 2001. PVB have been observed within these areas during surveys in subsequent years (Longcore *et al.* 2010).

### *Status and Distribution*

Historically, the PVB occurred throughout the Palos Verdes peninsula. When the PVB was first recognized as a distinct subspecies in the 1970's, its range and distribution were already reduced by grazing, agriculture, and residential and urban development (Service 1984; Arnold 1987; Mattoni 1992). The type locality of the subspecies on the Alta Vista Terrace was developed for residential use in 1978, causing the extirpation of that population (Service 1984). By the early 1980's, PVB were found at only 10 locations (Arnold 1987). Between 1983 and 1994, there were no documented observations of PVB, and the subspecies was presumed to be extinct (Arnold 1987). In 1994, PVB was rediscovered on DFSP San Pedro (Mattoni 1992). Following its rediscovery, a captive rearing program was established from individuals gathered at DFSP San Pedro (Longcore *et al.* 2002). The captive rearing program continues to be implemented and has expanded to a secondary facility at Moorpark College. PVB from these facilities have been used for reintroduction efforts throughout the Palos Verdes Peninsula as described below.

In 1996, the Navy completed a formal section 7 consultation with the Service for a Chevron pipeline replacement project at DFSP San Pedro (1-6-96-F-09). This project resulted in a temporary disturbance of 0.80 ha (1.98 ac) of habitat occupied by the butterfly. To offset this

habitat loss the Navy restored the area over the pipeline and revegetated a 4-ha (10-ac) area at DFSP San Pedro.

Unauthorized motorized vehicle use from trespass has occurred for many years at the northeast portion of fuel depot, adjacent to the Palos Verdes Navy housing area in and/or near areas of CSS and known occurrences of the butterfly. The Navy has installed a fence to minimize future potential off-road vehicle impacts to the butterfly and habitat in this area.

The Department of Housing and Urban Development completed a formal section 7 consultation with the Service for disposal and reuse of the Palos Verdes and San Pedro Navy housing areas adjacent to DFSP (FWS-LA-1017.6). Approximately .04 ha (0.09 ac) of known occupied PVB habitat and an additional 18.8 ha (46.6 ac) of potential PVB habitat were cleared as a result of this project. As a part of this project, the Navy established a 4.2-ha (10.4-ac) PVB reserve within the San Pedro Navy housing area that includes most of the occupied PVB habitat in the housing areas. In addition, the Navy funded an extensive pupal salvage effort within areas scheduled to be cleared (Longcore *et al.* 2003). Only two PVB pupae were found in the salvage effort, which suggests that little occupied habitat was lost due to project construction.

PVB from the captive rearing program were introduced to the 11.5-ha (28.5-ac) Linden H. Chandler Preserve (Chandler Preserve) in the City of Rolling Hills Estates in 2009 and the 51-ha (125-ac) Deane Dana Friendship Community Regional County Park (Friendship Park) in 2010. PVB were previously released in the Chandler Preserve following habitat restoration efforts in 2000, but this effort was not successful.

In association with the recent introduction at the Chandler Preserve, the Palos Verdes Peninsula Land Conservancy restored PVB habitat over several years and has committed to maintain the restoration area for the benefit of PVB (Low-Effect Habitat Conservation Plan for Restoration and Management of Linden H. Chandler Preserve in the City of Rolling Hills Estates, Los Angeles County, California 2008). The Los Angeles County Department of Parks and Recreation has also recently performed several years of restoration of PVB habitat within Friendship park and has committed to maintaining the restoration area until 2013 (Deane Dana Friendship Community Regional County Park Safe Harbor Agreement for the Palos Verdes Blue Butterfly, 2010). The success of these reintroduction efforts will be evaluated through surveys over the next several years.

Two male and one female PVB were discovered at the Malaga Dune in 2001 (Rudi Mattoni and Jeremiah George, personal communication, 2001). Previous surveys at this location did not detect any PVB. Therefore, PVB abundance is assumed to be very low at this site, and the site may or may not be currently occupied (Rudi Mattoni, personal communication, 2001). The Malaga Dune is within the City of Palos Verdes Estates.

