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PG&E Letter DCL-24-082

ATTN: Document Control Desk U.S. Nuclear Regulatory Commission Washington, DC 20555-0001

Diablo Canyon Units 1 and 2 Docket No. 50-275, OL-DPR-80 Docket No. 50-323, OL-DPR-82 <u>Diablo Canyon Power Plant Decommissioning Draft Biological Assessment and</u> <u>Draft Essential Fish Habitat Assessment</u>

Dear Commissioners and Staff:

On May 29, 2024, Pacific Gas and Electric Company (PG&E) sent a Draft U.S. Army Corps of Engineers (USACE) Standard Individual Permit (SIP) Application Package for Diablo Canyon Power Plant (DCPP) Decommissioning to the following federal agencies:

- National Marine Fisheries Service
- U.S. Nuclear Regulatory Commission (NRC)
- USACE
- U.S. Fish and Wildlife Service

The application package was submitted as a draft to provide information to assist in developing the approach for a single Endangered Species Act Section 7 consultation process for both DCPP License Renewal and DCPP Decommissioning.

Included in the Draft SIP Application package was a Draft Biological Assessment and Draft Essential Fish Habitat Assessment. PG&E understands that the NRC would like to cite some of the information from these documents in the Draft Supplemental Environmental Impact Statement for DCPP License Renewal. Therefore, enclosed are copies of these draft reports as Enclosures 1 and 2, respectively.

PG&E makes no new or revised regulatory commitments (as defined in NEI 99-04) in this letter.

If you have any questions or require additional information, please contact Mr. Kris Vardas at (805) 975-5220 or by email at Kris.Vardas@pge.com.

Document Control Desk Page 2 PG&E Letter DCL-24-082

Sincerely,

Thomas P. Jones Senior Director, Regulatory, Environmental, & Repurposing

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Enclosures

cc: Diablo Distribution

cc/enc: Anthony Chu, California Department of Public Health Kimberly Conway, NRC Environmental Project Manager Mahdi O. Hayes, NRC Senior Resident Inspector Delphine Hou, California Department of Water Resources John D. Monninger, NRC Region IV Administrator Diablo Canyon Decommissioning – Draft Biological Assessment



Biological Assessment

Prepared for PG&E By

Ramboll/SWCA

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29 April 2024

Prepared by

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Approved by

Date

DCPP Decommissioning Planning Information



Change History Log

Revision	Author(s)	Date	Description of Change
A1	Shannon Fluharty, Paul Krause, Brian Dugas	October 31, 2023	Review Draft
A2	Shannon Fluharty, Paul Krause, Brian Dugas	February 14, 2024	Minor modifications in response to comments
A3	Shannon Fluharty, Paul Krause	April 19, 2024	Minor modifications in response to comments
A4	Shannon Fluharty, Paul Krause	April 29, 2024	Replace figures 4.2.1-1, 4.2.1-3, and 4.2.1-4

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List of Acronyms and Abbreviations

<u>Name</u>	Description
AoR	Area of Responsibility
Aspen	Aspen Environmental Group
BA	Biological Assessment
BIA	Biologically Important Area
BMP	Best Management Practices
CCC	California Coastal Commission
CDFW	California Department of Fish and Wildlife
CEMP	California Eelgrass Mitigation Policy
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CHNMS	Chumash Heritage National Marine Sanctuary
County	County of San Luis Obispo Planning and Building Department
CRLF	California Red-legged Frog
CSLC	California State Land Commission
CWA	Clean Water Act
DCPP	Diablo Canyon Power Plant
DEIR	Draft Environmental Impact Report
DPS	Distinct Population Segments
EFH	Essential Fish Habitat
ENP	Eastern North Pacific
ERM	Environmental Resources Management, Inc.
ESA	Endangered Species Act
ESHA	Environmentally Sensitive Habitat Area
FSS	Final Status Surveys
GTCC	Greater-than-Class C
IPAC	Information for Planning and Consultation
ISFSI	Independent Spent Fuel Storage Installation
kV	Kilovolts
LOD	Limit of Disturbance
MBRA	Marine Biological Resources Assessment
MLLW	Mean lower low water
MMPA	Marine Mammal Protection Act
MPA	Marine Protected Area
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<u>Name</u>	Description
NMFS	National Marine Fisheries Service
nmi ²	Square nautical miles
NOAA	National Oceanic and Atmospheric Administration
NRC	U.S. Nuclear Regulatory Commission
ONMS	Office of National Marine Sanctuaries
PBF	Physical or biological features
PBR	Pismo Beach Railyard
PCE	Primary Constituent Elements
PG&E	Pacific Gas and Electric Company
SFP	Spent Fuel Pool
SMR	State Marine Reserve
SMVR-SB	Santa Maria Valley Railyard Facility at Betteravia Industrial Park
SNF	Spent nuclear fuel
SSC	Structures, systems, and components
SWCA	SWCA Environmental Consultants
Tenera	Tenera Environmental, Inc.
TBRA	Terrestrial Biological Resources Assessment
U.S.	United States
USACE	U.S. Army Corps of Engineers Corps
USFWS	U.S. Fish and Wildlife Service
WEAP	Worker Environmental Awareness Program
WNP	Western North Pacific
WOTUS	Waters of the United States
ZOI	Zone of Influence



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Diabio Ganyon Decommission

1. Introduction

Upon expiration of the Pacific Gas and Electric Company (PG&E) Diablo Canyon Power Plant (DCPP) two-reactor operating licenses, the entire power plant will be decommissioned (the Project). The Project encompasses three sites: (1) the DCPP site; (2) the Pismo Beach Railyard (PBR); and (3) Santa Maria Valley Railyard Facility at Betteravia Industrial Park (SMVR-SB) site in Santa Barbara County. The DCPP site is situated near Avila Beach in San Luis Obispo County on approximately 12,000 acres of the Pacific Coast. The PBR is an approximately 25.5-acre site located approximately 0.5 mile north of U.S. Highway 101 within Price Canyon, adjacent to Pismo Creek. While the SMVR-SB is located at 2820 W. Betteravia Road in the County of Santa Barbara approximately 30 miles southeast of the DCPP site. An application for authorization under Clean Water Act (CWA) Section 404 to conduct dredge and fill activities in Waters of the United States (WOTUS) and for authorization under Section 10 of the Rivers and Harbors Act of 1988 to conduct work in federally navigable waters has been submitted to the U.S. Army Corps of Engineers (USACE). This application is seeking approval for a portion of Phase 1 and Phase 2 activities, involving the decommissioning of the associated Discharge Structure, closure of the Intake Structure, and vessel activity associated with barging in the Intake Cove and Discharge Cove.

This Biological Assessment (BA) is prepared for PG&E by Ramboll and SWCA Environmental Consultants (SWCA; formerly Terra Verde Environmental Consulting) under the requirements of Section 7 (50 Code of Federal Regulations [CFR] 402.12 and 402.14[c]) of the Federal Endangered Species Act (ESA; 16 U.S.C. §§ 1531 et seq.). Several components of the Project interface with WOTUS under the jurisdiction of the USACE. The USACE Area of Responsibility (AoR), or USACE Action Area, encompasses these aquatic areas along with adjacent upland areas that need to be accessed to complete work within WOTUS. Because there is overlap between larger Project activities and proposed work within WOTUS, as well as suitable habitat for the same listed species inside and outside of the USACE AoR, PG&E requests that USACE provide the U.S. Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration (NOAA) Fisheries with a BA that evaluates impacts on listed species associated with the entire Project. The Project shall occur within the 750-acre U.S. Nuclear Regulatory Commission (NRC) DCPP licensed boundary as well as areas in the Pacific Ocean. As such, this BA includes information for both terrestrial and marine ESA-protected species and critical habitat¹ managed by the USFWS and NOAA Fisheries. The USFWS has permitting authority for both terrestrial and marine species within the overall Project limits and therefore there are two distinct USFWS Action Areas: the USFWS Action Area within USACE AoR and the USFWS Action Area outside USACE AoR. The NOAA Fisheries Action Area is

¹ NOAA Fisheries defines 'critical habitat' as the physical and biological features (PBF) that are essential to the conservation of a given species and that may require special management considerations or protection (50 CFR 424.12[b]). These may include spawning sites, feeding sites, seasonal wetland or dryland, water quality or quantity, geological formations, vegetation type, tide, and specific soil types. These features are referred to as Primary Constituent Elements (PCEs). During development of the Final Rule (76 FR 66806), critical habitat was divided into 20 Specific Areas. The DCPP site occurs within Specific Area 10.



limited to suitable habitat for marine species within the Project footprint located along the immediate coastline and within WOTUS.

The information provided in this BA was prepared in accordance with legal requirements set forth under Section 7 of the ESA (16 USC 1536 [c]), and follows the standards established in the USFWS Endangered Species Consultation Handbook (USFWS and NMFS 1998 as amended in 2019). This BA is supporting the USACE effects determination on federally listed species and to initiate a Section 7 consultation with USFWS and NOAA Fisheries.

This BA is organized in the following chapters:

- Chapter 1 is the introduction and brief background for the purpose of the BA.
- Chapter 2 provides a detailed description of the DCPP Decommissioning Project with each phase and a bifurcation of which portions of the USFWS Action Area are within and outside the USACE AoR and are within the NOAA Fisheries Action Area.
- Chapter 3 describes the project location, existing land use, and Action Areas.
- Chapter 4 details the terrestrial baseline within the Action Areas and which species are under USFWS and NOAA Fisheries responsibility.
- Chapter 5 summarizes the marine baseline within the Action Areas and which species are under USFWS and NOAA Fisheries responsibility.
- Chapter 6 provides effects analyses and determinations for each terrestrial and marine species.
- Chapter 7 summarizes potential cumulative effects to the Action Areas.
- Chapter 8 lists the conservation and mitigation measures for each species.
- Chapter 9 includes the references for the document.

2. Project Description

The full decommissioning effort of the DCPP facility (the Project) shall occur in two phases: Phase 1: Pre-planning and Decommissioning Project Activities and Phase 2: Final Site Restoration and Independent Spent Fuel Storage Installation (ISFSI) Only Operations. Broadly, Phase 1 includes decontamination and dismantling of on-site structures, systems, and components (SSCs), transfer of spent nuclear fuel (SNF) from the spent fuel pool (SFP) to the ISFSI, soil remediation activities, Final Status Surveys (FSS), and site modifications. Phase 2 generally includes completion of soil remediation, FSS, License Termination, final site restoration, and ISFSI operations. Figure 2-1 depicts the current state of the DCPP site and planned new buildings as part of DCPP Decommissioning. Sections 2.1 and 2.2 below summarize the activities included in each phase.



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Figure 2-1 – Existing DCPP Site with Planned New Buildings

Source: Figure 2-2; County of San Luis Obispo (County) 2023.



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2.1. Phase 1

Phase 1 activities would include disconnecting power to existing buildings, and installing an alternate external power supply, known as Cold and Dark power. Site infrastructure modifications as part of the Project include the construction of an approximately 12,000 square-foot building to serve as the New Security Building for the ISFSI and the Greater-than-Class C (GTCC) Waste Storage Facility and a new indoor Firing Range adjacent to this new building. A separate, approximately 15,000 square-foot building would provide storage for larger materials, equipment, vehicles, and trailers. An approximately 4,800 square-foot Security Warehouse is proposed as a permanent structure intended to support security-related long-term operations of the new Security Building. Additionally, an approximately 5,400 square-foot Vertical Cask Transporter Warehouse would be constructed north of the ISFSI pad for storage of the Vertical Cask Transporter. Additionally, a roughly 2,880 square-foot temporary decommissioning office construction trailer shall be constructed off Decom Avenue. This temporary structure would be removed upon completion of decommissioning activities and will not be needed for the five-year mitigation monitoring period following completion of construction activities. Removal of the exiting Discharge Structure and restoration of the area following removal, along with modifications to the Intake Structure to support barging activities, would also be carried out in Phase 1. A full list of the Phase 1 Project activities is as follows:

- **Cold and Dark Modifications:** Install electrical infrastructure to supply power for decommissioning.
- Site Security Modifications: Change security infrastructure to support decommissioning.
- **Site infrastructure modifications:** Modifications to buildings 109, 119, 116, 115, and 113; including utilities, updates to building aesthetics, safety, and equipment maintenance.
- **Railyard Modifications:** Modify and use railyard(s) for waste shipments PBR contingency site modifications by PG&E, SMVR-SB Santa Barbara County modifications by SMVR)
- **System and Area Closure:** Prior to building or structure demolition, SSCs will be removed following established procedures related to level of radioactivity and/or presence of other hazardous materials.
- Intake Structure Modification: Modify Intake Structure to load barges for bulk waste transport.
- Auxiliary Saltwater System Cooling of SFP: Cool SFP via the auxiliary saltwater system (current method).
- **Site Characterization Study:** A Site Characterization Study will be conducted to determine the nature and extent of potential radioactive and non-radioactive contaminants that may exist at the DCPP site.
- **Decontamination:** Remove, remediate, and/or abate hazardous materials in structures.
- **Building Demolition:** Removal of equipment, systems, or portions of systems within buildings prior to building demolition.
- **Stormwater Management:** Installation of temporary erosion and sediment controls for demolition activities.

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- **Waste Transport:** Transporting non-hazardous and non-radiological waste material offsite via trucks to the PBR and transferring loads into gondola rail cars for train shipment to the appropriate disposal facility, or via trucks to the SMVR, direct transport out-of-state, or via shipping barge.
- **Reactor Pressure Vessel Internals Removal and Disposal:** reactor pressure vessels and internal components and transport off site for disposal.
- **Large Component Removal:** Removal of large components associated with the containment buildings and turbine buildings prior to building demolition.
- **Utilities, Remaining Structures, Roads, and Parking Area Demolition:** Removal of any utilities no longer required for long-term operation.
- **Remove 230 kilovolts (kV) and 500 kV Infrastructure:** Remove 230 kV and 500 kV lines, poles, and towers from the Power Block to the switchyards (switchyards are to be retained).
- Construction of Waste Storage Facilities: Construction of radioactive storage facilities.
- **SNF and GTCC Waste Transfer to ISFSI and new GTCC Storage Facility:** After a cooling and decay period (i.e., time to reduce radioactivity), SNF and GTCC waste would be moved to the ISFSI and new GTCC Waste Storage Facility, respectively, for storage (SNF will be transferred to dry cask storage within approximately 4 years after each reactor shutdown).
- Water Management: Produce fresh water and cooling water and manage wastewater.
- Soil Remediation: Remediation of radiological and non-radiological impacted soils.
- **Initial Site Restoration:** Backfill, grade, and landscape to restore excavated and disturbed features at DCPP to natural conditions.
- License Termination Plan (LTP): Prepare and submit an LTP to the NRC.
- **FSS:** Surveys will be conducted to ensure all radiological materials have been removed.
- **Firing Range:** Remove the existing Firing Range and construct a new indoor Firing Range.
- **Retain Breakwaters:** Release Breakwaters from Part 50 facility operating license for reuse by others.
- **Retain Intake Structure:** Release Intake Structure from Part 50 facility operating license for reuse by others.
- **Installation of a Cofferdam:** A cofferdam will dewater the area for dry removal of the Discharge Structure.
- **Demolition of the Discharge Structure:** A crane and backhoe will be utilized to remove the overburden on the Discharge Structure.
- **Discharge Structure Restoration:** The void created by removal of the Discharge Structure will be filled with quarry rock sourced from local quarries (i.e., Santa Catalina Island and San Francisco Bay) and moved to site via tug and barge.
- **Discharge subtidal Zone Restoration:** Once discharge ceases, a pre-restoration hyperaccurate hydrographic survey will be completed to discern the subtidal conditions.

2.2. Phase 2 (2032-2039)

Phase 2 covers activities necessary to complete final site restoration and maintain ISFSI Operations. Activities in this phase include remediation, final site restoration, stormwater management, post-



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final site restoration activities, and Part 50 License Termination. The proposed activities in Phase 2 include:

- **Complete Waste Transportation:** Complete transport of remaining radiological and non-radiological waste materials off site.
- **Complete Soil Remediation:** Remediation of radiological and non-radiological impacted soils.
- **Complete FSS:** Surveys to be completed to ensure all radiological materials have been removed.
- **Intake Structure Closure:** Fill interior of Intake Structure and seal openings of Intake Structure with concrete bulkheads and removal of improvements and structures on top of the structure.
- NRC Part 50 License Termination: Terminate DCPP's NRC Part 50 facility operating licenses.
- Utilities, Remaining Structures, Roads, and Parking Area Demolition: Remove facilities not needed to support the retained DCPP facilities.
- **Final Site Restoration:** Grading and landscaping (revegetation) to restore excavated and disturbed features at DCPP to natural conditions.
- **Long-Term Stormwater Management:** Installation of post-grading stormwater controls to minimize any sediment impacts from the site to Diablo Creek and the Pacific Ocean.
- **Post-Final Site Restoration Monitoring**: Monitoring required due to site restoration.

2.3. Summary of Proposed Action

PG&E has requested the USACE issuance of an Individual Permit under Section 404 of the CWA authorizing discharge of fill to WOTUS and for authorization under Section 10 of the Rivers and Harbors Act of 1988 to conduct work in federally navigable waters to execute the decommissioning of the DCPP Discharge Structure, modifications to the Intake Structure, and for barging and anchoring activities within the Discharge Cove and Intake Cove. Discharge Structure removal and Intake Cove closure are only two components of the larger DCPP Decommissioning Project. Because there is overlap between larger Project activities and proposed work within WOTUS, as well as suitable habitat for the same listed species inside and outside of the USACE AoR, PG&E requests that the USACE provide the USFWS and NOAA Fisheries with a BA that evaluates impacts on listed species associated with the larger DCPP Decommissioning Project.

For the purposes of this BA, the Proposed Action has been split to differentiate between decommissioning activities under the permitting authority of the USACE and decommissioning activities outside USACE permitting authority.

The scope of the Proposed Action in the USACE AoR includes the removal of the Discharge Structure, the closure of the Intake Cove, and associated barging activity in both the Intake Cove and Discharge Cove.

The Discharge Structure is located to the west of the turbine building and consists of a tiered structure with an associated stairwell system. The structure was constructed to direct the flow of DCPP Decommissioning Planning Information



water from DCPPs discharge conduits out to the Pacific Ocean. The Discharge Structure was built into the bluff west of the turbine building, occupying a footprint of approximately 13,000 square feet. A portion of the Discharge Structure is below mean sea level, exposing it to wave action from the Pacific Ocean. To mitigate safety risks presented by exposure to turbulent wave activity, the "marine" aspect of the removal of the Discharge Structure would be minimized by the installation of a temporary circular cell steel sheet pile cofferdam. The temporary cofferdam would isolate work from direct action of the Pacific Ocean and would allow subsequent work to occur "in the dry."

A demolition plan for the DCPP Discharge Structure was proposed in the Preliminary Discharge Structure Demolition and Restoration Plan, which includes an approach to construct a temporary cofferdam, demolish the Discharge Structure, remove the coffer dam, and restore the shoreline post demolition with soil, concrete, gravel, and quarry rock fill (PG&E 2022a).

The cofferdam will join the coastline in the intertidal and shallow subtidal habitat immediately upcoast of the Discharge Structure. This intertidal and shallow subtidal habitat consists of emergent bedrock that forms a rocky-hard bottom. Approximately 0.58 acres of intertidal and subtidal marine habitat would be directly impacted due to cofferdam construction, which includes a 25-foot buffer on the offshore edge. The majority of which consists of scoured bedrock (0.46 acres) and approximately 0.12 acres of mixed sand and rocky habitat (County 2023). The dewatered area consists of approximately 0.12 acres of scoured bedrock and mixed sand and rocky habitat. Overall, the cofferdam construction would directly impact approximately 0.70 acres (0.58+0.12) of both water column and benthic marine habitat.

Cofferdam Installation/Removal

Since the circular cell style cofferdam is a gravity structure that does not require substantial anchoring into the ground (as opposed to a conventional cantilevered sheet pile wall), it can perform as a reliable water barrier without the need for heavy pile driving activity (PG&E 2022a). Since the cofferdam design relies solely on gravity and friction, little pile embedment is required during cofferdam construction; pile driving would utilize a crane-mounted vibratory hammer. The circular cell cofferdam system is comprised of two major elements: the main cell and the arc cell to be comprised of more than 600 sheet piles, which may be referred to in some uses as the "major cell" and "minor cell," respectively.

Once the cell is in place, concrete will be poured in the bottom of the cell to seal it. Following the concrete, angular gravel fill material will be added until it is two-thirds full, as support for the cell (PG&E 2022a). This fill is to be reused later to fill the Discharge Structure area following removal.

After a biological survey of the area and permitted re-location of sensitive marine species, such as black abalone (*Haliotis cracherodii*), the cofferdam will be dewatered using 8-inch centrifugal dewatering pumps for approximately 2 to 4 hours (PG&E 2022a). The dewatering rate is 7,600 gallons per minute.

Removal is also easier for the cofferdam design since the steel sheets are not embedded deeply into the substrate, adding additional benefit (PG&E 2022a). A Project biologist will first inspect the area behind the cofferdam and then the area behind the cofferdam will be filled with seawater. The fill DCPP Decommissioning Planning Information



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material will be removed from the structure and the concrete plugs will systematically be removed by cranes (PG&E 2022a). Once all concrete is broken up, the sheet piles will be extracted (only using vibratory hammers as needed). Overall impacts from the cofferdam would be temporary in nature lasting approximately 14 months (PG&E 2022a).

Demolition of Discharge Structure

Demolition of the Discharge Structure will be accomplished by sealing the upper water tunnel and systematically removing all concrete structures down to the underlying bedrock using excavators, cranes, and loaders (PG&E 2022a). Once completed the void in the bluff face will be reinforced by filling the entire area with a combination of 1-ton quarry rock, ¼-ton rock, angular gravel repurposed from the cofferdams, and native terrace and topsoil to match the natural terrace soil. The topsoil and native terrace provide important bluff stabilization as well as ecological habitat in both the intertidal and terrestrial areas of the bluff (PG&E 2022a).

Closure of Intake Structure

The Intake Structure will remain in place; however, intake tunnels will be closed off with ECOncrete bulkheads. These panels will be precast and bolted to the face of the Intake Structure via crane and have a textured outside face to enhance the biological productivity of the concrete surface (County 2023). The bulkheads would be 2-feet-thick, matching the existing thickness of the Intake Structure walls. There are a total of 16 openings of varying sizes requiring a total concrete volume of approximately 334 cubic yards.

Once sealed, the interior of the Intake Structure will need to be dewatered under approval of the California Water Board prior to filling the interior tunnels of the Intake Structure.

Proposed Action Related Vessel Activity

Due to the required transport of quarry rock and waste material associated with the cofferdam and restoration of the Discharge Structure in the Pacific Ocean, effects from vessel activity are assessed within this BA. It should be noted that within this report, "vessel activity" refers to the movement of barges and vessels to and from the Intake Cove to a designated barge route used for the transportation of materials and waste for the Proposed Action (see Figure 3-1). Temporary project-related vessel traffic within existing federal barge routes would be similar to that of vehicle traffic on a highway and therefore, is not discussed in detail within this BA.

A total of five barges will be anchored or moored for the Proposed Activities. Two empty barges would be temporarily moored to the Intake Structure, while another barge would remain moored in the southern portion of the Intake Cove. The barges in the Intake Cove will support closure activities for the Intake Cove. A pre-assembled crane will be delivered via barge and directly offloaded onto the Intake Structure and be loaded directly back onto the barge when closure activities are complete.

The remaining two barges will be in Diablo Cove (here in referred to as the Discharge Cove): one on the western side of the cofferdam and the other near the mouth of the Discharge Cove.



Sections 2.3.1 through 2.3.3 below, detail which portions of the above-described Proposed Activities fall within the responsibility of the USACE, USFWS, and NOAA Fisheries.

Future Activities

Upon completion of the Project, retained facilities including the Intake Cove would be released from the 10 CFR Part 50 facility operating licenses for both Units. Following this release, the Marina would be made available for reuse for recreational, education, and/or commercial purposes (County 2023). According to the Draft Environmental Impact Report (DEIR), marina improvements are assumed to be completed by a third party and would obtain the necessary permits and approvals. PG&E may also obtain the necessary permits and approvals. There are no planned improvements to the breakwaters of the Intake Cove, and they would continue to protect Marina activities from wave action.

The Marina is anticipated to support small vessel launch via a hydraulic boat hoist, improvements to the existing boat dock in the southeast corner of the Intake Cove, creation of a boat launch ramp and two docks in the northeast corner of the Intake Cove, new parking on top of the Intake Structure and along the eastern side of the Intake Cove, and parking in an upland lot with access from Diablo Canyon Road. Public restrooms will be provided for Marina users. It is assumed that up to 200 persons per day would visit the Marina. All Marina installments will be properly executed by a third party.

2.3.1. Activities in USFWS Action Area within USACE AoR

This section lists the Proposed Activities within the USACE AoR which may impact federally listed species that fall under the regulatory control of the USFWS based on the location and nature of the activity. In addition to the activities summarized below, barging and vessel activities in support of decommissioning are also within the USACE AoR.

Phase 1

- Intake Structure Modification: Modify Intake Structure to load barges for bulk waste transport.
- **Stormwater Management:** Installation of temporary erosion and sediment controls for demolition activities.
- **Installation of a Cofferdam:** A cofferdam will dewater the area for dry removal.
- **Demolition of the Discharge Structure:** A crane will be utilized to remove the overburden on the Discharge Structure.
- **Discharge Structure Restoration:** The void created by removal of the Discharge Structure will be filled with quarry rock sourced from local quarries (i.e., Santa Catalina Island and San Francisco Bay) and moved to site via tug and barge.
- **Discharge Subtidal Zone Restoration:** Once discharge ceases, a pre-restoration hyperaccurate hydrographic survey will be completed to discern the subtidal conditions.



