APPENDIX F
BIOLOGICAL RESOURCES SURVEY REPORT

1.0 INTRODUCTION

The purpose of this Biological Resources Survey Report is to provide information on the onshore biological resources located within and immediately adjacent to the Dynegy Morro Bay Power Plant Marine Terminal Decommissioning Project (Project) in sufficient detail to determine to what extent the Project may affect Threatened, Endangered or Candidate species. This Biological Resources Survey Report, with support from the Project Execution Plan, is also intended to provide Dynegy support during regulatory or municipal permitting efforts required for the Project.

The biological resources evaluated for this Biological Resources Survey Report were limited to the biological survey area (BSA). The BSA encompasses approximately 74 acres and includes the onshore pipeline corridor, as well as adjacent habitat and land use areas. This Biological Resources Survey Report does not include discussions for offshore/marine wildlife.

The primary objectives of the Biological Resources Survey Report are as follows:

1. Present the results of all field surveys within the BSA, including the type and extent of vegetative communities and wildlife habitats;
2. Provide an inventory of plants and wildlife observed in the BSA and identify local plant and wildlife species that may occur within the BSA but were not identified during field surveys;
3. Identify special-status plant and wildlife species occurring within the region and suitable habitat for these special-status species that may occur within the BSA;
4. Provide a complete evaluation of the potential Project impacts to biological resources within the BSA and surrounding region; and,
5. Provide a detailed list of measures to include into Project plans to avoid and/or minimize impacts to potentially occurring special-status species and associated habitats to the greatest extent possible.

2.0 REGULATORY SETTING

This Biological Resources Survey Report identifies and discusses the regulations and policies administered by resource agencies pertaining to those biological resources that are known to exist and/or have the potential to occur within the BSA and surrounding region.

2.1 FEDERAL REGULATIONS

Endangered Species Act. The Federal Endangered Species Act (FESA), administered by the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS), provides protection to species listed as Threatened or Endangered, and Critical Habitat designated for the protection of such species. The FESA prohibits "take" of Threatened and Endangered species except under certain circumstances and only with authorization from the USFWS through a permit under sections 4(d), 7, or 10(a) of the FESA. Under the FESA, take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.

Critical Habitat is defined in Section 3(5)(A) of the FESA as: (1) specific areas within the geographical area occupied by the species at the time of listing, on which are found those physical or biological features that are essential to the conservation of the listed species and that may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by the species at the time of listing that are essential for the conservation of a listed species.

The FESA also provides protection to those species proposed to be listed under FESA and maintains lists of species that are neither formally listed nor proposed, but could potentially be listed in the future. These Federal candidate species include taxa for which substantial information on biological vulnerability and potential threats exist, and are maintained in order to support the appropriateness of proposing to list the taxa as an Endangered or Threatened species.

The USFWS also manage Birds of Conservation Concern (BCC). The overall goal of the BCC is to accurately identify the migratory and non-migratory bird species that represent the highest conservation priorities. Bird species considered for inclusion as a BCC include non-game birds, game birds without hunting seasons, subsistence-hunted nongame birds in Alaska; and FESA candidate, proposed Endangered or Threatened, and recently delisted species.

Migratory Bird Treaty Act. The USFWS also administers the Federal Migratory Bird Treaty Act (MBTA) of 1918 (16 USC 703-711). The MBTA establishes Federal responsibilities for the protection of nearly all species of birds, their eggs, and their nests, including all native bird species. The MBTA of 1918 implemented the 1916 Convention between the United States and Great Britain for the protection of birds migrating between the United States and Canada; implemented the 1936 Convention for the Protection of Migratory Birds and Animals between the United States and Mexico; and similar conventions between the United States and Japan (1972) and the Union of Soviet Socialist Republics (1976). Under the MBTA, it is unlawful to kill, collect, *take*, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR 10, including feathers or other parts, nests, eggs or products, except as allowed by implementing regulations (50 CFR 21). Certain game bird species are allowed to be hunted for specific periods determined by federal and state governments.

Magnuson-Stevens Fishery Conservation and Management Act. The Magnuson-Stevens Act provides for the conservation and management of fishery resources within the United States Exclusive Economic Zone, which extends from the seaward boundary to 370 kilometer (km) [230 miles (mi)] from shore. Using the tools provided by the Magnuson-Stevens Act, National Oceanic and Atmospheric Administration's (NOAA's) NMFS assesses and predicts the status of fish stocks, ensures compliance with fisheries regulations and works to reduce wasteful fishing practices. Fish utilizing inland waters that are provided a significant nexus to the Pacific Ocean that swim upstream for breeding (anadromous fish)

are provided protection by the Magnuson-Stevens Act. Waters that may support anadromous fish may be subject to Section 7 consultation with the NMFS under the FESA.

Clean Water Act. The Clean Water Act (CWA), formally entitled the Federal Water Pollution Control Act of 1972, is comprehensive legislation enacted to protect the nation's waters. The Act generally includes reference to its substantial supplementation by the CWA of 1977. Both Acts were subsequently amended in 1981, 1987, and 1993. Overall, the CWA seeks to protect the nation's water from pollution by setting water quality standards for surface water and by limiting the discharge of effluents into waters of the United States (Waters). These water quality standards are enforced by the U.S. Environmental Protection Agency (EPA).

The U.S. Army Corps of Engineers (ACOE) is responsible for the issuance of permits for the placement of dredged or fill material into Waters pursuant to Section 404 of the Clean Water Act (33 USC 1344). As defined by the ACOE in 33 CFR 328.3(a)(3), Waters are those waters that are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; tributaries and impoundments to such waters; all interstate waters including interstate wetlands; and territorial seas. In addition, federal guidance has been developed that requires careful examination and documentation of the physical location(s) and hydrologic connections among waters/wetlands. To determine Federal jurisdiction, particular focus is given to (1) surface hydrologic connections between a wetland and "navigable waters in fact," (2) "adjacency" of a wetland to traditionally navigable waters, and thus (3) a "significant nexus" to interstate commerce. Waters/wetlands features can also be determined to be under Federal jurisdiction by the ACOE or EPA if a "significant nexus" can be shown between the wetland feature in question and its contribution to the maintenance or restoration of the physical, chemical, or biological integrity of downstream waters that are traditionally navigable.

In non-tidal waters, the lateral extent of ACOE jurisdiction is determined by the ordinary high water mark (OHWM), which is defined as the: "…line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" (33 CFR 328[e]).

2.2 STATE REGULATIONS

Porter-Cologne Water Quality Control Act. The Porter-Cologne Water Quality Control Act (CA Water Code §§ 13000-13999.10) mandates that waters of the state shall be protected, such that activities that may affect waters of the State shall be regulated to attain the highest quality. This Act establishes the State Water Resources Control Board (SWRCB) as the principal state agency for controlling water quality in California. The SWRCB provides regulations that mandate a "non-degradation policy" for state waters, especially those of high quality. The SWRCB is divided into local Regional Water Quality Control Boards (RWQCB).

Pursuant to Section 401 of the CWA, the ACOE cannot issue a Federal permit until the State of California first issues a Water Quality Certification to ensure that a project will comply with State water quality standards. The authority to issue Water Quality Certifications for the following Project is vested with the Central Coast RWQCB.

California Fish and Game Code. The California Department of Fish and Wildlife (CDFW), administers a number of laws and programs designed to protect fish and wildlife resources. Principal of these is the California Endangered Species Act of 1984 (CESA) Fish and Game Code Section 2050 that regulates the listing and take of State Endangered and Threatened species. CDFW also maintains lists of Candidate-Endangered species and Candidate-Threatened species. California candidate species are

afforded the same level of protection as listed species. CDFW also designates Species of Special Concern that are of limited distribution, declining populations, diminishing habitat, or unusual scientific, recreational, or educational value. These species do not have the same legal protection as listed species, but may be added to official lists in the future.

CDFW manages a Watch List that includes "Taxa to Watch" (Shuford and Gardali, 2008), which includes: 1) species not on the current Special Concern list but were on previous lists and they have not been State listed under CESA; 2) species that were previously State or Federally listed and now are on neither list; or 3) species are on the list of Fully Protected species.

CDFW administers other State laws designed to protect wildlife and plants. Section 3511 of the California Fish and Game Code designates species that are afforded Fully Protected status. Fish and Game Code Sections 4700 and 5515 assign the same status to specified mammals and fish. These statutes generally provide that specifically identified birds, mammals, and fish "or parts thereof may not be taken or possessed at any time and no provision of [the Fish and Game] code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected [bird, mammal, or fish] and no permits or licenses heretofore issued shall have any force or effect" for any such purpose. For fully protected fish and mammals, the only exception to the take prohibition is that the Fish and Game Commission may authorize the collecting of such species "for necessary scientific research" (Fish and Game Code, Sections 4700, 5515). With a proper permit, Fully Protected birds may also be captured live and relocated "for the protection of livestock" (Section 3511). Section 3503.5 protects birds-of-prey (Falconiformes and Strigiformes), their eggs, and their nests. In addition, Section 3513 provides protection to the birds listed under the MBTA, essentially all native birds.

CDFW manages the California Native Plant Protection Act of 1977 (Fish and Game Code Section 1900, *et seq*.), which was enacted to identify, designate and, protect rare plants. The California Native Plant Society (CNPS) operates under a Memorandum of Understanding (MOU) with the CDFW and outlines broad cooperation in rare plant assessment and protection, and formalizes cooperative ventures such as data sharing and production of complementary information sources for rare plants.

California Environmental Quality Act. Project-related adverse impacts on special-status species are considered significant for California Environmental Quality Act (CEQA) purposes. Section 15065 of CEQA states that a Lead Agency shall find that a project may have a significant effect on the environment and thereby require an Environmental Impact Report (EIR) to be prepared for the Project where the Project has the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or reduce the number or restrict the range of a rare or endangered plant or animal.

A Negative Declaration or a Mitigated Negative Declaration is prepared for a project when there is no substantial evidence that the project or any of its aspects could result in significant adverse impacts. A Negative Declaration or a Mitigated Negative Declaration is prepared for the proposed project in either of the following circumstances:

> "(a) There is no substantial evidence, in light of the whole record before the lead agency, that the project may have a significant effect on the environment.
>
> (b) An initial study identifies potentially significant effects on the environment, but (A) revisions in the project plans or proposals made by, or agreed to by, the applicant before the proposed negative declaration and initial study are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effect on the environment would occur, and (B) there is no substantial evidence, in light of the whole record before the lead agency, that the project, as revised, may have a significant effect on the environment.

3.0 METHODOLOGY

3.1 DESKTOP REVIEW

The initial desktop review included an aerial imagery review of the BSA and surrounding region. The region, for the purposes of this Biological Resources Survey Report, includes a five-mile radius from the boundaries of the BSA, within United States Geological Survey (USGS) quadrangles Cayucos, Morro Bay North, and Morro Bay South. This review included the incorporation of Geographic Information Systems (GIS) layers. These images were reviewed to analyze potential migratory routes, habitat connectivity and landscape fragmentation, and investigation of surrounding land uses. These images were also used in the field to further assist in defining and mapping existing vegetation communities and sensitive habitats identified within the BSA.

The desktop review included a query of the CDFW California Natural Diversity Database (CNDDB) to identify reported occurrences of special-status plant and wildlife species and sensitive habitats within the region surrounding the BSA. The CNDDB is a statewide digital database utilized to locate the nearest occurrences of all rare, threatened, endangered, and special-status species and natural communities in California. All wildlife taxa listed in the CNDDB are considered "Special Animals," which the CDFW is interested in tracking, regardless of their legal protection status. The CNDDB occurrences are displayed as polygons and/or points that depict the accuracy of the data that was used to map the occurrence. Each polygon is provided an accuracy class that describes the level of the location detail. A polygon, therefore, does not necessarily reflect that a species occurs in all areas of the polygon, but may represent a non-specific area that documents habitat resources and/or simply a buffer distance around a specific point.

The USFWS Critical Habitat Portal (2015) was reviewed to determine location of Critical Habitat for federally protected species that may potentially occur in the region. The USFWS Critical Habitat Portal is an online database that provides most recent datasets for federally defined Critical Habitat areas.

The desktop review also examined multiple sources of technical survey information completed in the vicinity of the BSA, including the following:

1. Chevron/Estero Marine Terminal Source Removal Project Execution Plan, prepared by Padre Associates, Inc. (2015);
2. Duke Energy/Morro Bay Marine Terminal Project Execution Plan, prepared by Padre Associates, Inc. (September, 2005);
3. Review of Biological Survey Report for Duke Energy prepared by V.L. Holland, Ph.D. & Villablanca, Ph.D. (2000);
4. Review of City of Morro Bay, Morro Creek Multi-Use Trail and Bridge Project, Initial Study-Mitigated Negative Declaration prepared by Rincon (2013);
5. Recent discussions with local biologists; and
6. Database search utilizing the most recent version (October 2015) of the CNDDB.

3.2 FIELD SURVEYS

Two biological field surveys were conducted by Padre Biologists, Alyssa Berry, Christina Santala, and Stephanie Seay on September 24 and 25, 2015. During all field surveys, biologists drove established access roads and walked the terrain within the BSA documenting all wildlife species observed. Direct visual observations, indirect signs (e.g., tracks, scat, skeletal remains, and burrows), and auditory cues (i.e., calls and songs) were documented.

All identifiable plant species were recorded and presence of suitable habitat for potentially occurring special-status plants was noted. Plant specimens that were not positively identified in the field were further examined using a dissecting microscope and appropriate botanical keys, including *The Jepson Manual: Vascular Plants of California, Second Edition* (Baldwin *et al*., 2012) and *The Jepson Herbarium Online Interchange California Floristics* (University of California, 2015). Vegetation types identified during the surveys were classified based on the CNPS *A Manual of California Vegetation, Second Edition* (Sawyer et al., 2009) (MCVII) and *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland, 1986), as appropriate.

4.0 EXISTING CONDITIONS

4.1 WILDLIFE OCCURRING WITHIN THE BSA

Wildlife species observed within the BSA during field surveys, as well as those that have the potential to utilize the BSA based on suitable habitat and other environmental conditions are described in the following sections. For a complete list of wildlife species observed during the September 2015 surveys, refer to Attachment 1 – Wildlife and Vascular Plants Observed With The BSA.

Invertebrates. Invertebrates observed during field surveys within the BSA included monarch butterfly (*Danaus plexippus*), European snail (*Helix aspersa*), and Big Sur shoulderband snail (*Helminthoglypta umilicata*). In addition, the following species have the potential to occur within the BSA based on their prevalence throughout the region and/or the presence of suitable habitat: globose dune beetle (*Coleus globosus*), mimic tryonia (*Tryonia imitator*), Morro Bay blue butterfly (*Plebejus icarioides moroensis*), Morro shoulderband snail (*Helminthoglypta walkeriana*), obscure bumble bee (*Bombus caliginosus*), and sandy beach tiger beetle (*Cicindela hirticollis gravida*).

Amphibians. No amphibians were observed during field surveys within the BSA, however, the following species have the potential to occur within the BSA based on their prevalence throughout the region and/or the presence of suitable habitat: California slender salamander (*Batrachoseps attenuatus*), arboreal salamander (*Aneides lugubris*), Sierran treefrog (*Pseudacris sierra*), California toad (*Anaxyrus boreas halophilus*), and California red-legged frog (*Rana draytonii*).

Reptiles. Reptiles observed during field surveys within the BSA include western fence lizard (*Sceloporus occidentalis*) and side-blotched lizard (*Uta stansburiana*). In addition, the following species have the potential to occur within the BSA based on their prevalence throughout the region and/or the presence of suitable habitat: southern alligator lizard (*Elgaria mulicarinata*), gopher snake (*Pituophis melanoleucus*), common garter snake (*Thamnophis sirtalis*), western skink (*Eumeces skiltonianus skiltonianus*), ringneck snake (*Diadophis punctatus*), two-striped garter snake (*Thamnophis hammondii*), Blainville's horned lizard (*Phrynosoma blainvillii*), Black and silvery legless lizard (*Anniella pulchra nigra and Anniella pulchra pulchra*), and southwestern pond turtle (*Actinemys marmorata pallida*).

Fish. No fish were observed during field surveys within the BSA; however, based on the presence of suitable habitat within Morro Creek, the following fish species have the potential to occur within the BSA, including three-spined stickleback (*Gasterosteus aculeatus*), South-central California coast steelhead (*Onchorhynchus mykiss*), and tidewater goby (*Eucyclogobius newberryi*).

Birds. Birds that were observed during field surveys within the BSA include: black-chinned hummingbird (*Archilochus alexandri*), Anna's hummingbird (*Calypte anna*), house finch (*Carpodacus mexicanus*), American crow (*Corvus brachyrhynchos*), common yellowthroat (*Geothylpis trichas*), Say's phoebe (*Sayornis saya*), Bewick's wren (*Thrymanes bewickii*), and white-crowned sparrow (*Zonotrichia leucophrys*). In addition, bird species that have the potential to occur based on the presence of suitable habitat within the BSA include western snowy plover (*Charadrius alexandrinus nivosus*), yellow warbler (*Dendroica petechia*), American peregrine falcon (*Falco peregrinus anatum*), Cooper's hawk (*Accipiter cooperii*), and white-tailed kite (*Elanus leucurus*).