In summary, there is one fairly robust population of the PVB at DFSP and within preserved habitat at the former Palos Verdes Naval housing area. A captive rearing program provides

some assurance against impacts from catastrophic events to wild populations and serves as a source for PVB reintroductions. The Malaga Dune likely supports few or no PVB, and although PVB have been reintroduced to the Chandler Preserve and Friendship Park, several years of survey data will need to be collected to evaluate the effectiveness of those efforts.

### *Threats*

Given the extremely limited range of the PVB, the primary threats to this species are catastrophic events and stochastic factors that could lead to extirpation given small population size (Shaffer 1981). One extreme disturbance event or a series of years with negative population growth could eliminate the only population with known potential for long-term viability at DFSP San Pedro.

Many areas that are currently considered open space on the Palos Verdes peninsula may be subject to development in the future. Given the historically widespread distribution of PVB on the peninsula, development of these open space areas would likely result in loss of areas with potential for recolonization by PVB. However, most of the remaining restorable habitat for PVB is within the City of Rancho Palos Verdes, and this City is actively developing a Natural Communities Conservation and Habitat Conservation Plan that would include habitat protection and restoration within most of the remaining open space.

Overall, conservation of PVB depends on the efficacy of habitat restoration techniques to establish suitable habitat for the PVB. Because both coast locoweed and deerweed are early successional species, over time restoration areas may naturally transition into later successional CSS of lesser or no suitability for PVB. If natural succession is allowed to proceed, suitable PVB habitat may be lost. Ultimately, active habitat management may be needed to maintain the availability of hostplants to support PVB.

### *Conservation Needs*

Additional populations of PVB need to be established to reduce the potential for extinction through demographic stochasticity or a single catastrophic event. Reintroduction efforts within DFSP San Pedro have shown that the existing captive rearing program has the potential to produce viable populations in suitable habitat.

Restoration and enhancement efforts are currently hindered by a lack of information; thus, researching the biological needs of the PVB is a high priority. Specific aspects of PVB biology that should be addressed include its dispersal capacity, its vulnerability to predation, pupation site requirements, and habitat requirements beyond hostplant presence.

## Coastal California Gnatcatcher

### *Listing Status and Critical Habitat*

The gnatcatcher was listed as threatened by the Service on March 30, 1993 (Service 1993). Critical habitat was designated for the gnatcatcher on October 24, 2000 (Service 2000) and revised on December 19, 2007 (Service 2007).

### *Species Description*

The gnatcatcher is a small, long-tailed member of the thrush family (Muscicapidae) that is endemic to cismontane southern California and northwestern Baja California, Mexico (Atwood 1980, 1988, 1990, 1991; American Ornithologists' Union (AOU) 1983, 1989). Its body plumage is dark blue-gray above and grayish-white below, while the tail is mostly black above and below. The male has a distinctive black cap that is absent during the winter, and both sexes have a distinctive white eye-ring. Vocalizations of this species include a call consisting of a rising and falling series of three kitten-like mew notes. The gnatcatcher is distinguished from the black-tailed gnatcatcher (*Polioptila melanura*) by its darker body plumage, less extensive white on tail feathers (rectrices 5 and 6), and longer tail.

### *Habitat Affinities*

The gnatcatcher typically occurs in or near coastal sage scrub, which is composed of relatively low-growing, dry-season deciduous and succulent plants. Characteristic plants of these communities include California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), laurel sumac (*Malosma laurina*), lemonade berry (*Rhus integrifolia*), *Salvia* spp., *Encelia* spp., and *Opuntia* spp. (Atwood 1990, Beyers and Wirtz 1997, Braden *et al.* 1997, Weaver 1998).

