Revised Third Draft Biological Assessment
DFSP San Pedro Routine Operations and Maintenance Activities
July 16, 2014

I. INTRODUCTION

The Defense Fuel Support Point (DFSP) San Pedro Main Terminal (approximately 333 acres) is located at 3171 North Gaffey Street San Pedro, California (See Figure 1) on the Palos Verdes Peninsula in Southern Los Angeles County. The Main Terminal facility is bordered by dense urban, surburban, commercial and industrial uses. The property is owned by the United States Navy – Naval Weapons Station Seal Beach (NAVWPNSTA Seal Beach), also known as the Host. The fuel facility is operated and maintained by the Defense Logistics Agency (DLA), also known as the Tenant. The primary mission of the fuel facility is to receive, store and distribute military fuels (JP-5, JP-8 and F-76). Fuel is supplied to Department of Defense customers in the southwestern United States.

In accordance with the Host Tenant Real Estate Agreement (HTREA) and the subsequent Facilities, Environmental and Public Affairs Memorandum of Agreement; the NAVWPNSTA Seal Beach is responsible for environmental compliance and natural resource management on DFSP San Pedro. The DFSP San Pedro Integrated Natural Resource Management Plan (INRMP) guides land use and management decisions for the facility. While the Navy has executive oversight responsibilities, the DLA, as a tenant, is also responsible for complying with the INRMP, Biological Opinions and all applicable Federal, State and local environmental statutes and regulations.

Both the federally endangered Palos Verdes Blue Butterfly (PVB) (*Glaucopsyche lygdamus palosverdesensis*) and the federally threatened Coastal California Gnatcatcher (*Polioptila californica californica*) are present on the 333 acre Main Terminal of DFSP San Pedro. The Navy and the DLA, in collaboration and consultation with the United States Fish and Wildlife Service (USFWS), manage these species through population monitoring, habitat restoration, and PVB captive rearing.

II. CONSULTATION HISTORY

This Biological Assessment amends the current 2010 Biological Opinion (BO). This assessment includes: (1) a more comprehensive list of routine operations and maintenance (O&M) activities (2) clarification of conservation areas and operational areas; and (3) an updated map.

Since the discovery of the PVB and the gnatcatcher on DFSP San Pedro, the Navy and the DLA have consulted with USFWS resulting in four BOs. Table 1 summarizes these BOs.

Table 1. DFSP San Pedro Consultation History

Date	Title	Reference Number	Purpose and Importance
01/06/1996	1996 Biological Opinion on the Formal Section 7 Consultation for the Chevron 1-8" Pipeline and Associated Government Pipelines Project, Defense Fuel Support Point, San Pedro, Los Angeles County, California	1-6-96-F-09	The current listed species restoration areas were established based upon this BO. The 1996 BO was specific to the pipeline project and does not specifically cover ongoing routine operations and maintenance within the installation.

Date	Title	Reference Number	Purpose and Importance
06/25/2004	Formal Section 7 Consultation for 2004 and 2005 Fire Suppression, Defense Fuel Support Point, San Pedro, Los Angeles County, California	1-6-04-F-4022.1	Developed to address 2004 and 2005 fire suppression and to expand to a programmatic consultation to cover routine and emergency activities within the entire installation. The 2004 BO clearly stated that "potential impacts of mowing operations for the year 2006 and beyond are not included in this biological opinion."
11/22/2005	Reinitiation of Formal Section 7 Consultation for Fire Suppression, Defense Fuel Support Point, San Pedro, Los Angeles County, California	1-6-06-RF-4022.2	Amendment to the 2004 BO to identify 4.4 acres of Avoidance Areas to address impacts to PVB that may result from the mowing program through 2007
07/02/2010	Formal Section 7 Consultation for Routine Maintenance Operations, Defense Fuel Support Point, San Pedro, Los Angeles County, California	FWS-LA-08B0606-08F0704	The most recent BO for the facility issued for Routine Maintenance Operations in support of an update to the installation's Integrated Natural Resources Management Plan (INRMP)

III. DESCRIPTION OF PROPOSED ACTION

The purpose of this Biological Assessment is to provide:

- a new DFSP San Pedro map with land use designations and improved delineation of fuel facility operational areas and conservation areas; and
- a more comprehensive list of activities that can take place in the designated land use areas (i.e., fuel facility operations and maintenance activities).