Mammals. Mammals that were observed during field surveys within the BSA include California ground squirrel (*Otospermophilus beecheyi*), coyote (*Canis latrans*), and California vole (*Microtus californicus*). Other common mammal species expected to occur within the BSA based on the presence of suitable habitat include Virginia opossum (*Didelphis virginiana*), brush rabbit (*Sylvilagus bachmani*), black-tailed jack rabbit (*Lepus californicus*), raccoon (*Procyon lotor*), and striped skunk (*Mephitis mephitis*).

4.2 VEGETATION TYPES OCCURRING WITHIN THE BSA

Based on species composition, life form, and community membership rules, the vegetation identified within the BSA can be classified into distinct vegetation types (i.e., alliances, associations) as described in the MCVII (Sawyer et al., 2009), or designated as site-specific vegetation types/land use areas. Refer to Attachment 1 – Wildlife and Vascular Plants Observed with the BSA for a list of plants observed within the BSA during field surveys. CDFW Vegetation Rapid Assessment Data Sheets are provided as Attachment 2 – Vegetation Rapid Assessment Data Sheets. Vegetation types identified within the BSA are illustrated in Figure 4-1 - Biological Field Survey Results, and described in detail in this section.

Coastal Strand/Beach. The coastal strand/beach habitat within the BSA is comprised of a broad, gradually sloping sandy beach area which is located to the west of the vegetated areas within the BSA and extends to the intertidal zone. Due to regular inundation of saltwater from high tides and wave activity, wind, and dynamic soils, the coastal strand/beach, does not support vegetation; however, deposits of kelp detritus and drift wood from extreme high tide periods provide cover for a variety of avifauna and marine invertebrates in portions of this habitat. The amount of available habitat from these deposits of kelp detritus and drift wood debris fluctuates throughout the year based on ocean tides and wave activity.

Dune Mat. Dune Mat (*Abronia latifolia-Ambrosia chamissonis* Herbaceous Alliance) occurs in sand dunes of coastal river bars, river mouths, and spits along the immediate coastline, with soils that are composed of coarse to fine-textured sands. According to MCVII, this alliance is characterized by yellow sand verbena (*Abronia latifolia*) and/or beach bur (*Ambrosia chamissonis*) mixed with other perennial herbs, grasses, and low shrubs to form a low canopy (Sawyer et al., 2009); yellow sand verbena was not observed within the BSA. Dune Mat was observed west of the mouth of Morro Creek, as well as immediately south of the beach access trail. Dune Mat vegetation was generally sparse however, density of component species was variable. As such, two locations within the Dune Mat were assessed to capture the variability of component species. Within the Dune Mat vegetation located north of the beach access trail, the quantitative vegetation assessment (Attachment 2: data sheet MB0005) identified native and non-native herb species with beach-bur as the dominant species. Component species included sea rocket (*Cakile maritima*) and fat-hen (*Atriplex prostata*). Within the Dune Mat vegetation located south of the beach access trail, the quantitative vegetation assessment (Attachment 2: data sheet MB0004) identified native and non-native herbs and grasses with sticky sand verbena (*Abronia maritima*) as the dominant species. Component species included beach bur, sea rocket, European beach grass (*Ammophila arenaria*), and ice plant (*Carpobrotus edulis*).

European Beach Grass Swards. European Beach Grass Swards (*Ammophila arenaria* Semi-Natural Herbaceous Stands) occur in dunes of coastal bars, foredunes, river mouths, and spits along the immediate coastline. This alliance is characterized by European beach grass as dominant in the herbaceous layer; canopy is intermittent to continuous (Sawyer et al., 2009). European Beach Grass Swards were observed on the western portion of the BSA, bordering the Coastal Strand/Beach. The quantitative vegetation assessment (Attachment 2: data sheet MB0003) identified European beach grass as the dominant species within this vegetation type. Component species were limited to a single species consisting of telegraph weed (*Heterotheca grandiflora*).

Mixed Riparian/Wetland. A distinct stand of vegetation comprised of an assemblage of riparian and wetland species was observed at the mouth of Morro Creek, in the northern portion of the BSA. A quantitative vegetation assessment (Attachment 2: data sheet MB0006) was conducted; however, there is no MCVII treatment for this assemblage of species, and as such, Padre designated this stand of vegetation as Mixed Riparian/Wetland. The quantitative vegetation assessment identified a variable mix of native and non-native shrub and herbaceous species, such as arroyo willow (*Salix lasiolepis*), white

sweet clover (*Melilotus alba*), saltgrass (*Distichlis spicata*), fat-hen, marsh baccharis (*Baccharis glutinosa*), beach bur, sea rocket, and ice plant.

Mixed Dune. A distinct stand of vegetation comprised of an assemblage of upland species was observed in the central portion of the BSA. This area has been the focus of past restoration efforts, and existing vegetation varies in degree of establishment. A quantitative vegetation assessment (Attachment 2: data sheet MB0002) was conducted, however, there is no MCVII treatment for this assemblage of species, and as such, Padre designated this stand of vegetation as Mixed Dune. The quantitative vegetation assessment identified a mix of native and non-native shrub and herbaceous species. Component species include ice plant, Blochman's groundsel (*Senecio blochmaniae*), beach bur, coyote brush (*Baccharis pilularis*), and ripgut brome (*Bromus diandrus*).

Arroyo Willow Thicket. Arroyo Willow Thicket (*Salix lasiolepis* Shrubland alliance) occurs along stream banks and benches, slope seeps, and stringers along drainages. This alliance is characterized by arroyo willow as dominant or co-dominant within the shrub or tree canopy, canopy is open to continuous and the herbaceous layer is variable (Sawyer et al., 2009). Arroyo Willow Thicket was observed within the channel and on the banks of Morro Creek, in the northern portion of the BSA. The quantitative vegetation assessment (Attachment 2: data sheet MB0007) identified native and non-native tree, shrub, and herbaceous species with Arroyo willow as the dominant species. Component species include Western sycamore (*Platanus racemosa*), marsh baccharis, blackberry (*Rubus ursinus*), fat hen, and poison hemlock (*Conium maculatum*).

Ornamental. Several stands of trees have been planted as windrows within the Project site, and within this report, are collectively referred to as Ornamental vegetation. A quantitative vegetation assessment (Attachment 2: data sheet MB0001) was conducted; however, there is no MCVII treatment for this assemblage of species, and as such, Padre designated this stand of vegetation as ornamental. Stands of trees often provide suitable nesting habitat for birds and overwintering habitat for monarch butterflies. The quantitative vegetation assessment (Attachment 2: data sheet MB0001) identified native and non-native tree species including Monterey cypress (*Hesperocyparis macrocarpa*), Monterey pine (*Pinus radiata*), and eucalyptus (*Eucalyptus globulus*) as the dominant components of this Ornamental vegetation. Component species include silver bush lupine (*Lupinus chamissonis*), California croton (*Croton californica*), ice plant, and Russian thistle (*Salsola tragus*).

Ruderal. For the purposes of this report, Ruderal habitat is a term used to describe those areas that have been disturbed by past land-use practices and/or recent ground disturbance. Ruderal habitat occurs along the roadways, within the abandoned areas of the power plant property, and adjacent to commercial structures within the BSA. This vegetation type consists almost entirely of disturbance-adapted weedy species including redstem filaree (*Erodium cicutarium*), ripgut grass, black mustard (*Brassica nigra*), and iceplant.

Developed. For the purposes of this report, Developed areas consist of developed lands. Generally, developed land is a term that describes areas where the land surface has been modified for commercial, residential, industrial, or infrastructure use such as buildings, parking lots, and paved roads. Developed lands typically do not support vegetative cover due to the presence of impervious surfaces. Developed areas within the BSA include office facilities, paved and unpaved roads, and commercial structures.

LEGEND:

- (#) Vegetation Rapid Assessment Point (VRAP)
- Biological Survey Area (BSA)

VegetationType

- AWT - Arroyo Willow Thicket
- CSB - Coastal Strand/Beach
- DEV - Developed
- DM - Dune Mat
- EBG - European Beach Grass
- MD - Mixed Dune
- MXR - Mixed Riparian
- OR - Ornamental
- RU - Ruderal

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Source: NAIP Imagery 2014
Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
Notes: This map was created for informational and display purposes only.

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: DYNEGY MORRO BAY MARINE TERMINAL SAN LUIS OBISPO COUNTY, CA
PROJECT NUMBER: 1502-2741
DATE: December 2015

BIOLOGICAL FIELD SURVEY RESULTS

FIGURE 4-1

Z:\Kristin\GIS Maps\Map Project\Dynegy Morro Bay Power Plant Marine Terminal\Decommissioning\Biological Resources Survey Results Map.mxd GTaylor 12/4/2015

4.3 REGIONALLY OCCURRING SENSITIVE HABITATS

Based on information obtained from the desktop review, several habitats occur in the region that are afforded protection by a Federal, State, or local authority, and may support special-status plants and wildlife. For the purpose of this survey, sensitive habitats include the following:

- Critical Habitat defined by the FESA under Section 3, and protected by the USFWS and/or NMFS;
- Special-status natural communities defined by the CESA and protected by the CDFW and/or local agencies;
- Sensitive habitats protected by the County of San Luis Obispo; and/or
- Rare habitats protected by local professional organizations and/or the scientific community.

Sensitive habitats occurring within 5.0 mi (8.0 km) of the BSA are illustrated in Figure 4-2 - Regionally Occurring Sensitive Habitats and further discussed in the following sections.

4.3.1 CDFW Natural Communities of Special Concern

CDFW has created the List of Vegetation Alliances and Associations (Natural Communities List) (CDFW, 2015b), to assist in the identification of Natural Communities that are considered to be a high priority for conservation. The Natural Communities List includes CNDDB Natural Community occurrences (i.e., Holland types) and vegetation types classified according to the current state standard MCVII nomenclature. All Natural Community occurrences in the CDFW Natural Communities List (CDFW, 2015b) have a corresponding G (global) and S (state) rank, according their degree of imperilment (as measured by rarity, trends, and threats) using the Heritage Methodology.

Based on the CNDDB query conducted during the desktop review, the following Natural Communities of Special Concern have been documented within the region: Central Dune Scrub, Central Maritime Chaparral, Coastal Brackish Marsh, and Northern Coastal Salt Marsh. Based on the September 2015 field surveys, Natural Communities of Special Concern, Central Dune Scrub and Central Coast Riparian Scrub (Holland, 1986) were identified within the BSA. These Natural Communities were described in Section 4.2 as Mixed Dune and Arroyo Willow Thicket based on MCVII nomenclature.

4.3.2 USFWS Critical Habitat

California Red-Legged Frog Critical Habitat. USFWS-designated Critical Habitat for CRLF was finalized in March of 2001 for core areas selected based on the following criteria: 1) areas that are occupied by CRLF; 2) areas where populations of CRLF appear to be source populations; 3) areas that provide connectivity between source populations; and 4) areas that represent areas of ecological significance (USFWS, 2002). Critical habitat may include an area that is not currently occupied by the species, but is important for its recovery. Further, CRLF are ultimately protected if occurring outside designated Critical Habitat areas. CRLF Critical Habitat is located within 1.0 mi (1.6 km) to the northeast of the BSA, but does not extend into the BSA.

Steelhead Critical Habitat. Steelhead are Federally listed as Threatened under the FESA. NMFS is responsible for designating Critical Habitat for this species. The South Central California Coast Distinct Population Segment (DPS) is defined as naturally spawned anadromous populations below impassable barriers from Pajaro Creek south to, but not including, Santa Maria River. Steelhead Critical Habitat includes Morro Creek within the BSA.

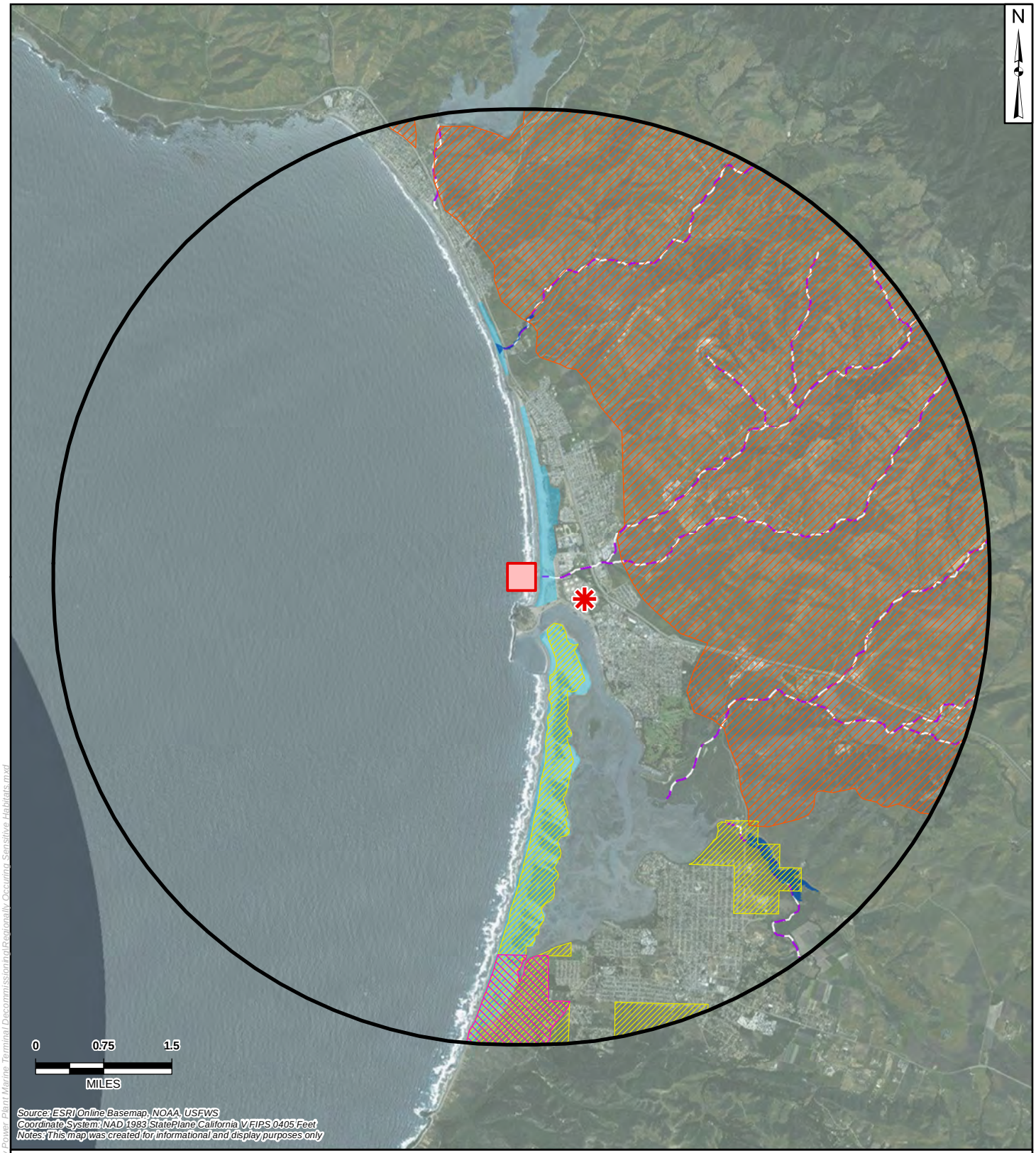
Tidewater Goby Critical Habitat. Tidewater goby are Federally listed as Endangered under the FESA, and USFWS-designated Critical Habitat includes all locations where this species is known or likely to occur. The nearest tidewater goby Critical Habitats, referred to as SLO-8 and SLO-9, are located

within Toro Creek approximately 2.5 mi (4.0 km) northwest of the BSA and Los Osos Creek, approximately 3.8 mi (6.2 km) southeast of the BSA. Critical Habitat does not extend into the BSA.

Western Snowy Plover Critical Habitat. The Pacific Coast population of western snowy plover is Federally listed under the FESA as Threatened. USFWS-designated Critical Habitat for this species was finalized in June of 2012 for areas along the coasts of California, Oregon, and Washington. Critical Habitat areas for western snowy plover consist of sandy beaches, dune systems immediately inland of an active beach face, salt flats, and mud flats, that were selected based on the following criteria: 1) areas that will allow the species to move and expand; 2) known breeding areas; 3) known wintering areas; 4) habitat that is unique or that provides interchange between otherwise widely separated units; 5) areas to maintain connectivity of habitat; and 6) areas in which restoration activities will occur. Western snowy plover Critical Habitat occurs within the coastal dune habitat within the BSA.

Morro Shoulderband Snail Critical Habitat. USFWS-designated Critical Habitat for Morro shoulderband snail was finalized in March of 2001. Critical Habitat designated by the USFWS includes these elements: 1) sand or sandy soils which are necessary for reproduction 2) to permit movement, no greater than a ten percent slope, 3) and native coastal dune scrub vegetation. Morro shoulderband snail Critical Habitat occurs within 0.5 mi (0.8 km) southeast of the BSA, but does not extend into the BSA.