Gnatcatchers are found in moderately dense stands of coastal sage scrub (Atwood 1980, 1988). Beyers and Wirtz (1997) found that nesting territories typically have greater than 50 percent shrub cover and an average shrub height that exceeds 1 m (2.3 ft). The relative density of shrub cover influences gnatcatcher territory size, with territory size increasing as shrub cover decreases, likely due to limited resource availability. Gnatcatchers will use sparsely vegetated coastal sage scrub as long as perennial shrubs are available, although there appears to be a minimum cover threshold below which habitat becomes unsuitable (Beyers and Wirtz 1997).

### *Life History*

The gnatcatcher is primarily insectivorous. Based on fecal sample analysis, its diet consists of small arthropods, especially leaf- and planthoppers (Homoptera) and spiders (Araneae) (Burger *et al.* 1999). Both adults and young consume more sessile than active prey items (Burger *et al.* 1999).

Gnatcatchers are non-migratory and exhibit strong site tenacity (Atwood 1990). Gnatcatcher pairs strongly defend territories during the breeding season against other gnatcatchers and predators, and some will defend territories throughout the year (Preston *et al.* 1998). Breeding season territories range in size from less than 1 ha (2.5 ac) to 10 ha (25 ac) (Atwood *et al.* 1998a, Preston *et al.* 1998), with mean territory size generally greater for inland populations than coastal populations (Preston *et al.* 1998). During the non-breeding season, gnatcatchers have been observed to wander into adjacent territories and unoccupied habitat, increasing their home range size to approximately 78 percent larger than their breeding territory (Preston *et al.* 1998).

Most gnatcatchers first breed at 1 year of age (Atwood and Bontrager 2001). The gnatcatcher breeding season extends from late-February through early-August with the peak of nesting attempts occurring from mid-March through mid-May (Grishaver *et al.* 1998, Atwood and Bontrager 2001). Nests are constructed over a 4-10 day period and are most often placed in perennial species of coastal sage scrub about 1.2 ha (3 ft) above the ground (Atwood 1990). Gnatcatchers typically lay clutches of 3 to 5 eggs (Atwood 1990, Galvin 1998, Grishaver *et al.* 1998), and clutch sizes may be influenced by the amount of precipitation immediately preceding nest initiation (Patten and Rotenberry 1999). The egg incubation period is 14 days, and the nestling period is 10 to 15 days (Grishaver *et al.* 1998). Both sexes participate in all phases of the nesting cycle, and gnatcatcher pairs may produce more than one brood in one nesting season (Atwood 1990, Grishaver *et al.* 1998).

Juveniles stay within their natal territories up to 5 weeks after fledging from the nest (Grishaver *et al.* 1998), with juveniles subsequently dispersing to find their own foraging and nesting territories. Juveniles have been observed to disperse up to 10.0 km (6.2 mi) from their natal territory (Atwood and Bontrager 2001), but they generally have been documented to disperse less than 3.0 km (1.9 mi) on average (Bailey and Mock 1998, Galvin 1998, Atwood and Bontrager 2001). Dispersing gnatcatchers are apparently able to traverse highly human-modified landscapes for at least short distances (Bailey and Mock 1998). Juveniles begin to establish territories as early as late spring and territories are established by the end of October (Preston *et al.* 1998).

### *Distribution*

The gnatcatcher is found on the coastal slopes of southern California, from southern Ventura southward through Los Angeles, Orange, Riverside, San Bernardino, and San Diego counties into Baja California, Mexico to approximately 30 degrees North latitude near El Rosario (Atwood 1980, 1990; Service 2000). Within its range, the distribution of coastal California gnatcatcher is further defined by relatively narrow elevation limits (Atwood and Bolsinger 1992). Atwood and Bolsinger (1992) found that of 324 sites occupied by the gnatcatcher between 1960 and 1990, 84 percent were located below 250 m (820 ft) elevation. In general, inland populations of the gnatcatcher can be found below 500 m (1,640 ft) elevation and coastal populations tend to be found below 250 m (820 ft) elevation. Atwood and Bontrager (2001) estimated approximately 94 percent of the gnatcatchers in the United States are found in Orange,

western Riverside, and San Diego counties. Relatively isolated populations also remain in portions of its former range in Los Angeles, San Bernardino, and southern Ventura counties.