Phase 2

- Intake Structure Closure: Seal openings of Intake Structure with concrete bulkheads and clear top.
- **Utilities, Remaining Structures, Roads, and Parking Area Demolition:** Remove facilities not needed to support the retained DCPP facilities.
- **Final Site Restoration:** Grading and landscaping (revegetation) to restore excavated and disturbed features at DCPP to natural conditions.
- **Long-Term Stormwater Management:** Installation of post-grading stormwater controls to minimize any sediment impacts from the site to Diablo Creek and the Pacific Ocean.
- **Post-Final Site Restoration Monitoring**: Monitoring required due to site restoration.

2.3.2. Activities in USFWS Action Area Outside of USACE AoR

Proposed Activities located outside the USACE AoR that may impact federally listed species under the regulatory control of USFWS are listed in this section.

Phase 1

- **Railyard Modifications:** Modify (under separate permits) and use railyard(s) for waste shipments (PBR contingency site modifications by PG&E, Santa Barbara County modifications by SMVR-SB).
- **System and Area Closure:** Prior to building or structure demolition, selected SSCs will be removed following established procedures related to level of radioactivity and/or presence of other hazardous materials.
- **Intake Structure Modification:** Modify Intake Structure to load barges for bulk waste transport.
- **Stormwater Management:** Installation of temporary erosion and sediment controls for demolition activities.
- **Waste Transport:** Transporting waste material offsite via trucks to PBR and transferring loads into gondola rail cars for train shipment to the appropriate disposal facility.
- Construction of Waste Storage Facilities: Construction of radioactive storage facilities.
- Soil Remediation: Remediation of radiological and non-radiological impacted soils.
- **Initial Site Restoration:** Backfill, grade, and landscape to restore excavated and disturbed features at DCPP to natural conditions.
- **Firing Range:** Remove the existing Firing Range and construct a new indoor Firing Range.
- **Retain Intake Structure:** Release Intake Structure from Part 50 facility operating license for reuse by others.
- **Discharge subtidal Zone Restoration:** Once discharge ceases, a pre-restoration hyperaccurate hydrographic survey will be completed to discern the subtidal conditions.



Phase 2

- **Complete Soil Remediation:** Remediation of radiological and non-radiological impacted soils.
- Intake Structure Closure: Seal openings of Intake Structure with concrete bulkheads and clear top.
- **Utilities, Remaining Structures, Roads, and Parking Area Demolition:** Remove facilities not needed to support the retained DCPP facilities.
- **Final Site Restoration:** Grading and landscaping (revegetation) to restore excavated and disturbed features at DCPP to natural conditions.
- **Long-Term Stormwater Management:** Installation of post-grading stormwater controls to minimize any sediment impacts from the site to Diablo Creek and the Pacific Ocean.
- **Post-Final Site Restoration Monitoring**: Monitoring required due to site restoration.

2.3.3. Activities in NOAA Fisheries Action Area

This section details the activities which have the potential to impact NOAA Fisheries listed species.

Phase 1

- Intake Structure Modification: Modify Intake Structure to load barges for bulk waste transport.
- **Retain Breakwaters:** Release Breakwaters from Part 50 facility operating license for reuse by others.
- Installation of a Cofferdam: A cofferdam will dewater the area for dry removal.
- **Demolition of the Discharge Structure:** A crane will be utilized to remove the overburden on the Discharge Structure.
- **Discharge Structure Restoration:** The void created by removal of the Discharge Structure will be filled with quarry rock sourced from local quarries (i.e., Santa Catalina Island and San Francisco Bay) and moved to site via tug and barge.
- **Discharge Subtidal Zone Restoration:** Once discharge ceases, a pre-restoration hyperaccurate hydrographic survey will be completed to discern the subtidal conditions.

Phase 2

• **Intake Structure Closure:** Seal openings of Intake Structure with concrete bulkheads and clear top and associated barging and vessel activity.

2.4. Purpose of the Biological Assessment

The purpose of this BA is to review the Proposed Action in detail to determine the extent that the Proposed Action may impact federally listed threatened and endangered species within the Action Area. Species information pertaining to this BA was collected during the surveys and research conducted for the Terrestrial Biological Resources Assessment (TBRA) and Marine Biological Resources Assessment (MBRA) commissioned by PG&E (PG&E 2020a; PG&E 2020b). PG&E

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requests that the USACE provide the USFWS and NOAA Fisheries with a BA that evaluates effects on special status species associated with the Diablo Canyon Decommissioning Project, including activities related to removal of the Discharge Structure during Phase 1 of the decommissioning process as well as nearshore barging and anchoring activities in support of DCPP Decommissioning.

2.5. Consultation and Coordination History

There has been consistent dialog between PG&E and its consulting team, and staff from the USACE, USFWS, and NOAA Fisheries which has facilitated effective project planning and technical analyses. This BA is provided to support the requirement for USACE to initiate a Section 7 consultation with NOAA Fisheries and the USFWS for potential take of special status species covered under the ESA.

On June 5, 2023, a virtual consultation meeting was held between PG&E, USFWS, USACE, NOAA Fisheries, and PG&E subcontractors (Ramboll, Environmental Resources Management, Inc. [ERM], and SWCA) to discuss the first draft of the DCPP Decommissioning BA, Essential Fish Habitat (EFH), and discussion of DCPP License Extension.

An in-person consultation meeting was held at the USFWS, Ventura office on June 30, 2023, with PG&E, Ramboll, and ERM representatives present. Discussion focused on edits to the DCPP Decommissioning BA as well as habitat classifications and mitigation policies pertaining to California red-legged frog (*Rana draytonii* [CRLF]). Subsequent discussion occurred, including a virtual meeting on December 6, 2023, with representatives from NMFS, NRC, USACE, and USFWS to discuss the Section 7 consultation approach for DCPP License Renewal and DCPP Decommissioning.

2.6. Completed Biological and Habitat Studies

A TBRA was completed by Terra Verde (now SWCA) and ERM in 2020. Additionally, an MBRA for the Project was completed by Tenera Environmental, Inc. (Tenera) and ERM in 2020. These studies describe both the marine and terrestrial baseline for the DCPP site. The environmental and ecological surveys were conducted from 2017 through 2020 (PG&E 2020a).

Due to positive identification of CRLF and black abalone during the initial TBRA and MBRA surveys, follow-up surveys were also conducted specifically for these species. One follow-up daytime and three nighttime surveys for CRLF were conducted in 2022 by SWCA within Diablo Creek and Tom's Pond at the request of the USFWS. In addition, habitat assessments were completed at three drainages along the southern access road and at Coon Creek along the northern access road. Further, due to the presence of suitable habitat, field surveys consisting of one daytime and three nighttime surveys were completed within Coon Creek located north of DCPP.

For the MBRA, a follow-up survey was also conducted in 2020 for black abalone, by Tenera. During the survey, Tenera identified one black abalone on the east breakwater and three on the west breakwater associated with the Intake Cove (PG&E 2020b).



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2.7. Implementation of "Small Federal Handle" Guidance

The USFWS provided guidance to USACE in May of 2017² on what the agencies refer to as "*small federal handle*" situations. This allows the USACE to authorize only a component of a larger Project, while the USFWS considers all effects of the larger Project. To utilize this approach, the USACE must provide USFWS with a BA for a proposed action that completely evaluates the larger Project. This BA must include all anticipated effects of the Project to listed species and critical habitat, along with consideration of cumulative effects. The small federal handle guidance states that USACE will distinguish between areas and activities that are within USACE responsibility in the BA. The BA must also distinguish between effects to listed species and designated critical habitat within and outside of USACE responsibility. In this context, "*USACE responsibility*" shall be read as including WOTUS and "*those portions of the entire Project over which the district engineer has sufficient control and responsibility to warrant Federal review*," as explained in USACE National Environmental Policy Act regulations for the regulatory program (33 CFR Part 325, Appendix B, para. 7[b][1]).

When a small federal handle situation is triggered, USFWS will issue a Biological Opinion that evaluates all effects of the larger Project and an incidental take statement that addresses all take expected to result from the larger Project. This in turn triggers the "Process for Section 7 Consultation in Small Federal Handle Situations" which contemplates that the biological opinion will evaluate "all components of the larger project" and that take associated with the larger Project will be addressed as part of the incidental take statement. The incidental take statement will identify the reasonable and prudent measures that address effects of activities within USACE control and responsibility, which the USACE will implement and USFWS will monitor (USFWS 2017).

PG&E met with USACE in May of 2022 to discuss the applicability of the Small Federal Handle approach for using this BA to initiate consultation with USFWS on federally listed species that occur outside of the USACE jurisdiction. The discussion concluded that there is potential for Small Federal Handle guidance to apply to the Proposed Action and PG&E should develop and submit a draft Section 404/10 application package to the USACE and USFWS for review. Based on the review of the draft and consultation with the USACE and USFWS, the USFWS will determine whether the Small Federal Handle approach could be utilized to address incidental take of CRLF from Proposed Activities that would occur outside the USACE Action Area.

3. Determination of Action Area and Compensatory Mitigation

As previously mentioned, the Proposed Action location is within three sites: (1) the 750-acre DCPP NRC-licensed site boundary located approximately 7 miles northwest of Avila Beach, within the County of San Luis Obispo, California; (2) the PBR; and (3) the SMVR-SB, see Figure 3-1. Barging and anchoring would occur within the Pacific Ocean. Most of the Proposed Activities will occur within the 750-acre DCPP NRC-licensed site boundary. However, the SMVR-SB railyard located at

² Letter of Gary Frazer, FWS to James C. Dalton, U.S. Army Corps of Engineers (May 22, 2017).

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2820 W. Betteravia Road will be used to transfer decommissioning waste from trucks to rail cars. Waste will then be transported by rail to out-of-state disposal facilities. The PBR site, approximately 12 miles southeast of the DCCP site, is presently used as a staging and vehicle maintenance area in support of PG&E's Transmission and Distribution operations. For the Proposed Action, the PBR site would be used as a contingency site for the shipment of non-radioactive and non-hazardous decommissioning wastes for out-of-state disposal.

The DCPP Discharge Structure is in a coastal environment subject to a high level of exposure to wave action and weather from the Pacific Ocean in The Discharge Cove. The Discharge Cove is a naturally occurring cove about 40 acres in size and is bound by two rocky promontories; North Diablo Point forms the upcoast extent of the cove and South Diablo Point, which forms the downcoast extent of the cove. The average depth is about 29 feet with a maximum depth of 65 feet. The site of the Proposed Action has a very shallow underlying marine terrace layer, and a rugged/rocky shoreline.

The closure of the Intake Structure and barging activity will occur in the Intake Cove. This coastal environment is protected from wave action by the east and west breakwaters. The depth of the Intake Cove ranges from 16 feet mean lower low water (MLLW) in the eastern portion of the cove to 33 feet MLLW adjacent to the Intake Structure. The seabed within the Intake Cove consists of mostly sand and soft sediments while boulder fields, low rock ridges, and emergent rocks constitute a smaller portion of the seabed.



Figure 2-1 – Proposed Project Sites

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Source: Figure ES-1, County 2023.



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3.1. Federal Jurisdictional Features Analysis

WOTUS within the Action Areas were delineated by Aspen Environmental Group (Aspen) in 2022. Aspen performed an investigation of all federal and state jurisdictional features within the 750-acre NRC-licensed site boundary, referred to as the Aquatic Resources Delineation Report (Aspen 2022). The Aspen aquatic resources delineation survey area extends 100 feet from the DCPP (survey buffer) and associated facilities as well as a borrow site located north of the DCPP structures. Though Aspen's study included coastal and federal wetlands, WOTUS, waters of the State, and riparian habitat (Aspen 2022), only federal waters (WOTUS) are within scope of this BA. The jurisdictional waters identified in the study are summarized in Table 3.1-1 below.³

Other than the WOTUS, included under the USACE AoR are the temporary laydown area, primary access roads, and the Discharge Structure removal limit of disturbance (LOD) (Figure 3.1-1). The USACE AoR encompasses all proposed activities that occur within or directly affect WOTUS, as well as upland features associated with work within or directly affecting WOTUS.

Aspen's jurisdictional study area (Survey Area) includes a total of 192.34 acres (Aspen 2022; Tetra Tech 2022). The results from the survey identify 12 delineated waters subject to direct effects in the USFWS Action Areas or the survey buffer.⁴ Of the 12 delineated waters, the Pacific Ocean is the only feature which will have direct effects from Project Activities. There are no Project-related direct effects proposed to any of the springs or associated freshwater wetland habitat.

Tetra Tech was retained by PG&E to complete a Mean Highwater Level delineation report at the point of the Discharge Structure (Tetra Tech 2022). See Figure 3.1-1 for the jurisdictional boundaries in relation to the Mean High-Water Line, and Scope of Analysis.

Feature Reference Number	Brief Description	Feature Designation	Length (ft)	Area Acres/(ft²)
17b	Ephemeral Drainage	Indirect effects within the survey buffer to WOTUS	37	0.446 (480.70 ft ²)
19a	Diablo Creek	Indirect effects within the Action Area to WOTUS	2	0.066 (71.73 ft²)
19b	Diablo Creek	Indirect effects within the survey buffer to WOTUS	276	10.815 (11,641.71 ft²)
20a	Pacific Ocean	Temporary direct effects within the Action Area to WOTUS	38	31.916 (34,354.30 ft ²)

Table 3 1-1 – Summary	ofUSACE	Iurisdictional V	Vaters of the	ILS in the Study	/ Area
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⁴ On august 29, 2023, the EPA and USACE updated the definition of WOTUS, which became effective September 8, 2023. As a result, an updated waters and wetland assessment will be conducted prior to final permitting effort.

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Feature Reference Number	Brief Description	Feature Designation	Length (ft)	Area Acres/(ft²)
20b	Pacific Ocean	Indirect effects within the survey buffer to WOTUS	203	54.896 (59,089.89 ft ²)
22b	Pacific Ocean	Indirect effects within the survey buffer to WOTUS	79	8.381 (9,021.26 ft ²)
23b	Pacific Ocean	Indirect effects within the survey buffer to WOTUS	3	0.043 (46.48 ft ²)
24b	Ephemeral Drainage	Indirect effects within the survey buffer to WOTUS	13	0.0401(43.22 ft ²)
25b	WOTUS	Indirect effects within the survey buffer to WOTUS	12	0.622 (669.29 ft ²)
26b	Pacific Ocean	Indirect effects within the survey buffer to WOTUS	94	5.150 (5,543.69 ft²)
29a	Ephemeral Drainage	Temporary direct effects within the Action Area to WOTUS	2	0.005 (5.33 ft ²)
29b	Ephemeral Drainage	Indirect effects within the survey buffer to WOTUS	58	0.176 (190.01 ft ²)

Source: Aspen 2022.

Notes: ft² = square feet; WOTUS = Waters of the United States



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3.2. Action Area

The Action Area is defined in 50 CFR § 402.02 as "*all areas to be directly or indirectly affected by the federal action and not merely the immediate area involved in the action.*" Under Section 7, the effects include effects of other actions interrelated or interdependent of the action (50 CFR 402.2). USFWS and NOAA Fisheries considers an activity to be interrelated or interdependent with a federal action if the activity would not occur "*but for*" the federal action under consultation (USFWS and NMFS 1998). Past and present effects of other federal, state, and private actions, as well as anticipated effects of activities that have already been subject to Section 7 consultation, are part of the environmental baseline and are not considered effects of the action (50 CFR 402.02). For the purposes of this BA, there are three distinct action areas: USFWS Action Area within USACE AoR, USFWS Action Area outside USACE AoR, and a NOAA Fisheries Action Area. The following subsections of Section 3.2 define each of the action areas within each AoR in detail.

3.2.1. USFWS Action Area within USACE AoR

The DCPP facility is located within the Port San Luis United States Geological Survey 7.5-minute topographic quadrangle, approximately 7 miles northwest of Avila Beach, California. Elevations range from sea level to approximately 1,115 feet. The Proposed Action lies within a 750-acre NRC-licensed site boundary, which is a high security zone within PG&E's approximately 12,000-acre owner-controlled land which consists of natural habitat areas surrounding the DCPP facility. The DCPP facility is bounded to the west, northwest, southwest, and southeast by Diablo Canyon Road. Pecho Valley Road borders the site to the north-northeast. The entrance to the DCPP facility is via Diablo Canyon Road from the southeast.

The components of the USFWS Action Area within the USACE AoR are portions of the Project area within the purple LOD, and barging and anchoring activities within the Discharge Cove and the Intake Cove (Figure 3.2.1-1). The terrestrial portion of the USFWS Action Area within the USACE AoR encompasses Diablo Canyon access road within the DCPP NRC licensed boundary, a temporary laydown area, and removal LOD. The primary access road encompasses 7.47 acres, the temporary laydown area consists of 6.57 acres, the Intake Structure removal LOD is 1.44 acres, and the Discharge Structure removal LOD is 2.53 acres.

The Pacific Ocean is considered a WOTUS within the USACE AoR, which includes the area behind the proposed cofferdam.

Both the Discharge Cove and the Intake Cove are included within the USFWS Action Area within the USACE AoR due to the presence of southern sea otter (discussed in detail in Section 5.2.2). Southern sea otter occur in the Intake and Discharge Cove waters and are regulated by USFWS. Since the Discharge Cove and Intake Cove are within the USACE Action Area, the vessel activity and barging are also included. The figure below shows the anchoring locations which would be located on the seaward side of the cofferdam in the Discharge Cove. Barging will also occur within the Intake Cove; however, all anchors will be on the shoreline above the mean high-water line, and none are on the seabed of the Intake cove.

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Figure 3.2.1-4 - Detail of USFWS Action Area within USACE AoR



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3.2.2. USFWS Action Area Outside USACE AoR

The USFWS Action Area outside of the USACE AoR encompasses the terrestrial areas within the DCPP NRC licensed boundary that are not associated with in-water work, as shown in Figure 3.2.2-1. These areas include intact natural habitats and grazing lands, with the Pacific Ocean to the west and southwest. Diablo Creek flows west along the northern edge of the industrial areas. Most of the 750-acre NRC-licensed site boundary is considered potential dispersal habitat for the CRLF due to the presence of CRLF within Diablo Creek (Figure 3.2.2-1). The surrounding landscape consists of rolling coastal hills and bluffs in an assortment of grazed annual grassland, coast live oak woodland, riparian woodland, chaparral, and various scrub habitats (PG&E 2020a). However, the only portions of the 750-acre NRC-licensed site boundary are included in the Action Area, totaling 316.1 acres (Figure 3.2.2-1). Broadly, the USFWS Action Area Outside of the USACE AoR includes all regions of the 750-acre NRC-licensed site boundary that will be utilized during the construction process in addition to a 300-foot buffer around those areas. However, this Action Area excludes the areas that overlap with the USFWS Action Area within the USACE AoR and ends at the coastline. The 300-foot buffer was included to conservatively measure impact on the areas immediately adjacent to those being directedly impacted by decommissioning activities.

Lastly, the USFWS Action Area Outside of the USACE AoR includes the two railyard facilities (PBR and SMVR-SB), which will support the Proposed Action as material and equipment storage, maintenance activity, and waste transportation areas. The PBR is 25.5 acres (Figure 3.2.2-2), and the SMVR-SB covers 28.4 acres (Figure 3.2.2-3). There would be minor improvements made to the PBR and SMVR-SB sites.





Figure 3.2.2-5 - Detail of Proposed USFWS Action Area Outside of USACE AoR

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Figure 3.2.2-6 – PBR Site



Source: Figure 2-3; County 2023.



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Figure 3.2.7-3 – SMVR-SB Site



Source: Figure 2-4; County 2023.



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3.2.3. NOAA Fisheries Action Area

The Proposed Action Area under NOAA Fisheries responsibility consists of The Discharge Cove, the Intake Cove, and the vessel route between the Intake Cove and the designated barge route. The Discharge Cove has a surface area of approximately 40 acres and the Intake Cove has a surface area of approximately 12 acres (Figure 3.2.3-1). Although the construction activity would be taking place in the Discharge Cove and not the Intake Cove, the Intake Cove and species regulated by NOAA Fisheries may be indirectly impacted (and temporarily subjected to an increased risk of incidental vessel strikes) due to barging activities and vessel traffic. As such, the NOAA Fisheries Action Area includes both the Discharge Cove and the Intake Cove. The NOAA Fisheries Action Area also includes the barge and vessel anchoring locations (Figure 3.2.3-1) which would be located on the seaward side of the cofferdam and the vessel path between the Intake Cove and the designated barge route. The NOAA Fisheries Action Area overlaps with the USFWS Action Area for the Discharge Cove and the Intake Cove due to the presence of southern sea otter (ESA-status managed by USFWS).

Lastly, because direct and indirect effects from vessel activity are included in this BA, the vessel activity between the Intake Cove and the designated barge route in international waters falls within NOAA Fisheries responsibility and is considered part of the Action Area. The Proposed Action would require: 1) export of waste from the Action Area to Port of Portland, Oregon; 2) export of waste from the Action Area to Boardman, Oregon; 3) import of gravel rock for the cofferdam fill from Port of Long Beach, California; and 4) import of quarry rock from Catalina Island for the Discharge Structure backfill (Figure 3.2.3-1). The vessel route extends from the designated barge route (Figure 3.2.3-1). The vessel route from the opening of the Intake Cove to the designated barge route is included in the NOAA Fisheries Action Area, however, the designated barge route is not considered part of the Action Area, since it is a federal shipping lane.




Figure 3.2.3-8 - NOAA Fisheries and USFWS Action Area and Designated Barge Route



3.2.3.1. Marine Sanctuaries

The NOAA Office of National Marine Sanctuaries (ONMS) announced on August 24, 2023, its proposal to designate a region of the central California coast and portions of offshore waters as Chumash Heritage National Marine Sanctuary (CHNMS). The target date for final designation of CHNMS is mid-2024, which would be prior to commencement of the DCPP decommissioning activities. The preferred alternative of the CHNMS encapsulates the Discharge Cove but does not include the Intake Cove associated with DCPP. As a result, if the CHNMS is designated prior to decommissioning activities, portions of the Proposed Action will be within the CHNMS. In which case, NOAA ONMS will be included as a review agency.

In addition to the CHNMS, there are three other marine sanctuary boundaries which will be parallel with the barge route along the California Coast (Figure 3.2.3-1). The three marine sanctuaries include Monterey Bay, Greater Farallones, and Cordell Bank Marine Sanctuaries.

As shown in Figure 3.2.3-1, the vessel transporting waste to Oregon will need to transit through the proposed CHNMS and can avoid the three other marine sanctuaries. As required by NOAA ONMS, any container of transported material accidentally lost within a marine sanctuary must be reported to NOAA ONMS with precise locations. Additionally, the Project must commit to recovering any lost containers within the marine sanctuary and restore any damaged resources.

3.3. Summary of Compensatory Mitigation

There are no permanent adverse effects proposed on any federally listed species and therefore, no compensatory mitigation is required for the Proposed Action.

4. Terrestrial Baseline

An "environmental baseline" refers to the condition of the listed species or designated critical habitat in the Action Area, without incorporating the potential effects of the Proposed Action. Field surveys were completed in 2020 and a desktop review was conducted in 2023 to establish an environmental baseline of the Action Area. Both a TBRA and MBRA were completed in 2020 which provides detailed species and habitat information surrounding the DCPP Decommissioning Project (PG&E 2020a; PG&E 2020b). In addition to the surveys executed for the TBRA and MBRA, the PG&E DCPP operational land stewardship and environmental monitoring programs contributed to the data which informed the environmental baseline.

The Discharge Cove represents typical geographical and geological features for the area, although some aspects of the biological characteristics of the Discharge Cove differ to that of other coves in the region due to the operational brine and cooling water discharges of DCPP. Downcoast of the DCPP is a rocky intertidal and subtidal area of wave exposed rocky shoreline with a large assemblage of rocks approximately 250 feet offshore.

The ecological setting and species composition in the nearshore region of DCPP have extensively been characterized by Sparling (1977), Gotshall et al. (1984), North et al. (1989), and Tenera Environmental Inc. (Tenera 1988; 1997; 2002). The intertidal and subtidal areas of the Discharge Cove consist of bedrock, boulder, and cobble fields with rock pinnacles offshore (PG&E 2020a). This DCPP Decommissioning Planning Information



area is consistent with California's rocky nearshore areas and inhabits a range of ecologically important species. There is a wide diversity of species of both plants and animals within the different nearshore zones. The nearshore zones are biologically diverse due to the variations in physical factors such as, temperature, elevation, wave exposure, open space, and substrate type; along with the biological factors, such as grazing, predation, and recruitment episodes (Dayton 1971; Connell 1972; Lubchenco and Menge 1978; McGuinness 1987; Menge et al. 1994; PG&E 2020a).