Morro Bay Kangaroo Rat Critical Habitat. USFWS-designated Critical Habitat for Morro Bay Kangaroo Rat (*Dipodomys heermanni morroensis*) was finalized August 1977. The Critical Habitat was originally delineated because it contained a significant population of the species. Since the designation, the population has decreased and is now restricted to an area of approximately five square miles, generally corresponding to the distribution of Baywood fine sand, south and southeast of Morro Bay. The species has not been observed in the wild since 1986. Morro Bay Kangaroo Rat Critical Habitat occurs 4.0 mi (6.4 km) south of the BSA within Montaña De Oro State Park. Critical Habitat does not extend into the BSA.



Power Plant Location

5 Mile Buffer of the Project Area

Project Area

USFWS Critical Habitat

California red-legged frog (*Rana draytonii*)

Morro Bay Kangaroo Rat (*Dipodomys heermanni morroensis*)

Morro Shoulderband Snail (*Helminthoglypta walkeriana*)

Tidewater Goby (*Eucyclogobius newberryi*)

Western snowy plover (*Charadrius alexandrinus nivosus*)

Steelhead Trout (*Oncorhynchus mykiss*)

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME:
DYNEGY MORRO BAY POWER PLANT
MARINE TERMINAL DECOMMISSIONING

PROJECT NUMBER: 1502-2741

DATE: December 2015

REGIONALLY OCCURRING SENSITIVE HABITATS

FIGURE 4-2

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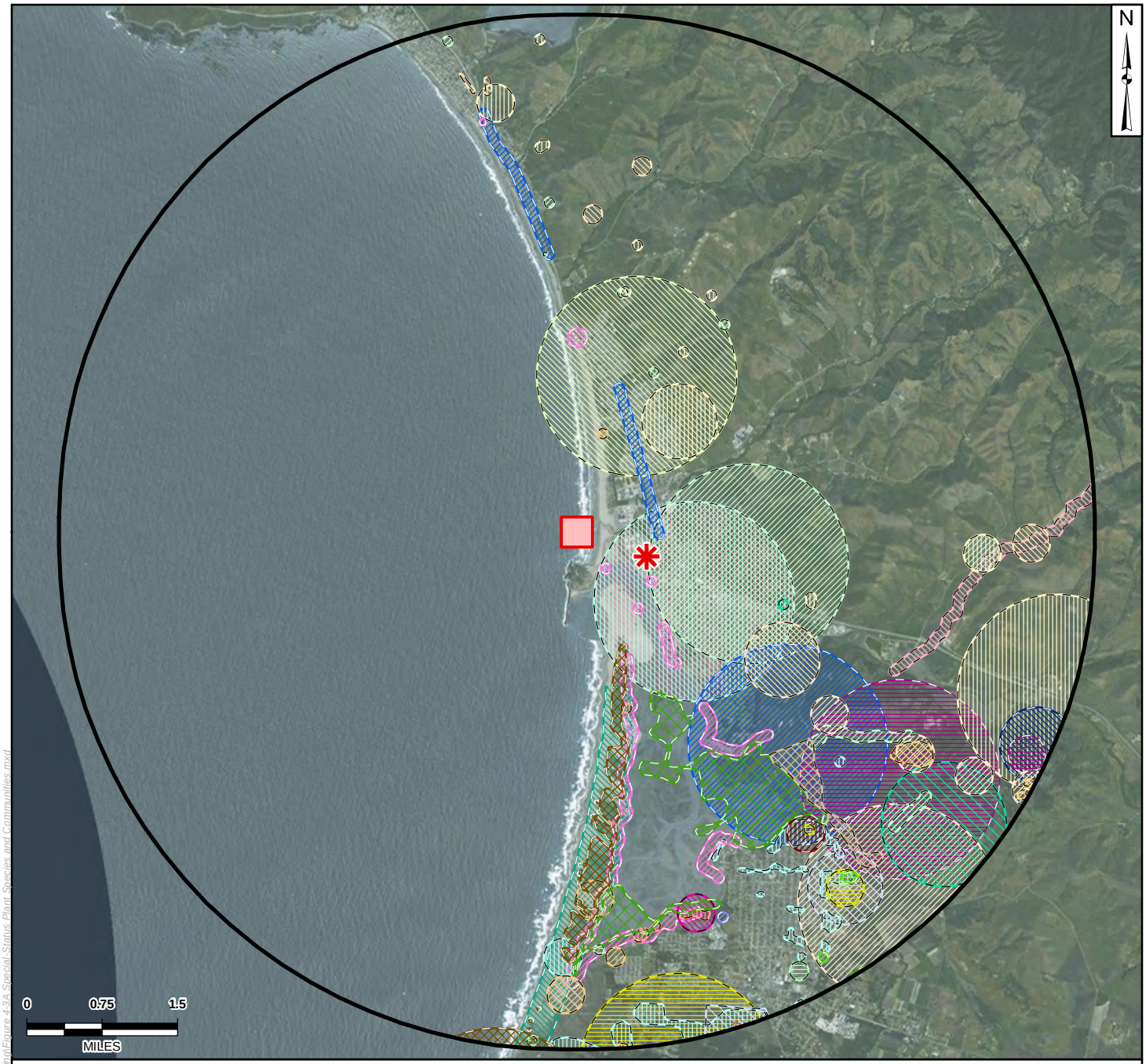
4.4 REGIONALLY OCCURRING SPECIAL-STATUS SPECIES

4.4.1 Plants

Special-status plants are either listed as Endangered or Threatened under FESA or CESA, considered rare under the California Native Plant Protection Act, or considered rare (but not legally listed) by resources agencies, professional organizations, and the scientific community. Special-status plants are defined as follows:

- Plants listed or proposed for listing as Threatened or Endangered under the FESA (50 CFR 17.12 for listed plants and various notices in the Federal Register for proposed species);
- Plants that are candidates for possible future listing as Threatened or Endangered under the FESA (Federal Register Vol. 67, No. 114, pp.40657-4067, June 13, 2002);
- Plants that meet the definitions of rare or endangered species under the CEQA (State CEQA Guidelines, Section 15380);
- Plants considered by the CNPS to be "rare, threatened, or endangered" in California (Ranks 1B and 2 in CNPS, 2011);
- Plants listed by CNPS as plants about which we need more information and plants of limited distribution (Ranks 3 and 4 in CNPS, 2011);
- Plants listed or proposed for listing by the State of California as Threatened or Endangered under the CESA (14 CCR 670.5);
- Plants listed under the California Native Plant Protection Act (California Fish and Game Code 1900 et seq.);
- Plants considered sensitive by other Federal agencies (i.e., U.S. Forest Service, Bureau of Land Management), State and local agencies or jurisdictions; or
- Plants considered sensitive or unique by the scientific community or occurring at the limits of their natural range (State CEQA Guidelines).

The desktop review and field surveys found that several special-status plant species have been recorded within the Project region and the BSA may provide suitable habitat for potentially occurring special-status species. Table 4-1 - Special-Status Plant Species of the Project Region lists these species, their current status, habitat description, nearest known occurrence to the BSA, as well as the potential for occurrence within the BSA. Figure 4-3A – Regionally Occurring Special-Status Plant Species and Communities illustrates special-status plant species and CDFW Natural Communities occurring within a 5.0 mi (8.0 km) radius from the BSA.



Power Plant Location

5 Mile Buffer of the Project Area

Project Area

CDFW Natural Communities

Central Dune Scrub

Central Maritime Chaparral

Coastal Brackish Marsh

Northern Coastal Salt Marsh

CNDDB Occurence

Arroyo de la Cruz manzanita

Betty's dudleya

Blochman's dudleya

Blochman's leafy daisy

California seablite

Cambria morning-glory

Coulter's goldfields

Eastwood's larkspur

Hardham's evening-primrose

Indian Knob mountainbalm

Jones' layia

Miles' milk-vetch

Morro manzanita

Oso manzanita

San Joaquin spearscale

San Luis Obispo owl's-clover

beach spectaclepod

coast woolly-heads

coastal goosefoot

dacite manzanita

marsh sandwort

popcorn lichen

salt marsh bird's-beak

southern curly-leaved monardella

splitting yarn lichen

twisted horsehair lichen

Source: ESRI Online Basemap, NOAA, CNDDB
Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
Notes: This map was created for informational and display purposes only

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME:
DYNEGY MORRO BAY POWER PLANT
MARINE TERMINAL DECOMMISSIONING

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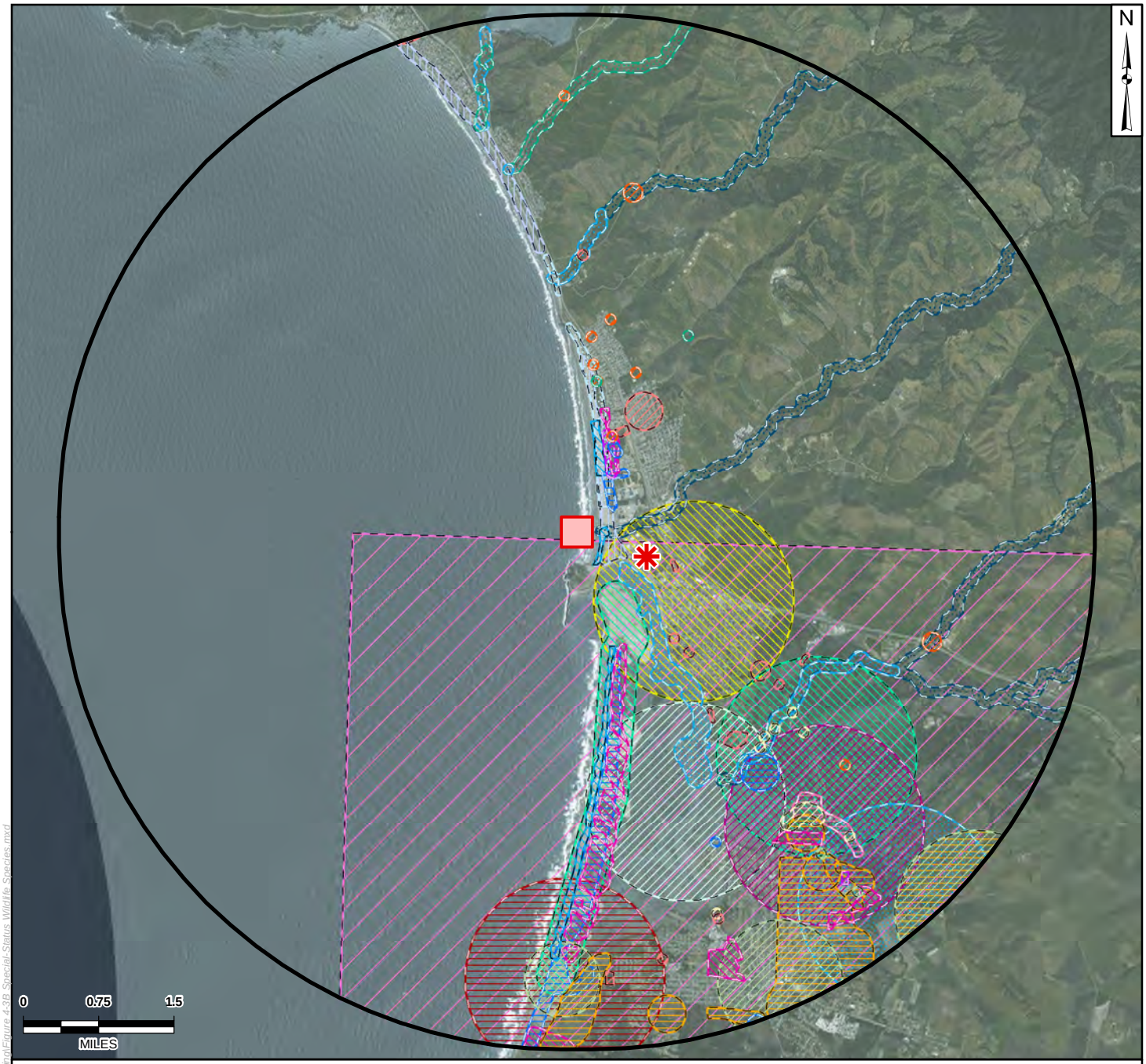
DATE: December 2015

SPECIAL-STATUS PLANT SPECIES AND COMMUNITIES

FIGURE
4-3A

Y:\Admin\GIS Maps\Map Projects\Dynegy Morro Bay Power Plant Marine Terminal Decommissioning\Figure 4-3A Special-Status Plant Species and Communities.mxd



- Power Plant Location
- 5 Mile Buffer of the Project Area
- Project Area

CNDDB Occurence

- California black rail
- California clapper rail
- California red-legged frog
- Cooper's hawk
- Morro Bay blue butterfly
- Morro Bay kangaroo rat
- Morro shoulderband snail
- big free-tailed bat
- black legless lizard
- coast horned lizard
- globose dune beetle
- California brackish water snail
- monarch - California overwintering population
- obscure bumble bee
- pallid bat
- sandy beach tiger beetle
- silvery legless lizard
- steelhead - south-central California coast DPS
- tidewater goby
- western pond turtle
- western snowy plover

Source: ESRI Online Basemap, NOAA, CNDDB
Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
Notes: This map was created for informational and display purposes only

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PROJECT NAME:
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MARINE TERMINAL DECOMMISSIONING

PROJECT NUMBER: 1502-2741

DATE: December 2015

SPECIAL-STATUS WILDLIFE SPECIES

FIGURE 4-3B

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Table 4-1 – Special-Status Plant Species of the Project Region

Common Name ***Scientific Name*** *(Arranged alphabetically by common name)*	**Regulatory Status[1]**	**Habitat Description** *As described by CDFW, 2015.*	**Nearest Documented Occurrence**	Habitat Present	Observed in BSA	**Potential for Occurrence**
Arroyo de la Cruz manzanita *Arctostaphylos cruzensis*	Rank 1B.2	Broadleafed upland forest, coastal bluff scrub, closed-cone coniferous forest, chaparral, coastal scrub, valley and foothill grassland.	Southwest part of Cerro Cabrillo, Morro Bay, approximately 2.7 mi (4.3 km) southeast of the BSA (CDFW, 2015b).	X		**X**
Beach spectaclepod *Dithyrea maritima*	ST, Rank 1B.1	Coastal dunes and coastal scrub.	Morro Bay sand spit, Montaña de Oro State Park, approximately 2.18 mi (3.5 km) southeast of the BSA (CDFW, 2015b).	X		**X**
Betty's dudleya *Dudleya abramsii* ssp. *bettinae*	Rank 1B.2	Chaparral, coastal scrub, valley and foothill grassland on rocky barren exposures of serpentine.	On a hill near the mouth of Chorro Creek, approximately 1.82 mi (2.9 km) southeast of the BSA (CDFW, 2015b).	X[2]		
Blochman's dudleya *Dudleya blochmaniae* ssp. *blochmaniae*	Rank 1B.1	Coastal bluff scrub, chaparral, coastal scrub, valley and foothill grassland with shallow rocky slopes in clays over serpentine.	Hillsides between Morro Creek Road and South Bay Boulevard, north of Highway 1, Morro Bay, approximately 0.57 mi (0.9 km) southeast of the BSA (CDFW, 2015b).	X[2]		
Blochman's groundsel *Senecio blochmaniae*	Rank 4.2	Coastal sand dunes, sandy floodplains.	**Observed by Padre within the BSA during 2015 field surveys.**	X	X	**X**
Blochman's leafy daisy *Erigeron blochmaniae*	Rank 1B.2	Coastal dunes, coastal scrub. Endemic to San Luis Obispo County.	Between Cloisters Development and the beach, Morro Bay, approximately 0.79 mi (1.3 km) northeast of the BSA (CDFW, 2015b).	X		**X**

Common Name ***Scientific Name*** *(Arranged alphabetically by common name)*	**Regulatory Status[1]**	**Habitat Description** *As described by CDFW, 2015.*	**Nearest Documented Occurrence**	Habitat Present	Observed in BSA	**Potential for Occurrence**
California seablite *Suaeda californica*	FE, Rank 1B.1	Coastal salt marshes and swamps.	North shore of the mouth of Morro Bay, just east of Morro Rock, approximately 0.2 mi (0.3 km) southeast of the BSA (CDFW, 2015b).	X		**X**
Cambria morning-glory *Calystegia subacaulis* ssp. *episcopalis*	Rank 4.2	Chaparral and cismontane woodland.	Just east of Morro Bay along Highway 1, about 0.6 mi (1.0 km) north of the summit of Black Hill, approximately 1.94 mi (3.1 km) southeast of the BSA (CDFW, 2015b).			
Coast woolly-heads *Nemacaulis denudata* var. *denudata*	Rank 1B.2	Coastal dunes.	Coastal dunes of Montaña de Oro State Park, approximately 1.4 mi (2.3 km) southeast of the BSA (CDFW, 2015b)	X		**X**
Coastal goosefoot *Chenopodium littoreum*	Rank 1B.2	Coastal dunes.	Sharks Inlet, south Morro Bay Shore, Montaña De Oro State Park, approximately 3.96 mi (6.4 km) southeast of the BSA (CDFW, 2015b).	X		**X**
Coulter's goldfields *Lasthenia glabrata* ssp. *coulteri*	Rank 1B.1	Coastal salt marsh, playas, vernal pools.	Sweet Springs Nature Preserve, southern end of Morro Bay, approximately 3.6 mi (5.8 km) southeast of the BSA (CDFW, 2015b).	X		**X**
Dacite manzanita *Arctostaphylos tomentosa* ssp. *daciticola*	Rank 1B.1	Chaparral, cismontane woodland.	Lower north slope of Hollister Peak, east of Morro Bay, approximately 4.47 mi (7.2 km) southeast of the BSA (CDFW, 2015b).			
Eastwood's larkspur *Delphinium parryi* ssp. *eastwoodiae*	Rank 1B.2	Chaparral, valley and foothill grassland.	Morro Bay near Del Mar Park, approximately 0.47 mi (0.8 km) northeast of the BSA (CDFW, 2015b).			