### *Population Dynamics*

The abundance of gnatcatchers at a given locale can fluctuate extensively on an annual basis (Atwood *et al.* 1998b, Erickson and Miner 1998, Preston *et al.* 1998). These fluctuations can be relatively extreme, resulting in population sizes that double or halve in a single year (Atwood and Bontrager 2001). Cold, wet winters appear to reduce over-wintering survivorship, and wet springs increase gnatcatcher reproductive success through increased plant productivity and corresponding increases in food availability (Erickson and Miner 1998, Patten and Rotenberry 1999). Drought conditions may reduce gnatcatcher productivity, as suggested by reduced levels of nest success and reduced number of broods during drought conditions (Grishaver *et al.* 1998).

### *Population Estimates*

In 1993, the Service estimated that approximately 2,562 pairs of gnatcatchers remained in the United States. Of these, 30 pairs (1.2 percent) occurred in Los Angeles County, 757 pairs (29.5 percent) occurred in Orange County, 261 pairs (10.2 percent) occurred in Riverside County, and 1,514 pairs (59.1 percent) occurred in San Diego County. In October 1996, the Service estimated the total number of gnatcatchers in the United States at 2,899 pairs (Service 1996). Both of these estimates were based on summing observations that were made over the span of several years without a consistent, probability-based sampling design that can be used to generate an associated margin of error for the population estimates and that takes into account annual population fluctuations (Winchell and Doherty 2008). In the most recent assessment of the range-wide gnatcatcher population, the Service determined that there was insufficient quantitative data to determine whether the overall gnatcatcher population had increased or decreased from 1996 to 1999 (Service 1999).

In 2002, the Service implemented a probability-based sampling scheme to estimate the gnatcatcher population within 81,036 ac (32,794 ha) of coastal scrub and scrub-chaparral ecotone plant communities on accessible public and quasi-public lands of Orange and San Diego counties (Winchell and Doherty 2008). Within this area during the spring of 2002, the average number of gnatcatchers estimated over four sample periods was 1,324 (95 percent confidence interval = 976-1,673) (Winchell and Doherty 2008).

### *Threats*

Gnatcatchers were considered locally common in the mid-1940s, but they had declined substantially in the United States by the 1960s (Atwood 1980). Because of habitat loss and fragmentation resulting from urban and agricultural development, the species was listed as threatened on March 30, 1993 (Service 1993). The direct loss of habitat reduces the amount of breeding, sheltering and foraging area available, thereby reducing reproductive capacity and



ultimately the population size. Development within and near gnatcatcher habitat has increased recreational use of habitats, fire frequency, waste dumping, air pollution, exotic plant and animal species, predators, cowbird parasitism, domestic pets, and night lighting, all of which can have adverse impacts on the quality of habitat for the gnatcatcher. In addition, changes in global climate conditions have the potential to alter the quality and distribution of habitats suitable for the gnatcatcher.

### *Conservation*

Since the listing of the gnatcatcher, the Service has worked with proponents of development projects to offset the loss of occupied or potential gnatcatcher habitat. This has been achieved through conservation, enhancement, and/or restoration of coastal sage scrub as agreed to during interagency consultation, the gnatcatcher 4(d) Rule, or the habitat conservation planning (HCP) process. Development and implementation of several regional HCPs provides long-term protection of gnatcatchers in western Riverside, Orange, and San Diego counties through the conservation and management of relatively large contiguous blocks of habitat.

### *Conservation Needs*

Large blocks of habitat on public and private lands have been secured and are being managed for the benefit of the gnatcatcher as discussed above. Long term management will likely be required in most conserved areas to address the numerous threats posed by the urban edge and ensure the persistence of the species. Some long-term management actions that will address identified threats include predator control, cowbird trapping, routine invasive vegetation removal, limited public access in areas of high quality habitat, and control of irrigation water and other urban runoff adjacent to preserved habitat. Monitoring of the species distribution over time will assist in determining the effectiveness of management actions at reducing threats and will allow for management to be adapted in the event that threats have not been adequately reduced. Adaptive management plans are being developed or have been developed for regional habitat conservation plans in Orange, Riverside, and San Diego counties.