4.1. Baseline Vegetation Communities

Terra Verde (now SWCA) (PG&E 2020a) surveyed vegetation communities and land cover types across all Action Areas, with consideration of known land management practices. The vegetation survey included a total of about 756 acres. Fourteen natural vegetation communities were classified and mapped as well as ruderal vegetation associated with developed portions of the site. Natural vegetation communities were characterized using the second edition of *A Manual of California Vegetation* classification system (Sawyer et al. 2009), as well as updates included in MCV Online (CNPS 2020b). There are eight federally listed plant species that have potential to occur within the region, according to the Information for Planning and Consultation (IPAC) database (USFWS 2022a). No federally listed plant species were identified during the surveys and no potentially suitable habitat for these species was recorded. Due to lack of presence and evidence of suitable habitat, this BA does not include the eight plant species. Table 4.1-1 includes a list of each vegetation community identified on site. None of the existing vegetative communities fall under the USACE AoR or within the USFWS, or NOAA Action Areas. None of the species found within these vegetative communities have federal status designation.

Community Classification(s)	Status Designation
Wild Oats and Annual Brome Grasslands	None
Needle Grass – Melic Grass Grassland	CDFW Sensitive Natural Community
Hardstem and California Bulrush Marshes	CDFW Sensitive Natural Community,
	ESHA
Coyote Brush Scrub (Alliance)	None
Coastal Bluff Scrub (Baccharis pilularis / Dudleya farinosa	ESHA, due to special-status species
Association)	presence
California Sagebrush Scrub	ESHA, in part (stands in the Coastal Zone
	with special-status species)
California Coffee Berry Scrub	None
Bush Monkeyflower Scrub	None
Chamise – Black Sage Chaparral	None
Buck Brush Chaparral	None
Toyon Chaparral	None
Arroyo Willow Thickets	ESHA

Table 4.1-1 – Summary of Documented Vegetation Communities



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Community Classification(s)	Status Designation
Coast live Oak Woodland and Forest	None
Artesian Springs / Slope Wetlands	ESHA (Springs 1 through 8)
Ruderal / Anthropogenic	None

Source: PG&E 2020a.

Terrestrial and freshwater observations of wildlife were documented at DCPP. The terrestrial and freshwater aquatic habitats observed within and adjacent to the DCPP survey include highly developed and modified areas as well as areas of relatively undisturbed habitat including woodlands, chaparral, scrub, drainages, seeps, grasslands, coastal bluffs and offshore rocks (PG&E 2020a). Terra Verde (now SWCA) determined that suitable habitat is present at the DCPP site for one federally listed terrestrial species; CRLF (PG&E 2020a). As such, the CRLF is the only⁵ federally listed terrestrial wildlife species discussed in detail throughout this BA. Diablo Creek provides suitable aquatic breeding and non-breeding habitat for CRLF, and non-developed upland habitats provide suitable dispersal habitat (PG&E 2020a).

It is worth noting that the terrestrial survey found the Action Area provides suitable habitat for a variety of common wildlife species. Specifically, the bluffs and offshore rocks immediately adjacent to the survey area provide nesting and roosting habitat for a variety of birds, including migratory birds (PG&E 2020a). Migratory birds are protected under the Migratory Bird Treaty Act; however, none of the USFWS IPAC-identified federally listed birds were observed during the surveys and suitable breeding habitat for these species is absent from the USFWS Action Area.

4.2. Terrestrial Species Assessed in this BA

4.2.1. California Red-legged Frog

Status and Distribution

CRLF was federally listed as threatened in 1996 (61 FR 25813 – 25833). Historically, CRLF was common in coastal habitats ranging from the vicinity of Point Reyes National Seashore, Marin County, California, and inland from the vicinity of Redding, Shasta County, California, southward to northwestern Baja, California, Mexico (Jennings and Hayes 1985; Jennings and Hayes 1994). Once present in 46 counties, CRLF is now extirpated from 24 of these (USFWS 1996), and nearly 70 percent of its former range (USFWS 2002). The population of CRLF have declined drastically in southern California through the Transverse and Peninsular Ranges (Thomson et al 2016). Currently, CRLF populations persist in 35 counties extending along the California Coast Range from southern Mendocino County to Santa Barbara County, through the northern Transverse Ranges from Santa Barbara County to Los Angeles County, and in isolated populations in the Sierra Nevada foothills, Riverside County, and San Diego County. Additional populations can be found in the San

⁵The southern sea otter is considered a marine species in this BA and is discussed further in Section 5.2.2.

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Francisco Bay Area, along the Central Coast of California, and in Baja California, Mexico (Thomson et al 2016; USFWS 2002; USFWS 2022b). Its elevational range spans from sea level to about 5,200 feet, with most occurrences below 3,500 feet (USFWS 2002).

CRLF utilizes a variety of aquatic, riparian, and upland habitats and persists in areas where multiple breeding areas are embedded within a matrix of habitats used for dispersal (USFWS 2002). Breeding sites of the CRLF include streams, deep pools, backwaters within streams and creeks, ponds, marshes, sag ponds, dune ponds, and lagoons. Breeding adults are often associated with still or slow-moving water that is at least 2 feet deep with dense, shrubby riparian or emergent vegetation which provide pools and backwater aquatic areas for breeding, foraging habitat, and facilitate dispersal (Hayes and Jennings 1988; Thomson et al. 2016; USFWS 2002). Shrubby riparian vegetation such as arroyo willow (*Salix lasiolepis*), cattails (*Typha sp.*) and bulrushes (Scirpus sp.) provide the most suitable structural habitat for CRLF. Vegetation is necessary for the survival of adults based on behavioral data (Hayes and Jennings 1988). They have been most frequently recorded at sites influenced by a small drainage area, having a low local gradient, and in streams having a low stream order (Hayes and Jennings 1988). Aquatic habitat, drainage area, and introduced bullfrogs (*Lithobates catesbeianus*) are significantly related to the probability of survival of local populations of CRLF. Water shall have a salinity of less than or equal to 4.5% to ensure embryos survive (Hayes and Jennings 1988; Jennings and Hayes 1995). CRLF are most likely to be found at sites with native fishes and less likely to be found at sites with introduced fishes or bullfrogs (Hayes and Jennings 1988; Doubledee et al. 2003). They tend to concentrate along portions of the creek nearest to breeding sites (Fellers and Kleeman 2007). Tadpoles most frequently occur in water depths of 10 to 20 inches. However, they have been observed in shallow sections of streams that are not cloaked in riparian vegetation (USFWS 2002). CRLF frequently breed in stock ponds; however, these environments must be properly managed for non-native predators, hydroperiod, and vegetative cover (USFWS 2002).

The CRLF breeds from November through May. Males appear at breeding sites two to four weeks before females, calling in small groups of two to seven individuals to attract mates. Amplexus pairs move to an oviposition site where eggs are attached to braces, such as emergent vegetation like bulrushes and cattails or roots and twigs. Each mass contains about 300 to 4,000 eggs, though fewer than one percent of eggs laid survive the tadpole phase. Eggs require approximately 20-22 days to develop into tadpoles, and tadpoles mature into terrestrial frogs in 11 to 20 weeks. Tadpoles may not metamorphize the first year and overwinter instead (USFWS 2002). Males attain sexual maturity at two years of age and females at three years of age. Adults may live eight to ten years; however, the average life span is probably lower due to CRLF larvae being highly vulnerable to fish predation (USFWS 2002). Adult frogs are largely nocturnal, whereas juvenile frogs have been found to be active diurnally and nocturnally. The activity patterns and movement of CRLF varies based on local climate. Individuals from coastal populations are rarely inactive because low temperature extremes are infrequent due to the maritime effect. Individuals from inland sites may become inactive for long intervals due to lower temperatures (USFWS 2002). Most CRLF move away from breeding sites, but few move farther than the nearest suitable nonbreeding habitat. They generally move towards breeding ponds with the onset of heavy winter rains, but some may stay



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until their seasonal habitat is on the verge of drying. They may depart breeding ponds at varying times throughout the rainy season, and some may remain at permanent ponds all year. During the dry season (May through October), some CRLF make large-scale movements as seasonal breeding sites become dry. The distance moved is highly site dependent as influenced by the local landscape (Fellers and Kleeman 2007).

During the wet season, CRLF have been documented to disperse distances from 0.25 mile to more than 2 miles. Their dispersal movements are long-distance, straight-line, point to point migrations rather than using corridors for moving in between habitats (USFWS 2002). In riparian corridors, CRLF utilize a range of microhabitats that provide both cover and moisture, especially blackberry thickets, logjams, and root tangles at the base of standing or fallen trees (Fellers and Kleeman 2007). During dry periods, CRLF are rarely found far from water but can disperse in response to receding water by moving through upland habitats. These upland habitats include spaces under downed trees or logs, industrial debris, and agricultural features such as drains or watering troughs. Additionally, CRLF utilize small mammal burrows, moist leaf litter, and cracks at the bottom of dried ponds as refugia (USFWS 2002). Non-breeding habitats must have sufficient moisture to allow amphibians to survive throughout the nonbreeding season (up to 11 months), have sufficient cover to moderate temperatures during the warmest and coldest times of the year, and protection (e.g., deep pools in a stream or complex cover such as root masses or thick vegetation) from predators such as raptors (hawks and owls), herons, and small carnivores (Fellers and Kleeman 2007). CRLF have been found to use less pristine migration corridors as they move towards breeding ponds, including agricultural lands, burned fields, and pasturelands surrounding breeding sites (Fellers and Kleeman 2007).

The diet of CRLF is highly variable but mostly consists of invertebrates. In a study by Hayes and Tennant (1985) over half of the prey mass eaten by larger frogs comprised of vertebrates such as pacific tree frogs (*Pseudacris regilla*) and California deermouse (*Peromyscus californicus*) although invertebrates were the most numerous food items. Juveniles appear to forage during the day and night whereas subadults and adults forage mostly at night (Hayes and Tennant 1985). Feeding typically occurs along the shoreline and on the surface of the water. Frogs also forage several feet into dense riparian areas (USFWS 2002).

Threats/Reasons for Decline

CRLF is threatened by habitat loss and degradation caused by agriculture, urbanization, mining, overgrazing, recreation, timber harvesting, non-native plants, water diversions, degraded water quality, use of pesticides, and the spread of introduced predators (e.g., bullfrog, African clawed-frog [*Xenopus laevis*], red swamp crayfish [*Procambarus clarkii*], signal crayfish [*Pacifastacus leniusculus*], and various species of fishes, especially bass, catfish [*Ictalarus sp.*], sunfish, and mosquitofish [*Gambusia affinis*]) (USFWS 2002; Thomson et al. 2016). Bullfrog is a strong competitor and predator on multiple life stages of CRLF (Thomson et al. 2016; Doubledee et al. 2003). With the development of watersheds and increase in impervious surfaces from urbanization, water contamination from pesticides, fertilizers, heavy metals such as hydrocarbons, and other debris also increases. Water diversion and impoundment for irrigation also may reduce flows necessary to support adequate aquatic habitat for frogs. Routine flood control maintenance DCPP Decommissioning Planning Information



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including vegetation removal, herbicide spraying, shaping, and riprapping of banks to control erosion, dredging of creeks and rivers also degrade CRLF habitat and result in the proliferation of non-native aquatic species or expose and desiccate egg masses (USFWS 2002). Warmer average temperatures and reduced levels of precipitation due to climate change also threaten the permanence and reliability of breeding sites for CRLF (Thomson et al. 2016).

Recovery Plan

The Recovery Plan for the CRLF was published by USFWS on May 28, 2002 (USFWS 2002). The recovery strategy for CRLF consists of four parts: (1) protect existing populations by reducing threats; (2) restore and create habitat that will be protected and managed in perpetuity; (3) survey and monitor populations and conduct research on the biology of and threats to the subspecies; and (4) reestablish populations of the subspecies within its historical range.

The Action Area overlaps with the Central Coast Recovery Unit and is not located within any designated Core Areas. According to the CRLF Recovery Plan, the Central Coast Recovery Unit has a Recovery Status of "High," meaning that there are many existing CRLF populations, many areas of high habitat suitability, and low to high levels of threats (USFWS 2002).

Surveys for California Red-legged Frog at DCPP

Terra Verde (now SWCA) conducted CRLF habitat assessments and protocol surveys in 2020 and 2022 on behalf of PG&E in support of the DCPP Decommissioning Project. Survey areas included suitable aquatic and riparian habitat within and near DCPP that may be subject to effects from the Proposed Action, and the southern and northern access roads. Surveys were conducted in accordance with the USFWS Revised Guidance on Site Assessments and Field Surveys for CRLF (USFWS 2005). The 2020 surveys were conducted at the request of PG&E to identify suitable habitat and determine whether or not CRLF were present within DCPP. Habitat assessments were completed for ten ephemeral drainages and two perennial drainages within 1 mile of the DCPP facility, and Tom's Pond, a perennial pond, which is located 1.5 miles north of the facility. Of the thirteen features, Diablo Creek and Tom's Pond were characterized as the only aquatic resources likely to support CRLF. Follow-up protocol surveys focused on suitable habitat within Diablo Creek and Tom's Pond. One adult CRLF was observed in Diablo Creek during one daytime survey conducted in 2020. See Figure 4.2.1-1 for the total area surveyed for CRLF in 2020.

Additional surveys were conducted at the request of USFWS in 2022 to assess the size of the CRLF population present at DCPP and to expand the survey area to include potentially suitable habitat for CRLF along the northern access road and the main southern access road to the Project site. Habitat assessments were completed at three drainages known to have intermittent to perennial water along the southern access road (Vineyard Canyon Creek, Pecho Creek, and Rattlesnake Creek) and one drainage (Coon Creek) along the northern access road. All but Coon Creek were determined to lack sufficient aquatic habitat to support CRLF. Protocol surveys were completed in Diablo Creek, Tom's Pond, and Coon Creek and three daytime and three nighttime surveys were conducted within Diablo Creek and Coon Creek and three daytime, and three nighttime surveys were conducted in Tom's Pond. During the nighttime surveys in Diablo Creek, up to two adult CRLFs were observed within the pool downstream of the Diablo Canyon Road culvert outlet and up to two



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adults were observed within the pool downstream of the 230 kV and 500 kV switchyard culvert. During the nighttime surveys in Tom's Pond, up to one adult and two subadult CRLFs were observed. In addition, up to five subadult CRLF were observed during daytime surveys.

Surveys for California Red-legged Frog at PBR

Terra Verde (now SWCA) conducted CRLF protocol surveys in 2020 at PBR in Pismo Beach, California on behalf of PG&E in support of the DCPP Decommissioning Project. Survey areas included all aquatic habitat present within the PBR which consisted of three wetland features and a man-made ditch between the facility and the Union Pacific Railroad tracks that runs along the eastern edge of the facility. In addition, a portion of Pismo Creek, which runs north to south adjacent to the east side of the facility, was surveyed (see Figure 4.2.1-2). Similar to the surveys at DCPP, surveys at the PBR site were conducted in accordance with the USFWS Revised Guidance on Site Assessments and Field Surveys for CRLF (USFWS 2005). In total, eight surveys were completed at the PBR, consisting of three daytime surveys and five nighttime surveys, from April 28 through July 22, 2020. No CRLF were observed during this survey effort; however, PBR is located within the dispersal range from historically documented CRLF populations in the vicinity of the facility. There is a documented CRLF occurrence from 2005 of one adult CRLF observed within an unnamed tributary to Pismo Creek north of the facility.

Surveys for California Red-legged Frog at the SMVR-SB

Terra Verde (now SWCA) conducted two reconnaissance-level biological resources surveys of the SMVR-SB site. No aquatic resources are present within the SMVR-SB site; therefore, no focused surveys for CRLF were conducted. However, several stormwater basins and Guadalupe Lake are located adjacent to the site and may provide seasonal habitat for CRLF in the vicinity of the site. Undeveloped portions of the site may provide dispersal habitat to CRLF. The developed portion of the site where the Proposed Action is planned is paved and does not provide suitable dispersal habitat for CRLF.

Habitat Assessment

Final critical habitat was designated for CRLF on April 13, 2006 (71 FR 19244-19346). Due to concern about litigation and scientific integrity regarding the 2006 designation of critical habitat (Center for Biological Diversity v. Kempthorne et al.), USFWS proposed revised critical habitat for CRLF on September 16, 2008 (73 FR 53492-53679) and published its final revised critical habitat for the species on March 17, 2010 (75 FR 12816-12959). The final revised critical habitat rule designated 1,636,609 acres of critical habitat for 53 critical habitat units within 27 California counties. USFWS stated that the proposed four-fold expansion of critical habitat over the 2006 designation better reflects areas that contain the physical or biological features (PBF) of CRLF habitat, including aquatic habitat for breeding activities; aquatic habitat for non-breeding activities; and upland habitat for shelter, foraging, predator avoidance, and dispersal (75 FR 12816-12959). In addition, 34 core areas that were described in the Recovery Plan were used to focus on critical habitat areas, and areas within the 2006 designation were expanded to include habitat that is adjacent to areas with documented occurrences of CRLF (USFWS 2002).



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No critical habitat has been designated for this species within the USACE AoR. The closest designated critical habitat area to the USACE AoR is SLO-3, located approximately 8.25 miles north of the USACE AoR.

California Red-legged Frog in the DCPP site

Adjacent to the DCPP site, CRLF were observed within Diablo Creek in existing scour pools located immediately downstream of the culvert outlets from the 230 kV and 500 kV switchyards and the Diablo Canyon Road crossing (see Figure 4.2.1-1 through Figure 4.2.1-6) These pool habitat areas vary in size and may provide marginal breeding habitat for CRLF. However, the timing of the 2022 field surveys were likely too late to observe egg masses if breeding did occur. No pool habitat was observed in the upper portion of Diablo Creek upstream of the 500 kV switchyard which appears to have silted in over time from upstream erosion (i.e., slope failures) and associated silt and sediment deposition. The CRLF observed within the pool downstream of Diablo Canyon Road are approximately 500 feet north of the Proposed Action that would occur at the Discharge Structure. Further, due to the potential for CRLF to disperse up to two miles, CRLF may utilize upland and dispersal habitats in proximity to Diablo Creek within the USFWS Action Area outside of the USACE AoR (see Figure 4.2.1-3).

The drainages along the southern access road to DCPP are ephemeral to intermittent and are not expected to provide suitable year-round habitat for CRLF. These areas likely provide temporary habitat for dispersing individuals but are not expected to support breeding populations. Further, proposed activities along the southern roadway would be limited to site access.

The northern access road passes within approximately 900 feet of Tom's Pond and crosses over Coon Creek. Tom's Pond provides high quality habitat for CRLF and the presence of subadults indicates successful breeding has likely occurred in recent years, which may provide a source population for CRLF to disperse to other habitats. In addition, high quality habitat for CRLF was observed present within Coon Creek; however, CRLF and other amphibians were not observed during either the day or nighttime surveys. Due to the high-quality habitat observed, it is assumed that CRLF are likely present within Coon Creek. Additionally, some portions of the DCPP site are considered non-suitable habitat per guidance from USFWS. Those non-suitable areas include preexisting buildings, areas with vertical barriers or walls that prevent CRLF from freely traversing the landscape. Those areas have been excluded from the suitable habitat calculation.

Table 4.2.1-1 quantifies the acreage of CRLF suitable habitat in the DCPP site. This includes the amount of aquatic breeding and non-breeding habitat that occurs within the USFWS Action Area outside USACE AoR as well as all associated riparian/wetland, upland and dispersal habitat occurring with the 750-acre NRC-licensed site boundary.

Table 4.2.1-1 - California Red-Legged Frog Suitable Habitat at the 750-Acre NRC License Boundary

Habitat Type	Acres	Location in Action Area
Aquatic Breeding	0.5	Lower Diablo Creek stream channel/pool habitat
Aquatic Non-Breeding	1.2	Upper Diablo Creek, ephemeral drainages, and marina detention basin.



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Habitat Type	Acres	Location in Action Area
Riparian and Wetland	24.6	Riparian and wetland habitat within 200 feet of aquatic habitat.
Upland	95.4	Grassland and scrub habitat within 200 feet of aquatic habitat.
Dispersal	462.8	All accessible riparian/wetland, upland, and other open habitat areas (i.e., grasslands) which do not contain barriers to dispersal from lower Diablo Creek. Includes existing parking lots and roadways containing stormwater conveyance features and culverts, etc.
Total	584.5	

The CRLF upland and dispersal habitat identified on the DCPP site falls within the USFWS Action Area. Table 4.2.1-2 shows the acreage of suitable CRLF habitat within the USFWS Action Area.

Habitat Type	Acres	Location in Action Area			
Upland 35.4		Grassland and scrub habitat within 200 feet of aquatic habitat.			
Riparian Wetland	10.9 Riparian and wetland habitat				
Dispersal	173.8	All accessible riparian/wetland, upland, and other open habitat areas (i.e., grasslands) which do not contain barriers to dispersal from lower Diablo Creek. Includes existing parking lots and roadways containing stormwater conveyance features and culverts, etc.			
Total	220.1				

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Table 4.7.1-7	California Red-Legged	i Prog Suitanie i	Habitat in USEV	VS ACTION Area
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California Red-legged Frog in the PBR Site

No CRLF were observed at PBR; however, the facility is within the dispersal range from known CRLF populations. Aquatic habitat within PBR may provide marginal dispersal habitat, though likely would not support breeding. As such, dispersing CRLF may be present within the PBR site.

California Red-legged Frog in the SMVR-SB Site

No aquatic resources are present within SMVR-SB site and the developed portion of the site is primarily paved and does not provide suitable dispersal habitat for CRLF. However, there is potentially suitable aquatic habitat present in the vicinity of the SMVR-SB; therefore, dispersing CRLF may be present within the SMVR-SB site.



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Figure 4.2.9-1 - California Red-Legged Frog 2020 Survey Map





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Figure 4.2.10-2 – California Red-Legged Frog Survey Map at PBR Facility



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Figure 4.2.12-4 - California Red-Legged Frog Habitat at the DCPP Site



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Figure 4.2.13-5 - California Red-Legged Frog Habitat at PBR Facility



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Figure 4.2.14-6 - California Red-Legged Frog Habitat at the SMVR-SB Facility



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4.3. Terrestrial Baseline Within USACE AoR

As established by Terra Verde (now SWCA) and ERM in the TRBA completed in 2020, the terrestrial and freshwater aquatic habitats observed within and adjacent to the DCPP survey area are diverse and include highly developed and modified areas associated with the DCPP facilities as well as areas of relatively undisturbed habitat including woodlands, chaparral, scrub, drainages, seeps, grasslands, coastal bluffs and offshore rocks (PG&E 2020a). Critical habitat designated by USFWS for terrestrial or freshwater aquatic species is not present within the USACE AoR. There is an existing paved road that is within the USACE LOD and due to the mobility of the species, CRLF may occur within the USACE AoR.

4.4. Terrestrial Baseline Outside USACE AoR

A survey of Diablo Creek noted rainbow trout/steelhead (*Oncorhynchus mykiss*) downstream of the 500 kV and 230 kV switchyard culvert down to the creek mouth of Diablo Creek. The anadromous Steelhead – South-Central California Coast Distinct Population is federally listed as threatened, while resident freshwater rainbow trout are not listed. The resident and anadromous forms of the species are collectively discussed here since the potential exists for the latter to access potentially suitable pool habitat in lower Diablo Creek during periods of high flows and high tides. The lower section of Diablo Creek is within the USACE jurisdictional area; however, it is well outside of the LOD and would not be affected by the Project. As such, steelhead are not discussed further and the only federally listed terrestrial species within the USFWS Action Area outside USACE AoR is CRLF.

An additional 25 federally listed species appeared on the USFWS IPAC database as potentially within the DCPP property bounds; however, these species were not included in this BA due to the lack of occurrence data within the vicinity of all three Action Areas and the absence of suitable habitat. Based on this evidence, these species are unlikely to occur in any of the three Action Areas and would not be affected by the Proposed Action. Table 4.4-1 lists 27 species and their status provided by the IPAC database (USFWS 2022a) and illustrates that there is no critical habitat proposed or designated for these species within the Action Areas.

Terrestrial Species	Federal Status	Critical Habitat Determination	
Flowering Plant Species			
California Jewelflower (Caulanthus californicus)	Endangered	No Critical Habitat	
Chorro Creek Bog Thistle (<i>Cirsium fontinale</i> var. obispoense)	Endangered	No Critical Habitat	
Indian Knob Mountainbalm (<i>Eriodictyon altissimum</i>)	Endangered	No Critical Habitat	
Marsh Sandwort (<i>Arenaria paludicola</i>)	Endangered	No Critical Habitat	
Morro Manzanita (Arctostaphylos morroensis)	Threatened	No Critical Habitat	
Pismo Clarkia (<i>Clarkia speciosa ssp. Immaculata</i>)	Endangered	No Critical Habitat	
Salt Marsh Bird's-beak (<i>Cordylanthus maritimus ssp. Maritimus</i>)	Endangered	No Critical Habitat	
Spreading Navarretia (<i>Navarretia fossalis</i>)	Threatened	No Critical Habitat	
Mammals		·	

Table 4.4-1 – Potential USFWS Listed Terrestrial Species Outside USACE AoR



Terrestrial Species	Federal Status	Critical Habitat Determination
Giant Kangaroo Rat (<i>Dipodomys ingens</i>)	Endangered	No Critical Habitat
Southern Sea Otter (<i>Enhydra lutris nereis</i>) – Marine Mammal	Threatened	No Critical Habitat
Birds		
Ridgway's Rail (<i>Rallus obsoletus</i>)	Endangered	No Critical Habitat
California Condor (<i>Gymnogyps californianus</i>)	Endangered	No Critical Habitat
California Least Tern (Sterna antillarum browni)	Endangered	No Critical Habitat
Hawaiian Petrel (<i>Pterodroma sandwichensis</i>)	Endangered	No Critical Habitat
Least Bell's Vireo (<i>Vireo bellii pusillus)</i>	Endangered	No Critical Habitat
Marbled Murrelet (<i>Brachyramphus marmoratus</i>)	Threatened	No Critical Habitat
Short-tailed Albatross (<i>Phoebastria (=Diomedea) albatrus</i>)	Endangered	No Critical Habitat
Southwestern Willow Flycatcher (<i>Empidonax traillii extimus</i>)	Endangered	No Critical Habitat
Western Snowy Plover (<i>Charadrius nivosus nivosus</i>)	Threatened	No Critical Habitat
Yellow-billed Cuckoo (<i>Coccyzus americanus</i>)	Threatened	No Critical Habitat
Amphibians		
California Red-legged Frog (<i>Rana draytonii</i>)	Threatened	No Critical Habitat
California Tiger Salamander (<i>Ambystoma californiense</i>)	Threatened	No Critical Habitat
Foothill Yellow-legged Frog (<i>Rana boylii</i>)	Endangered	No Critical Habitat
Fishes	•	•
Tidewater Goby (<i>Eucyclogobius newberryi</i>)	Endangered	No Critical Habitat
Steelhead Trout (<i>Oncorhynchus mykiss</i>)	Threatened	No Critical Habitat
Crustaceans	·	•
Vernal Pool Fairy Shrimp (<i>Branchinecta lynchi</i>)	Threatened	No Critical Habitat
Insects		
Monarch Butterfly (<i>Danaus plexippus</i>)	Candidate	No Critical Habitat
Source: LISEWS 2022a		

5. Marine Baseline

In response to decommissioning requirements, Tenera and ERM conducted marine surveys to complete the MBRA (PG&E 2020b). The MBRA found that the DCPP site includes two broad marine habitat areas: intertidal marine habitat and subtidal marine habitat.