Common Name ***Scientific Name*** *(Arranged alphabetically by common name)*	**Regulatory Status[1]**	**Habitat Description** *As described by CDFW, 2015.*	**Nearest Documented Occurrence**	Habitat Present	Observed in BSA	**Potential for Occurrence**
Hardham's evening-primrose *Camissoniopsis hardhamiae*	Rank 1B.2	Closed-cone coniferous forest, chaparral in serpentine soils.	North of the intersection of Buckskin Drive and Martingale Avenue in Los Osos, approximately 4.97 mi (8.0 km) southeast of the BSA (CDFW, 2015b).			
Indian Knob mountainbalm *Eriodictyon altissimum*	FE, SE, Rank 1B.1	Maritime chaparral, cismontane woodland, coastal scrub. Endemic to San Luis Obispo County.	Morro Dunes Ecological Reserve in Los Osos, approximately 4.93 mi (8.0 km) southeast of the BSA (CDFW, 2015b).	X		**X**
Jones' layia *Layia jonesii*	Rank 1B.2	Chaparral and grasslands areas with clay and serpentine outcrops and soil.	East of Morro Strand State Beach and community of Morro Bay, approximately 0.91 mi (1.5 km) northeast of the BSA (CDFW, 2015b).			
Marsh sandwort *Arenaria paludicola*	FE, SE, Rank 1B.1	Marshes and swamps.	Sweet Springs Audubon Nature Preserve in Los Osos, approximately 3.86 mi (6.2 km) southeast of the BSA (CDFW, 2015b).	X		**X**
Miles' milk-vetch *Astragalus didymocarphus* var. *milesianus*	Rank 1B.2	Coastal scrub.	Morro Bay, approximately 0.15 mi (0.2 km) southeast of the BSA (CDFW, 2015b).	X		**X**
Monterey cypress	Rank 1B.2	Closed-cone pine forest	**Observed by Padre within the BSA during 2015 field surveys.**	X	X	**X**
Monterey pine	Rank 1B.2	Closed-cone pine forest	**Observed by Padre within the BSA during 2015 field surveys.**	X	X	**X**
Morro manzanita *Arctostaphylos morroensis*	FT, Rank 1B.2	Chaparral, cismontane woodland, coastal dunes, coastal scrub in sandy loam.	In the vicinity of Baywood Park, west of Los Osos Creek, approximately 3.18 mi (5.1 km) southeast of the BSA (CDFW, 2015b).	X		**X**

Common Name ***Scientific Name*** *(Arranged alphabetically by common name)*	**Regulatory Status[1]**	**Habitat Description** *As described by CDFW, 2015.*	**Nearest Documented Occurrence**	Habitat Present	Observed in BSA	**Potential for Occurrence**
Mouse-gray dudleya *Dudleya abramsii* ssp. *murina*	Rank 1B.3	Chaparral, cismontane woodland, valley and foothill grassland on rocky barren exposures of serpentine rock/soils.	Chevron Estero property, approximately 2.5 mi (4.0 km) northwest of the BSA (Padre, 2003).			
Oso manzanita *Arctostaphylos osoensis*	Rank 1B.2	Chaparral, cismontane woodland, narrowly endemic to mountains north of Los Osos Valley, San Luis Obispo County.	North side of Los Osos Valley, approximately 2.84 mi (4.6 km) southeast of the BSA (CDFW, 2015b).			
Popcorn lichen *Cladonia firma*	Rank 2B.2	Maritime habitats, stabilized dunes along the coast.	Morro Bay State Park, across from Los Osos Middle School and west of Baywood Park, approximately 4.1 mi (6.6 km) southeast of the BSA (CDFW, 2015b).	X		**X**
Salt marsh bird's-beak *Chloropyron maritimum* ssp. *maritimum*	FE, SE, Rank 1B.2	Coastal salt marsh, coastal dunes.	Montaña de Oro State Park, north end of Morro Bay sand spit, approximately 1.59 mi (2.6 km) southeast of the BSA (CDFW, 2015b).	X		**X**
San Joaquin spearscale *Atriplex joaquinana*	Rank 1B.2	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland in alkaline soil.	Near Morro Bay, approximately 0.15 mi (0.2 km) southeast of the BSA (CDFW, 2015b).			
San Luis Obispo owl's-clover *Castilleja densiflora* var. *obispoensis*	Rank 1B.2	Meadows and seeps, valley and foothill grassland, sometimes in serpentine soil.	One mile north of Morro Bay, approximately 0.55 mi (0.9 km) northeast of the BSA (CDFW, 2015b).			

Common Name ***Scientific Name*** *(Arranged alphabetically by common name)*	**Regulatory Status[1]**	**Habitat Description** *As described by CDFW, 2015.*	**Nearest Documented Occurrence**	Habitat Present	Observed in BSA	**Potential for Occurrence**
Southern curly-leaved monardella *Monardella sinuata* ssp. *sinuata*	Rank 1B.2	Coastal dunes, coastal scrub, chaparral, cismontane woodlands.	Baywood Park, northeast of Los Osos Middle School, approximately 3.85 mi (6.2 km) southeast of the BSA (CDFW, 2015b).	X		**X**
Splitting yarn lichen *Sulcaria isidiifer*	Rank 1B.1	Chaparral, cismontane woodland.	Elfin Forest, at the southeast end of Morro Bay, approximately 3.49 mi (5.6 km) southeast of the BSA (CDFW, 2015b).			
Sticky sand verbena *Abronia maritima*	Rank 4.2	Coastal dunes.	**Observed by Padre within the BSA during 2015 field surveys.**	X	X	**X**
Twisted horsehair lichen *Bryoria spiralifera*	Rank 1B.1	North coast coniferous forest.	Elfin Forest, ridge north of Baywood Park, south end of Morro Bay, approximately 3.37 mi (5.4 km) southeast of the BSA (CDFW, 2015b).			

Notes:
[1]Status Codes:
FE Federal Endangered (USFWS)
FC Federal Species of Concern (USFWS)
SE State Endangered (CDFW)
ST State Threatened (CDFW)
SR State Rare (CDFW)
Rank 1B Plants Rare, Threatened, or Endangered in California and Elsewhere (CNPS)
0.1 Seriously Endangered in California
0.2 Fairly Endangered in California
0.3 Not very Endangered in California
Rank 2 Plants rare, Rare, Threatened, or Endangered in California, but More Common Elsewhere (CNPS)
Rank 4 Plants of Limited Distribution – A Watch List (CNPS)
G Global Rank
S State Rank

[2] Although coastal scrub habitat is present within the BSA, suitable ecological conditions consisting of serpentine rock outcroppings/soils are absent. Therefore, these species are not expected to occur within the BSA.

Field surveys were completed in September which falls within the blooming periods for some, but not all, of the special-status plants occurring within 5.0 mi (8.0 km) of the BSA. Table 4.2 – Blooming Periods for Potentially Occurring Special-Status Plants, presents the blooming periods for special-status plant species that occur within the habitat types observed in the BSA. The presence, absence, and abundance of special-status plants associated with the habitats occurring within the BSA can vary based on annual fluctuations in precipitation, fire, non-native and/or invasive species, human disturbance, agricultural operations, and/or seed banks that can stay dormant for several years. Additional botanical surveys are recommended during the appropriate blooming period to determine the presence of special-status plants that have potential to occur within the BSA.

Table 4-2. Blooming Periods for Potentially Occurring Special-Status Plants

	Blooming Period[1] (month)											
Common Name	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Arroyo de la Cruz manzanita	■	■	■									■
Beach spectaclepod			■	■	■	■	■	■				
Blochman's groundsel					■	■	■	■	■	■	■	
Blochman's leafy daisy						■	■	■	■	■		
California seablite							■	■	■	■		
Coast woolly-heads			■	■	■	■	■	■	■			
Coastal goosefoot				■	■	■	■	■	■	■		
Coulter's goldfields		■	■	■	■	■						
Indian knob mountainbalm			■	■	■	■						
Marsh sandwort					■	■	■	■				
Miles' milk-vetch			■	■	■	■						
Morro manzanita	■	■	■									■
Popcorn lichen[2]	-	-	-	-	-	-	-	-	-	-	-	-
Salt marsh bird's-beak					■	■	■	■	■	■		
Southern curly-leaved monardella				■	■	■	■	■	■			
Sticky sand verbena		■	■	■	■	■	■	■	■	■	■	■

Notes:
[1]Blooming period information was provided by Baldwin et al., 2012 and CNPS, 2015.
[2]Non-blooming species
[3]Species in italics are detectable outside of breeding period.

During 2015 field surveys, sticky sand verbena and Blochman's groundsel was observed within the BSA. No additional special-status plant species were identified within the BSA at that time. However, based on presence of suitable habitat, the following special-status plant species have the potential to occur within the BSA: Arroyo de la Cruz manzanita, beach spectaclepod, Blochman's leafy daisy, California seablite, coast woolly-heads, coastal goosefoot, Coulter's goldfields, Indian Knob mountainbalm, marsh sandwort, Miles' milk-vetch, Morro manzanita, popcorn lichen, salt marsh bird's-

beak, and southern curly-leaved monardella. The following descriptions briefly discusses biological information and ecological requirements for sticky sand verbena and Blochman's groundsel.

Sticky sand verbena. Sticky sand verbena is a perennial herb in the Nyctaginaceae (four o'clock) family that occurs in coastal dune habitat and generally blooms between February and December. This species was observed by Padre biologists during 2015 field surveys throughout the foredune area of the BSA within the dune mat vegetation type, adjacent to the recreational beach area. This plant will not be impacted by the Project because the segment of pipeline that intersects this occurrence will be abandoned in place.

Blochman's groundsel. Blochman's groundsel is a shrub in the Asteraceae (sunflower) family that occurs in coastal dune and sandy floodplain habitats, and generally blooms between May and November. This species was observed by Padre biologists during 2015 field surveys within the mixed dune vegetation area of the BSA. This plant will not be impacted by the Project because the segment of pipeline that intersects this occurrence will be abandoned in place.

4.4.2 Wildlife

Special-status wildlife species are either listed as Endangered or Threatened under FESA or CESA, or considered rare by resources agencies, professional organizations, and the scientific community. For the purposes of this Report, special-status wildlife species are defined as follows:

- Animals listed or proposed for listing as Threatened or Endangered under the FESA (50 CFR 17.11 for listed animals and various notices in the Federal Register for proposed species);
- Animals that are candidates for possible future listing as Threatened or Endangered under the FESA (Federal Register Vol. 70, No. 90, pp. 24869-24934, May 11, 2005);
- Animals that meet the definitions of rare or endangered species under the CEQA (*State CEQA Guidelines*, Section 15380);
- Animal Species of Special Concern to the CDFW (CDFW, 2015b);
- Animals listed or proposed for listing by the State of California as Threatened and Endangered under the CESA (14 CCR 670.5);
- Animal species that are fully protected in California (California Fish and Game Code, Section 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]);
- Animal species protected under the Marine Mammal Protection Act (as amended in 1994);
- Birds of Conservation Concern. Migratory and non-migratory bird species (beyond those already designated as federally Threatened or Endangered) that represent the USFWS highest conservation priorities in effort to draw attention to species in need of conservation action (USFWS, 2008);
- Birds on the CDFW Watch List include "Taxa to Watch" (Shuford and Gardali, 2008) 1) not on the current Special Concern list but were on previous lists and they have not been state listed under CESA; 2) were previously state or federally listed and now are on neither list; or 3) are on the list of "Fully Protected" species;
- The Western Bat Working Group is comprised of agencies, organizations and individuals interested in bat research, management and conservation from the 13 western states and provinces. Species designated as "High Priority" are imperiled or are at high risk of imperilment based on available information on distribution, status, ecology and known threats; or
- The CNDDB ranking element codes are part of the "Heritage Methodology" for special animals in which the CDFW is interested in tracking, regardless of their legal protection

status. It is a shorthand formula that provides information about the status of a taxon, both throughout its entire range and within California.

Table 4-3 - Special-Status Wildlife Species documented within 5.0 mi (8.0 km) of the BSA lists special-status wildlife that have been documented within the Project region and/or may occur within the BSA based on presence of suitable habitat. Figure 4-3B illustrates special-status wildlife species occurring within a 5.0 mi (8.0 km) radius of the BSA.

Table 4-3. Special-Status Wildlife Species

Common Name ***Scientific Name***	**Status**	**General Habitat Description** *As described by CDFW, 2015.*	**Nearest Documented Occurrence**	Habitat Present	Observed in BSA	**Potential for**
Invertebrates						
Globose dune beetle *Coelus globosus*	G1G2, S1S2	Coastal sand dune habitat.	Immediately south of the mouth of Morro Creek to Morro Rock in the city of Morro Bay, approximately 0.07 mi (0.1 km) southeast of the BSA (CDFW, 2015b).	X		**X**
Mimic tryonia *Tryonia imitator*	G2, S2	Inhabits coastal lagoons, estuaries and salt marshes.	Los Osos Creek marsh, on east side of Morro Bay, near the intersection of South Bay Boulevard and Turri Road, approximately 3.21 mi (5.2 km) southeast of the BSA (CDFW, 2015b).	X		**X**
Monarch butterfly *Danaus plexippus*	G4T2T3, S2S3	Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress) with nectar and water sources nearby.	North of Surf Street, between Main Street and Morro Avenue in the city of Morro Bay, approximately 0.79 mi (1.3 km) southeast of the BSA (CDFW, 2015b).	X		**X**
Morro Bay blue butterfly *Plebejus icarioides moroensis*	G5T2, S2	Coastal dune scrub containing silver dune lupine (*Lupinus chamissonis).*	City of Morro Bay, approximately 0.15 mi (0.2 km) southeast of the BSA (CDFW, 2015b).	X		**X**
Morro shoulderband snail *Helminthoglypta walkeriana*	FE, G1, S1	Coastal dune and coastal scrub.	South end of Morro Strand State Beach, approximately 0.19 mi (0.3 km) northeast of the BSA (CDFW, 2015b).	X		**X**
Obscure bumble bee *Bombus caliginosus*	G4, S1S2		Morro Bay sand dunes within Montaña de Oro State Park, approximately 0.39 mi (0.6 km) southeast of the BSA (CDFW, 2015b).	X		**X**

Table 4-3. Special-Status Wildlife Species

Common Name ***Scientific Name***	**Status**	**General Habitat Description** *As described by CDFW, 2015.*	**Nearest Documented Occurrence**	Habitat Present	Observed in BSA	**Potential for**
Sandy beach tiger beetle *Cicindela hirticollis gravida*	G5T2, S1	Non-brackish water habitat.	Morro Strand Beach, approximately 0.08 mi (0.1 km) northeast of the BSA (CDFW, 2015b).	X		**X**
Fish						
South-central California coast steelhead *Oncorhynchus mykiss*	FT, CSC	Coastal streams.	Within Morro Creek along Highway 41, northeast of Highway 1, east of Morro Bay, approximately 0.04 mi (0.1 km) northeast of the BSA (CDFW, 2015b).	X		**X**
Tidewater goby *Eucyclogobius newberryi*	FE, CSC	Brackish water habitats.	Main channel of Morro Bay, 0.5 mi (0.8 km) east of Morro Rock, approximately 0.32 mi (0.5 km) southeast of the BSA (CDFW, 2015b).	X		**X**
Amphibians						
California red-legged frog *Rana draytonii*	FT, CSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation.	Natural dune wetland within Morro Strand State Beach, approximately 0.78 mi (1.3 km) northeast of the BSA (CDFW, 2015b).	X		**X**
Reptiles						
Black legless lizard *Anniella pulchra nigra*	CSC	Sandy dunes and soils within Morro Bay and Monterey Bay areas. Moist soil is essential	Non-specific location within 5.0 mi (8.0 km) of the BSA (CNDDB, 2015).	X		**X**
Blainville's horned lizard *Phrynosoma blainvillii*	CSC	Wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes.	Morro Strand State Beach, approximately 0.43 mi (0.7 km) northeast of the BSA (CDFW, 2015b).	X		**X**
Silvery legless lizard *Anniella pulchra pulchra*	CSC	Sandy soils, sparse vegetation.	In Los Osos, just northwest of the intersection of Santa Ysabel Avenue and 17th Street, approximately 3.77 mi (6.1 km) southeast of the BSA. (CDFW, 2015b).	X		**X**