A. Land Use Designations

The 333 acres of DFSP San Pedro can be divided into the following land use designations: (1) Operations Emphasis area; (2) Leased Areas; (3) PVB Management Emphasis areas and (4) Habitat Opportunity areas.

The Operations Emphasis area is managed by DLA and is the area where fuel facility operations take place. This area contains storage tanks; pipelines; valve pits and vaults; fire suppression system; a truck loading rack and operational/administration buildings. Also included in the operations area are parking lots, roadways, utilities and the perimeter fencing.

The leased areas are managed by the NAVWPNSTA Seal Beach. These area include leases to the Los Angeles Police department for an indoor firing range and two ball fields leased to numerous community softball organizations.

The PVB Management Emphasis area includes designated PVB and gnatcatcher habitat. The Habitat Opportunity areas are areas suitable to expand the habitat management. Table 2 summarizes the number of acres by land use type.

Table 2. DFSP San Pedro Land Use Designations

Land Use Designations	Description	2010 BO Acreage	Current Acreage
Operations Area	Areas that have little resource value for non-grassland species because they are either developed or routinely mowed for fire abatement around active fuel tanks.	227	218
Leased Area	Areas that are leased as ball fields and a firing range; these activities effectively eliminate natural resource value	22	24
PVB Management Emphasis Area	Areas that provide natural resource benefits and are not subject to significant operations impacts on a regular basis	78	73
Habitat Opportunity Areas	Identified as areas of the facility not routinely accessed for operation support purposes	--	17
Total Acreage		**327**	**333**

Mapping errors were discovered during this biological assessment. The corrections are described in Table 3 below. An updated map is provided as Figure 1. It should be noted that the acreage "decreases" are not necessarily re-designations, but simply corrections to the map.

Table 3. Mapping Corrections from 2010 BO

Description of Change	Land Use Designation	Decreased Acreage from 2010 BO	Increased Acreage from 2010 BO
Lease acreage near firing range were double counted as operations emphasis in the 2010 BO	Leased Area	--	--
	Operations Area	5.5	--
Corrected fenceline near northwestern ballfields leased area	Leased Area	--	1.1
	Operations Area	0.5	--
	PVB Management Emphasis Area	0.6	--
Roads throughout the facility were corrected to Operations Emphasis	Operations Area	--	4.3
	PVB Management Emphasis Area	4.3	--

Description of Change	Land Use Designation	Decreased Acreage from 2010 BO	Increased Acreage from 2010 BO
Fuel piping became daylighted from soil erosion and maintenance requires a 5 foot buffer working area	Operations Area	--	0.08
	PVB Management Emphasis Area	0.08	--
Area north of the ballfields was not previously identified as potential habitat	Habitat Opportunity Area		17
Total Increase/Decrease		**10.98**	**22.48**

B. Fuel Facility Operations and Maintenance

The following activities are proposed to be included in the BO amendment:

- Existing road vegetation maintenance

  Existing DFSP road widths currently vary between 15 and 20 feet. Federal published standards for road shoulders indicate that appropriate shoulder widths for rural settings are between 2 and 8 feet and road widths are between 24 and 40 feet (USDOT, 2007). DFSP is adopting the standard distances of 24-foot width that includes minimum 2-foot shoulders. These roads will require vegetation maintenance from the center of the existing road to 12 feet on either side to enable total drivable road width at 24 feet, where possible.

- Vegetation clearance from fire hydrants

  Per National Fire Protection Association 1, Uniform Fire Code, Section 13.1.4, firefighting systems shall be accessible at all times, and a clearance distance of 36 inches is maintained from hydrants.

- Vegetation management within pipeline "daylighting" area in the central ravine

  Soil erosion at the site has exposed a section of fuel piping. To reduce potential risk of damage to the pipes and potential impacts to the surrounding environment, 5 feet of vegetation will need to remain clear around this section of exposed pipe. While it is within the 2010 BO PVB Management Emphasis Area, vegetation at this site primarily consists of mulefat (*Baccharis salicifolia*) and nonnative vegetation such as palms (*Washingtonia robusta*), and is not within a Potentially Occupied Habitat Area for PVB or CAGN.