## ENVIRONMENTAL BASELINE

Regulations implementing the Act (50 CFR § 402.02) define the environmental baseline as the past and present impacts of all Federal, State, or private actions and other human activities in the action area. Also included in the environmental baseline are the anticipated impacts of all proposed Federal projects in the action area that have undergone section 7 consultation and the impacts of State and private actions that are contemporaneous with the consultation in progress.

Because the mission of DFSP San Pedro is to store and deliver fuel for military operations, maintenance and operation of fuel supply infrastructure are the primary activities conducted throughout the facility. These activities are described in the project description for this biological opinion. Previous biological opinions within the action area were focused on

operations and maintenance projects such as pipeline construction [Chevron 1-8” Pipeline and Associated Government Pipelines (FWS-LA-1-6-96-F-09)], fire abatement [2004 and 2005 Fire Suppression, Defense Fuel Support Point, San Pedro (FWS-LA-4022.1)], and building maintenance [Renovation of Building 108, Defense Fuel Support Point, San Pedro (FWS-LA-4504.1)].

### *Palos Verdes Blue Butterfly*

We estimate that 14.4 ha (35.5 ac) of potentially occupied PVB habitat are present within DFSP San Pedro. Since 1994, PVB surveys have been conducted annually along fixed transects within DFSP San Pedro, and several transects have been added and followed through the years (Longcore et al. 2010). These transects run through most of the area designated as “PVB Management Emphasis” in Figure 1, and PVB have been observed at least once in all but one transect. The estimated population size from these surveys varies between approximately 30 and 300 individuals. The variability in population estimates is most likely explained by annual climate patterns, specifically drought conditions (Longcore 2009).

For some transects, PVB are observed intermittently, and in other transects PVB have not been observed for several years (Longcore *et al.* 2010). Intermittent occupancy can be explained by a combination of low detectability, which masks occupancy in transects occupied at low density, and local, temporary extirpation, which is consistent with metapopulation dynamics. In contrast, transects where PVB have not been observed for several years likely no longer support suitable habitat for the subspecies because the habitat has matured into dense scrub communities lacking suitable hostplants for PVB.

Overall, the PVB population size within DFSP San Pedro has been stable or increasing since it was discovered in 1994. This result suggests that habitat management has been effective to this point. However, the apparent loss of PVB from some transects suggests that habitat conditions are degrading in these areas and some level of habitat management is likely needed to sustain PVB into the future.

### *Coastal California Gnatcatcher*

We estimate that 18.5 ha (45.8 ac) of potentially occupied gnatcatcher habitat are present within DFSP San Pedro. Gnatcatchers have been known to occupy DFSP San Pedro since surveys began in 1993 (Tierra Data Systems 1998; Courtois 2003). A maximum of five breeding pairs have been observed, but in some years no evidence of breeding was observed (Tierra Data Systems 1998). The most recent surveys were conducted in 2003, when four distinct pairs were observed with evidence of successful breeding by at least two pairs (Courtois 2003).

Gnatcatcher habitat broadly overlaps suitable PVB habitat within DFSP San Pedro. Whereas PVB require relatively open patches of coastal sage scrub, gnatcatchers prefer relatively dense scrub for nesting.

## EFFECTS OF THE ACTION

Effects of the action refer to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated and interdependent with that action that will be added to the environmental baseline. Interrelated actions are those that are part of a larger action and depend on the proposed action for their justification.

Interdependent actions are those that have no independent utility apart from the action under consideration. Indirect effects are those that are caused by the proposed action and are later in time but are still reasonably certain to occur.