In addition to these broad habitat areas, three spatially explicit protected areas occur within the marine portions of the NOAA Fisheries Action Area; EFH, NOAA Fisheries Critical Habitat, and Marine Protected Areas (MPAs) (PG&E 2020b). An EFH report (PG&E 2023) was submitted as part of the Individual Permit Application package and therefore is not covered in this BA. The boundary of Point Buchon State Marine Reserve (SMR) is approximately 1 mile upcoast from The Discharge Cove. This MPA extends over approximately 4,200 acres, encompassing both sandy beaches and rocky shore intertidal habitat and extensive kelp beds, rocky pinnacles, and associated fishes and invertebrates (PG&E 2020b). Immediately offshore of the Point Buchon SMR is the Point Buchon State Marine Conservation Area. This MPA extends over approximately 7,900 acres and includes deeper habitats than the SMR, ranging from 190 to 394 feet deep (PG&E 2020b).

This marine baseline focuses on the marine species identified during Tenera surveys that are federally protected under the ESA, Marine Mammal Protection Act (MMPA), and MPAs. As described in the MBRA, marine mammals are protected under the MMPA, which prohibits the "take" of marine mammals in WOTUS, but only those marine mammals that are also listed as federally threatened or endangered under the ESA are discussed in this BA. "Take" includes the harassment, feeding, hunting, capture, or killing, or the attempt to do so (50 CFR 216.3).

To complement the surveys conducted for the MBRA, an additional desktop analysis was conducted to determine the potential marine federally listed species in Project Action Areas. Table 5-1 summarizes species listed under the ESA that may occur at the DCPP by virtue of their ecology (PG&E 2020b).

Species and Management Unit (ESU, DPS, or stock)	Scientific name	ESA†	Likelihood of Occurrence
Black abalone	Haliotus cracherodii	FE	High
Southern sea otter	Enhydra lutris nereis	FT	High
Humpback whale	Megaptera novaeangliae		Medium
- Central America DPS		FE	
- Mexico DPS		FT	
Chinook salmon	Oncorhynchus tshawytscha		Medium to low
- Upper Klamath and Trinity rivers ESU		С	
- California coastal ESU		FT	
- Sacramento River winter-run ESU		ГТ	
- Central Valley spring-run ESU		ГI Р	
- Central valley spring-run in the San Joaquin River XN		C	
Steelhead salmon	Oncorhunchus multiss iridaus		Low
	Oncornynenus mykiss intueus	DTD	LOW
- South-central California coast DPS		FT	
Blue whale	Balaenoptera musculus	FE	Low
Fin whale	Balaenoptera physalus	FE	Low
Sperm whale	Physeter macrocephalus	FE	Low
Gray whale	Eschrichtius robustus		Low
- Western North Pacific DPS		FE	LOW
Guadalupe fur-seal	Arctocephalus townsendi	FT	Low
Green turtle - east Pacific DPS	Chelonia mydas	FT	Very Low
Leatherback turtle	Dermochelys coriacea	FE	Very Low
Pacific olive Ridley turtle	Lepidochlys olivacea		Very Low
- Mexico's Pacific Coast breeding population		FE	
- All other populations		FT	

Table 5-1 – Marine Species Listed Under the ESA that May Occur at the DCPP Site



Diablo Canyon Decommissioning

Species and Management Unit (ESU, DPS, or stock)	Scientific name	ESA†	Likelihood of Occurrence
Loggerhead turtle - North Pacific DPS	Caretta	FE	Very Low
Tidewater goby	Eucyclogobius newberryi	FE†††	Very Low*
Green sturgeon - southern DPS	Acipenser medirostris	FT	Very Low
Source: DC8 E 2020b			

Source: PG&E 2020b.

Notes:

* Likelihood refers to encountering adult tidewater goby in the marine environment, not an assessment of their presence in brackish streams at the DCPP site.

- [†] NOAA 2020a unless otherwise indicated
 ^{††} USFWS 2022a
 c = Candidate
 CT = CESA Threatened
 DCPP = Diablo Canyon Power Plant
 e = ESA Experimental Population
 FE = ESA Endangered
 FT = ESA Threatened
 - ESU = Evolutionarily Significant Unit DPS = Distinct Population Segment ESA = Federal Endangered Species Act

Although favorable conditions exist to support the federally listed species in Table 5-1, only 5 of those species have been historically or recently observed in the marine environment surrounding the DCPP site. The observed federally listed species include black abalone (*Haliotus cracherodii*), southern sea otter (*Enhydra lutris nereis*), humpback whale (*Megaptera novaeangliae*), gray whale (*Eschrichtius robustus*), and green turtle (*Chelonia mydas*). Although not observed on the DCPP site, there is critical habitat for the leatherback turtle (*Dermochelys coriacea*) within the USFWS Action Area within USACE AoR and the NOAA Fisheries Action Area, thus the leatherback turtle was included in this BA.

Lastly, though not observed during the marine resource surveys, the fin whale (*Balaenoptera physalus*) and blue whale (*Balaenoptera musculus*), were included in this report due to their tracked occurrences in proximity to the NOAA Fisheries Action Area. This analysis results in a total of eight federally listed species that were identified to be within at least one of the three Action Areas. A detailed description of the species status and their baseline extent within Action Areas are detailed below.

5.1. Assessed Federally Listed Marine Species

5.1.1. Aquatic Vegetative Communities

The subtidal algal assemblage within the Discharge Cove includes canopy-forming and understory kelps (brown algae) providing habitat for a variety of invertebrates and fishes. *Cystoseira osmundacea* and *Sargassum muticum* are abundant canopy-forming kelps at the shallow water monitoring stations in The Discharge Cove, while other kelps observed in the Discharge Cove included giant kelp and subcanopy kelps such as *Pterygophora californica* and *Laminaria setchellii*. Approximately 21 acres of kelp were mapped within The Discharge Cove. Understory algae also



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consists of a complex of articulated coralline red algae (*Calliarthron* spp. and *Bossiella* spp.), and understory red algae including *Rhodymenia* spp., *Acrosorium ciliolatum*, *Chodracanthus corymbiferus*, a complex of *Farlowia* spp. and *Pikea* spp., *Cryptopleura violacea*, and *Prionitis* spp.

The substrate is mostly devoid of macroalgae, with a diatom film covering much of the rocky substrate (PG&E 2020b). The green alga *Ulva spp*. and red alga (*Gelidium coulteri*) were commonly observed, with coralline algae less common (PG&E 2020b). Common sessile invertebrates included the barnacle (*Chthamalus fissus*), the California mussel (*Mytilus californianus*), and the anemone (*Anthopleura elegantissima*). Conversely, the intertidal zone downcoast of the Discharge Structure consists of a wide bench reef interspersed with some boulder and cobble. The area is comparatively more diverse than the area upcoast of the Discharge Structure, with juvenile articulated coralline algae, crustose coralline algae, and the articulated coralline (*Corallina vancouveriensis*) abundant in the area. The Discharge CoveNo eelgrass (*Zostera* spp.) was observed in the Discharge Cove.

The MBRA also surveyed the Discharge Cove and the Intake Cove for kelp canopy and eelgrass (*Zostera* spp.) in 2020. The survey results found approximately 7 acres of kelp canopy in the Intake Cove and occurrences of eelgrass in the shallow subtidal habitat at the eastern end of the Intake Cove. These beds are in areas closely adjacent to the most downcoast extent of the rip-rap and graded road (PG&E 2020b). An additional survey for eelgrass were conducted in September of 2023 by Tenera ahead of a planned dredging activity in the Intake Cove approved and completed under a separate permit. The 2023 eelgrass survey verified that the eelgrass beds mapped in 2020 were mostly still present at the same locations with reduced areal extent and coverage. Additionally, the small eelgrass bed previously mapped closest to the Intake Structure was no longer present (Tenera 2023). Figure 5.1.1-1 displays the mapped eelgrass beds observed in 2020 and 2023.

Eelgrass beds are a protected habitat under the Magnuson-Stevens Fishery Act, designated as Habitat Areas of Particular Concern, a subset of EFH, because they are a resource to a variety of species, including the southern sea otter.⁶ Proposed barging activities are not expected to impact the eelgrass beds within the Intake Cove. According to the DEIR (County 2023), an Eelgrass Monitoring Plan shall be prepared to ensure protection to eelgrass beds that are present in the Intake Cove.

⁶ Due to its importance to southern sea otter, it was requested by USFWS during the consultation process to include the assessment of eelgrass in relation to southern sea otter in the BA.



Figure 5.1.1-1 - Approximate Extent and Location of Eelgrass within the Action Area



Source: PG&E 2020b and Tenera 2023.



5.1.2. Black Abalone

Status and Distribution

Black abalone (*Haliotis cracherodii*) has been listed as endangered under the ESA since 2009 (74 FR 1973). Black abalone are plant-eating marine snails commonly found in rocky intertidal and subtidal reefs along the California and Baja California coast. They feed on macroalgae such as various forms of kelp and sea palm (NOAA Fisheries 2020a).

The geographical range for black abalone extends generally from Point Arena (Mendocino County, California) south to Bahia Tortugas, Mexico. Adult black abalone are relatively sedentary, benthic gastropod mollusks (a type of snail) that can reach 8 inches long and can live up to 30 years. Black abalone is the only abalone species in California that primarily occurs in rocky intertidal habitat as adults; the remaining abalone species are found in subtidal habitat.

Threats and Reasons for Decline

The black abalone population began to decline in the late 1980s due to a disease called Withering Syndrome that is caused by a prokaryotic pathogen called *Candidatus Xenohaliotis californiensis* (PG&E 2020b). Continued decline occurred through the 1990s with populations as far north as Cambria, north of DCPP at the northern border of San Luis County declining in abundance by more than 80 percent (PG&E 2020b). Similar declines are well documented throughout California in scientific studies.

Black abalone are broadcast spawners and as a result, males and females must be within approximately 15 feet of one another to ensure successful fertilization. The combination of this reproductive strategy with the limited larval dispersal of black abalone and the low population density has caused breeding among closely related individuals in spatially constrained clusters/sub-populations throughout the species' range. The combination of these factors has caused current black abalone populations to have low levels of gene flow. Low gene flow can lead to more vulnerable populations and extinction as compared to a similar sized population with a higher level of gene flow.

Recovery Plan

NOAA Fisheries published the black abalone final recovery plan in November of 2020 (NOAA Fisheries 2020a). The recovery plan details goals for species recovery and a review of the critical habitat identified for this species.

Surveys for Black Abalone

Surveys at DCPP in the 1970s and early 1980s recorded concentrations of up to 6.9 black abalone per square meter at sampling stations in The Discharge Cove, with the highest densities in the northern part of the cove. By the late 1980s, abundances throughout the area had declined to less than one per square meter.

Recent surveys conducted for the MBRA (2020) identified one black abalone on the east breakwater and three on the west breakwater associated with the Intake Cove. All black abalone were found on the seaward sides of the breakwaters.



Lastly, black abalone has been observed during routine intertidal monitoring surveys along the DCPP site coastline.

Location	Area Description	Acres
The Discharge Cove	Coffer Dam w/ 25' Buffer and Dewatered Area	0.47
The Discharge Cove	Barge and Anchorage Area	4.23

Table 5.1.2-1 -	- Black Abalone	Observations	during	Protected S	Species Surv	evs at DCPP
Tuble official t	Diadicitibatoric	obber vaciono	aarmo	I I Ottottota t	species but v	cyb ac D di i

Source: PG&E 2020b

Habitat Assessment

Critical habitat for black abalone was designated in 2011 (76 FR 66806). The geographical extent, which includes the DCPP site, encompasses over 139 square miles of intertidal and shallow subtidal rocky habitat in California from Del Mar Landing Ecological Reserve to the Palos Verdes Peninsula. It also includes habitat on the Farallon Islands, Ano Nuevo Island, San Miguel Island, Santa Rosa Island, Santa Cruz Island, Anacapa Island, Santa Barbara Island, and Santa Catalina Island (NOAA Fisheries 2011). Within these geographical boundaries, the designation encompasses all rocky intertidal and subtidal habitats from the mean higher high-water line to a depth of 20 feet (relative to the MLLW line), as well as coastal marine waters overlying this zone.

During development of the Final Rule (76 FR 66806), critical habitat was divided into 20 Specific Areas of roughly equal area that contain at least one Primary Constituent Elements (PCE) that may require special management considerations or protection. The DCPP site occurs within Specific Area 10. This area includes rocky intertidal and subtidal habitats from Montaña de Oro, San Luis Obispo County to just south of Government Point, Santa Barbara County.

5.1.3. Southern Sea Otter

Status and Distribution

The southern sea otter is a federally threatened marine dwelling member of the weasel family (Mustelidae) (USFWS 2022c). They are known to live along the California coast from San Mateo County to Santa Barbara County (USFWS 2019b). Southern sea otters mainly consume marine invertebrates and utilize rocks as tools to break into mollusk shells as their main source of food. Based on the habitat surrounding DCPP, the rocky substrate and algal growth is likely to support sea otter food resources, which include abalone, rock crabs, sea urchins, kelp crabs, clams, turban snails, mussels, octopus, barnacles, scallops, sea stars, and chitons (USFWS 2019b). Rocky habitats that are topographically heterogeneous and support kelp forests are likely to support the greatest diversity (4.65-5.62 individuals per square kilometer) and abundance of sea otter food resources. Areas with sandy bottoms and areas of mixed habitat support average equilibrium densities of 0.84-1.32 and 0.44-1.16 individuals per square kilometer, respectively (PG&E 2020b).



Sea otter populations from Point Buchon to near Point San Luis (including the area adjacent to DCPP) have been monitored monthly since 1973. Average population size has varied over the years but has seasonally ranged from less than 40 to over 100 individuals (Benech 1996). Their distribution is known to change with local conditions and the population size appears to be largely influenced by the availability of food resources, suitable resting sites, pupping success, and movement of otters between adjacent coastal areas. Females and pups now dominate the study area, representing about 95 percent of the resident population. Distribution of the southern sea otter is known to change based on local conditions; however, based on previous surveys, females and pups are known to frequent the Intake Cove and would form 'rafts' of up to 30 otters (PG&E 2020a). 'Rafts' are small groups of floating otters that would rest and groom as a group (PG&E 2020a).

Threats and Reasons for Decline

During the 18th and early 19th century, sea otters were hunted for their pelts to the point of near extinction. In 1911, protections for the southern sea otter were established and as a result, populations have gradually expanded from a small number of surviving individuals near Bixby Creek in Monterey County. Recently, large mortality events were caused by domoic acid poisoning due to red tide events (naturally occurring phytoplankton blooms). Currently, white shark attacks are the single most important cause of mortality for southern sea otter, accounting for more than 50 percent of recovered carcasses. The reasons for the increase in shark bites are not well understood, but it may be related to the white shark behavior and distribution associated with increasing populations of northern elephant seals and California sea lions along the California coastline.

Recovery Plan

The southern sea otter was listed as threatened in 1977 under the ESA, with the creation of the Sea Otter Recovery team in 1982. The Southern Sea Otter Recovery Research Act (H.R. 3639) directs the sea otter recovery program under the ESA and MMPA. Last revised in 2003, the recovery plan requires:

- Monitoring and analyzing sea otter population demographics and life history parameters with a biannual population census;
- Protection of the sea otter population;
- Reducing or eliminating threats due to human activities; and
- Implementation of education and outreach efforts which focus on sea otters and their survival.

Surveys for Southern Sea Otter

Tenera conducted monthly to biweekly clifftop surveys of marine mammals at several locations along the Action Areas since 2017 and have collected data on sightings of protected marine mammal species (PG&E 2020a). Table 5.1.3-1 shows the sea otter observations for those surveys.



Table 5.1.3-1 - Southern Sea Otter Observations During Protected Species Surveys at DCPP

Common Name	Scientific Name	Individuals Observed
Southern sea otter	Enhydra lutris nereis	279
Source: PG&E 2020b		

Habitat Assessment

There has not been any critical habitat designated for southern sea otter. Sea otter habitat is typically defined as occurring inshore of approximately 131 feet depth contour (USFWS 2019b; PG&E 2020b). Southern sea otters forage in both rocky and soft-sediment communities in water depths of 82 feet in depth or less. Sea otters are capable of diving to depths of up to 328 feet (USFWS 2019b). Rocky habitats that support kelp forests are likely to support the greatest diversity and abundance of sea otter food resources, which include abalone, rock crabs, sea urchins, kelp crabs, clams, turban snails, mussels, octopus, barnacles, scallops, sea stars, and chitons.

5.1.4. Humpback Whale

Status and Distribution

Humpback whales (*Megaptera novaeangliae*) are a common Mysticete species which live along the northern and central California coastline. Humpback whales listed as endangered (Central American distinct population segments [DPS]) and threatened (Mexico DPS) under the ESA occur in California waters, including waters adjacent to the DCPP site (NOAA Fisheries 2021a). Humpback whales from these two DPS commonly occur in California waters during their feeding season (summer and fall). Whales from the Central American DPS tend to be more frequently observed in the southern parts of the feeding grounds than the Mexico DPS whales. It is expected that almost all the Central American DPS whales feed in California and Oregon. Whales from the Mexico DPS also feed in Washington and Alaskan waters. Whales from the Hawaii DPS, which is unlisted under the ESA, have also been observed feeding in California waters; however, these whales primarily feed in Southeast Alaska, Northern British Columbia, northern Gulf of Alaska, and the Bering Sea (NOAA Fisheries 2021a).

Threats and Reasons for Decline

Prior to the established moratorium on commercial whaling in 1985 in the United States (U.S.), humpback whale populations were reduced by over 95 percent. Accidental vessel strikes, entanglement in fishing gear, and inadvertent vessel-based harassment are currently among the top listed threats to the species. Additionally, the extent of impacts to humpback whales from climate change are unknown but are considered a potential threat to population numbers.

Recovery Plan

The humpback whale recovery plan was introduced in 1991 to require actions that would protect crucial breeding and feeding areas associated with the species. This plan includes establishment of regulations which restrict vessel and aircraft distance from humpback whales to minimize



disturbance from these activities. The major actions recommended in the existing recovery plan include:

- Reduction or elimination of injury and mortality caused by fisheries, fishing gear, and vessel collisions;
- Minimization of effects from vessel disturbance;
- Continuation of the international moratorium on commercial whaling; and
- Expansive data collection efforts from dead whales through the NOAA Marine Mammal Health and Stranding Program.

Surveys for Humpback Whale

Tenera conducted monthly to biweekly clifftop surveys of marine mammals at several locations along the Action Area since 2017 and have collected data on sightings of protected marine mammal species (PG&E 2020a). Table 5.1.4-1 shows the humpback whale observations for those surveys.

Table 5.1.4-1 – Humpback Whale Observations During Protected Species Surveys at DCPP Since 2017

Common Name	Scientific Name	Individuals Observed
Humpback whale	Megaptera novaeangliae	7

Source: PG&E 2020b

Habitat Assessment

NOAA Fisheries published the final rule to designate critical habitat for the endangered Western North Pacific (WNP) DPS, the endangered Central America DPS, and the threatened Mexico DPS of humpback whales (*Megaptera novaeangliae*) pursuant to Section 4 of the ESA (NOAA 2021a). Specific areas designated as critical habitat under 81 FR 62260 are for the WNP DPS of humpback whales contain approximately 59,411 square nautical miles (nmi²) of marine habitat in the North Pacific Ocean, including areas within the eastern Bering Sea and Gulf of Alaska (NOAA 2021a). Specific areas designated as critical habitat for the Central America DPS of humpback whales contain approximately 48,521 nmi² of marine habitat in the North Pacific Ocean within the portions of the California Current Ecosystem off the coasts of Washington, Oregon, and California. Specific areas designated as critical habitat for the Mexico DPS of humpback whales contain approximately 116,098 nmi² of marine habitat in the North Pacific Ocean, including areas within portions of the eastern Bering Sea, Gulf of Alaska, and California Current Ecosystem (NOAA 2021a).

Critical habitat for humpback whale begins approximately 0.6 miles offshore of the DCPP site. It is unlikely that humpback whale would enter The Discharge Cove; however, there is higher likelihood that humpback whale may appear within the vessel route.



5.1.5. Blue Whale

Status and Distribution

Blue whales (*Balaenoptera musculus*) are listed as endangered under the ESA throughout their range. The Eastern North Pacific (ENP) stock predominates in the Gulf of Alaska, and the west coast of the U.S., including California waters. Due to commercial whaling, it is estimated that between 1905 and 1971, approximately 3,411 blue whales were removed from the population. Population estimates for data collected in 2018 suggest the population is around 1,898.

Blue whales spend the summer season feeding in northern latitudes and migrate to tropical and subtropical regions in the winter to breed and calve. The ENP Stock also has two distinct populations (NOAA Fisheries 2022a). The highest abundance of blue whale occurred in the mid-1990s, with colder weather conditions (NOAA Fisheries 2022a). Due to warming waters, the population distribution is seeing a northern shift. Though overall distribution and migration patterns vary, it is known that their presence is mostly determined by the availability of food (NOAA Fisheries 2022a). Blue whales primarily attain their nutrients from krill.

Threats and Reason for Decline

Since protections have been put in place by NOAA to preserve the species and ban commercial whaling practices in the U.S. (1985), the main threat and reason for decline to blue whale are vessel strikes. Most observed vessel strikes to blue whales have occurred in southern California or nearby the San Francisco Bay Area, where blue whales seasonally congregate to feed on krill (Berman-Kowalewski et al. 2010). In relation to effects from vessels on the species, underwater noise from vessel activities can cause behavior threats and noise associated with sonar use can cause alternations in diving and feeding behavior (NOAA Fisheries 2022a).

Another main threat to blue whales is entanglement in fishing gear (NOAA Fisheries 2022a). Once entangled, blue whales either swim away with the gear still attached or become anchored and trapped. Blue whales have been known to become entangled in varying gear types such as traps, pots, and nets. Entanglement can lead to cascading negative effects on feeding ability, injury, and reproductive success, leading to fatigue and potentially death (NOAA Fisheries 2022a).

Recovery Plan

The blue whale recovery plan was last updated by the NOAA Office of Protected Resources in 2020 (NOAA Fisheries 2020b). The two highlighted objectives of the blue whale recovery plan include: 1) increase blue whale resiliency and ensure geographic and ecological representation by achieving sufficient and viable populations in all ocean basins and in each recognized subspecies; and 2) increase resiliency by managing or eliminating significant anthropogenic threats.

Surveys for Blue Whale

During the surveys conducted for PG&E for marine mammals, there have not been any observations of blue whale within the Discharge Cove and the Intake Cove since 2017. There have been other surveys in proximity to the DCPP which provided data from GPS satellite tags attached to blue whales over several years between 1993 and 2009 (Bailey et al. 2009). This data indicates that the persistent presence of blue whales within approximately 40 miles of the DCPP site for at least the



period from August through September. Blue whales have been observed on 15 occasions on transects completed within 37 miles of the DCPP between 1987 and 2015 (FIAER et al. 2017).

Habitat Assessment

While there is no designated critical habitat for blue whales, there are nine identified feeding areas (also referred to as Biologically Important Areas [BIAs]) along California's coast (NOAA Fisheries 2022a). These feeding areas represent both nearshore and offshore areas which overlap with existing anthropogenic activities (shipping, oil and gas extraction, and military activities) in the region. The U.S. west coast is considered a BIA for blue whale in the summer and fall for feeding (NOAA Fisheries 2022a). The closest BIA to the Action Area is the Point Conception/Arguello BIA, which is approximately 21 miles south of the Action Area (Calambokidis et al. 2015). None of the BIAs intersect with the Action Area.

5.1.6. Fin Whale

Status and Distribution

Fin whales (*Balaenoptera physalus*) are a Mysticete whale listed as endangered under the ESA throughout its range (35 FR 12222). Similar to blue whales, fin whales are distributed throughout California waters, and are abundant near the NOAA Fisheries Action Area within the summer and fall months. Fin whales also have varying migration patterns which are often fueled by prey abundance and optimization of foraging patches (PG&E 2020b). The animals are primarily distributed farther offshore in comparison to blue whale.