- Stormwater Best Management Practice (BMP) maintenance, including vegetation removal along berms and within drainage structures

  To maintain proper flow of runoff and to meet discharge requirements within the facility, stormwater BMP structures must be regularly maintained. This routine maintenance includes the removal of vegetation and other debris that can build up within and around structures.

- Electrical distribution and communication lines maintenance

Field personnel regularly inspect and repair overhead electrical distribution and communication lines within the facility. This typically requires access by foot to the structures and will not require vegetation removal.

- Tree trimming

  For fire and operational safety, trees are trimmed regularly to ensure appropriate fuel reduction, access to facilities, and to maintain safe visibility along roadways. Removal and clearance of all flammable vegetation or other combustible growth for a minimum of 10 feet on each side of every roadway, whether public or private, may be required (CFC 325.10). Tree trimming generally does not include ground disturbance or removal of plants or shrubs.

For reference, several routine O&M activities were described in the 2010 BO. The activities included, but were not limited to the following:

- Routine access for military operations and maintenance including roads, water lines, fuel pipelines, fuel tanks with 100-foot buffers, valve pits with 25-foot buffers, and fuels management zones
- Mowing for fire hazard abatement
- Road repairs and maintenance
- Electrical system upgrade
- Perimeter fenceline 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
- Emergency actions to stop environmental contamination from a fuel spill or leak
- Emergency actions to counter a terrorist attack or threatening trespass on DFSP San Pedro
- Emergency actions to stop a fire on DFSP San Pedro
- Other activities that support the maintenance, safety, and operation of DFSP San Pedro as defined by facilities and public works managers to include emergency response to significant threats

C. DFSP San Pedro Site Compliance Requirements

All employees, contractors and others on site to conduct O&M activities within or adjacent to potentially occupied habitat areas on Figure 1 meet the following requirements:

- Review the requirements within this document prior to conducting work at the facility
- Obtain appropriate approvals by DLA Installation Support for Energy-Environment and Navy environmental management personnel (when required) as provided herein
- Participate in annual Environmental Awareness training

Activities for conservation and protection of listed species from the 2010 BO are supported by DLA and the Navy are as follows:

- Maintaining a captive breeding program and allow for research to support PVB protection and recovery;
- Monitoring PVB in the wild;
- Minimizing and avoiding impacts to PVB and CAGN;
- Removal of non-native vegetation; and
- Restoration of PVB habitat.

These activities for conservation and protection of listed species, including habitat restoration and enhancement and non-native vegetation removal, are covered in the annual report prepared by DLA and Navy and approved by USFWS, and are not discussed in detail within this document.

D. 2010 Conservation Measures and Routine O&M Work Requirements

The implementation of conservation measures is summarized in Table 4 and discussed in more detail below.

Table 4. Summary of Timing Restrictions on Operations and Maintenance Activities

Time of Year	**Contact**	**DLA Preparation Activities**
Operations Emphasis Areas (With no potentially occupied habitat overlay)		
Feb 15 – May 31; Mowing Only	DLA Installation Support for Energy-Environment one week prior to start of work	PVB hostplants surveyed, flagged, 2 ft buffer
June 1 to Feb 14; Mowing Only	None	None
PVB Management Emphasis Areas (With no potentially occupied habitat overlay)		
All year; All routine O&M	None	None
PVB Potentially Occupied Habitat Overlay		
February 15 to May 31	DLA Installation Support for Energy-Environment one week prior to start of work	PVB hostplants surveyed, flagged, 2 ft buffer
June 1 to Feb 14	DLA Installation Support for Energy-Environment one week prior to start of work	PVB hostplants surveyed, flagged, 2 ft buffer
CAGN Potentially Occupied Habitat Overlay		
February 15 to August 15	DLA Installation Support for Energy-Environment one week prior to start of work	Nest surveys, 100 ft buffer, USFWS/US Navy consultation, if necessary
August 16 to February 14	DLA Installation Support for Energy-Environment one week prior to start of work	CAGN survey and avoidance techniques

1. Coordination of Activities

For routine O&M activities conducted in a PVB or CAGN Potentially Occupied Habitat area, there should be no concurrence or approval from USFWS required when the conservation measures can be implemented. For any activities conducted within a Potentially Occupied Habitat for PVB or CAGN, the DLA Installation Support for Energy-Environment will make notification to Navy Environmental Staff for review and clearance prior to conducting activities. If the requirements cannot be met, concurrence will also be required from the USFWS prior to the start of work.