Implementation of the proposed project will temporarily clear no more than 0.2-ha (0.5-ac) of PVB and gnatcatcher habitat in any year and no more than 0.4-ha (1-ac) of PVB and gnatcatcher habitat in any 3-year period. Based on the anticipated maintenance and operations needs for DFSP San Pedro and the avoidance and minimization measures that will be incorporated into project planning, we anticipate that these acreage thresholds will rarely be met. In addition, these impacts will principally be focused along linear easements associated with roads, fuel pipelines, and water lines depicted in Figure 1, such that most occupied habitat will not be directly impacted by maintenance and operations projects. For habitat restoration activities, up to 0.4-ha (1-ac) of PVB and gnatcatcher habitat may be temporarily disturbed within a 1-year period in addition to the acreage disturbed for operations and maintenance. We anticipate that these habitat restoration activities will have a net benefit to these species. Overall, we anticipate that the combination of project-related habitat restoration and ongoing habitat maintenance and restoration activities throughout DFSP San Pedro will maintain or increase habitat availability for the PVB and gnatcatcher within the installation over time.

### Palos Verdes Blue Butterfly

For projects that will impact PVB habitat, which is almost exclusively within the PVB Management Emphasis area, we anticipate no direct mortality of adults and little to no loss of other developmental stages. During operations and maintenance activities within this area (collectively “project activities”), avoidance of a 0.6-m (2-ft) buffer around PVB hostplants will likely eliminate all impacts to eggs, larvae and pupae. Project activities that cannot avoid this buffer have the potential to crush eggs, larvae and pupae. These life stages could also be displaced (i.e., inadvertently moved) during project activities and not survive such disturbance due to desiccation or distance from host plant. Because eggs, larvae and pupae are extremely difficult to detect in the field, it is not possible to accurately predict or detect the number of individuals impacted by specific projects; nonetheless, since we expect few projects to fall into this category, we expect the number of eggs, larvae, and pupae crushed to be low.

Previous mowing has likely eliminated hostplant availability for PVB oviposition within the designated mowing areas shown in Figure 1. Therefore, we anticipate that no pupae will be lost during mowing, and by restricting the timing of mowing, impacts to dispersing adult butterflies from this activity will be avoided. There will be no direct impacts of the mowing program to

PVB eggs, larvae or adults within the 1.8 ha (4.4 ac) of Avoidance areas.

Some PVB pupae may be crushed or displaced during vegetation removal within the Avoidance areas, but the restrictions on heavy equipment will limit impacts to pupae. Colonization of Avoidance areas by larval hostplants is expected by restricting mowing, and the location of the Avoidance areas within the landscape of DFSP San Pedro will increase the likelihood of PVB dispersal among occupied areas throughout the installation. Clearing of nonnative vegetation within Avoidance areas will increase the likelihood of successful PVB dispersal into these areas. Thus, overall, vegetation management within the Avoidance areas will benefit PVB.

Vehicles will be driven along established roads within PVB habitat for routine security and maintenance checks. Because these roads will be used during the PVB flight season, there is some potential for PVB adults to be struck by vehicles. However, DFSP San Pedro has an establish speed limit of 24 km/h (15 mph) throughout the installation, and we anticipate that this speed limit will allow adult PVB to avoid vehicles.

Within the PVB Management Emphasis area, some PVB pupae may be crushed or displaced through habitat restoration and management activities such as vegetation removal and planting. Based on survey information from DFSP San Pedro, and habitat conditions within the areas that will be restored, we anticipate that no PVB eggs, larvae or adults will be present within the restoration areas from June 1 to February 15. Therefore, restricting the timing of when restoration activities will be implemented should prevent impacts to eggs, larvae and adults.

Similarly, no eggs, larvae or adults are anticipated to be present during the timing of herbicide application. While no studies have been conducted to specifically evaluate toxicity of glyphosate to PVB pupae, the available data suggest that herbicides containing glyphosate, such as Roundup Pro<sup>®</sup>, have very low toxicity to insects in general, and toxic effects have only been shown at much higher dosage levels than currently proposed (Giesy *et al.* 2000; Trumbo 2005). In addition, the pupal stage is less vulnerable to toxic effects than other developmental stages because the pupal case and low metabolic rate of pupae reduces the transport of potentially harmful chemicals from the environment to internal organs. Therefore, we anticipate that no PVB eggs, larvae, pupae or adults will be impacted by herbicide toxicity. However, some pupae may be trampled during herbicide application. Overall, habitat restoration and management activities, including herbicide application, are expected to have a net benefit to PVB through the creation and maintenance of suitable PVB habitat at DFSP San Pedro.