According to the NOAA fin whale California/Oregon/Washington Stock report, the best estimate of the population size was reported in 2018 at approximately 11,065 (NOAA Fisheries 2022b).

Threats and Reason for Decline

Anthropogenic activities are the main threats and reasons for decline in fin whales. Recent data between 2015 and 2019 indicated that there have been three observed serious injuries from entanglement of fishing gear and seven deaths of fin whale from vessel strikes (NOAA Fisheries 2022b).

Recovery Plan

The recovery plan for fin whale was published in July of 2010 with the goal to recover the species to a point at which the listing can be moved from endangered to threatened (NOAA Fisheries 2022b). To achieve this goal, the NOAA Office of Protected Resources aims to reduce or eliminate injury or death caused by vessel strikes and fishing gear; protect essential habitats to species survival; monitor population size; maintain protections already in place for the species; and collect data from stranded or dead whales (NOAA Fisheries 2022b).

Surveys for Fin Whale

During surveys completed from 2017-2020 for the MBRA, there have been no known observations of fin whale within the Action Area (PG&E 2020b). Fin whales have been observed on eight occasions on transects completed within 37 miles of the DCPP between 1987 and 2015 (FIAER et al.



2017). Due to their offshore distribution, there is potential for fin whale to occur within the vessel route of the Action Area.

Habitat Assessment

Fin whales can be found in the deep, offshore areas of all oceans and travel far from the coastline, making them difficult to track. There is no critical habitat listed for fin whale. Due to their wide distribution, they have seasonal migration cycles and are known to aggregate in regions where krill are abundant (NOAA Fisheries 2022b).

5.1.7. Gray Whale

Status and Distribution

Gray whales (*Eschrichtius robustus*) are listed as endangered by the WNP DPS which includes Islands of Asia and the Bering Sea. However, the NOAA Fisheries Action Area falls within the ENP DPS, which encapsulates WOTUS west coast, Canada, and south to Baja California. The ENP DPS was once listed under the ESA but has been delisted since 1994 (NOAA Fisheries 2021b). Though these are two distinct populations, some WNP whales have been identified in the ENP region, thus their inclusion in this BA.

During migrations, gray whales typically stay within 6 miles of the shore unless navigating around islands. Most ENP gray whales migrate south through California during the winter months away from feeding grounds between Alaska and Russia (Chukchi, Beaufort, and northwestern Bering seas) to winter in lagoons in Baja California (PG&E 2020b). Pregnant females and those with calves concentrate in the lagoons throughout winter and typically migrate north to feeding grounds from February through the early summer. A small number of whales feed in waters between Alaska and northern California (NOAA Fisheries 2021b).

Threats and Reason for Decline

The main threats to gray whales are entanglement in fishing gear, vessel strikes, disturbance from whale watching activities, underwater noise, habitat degradation from offshore infrastructure, and climate change (NOAA Fisheries 2021b). Due to their near shore migration tendencies, gray whales are more likely to come into contact with nearshore vessel traffic, increasing likelihood of interaction with recreational activities.

Recovery Plan

After the ban on commercial whaling in the U.S. in 1985, gray whale populations, especially in the ENP DPS began to recover. The recovery of this species in the ENP lead to the delisting of the population in 1994. As such, there is no recovery plan for gray whale, however, NOAA Fisheries is continually monitoring the species to ensure continuous population growth. NOAA has plans in place to reduce vessel collisions to gray whales through collaboration with the U.S. Coast Guard and NOAA Sanctuaries. Collaboration with the shipping industry has led to better communication and tracking of vessel strikes and progress towards mitigation. Their inshore distribution relative to other commonly observed whales in the area is also clear in data from FIAER et al. (2017).



Surveys for Gray Whale

Tenera conducted monthly to biweekly clifftop surveys of marine mammals at several locations along the Action Area since 2017 and have collected data on sightings of protected marine mammal species (PG&E 2020a). Table 5.1.7-1 shows the gray whale observations for those surveys.

Table 5.1.7-1 – Gray Whale Observations During Protected Species Surveys at DCPP Since 2017

Common Name	Scientific Name	Individuals Observed
Gray whale	Eschrichtius robustus	37

Source: PG&E 2020b

Habitat Assessment

Due to the presence of gray whales across the world, there is broad habitat availability for the species. Gray whale primarily habitat nearshore waters and regions where feeding conditions are ideal. Recent research has shown that gray whales may experience more favorable feeding conditions in the arctic as ice melts due to global warming (NOAA Fisheries 2021b). Additionally, gray whales feed on both benthic and pelagic prey, which allows them to adapt better than some comparable species to changes in their environment (NOAA Fisheries 2021b).

5.1.8. Leatherback Turtle

Status and Distribution

Leatherback turtles (*Dermochelys coriacea*) are listed as threatened under the ESA throughout their distribution. Leatherback turtles are a species of marine turtle found in the Pacific Ocean, across the Caribbean, the Atlantic Ocean, and the Gulf of Mexico (PG&E 2020b). Leatherback turtles that occur in California waters migrate to California to feed from nesting areas in both the western Pacific and Central America (Benson et al. 2011). Potentially half the global population of adult female leatherback turtles nest on the west coast of Mexico (Benson et al. 2011). Leatherback turtles are estimated to be the most common sea turtle in U.S. Pacific waters. Sightings along the coast of California peak in August (Benson et al. 2011).

Threats and Reasons for Decline

The main threats to leatherback turtle are incidental take from fisheries, accidental killing of nesting females, and destruction of eggs at nesting beaches (NOAA Fisheries 2012). There are no nesting leatherbacks within the NOAA Pacific jurisdiction of this species (NOAA Fisheries 2012), which means there is no nesting habitat within the Action Area.

Recovery Plan

Established in 1998, the recovery plan for the U.S. Pacific populations of the leatherback turtle with the goal to eventually delist the species. According to the recovery plan, there are five main actions which are required to achieve recovery:

- 1. Elimination of incidental take of leatherbacks in U.S. and international commercial fisheries.
- 2. Support the efforts of Mexico and the countries of Central America to census and protect nesting leatherbacks, their eggs, and nesting beaches.



- 3. Identification of movement patterns, habitat needs and primary foraging areas for the species throughout its range.
- 4. Determination of population size and status in WOTUS through regular aerial or on-water surveys.
- 5. Identification of stock home ranges using DNA analysis.

Surveys for Leatherback Turtle

During the surveys conducted for the MBRA in 2020, there were no leatherback turtles identified within or in proximity to the Action Area. PG&E has an active Incidental Take Permit for leatherback turtle issued by NOAA Fisheries. Routine diver surveys are conducted within The Discharge Cove, the Intake Cove, and along the DCPP coastline. No leatherback turtles have been observed during the routine monitoring.

Habitat Assessment

Critical habitat within the Action Area for leatherback turtle was designated in 2012 (77 FR 4169). The geographical extent includes waters adjacent to the states of California, Oregon, and Washington. In California, the critical habitat encompasses coastal waters from the shoreline to the 10,000 feet depth contour between Point Arena and Point Arguello.

Food resources within the critical habitat area is a PCE, which was discussed in detail in the Proposed Rule (75 FR 319). The primary prey species of leatherback turtle are *scyphomedusae* (jellyfishes) of the order *Semaeostomeae* (e.g., *Chrysaora, Aurelia, Phacellophora, and Cyanea*). Jellyfish are the largest and most abundant in coastal waters of California, Oregon, and Washington during late summer-early fall months.

5.1.9. Green Turtle

Status and Distribution

Green turtles are listed as threatened under the ESA and are also divided into DPS management units. The Pacific DPS extends from the Oregon/California border to central Chile (PG&E 2020b). No nesting beaches for green turtle occur in California, and green turtles are not resident in any parts of California north of a persistent population established in San Diego Bay (NOAA Fisheries 2022c).

Their primary food source is marine algae and seagrass. Eastern Pacific green turtles are known to forage on a greater proportion of invertebrates than other green turtles (Seminoff et al. 2015).

Threats and Reasons for Decline

The primary threats to green turtles include bycatch in fishing gear, harvest of turtle eggs, vessel strikes, marine debris, climate change and fibropapillomatosis disease (which causes tumors) (NOAA Fisheries 2022c).



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Recovery Plan

The recovery plan for U.S. Pacific populations of the green turtle was established in 1998. The major recovery actions included in the plan are (NOAA Fisheries 2022c):

- Protection of turtles on nesting beaches and in marine environments;
- Protection of the foraging habitats;
- Reduction of bycatch in commercial, artisanal, and recreational fisheries;
- Reduction of the effects of entanglement and ingestion of marine debris;
- Reduction of vessel strikes;
- Determination of the impact of diseases on turtles;
- Collaboration with partners internationally to protect turtles in all life-stages; and
- Support of research and conservation projects consistent with Recovery Plan priorities

Surveys for Green Turtle

Rare occurrences of green turtles have been reported within the vicinity of the Action Area. Green turtles were observed on two occasions at the DCPP in 1977, prior to plant commercial operation (PG&E 2020b). Since operation of the facility, green turtles have been observed at the Intake Structure on fourteen occasions (PG&E 2020b). PG&E is also continuing monitoring and reporting for this species required by the NOAA incidental take permit issued to PG&E for operations.

Habitat Assessment

There is no established critical habitat for green turtle within the Action Area (NOAA Fisheries 2022c). Most green turtles spend the majority of their lives in coastal foraging grounds along open coastline or in sheltered bays/lagoons. Green turtles nest on sandy, ocean-facing mainland and island beaches in the tropics and sub-tropics.

5.2. Marine Baseline within USACE AoR

The marine portions of the USFWS Action Area within the USACE AoR are those within the Discharge Cove and the Intake Cove, which include two broad marine habitat areas: intertidal marine habitat and subtidal marine habitat. Within each of these broad habitat areas, more specific habitat types can be defined based on the substrate type or dominant biological community such as the algal assemblage (PG&E 2020c). Within the Intake Cove are eelgrass beds which are considered EFH (discussed in the EFH Assessment 2024).

In addition to these broad habitat areas, critical habitat for two federally listed species occur within the Discharge Cove and the Intake Cove: black abalone and leatherback turtle.

As both the Intake Cove and Discharge Cove are included in the USFWS Action Area within the USACE AoR, black abalone, southern sea otter, and leatherback turtle fall within this Action Area.

5.2.1. Black Abalone within the USACE AoR

Within the USACE AoR is a portion of the Pacific Ocean which includes critical habitat for black abalone. One black abalone was observed during the surveys of the east breakwater and three were



found on the west breakwater during the Intake Cove survey (PG&E 2020b). Due to the intense wave action created by the discharge flow, the survey effort was not able to complete a survey of the entirety of The Discharge Cove. Therefore, although there have not been black abalone found within the Discharge Cove near the point of discharge, there is potential for black abalone to exist in this area. As part of the Project, the area immediately adjacent to the Discharge Structure will be dewatered and black abalone will be excluded from this portion of the Pacific Ocean during construction. Table 5.2.1-1 summarizes the estimated black abalone habitat which will be impacted by Proposed Activities within the USACE AoR. Black Abalone are also considered to be within the NOAA Fisheries Action Area.

Table 5.2.1-1 -	Black Abalone	Habitat Impacted in	USACE Action Area
		· · · · · · · · · · · · · · · · · · ·	

Location	Area Description	Acres
The Discharge	Coffer Dam w/ 25' Buffer and Dewatered Area	
Cove		0.47
Courses Courses 20'		-

Source: County 2023.

5.2.2. Southern Sea Otter within the USACE AoR

Southern sea otter are found in USFWS Action Area within the USACE AoR. Since southern sea otter are listed as threatened under the ESA within Southern California and the status is managed by the USFWS, southern sea otter fall within USFWS management responsibilities for the Proposed Action. There is potential for vessel traffic from the Proposed Action to temporarily effect the behavior of southern sea otter, and cause incidental vessel strikes, however due to the highly mobile nature of the species, detrimental effects to the southern sea otter are highly unlikely.

Southern sea otter females and pups identified within the Intake Cove have been observed to form rafts where they float in groups of up to approximately 30 while resting at night. They have also been observed to disperse to offshore foraging areas during the day. Additionally, southern sea otter utilize eelgrass, which has been observed within the Intake Cove.

Southern sea otter are also considered to be within the NOAA Fisheries Action Area.

5.2.3. Leatherback Turtle within the USACE AoR

Although there have been no sightings of leatherback turtles within proximity to the DCPP site (including the Discharge Cove and the Intake Cove), the Benson et al. study suggests individuals may migrate to the Discharge Cove (Benson et al. 2011; PG&E 2020b). The Distribution of leatherback turtle is largely offshore and there is no nesting habitat within the USACE AoR. Therefore, though possible, it is highly unlikely that leatherback turtle will occur within the USACE AoR during Project activities. Since leatherback critical habitat is within the Discharge Cove and the Intake Cove, the Project is anticipated to temporarily affect leatherback turtle critical habitat through anchoring and barging activity (shown in Table 5.2.3-1). Leatherback turtle are also considered to be within the NOAA Fisheries Action Area.



Table 5 2 3-1 - 1	eatherback	Turtle Ha	hitat Tem	norarily Im	nacted 0	utcido l	ISACE AOR
Table 5.2.5-1 - 1	Leaulei Dack	гигие па	ibitat Tem	porarity III	ipacieu U	uusiue	DOALE HOR

Location	Area Description	Acres
The Discharge	Coffer Dam w/ 25' Buffer and Dewatered Area	
Cove		0.47

Source: County 2023

5.3. Marine Baseline Outside USACE AoR

Due to the vessel activity associated with the Proposed Project, the region outside the USACE AoR is more expansive in the marine environment and therefore encapsulates species which have a broader distribution outside of the Intake Cove and Discharge Cove. A total of five marine species are listed as outside of the USACE AoR.

5.3.1. Humpback Whale Outside the USACE AoR

Humpback whales are observed regularly offshore of the DCPP site by biologists working for PG&E. Humpback whale sightings from DCPP typically range from 0.6 to 1.2 miles offshore of the DCPP site and most commonly from late summer through early winter. In one instance, humpback whales have been observed feeding as close as the seaward side of Diablo Rock, less than 1,640 feet from the Discharge Structure. Though humpback whales are commonly observed in view shed of the coastline of the DCPP site boundary, they largely remain offshore and are likely to occur within the vessel route.

As a result of the above, Humpback Whale have the potential to occur in the vicinity of the Discharge Cove and the vessel route between the Intake Cove and the designated barge route within NOAA Fisheries Action Area (PG&E 2020a).

5.3.2. Blue Whale Outside USACE AoR

Due to the migratory nature of the blue whale, there is moderate likelihood that they could be near the vessel route (extending 50 miles offshore) between the Intake Cove and the designated barge route of the NOAA Fisheries Action Area in the summer and fall seasons (PG&E 2022b). It is highly unlikely that blue whale will occur within the Discharge Cove or the Intake Cove. Based on seasonal distribution data included in the Transportation Analysis Offshore, prepared for PG&E (2022b), it is not likely that blue whale would be present in the winter and spring within the NOAA Fisheries Action Area.

5.3.3. Fin Whale Outside the USACE AoR

There are no known fin whale occurrences nearshore to the DCPP site. According to distribution data collected in 2009, fin whales are present in the Pacific Northwest region during summer and fall, mainly concentrated offshore of the DCPP site and slightly northward in Monterey County (Halpin et al. 2009). Fin whale have been mapped as highly likely to be present within the vessel



route and as a result, within the NOAA Fisheries Action Area in summer and fall, but highly unlikely to be present in the NOAA Fisheries Action Area in the winter and spring (PG&E 2022b).

5.3.4. Gray Whale Outside the USACE AoR

Due to the nearshore migration patterns of gray whales, particularly during their northerly migration when many females migrate with calves, they are often observed at the DCPP site. Since the Discharge Cove is included within the NOAA Fisheries Action Area, it is highly likely that gray whales will enter these action areas.

5.3.5. Green Turtle Outside the USACE AoR

Historic data determined that a San Diego Bay population of green turtles seasonally aggregates in the warm water discharge of a power plant (MacDonald et al. 2012). Although not common, green turtles have been spotted in the Intake Cove, most recently in 2019 (PG&E 2020b). Critical habitat has not been identified in this region for green turtle. Since the Intake Cove is within the NOAA Fisheries Action Area, there is potential for green turtle to occur within the NOAA Fisheries Action Area.

6. Determination

This section discusses the determination statements for the species listed by USFWS that may appear in and around the Action Areas. Species included in this section are protected under the ESA of 1973 (Federal Register 41[110]:22915–22922. June 7, 1976), as amended (PL 94-325, PL 94-359, PL 95-212, PL 95-632, PL 96-159, PL 97-304). According to this legislation, endangered species are those that are "in danger of extinction throughout all or a significant portion of its range." Threatened species, are those "likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range."

For federally listed species, direct effects that would lead to the "taking" of an individual as defined in Section 9 or Section 10 of the ESA. Section 9 of the ESA prohibits take (e.g., to harass, harm, pursue, hunt, wound, kill) of listed species of fish, wildlife, and plants without special exemption. "Harm" is further defined as the performance of an act that kills or injures wildlife and includes significant habitat disturbance or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns such as breeding, feeding, or sheltering. "Harass" is further defined as actions that create the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavior patterns, which include breeding, feeding, and sheltering. Section 7(a)(2) of the ESA requires that federal agencies ensure that any action they authorize, fund, or carry out is not likely to result in the destruction or adverse modification of critical habitat of listed species. "Destruction or adverse modification" means a direct or indirect alteration that appreciably diminishes the value of critical habitat for the conservation of a listed species. Such alterations may include, but are not limited to, those that alter the physical or biological features (PBF) essential to the conservation of a species or that preclude


or significantly delay development of such features (50 CFR 402.02). The Department of the Interior adopted this definition on January 29, 2016 (81 FR 7214). The change to the definition of "destruction or adverse modification" in 50 CFR 402 became effective on March 14, 2016. Specifically, the USFWS will generally conclude that a federal action is likely to "destroy or adversely modify" designated critical habitat if the action results in an alteration of the quantity or quality of the essential PBF of designated critical habitat, or that precludes or significantly delays the capacity of that habitat to develop those features over time, and if the effect of the alteration is to appreciably diminish the value of critical habitat for the conservation of the species. If the USFWS makes a destruction or adverse modification determination, they will develop reasonable and prudent alternatives on a case-by-case basis and based on the best scientific and commercial data available (81 FR 7214–7226).

6.1. Summary of Effects

This section includes an analysis of the potential direct and indirect effects of the Proposed Action on CRLF, black abalone, southern sea otter, humpback whale, blue whale, fin whale. gray whale, leatherback turtle, and green turtle. The following are definitions of "effects language" used throughout this section:

- **Direct effects** are those caused by the Proposed Action and occur at both the same time and place as the action.
- **Indirect effects** are those that are caused by or will result from the Proposed Action and are later in time but are still reasonably certain to occur. However, with respect to USACE, because its permit action is limited to construction, the indirect effects analyzed within USACE's jurisdiction would only occur during construction.

Even though direct and indirect effects are displayed separately, all effects are to be considered holistically as "effects."

Upon evaluation of potential direct and indirect effects, one of three determinations were made for the species addressed in this BA and any designated critical habitat:

- **"No effect"** means there are no effects from the Proposed Action either positive or negative on the listed species or Critical Habitat. If effects are insignificant or discountable, a "may affect, but not likely to adversely affect" determination is appropriate. A "no effect" determination does not require Section 7 consultation with USFWS or NOAA.
- "May affect, but not likely to adversely affect" refers to effects which are either beneficial, insignificant, or discountable. Beneficial effects have contemporaneous positive effects without any adverse effects to the species or habitat. Insignificant effects relate to the size of the impact and include those effects that are undetectable, not measurable, or cannot be evaluated, and shall never reach the scale where "take" occurs. Discountable effects are those extremely unlikely to occur. Based on the best scientific and commercial information available, a person would not be able to meaningfully measure, detect, or evaluate insignificant effects or expect discountable effects to occur. This determination requires only informal consultation with and written concurrence from USFWS.



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• "May affect and is likely to adversely affect" is assigned when listed resources are likely to be exposed to the proposed action and will respond in a negative manner. This determination means that (1) effects to species and habitat are not insignificant in size and avoidance of "take" cannot be guaranteed; and (2) effects are not extremely unlikely to occur. Adverse effects do not qualify as discountable simply because of lack of certainty that they will occur. The probability of occurrence must be extremely small to achieve discountability (extremely unlikely to occur). A combination of beneficial and adverse effects is still "likely to adversely affect," even if the net effect is neutral or positive. This determination triggers formal consultation with USFWS.

6.2. California Red-Legged Frog

This section describes the temporary and permanent direct and indirect effects of the Proposed Action on CRLF individuals and suitable habitat. The effects within USACE scope of analysis and outside of the scope of analysis are discussed separately.

Outside of USACE responsibility and control, direct effects to CRLF upland habitat and dispersal habitat would result from decontamination and dismantlement of DCPP SSCs, modifications to the site, soil remediation, grading, and restoration. Activities within access routes, staging and laydown yards, and other effects necessary to support the Discharge Structure decommissioning activities are within the USACE responsibility and control (shown in Figure 6.2-1).



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Figure 6.2-1 – CRLF Habitat in LOD





Table 6.2-1 – CRLF Habitat Impact Summary within Limit of Disturbance

Tota	Total CRLF Disturbance and Habitat Areas			
	Category	Acres		
+	Limit of Disturbance	103.10		
-	Ocean area in LOD	0.83		
-	Proposed Project Features (new buildings and structures that are not being removed during decommissioning/restoration but are in the LOD)	5.01		
=	Total Temporary Direct Impact Area	97.26		
Total Currently Built Out Areas to be returned to Habitat				
	Total acreage of "currently built out areas" (buildings, parking lots, roads, etc.) that will become habitat	82.23		
CRLF Habitat Areas in LOD				
	CRLF Habitat Acres	22.02		
	Dispersal	22.43		
	Upland	1.58		
	Temporary impacts on CRLF Habitat in LOD overlaps with Total "Limit of Disturbance"	22.02		
	Permanent impacts on Habitat in LOD	0.00		

PG&E has committed to implementing conservation and mitigation measures as part of the Proposed Action to avoid and minimize the effects of the Proposed Action on federally listed species. Although the potential direct and indirect effects to CRLF are analyzed in this section, existing mitigation measures would avoid, minimize, or effectively mitigate many of these effects.

6.2.1. Temporary Effects

Temporary Direct Effects

There are no direct effects to CRLF anticipated in the USFWS Action Area within the USACE AoR. Specifically, there would be no direct effects on Diablo Creek and associated aquatic/upland habitat as a result of Discharge Structure decommissioning activities.

For areas outside of the USACE AoR, no direct effects to aquatic and riparian/wetland habitat are anticipated during the Proposed Action. However, due to the proximity of Diablo Creek to DCPP and the potential dispersal range of CRLF, there is potential to affect CRLF within the upland and dispersal habitat areas during decommissioning activities. Specifically, there is a potential for direct injury or loss of individuals from collisions with heavy construction equipment (including the collapse of burrows used for aestivation) or inadvertent trampling by construction personnel. In addition, any debris or litter generated from decommissioning activities could attract predators (e.g., ravens or raccoons) to the area and result in additional injury or loss of individual CRLF. Direct effects to individual CRLF would be avoided through implementation of pre-construction surveys and monitoring. If any CRLF are found during preconstruction surveys and/or during initial DCPP Decommissioning Planning Information



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grading activities, a qualified biologist shall ensure that the individuals are avoided or allowed to move out of harm's way on their own volition. If halting activities is not possible, the biologist shall move the individual to suitable habitat nearby to avoid direct injury or mortality.

Construction work limits would be delineated and signage would be installed to define nearby environmentally sensitive areas, including CRLF habitat. There would be an emphasis on clearly marking the work limits near Diablo Creek and other drainages and/or aquatic features within proximity to construction limits. This measure would ensure that inadvertent trampling by construction personnel would not occur because the fencing would clearly demarcate where workers must not enter. The installation of exclusion fencing prior to the start of construction, shall ensure the species does not disperse through the USFWS and USACE Action Areas. Trash shall be picked up and removed from the construction site at the end of each day, which would reduce the likelihood that food discarded by construction personnel would attract and increase the number of predator species.

Riparian/wetland areas shall be avoided as feasible, and that temporary impacts within 100 feet of Diablo Creek be stabilized and restored. See Figure 6.2-1 and Table 6.2-1 for impact quantities. Temporary impact areas are largely associated with removing structures and pavement which will be later restored as suitable CRLF habitat. Thus, temporary construction-related effects would have a long-term net benefit to CRLF.

Temporary Indirect Effects

The indirect effects to CRLF individuals that are likely to occur within the USFWS Action Area within the USACE AoR and outside the USACE AoR will happen during construction. These indirect effects include noise, vibrations, increased human presence from construction activities, and stormwater erosion. Noise, vibration, and increased human presence may temporarily cause CRLF to avoid areas associated with construction and/or alter their behavior in ways that affect breeding, dispersal, feeding, or aestivation activities.