Table 4-3. Special-Status Wildlife Species

Common Name ***Scientific Name***	**Status**	**General Habitat Description** *As described by CDFW, 2015.*	**Nearest Documented Occurrence**	Habitat Present	Observed in BSA	**Potential for**
Southwestern pond turtle *Actinemys pallida*	G3G4, S3, CSC	Ponds, marshes, rivers, streams, and irrigation ditches, usually with aquatic vegetation.	Alva Paul Creek, Morro Strand State Beach, approximately 1.3 mi (2.1 km) northeast of the BSA (CDFW, 2015b).	X		**X**
Birds						
Burrowing owl *Athene cunicularia*	CSC, M	Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation.	Chevron Estero property, approximately 2.5 mi (4.0 km) northwest of the BSA (Padre, 2015).	X		**X**
California black rail *Laterallus jamaicensis coturniculus*	ST, FP, M	Marshes, swamps, meadows.	Chorro Delta Marsh, Morro Bay State Park, approximately 2.5 mi (4.0 km) southeast of the BSA (CDFW, 2015b).	X		**X**
California clapper rail *Rallus longirostris obsoletus*	FE, SE, FP, M	Salt-water and brackish marshes.	Morro Bay estuary, approximately 1.71 mi (2.8 km) southeast of the BSA (CDFW, 2015b).	X		**1**
California horned lark *Eremophila alpestris actia*	WL, M	Grasslands with low-lying vegetation.	Chevron Estero property, approximately 2.5 mi (4.0 km) northwest of the BSA (Padre, 2014).			
Cooper's hawk *Accipiter cooperii*	WL, M, G5, S4	Found in riparian forest and nests in tall trees.	Baywood Park, approximately 2.62 mi (4.62 km) southeast of the BSA (CDFW, 2015b)	X		**X**
Ferruginous hawk (wintering and nest sites) *Buteo regalis*	WL, M	Open grasslands, sagebrush flats, desert scrub, low foothills and fringes of pinyon-juniper habitats.	Chevron Estero property, approximately 2.5 mi (4.0 km) northwest of the BSA (Padre, 2015).			
Golden eagle (nest sites) *Aquila chrysaetos*	FP, WL, BCC, M	Rolling foothills, mountain areas, sage-juniper flats, and desert. Nests in cliff-walled canyons or large trees in open areas.	Chevron Estero property, approximately 2.5 mi (4.0 km) northwest of the BSA (Padre, 2015).			
Loggerhead shrike *Lanius ludovicianus*	CSC, M	Open, brushy areas.	Chevron Estero property, approximately 2.5 mi (4.0 km) northwest of the BSA (Padre, 2015).	X		**X**

Table 4-3. Special-Status Wildlife Species

Common Name ***Scientific Name***	**Status**	**General Habitat Description** *As described by CDFW, 2015.*	**Nearest Documented Occurrence**	Habitat Present	Observed in BSA	**Potential for**
Peregrine falcon (nest sites) *Falco peregrinus anatum*	FP, BCC, M	Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds, or human-made structures.	Chevron Estero property, approximately 2.5 mi (4.0 km) northwest of the BSA (Padre, 2015).	X		**X**
Western snowy plover *Charadrius alexandrinus nivosus*	FT, CSC, M	Sandy beaches, salt pond levees and shores of large alkali lakes.	Atascadero State Beach at the north end of Morro Bay, approximately 0.12 mi (0.2 km) northeast of the BSA (CDFW, 2015b).	X		**X**
White-tailed kite (foraging and nest sites) *Elanus leucurus*	FP, M	Uncommon in open fields and marshes. Nests in trees.	Chevron Estero property, approximately 2.5 mi (4.0 km) northwest of the BSA (Padre, 2015).	X		**X**
Yellow warbler *Dendroica petechia*	CSC, BCC, M	Riparian plant associations in close proximity to water. Frequently found nesting and foraging in willow shrubs and thickets, and in other riparian plants.	Chevron Estero property, approximately 2.5 mi (4.0 km) northwest of the BSA (Padre, 2015).	X		**X**
Mammals						
Big free-tailed bat (roost sites) *Nyctinomops macrotis*	CSC	Crevices on cliff faces or mature forests.	Morro Bay State Park, approximately 3.5 mi (5.6 km) south of the BSA (CDFW, 2015b).			
Morro Bay kangaroo rat *Dipodomys heermanni morroensis*	FE, SE, FP	Coastal sage scrub on south side of Morro Bay.	Species is believed to be extinct. Nearest known occurrence is north of Santa Ysabel Avenue within the town of Los Osos, approximately 3.37 mi (5.4 km) southeast of the BSA (CDFW, 2015b).			
Pallid bat (roost sites) *Antrozous pallidus*	CSC	Deserts, grasslands, shrublands, woodlands, and forests, open dry habitats with rocky outcrops for roosting.	In the city of Morro Bay, approximately 0.15 mi (0.2 km) southeast of the BSA (CDFW, 2015b).			

Table 4-3. Special-Status Wildlife Species

Common Name *Scientific Name*	**Status**	**General Habitat Description** *As described by CDFW, 2015.*	**Nearest Documented Occurrence**	Habitat Present	Observed in BSA	**Potential for**

Status Codes:

FE	Federal Endangered (USFWS/NMFS)	SE	State Endangered (CDFW)
FT	Federal Threatened (USFWS/NMFS)	ST	State Threatened (CDFW)
CSC	California Species of Special Concern (CDFW)	BCC	Bird of Conservation Concern (USFWS)
M	Migratory Bird Treaty Act (USFWS)		
FP	Fully Protected (CDFW)		

CNDDB Conservation Status Element Ranks (CDFW)

G1/S1 Global/State Rank, less than 6 viable element occurrences (EOs) OR less than 1,000 individuals OR less than 2,000 acres. Critically Imperiled– At very high risk of extinction or elimination due to extreme rarity, very steep declines, or other factors.

G2/S2 Global/State Rank, 6-20 EOs OR 1,000-3,000 individuals OR 2,000-10,000 acres. Imperiled – At high risk of extinction or elimination due to very restricted range, very few populations or occurrences, steep declines, or other factors.

G3/S3 Global/State Rank, 21-80 EOs or 3,000-10,000 individuals OR 10,000-50,000. Vulnerable – At moderate risk of extinction or elimination due to a restricted range, relatively few populations or occurrences, recent and widespread declines, or other factors.

G4/S4 Global/State Rank. Apparently secure - this rank is clearly lower than S3 but factors exist to cause some concern; i.e. there is some threat, or somewhat narrow habitat

S5/G5 Global/State Rank. Common, widespread, and abundant. Population or stand demonstrably secure to ineradicable due to being commonly found in the world

[1] Current distribution is limited to San Francisco Bay

Based on the desktop review and field surveys, the BSA may provide suitable habitat with potential to support several special-status wildlife species. The proposed impact area is located within a portion of the pipeline corridor within the Coastal Strand/Beach vegetation type; however, species typically associated with other habitat types existing throughout the BSA may utilize the proposed impact area during movement throughout the region and/or seasonal changes to the flow pattern of Morro Creek. The following discussion provides general descriptions of wildlife species with the potential to occur within the proposed impact area.

Invertebrates

Globose dune beetle. Globose dune beetle inhabits coastal sand dune and foredune habitats from Sonoma County south to Mexico. It burrows beneath the sand surface and is most common beneath dune vegetation. This species has been observed south of the BSA and north of Morro Rock on Morro Strand State Beach (CDFW, 2015b). Focused surveys have not been conducted for globose dune beetle within the BSA and this species was not observed during the September 2015 field survey; however, due to the presence of suitable habitat within the proposed impact area, as well as nearby occurrences, this species has the potential to occur within the proposed impact area.

Mimic tryonia. Mimic tryonia is a species of mollusk that inhabits permanently inundated brackish coastal habitats, and are known to subsist in a variety of sediment types and salinities. This species has been documented within the Morro Bay Estuary, approximately 3.2 mi (5.1 km) southeast of the BSA (CNDDB, 2015). Focused surveys have not been conducted for mimic tryonia within the BSA and there is limited information available on the habitat requirements for this species; however, due to the variable suitability in brackish aquatic habitats, as well as nearby occurrences, there is potential for this species to occur within the proposed impact area during seasonal alterations to the alignment/terminus of Morro Creek.

Monarch butterfly. This species is not formally listed as an Endangered or Threatened species; however, over-wintering monarch butterflies are considered to be a "special animal" by the CDFW. Monarch butterfly wintering sites are classified as "demonstrably secure" worldwide but within California they are considered of "restricted range; rare." Monarch butterflies will begin to abandon autumnal roosts within northern United States and Canada in early November to December to over-wintering sites in the warmer climates in southern California and Mexico. Monarch butterflies will fly north for breeding as the milkweed plants come into bloom in the spring.

Wintering aggregations of monarch butterflies in California can primarily be found on Monterey pines and in eucalyptus groves (Sakai and Calvert, 1991). Wintering habitat components frequently include sources of moisture such as streams, ponds or abundant morning dew. Other habitat preferences include little direct sunlight, minimal wind, and moist ambient conditions. There are scattered ornamental trees forming a windrow along the perimeter of the former tank farm, including Monterey pines and eucalyptus. Monarch butterflies are commonly observed throughout the region, and are known to roost in eucalyptus planted within the southeast corner of the MBPP property, although these are not considered wintering roosts, but rather fall aggregation sites (Padre, 2005). No potential roosting habitat is present within the proposed impact area; however, this species has the potential to occur transiently within the proposed impact area during migration or movement throughout the region.

Morro Bay blue butterfly. This species occurs in coastal dune scrub areas within the region and is closely associated with its food host plant, silver dune lupine (*Lupinus chamissonis*). Silver dune lupine is present along the pipeline corridor outside of the proposed impact area to the southeast. Focused surveys were not conducted for Morro Bay blue butterfly within the BSA and this species was not observed during the September 2015 field surveys; however, due to its close association with silver dune lupine and nearby occurrences, this species has the potential to occur transiently within the proposed impact area.

Morro shoulderband snail. Morro shoulderband snail is a Federally Endangered species, and USFWS-designated Critical Habitat exists within 5.0 mi (8.0 km) of the BSA. The Morro shoulderband snail occurs in coastal dune and scrub communities. The snail is most closely associated with the dominant shrub, mock heather (*Ericameria ericoides*); however, several other shrub and succulent species are associated with the habitat of the Morro shoulderband snail, including non-native ice plant. These vegetation communities and suburban landscapes are known to provide shelter for this species. Current range for the snail is in western San Luis Obispo County in Morro Bay; specifically areas south of Morro Bay, west of Los Osos Creek, and North of Hazard Canyon. This species has also been documented in Morro Strand State Beach (CDFW, 2015b), within 5.0 mi (8.0 km) of the BSA. Protocol-level surveys for this species were conducted within the MBPP in 2001 and again in 2004 resulting in negative findings (Padre, 2005). Additional protocol-level surveys are currently underway within the BSA; specifically in the vicinity of the pipeline corridor within the Project site. Results of the surveys/assessment are pending.

Obscure bumble bee. The obscure bumble bee inhabits open grassy coastal prairies and coast range meadows. Preferred food sources occur within the BSA including species of *Lupinus* and *Rubus.* Nesting occurs underground in old rodent dens, as well as above ground in tufts of grass, old bird nests, rock piles, or dead tree cavities (Hatfield et al., 2014). The obscure bumble bee occurs in Mediterranean California and the Pacific coast, from southern California to southern British Columbia; however it is uncommon throughout its range. The obscure bumble bee was historically found within Morro Bay and Montaña de Oro State Parks which are located within five miles of the BSA (CNDDB, 2015). Focused surveys have not been conducted for obscure bumblebee within the BSA and this species was not observed during the September 2015 field; however, due to the presence of suitable habitat within the BSA, as well as nearby occurrences, this species has the potential to occur transiently within the proposed impact area.

Sandy beach tiger beetle. Sandy beach tiger beetle is within the Order Coleoptera, and Family Cincindelidae "tiger beetles" and inhabits dry sandy areas adjacent to non-brackish water along the coast of California from San Francisco Bay to northern Mexico. This is a spring/fall species with a one or two-year lifecycle. Larvae are burrow-dwelling and adults will also dig burrows in cooler substrates to escape higher temperatures (Pearson, 2007). This species has been documented within Morro Strand State Beach (CDFW, 2015b), within 5.0 mi (8.0 km) of the BSA. Focused surveys have not been conducted for sandy beach tiger beetle within the BSA and this species was not observed during the September 2015 field surveys; however, due to nearby occurrences , as well as the presence of dry sandy areas adjacent to the mouth of Morro Creek, this species has the potential to occur within the proposed impact area.

Fish

South-central California coast steelhead. Steelhead trout are listed as Federally Threatened within the south-central California coast Distinct Population Segment (DPS) which extends from the Pajaro River in Santa Cruz County to (but not including) the Santa Maria River (Busby et al., 1996), and USFWS-designated Critical Habitat for this species includes Morro Creek within the BSA. Steelhead have been documented within Morro Creek, approximately 0.4 mi (0.6 km) east of the proposed Project impact area (CNDDB, 2015), and five individuals were observed during a visual survey in July 2000, upstream from the mouth of Morro Creek (Villablanca, 2000). Morro Creek will periodically flow to the ocean during periods of sufficient flow and may intersect the proposed impact area. As such, based on these seasonal alterations to the Creek's flow pattern, as well documented occurrences of steelhead within the Creek, steelhead have the potential to occur within the proposed impact area during certain periods of the year.

Tidewater goby. The tidewater goby is a Federally Endangered fish species, and USFWS-designated Critical Habitat includes all locations where this species is known or likely to occur. Tidewater goby has been documented within the main channel of Morro Bay, approximately 0.32 mi (0.5 km) southeast of the proposed impact area (CNDDB, 2015). This species is found in brackish shallow lagoons and lower stream reaches, and has a wide distribution within California from San Diego to Arcata, but they are not considered common except in Morro Bay. During the summer months a lagoon is formed at the mouth of Morro Creek which is reachable by high tide, resulting in brackish conditions which may be suitable for tidewater goby. A visual survey was conducted within the mouth of Morro Creek in July 2000 by Villablanca et al. (Villablanca, 2000). No tidewater goby were observed during the July 2000 survey. Additional surveys, including sampling with dip nets and seins were conducted in 2011 by SWCA Environmental Consultants in support of the Morro Creek Diversion Project (2011, SWCA); no tidewater goby were observed during the April 2011 surveys. Due to the periodic connectivity between Morro Creek and the Pacific Ocean, as well as the resulting brackish conditions within the mouth of the Creek, this species has the potential to occur within the proposed impact area during certain periods of the year.

Amphibians

California red-legged frog (CRLF). The CLRF is a Federally Threatened species, and USFWS-designated Critical Habitat for this species occurs within 1.0 mi (1.6 km) east of the BSA. CRLF use a variety of aquatic and terrestrial habitats, including streams, marshes, ponds, riparian woodlands, springs, lagoons, irrigation canals, wells, reservoirs, and even sewage treatment ponds, as well as upland habitats for dispersal/migration. CRLF have been documented 0.78 mi (1.3 km) northeast of the BSA within wetland habitat in Morro Strand State Park. Protocol-level surveys were conducted for CRLF in 2000 within a .0 mi (1.6 km) section of Morro Creek intersecting the Power Plant property (Villablanca, 2000). No CRLF were observed during these surveys; however, due to nearby occurrences, as well as potentially suitable habitat within Morro Creek, CRLF have the potential to occur transiently within the proposed impact area during upland dispersal/migration.

Reptiles

Blainville's horned lizard. Blainville's horned lizard has been documented in various places throughout San Luis Obispo County, including localities around Morro Bay and Los Osos, specifically at the Morro Bay sand spit (CDFW, 2015b). Within its range it can be found in a variety of habitats; along the coast of California this lizard is often associated with shrublands and grasslands (Stebbins, 2003). In addition to being found in sandy washes, they are found in areas with a substrate of fine loose soil. Horned lizards' diets consists of ants and other insects (Stebbins, 2003). In some regions of California it is thought that exotic ant species, that have displaced and reduced numbers of native ants, are unpalatable to horned lizards and have subsequently reduced the lizard's abundance. Focused surveys were not conducted for Blainville's horned lizard within the BSA, and this species was not observed during the September 2015 field surveys; however, due to the presence of suitable habitat within the proposed impact area, as well as nearby occurrences, this species has the potential to occur within the proposed impact area.

Black and silvery legless lizard. Black and silvery legless lizards are a State Species of Special Concern. This species lives mostly underground, burrowing in moist warm loose soil in sparsely vegetated areas of beach dunes, chaparral, sandy washes, and stream terraces with oaks. These lizards range from 4.0 to 7.0 in (10.2 to 17.8 cm) in snout to vent length and are often found under rocks, boards, driftwood, and logs. This species does not bask in direct sunlight and feeds primarily on larval insects, beetles, termites, and spiders. Legless lizards are sometimes active on the surface at dusk and at night, and remain below ground during the day (Stebbins, 2003). Focused surveys were conducted for this species in 1999 within a portion of the BSA; specifically, within the former Tank Farm (Villablanca, 2000). No legless lizards were observed during these surveys; however the surveyors concluded that their presence could not be ruled out. No legless lizards were observed during the September 2015 field surveys; however, due to the presence of suitable habitat within the proposed impact area, as well as nearby occurrences, this species has the potential to occur within the proposed impact area.