### *Effect on Recovery*

The proposed actions will contribute to several recovery goals identified in the PVB recovery plan (Service 1984). Protection and management of PVB habitat and specific management of larval resources were all identified as recovery priorities, and the proposed activities will contribute to these goals. By continuing to support the captive breeding program and committing to work with local agencies and non-profit groups to release PVB throughout the

Palos Verdes Peninsula, the installation will contribute to expansion of the range of the PVB. Release of PVB into their historic range was identified as an important recovery goal within the recovery plan and was recently emphasized in the PVB 5-Year Review (Service 2008). Successful reintroduction of PVB into its historic range will substantially increase the likelihood of long-term survival and recovery of the subspecies.

### Coastal California Gnatcatcher

DFSP San Pedro supports about 18.5 ha (45.8 ac) of gnatcatcher habitat, and no more than 0.2 ha (0.5 ac) of suitable gnatcatcher habitat will be cleared in any 1-year period, and no more than 0.4 ha (1 ac) will be cleared over any 3-year period. Actions will be taken to restore temporary habitat impacts so that no long term loss of habitat for gnatcatchers at DFSP San Pedro is expected. Breeding season territories range in size from less than 1 ha (2.5 ac) to 10 ha (25 ac) (Atwood *et al.* 1998a, Preston *et al.* 1998). Thus, in any given year, sufficient habitat should be available to support the feeding, breeding and sheltering needs of the resident population of gnatcatchers (up to five pairs) despite the temporary impacts expected

Additionally, we anticipate no direct mortality of gnatcatcher eggs, juveniles or adults in association with operations and maintenance activities. Some activities may temporarily disturb gnatcatchers; however, we do not anticipate significant impacts to nesting behavior or reproductive success since 1) most activities will occur outside of the gnatcatcher breeding season and 2) when breeding season restrictions are not practicable, pre-project nest surveys will be performed to determine and maintain a 30-m (100-ft) buffer between impacts and active nests. Finally, any activity that must be implemented during the breeding season and that will occur within 30 m (100 ft) of an active gnatcatcher nest will be coordinated with the Service. Through this coordination, we anticipate that minimization measures will be identified and implemented to prevent adverse impacts to gnatcatcher breeding success.

### *Cumulative Effects*

Cumulative effects are those effects of future non-Federal (State, local government, or private) activities on endangered or threatened species or critical habitats that are reasonably certain to occur during the course of the action. Future federal actions are subject to the consultation requirements established in section 7 of the Act and therefore are not considered cumulative to the proposed project.

Because DFSP San Pedro is a Federal installation, future actions on DFSP San Pedro that have potential to affect PVB and the gnatcatcher are subject to section 7 consultation requirements and are therefore not considered cumulative to the proposed project. Thus, we have not identified any cumulative effects in the action area that are reasonably certain to occur during implementation of the subject maintenance and operations plan.

## CONCLUSION

After reviewing the current status of the PVB and gnatcatcher, the environmental baseline for the action area, the direct and indirect effects of the proposed project, and the cumulative effects, it is our biological opinion that the proposed operations and maintenance activities are not likely to jeopardize the continued existence of the PVB or gnatcatcher. We reached this conclusion because 1) the acreage of PVB and gnatcatcher habitat impacts will be small when compared to the overall acreage of occupied habitat present within DFSP San Pedro, 2) habitat maintenance and restoration will maintain or improve habitat conditions for both species over time, 3) based on the habitat quality within the project area, we anticipate that only a small number of PVB individuals will be killed or injured and no gnatcatcher individuals will be killed or injured during project implementation; and 4) short-term impacts will be offset by long-term management of habitat at DFSP for these two species.