To reduce these effects, work shall be limited to designated construction areas and vehicle speeds shall be limited to 15 miles per hour. Limiting construction work to designated construction areas provides areas for wildlife refuge away from construction areas, and lower speeds shall reduce the noise emitted and vibrations from construction-related vehicles and equipment. These measures would also minimize the effects of increased human presence because limiting construction work to designated construction areas would provide areas for wildlife refuge away from construction areas and clearly demarcate where workers must not enter, and thus minimize the effects of human activities, such as trampling habitat or species. Limiting vehicle speeds to 15 miles per hour also allows drivers adequate braking time to avoid collisions with frogs, as necessary. The effects of erosion would be minimized by limiting the amount of disturbance during grading and implementation of Best Management Practices (BMPs) and stabilization to the temporary impact areas.



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Additionally, indirect effects to CRLF individuals may include the introduction and spread of waterborne diseases that may be detrimental to amphibian populations (e.g., chytrid fungus). To mitigate this effect, equipment shall be cleaned prior to arrival and work on site.

Restoration of areas subject to temporary effects would also help prevent long-term adverse effects of increased erosion and dust generation. Additionally, erosion would be avoided through implementation of the required Stormwater Pollution Prevention Plan. Finally, a biological monitor shall be present during construction to enforce these mitigation measures and require preparation of reports demonstrating compliance.

6.2.2. Permanent Effects

Direct Effects

The Proposed Activities will result in a net gain of suitable CRLF habitat within the Action Areas. Therefore, while there would be potential for direct take during temporary ground-disturbing activities, the overall long-term effects of the Action would be beneficial to the local CRLF population (see Table 6.2-1).

Indirect Effects

Permanent indirect effects could occur due to final site restoration. Once excavated and disturbed features at DCPP are restored to natural conditions, those areas would be considered suitable upland and dispersal habitat for CRLF. Long-term effects would be natural succession of habitat and development of cover or sheltering resources due to drainage alterations and conversion of concrete to more natural substrates.

6.2.3. Loss or Harm of Individuals

CRLFs are a highly mobile species that are known to adapt to a variety of environments. This species requires perennial or permanent water sources for breeding, and outside the breeding season, when conditions are wet, they disperse and use upland habitats, including small mammal burrows for refugia and aestivation. Based on known occurrences of this species in lower Diablo Creek, this species has a potential to occur within upland habitats and surrounding areas within the USFWS Action Area.

The population of CRLF within Diablo Creek was found within the lower section of stream channel containing suitable pool habitat downstream of the 230 kV and 500 kV switchyards. The overall population is expected to be small in overall size (i.e., less than 10 adults) due to the limited breeding habitat available. Although the Discharge Structure demolition (USACE Scope of Analysis) is located approximately 500 feet from the Diablo Creek mouth, the potential for loss or harm to individuals from Discharge Structure activities is considered very low, as proposed activities are primarily marine-based, and the upland laydown and access route are within developed areas currently lacking PBF that constitute CRLF suitable habitat. Portions of the USACE AoR are already paved and would remain as such during removal of the Discharge Structure, as such, construction activities will remain in those paved areas minimizing the potential for loss or harm of CRLF.



The ephemeral drainages along the southern access road were not observed to have suitable habitat for long-term use by CRLF, though may provide temporary dispersal habitat. Due to the presence of potentially suitable CRLF habitat within close proximity to areas where proposed decommissioning activities would occur there is potential for take of dispersing CRLF during grading and restoration activities post demolition. The potential for take increases during rain events. This could include dispersal of CRLFs across impervious areas of DCPP including roadways and parking lots containing stormwater conveyance features and associated culverts which may provide temporary refuge for frogs as they move through the Action Area (see Figure 4.2.1-3). However, the overall population of CRLF within lower Diablo Creek is expected to be small; therefore, the number of CRLF individuals that could be affected due to proposed activities is expected to be low (i.e., between 0-3 individuals annually). The implementation of exclusion fencing would further decrease the likelihood of the species entering the Action Area during proposed activities.

Loss of Suitable Habitat

There would be no loss of suitable habitat for CRLF due to Proposed Action implementation and all effects would be temporary. Following removal of structures, the previously developed areas would be graded, remediated, and restored to a coastal terrace grassland which would provide an increase in suitable upland and dispersal habitat throughout the USFWS Action Areas inside and outside the USACE AoR (as shown in Table 6.2-1). Structures proposed to be constructed for the overall Decommissioning Project (refer to Figure 2-1) would be located in existing developed areas, entirely outside of potential CRLF habitat. Therefore, there will be no permanent impacts or loss of CRLF habitat anywhere in the Project footprint.

6.2.4. Determination of Effect

No direct permanent effects to aquatic or riparian habitat are anticipated during the proposed activities. Further, potential secondary effects due to silt and sedimentation effects would be avoided and/or minimized with implementation of erosion control plans and standard BMPs. Temporary effects to upland and dispersal habitat areas due to decommissioning activities would be fully restored following Proposed Action completion. The structure demolition, removal, and restoration proposed as part of the overall project would effectively offset temporary impacts to potentially suitable CRLF upland/dispersal habitat. Temporary direct impacts on suitable CRLF habitat amount to 22.02 acres, whereas 82.23 acres of currently developed areas will be restored to habitat. As such, restoration of habitat will be more than 3.7 times the area of temporary direct impacts. Due to the proximity of Diablo Creek to the USFWS and USACE Action Areas, there is potential for take of individuals to occur in upland and dispersal habitat within or adjacent to the USFWS Action Area outside the USACE AoR. Individuals may utilize corridors between existing stormwater infrastructure to disperse and may disperse through the USFWS Action Area outside the USACE AoR during construction, especially during rain events. CRLFs may also utilize developed stormwater conveyance systems to disperse through the Action Area. Construction activities may result in the loss of individual CRLFs shall vehicles inadvertently collide with dispersing individuals or during initial vegetation or ground disturbance activities.



Following removal of structures, the previously developed areas shall be graded, remediated, and restored to provide an increase in suitable upland and dispersal habitat on site. No CRLF habitat will be permanently adversely impacted by the Proposed Action. Finally, an approved biological monitor shall be present during construction to enforce conservation and mitigation measures and require preparation of reports demonstrating compliance. Training and ongoing monitoring shall aid in enforcing the requirements of the mitigation measures. As such, no permanent impacts to CRLF dispersal habitat would occur from the Proposed Project, therefore, compensatory mitigation for impacts to aquatic resources is not required. There are temporary direct impacts to riparian habitat for CRLF dispersal habitat, however, with the restoration of the site proposed by the Project, temporary impacts will inherently be mitigated through execution of the Project. See Figure 6.2-1 and Table 6.2-1 for a detailed depiction and estimation of the total CRLF habitat within the Project LOD.

In consideration of the aforementioned analysis, the Proposed Action *may affect and is likely to adversely affect* CRLF. No critical habitat for CRLF occurs within any of the Action Areas; therefore, the proposed Project anticipates *no effect* to CRLF critical habitat. The recommended conservation measures listed in Section 8 would minimize the direct and indirect adverse effects of the Proposed Action on CRLF and the overall long-term effects on the species would be beneficial.

6.3. Black Abalone

This section describes the direct and indirect effects of the Proposed Action on black abalone individuals and critical habitat. Black abalone have been observed on the seaward side of the Intake Cove breakwaters. No black abalone have been observed in The Discharge Cove; however, their presence is possible. Although there is potential for direct and indirect effects to black abalone from the Proposed Action, the proposed conservation/mitigation measures would be implemented by PG&E to avoid, minimize, and mitigate many of these effects. Once the Discharge Structure is fully removed, the cofferdam is removed, and the area is restored, the area would provide improved quality critical habitat for black abalone and other marine organisms.

6.3.1. Temporary Effects

Temporary Direct Effects

Temporary direct effects to black abalone in the USFWS Action Area within the USACE AoR and in the NOAA Fisheries Action Area would occur as a result in the loss of occupied habitat and critical habitat from construction activities. A portion of this critical habitat lies within the cofferdam footprint would be temporarily covered and de-watered when the cofferdam is built in this area. However, it is unlikely there are black abalone in this location. No black abalone were found during the latest surveys (PG&E 2020b). Temporary impacts to Critical Habitat adjacent to the Discharge Structure would be short-term. Once discharge operations cease and construction is complete, the Discharge Cove would have greater suitable habitat for black abalone relative to the existing conditions.



Any black abalone identified during the preliminary survey shall be relocated to nearby suitable habitat outside of the Project LOD. The conservation/mitigation measures discussed in Sections 8.1 and 8.2 would help mitigate effects to the black abalone habitat and population.

Temporary Indirect Effects

Temporary indirect effects could include turbidity from construction of the coffer dam and removal of the cofferdam post decommissioning. Temporary indirect effects in the USFWS Action Area within the USACE AoR and in the NOAA Fisheries Action Area could also occur due to the relocation of black abalone that are found near the Discharge Structure. There could be a decreased survival rate of individuals due to removal and relocation. Once individuals are relocated, the fate of the individual is considered to be outside the USACE AoR.

Since black abalone primarily inhabit rocky substrate, there are no anticipated indirect effects to black abalone from vessel activity associated with Proposed Activities.

6.3.2. Permanent Effects

Permanent Direct Effects

None of the black abalone critical habitat will be permanently removed by the Proposed Action. Furthermore, the anticipated direct effects on black abalone are beneficial in nature due to the restoration of the discharge structure footprint.

Permanent Indirect Effects

Permanent indirect effects could occur due to the removal of the Discharge Structure. Once discharge ceases, the region near the restored discharge area could be more hospitable to black abalone.

6.3.3. Loss or Harm of Individuals

It is difficult to quantify the potential loss or harm of black abalone species due to the mobility of the adult population. While no black abalone were observed directly in the Discharge Cove (where demolition of the Discharge Structure would occur), some individuals may move to the region prior to construction which would require professional removal and relocation of individuals. The Proposed Action may result in the loss or harm of individuals due to relocation, unfortunately this cannot be quantified until a preliminary survey has been conducted.

6.3.4. Determination of Effect

Temporary impacts to suitable habitat would occur as a result of construction of the cofferdam and dewatering of the area. Habitat shall be covered due to installation of the cofferdam resulting in temporary loss of habitat. With the removal of the cofferdam post-construction, habitat would be restored. Individuals may be at risk of affect if found on site during preliminary survey efforts. Those identified on site shall be relocated and as such, could be at risk for harm. Table 6.3.4-1 summarizes the total impacted acres which could potentially be inhabited by black abalone.



Table 6.3.4-1 – Summary of Impact to Black Abalone

Impacts/Conservation	Description	Acres		
Temporary				
Impacts Within USACE AoR	Cofferdam w/ buffer, dewatered area, and barge footprint (Intake and Discharge Coves).	4.7		
Permanent				
Impacts Within USACE AoR	Cofferdam w/ buffer and dewatered area and Discharge			
(beneficial)	Structure Restoration Area	0.83		

Source: County 2023.

As a result of the decommissioning of the Discharge Structure, the natural habitat shall be restored to pre-operation status and may help in supporting a healthy black abalone population. Upon summary of the provided information, it is determined that the proposed activities *may affect and is likely to adversely affect* black abalone in the Action Area. Long-term effects are anticipated to be beneficial.

6.4. Southern Sea Otter

This section describes the direct and indirect effects of the Proposed Action on southern sea otter individuals and suitable habitat. PG&E has committed to implementing conservation/mitigation measures as part of the Proposed Action to avoid and minimize the effects of the Proposed Action on federally listed species. Although the potential direct and indirect effects to southern sea otter are analyzed in this section, existing conservation/mitigation measures would avoid, minimize, and mitigate many of these effects.

6.4.1. Temporary Effects

Temporary Direct Effects

The anticipated direct effects on the southern sea otter in the USFWS Action Area within the USACE AoR and in the NOAA Fisheries Action Area are due to the construction of the cofferdam and dewatering of The Discharge Cove. Sea otter habitat is typically defined as occurring inshore of the 131 feet depth contour. Southern sea otters forage in both rocky and soft-sediment communities in water depths generally 82 feet or less, although some animals utilize deeper waters. Rocky bottom habitats support an average equilibrium density of 12.04-14.56 individuals per square mile. Areas with sandy bottoms and areas of mixed habitat support average equilibrium densities of 0.84-1.32 and 1.14-3.0 individuals per square mile, respectively. Although southern sea otter primarily occupies the Intake cove, it is possible for individuals to be present in The Discharge Cove. Dewatering of the Discharge Cove due to cofferdam construction would temporarily affect potential southern sea otter habitat.

Temporary Indirect Effects

Temporary indirect effects on the southern otter in the USFWS Action Area within the USACE AoR and in the NOAA Fisheries Action Area would occur from the dewatering of the Discharge Cove



which would include loss of food resources. Removal of kelp canopy and restricting access to the rocky subtidal habitat would temporarily deter sea otters from coming into the area. Another temporary indirect effect could be the increase in vessel activity associated with removal of the Discharge Structure and barging within the Intake Cove for Intake Cove closure. Disturbances associated with noise and movement of vessels within the Action Area could result in behavioral effects to the species, including temporary avoidance of the Action Area during construction activities.

Vibratory pile driving will also be utilized during construction, the impacts of which have been assessed in detail in the Underwater Noise Impact Assessment (2022). The study shows that Southern Sea otter would need to be within 9.5 meters to incur potential hearing damage from pile driving activities and could experience behavioral changes within 38,072 meters of Pile driving activities. (PG&E 2022c).

Eelgrass is also a resource for sea otter. As discussed in Section 5.1.1, eelgrass is sparse within the Intake Cove and there are no anticipated effects from barging to the eelgrass beds identified within the Intake Cove.

6.4.2. Permanent Effects

Permanent Direct Effects

The Proposed Activities will not result in loss of southern sea otter habitat. Therefore, there are no anticipated permanent direct effects on southern sea otter within the Action Areas.

Permanent Indirect Effects

There is no permanent conservation easement planned for the Proposed Action, however the improvement of the Discharge Cove may be considered a permanent indirect effect. Occupancy rates of southern sea otter to the region may increase upon Proposed Action completion due to the removal of the Discharge Structure. Removal of the Discharge Structure would allow the Discharge Cove to return to pre-power plant condition and would likely result in increased biodiversity.

6.4.3. Loss or Harm of Individuals

The Proposed Action is not likely to result in loss or harm of sea otter as otters occurring in the Action Area have some level of habituation to human activities and are highly mobile. As previously stated, sea otters use this region to raft which allows them to remain in large groups, which may be easily spotted by contractors. Installation of the cofferdam and vessel activity associated with the Intake Cove may lead to behavioral effects to the southern sea otter, most likely leading to temporary avoidance of the Action Area during construction activities. For these reasons, loss or harm of southern sea otter individuals is anticipated to be avoidable. There is low potential for direct injury due to construction activities including anchoring of the cofferdam on the rocky substrate and movement of vessels. The conservation/mitigation measures detailed in Section 8 would assist in avoidance of loss or harm of individuals.



6.4.4. Determination of Effect

Removal of the Discharge Structure would permanently change the Discharge Cove and would likely enhance sea otter habitat in this area by creating additional rocky subtidal habitat which can facilitate biodiverse growth, providing food and other resources for the southern sea otter. Table 6.4.4-1 summarizes the total impacted acres which could potentially be inhabited by southern sea otter.

Table 6.4.4-1 - Summary of Impact to Southern Sea Otter

Impacts/Conservation	Description	Acres		
Temporary				
	Cofferdam w/ buffer, dewatered area, and barge footprint			
Impacts Within USACE AoR	(Intake and Discharge Coves).	4.70		
Permanent				
	Cofferdam w/ buffer and dewatered area and Discharge			
Impacts Within USACE AoR	Structure Restoration Area (Beneficial)	0.83		
Source: County 2023.				

In accordance with the conservation measures discussed in Section 8, marine mammal monitoring shall be conducted to avoid negative effects to southern sea otter. In consideration of the aforementioned analysis, the Proposed Action *may affect, but is not likely to adversely affect,* southern sea otter.

6.5. Humpback Whale

This section describes the direct and indirect effects of the Proposed Action on Humpback Whale individuals and critical habitat. Humpback whale are a common *Mysticete* species along the northern and central California Coast. As such, NOAA Fisheries has identified critical habitat for this species along the coast including Diablo Canyon. Humpback whales are regularly observed from the DCPP site; however, the conservation/mitigation measures listed in Section 8 are included as part of the Proposed Action to avoid, minimize, and mitigate potential effects on the species.

6.5.1. Temporary Effects

Temporary Direct Effects

Critical habitat for humpback whale begins approximately 0.6 mile from the DCPP site which is within the NOAA Fisheries Action Area. The cofferdam shall be placed approximately 0.02 mile offshore and the farthest anchorage point shall be placed approximately 0.25 mile offshore. Humpback whales are offshore dwelling creatures, and it is unlikely they would travel within the Discharge Cove and the Intake Cove and be directly affected by construction activities. Additionally, based on the distribution and migratory nature of humpback whales, they are only anticipated to be present within the NOAA Fisheries Action Area in the summer and fall seasons, furthermore, there are no anticipated temporary direct effects to individuals during the winter and spring.



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The only Proposed Activity which occurs within the critical habitat of the humpback whale would be the vessel activity between the designated barge route and the Intake Cove. During the summer and fall seasons, although unlikely, there is potential for vessel strikes.

Temporary Indirect Effects

Indirect effects to humpback whale would occur as a result of a temporary increase in the vessel traffic within the region. This vessel traffic may deter the whale population from visiting the region due to increased activity and potential for underwater noise. Vibratory pile driving will also be utilized during construction, the impacts of which have been assessed in detail in the Underwater Noise Impact Assessment (2022). The study shows that humpback whales would need to be within 223.0 meters to incur potential hearing damage from pile driving activities and could experience behavioral changes within 38,072 meters of Pile driving activities. (PG&E 2022c).

However, demolition activities are not planned in critical habitat and would not affect availability of food resources. Additionally, vessels will reduce speed when the presence of marine mammals is detected. The transportation of waste and materials between the designated barge route and the Intake Cove would be the only activity occurring within humpback whale critical habitat. Indirect effects during construction shall be minimized with marine mammal monitoring and implementation of the mitigation requirements discussed below.

6.5.2. Permanent Effects

There are no anticipated permanent direct or indirect effects to humpback whale as a result of the Proposed Action.

6.5.3. Loss or Harm of Individuals

The Proposed Action is not anticipated to result in a loss or harm of individuals. Humpback whales primarily remain offshore and the only activity which would occur within critical habitat is outside vessel activity. Since humpback whales are commonly observed outside the USACE AoR, marine mammal monitoring and reinforced limits on vessel speed would be enforced to help mitigate effects to the humpback whale population and loss of individuals is avoidable.

6.5.4. Determination of Effect

The Proposed Action would not result in the direct permanent loss of habitat or individuals within the NOAA Fisheries Action Area. As previously detailed, the humpback whale population remains offshore and does not enter the Discharge Cove or the Intake Cove. The only Proposed Activity which would occur in the adjacent designated critical habitat is temporary vessel activity from the Intake Cove to the designated barge route (50 miles). Therefore, it has been determined that the Proposed Action *may affect, but is not likely to adversely affect* individuals for humpback whale.



6.6. Blue Whale

This section describes the direct and indirect effects of the Proposed Action on blue whale individuals and suitable habitat, which falls within the NOAA Fisheries Action Area. There is no critical habitat designated for blue whale, however they are a federally listed species and within scope of this BA. Although direct and indirect effects are discussed in this BA, the implantation of conservation/mitigation measures would be successful in avoiding and minimizing the effects to the blue whale.

6.6.1. Temporary Effects

Temporary Direct Effects

As a result of the Proposed Action, there are no anticipated temporary direct effects on blue whale food resources or suitable habitat. Of the nine BIA's identified for blue whale, none overlap with the Action Areas. Due to the offshore distribution of blue whale and the proposed vessel activity the potential for vessel strikes exists, which would be considered a direct effect. The conservation/mitigation measures discussed in Sections 8.1 and 8.2 would aid in avoidance of vessel strikes. As a result of their migratory behavior, the likelihood of direct effects would also reduce during the winter and spring seasons.

Temporary Indirect Effects

Indirect effects to blue whale would occur due to a temporary increase in the vessel traffic in the region. This traffic may deter the whale population from visiting the region due to noise and vessel activity. As previously stated, inadvertent harassment from vessels is considered a threat to the species. None of the vessel activity associated with the Proposed Action shall occur within BIA's and conservation/mitigation measures shall help minimize the temporary indirect effect on blue whale.

Vibratory pile driving will also be utilized during construction, the impacts of which have been assessed in detail in the Underwater Noise Impact Assessment (2022). The study shows that blue whales would need to be within 223.0 meters to incur potential hearing damage from pile driving activities and could experience behavioral changes within 38,072 meters of Pile driving activities. (PG&E 2022c).

As a result of their migratory behavior, the likelihood of indirect effects would also reduce during the winter and spring.

6.6.2. Loss or Harm of Individuals

The Proposed Action is not anticipated to result in a loss or harm of individuals. However, the presence of vessel activity has the potential to result in the inadvertent vessel strike of a blue whale outside the USACE AoR. The conservation/mitigation measures discussed in Section 8 can assist in avoiding loss or harm of individuals.



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6.6.1. Permanent Effects

There are no anticipated permanent direct or indirect effects to blue whale as a result of the Proposed Action.

6.6.2. Determination of Effect

Though blue whales do frequent the coastal area adjacent to the NOAA Fisheries Action Area, there is no anticipated direct permanent loss of habitat or individuals within the NOAA Fisheries Action Area. Based on their known distribution, blue whale may incur indirect effects as a consequence of vessel activity between the Intake Cove and the designated barge route (50 miles). The combination of marine mammal monitoring and enforcement of reduced vessel speeds, the indirect and direct effects would be minimized. Taking into account the aforementioned discussion, it has been determined that the Proposed Action *may affect, but is not likely to adversely affect* the blue whale individuals.

6.7. Fin Whale

This section is dedicated to discussing the potential for direct and indirect effects of the Proposed Action on fin whale. Similar to blue whales, fin whales are distributed throughout the area and are abundant near the Action Area outside the USACE AoR within the summer and fall months, reducing the overall likelihood of both direct and indirect effects during the winter and spring months. The conservation/mitigation measures discussed in Sections 8.1 and 8.2 would assist in mitigating, avoiding, and minimizing many of the direct and indirect effects.

6.7.1. Temporary Effects

Temporary Direct Effects

Based on the surveys conducted for PG&E, there are no known observations of fin whale within the USACE AoR. While their known distribution range includes the NOAA Fisheries Action Area, there is low likelihood of occurrence. As a result of the Proposed Action, there is no anticipated direct effect on fin whale food resources. There is no critical habitat or identified BIAs associated with fin whale and there are no anticipated direct effects to suitable habitat. Due to the offshore distribution of fin whale and the proposed vessel activity, the potential for vessel strikes exists which would be considered a direct effect.

Temporary Indirect Effects

Indirect effects to fin whale would be a temporary increase in the vessel traffic in the region. This traffic may deter fin whales from visiting the region due to noise and vessel activity. The Proposed Action is not anticipated to impact food sources or habitat for the species. The transportation of waste and materials between the designated barge route and the Intake Cove would be the only activity occurring in the offshore space inhabited by fin whale. Indirect effects during construction would be minimized with marine mammal monitoring and mandatory reduced vessel speeds to reduce the likelihood of unintended harassment from vessel activity.



Vibratory pile driving will also be utilized during construction, the impacts of which have been assessed in detail in the Underwater Noise Impact Assessment (2022). The study shows that fin whales would need to be within 223.0 meters to incur potential hearing damage from pile driving activities and could experience behavioral changes within 38,072 meters of Pile driving activities. (PG&E 2022c).

6.7.2. Permanent Effects

There are no anticipated permanent direct or indirect effects to fin whale as a result of the Proposed Action.

6.7.3. Loss or Harm of Individuals

The Proposed Action is not anticipated to result in a loss or harm of individuals. Fin whale have not been frequently observed within the Action Areas, regardless marine mammal monitoring and reinforced limits on vessel speed would be in place to help reduce the possibility for loss or harm of individuals from vessel activity.

6.7.4. Determination of Effect

The Proposed Action is not expected to result in the direct permanent loss of habitat or individuals within the Action Areas. Fin whales do frequent the coastal area adjacent to the NOAA Fisheries Action Area and as a result, may be exposed to the temporary vessel activity between the Intake Cove and the designated barge route (50 miles). The inclusion of the conservation/mitigation measures would reduce the likelihood of direct and indirect effects of the Proposed Action. Therefore, it has been determined that the Proposed Action *may affect, but is not likely to adversely affect* the fin whale.

6.8. Gray Whale

This section describes the direct and indirect effects of the Proposed Action on gray whale individuals and suitable habitat. Gray whale commonly occur outside the USACE AoR, within the NOAA Fisheries Action Area and it is within the scope of the Proposed Action to avoid and minimize the effects of the Proposed Action on federally listed species. Though the ENP DPS of gray whale has been delisted since 1994, the WNP DPS is still listed as endangered and individuals from the WNP DPS have been tracked within California coastal waters (NOAA Fisheries 2021b).

6.8.1. Temporary Effects

Temporary Direct Effects

There are no anticipated direct effects on gray whale suitable habitat or food resources from the Proposed Action. As previously discussed, there is no critical habitat designated for gray whale. As offshore dwelling creatures (~6 miles offshore for migration), and it is unlikely they would travel within the Discharge Cove and the Intake Cove where the bulk of Proposed Activities would take



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place. As previously established, vessel strikes are a known threat to gray whales and although unlikely, the possibility for vessel strikes exists. The conservation/mitigation measures discussed in Sections 8.1 and 8.2 would aid in minimizing or avoiding direct effects from vessels.