Southwestern pond turtle. The southwestern pond turtle is a State and Federal Species of Special Concern. It is an aquatic turtle inhabiting streams, marshes, ponds, and irrigation ditches within woodland, grassland, and open forest communities. However, it requires upland sites for nesting and over-wintering. Stream habitat must contain large, deep pool areas (six feet) with moderate-to-good plant cover, and rock and cobble substrates for escape retreats. Southwestern pond turtle has been documented near the mouth of Alva Paul Creek where it meets Morro Strand State Beach, approximately 1.3 mi (2.1 km) to the northeast of the proposed impact area (CNDDB, 2015). Several focused surveys were conducted for this species in 2000 within Morro Creek (Villablanca, 2000). No southwestern pond turtles were observed during these surveys, however, the surveyors concluded that suitable habitat was present within Morro Creek. Due to the presence of suitable habitat within Morro Creek, as well as nearby occurrences, this species has the potential to occur within the proposed impact area during nesting and/or over-wintering periods.

Birds

Burrowing owl. Burrowing owls are a State Species of Special Concern. They are year-round residents in annual and perennial grasslands or other vegetation communities that support little to no tree or shrub cover. In California, the species is typically found in close association with California ground squirrels, which create burrows that are used by burrowing owls for year-round shelter and seasonal nesting habitat. They may also utilize badger, coyote and fox dens, or holes (Ronan, 2002), as well as human-made structures such as culverts, corrugated metal pipes, debris piles, or openings beneath pavement as shelter and nesting habitat (CDFW, 2015b). Typical burrowing owl breeding season in California is from March to August, but can begin as early as February and extend into December (Rosenberg and Haley, 2004). Burrowing owl are not known to breed in most of San Luis Obispo County,

with the exception of California Valley located within the far southeastern portion of the County, over ten miles away; however, this species has been observed within the Chevron-owned Estero Marine Terminal, approximately 2.5 mi (4.0 km) northeast of the Project site, during the winter months (non-breeding season) by Padre. Focused surveys have not been conducted for burrowing owl within the BSA and this species was not observed during the September 2015 field survey. Further, no suitable nesting habitat occurs within the proposed impact area. Due to nearby occurrences; however, there is potential for this species to occur transiently within the proposed impact area during foraging and/or movement throughout the region.

Western snowy plover. The Pacific coast population of western snowy plover is Federally listed as Threatened, and USFWS-designated Critical Habitat for this species includes the beach and foredunes within the BSA. This species inhabits sandy beaches and shores of alkali lakes along the coast of Californian and feeds on small aquatic prey and requires sandy, gravelly, or friable soils for nesting (Sibley, 2003; CDFW, 2015b). Nests, which consist of a shallow scrape lined with bits of shell or stone, are easily disturbed by human activity. Western snowy plovers are also known to be heavily impacted by natural predators, such as raccoons, coyotes, and foxes. Western snowy plovers are known to breed along the Morro Bay Sand Spit across the harbor south of the BSA, and along the dune complex of Morro Strand State Beach, and as such, this species has the potential to occur within the proposed impact area.

Yellow warbler. Yellow warbler is a State Species of Special Concern. This species of bird generally occupies riparian vegetation in close proximity to water (Lowther et al., 1999) and are a common nesting species in riparian habitats in San Luis Obispo and Santa Barbara counties. This species occurs in California as a migrant and summer resident from late March through early October, and during breeding season from April through late July (Sibley, 2003). Focused surveys were conducted for this species in the spring of 2000, however, no individuals were observed (Padre, 2005). Yellow warbler has been observed by Padre Biologists along Toro Creek within the Chevron-owned Estero Marine Terminal Property approximately 2.5 mi (4.0 km) northeast of the BSA, and as such, due to suitable habitat within the BSA, as well as nearby occurrences, this species has the potential to occur transiently within the proposed impact area.

Loggerhead shrike. This species occurs in grasslands, open woodlands, and other open, brushy habitats and is a year-long resident in San Luis Obispo County. Loggerhead shrike feeds primarily on insects, amphibians, reptiles, small mammals, and small birds, and are known to occasionally cache captured prey on thorns for later consumption (Sibley, 2003). Due to suitable habitat present within the BSA, nearby documented occurrences, and mobility of this species, Loggerhead shrike may occur within the BSA.

California black rails. The California black rail is a small rail that occurs in saltwater, brackish, and freshwater marshes. A breeding population has been documented in Morro Bay. California black rails feed on arthropods (CDFG, 1987). Due to suitable habitat within the BSA and nearby occurrences, California black rail may occur with the BSA.

American peregrine falcon. American peregrine falcon is listed as a Federally Endangered species during its nesting season. This bird of prey species frequently nests near water on ledges of rocky cliffs or buildings, and occasionally will use abandoned nests of other species. Peregrine falcons do not build nests, but scrape a small depression in the surface of their nesting site and typically nest year after year in the same locations. American peregrine falcons are fairly uncommon throughout San Luis Obispo County and are generally found along coastal areas. Long-term nest use (over 15 years) has been recorded at the Morro Rock and Ecological Preserve, approximately 0.35 mi (0.6 km) southwest of the BSA. This is one of only a few sites within the county where nesting peregrines are consistently found, although migrants and winter transients augment wintering populations. Focused surveys were

not conducted for American peregrine falcon within the BSA, and this species was not observed during the September 2015 field survey; however, its distribution throughout the region is well documented. Due to the mobility of this species and nearby occurrences, American peregrine falcons have the potential to occur transiently within the proposed impact area during foraging and/or movement throughout the region.

Other Birds of Prey. Birds of prey such as Cooper's hawk and white-tailed kite are well-documented within the region. These species may also utilize habitat within the vicinity of the BSA for nest sites, which are often used year after year and are protected by State and Federal agencies, including CDFW and USFWS. No suitable nesting sites are located within the proposed impact area; however, due to the mobility of these species, as well as nearby occurrences, there is potential for birds of prey to occur transiently within the proposed impact area during foraging and/or movement throughout the region.

5.0 IMPACTS DISCUSSION

Proposed impacts will occur primarily within the Coastal Strand/Beach portion of the BSA; however, depending on the locations selected for staging and/or access routes, additional temporary impacts may occur to vegetation stands south of Morro Creek. These impacts will include excavation and disturbance by the mobilization and/or operation of Project-related equipment used to removed buried pipelines. Further, during periods when connectivity occurs between Morro Creek and the Pacific Ocean, the Creek may intersect the proposed impact area. Impacts to Morro Creek may occur if de-watering and diversion measures are required to facilitate Project activities. Dewatering and diverting Morro Creek has the potential to impact aquatic wildlife. Impacts outside of the Creek resulting from the use of Project-related equipment will be reduced by delineating the impact area, designating an equipment staging and fueling area, and providing biological monitoring for the duration of the Project. Potential impacts to vegetation within the BSA will be offset through the implementation of the Project's Preliminary Site Restoration Plan; therefore, impacts to vegetation stands would be minimal with the implementation of avoidance and minimization measures and the procedures identified in the Preliminary Site Restoration Plan.

Heavy equipment operation and associated noise, dust generated by grading and excavation activities, and an increase in human presence have the potential to disrupt foraging and denning activities of some wildlife, including special-status species. Wildlife utilizing the proposed impact area during Project activities may be temporarily displaced into adjacent habitats and may experience greater competition for food and nest sites; however, these impacts to wildlife are indirect and temporary and will be reduced to less than significant with the implementation of avoidance and minimization measures.

Globose dune beetle, Monarch butterfly, obscure bumblebee, Morro shoulderband snail, Morro Bay blue butterfly, mimic tryonia, and sandy beach tiger beetle are invertebrate species that are associated with habitats occurring within the BSA. Project impacts to these special-status invertebrates and/or their potential suitable habitat within the Project site are considered less than significant with the incorporation of avoidance and minimization measures, such as pre-activity surveys and avoiding roost sites.

South-central California coast steelhead is an anadromous fish species that has been observed within Morro Creek as recently as July 2000, and during years of sufficient inundation, portions of Morro Creek may still support inland migrating and/or reproducing fish. Tidewater goby is a fish species that has the potential to occur within Morro Creek due to the periodic formation of a brackish lagoon at the mouth of Morro Creek. Should Project-related activities coincide with periods when Morro Creek intersects the proposed impact area, impacts may occur to migrating steelhead and/or tidewater goby. In this event, the intersecting portion will have to be de-watered and diverted; however, impacts caused by these activities are considered temporary and no permanent loss of habitat will occur. Further, with the implementation of avoidance and minimization measures, such as the installation of block netting upstream and downstream of the Project site, fish removal and relocation to pre-designated areas, disuse of heavy equipment within Morro Creek channel, and daily continued monitoring, these impacts are considered less than significant.

Southwestern pond turtle and CRLF are species that utilize both upland and aquatic habitats for portions of their life cycle. These species have been documented within 5.0 mi (8.0 km) of the BSA and have the potential to be impacted by Project activities. The Project will increase human presence and use of heavy equipment in suitable habitat areas for these species. There is the potential for CRLF and/or southwestern pond turtles to be injured during upland migration/nesting. Impacts due to Project activities proposed within and along Morro Creek are considered temporary and no permanent loss of habitat will

occur. With the implementation of avoidance and minimization measures, such as pre-activity surveys and construction monitoring, these impacts are considered less than significant.

Blainville's horned lizard, black legless lizard, and silvery legless lizard are species that utilize upland habitats, specifically sandy soils, such as those within the proposed impact area. However, the Project area lacks vegetation which decreases the likelihood of encountering these species. Initial grading activities may result in the mortality of these species during Project activities. Project grading activities will not create any significant migration barriers and suitable habitat will not be significantly removed as a result of the Project. Impacts to Blainville's horned lizard, black legless lizard, and silvery legless lizard from Project activities are considered temporary and with the implementation of avoidance and minimization measures, these impacts are considered less than significant.

A number of bird species could potentially nest in the coastal dune habitat and riparian habitat along Morro Creek within the Project site. These include ground nesters (e.g., western snowy plover) and small tree/shrub nesters (e.g., loggerhead shrike). In addition, raptors may utilize trees in/near the BSA for roosting sites (i.e., Cooper's hawk, white-tailed kite, etc.). Nest destruction from ground-clearing activities and/or tree removal outside of the current proposed impact area could destroy nests, nestlings, or hatchlings, and result in a violation of the MBTA (16 USC 703-712). With the implementation of avoidance and minimization measures including daily nest surveys during the nesting season, these impacts to nesting birds will be reduced to less than significant.

6.0 AVOIDANCE AND MINIMIZATION RECOMMENDATIONS

The following avoidance and minimization measures are required to avoid and/or reduce the potential biological impacts of the Project.

1. Prior to the start of Project construction, the limits of the beach portion of the construction area shall be clearly delineated. No unauthorized personnel or equipment shall be allowed outside the delineated work area. Natural habitat areas outside of the construction zone shall not be disturbed.
2. A Project-specific environmental sensitivity orientation will be prepared by a biologist familiar with the Project region and incorporated into site-specific training for all Project personnel. The purpose of the orientation is to educate Project personnel on local special-status wildlife species that may occur within the Project area and to provide an overview of the avoidance and minimization measures to be adhered to during the Project. In addition, personnel will be briefed on the reporting process in the event that an inadvertent injury should occur to a special-status species during construction.
3. A qualified biological monitor shall be onsite as necessary during construction activities. The biological monitor shall be responsible for conducting pre-construction surveys for listed and non-listed species, ensuring Project compliance with biologically-related measures and permit conditions, relocating wildlife species out of the impact area, and surveying and documenting wildlife species occurring onsite or in the immediate vicinity. The biological monitor shall have the authority to halt work as necessary.
4. Project activities on the beach shall be conducted during the summer fall months to avoid impacts to Morro Creek, which coincides with the nesting season for Western snowy plover. The following conditions designed to protect special-status bird species shall be implemented prior to and during Project operations:
    - No more than one week prior to the start of the Project construction, the flagged construction area shall be surveyed by a qualified biologist to determine the presence or absence of active nests or foraging activities by western snowy plovers. If active nests are found, all areas within a 500 ft (152.4 m) radius of the nesting site shall be clearly marked and avoided during construction, if feasible. No disturbances shall occur within the protective area until all young birds have fledged, as confirmed by the biologist. Work may proceed within 500 ft of nests if biological monitoring determines that the activity has no effect on the nesting behavior; and
    - If at any time during Project operations special-status bird species (including but not limited to western snowy plover, burrowing owl, and peregrine falcon) are observed within the BSA, or within a predetermined radius surrounding the onshore portion of the BSA (as to be determined by the onsite biologist), work shall be stopped or redirected to an area within the BSA that would not impact these birds, if feasible. The special-status birds will be monitored and kept out of harm's way during work activities.
5. To reduce potential sedimentation impacts to Morro Creek, all excavated materials shall be side-cast and/or stockpiled away from Morro Creek. Any material which may slough off the banks of the excavations shall also be side-cast away from Morro Creek.
6. In the event that Morro Creek is in direct contact, or flows beneath the pipeline, the following measure shall be implemented to avoid and minimize impacts to migrating steelhead and/or tidewater goby:
    - Work will be rescheduled to avoid impacts to Morro Creek.

7. The following measures shall be implemented to the extent feasible based on environmental conditions at the time of pipeline removal operations within the active stream channel of Morro Creek:
    - Heavy equipment operation within the stream channel shall be minimized to the extent feasible during Project activities. As necessary, equipment access through the stream channel shall be limited to the mouth of Morro Creek below the mean high tide line to avoid impacts to the bed and banks of the active channel. The existing Chevron northern access route may also be utilized (as necessary) to mobilize equipment to the north side of Morro Creek to further minimize equipment access through the active stream channel;
    - Pipelines shall be cut on both sides of the active creek channel using construction methodologies congruent with those procedures proposed for nearshore abandonment to avoid or reduce potential contamination that would occur from risk of upset (e.g., covered pipe ends, containment, etc.). In the event that Morro Creek comes into direct contact with or flows beneath the pipeline, the shortened segment shall be covered and removed by lifting vertically or pulling horizontally out of the stream channel in a gradual, slow motion to minimize and/or avoid the short-term turbidity impacts within the stream channel; and
    - In the event that Morro Creek comes into direct contact with or flows beneath the pipeline, the Stream Diversion Plan (Appendix I) will be referenced to minimize/avoid impact to surface water.
8. The Project Marine Wildlife Contingency Plan that has been prepared for this Project shall be implemented.
9. In compliance with the Preliminary Site Restoration Plan (Appendix H) and the Project Execution Plan that Dynegy has prepared for the Project, wherever possible native plant species will be removed to a well-protected and shaded area until Project completion. A photographic record of pre- and post-conditions of the native vegetation shall also be completed using pre-determined representative photographic stations. Project activities which result in damage or destruction of native dune vegetation shall be documented by a qualified botanist.