In addition, when conservation measures cannot be implemented or if the current proposed activity or cumulative habitat impacts in Potentially Occupied Habitat for PVB or CAGN exceed 0.5 acre within a given year or the cumulative acreage of habitat disturbance over a 3-year period exceeds 1 acre, specific approval by the USFWS will be required.

2. Requirements for Operations Emphasis Area

Operations, maintenance and safety activities are allowed within the Operations Emphasis areas during any time of year, except for the limitations on mowing described below.

Mowing has been a main focus of concern for protection of listed species in previous BOs developed for consultation for routine O&M activities at DFSP. All previous BOs provide avoidance and minimization measures to ensure protection for listed species, particularly PVB. A conservation measure for PVB from previous BOs is to avoid mowing within the Operations Emphasis Area (Figure 1) during PVB flight season between February 15 and May 31. In order for the DFSP San Pedro to fulfill its mission requirements as well as to address concerns verbalized by local fire departments, the vegetation must be kept to a height of up to 6 inches at all times. It is therefore critical that mowing within the Operations Emphasis Area be conducted during the growing season throughout late winter and spring. Conservation and protection measures that were included in previous BOs are incorporated in the requirements below in order to meet the operational and safety goals while protecting listed species.

The following requirements must be met by contractors and terminal personnel when mowing within the Operations Emphasis Area:

- Avoid mowing February 15 to May 31, whenever mowing is not needed to address fire hazards
- If mowing must take place between February 15 to May 31 in order to meet fire safety requirements to keep vegetation at a height of up to 6 inches, the following requirements apply:
    - Notify DLA Installation Support for Energy-Environment one week prior to mowing
    - PVB hostplants must be flagged and avoided within the work area

3. Requirements for Administration Areas

Portions of the facility within the Administration Area that ds not provide any habitat value for listed speciest can be mowed any time of year.

4. Requirements for PVB Management Area/Habitat Opportunity Area without Potentially Occupied Habitat Areas

Routine O&M activities generally are not conducted within the PVB Management Area, however there are occasions when work must occur. There are no restrictions on routine O&M activities taking place within the PVB Management Area/Habitat Opportunity Area, unless there is a potentially occupied habitat overlay as described in the following sections.

5. Requirements for Potentially Occupied Palos Verdes Blue Butterfly (PVB) Habitat Areas

a. 2010 BO Conservation Measures for PVB Potentially Occupied Habitat Areas

The 2010 BO set forth measures to minimize and avoid impacts to PVB eggs, larvae and adults within PVB Potentially Occupied Habitat as shown on Figure 1. In brief, these measures are:

- Avoid the flight season (February 15 to May 31) when practical
- When work must occur during the flight season, impacts to PVB will be minimized by:
    - Identifying hostplants in the work area
    - The hostplants and a 2 foot buffer will be avoided where possible
    - All work be conducted during daylight hours to allow adult PVB to escape impacts

The quantity of PVB Potentially Occupied Habitat area disturbed must be tracked and reported annually to US Fish and Wildlife Service as well. In total, disturbance relating to O&M activities shall not exceed:

- No more than 0.2 ha (0.5 ac) of suitable 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.

The Navy, in coordination with DLA, will initiate additional consultation for any activities that may impact larger areas.

b. Routine O&M Work Conducted in PVB Potentially Occupied Habitat Area

All field personnel conducting routine maintenance work within areas designated as PVB Potentially Occupied Habitat during the flight season (February 15 to May 31) must contact DLA Installation Support for Energy-Environment at least one week prior to starting work, in order for the following preparations to take place:

- Activities rescheduled to avoid the flight season if safety or mission requirements are not affected
- Hostplants to be identified and 2-foot buffers emplaced
- Ensure work occurs during daylight hours
- If work areas cannot be accessed by roads, construction equipment and vehicles will access work areas by rolling over vegetation and using the same vehicle tracks for entry and exit
- If vegetation must be cleared for access, it will be cut at the base to leave roots in place, where possible
- If substantial soil disturbance is required in habitat areas, work will be coordinated with Navy environmental management personnel and USFWS (by coordination through DLA Installation Support for Energy-Environment) and soil disturbed by the action will be stockpiled and reused on site
- Any mowing that occurs within the PVB Potentially Occupied Habitat is subject to these requirements