Temporary Indirect Effects

Indirect effects to gray whale would be the temporary increase in the vessel traffic and resulting noise in the region. There is potential for the gray whale to incur behavioral changes due to the vessel activity between the designated barge route and the Intake Cove. The Proposed Action is not anticipated to impact food sources or habitat for the species.

Vibratory pile driving will also be utilized during construction, the impacts of which have been assessed in detail in the Underwater Noise Impact Assessment (2022). The study shows that gray whales would need to be within 223.0 meters to incur potential hearing damage from pile driving activities and could experience behavioral changes within 38,072 meters of Pile driving activities. (PG&E 2022c).

Indirect effects during construction would be minimized with marine mammal monitoring and mandatory reduced vessel speeds to diminish the likelihood of unintended harassment from vessel activity.

6.8.2. Permanent Effects

There are no anticipated permanent direct or indirect effects to gray whale as a result of the Proposed Action.

6.8.3. Loss or Harm of Individuals

The Proposed Action is not anticipated to result in a loss or harm of individuals. Gray whales are commonly observed adjacent to the NOAA Fisheries Action Area, so the incorporation of marine mammal monitoring and reinforced limits on vessel speed shall be in place to avoid the loss or harm of individuals.

6.8.4. Determination of Effect

Gray whales are commonly observed within proximity to the NOAA Fisheries Action Area; however, the Proposed Action is not anticipated to result in the direct permanent loss of habitat or individuals. Based on their high likelihood of occurrence within the Action Areas, gray whale may be exposed to the temporary vessel activity between the Intake Cove and the designated barge route (50 miles). Therefore, it has been determined that the Proposed Action *may affect, but is not likely to adversely affect* the gray whale.

6.9. Leatherback Turtle

Leatherback turtles have never been observed within any of the Action Areas and are not likely to occur during Proposed Activities. However, the Discharge Cove is within the designated critical



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habitat for leatherback turtle. PG&E is committed to incorporating the drafted conservation/mitigation measures in Section 8 to minimize direct and indirect effects to federally listed species and designated critical habitat within the Action Areas.

6.9.1. Temporary Effects

Temporary Direct Effects

As leatherback turtles have not been observed within the proximity to the DCPP site, there are not likely to be direct effects on individuals. Since the Discharge Cove and the Intake Cove are part of the designated critical habitat for leatherback turtle and in the USFWS Action Area within the USACE AoR and the NOAA Fisheries Action Area, there would be temporary effects to critical habitat when the cofferdam is built and a portion of the Discharge Cove is dewatered.

Feeding areas for leatherback turtle are several miles offshore in the NOAA Fisheries Action Area and due to vessel activity from the Intake Cove to the designated barge route, there is a slight possibility for vessel strikes, however those are extremely rare and leatherback turtle have never been sighted within the USACE AoR.

General sightings along the California coast peak in August, so extra precaution shall be taken during that period to ensure avoidance of adverse direct effects on leatherback turtle.

Temporary Indirect Effects

Due to the lack of sightings within the Action Areas and their offshore distribution, it is unlikely there would be indirect effects to leatherback turtle. Temporary indirect effects on critical habitat could include the temporary removal of kelp, algae, and access to subtidal invertebrates and vertebrates which are food sources for leatherback turtle. Additionally, indirect effects will come from the temporary increase in vessel traffic and human activity from construction activities.

Vibratory pile driving will also be utilized during construction, the impacts of which have been assessed in detail in the Underwater Noise Impact Assessment (2022). The study shows that sea turtles for a mortal injury to occur from underwater noise, the noise needs to reach 210 decibels, however the pile driving associated with Project activities will only reach 172 decibels (PG&E 2022c). Behavioral shifts for sea turtles will be seen from 381 meters from the sound source.

6.9.2. Permanent Effects

There will be no loss of leatherback turtle critical habitat from Proposed Activities, therefore there are no anticipated permanent direct or indirect effects to leatherback turtle because of the Proposed Action.

6.9.3. Loss or Harm of Individuals

The Proposed Action does not anticipate loss or harm of individuals because the likelihood of leatherback turtles on site is extremely low. Leatherback turtles are known to feed offshore several



miles so it is unlikely Proposed Activities would result in the loss or harm of individuals. There is a chance leatherback turtle could occur within the vessel route between the Intake Cove and designated barge route (50 miles) in the NOAA Fisheries Action Area and as such there is a slight risk presented by vessel strike. PG&E is committed to the proposed conservation/mitigation measures discussed in Section 8 which would aid in avoiding and minimizing loss or harm of the leatherback turtle.

6.9.4. Determination of Effect

It is extremely unlikely that leatherback turtle individuals would be found on site during construction activities; however, impact to leatherback turtle habitat would occur. Most sightings in California occur in deeper waters due to their feeding habits.

Table 6.9.4-1 – Summary of Impact to Leatherback Turtle

Impacts/Conservation	Description	Acres	
Temporary			
	Cofferdam w/ buffer, dewatered area, and barge footprint		
Impacts Within USACE AoR	(Intake and Discharge Coves).	4.7	

Source: County 2023.

The potential effects that could result from the Proposed Action include the temporary limitation of access to critical habitat within the Discharge Cove through the construction of the cofferdam. Once the Discharge Structure is removed the biodiversity of the Action Areas would be restored and may even be improved; therefore, the Proposed Action *may affect, but is not likely to adversely affect* leatherback turtle.

6.10. Green Turtle

This section discusses the potential for direct and indirect effects of the Proposed Action to the green turtle. Green turtles have been rarely observed throughout DCPP commercial activities. Historical sightings of green turtle in the USFWS Action Area within the USACE AoR and NOAA Fisheries Action Area occurred sporadically throughout commercial operations: December 11, 2023; July 26, 2019; September 22, 2014; September 21, 2012; August 08, 2010; September 08, 2009; July 23, 2007; February 27, 2001; April 16, 2000; August 24, 1999; May 29, 1999; June 12, 1997; January 10, 1997; and April 27, 1994 (PG&E 2020b). All observations of green turtle occurred at the Intake Structure where barging will take place.

6.10.1. Temporary Effects

Temporary Direct Effects

Since there have been minimal sightings of green turtles and there is no critical habitat for the species in USFWS Action Area within the USACE AoR and NOAA Fisheries Action Area, there are not likely to be direct effects on individuals. Though not likely, the increase of vessel activity has the



potential to result in an inadvertent vessel strike. The conservation/mitigation measures discussed in Section 8 would be enforced to reduce the direct effects on the green turtle.

Temporary Indirect Effects

Due to the rare sporadic occurrence of green turtle in the USFWS Action Area within the USACE AoR and NOAA Fisheries Action Area and their offshore distribution, it is unlikely there would be indirect effects on green turtle. Temporary indirect effects could occur due to vessel traffic and human activity from construction activities.

Vibratory pile driving will also be utilized during construction, the impacts of which have been assessed in detail in the Underwater Noise Impact Assessment (2022). The study shows that sea turtles for a mortal injury to occur from underwater noise, the noise needs to reach 210 decibels, however the pile driving associated with Project activities will only reach 172 decibels (PG&E 2022c). Behavioral shifts for sea turtles will be seen from 381 meters from the sound source.

6.10.2. Permanent Effects

There are no anticipated permanent effects to green turtle from the Proposed Action.

6.10.3. Loss or Harm of Individuals

Green turtle sightings have been limited to areas near the Intake Structure. There is vessel activity planned within the Intake Cove, but the bulk of the Proposed Activities would occur within the Discharge Cove. Due to reduced vessel speed limits and monitoring of marine species, loss or harm of green turtles is avoidable.

6.10.4. Determination of Effect

It is unlikely that green turtle individuals would be found on site during construction activities, however there is the possibility for direct and temporary indirect effects due to vessel traffic and noise associated with the Proposed Action. Once the Discharge Structure is removed, the biodiversity of the Action Areas would be restored and possibly improved; therefore, the Proposed Action *may affect, but is not likely to adversely affect* the green turtle.

7. Cumulative Effects

There have not been any established plans or communication regarding other active projects which may contribute to cumulative effects to the federally listed species discussed in this report in tandem with the Proposed Action. Offshore wind leases have been awarded off the coast of California, however, timelines and plans for the offshore wind developments have not been released. Reevaluation of cumulative effects may be required if new information comes to light. As such, this report includes all known effects of the Proposed Action and interrelated activities.



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Diablo Canyon Decommissioning

8. Mitigation Measure Recommendations

Mitigation measures were recommended in the DEIR to reduce significant impacts, where applicable (County 2023). The mitigation measures provided throughout this section are from the DEIR and are specific to the federally listed species discussed in this BA. For a complete list of the mitigation measures recommended for the Project, see the DEIR (County 2023). These mitigation measures shall be considered by NMFS and USFWS while preparing the Biological Opinion for DCPP Decommissioning.

8.1. Terrestrial Mitigation Measures

BIO-1: Prepare and Implement a Worker Environmental Awareness Program (WEAP)

Prior to and for the duration of any ground disturbance, the Applicant or its designee shall provide WEAP training to all new project personnel who will be involved in ground-disturbing activities prior to beginning work at the DCPP, PBR, and SMVR-SB sites. The training program shall be developed by a Lead Biologist to educate Project personnel about the Project's sensitive biological resources. A draft of the training program (i.e., video and written materials) shall be provided to the County of San Luis Obispo Planning and Building Department (County) for review and approval no fewer than 135 days prior to issuance of construction permits for any ground disturbance at the DCPP, PBR, or SMVR-SB sites. The training may be conducted concurrent with other environmental training (e.g., cultural resources awareness training, safety training, etc.). The WEAP training shall include, at a minimum:

- An overview of the sensitive biological resources that are known or have the potential to occur in the Project area and surrounding habitat. This shall include nesting birds, special-status plants and wildlife, and sensitive habitats.
- An overview of the Project, Mitigation Monitoring and Reporting Program, and regulatory permit conditions and the consequences of non-compliance with these requirements.
- An overview of the federal and state ESAs, Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, pertinent Fish and Game Code sections, and other applicable regulatory requirements and the consequences of non-compliance with these requirements.
- Functions, responsibilities, and authority of biological monitors and how they interact with Project personnel.
- Identify clear points of contact for biological monitors and construction personnel including who to contact should workers have questions regarding compliance with environmental documents and permit conditions.
- Project restrictions, such as Environmentally Sensitive Habitat Areas (ESHAs), required setbacks from sensitive biological resources, and avoidance buffers.
- Requirements to remain within authorized work areas and on approved access routes, with examples of flagging and signage used to designate these areas.
- Information on compliance with Project speed limits, control of litter and micro trash, smoking restrictions, wildfire minimization measures, spill containment and clean up, and the implementation of BMPs.



- Measures to reduce the potential to introduce or spread invasive weeds into the Project area, descriptions of the Project's weed control methods, and compliance requirements for Project personnel.
- Identify limitations for refueling near aquatic features or where spills may enter state or federal waters.
- Explanation that wildlife must not be harmed or harassed including procedures for abiding by Project speed limits, covering pipes, securing excavations, and installing exit ramps to prevent wildlife entrapment.

Training acknowledgement forms shall be signed by each person attesting that they understand and will abide by Project requirements. The Applicant or its designee shall provide the County, a Monthly Compliance Report, the WEAP training acknowledgement forms for persons who have completed the training in the prior month, and a running total of all persons who have completed the training to date. A hardhat sticker that can be easily verified in the field will be distributed by the Applicant or its designee to indicate participation in the WEAP training.

BIO-2: Conduct Biological Monitoring and Reporting

Prior to the submission of applications for any County Grading/Construction Permit, the following general biological monitoring requirements shall be implemented in addition to specific monitoring requirements for marine species. During Phase 1 and Phase 2, the Applicant or its designee shall employ a Biological Monitoring Team to oversee Project activities and to ensure compliance with mitigation measures, permit conditions, and plan requirements. General biological monitoring shall be conducted during all initial vegetation clearance, tree trimming, and grading activities at the DCPP site. Monitoring shall occur at least once weekly following completion of those activities throughout the duration of Phase 1 and Phase 2. General monitoring at the PBR and SMVR-SB sites shall occur at least once weekly throughout the duration. General monitoring efforts shall be elevated from this schedule accordingly to cover any activity that may impact vegetation, wildlife, and sensitive biological resources.

BIO-3: Implement Wildlife Impact Avoidance and Minimization Measures

Throughout all of Phase 1 and Phase 2 decommissioning activities at the DCPP, PBR, and SMVR-SB sites, the Applicant or its designee shall undertake the following measures to avoid or minimize impacts to wildlife resources:

- The Applicant or its designee will specify and enforce a maximum 15 miles per hour vehicle speed limit on any unpaved roads or work areas within the Project area. No Project-related pedestrian or vehicle traffic will be permitted outside of defined work area boundaries.
- Night lighting, when in use, shall be designed, installed, and maintained to prevent side casting of light towards surrounding wildlife habitat.
- Any soil bonding and weighting agents used for dust suppression on unpaved surfaces shall be non-toxic to plants and wildlife.
- To minimize disturbance to wildlife in surrounding habitat, unnecessary noise (e.g., loud radios, vehicle horns) shall be avoided.



- Potable and non-potable water sources, such as water buffalos and water truck tanks, shall be covered or otherwise secured to prevent animals (including birds) from entering. Water applied for dust abatement shall use the minimal amount needed to meet safety and air quality standards. Water sources (e.g., hydrants, J stands) shall be checked periodically by biological monitors to ensure they are not creating open water sources due to leaking or consistently overfilling trucks.
- Trash. All trash, micro trash, and food-related waste shall be contained in vehicles or covered trash containers and removed from the site regularly.
- Worker guidelines. Workers shall not feed wildlife or bring pets to the Project area. Except for DCPP security and law enforcement personnel, no workers or visitors shall bring firearms or weapons into the Project area.
- Wildlife entrapment. Project-related excavations shall be secured to prevent wildlife entry
 and entrapment. Holes and trenches shall be backfilled, securely covered, or fenced.
 Excavations that cannot be fully secured shall incorporate appropriate wildlife exit ramp(s)
 at a slope of no more than a 3:1 ratio, or other means to allow trapped animals to escape.
 Biological monitors shall provide guidance to work crews to ensure that wildlife ramps or
 other means are sufficient to allow trapped animals to escape. A biological monitor shall
 inspect excavations for trapped wildlife routinely throughout the day and at the end of each
 workday. All pipes or other construction materials or supplies will be covered or capped in
 storage or laydown areas. No pipes or tubing will be left open either temporarily or
 permanently, except during use or installation. Any construction pipe, culvert, or other
 hollow materials will be inspected for wildlife before it is moved, buried, or capped.
- Dead wildlife. Dead animals of non-special-status species found within the Project area shall be reported to the appropriate local animal control agency within 24 hours. A biological monitor shall safely move the carcass out of the road or work areas as needed. Dead animals of special-status species found in the Project area shall be reported to CDFW, National Marine Fisheries Service (NMFS), and/or USFWS within one workday and the carcass handled as directed by the regulatory authority.
- Injured wildlife. PG&E shall create and implement guidelines for dealing with injured or entrapped wildlife found on or near the Project area. These guidelines shall be provided to all Project biological monitors. If an animal is entrapped or entangled, a qualified biological monitor shall free the animal if feasible, or work with decommissioning personnel to free the animal, in compliance with applicable safety regulations and Project requirements. If biological monitors cannot free the animal or the animal is too large or dangerous for monitors to handle, the Applicant or its designee shall contact and work with local animal control, CDFW, or other qualified parties to obtain assistance as soon as possible.

Bio-4: Install and Maintain California Red-legged Frog Exclusion Fencing

The applicant shall develop a California Red-Legged Frog Exclusionary Fencing Plan prior to applying for a County Construction/Grading or Building permit related to any Project activities at the DCPP, PBR, or SMVR-SB sites. The plan must be submitted to the County for approval no less than 60 days prior to the initiation of any Project activities. The intent of the plan is to minimize the potential for CRLFs to enter work areas. The plan shall include, at a minimum, areas identified for



installation of fencing that most effectively exclude dispersing frogs and other special-status amphibians from work areas (including maps), a schedule for installation, the type of fence to be installed, installation methods, maintenance contingencies, and monitoring and inspection requirements.

At a minimum, areas that require fencing shall include all work area interfaces with Diablo Creek and Pismo Creek (including the north and east boundaries of the 500 kV switchyard and the northern boundary of the 230 kV switchyard) and the Southeast Borrow Site and associated access road. exclusion fencing shall consist of materials approved by the County in coordination with USFWS and CDFW. The fencing shall be buried along the bottom margin for 4 inches into the ground or shall be landscaped stapled with 7-inch staples every 3 inches along the bottom of the fence if soil conditions are not suitable to bury the fencing. Exclusion fencing shall be routinely inspected by a County-approved Qualified Biologist and maintained throughout the duration of Phase 1 activities for the DCPP, PBR, and SMVR-SB sites, and throughout the duration of Phase 2 activities at the DCPP site.

Bio-5: Conduct Clearance Surveys and Monitoring for California Red-legged Frog

At least 15 days prior to the onset of any Project activities or issuance/Notice to Proceed for any construction permits at the DCPP, PBR, and SMVR-SB sites, the Applicant or its designee shall submit the names and credentials of qualified biologist(s) who would conduct clearance surveys and monitoring conditions identified below to the County for review and approval.

8.2. Marine Mitigation Measures

MBIO-1: Eelgrass Monitoring Plan

During Phase 1 and at least 90 days prior to submittal of construction permits related to any inwater construction activity within the Intake Cove, the Applicant or its designee shall prepare an Eelgrass Monitoring Plan to provide protection to eelgrass beds that are present in the Intake Cove. The plan shall be consistent with the California Eelgrass Mitigation Policy (CEMP) that includes specific guidelines for monitoring, as well as appropriate responses and measures for activities that threaten eelgrass vegetated habitats. The goal of CEMP is to have no loss and to accomplish greater eelgrass habitat than is lost (NOAA 2014). Any loss will be compensated at a minimum ratio of 1.2:1 consistent with CEMP guidelines. The Monitoring Plan shall be submitted to County Planning and Building and reviewed and approved by the County, NOAA Fisheries, and CDFW prior to issuance of construction permits for any in-water construction activity within the Intake Cove. In accordance with the requirements of the CEMP and as identified in Appendix J – MBRA of PG&E's application, both pre- and post-construction surveys shall be described in the Eelgrass Monitoring Plan and implemented according to the approved plan. The pre-construction eelgrass survey shall be completed within 60 days prior to initiation of construction activities at the project and reference sites. This survey shall confirm both area and density characterization of the eelgrass beds. Based on the pre-construction survey, existing eelgrass beds shall be protected from equipment such as vessel operations, barge anchoring and mooring, or increased turbidity; protective measures shall be identified in the plan and implemented. A post-construction survey shall be performed within 30 days following project completion to quantify eelgrass at both the project and reference sites. A



comparison of pre- and post-construction survey results shall be documented and submitted to the County within 15 days following completion of surveys.

MBIO-2: Marine Safety and Anchoring Plan

During Phase 1 and prior to submittal of any permits related to any in-water construction activity in the Intake Cove and The Discharge Cove, the applicant or its designee shall prepare a Marine Construction Activity Plan, comprised of updates to the Discharge Demolition Anchoring Plan and the Intake Structure and Barge Loading Plan and supplemented with a Marine Safety and Anchoring Plan to avoid or minimize, as feasible, impacts to EFH Habitat of Particular Concern such as rocky reef habitat, canopy kelp, or eelgrass beds. The Marine Safety and Anchoring Plan component would be developed following the analysis of a pre-construction seafloor habitat and bathymetric survey performed after the Discharge Structure flow ceases. Additionally, a confirmation or ground truthing survey shall be conducted to ensure that all pre-determined anchor locations are positioned in sedimentary habitats and avoid impacts to rocky substrata, kelp, or eelgrass beds. The Marine Safety and Anchoring Plan shall also include the types and sizes of vessels to be anchored, anchoring and mooring systems that may be utilized, and general anchoring procedures. The Marine Construction Activity Plan composed of the three elements noted above shall be submitted to County Planning & Building, CSLC, California Coastal Commission (CCC), CDFW, and NOAA Fisheries for review prior to the commencement of Project activities and shall be approved prior to County issuance of any marine-related construction permits for implementation. The Marine Construction Activity Plan shall be incorporated into any permits related to barge loading, Discharge Structure demolition, and Intake closure. Documentation of the mooring system installation shall be submitted to the County within 30 days of installation to document compliance with this measure.

MBIO-3: Cofferdam Installation and Dewatering Plan

During Phase 1 and at least 90 days prior to, or concurrent with, submittal of initial construction permits related to Discharge Structure demolition or cofferdam installation, the Applicant or its designee shall develop a Cofferdam Installation and Dewatering Plan to avoid impacts to marine biological resources, receiving waters, sensitive habitats, and potentially protected species from all aspects associated with cofferdam construction and removal. Lessons learned from previous installations have been identified and summarized in PG&E's Preliminary Discharge Structure Demolition Plan – 30% Design Level. The plan, at a minimum shall include an organizational chart, a pre-construction habitat and biological survey, an approach to relocate/salvage marine life, tracking and management of agency authorization and permitting, dewatering controls to minimize turbidity, water quality monitoring that shall comply with any CWA permit requirements, and inspection schedule to ensure compliance. The plan shall be submitted to the County, CSLC, CCC, CDFW, and NOAA Fisheries for review and approval prior to issuance of any permits for the commencement of Project activities related to decommissioning the Discharge Structure. Plan measures and requirements shall be included in the construction permits. Relocation of black abalone would require a biologist with a scientific collection permit and obtaining a Project incidental take permit and letter of authorization from CDFW. Results of the preconstruction habitat and biological survey, animal relocation efforts, and water quality monitoring shall be



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submitted to the County, NOAA Fisheries, and CDFW within 30 days following completion of surveys. Within 60 days following completion of the Discharge Structure removal and restoration and cofferdam removal, a final summary report on the dewatering and cofferdam plan shall be prepared and submitted to the County and agencies.

MBIO-4: Marine Habitat Restoration and Monitoring Plan

During Phase 1 and prior to submittal of County applications for permits related to Discharge Structure Removal and Restoration, the Applicant or its designee shall update the Marine Habitat Restoration and Monitoring Plan to outline the restoration and subsequent monitoring specifically associated with the restoration of the Discharge Structure. This does not include monitoring for other aspects of the Project such as anchoring, cofferdam installation and dewatering, or black abalone monitoring. The plan shall provide specific methods, procedures, goals, and performance standards, and is expected to be an extension of the current marine monitoring program. A Marine Habitat Restoration and Monitoring Plan was developed for the Project, but the plan requires updating to be consistent with the final restoration construction plans. The current plan's objectives are the removal and filling of foundations and voids and regrading to natural contour status; evaluation of existing biological resources and restoration of marine resources along the coastline of the property; and updating and/or development of various plans that apply to marine areas, including the Mitigation Monitoring Plan. The Marine Habitat Restoration and Monitoring Plan approach is based on several case studies of marine restoration projects and is built around a monitored natural attenuation approach. The implementation portion of the plan includes an initial hydrographic survey, pre-restoration biological survey, site restoration and habitat enhancements, post-restoration hydrographic surveys, and post-restoration biological surveys. Ongoing monitoring, including sampling and data analysis, is also included. Performance metrics for the restoration of marine habitat are based on the re-establishment of natural communities similar to those found in surrounding areas that have not been altered or affected by construction or operation of the power plant. When the Marine Habitat Restoration and Monitoring Plan is updated, the plan shall be reviewed by various agencies including, at a minimum, the County, CSLC, CCC, CDFW, and NOAA Fisheries and shall be approved prior to issuance of any permits related to the Discharge Structure demolition and restoration activities. Monitoring and reporting requirements shall be followed, and a summary Final Compliance Report shall be submitted to the permit agency(ies) within 60 days of project completion.

MBIO-5: Marine Mammal and Sea Turtle Mitigation and Monitoring Plan

During Phase 1, prior to submittal of any County permits related to Discharge Structure removal and restoration, the Applicant or its designee shall develop a Marine Mammal and Sea Turtle Mitigation and Monitoring Plan to ensure that no harassment of marine mammals or other marine life occurs during both offshore and onshore Project activities. The approved Plan shall be updated and resubmitted at Phase 2 concurrent with submittal of County permits related to Intake Structure closure activities. A draft plan was developed for the Project, but a final plan shall be developed and approved by the County as part of NOAA Fisheries, CDFW, and USFWS consultation under the MMPA, and shall include:



- A description of the work activities including vessel size, activity types and locations, and proposed Project schedule. Incorporate results of noise impact assessment (PG&E 2022a) on effects to marine mammals and sea turtles based on the most current activity plans.
- For nearshore activities, the qualifications, number, location, and roles/authority of dedicated marine wildlife observers. The marine wildlife observer tasks may include:
 - Establishing an exclusion zone for eliminating risk of impacts to marine wildlife.
 - Keeping a daily monitoring log detailing the marine mammals or sea turtles observed during the day and Project activities undertaken during those observations.
 - Digital photographs taken during the monitoring.
 - Training of crew, recording survey data, and providing a final report on the results of the monitoring.
 - Instructing vessel operators to observe low vessel speeds within the Discharge and Intake Coves and always maintain awareness of marine wildlife.
- For offshore activities, the distance, speed, and direction transiting vessels shall maintain when in proximity to a marine mammal or turtle, as follows:
 - Vessel operators shall make every effort to maintain a distance of at least 300 feet from sighted whales, and 150 feet or greater from sea turtles or smaller cetaceans whenever possible.
 - When small cetaceans are sighted while a vessel is underway (e.g., bow-riding), vessel operators shall attempt to remain parallel to the animal's course. When paralleling whales, vessels shall operate at a constant speed that is not faster than the whales' and shall avoid excessive speed or abrupt changes in direction until the cetacean has left the area.
 - When safety permits, vessel speeds shall not exceed 11.5 miles per hour (10 knots) when mother/calf pairs, groups, or large assemblages of cetaceans (greater than five individuals) are observed near an underway vessel. A single cetacean at the surface may indicate the presence of submerged animals in the vicinity; therefore, prudent precautionary measures, such as decreasing speed and avoiding sudden changes in direction, should be exercised. The vessel shall route around the animals, maintaining a minimum distance of 300 feet.
 - Support vessels (i.e., barge tows) shall not cross directly in front of migrating whales, other threatened or endangered marine mammals, or sea turtles.
 - Vessels shall not separate female whales from their calves or herd or drive whales. If a whale engages in evasive or defensive action, support vessels shall drop back until the animal moves out of the area.
- For pile driving activities, measures shall be incorporated to reduce underwater noise and minimize potential impacts to fish, sea turtles, and marine mammals. The following noise reduction measures include:
 - Vibratory pile driving shall be used to the extent practicable.
 - During construction activities involving pile driving or extraction, the contractor, under direction of a qualified biologist (i.e., certified/approved by NOAA Fisheries or CDFW), shall conduct monitoring within the applicable Zone of Influence (ZOI).