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ATTACHMENT 1
WILDLIFE AND VASCULAR PLANTS OBSERVED WITHIN THE BSA

Dynegy Marine Terminal Decommissioning Project
WILDLIFE SPECIES LIST OBSERVED WITHIN THE BSA

Common Name	*Scientific Name*	Residence Status	Protected Status
Invertebrates			
Monarch butterfly	*Danaus plexippus*	Winter Resident	CSC
Reptiles			
Common side-blotched lizard	*Uta stansburiana*	Permanent	--
Birds			
Anna's hummingbird	*Calypte anna*	Summer Resident	M
House finch	*Carpodacus mexicanus*	Permanent	M
American crow	*Corvus brachyrhynchos*	Permanent	M
Common yellowthroat	*Geothlypis trichas*	Permanent	M
Say's phoebe	*Sayornis saya*	Winter Resident	M
Bewick's wren	*Thryomanes bewickii*	Permanent	M
White-crowned sparrow	*Zonotrichia leucophrys*	Winter Resident	M
Mammals			
Coyote	*Canis latrans*	Permanent	--
California ground squirrel	*Spermophilus beecheyi*	Permanent	--

Protected Status	
FE	Federally Endangered
FT	Federally Threatened
FC	Federal Candidate
M	Migratory Bird Treaty Act
SE	State of California Endangered
ST	State of California Threatened
SSC	California Species of Special Concern

Dynegy Marine Terminal Decommissioning Project
VASCULAR PLANT SPECIES LIST OBSERVED WITHIN THE BSA

Scientific Name	Common Name	Habit	Wetland Indicator Status	Conservation Status	Family
Abronia maritima	**Red sand verbena**	**PH**	**.**	**4.2**	**Nyctaginaceae**
***Ambrosia* chamissonis**	**Beach bur**	**PH**	**.**		**Asteraceae**
Ammophila arenaria*	**European beachgrass**	**PG**	**.**		**Poaceae**
Artemisia californica	**California sagebrush**	**S**	**.**		**Asteraceae**
Atriplex prostrata*	**Fat-hen**	**AH**	**.**		**Chenopodiaceae**
Baccharis pilularis	**Coyote brush**	**S**	**.**		**Asteraceae**
Baccharis glutinosa	**Marsh baccharis**	**PH**	**FACW**		**Asteraceae**
Brassica nigra*	**Black mustard**	**AH**	**.**		**Brassicaceae**
Bromus diandrus*	**Ripgut grass**	**AG**	**.**		**Poaceae**
Cakile maritima	**Sea rocket**	**AH**	**.**		**Poaceae**
Unknown	**Unknown**	**PH**	**.**		**Liliaceae**
Camissoniopsis cheiranthifolia	**Beach evening-primrose**	**PH**	**.**		**Onagraceae**
Carpobrotus edulis	**Iceplant**	**PH**	**.**		**Aizoaceae**
Corethrogyne filaginifolia	**California aster**	**PH**	**.**		**Asteraceae**
Conium maculatum	**Poison hemlock**	**PH**	**FACW**		**Apiaceae**
Croton californicus	**California croton**	**PH**	**.**		**Euphorbiaceae**
Cynodon dactylon*	**Bermuda grass**	**PG**	**FAC**		**Poaceae**
Delairea odorata	**Cape ivy**	**PH**	.		**Asteraceae**
Distichlis spicata	**Saltgrass**	**PG**	**FACW**		**Poaceae**
Elymus condensatus	**Giant wild rye**	**PG**	**FACU**		**Poaceae**
Elymus triticoides	Beardless wild rye	PG	FAC		Poaceae
Erigeron canadensis	**Horseweed**	**AH**	**FAC**		**Asteraceae**
Eriogonum latifolium	**Coast buckwheat**	**S**	**.**		**Polygonaceae**
Eriogonum parvifolium	**Sea cliff buckwheat**	**S**	**.**		**Polygonaceae**
Erodium cicutarium*	**Red stem filaree**	**AH**	**.**		**Geraniaceae**
Eucaluptus globulus	**Blue**	**T**	**.**		**Papaveraceae**
***Hesperocyparis* macrocarpa**	**Monterey cypress**	**T**		**1B.2**	**Cupressaceae**
Hesperocyparis* sp.	**Ornamental cyperus**	**T**			**Cupressaceae**
Heterotheca grandifolia	**Telegraph weed**	**PH**	**.**		**Asteraceae**
Juncus bufonius	**Common toad rush**	**AH**	**FACW**		**Juncaceae**
Lupinus chamissonis	**Silver lupine**	**PH**	**.**		**Fabaceae**
Melilotus albus*	**White sweet clover**	**A/BH**	**FACU**		**Fabaceae**
Pinus halepensis*	**Aleppo pine**	**T**			**Pinaceae**
Pinus radiata	**Monterey pine**	**T**		**1B.1**	**Pinaceae**
Platanus recemosa	**California sycamore**	**T**	**FAC**		**Platanaceae**
Potentilla anserina	**Silver weed**	**PH**	**.**	**OBL**	**Rosaceae**
Pseudognaphalium luteoalbum*	**Jersey cudweed**	**AH**	**FAC**		**Asteraceae**
Ricinus communis	**Castor bean**	**S**	**.**		**Euphorbiaceae**
***Rumex* sp.**	**Dock**	**PH**	.		**Polygonaceae**
Salix exigua	**Sandbar willow**	**S**	**OBL**		**Salicaceae**
Salix lasiolepis	**Arroyo willow**	**S**	**FACW**		**Salicaceae**
Salsola tragus*	**Tumbleweed**	**AH**	**FACU**		**Chenopodiaceae**
***Schoenoplectus* pungens**	**Common threesquare**	**PH**	**OBL**		**Cyperaceae**
Senecio blochmaniae	**Blochman's groundsel**	**S**	**.**	**4.2**	**Asteraceae**

Dynegy Marine Terminal Decommissioning Project
VASCULAR PLANT SPECIES LIST OBSERVED WITHIN THE BSA

Scientific Name	Common Name	Habit	Wetland Indicator Status	Conservation Status	Family
Stellaria media*	**Common chickweed**	**AH**	**FACU**		**Caryophyllaceae**
Tropaeolum majus	**Garden nasturtium**	**AH**	**.**		**Tropaeolaceae**
Tetragonia tetragonoides*	**New Zealand Spinach**	**PH**	**.**		**Aizoaceae**

Notes: Scientific nomenclature follows Second Edition of the Jepson Manual (Baldwin, et.al., 2012)

"*" indicates non-native species which have become naturalized or persist without cultivation.

Habit definitions:

AF = annual fern or fern ally	AV = annual vine	S = shrub
AG = annual grass	PG = perennial grass	T = tree
AH = annual herb	PH = perennial herb	
BH = biennial herb	PF = perennial fern or fern ally	

Wetland indicator status California - Arid West Region, U.S. Army Corps of Engineers (CRREL 2012):

OBL = obligate wetland species, occurs almost always in wetlands (>99% probability)

FACW = facultative wetland species, usually found in wetlands (67-99% probability).

FAC = facultative species, equally likely to occur in wetlands or non-wetlands (34-66% probability).

FACU = facultative upland species, usually occur in nonwetlands (1-33% probability).

UPL = upland species, almost always occurs in non-wetlands in the region specified (<1% probability).

A period (.) indicates that no wetland indicator status has been given.

ATTACHMENT 2
VEGETATION RAPID ASSESSMENT RESULTS

CNPS and CDFW Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised February 27, 2014)

For Office Use
Final database #:

Final vegetation type: Alliance _____
Association _____

I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Stand ID: MB 0001

Date: 9/24/2015

Name of recorder: Christina Santala, Alyssa Berry

Other surveyors:

GPS name: Trimble **Datum:** (NAD83) or _____ For Relevé: **Bearing°**, left axis at SW point____ of Long / Short side

UTME 694412 **UTMN** 3916599 **Zone:** 10 / 11 (circle one) **Error:** ±____ ft / m / pdop

GPS within stand? Yes / (No) If No, cite from GPS to stand distance (m) 8 bearing ° ____ inclination ° ____
and record projected UTMs. UTME ____ UTMN ____

Elevation: 0 ft / m **Camera Name/Photograph #'s:** Cannon 150-018/

Stand Size (acres): <1, (1-5), >5 | **Plot Size** (m^2): 10 / 100 / 400 / 1000 | **Plot Shape** ___ x ___ ft / m or **Circle Radius** ___ ft / m

Exposure, Actual °: _____ NE NW SE (SW) Flat Variable All | **Steepness, Actual °:** _____ 0° 1-5° (5-25°) > 25

Topography: Macro: (top) upper mid lower bottom | **Micro:** (convex) flat concave undulating

Geology code: SETH **Soil Texture code:** FISN | (Upland) or Wetland/Riparian (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)

H20: 0 **BA Stems:** 5 **Litter:** 10 **Bedrock:** 0 **Boulder:** 0 **Stone:** **Cobble:** 1 **Gravel:** 5 **Fines:** 89 =100%

% Current year bioturbation 1 **Past bioturbation present?** Yes / (No) | **% Hoof punch** _____

Fire evidence: Yes / (No) (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments: Former Tank Farm perimeter / manmade berm windrow, middle age

Disturbance code / Intensity (L,M,H): 01 / M ___/___ ___/___ ___/___ ___/___ **"Other"** _____/___

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH : T1 (<1" dbh), **T2** (1-6" dbh), **T3** (6-11" dbh), (T4) (11-24" dbh), **T5** (>24" dbh), **T6** multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: S1 seedling (<3 yr. old), **S2** young (<1% dead), (S3 mature (1-25% dead), **S4** decadent (>25% dead)

Herb: (H1) (<12" plant ht.), **H2** (>12" ht.) **Desert Riparian Tree/Shrub: 1** (<2ft. stem ht.), **2** (2-10ft. ht.), **3** (10-20ft. ht.), **4** (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), **2** (1.5-6" diam.), **3** (>6" diam.) **% NonVasc cover:** 0 **% Vasc Veg cover:** 75

% Cover: (Conifer tree / Hardwood tree: 70 / ____ **Regenerating Tree:** 0 **Shrub:** 3 **Herbaceous:** 2

Height Class: Conifer tree / Hardwood tree: 5 / ____ **Regenerating Tree:** ____ **Shrub:** 02 **Herbaceous:** 01

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S = Shrub, H= Herb, E = SEedling, A = SApling, N= Non-vascular.
% cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%.

Strata	Species	% cover	C	Strata	Species	% cover	C
T	Hesperocyparis sp.	40	✓	H	Salsola tragus	<1	
T	Pinus radiata	45		T	Eucalyptus globulus	1	
S	Lupinus chamossonis	3					
S	Croton californicus	1					
H	Carpobrotus edulis	10					
H	Heterotheca grandiflora	1					
H	Corethrogyne filaginifolia	1					

Unusual species: _____

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Ornamental

Field-assessed association name (optional): _____

Adjacent alliances/direction: Lupinus cha Shrub/ W, Ruderal, E, Developed N&S

Confidence in alliance identification: L M (H) **Explain:** _____

Phenology (E,P,L): **Herb** P **Shrub** L **Tree** L **Other identification or mapping information:**

Project: 1502-2741 Dynegy Biological Resources Assessment
Vegetation Rapid Assessment Attachment
Stand/Plot ID: **MB0001**

North

East

South

West

Classification: Ornamental (Site-Specific)

CNPS and CDFW Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised February 27, 2014)

For Office Use
Final database #:

Final vegetation type: Alliance _____
Association

I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Stand ID: MB0002

Date: 9/24/2015

Name of recorder: CS, AB

Other surveyors:

GPS name: Trimble **Datum:** NAD83 or _____ For Relevé: **Bearing°**, left axis at SW point_____ of **Long / Short** side

UTME 6 9 4 3 8 4 **UTMN** 3 9 1 6 5 8 2 **Zone: 10 / 11** (circle one) **Error: ±**_____ **ft / m / pdop**

GPS within stand? (Yes) / No If No, cite from GPS to stand: distance (m)_____ bearing °_____ inclination °_____
and record projected UTMs UTME _____ UTMN _____

Elevation: 10 (ft / m) **Camera Name/Photograph #'s:** Cannon

Stand Size (acres): <1, 1-5, (>5) **Plot Size (m²):** 10 / 100 / 400 / 1000 | **Plot Shape** ___ x ___ ft / m **or Circle Radius**____ft / m

Exposure, Actual °: _____ NE NW SE SW Flat (Variable) All | **Steepness, Actual °:** _____ 0° (1-5°) 5-25° > 25

Topography: Macro: top upper mid lower bottom | **Micro:** convex flat concave undulating

Geology code: SETU **Soil Texture code:** FISN | **Upland or Wetland/Riparian** (circle one)

% Surface cover: (Incl outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)

H20: n **BA Stems:** 25 **Litter:** 25 **Bedrock:** ○ **Boulder:** | **Stone:** ○ **Cobble:** ○ **Gravel:** ◇ **Fines:** 50 **=100%**

% Current year bioturbation 1 **Past bioturbation present?** (Yes) / No | **% Hoof punch** _____

Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments:

Tank/dredging spoils

Disturbance code / Intensity (L,M,H): 20 / L ___/___ ___/___ ___/___ ___/___ **"Other"** _____/___

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH : T1 (<1" dbh), **T2** (1-6" dbh), **T3** (6-11" dbh), **T4** (11-24" dbh), **T5** (>24" dbh), **T6** multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: (S1) seedling (<3 yr. old), **S2** young (<1% dead), (S3) mature (1-25% dead), **S4** decadent (>25% dead)

Herb: (H1) (<12" plant ht.), (H2) (>12" ht.) **Desert Riparian Tree/Shrub: 1** (<2ft. stem ht.), **2** (2-10ft. ht.), **3** (10-20ft. ht.), **4** (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), **2** (1.5-6" diam.), **3** (>6" diam.) **% NonVasc cover:**____ **% Vasc Veg cover:**_____

% Cover: **Conifer tree / Hardwood tree:** ____/____ **Regenerating Tree:** _____ **Shrub:** _____ **Herbaceous:** _____

Height Class: **Conifer tree / Hardwood tree:** ____/____ **Regenerating Tree:** _____ **Shrub:** _____ **Herbaceous:** _____

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S = Shrub, H= Herb, E = SEedling, A = SApling, N= Non-vascular.
% cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%.

Strata	Species	% cover	C	Strata	Species	% cover	C
H	Carpobrotus edulis	30		H	B. diandrus	<1	
H	Senecio blochmaniae	5		H	Camissoniopsis cheiranthifolia	<1	
H	H. grandiflora	7		H	Erodium cicutarium	<1	
S	L. chamissonis	25					
S	C. filaginifolia	+					
S	B. pilularis	1					
H	A. chamissonis	1					

Unusual species: _____

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Dune restoration Area (mixed dune)

Field-assessed association name (optional): _____

Adjacent alliances/direction: _____/_____, _____/_____

Confidence in alliance identification: L M (H) **Explain:** _____

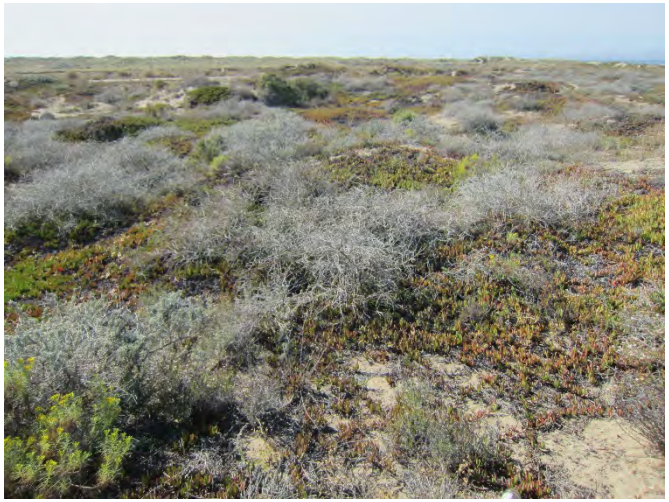
Phenology (E,P,L): Herb L **Shrub** L **Tree** (P) **Other identification or mapping information:**

Project: 1502-2741 Dynegy Biological Resources Assessment
Vegetation Rapid Assessment Attachment
Stand/Plot ID: **MB0002**

North

East

South



West

Classification: Dune Restoration Area- Mixed dune vegetation (Site-Specific)

CNPS and CDFW Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised February 27, 2014)

For Office Use
Final database #:

Final vegetation type: Alliance _____
Association _____

I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Stand ID: MB0003

Date: 9/24/15

Name of recorder: CS, AB

Other surveyors:

GPS name: Trimble **Datum:** (NAD83) or _____ For Relevé: Bearing°, left axis at SW point____ of Long / Short side

UTME 694134 **UTMN** 3916752 **Zone:** 10 / 11 (circle one) **Error:** ±____ ft / m / pdop

GPS within stand? (Yes) / No If No, cite from GPS to stand distance (m) ____ bearing ° ____ inclination ° ____
and record projected UTMs: UTME ____ UTMN ____

Elevation: ( ) ft / m **Camera Name/Photograph #'s:** Iphone

Stand Size (acres): <1, 1-5, >5 | **Plot Size (m^2):** 10 / 100 / 400 / 1000 | **Plot Shape** ___ x ___ ft / m **or Circle Radius** ___ ft / m

Exposure, Actual °: _____ NE NW SE SW Flat (Variable) All | **Steepness, Actual °:** _____ 0° (1-5°) 5-25° > 25

Topography: Macro: top upper (mid) lower bottom | **Micro:** convex flat concave (undulating)

Geology code: SETU **Soil Texture code:** FISN | (Upland) or Wetland/Riparian (circle one)

% Surface cover: (Incl outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)

H20: ( ) **BA Stems:** 30 **Litter:** 3 **Bedrock:** ( ) **Boulder:** ( ) **Stone:** ( ) **Cobble:** ( ) **Gravel:** ( ) **Fines:** 69 =100%

% Current year bioturbation 1 **Past bioturbation present?** Yes / (No) | **% Hoof punch** _____

Fire evidence: Yes / (No) (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments:

Planted erosion control / dune stabilization

Disturbance code / Intensity (L,M,H): 20/L ___/___ ___/___ ___/___ ___/___ **"Other"** _____/___

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH : T1 (<1" dbh), **T2** (1-6" dbh), **T3** (6-11" dbh), **T4** (11-24" dbh), **T5** (>24" dbh), **T6** multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: S1 seedling (<3 yr. old), **S2** young (<1% dead), **S3** mature (1-25% dead), **S4** decadent (>25% dead)

Herb: H1 (<12" plant ht.), **H2** (>12" ht.) **Desert Riparian Tree/Shrub: 1** (<2ft. stem ht.), **2** (2-10ft. ht.), **3** (10-20ft. ht.), **4** (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), **2** (1.5-6" diam.), **3** (>6" diam.) **% NonVasc cover:** 0 **% Vasc Veg cover:** 60

% Cover: **Conifer tree / Hardwood tree:** ____/____ **Regenerating Tree:** ____ **Shrub:** ____ **Herbaceous:** 60

Height Class: **Conifer tree / Hardwood tree:** ____/____ **Regenerating Tree:** ____ **Shrub:** ____ **Herbaceous:** 02

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S = Shrub, H= Herb, E = SEedling, A = SApling, N= Non-vascular.
% cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%.