6. Requirements for California Gnatcatcher (CAGN) Potentially Occupied Habitat Areas

a. 2010 BO Conservation Measures for CAGN Potentially Occupied Habitat Areas

The 2010 BO set forth measures to minimize and avoid impacts to California gnatcatchers within CAGN Potentially Occupied Habitat as shown on Figure 1. In brief, these measures are:

Regarding active gnatcatcher nests:

- When practical, activities will avoid the active nesting season (February 15 to August 15)

- For activities that require work within the nesting season, nest surveys will be conducted within one week prior to the start of work in the area subject to direct habitat impacts, and a 100-ft buffer surrounding the impact area
- If operations and maintenance activities will last longer than one week, DFSP San Pedro will coordinate with the Service to determine appropriate nest survey frequency;
- The following measures will be employed if active nest(s) are detected within the immediate area of project impacts or within the surrounding 100-ft buffer:
    - If practical, construction activities will be avoided within 100 feet of a nest until the nest fails or juveniles successfully fledge as determined by a Service-approved biologist
    - If construction activities are necessary within 100 feet of an active nest, project-specific minimization measures will be coordinated with the Service

The following measures will be implemented to minimize impacts to gnatcatchers outside of the nesting season:

- Immediately prior to clearing vegetation, a Service-approved biologist will survey the work area for gnatcatchers
- If gnatcatchers are found within the work footprint, the biologist will direct workers to begin initial vegetation clearing in an area away from gnatcatchers
- The biologist will walk ahead of clearing/grubbing equipment to passively flush birds toward areas of appropriate vegetation that are to be avoided

Similar to PVB Potentially Occupied Habitat, impacts to CAGN Potentially Occupied Habitat must be quantified and tracked and reported annually to USFWS:

- No more than 0.2 ha (0.5 ac) of suitable gnatcatcher 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.

The Navy, in coordination with DLA, will initiate separate consultation for any activities that may impact larger areas.

b. Clarification of Requirements for O&M Work Conducted in CAGN Potentially Occupied Habitat Area

All field personnel conducting routine maintenance work within areas designated as CAGN Potentially Occupied Habitat must contact DLA Installation Support for Energy-Environment at least one week prior to starting work, in order for the following work preparation requirements to be met:

- Activities rescheduled to avoid active nesting season (February 15 to August 15) if safety or mission requirements are not affected

When operations must be conducted in habitat areas between February 15 and August 15, preparations for the work will be arranged to include:

- Surveys within one week prior to planned activity to identify gnatcatcher nests
- Coordination with USFWS on any action requiring longer than one week during the nesting season
- Avoid work within 100 feet of an occupied nest identified during the surveys
- Coordination with USFWS on any work required within 100 feet of an occupied nest

Those activities occurring during non-nesting season (August 16 to February 14) preparations for the work will be arranged to include:

- A biological survey to identify any gnatcatchers and arrange avoidance requirements
- If work areas cannot be accessed by roads, construction equipment and vehicles will access work areas by rolling over vegetation
- If vegetation must be cleared for access, it will be cut at the base to leave roots in place, where possible
- If substantial soil disturbance is required in habitat areas, the work will be coordinated with Navy environmental management personnel and USFWS (by coordination through DLA Installation Support for Energy-Environment) and soil will be stockpiled and reused on site

7. Leased Area Management

While there may be potentially occupied habitat adjacent to some of the Lease Areas within the facility, the fenced lease areas do not contain PVB or CAGN habitat (with one exception) and are routinely managed by the lessees as either ballfields or a firing range.

There is a small area of PVB Potentially Occupied Habitat located within the leased area in the northeast ballfield, though this area is not regularly maintained by the lessee and is left in its natural condition.