## INCIDENTAL TAKE STATEMENT

Section 9 of the Act and federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct. Harm is further defined by us to include significant habitat modification or degradation that actually kills or injures a listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by us as an action that creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and 7(o)(2) of the Act, such incidental take is not considered a prohibited taking under the Act, provided that such taking is in compliance with this incidental take statement.

The measures described below are nondiscretionary and must be undertaken by the DLA in order for the exemption in section 7(o)(2) to apply. The DLA has a continuing duty to regulate the activity that is covered by this incidental take statement. If the DLA (1) fails to adhere to the terms and conditions of the incidental take statement or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

## AMOUNT OR EXTENT OF TAKE

We anticipate that the number of PVB individuals that will be killed or injured will be low due to the minimization measures committed to by the DLA. However, quantifying the precise number of individual PVB that may be incidentally taken is not possible because detection of mortality or injury is highly unlikely for eggs, larvae and pupae given their size and difficulty in identification. Thus, we have described the incidental take anticipated and quantified it using

PVB habitat (e.g. scrub vegetation with hostplants present) as an ecological surrogate to establish incidental take thresholds, which should not be exceeded.

Within the 32 ha (78 ac) PVB Management Emphasis area during vegetation clearing for routine maintenance and operations activities, we anticipate crushing or displacement of PVB eggs, larvae and/or pupae to result in death or injury to these PVB life stages; and during habitat restoration and management activities, we anticipate trampling of pupae to result in death or injury to this PVB life stage. Take thresholds for the PVB Management Emphasis area are as follows:

- Temporary disturbance of up to 0.2 ha (0.5 ac) of PVB habitat per year during routine operations and maintenance;
- Temporary disturbance of up to 0.4 ha (1 ac) of PVB habitat over any 3-year period during routine operations and maintenance; and
- Temporary disturbance of up to 0.4 ha (1 ac) of PVB habitat per year during habitat restoration activities.

Within the 1.8 ha (4.4 ac) mowing Avoidance area during habitat management activities to remove nonnative vegetation, we anticipate crushing or displacement of pupae to result in death or injury to this PVB life stage. The take threshold for the mowing Avoidance area will be exceeded if mowing or mechanized equipment is used in this 1.8 ha (4.4 ac) area.

No incidental take of coastal California gnatcatchers (any life stage) or PVB adults is anticipated, and none is authorized.

#### EFFECT OF THE TAKE

In the accompanying biological opinion, we determined that this level of anticipated take is not likely to result in jeopardy to the Palos Verdes blue butterfly or coastal California gnatcatcher.

#### REASONABLE AND PRUDENT MEASURES

DLA has committed to implement significant conservation measures as an integral part of their routine maintenance activities at DFSP San Pedro, including providing the Service with an annual report that will allow us to monitor the incidental take described above. Thus, we have not identified any additional reasonable and prudent measures to further minimize take of PVB within the action area.

## TERMS AND CONDITIONS

No terms and conditions are necessary because no Reasonable and Prudent Measures have been identified.

## Disposition of Dead Specimens

This office is to be notified within 3 working days if any PVB or gnatcatchers are found dead or injured as a direct or indirect result of implementation of this project. Notification must include the date, time, and location of any individuals and any other pertinent information. Dead animals should be collected in an appropriate manner only by a biologist approved by the Service. The office contact person is the Division Chief for Los Angeles County, who may be contacted at the letterhead address or at (760) 431-9440.

## CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, help implement recovery plans, or to develop information. We have no conservation recommendations at this time.


## REINITIATION NOTICE

This concludes formal consultation on the proposed Routine Maintenance and Operations for DFSP San Pedro. As provided in 50 CFR §402.16 reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

If you have any questions or comments about this letter or the consultation process in general, please contact Eric Porter of this office at (760) 431-9440, extension 285.

Sincerely,



 Jim A. Bartel  
Field Supervisor



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