Strata	Species	% cover	C	Strata	Species	% cover	C
H	Ammophila arenaria	60					
H	H. grandiflora	1					

Unusual species: _____

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Ammophila Stand

Field-assessed association name (optional): _____

Adjacent alliances/direction: Beach Strand, W & N, Restoration E, Developed, S / _____

Confidence in alliance identification: L (M) H **Explain:** _____

Phenology (E,P,L): (Herb) Shrub Tree **Other identification or mapping information:**

Project: 1502-2741 Dynegy Biological Resources Assessment
Vegetation Rapid Assessment Attachment
Stand/Plot ID: **MB0003**

North

East

South

West

Classification: European beach grass swards (MCVII)

CNPS and CDFW Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised February 27, 2014)

For Office Use
Final database #:

Final vegetation type: Alliance _____
Association _____

I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Stand ID: MB0004

Date: 9/24/2015

Name of recorder: C. S. A. B

Other surveyors:

GPS name: Trimble **Datum:** (NAD83) or _____ For Relevé: **Bearing°**, left axis at SW point____ of **Long / Short** side

UTME 694099 **UTMN** 3916755 **Zone: 10 / 11** (circle one) **Error: ±**_____ **ft / m / pdop**

GPS within stand? (Yes) / No If No, cite from GPS to stand: distance (m) ____ bearing ° ____ inclination ° ____
and record projected UTMs: UTME ____ UTMN ____

Elevation: 0 ft / m **Camera Name/Photograph #'s:**

Stand Size (acres): (<1), 1-5, >5 | **Plot Size** (m^2): 10 / 100 / 400 / 1000 | **Plot Shape** ___ x ___ ft / m **or Circle Radius** ____ ft / m

Exposure, Actual °: _____ NE NW SE SW Flat Variable All | **Steepness, Actual °:** _____ 0° 1-5° 5-25° > 25

Topography: Macro: top upper (mid) lower bottom | **Micro:** convex flat concave (undulating)

Geology code: SETU **Soil Texture code:** FLSN | (Upland) or Wetland/Riparian (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)

H20: 0 **BA Stems:** 10 **Litter:** 3 **Bedrock:** 0 **Boulder:** 0 **Stone:** 0 **Cobble:** 0 **Gravel:** 0 **Fines:** 87 =100%

% Current year bioturbation 0 **Past bioturbation present?** Yes / (No) | **% Hoof punch** _____

Fire evidence: Yes / (No) (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments:

Foredunes, recreational beach area is adjacent

Disturbance code / Intensity (L,M,H): 20 / L ___/___ ___/___ ___/___ ___/___ **"Other"** _____/___

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH : T1 (<1" dbh), **T2** (1-6" dbh), **T3** (6-11" dbh), **T4** (11-24" dbh), **T5** (>24" dbh), **T6** multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: S1 seedling (<3 yr. old), **S2** young (<1% dead), **S3** mature (1-25% dead), **S4** decadent (>25% dead)

Herb: (H1) (<12" plant ht.), **H2** (>12" ht.) Occassional **Desert Riparian Tree/Shrub: 1** (<2ft. stem ht.), **2** (2-10ft. ht.), **3** (10-20ft. ht.), **4** (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), **2** (1.5-6" diam.), **3** (>6" diam.) **% NonVasc cover:** 0 **% Vasc Veg cover:** 25

% Cover: **Conifer tree / Hardwood tree:** ____/____ **Regenerating Tree:** ____ **Shrub:** ____ **Herbaceous:** 25

Height Class: **Conifer tree / Hardwood tree:** ____/____ **Regenerating Tree:** ____ **Shrub:** ____ **Herbaceous:** 01

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S = Shrub, H= Herb, E = SEedling, A = SApling, N= Non-vascular.
% cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%

Strata	Species	% cover	C	Strata	Species	% cover	C
H	Abronia maritima	20					
H	Ambrosia chamissonis	5					
H	Cakile maritima	5					
H	Ammophila arenaria	1					
H	Carpobrotus edulis	3					

Unusual species: _____

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Abronia maritima (Dune mat)

Field-assessed association name (optional): _____

Adjacent alliances/direction: _____/_____, _____/_____

Confidence in alliance identification: L M (H) **Explain:** _____

Phenology (E.P.L): Herb P **Shrub** ___ **Tree** ___ **Other identification or mapping information:**

Project: 1502-2741 Dynegy Biological Resources Assessment
Vegetation Rapid Assessment Attachment
Stand/Plot ID: **MB0004**

North

East

South

West

Classification: Dune mat (MCVII)

CNPS and CDFW Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised February 27, 2014)

For Office Use
Final database #:

Final vegetation type: Alliance _____
Association _____

I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Stand ID: MB0005 **Date:** 9/25/15 **Name of recorder:** Christina Santana
Other surveyors:

GPS name: Trimble **Datum:** NAD83 or _____ For Relevé: **Bearing°**, left axis at SW point____ of **Long / Short** side
UTME 6 9 4 1 0 9 **UTMN** 3 9 1 6 8 3 8 **Zone: 10 / 11** (circle one) **Error:** ±_____ **ft / m / pdop**

GPS within stand? (Yes) No If No, cite from GPS to stand distance (m) ____ bearing ° ____ inclination ° ____
and record projected UTMs: UTME _____ UTMN _____

Elevation: 0 ft / m **Camera Name/Photograph #'s:** Canon 1, 2, 3, 4

Stand Size (acres): <1, (1-5,) >5 | **Plot Size (m²):** 10 / 100 / 400 / 1000 | **Plot Shape** ___ x ___ ft / m **or Circle Radius** ___ ft / m
Exposure, Actual °: _____ NE NW SE SW Flat (Variable) All | **Steepness, Actual °:** _____ (0°) 1-5° 5-25° > 25

Topography: Macro: top upper mid (lower) bottom | **Micro:** convex flat concave (undulating)
Geology code: SETU **Soil Texture code:** FINS | (Upland) or Wetland/Riparian (circle one)

% Surface cover: (Incl outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)
H20: 0 **BA Stems:** 5 **Litter:** 0 **Bedrock:** 0 **Boulder:** 0 **Stone:** 0 **Cobble:** 0 **Gravel:** 0 **Fines:** 95 =100%

% Current year bioturbation 0 **Past bioturbation present?** Yes / (No) | **% Hoof punch** ____
Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments:
Foredunes at Creek mouth, beach recreation

Disturbance code / Intensity (L,M,H): 201 L ___/___ ___/___ ___/___ ___/___ **"Other"** _____/___

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH : T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 multi-layered (T3 or T4 layer under T5, >60% cover)
Shrub: S1 seedling (<3 yr old), S2 young (<1% dead), S3 mature (1-25% dead), S4 decadent (>25% dead)
Herb: (H1) (<12" plant ht.), H2 (>12" ht.) **Desert Riparian Tree/Shrub:** 1 (<2ft stem ht.), 2 (2-10ft ht.), 3 (10-20ft ht.), 4 (>20ft ht.)
Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.) **% NonVasc cover:** 0 **% Vasc Veg cover:** 20
% Cover: **Conifer tree / Hardwood tree:** ___/___ **Regenerating Tree:** ___ **Shrub:** ___ **Herbaceous:** 20%
Height Class: **Conifer tree / Hardwood tree:** ___/___ **Regenerating Tree:** ___ **Shrub:** ___ **Herbaceous:** 01
Height classes: (01)=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S = Shrub, H= Herb, E = SEedling, A = SApling, N= Non-vascular.
% cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%.

Strata	Species	% cover	C	Strata	Species	% cover	C
H	Cakile maritima	8					
H	Ambrosia chamissonis	12					
H	Atriplex prostata	1					

Unusual species: _____

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Ambrosia cham alliance (Dune mat)
Field-assessed association name (optional): _____
Adjacent alliances/direction: West - Beach strand, N beach & Dev E Riparian S Beach
Confidence in alliance identification: L M (H) **Explain:** Plants readily identifiable
Phenology (E(P)L): Herb P **Shrub** ___ **Tree** ___ **Other identification or mapping information:**

Project: 1502-2741 Dynegy Biological Resources Assessment
Vegetation Rapid Assessment Attachment
Stand/Plot ID: **MB0005**

North

East

South

West

Classification: Dune mat (MCVII)

CNPS and CDFW Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised February 27, 2014)

For Office Use | **Final vegetation type:** Alliance
Final database #: | Association

I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Stand ID: MB0006 | **Date:** 9/25/15 | **Name of recorder:** C. Santala | **Other surveyors:**

GPS name: Trimble **Datum:** NAD83 or _____ For Relevé: **Bearing°**, left axis at SW point____ of **Long / Short** side

UTME 6 9 4 2 0 7 **UTMN** 3 9 1 6 8 6 0 **Zone:** 10 / 11 (circle one) **Error:** ±_____ ft / m / pdop

GPS within stand? (Yes) No If No, cite from GPS to stand: distance (m) ____ bearing ° ____ inclination ° ____
and record projected UTMs: UTME _____ UTMN _____

Elevation: 0 ft / m **Camera Name/Photograph #'s:** Canon 5, 6, 7, 8

Stand Size (acres): <1, (1-5), >5 | **Plot Size (m²):** 10 / 100 / 400 / 1000 | **Plot Shape** ___ x ___ ft / m **or Circle Radius** ___ ft / m

Exposure, Actual °: _____ NE NW SE SW Flat Variable All | **Steepness, Actual °:** 0 0° 1-5° 5-25° > 25

Topography: Macro: top upper mid (lower) bottom | **Micro:** (convex) flat concave (undulating)

Geology code: SETU **Soil Texture code:** BNS | **Upland or Wetland** (Riparian) (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)

H20: 0 **BA Stems:** 35 **Litter:** 5 **Bedrock:** 0 **Boulder:** 0 **Stone:** 0 **Cobble:** 0 **Gravel:** 0 **Fines:** 60 =100%

% Current year bioturbation 2 **Past bioturbation present?** Yes / (No) | **% Hoof punch** ____

Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments:

Creek mouth BMAC transects above (installed recently), open to the Public adjacent to beach activities

Disturbance code / Intensity (L,M,H): 20 / L ___/___ ___/___ ___/___ ___/___ **"Other"** _____/___

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH : T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: S1 seedling (<3 yr. old), S2 young (<1% dead), (S3) mature (1-25% dead), S4 decadent (>25% dead)

Herb: (H1) (<12" plant ht.), (H2) (>12" ht.) **Desert Riparian Tree/Shrub:** 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.) **% NonVasc cover:** 0 **% Vasc Veg cover:** 95

% Cover: **Conifer tree / Hardwood tree:** —/— **Regenerating Tree:** — **Shrub:** 5 **Herbaceous:** 90

Height Class: **Conifer tree / Hardwood tree:** ___/___ **Regenerating Tree:** — **Shrub:** 02 **Herbaceous:** 01, 02, 03

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m (04=2-5m) 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S = Shrub, H= Herb, E = SEedling, A = SApling, N= Non-vascular.
% cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%.

Strata	Species	% cover	C	Strata	Species	% cover	C
S	Salix lasiolepis	10		H	Potentilla anserina	5	
S	Baccharis glutinosa	5		H	Atriplex prostata	15	
S	Salix exigua	3		H	Cakile maritima	3	
S	Melilotus albus	25		H	Rumex sp.	1	
H	Distichlis spicata	25		S	Baccharis pilularis	1	
H	Carpobrotus edulis	3		H	Helenium grandiflora	7	
H	Ambrosia chamissonis	2		H	Convolvulus	1	
H	Schoenoplectus pungens	10		H	Juncus communis	1	

Unusual species: _____

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Mixed Riparian / Wetland

Field-assessed association name (optional): _____

Adjacent alliances/direction: _____/_____, _____/_____

Confidence in alliance identification: L M H **Explain:** _____

Phenology (E,P,L): Herb L **Shrub** P **Tree** — **Other identification or mapping information:** _____

CNPS and CDFW Combined Vegetation Rapid Assessment and Relevé Field Form

RELEVE SPECIES SHEET (Revised 2/27/2014)

Page 2 of Polygon/Stand #: MK0006

Stratum categories: T = Tree, S = Shrub, H = Herb, E = SEedling, A = SApling, and N=Non-vascular

% Cover Intervals for reference: r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

Strata	Vascular plant name or lichen/bryophyte	% Cover	Collection	Final species determination (or DBH)
H	Juncus bufonius	2		
H	Salsola tragus	1		
H	Tetragonia tetragonoides	1		

Project: 1502-2741 Dynegy Biological Resources Assessment
Vegetation Rapid Assessment Attachment
Stand/Plot ID: **MB0006**

North

East

South

West

Classification: Mixed Riparian/Wetland (Site-Specific)

CNPS and CDFW Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised February 27, 2014)

For Office Use
Final database #:

Final vegetation type: Alliance _____
Association _____

I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Stand ID: MB0007 **Date:** 9/25/15 **Name of recorder:** C. Santala
Other surveyors:

GPS name: Inmbe **Datum: NAD83 or** _____ For Relevé: **Bearing°**, left axis at SW point ____ of **Long / Short** side
UTME 6 9 4 3 0 6 **UTMN** 3 9 1 6 8 6 2 **Zone: 10 / 11** (circle one) **Error: ±** _____ **ft / m / pdop**

GPS within stand? (Yes) / No If No, cite from GPS to stand: distance (m) ____ bearing ° ____ inclination ° ____
and record projected UTMs: UTME _____ UTMN _____

Elevation: 0 ft / m **Camera Name/Photograph #'s:** Canon 9, 10, 11, 12

Stand Size (acres): <1, (1-5), >5 | **Plot Size (m²):** 10 / 100 / 400 / 1000 | **Plot Shape** ___ x ___ ft / m **or Circle Radius** ___ ft / m
Exposure, Actual °: _____ NE NW SE SW Flat (Variable) All | **Steepness, Actual °:** 0 0° 1-5° 5-25° > 25

Topography: Macro: top upper mid (lower) bottom | **Micro:** (convex) flat concave (undulating)
Geology code: SAAL **Soil Texture code:** MELS | **Upland or (Wetland/Riparian)** (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)
H20: 0 **BA Stems:** 20 **Litter:** 10 **Bedrock:** 0 **Boulder:** 0 **Stone:** 0 **Cobble:** 0 **Gravel:** 3 **Fines:** 67 =100%

% Current year bioturbation 2 **Past bioturbation present?** Yes / (No) | **% Hoof punch** _____
Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments:
Ephemeral drainage adjacent to beach

Disturbance code / Intensity (L,M,H): 20 / L ___/___ ___/___ ___/___ ___/___ **"Other"** _____ / ___

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH : T1 (<1" dbh), **T2** (1-6" dbh), **T3** (6-11" dbh), **T4** (11-24" dbh), **T5** (>24" dbh), **T6** multi-layered (T3 or T4 layer under T5, >60% cover)
Shrub: S1 seedling (<3 yr. old), **S2** young (<1% dead), (**S3** mature (1-25% dead), **S4** decadent (>25% dead)
Herb: (H1 (<12" plant ht.) (H2 (>12" ht.) **Desert Riparian Tree/Shrub: 1** (<2ft. stem ht.), **2** (2-10ft. ht.), **3** (10-20ft. ht.), **4** (>20ft. ht.)
Desert Palm/Joshua Tree: 1 (<1.5" base diameter), **2** (1.5-6" diam.), **3** (>6" diam.) **% NonVasc cover:** 0 **% Vasc Veg cover:** 75
% Cover: Conifer tree / Hardwood tree: ___/___ **Regenerating Tree:** ___ **Shrub:** ___ **Herbaceous:** ___
Height Class: Conifer tree / Hardwood tree: ___/___ **Regenerating Tree:** ___ **Shrub:** 84 03 **Herbaceous:** 01, 02
Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S = Shrub, H= Herb, E = SEedling, A = SApling, N= Non-vascular.
% cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%.

Strata	Species	% cover	C	Strata	Species	% cover	C
S	Salix lasiolepis	60		H	Atriplex prostata	5	
S	Baccharis glutinosa	20		H	Elymus condensatus	6	
H	Conium maculatum	1		T	Platanus racemosa	1	
H	Delairea odorata (Vine)	2		H	Ricinus communis	1	
H	Helminthotheca echioides	3		H	Stellaria media	1	
S	Rubus ursinus	4					
H	Nasturtium	1					
H	Eriogonum ramadense	5					

Unusual species: _____

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Arroyo willow stand
Field-assessed association name (optional): _____
Adjacent alliances/direction: Beach sand dune / Dev-North / Dev open space E / Dev south
Confidence in alliance identification: L M H **Explain:** _____
Phenology (E,P,L): Herb L **Shrub** P **Tree** L **Other identification or mapping information:**

Project: 1502-2741 Dynegy Biological Resources Assessment
Vegetation Rapid Assessment Attachment
Stand/Plot ID: **MB0007**

North

East

South

West

Classification: Arroyo willow thicket (MCVII)