IV. STATUS OF THE SPECIES

Palos Verdes Blue Butterfly

The following information regarding PVB listing status and critical habitat, species description, habitat affinities, life history, abundance and population dynamics, status and distribution, threats, and conservation needs has been summarized from the 2010 Biological Opinion, and updated using a 2012 report of results of PVB surveys, and a 2012 report of the captive rearing program at DFSP and Moorpark College.

Palos Verdes Blue Butterfly was listed as endangered and the USFWS designated critical habitat for the species on July 2, 1980, due to its known populations being small, limited in range, and threatened by urban development or weed control practices. The PVB was thought to be extinct in 1983 when the only known population was lost due to development; however, the species was rediscovered in 1994 on DFSP San Pedro.

The PVB is one of 11 subspecies of the silvery blue butterfly (*Glaucopsyche lygdamus; Lepidoptera: Lycaenidae*). This subspecies is differentiated from other silvery blues by size, wing color, spot pattern, geographic range, flight characteristics, and flight period. 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*).

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. Coast locoweed and deerweed are both 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.

The PVB is a univoltine (single brood) species with a flight period that occurs during hostplant flowering, typically late January to early May. Eggs are generally laid individually on flowerheads of the larval hostplants, where larvae eclose (hatch) and feed. Mature larvae probably crawl into leaf litter surrounding hostplants, where they are thought to pupate. Pupae associated with coast locoweed have been seen in seedpods; 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. 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.

Researchers surveyed for PVB on DFSP San Pedro from 1994 to 2012 and on the adjacent former Palos Verdes Navy housing area from 1999 to 2012 (Longcore et al., 2012). Based on population estimation methods combined population sizes for DFSP San Pedro and Palos Verdes Navy housing area from 1994 to 2012 were estimated at 69, 105, 247, 109, 199, 209, 132, 139, 215, 30, 282, 204, 219, 211, 45, 214, 47, 53, and 148.

Spatial and temporal variation in PVB hostplant density from these surveys suggests that no single area provides consistently high-quality habitat for the PVB over the long-term. Areas 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.

A captive rearing program was established at DFSP following the PVB species rediscovery in 1994. The program continues to be implemented and has expanded to a secondary facility at Moorpark College in Ventura County. In an effort to reintroduce the PVB into areas with suitable hostplants, pupae from the captive rearing program were released in two unoccupied areas within DFSP in 2000. Several adults emerged in 2001 with typical flight and mating behavior in each area. PVB have been observed within these areas during surveys in subsequent years (Longcore et al., 2012). 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.

Given the extremely limited range of the PVB, the primary threats to this species are catastrophic events and other factors leading to extirpation due to its small population size. Overall, conservation of PVB depends on developing 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.

Additional populations of PVB will 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

The following information regarding CAGN listing status and critical habitat, species description, habitat affinities, life history, abundance and population dynamics, status and distribution, threats, and conservation needs has been summarized from the 2010 Biological Opinion, and updated using a 2011 presence/absence survey report of the CAGN at DFSP.

The coastal California gnatcatcher was listed as threatened by the Service on March 30, 1993, and critical habitat was designated for the species on October 24, 2000, and revised on December 19, 2007.

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. Within its native range, the distribution of coastal California gnatcatcher is further defined by relatively narrow elevation limits. 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.

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, and longer tail.

The gnatcatcher typically occurs in or near coastal sage scrub, which is primarily 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.

Nesting territories range in size from less than 1 ha (2.5 ac) to 10 ha (25 ac), and typically have greater than 50 percent shrub cover and an average shrub height that exceeds 1 meter. Gnatcatchers are non-migratory and exhibit strong site tenacity. Gnatcatcher pairs strongly defend territories during the breeding season against other gnatcatchers and predators. 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. Most gnatcatchers first breed at 1 year of age.

The gnatcatcher breeding season extends from late-February through early-August with the peak of nesting attempts occurring from mid-March through mid-May. Nests are constructed over a 4-10 day period and are most often placed in perennial species of coastal sage scrub about 3 ft above the ground. Gnatcatchers typically lay clutches of 3 to 5 eggs. The egg incubation period is 14 days, and the nestling period is 10 to 15 days. Both sexes participate in all phases of the nesting cycle, and gnatcatcher pairs may produce more than one brood in a single nesting season. Juveniles disperse up to 10.0 km (6.2 mi) from their natal territory, and establish territories between late spring and the end of October.

The gnatcatcher is primarily insectivorous with a diet consisting of small arthropods, especially leaf- and planthoppers (*Homoptera*) and spiders (*Araneae*).

The abundance of gnatcatchers at a given locale can fluctuate extensively on an annual basis. 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. Drought conditions may reduce gnatcatcher productivity, as suggested by reduced levels of nest success and reduced number of broods during drought conditions.

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 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. The average number of gnatcatchers was estimated at 1,324.

Gnatcatchers were considered locally common in the mid-1940s, but they had declined substantially in the United States by the 1960s. The species was listed as threatened on March 30, 1993 as a result of habitat loss and fragmentation resulting from urban and agricultural development. 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.

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.

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 addressing 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 run-off adjacent to preserved habitat. Monitoring of the species distribution over time will assist in determining the effectiveness of management actions at reducing threats and 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.

V. 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. The following is summarized from the 2010 BO and updated using recent survey reports.

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)], and the current biological opinion [FWS-LA-08B0606-08F0704].

Palos Verdes Blue Butterfly

It is estimated that 11.9 ha (29.4 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., 2012). 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 a combination of the amount of rainfall during the larval year and by hostplant abundance and distribution (Longcore et al., 2012). However, for the third year in a row, the population number was below that estimated by the rainfall. This may be explained by patch dynamics, where previous declines in deerweed resulted in elimination of butterflies from some areas in on the base, and now the modestly increased foodplant resources are not all colonized. So despite above average rainfall, and some recovery in foodplant cover, butterfly numbers are not as high as they might be for these conditions.

For some transects, PVB are observed intermittently, and in other transects PVB have not been observed for several years (Longcore et al., 2012). 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 (Longcore et al., 2012).

Coastal California Gnatcatcher

It is estimated that 23.0 ha (56.9 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. A maximum of five breeding pairs have been observed, but in some years no evidence of breeding was observed. The most recent surveys were conducted in 2011, when at least two pairs and two to three single males were observed.

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.

VI. 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. The following is summarized from the 2010 BO.

Implementation of the operations and maintenance activities at DFSP San Pedro 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, these acreage thresholds are not anticipated to 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 activities. 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. These habitat restoration activities are anticipated to have a net benefit to these species. Overall, 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, no direct mortality of adults and little to no loss of other developmental stages of the species is anticipated. 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 few projects are expected to fall into this category, the number of eggs, larvae, and pupae crushed are expected to be low.

Previous mowing has likely eliminated hostplant availability for PVB oviposition within the areas routinely mowed. Therefore, no pupae are anticipated to be lost during mowing, and by restricting the timing of mowing, impacts to dispersing adult butterflies from this activity will be avoided.

Vehicles will be driven along established roads throughout the facility 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 established speed limit of 24 km/h (15 mph) throughout the installation, and it is anticipated that this speed limit will allow adult PVB to avoid vehicles.

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, no PVB eggs, larvae or adults are anticipated to 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. In fact, habitat restoration and management activities are expected to have a net benefit to PVB through the creation and maintenance of suitable PVB habitat at DFSP San Pedro.

VII. EFFECT ON RECOVERY

The proposed actions will contribute to several recovery goals identified in the PVB recovery plan. 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 contributes to expanding the range of the PVB. 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 approximately 23.0 ha (56.9 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 impacts to habitat 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). 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 that might take place.

Additionally, no direct mortality of gnatcatcher eggs, juveniles or adults in association with operations and maintenance activities are anticipated. Some activities may temporarily disturb gnatcatchers; however, significant impacts to nesting behavior or reproductive success are expected 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, it is anticipated that minimization measures will be identified and implemented to prevent adverse impacts to gnatcatcher breeding success.

VIII. 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, no cumulative effects in the action area have been identified that are reasonably certain to occur during implementation of the subject maintenance and operations plan.

IX. CONCLUSION AND DETERMINATION

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 thought the proposed operations and maintenance activities are not likely to jeopardize the continued existence of the PVB or gnatcatcher. This conclusion has been reached because 1) the acreage of PVB and gnatcatcher habitat impacts will be small when compared to the overall acreage of potentially 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, only a small number of PVB individuals are anticipated to 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.

X. REFERENCES

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