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The contractor shall halt in water pile driving or extraction work if any observations of marine mammals or sea turtles are made within the defined ZOI. Work shall not re-commence until it has been determined that the mammal(s) or turtle(s) have left the area or have not been seen on the surface within the ZOI for a period of 15 minutes.

- A soft start or "ramp-up" procedure shall be utilized to provide nearby wildlife with an opportunity to respond by avoiding the sound source and vacating the area. When performing vibratory pile driving, the contractor shall commence work with a few short pulses followed by a 1-minute period of no activity, prior to commencing full activities. The purpose of this activity is to encourage turtles or marine mammals in the area to leave the project site prior to commencement of work. The contractor, under the direction of a qualified biologist, shall then commence monitoring as described above to determine if turtles or mammals are in the area. This process should be repeated if pile driving ceases for a period of greater than an hour.
- Observation recording procedures and reporting requirements in the event of an observed impact to marine wildlife. Collisions with marine wildlife shall be reported promptly to the NOAA Fisheries, CDFW, CCC, USFWS, and CSLC pursuant to each agency's reporting procedures.
- A final report summarizing daily reports and any actions taken shall be submitted to the County, NOAA Fisheries, CDFW, CCC, CSLC, and USFWS within 60 days following completion of monitoring.

MBIO-6: Oil Spill Response Plan

During Phase 1 and prior to submittal of permits for authorization of any in-water construction activities, the Applicant or its designee shall update the Oil Spill Response Plan to outline initial response and procedures to be followed in the event of an inadvertent release of hazardous materials such as fuel or oil as a result of Project activities. The plan shall include at a minimum, a description of the Project scope-of-work and geographic area; pre-work planning needed to prepare for a possible nearshore oil spill; initial response procedures including agency notifications and on-site team communications; how the waste from the oil spill will be handled and disposed of; and a description of how the area will be decontaminated and how any contaminated materials will be handled. The plan shall be reviewed and approved by various agencies including, at a minimum, the County, CSLC, CDFW, NOAA Fisheries, and the CDFW Office of Spill Prevention and Response. Each Project vessel shall have a copy of the plan and shall maintain the required spill response equipment. Additional shore-based response equipment shall be onsite, which can be used for first-response containment and collection of petroleum that reaches the shoreline. If necessary, additional personnel and equipment shall be deployed to assist in the recovery and disposal of spilled petroleum.

MBIO-7: Mooring Placement Habitat Survey

Prior to Marina reuse, the Applicant or third-party lessee shall prohibit overnight anchoring except for emergency situations, and that up to five mooring buoys be installed in the Marina prior to



commencing overnight use by private vessels (except vessels at dock). The Mooring Plan shall include the following:

- Prior to mooring installation, a pre-construction habitat survey shall be conducted to delineate sensitive habitats such as eelgrass beds and rocky reefs.
- Mooring locations would be identified and include a buffer zone to avoid impacts to these habitats from each mooring anchor, as well as potential chain scour.
- Results of the pre-construction habitat survey and proposed mooring locations shall be submitted to the County and CCC, CSLC, and CDFW as required.
- Upon County and agency approval, the construction permits would specify installation of the mooring buoys in the approved locations.
- The County Development Plan/Coastal Development Permit approval will require that the Applicant or third-party operator provide the means and methods for managing and monitoring the number of vessels and length of stay.

Documentation of the mooring buoy installation shall be submitted to the County within 30 days of installation to document compliance with this measure. Mooring buoys shall be maintained and used as permitted over the course of Marina operations.

MBIO-8: Non-Native Aquatic Species Measures

To prevent the introduction of non-native aquatic species, during Phase 1 and prior to issuance of permits for in-water construction requiring vessels or other floating platforms (e.g., barges), the Applicant or its designee shall verify that all Project vessels: (1) Originate from a local harbor or port, or have underwater surfaces cleaned before entering southern or central California and immediately prior to transiting to the DCPP area or disposal locations; and (2) Comply with applicable CSLC regulations or standards including Ballast Water Management Regulations, Biofouling Management Requirements, and/or Ballast Water Discharge Performance Standards, including reporting procedures. Documentation shall be submitted to the County and CSLC at least 30 calendar days prior to start of construction.

MBIO-9: Preconstruction Survey for Black Abalone

During Phase 1 and prior to installation of the cofferdam, dewatering, cofferdam removal, or any other construction activity that may affect black abalone, the Applicant or its designee shall conduct a survey by a qualified biologist (i.e., certified/approved by NOAA Fisheries and CDFW) within the area of impact to determine if black abalone are present. This pre-construction survey requirement shall be included in every County (or other agency) construction permit affecting the Discharge Cove marine waters. If black abalone are discovered in the work area, they shall be relocated by a qualified biologist with appropriate authorization from NOAA Fisheries and CDFW to predetermined suitable habitat areas located outside the immediate impact area. Relocation of black abalone would require a biologist with a scientific collection permit and obtaining a project incidental take permit and letter of authorization from CDFW. Monitoring shall also be conducted to assess the effectiveness of relocation for a duration as prescribed by NOAA Fisheries, and CDFW. Results of each such survey and relocation monitoring event shall be submitted to the County,



NOAA Fisheries, and CDFW within 30 days following completion of surveys, and a final summary report submitted within 60 days following completion of construction activity.

8.3. Species Specific Monitoring Measures

Mitigation measures specific to listed species are described in Table 8.3-1 below.

Species	Applicable Mitigation Measure
California Red-legged Frog	Bio-4: Install and Maintain California Red-legged Frog Exclusion Fencing
	Bio-5: Conduct Clearance Surveys and Monitoring for California Red-legged Frog
Black Abalone	MBIO-9: Preconstruction Survey for Black Abalone
Southern Sea Otter	MBIO-5: Marine Mammal and Sea Turtle Mitigation and Monitoring Plan
Humpback Whale	MBIO-5: Marine Mammal and Sea Turtle Mitigation and Monitoring Plan
Blue Whale	MBIO-5: Marine Mammal and Sea Turtle Mitigation and Monitoring Plan
Fin Whale	MBIO-5: Marine Mammal and Sea Turtle Mitigation and Monitoring Plan
Gray Whale	MBIO-5: Marine Mammal and Sea Turtle Mitigation and Monitoring Plan
Leatherback Turtle	MBIO-5: Marine Mammal and Sea Turtle Mitigation and Monitoring Plan
Green Turtle	MBIO-5: Marine Mammal and Sea Turtle Mitigation and Monitoring Plan

Table 8.3-1 – Species-Specific Monitoring Measures

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Diablo Canyon Decommissioning – Draft Essential Fish Habitat Assessment



Essential Fish Habitat Assessment

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List of Acronyms and Abbreviations

Description
Area of Responsibility
Biological Assessment
California Department of Fish and Wildlife
California Endangered Species Act
Coastal Pelagic Species
Diablo Canyon Power Plant
Distinct Population Segments
Essential Fish Habitat
Federal Endangered Species Act
Fishery Management Plan
Marine Biological Resources Assessment
Magnuson-Stevens Fishery Conservation and Management Act
National Environmental Protection Act
National Marine Fisheries Service
National Oceanic and Atmospheric Administration
Pacific Fishery Management Council
Pacific Coast Groundfish
Pacific Coast Salmon
Pacific Gas and Electric Company
United States
U.S. Army Corps of Engineers
U.S. Fish and Wildlife Service



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1. Introduction

This Essential Fish Habitat (EFH) assessment was written in support of the National Environmental Protection Act (NEPA) permitting package for the decommissioning of Diablo Canyon Power Plant (DCPP) Discharge Structure, closure of the Intake Structure, associated vessel activity and barging within the Discharge Cove, Intake Cove, as well as vessel traffic to a designated barge route. This EFH is submitted in tandem with the Pacific Gas and Electric Company (PG&E) Diablo Canyon Decommissioning Biological Assessment (BA) (2024). The EFH format is written in accordance with Section 305(b(2)-(4)) of the Magnuson-Stevens Act of 1976 (Public Law 104-267) as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-297). The Act requires that the National Marine Fisheries Service (NMFS), regional Fishery Management Councils, and other federal agencies identify and protect important marine, estuarine, and anadromous fish habitat. NMFS is herein referred to as "National Oceanic and Atmospheric Administration (NOAA) Fisheries."

Regional Fishery Management Councils are required to prepare Fishery Management Plans (FMPs) for the identification, protection, and enhancement of EFH for federally "managed species." Furthermore, agencies are required to consider the potential effects of a project on both EFH and managed species as part of an EFH Assessment (Section 305(b(2)-(4)) of the Act).

As described in the PG&E BA (2024), the full decommissioning of the DCPP facility (the Project) shall occur in two phases: Phase 1: Pre-planning and Decommissioning Project Activities and Phase 2: Final Site Restoration and Independent Spent Fuel Storage Installation Only Operations. The Proposed Action for this NEPA application package considers a portion of Phase I of the Project, involving the removal of the DCPP discharge structure, closure of the Intake Structure, and related vessel activity (herein referred to as the Proposed Action or Proposed Activities). Within the BA (2024), the Proposed Activities were broken into three Action Areas: (1) U.S. Fish and Wildlife Service (USFWS) Action Area within the U.S. Army Corps of Engineers (USACE) Area of Responsibility (AoR), (2) USFWS Action Area Outside of the USACE AoR, and (3) NOAA Fisheries Action Area. EFH has been determined to be located within the NOAA Fisheries Action Area and USFWS Action Area within the USACE AoR (Figure 1.1-1) as described in the PG&E BA (2024). The term "Action Areas" within this document refers to both the NOAA Fisheries Action Area and USFWS Action Area within the USACE AoR. The purpose of this EFH assessment is to review the activities associated with the Proposed Action to determine the extent that the Proposed Action may affect managed species and habitats within the Action Areas (as defined in the accompanied 2024 PG&E Diablo Canyon Decommissioning BA).

The information provided in this report was prepared in accordance with legal requirements set forth under Section 7 of the federal Endangered Species Act (ESA) (16 USC 1536 [c]), and follows the standards established in the USFWS Endangered Species Consultation Handbook (USFWS and NMFS 1998). Species information pertaining to this EFH was collected during the surveys and research conducted during the Marine Biological Resources Assessment (MBRA) conducted by Tenera Environmental Incorporated (Tenera) (PG&E 2020a). The MBRA was prepared in accordance with the County of San Luis Obispo Department of Planning and Building *Guidelines for Biological Resources Assessment* - *Guidelines for Biological Consultants* (2016 Draft, October 2015).

DCPP Decommissioning Planning Information



In support of the application for Section 404 of the Clean Water Act and Section 7 of the Rivers and Harbors Act and in accordance with 50 Code of Federal Regulations Section 600.920, this report identifies potential impacts to EFH due to the Proposed Action and addresses managed fish and invertebrate taxa that have potential to occur within the Action Areas.

1.1. Proposed Action Characteristics

The DCPP Nuclear Resource Commission licensed boundary is situated near Avila Beach in San Luis Obispo County on approximately 750 acres of the Pacific Coast. This EFH is required due to the interaction of the DCPP Discharge Structure with the marine environment and the decommissioning-related vessel traffic and barging activity within the Discharge Cove and Intake Cove up to the barging route. The bulk of construction activities would occur within Diablo Cove, while barging activity will occur in the Intake Cove (Figure 1.1-1). A Preliminary Discharge Structure Demolition and Restoration Plan (PG&E 2022) details an approach to construct a temporary cofferdam, dewater the cofferdam, demolish the Discharge Structure, remove the coffer dam, and restore the shoreline post demolition (PG&E 2022). A circular cell steel sheet pile cofferdam would be installed in the shallow rock which shall allow for a dry marine working environment during decommissioning. A more detailed description of the Proposed Action and full DCPP Decommissioning Project description is provided in the full BA (PG&E 2024) submitted with this EFH.



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2. Essential Fish Habitat Analysis

The USFWS manages federally endangered and threatened species under the ESA. The ESA defines "endangered" as a species at risk of extinction throughout at least a substantial portion of its geographic range. A species is considered to be 'threatened' when it is probable to become endangered within the foreseeable future. Consultation with USFWS would identify potential impacts to federally endangered and threatened species to determine if an Incidental Take Authorization permit is required. Upon consultation with USFWS for the Proposed Project, an incidental take authorization is not required for USFWS managed marine species.

NOAA Fisheries oversees national marine resources and currently manages over 165 endangered and threatened species under the ESA; cetaceans (whales, dolphins and porpoises), otariids (eared seals, or sea lions), and phocids (true seals) under the Marine Mammal Protection Act; and any EFH required for fish to spawn, breed, feed, or grow (NOAA 1972; NOAA 2007; NOAA 2020). EFH is identified by the Magnuson-Stevens Fishery Conservation and Management Act (MSA) as waters and substrate which is necessary for breeding, growth, feeding, or spawning. In 2002, NOAA Fisheries further clarified EFH (67 Federal Register 2343) with the following definitions:

- "Waters" include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate.
- "Substrate" includes sediment, hard bottom, structures underlying the waters, and associated biological communities.
- "Necessary" means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and "spawning, breeding, feeding, or growth to maturity" covers a species' full life cycle.

The MSA, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), established procedures designed to identify, conserve, and enhance EFH for those species regulated under an FMP. The MSA requires federal agencies to consult with NOAA Fisheries on all actions, or proposed actions, authorized, funded, or undertaken by the agency, which may adversely affect EFH. "Adverse" effect means any impact which reduces quality and/or quantity of EFH, and may include direct, indirect, site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions. Effects of the action consist of interactions between the effects of the Proposed Action and the biological resources which have been identified. If the effects are identified as "substantial," there is a requirement that Avoidance and Minimization Measures be integrated to reduce the harmful impact to less than substantial.

There are four FMPs on the Pacific Coast of North America. All four have managed species with designated habitat areas that occur within the NOAA Fisheries Action Area. The FMPs include the Coastal Pelagic Species (CPS) FMP, the Pacific Coast Groundfish (PCG) FMP, the Pacific Coast Salmon (PCS) FMP, and the Highly Migratory Species FMP (PFMC 2022a). Each FMP has designated EFH areas and lists either specific managed species, or taxonomic groups.

DCPP Decommissioning Planning Information



2.1. Managed Species of Interest

The Pacific Fishery Management Council (PFMC) published the latest update to the CPS FMP in 2019. The PFMC manages approximately 119 species within the United States (U.S.) West Coast Exclusive Economic Zone 3 to 200 miles offshore (PFMC 2022b). NOAA Fisheries organizes the management of species into units. The EFH online mapper was utilized to identify which units are located within and adjacent to the Action Areas. Each species management unit shows which identified species may be present within the NOAA Fisheries Action Area through all life stages. In the FMP there are three management categories for CPS. The FMP category identified in the NOAA Fisheries Action Area is Pacific Groundfish. Table 2.1-1 provides a list of the species management units within the Action Area.

Species/Management Unit	Lifestage(s) Found at Location	Management Council	FMP
Finfish	All	Pacific	
Krill – Thysanoessa Spinifera	All	Pacific	
Krill – Euphausia Pacifica	All	Pacific	
Other Krill Species	All	Pacific	
Coastal Pelagic Species	All	Pacific	
Groundfish	All	Pacific	Groundfish

Table 2.1-1 – Managed Species Units NOAA Action Area within the NOAA Action Area

Source: NOAA Fisheries 2022.

2.1.1. Species Information

A list of species managed as part of one of the four FMPs that are likely to occur at the NOAA Action Area is provided below (Table 2.1.1-1). Species that have been observed as part of the ongoing sampling program maintained by Tenera are listed as having a HIGH likelihood of occurrence at the site (PG&E 2020a). Species that have not been observed but have the possibility to occur at the site based on their known distribution are included as having a LOW likelihood of occurrence (PG&E 2020a). This likelihood of occurrence assessment includes adult, juvenile, and larval distribution patterns.

Table 2.1.1–1 – Taxonomic Groups Managed Under FMPs Likely to Occur at the NOAA Action Area within the NOAA Action Area

	Fish	Fishery Management Plan			Likelihood of
Таха	HMS	PCG	CPS	PCS	Occurrence
Nearshore benthic – hard substrate					
Cabezon (Scorpaenichthys marmoratus)		Х			HIGH
Rockfishes (<i>Sebastes</i> spp.)		Х			HIGH
Lingcod (Ophiodon elongates)		Х			HIGH
Kelp greenling (Hexagrammos decagrammus)		Х			HIGH
Nearshore benthic – soft substrate					
English sole (<i>Parophrys vetulus</i>)		Х			HIGH
Starry flounder (Platichthys stellatus)		Х			HIGH



		nery Mana	Likelihood of		
Таха	HMS	PCG	CPS	PCS	Occurrence
Big skate (<i>Raja binoculata</i>)		Х			HIGH
California skate (<i>Raja inornata</i>)		Х			HIGH
Curlfin sole (Pleuronichthys decurrens)		Х			LOW
Pacific sanddab (<i>Citharichthys sordidus</i>)		Х			LOW
Sand sole (Psettichthys melanostictus)		Х			LOW
All other skates (endemic Arhynchobatidae)		Х			LOW
Dover sole (Microstomus pacificus)		X			LOW
Petrale sole (<i>Eopsetta jordani</i>)		Х			LOW
Nearshore pelagic/water column					
Leopard shark (Triakis semifasciata)		X			HIGH
Pacific sardine (Sardinops sagax)			X		HIGH
Pacific (chub) mackerel (Scomber japonicas)			X		HIGH
Northern anchovy (Engraulis mordax)			Х		HIGH
Jack mackerel (Trachurus symmetricus)			X		HIGH
Jacksmelt (Atherinopsis californiensis)			Х		HIGH
Market squid (Doryteuthis opalescens)			Х		HIGH
Silversides (Atherinopsidae)		X	X		HIGH
Great white shark (Carcharodon carcharias)	X				HIGH
Chinook salmon (Oncorhynchus tshawytscha)	X			Х	HIGH
Pacific whiting (hake) (<i>Merluccius productus</i>)		X			LOW
Sablefish (Anoplopoma fimbria)		Х			LOW
Round herring (Etrumeus teres)	X	Х	Х	Х	LOW
Common thresher shark (Alopias vulpinus)	X				LOW
Pacific herring (Clupea pallasii)			Х		LOW
Pacific saury (Cololabis saira)	X	Х	Х	Х	LOW
Krill or euphausiids			Х		LOW

Source: PG&E 2020a.

Notes: Organized by broad adult habitat type.

CPS = Coastal Pelagic Species

HMS = Highly Migratory Species

PCG = Pacific Coast Groundfish

PCS = Pacific Coast Salmon

Ecosystem Component (EC) species are also identified within the Action Area. ECs are identified as "1) Be a non-target stock/species; 2) Not be subject to overfishing, approaching overfished, or overfished and not likely to become subject to overfishing or overfished in the absence of conservation and management measures; and, 3) Not generally retained for sale or personal use, although "occasional" retention is not by itself a reason for excluding a species from the EC category" (PFMC 2019). Two species in particular are occasionally unintentionally caught as bycatch species within this region and thus are included as EC species to accurately monitor by catch in the CPS fishery.



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The two managed EC species in the Action Area include Pacific herring (*Clupea pallasii pallasii*) and Jacksmelt (*Atherinopsis californiensis*) (PFMC 2019).

2.2. Essential Fish Habitat Areas

The PCG FMP manages over 90 species; these species span across a large region with high biodiversity (PFMC 2020). The PCG FMP identifies groundfish EFH as all waters and substrate within the following areas (PFMC 2022c):

- Depths less than or equal to 11,483 feet to mean higher high-water level or the upriver extent of saltwater intrusion, defined as upstream and landward to where ocean-derived salts measure less than 0.5 parts per thousand during the period of average annual low flow.
- Seamounts in depths greater than 11,483 feet as mapped in the EFH assessment geographic information system.
- Areas designated as Habitat Areas of Particular Concern not already identified by the above criteria.

According to the PCG FMP definition, the Proposed Activities involving marine work occurs within the groundfish EFH.

The CPS FMP designates all marine and estuarine waters from the shoreline along the California coast to the limits of the U.S. Exclusive Economic Zone (200 nautical miles) and above the thermocline where sea surface temperatures range between 50- and 79-degrees Fahrenheit (PFMC 2020). The EFH designated for krill extends to the 1,000 fathoms depth contour and extends from the surface to a depth of 1,300 feet (PFMC 2019). Based on this designation, all submerged portions of the NOAA Action Area are within the CPS EFH.

The FMP for U.S. West Coast Fisheries for Highly Migratory Species are species dependent and largely occur over water depths deeper than what occur at the NOAA Action Area. Only pre-adult common thresher shark (*Alopias vulpinus*) has designated EFH that may overlap with the NOAA Action Area (PG&E 2020a). EFH for neonate and juvenile common thresher sharks (<40 inches fork length) and for late juveniles and subadult common thresher sharks (<66 inches from snout tip to tip of the longest caudal fin) includes waters off beaches and open coast bays and offshore, in near-surface waters from the U.S.-Mexico border to Pigeon Point (37° 10' N. latitude) over bottom depths as shallow as 6 fathoms (PFMC 2022a).

Appendix A of the PCS FMP (PFMC 2022b) designates estuarine and marine waters extending from the extreme high tide line to the U.S. Exclusive Economic Zone (200 nautical miles) offshore of California north of Point Conception as EFH for PCS (PFMC 2022b). The main focus on salmonid conservation management, including the designation and maintenance of EFH, is concentrated on the freshwater stream and river habitats that act as spawning and juvenile habitat and are typically subject to considerable anthropogenic pressure from agricultural practices, dams, bycatch, and pollution (PFMC 2022b).



Critical Habitat areas are discussed in the PG&E BA (2024) submitted with this EFH.

2.2.1. Habitat Areas of Particular Concern

The MBRA surveyed Diablo Cove and the Intake Cove for kelp canopy and eelgrass (*Zostera* spp.) in 2020. Due to the turbulence of the water around the Discharge Structure, the area immediately in the path of the discharge could not be surveyed. Therefore, the findings for the Discharge Cove include the coastline immediately adjacent to the Discharge Structure.

Within Diablo Cove, the biological community is dominated by algal cover, which is typical of rocky intertidal habitat for the region. Additionally, an assemblage of red assemblage of red, brown, and green algae, the surfgrass (*Phyllospadix* spp.) are regularly recorded in the lower intertidal zone within Diablo Cove. The subtidal algal assemblage within Diablo Cove includes canopy-forming and understory brown algal kelps. *Cystoseira osmundacea* is the most abundant canopy-forming kelp at in Diablo Cove. Another invasive species of Sargassum, which has been present along the west coast for several decades, is *Sargassum muticum*. This alga is also an abundant canopy-forming kelp at the -10 feet mean lower low water depth but is largely absent at 15 feet depth. Other brown algal kelps regularly recorded at the subtidal stations in Diablo Cove include giant kelp (*Macrocystis pyrifera*), and subcanopy stalked kelps such as *Pterygophora californica* and *Laminaria setchellii*.

The survey results found approximately 7 acres of kelp canopy in the Intake Cove and occurrences of eelgrass in the shallow subtidal habitat at the eastern end of the Intake Cove. These beds are in areas closely adjacent to the most downcoast extent of the rip-rap and graded road (PG&E 2020c). An additional survey for eelgrass was conducted in September of 2023 by Tenera. The 2023 eelgrass survey verified that the eelgrass beds mapped in 2020 were mostly still present at the same locations with reduced aerial extent and spatial coverage. The small eelgrass bed previously mapped closest to the Intake Structure was no longer present (Tenera 2023). Figure 2.2.1-1 displays the mapped eelgrass beds observed in 2020 and 2023.

Eelgrass beds are a protected habitat under the MSA designated as Habitat Areas of Particular Concern, a subset of EFH, because they are a resource to a variety of species, including the southern sea otter. Proposed barging activities are not expected to impact the eelgrass beds within the Intake Cove. According to the Draft Environmental Impact Report (County 2023), an Eelgrass Monitoring Plan shall be prepared to ensure protection to eelgrass beds that are present in the Intake Cove.

Damage from eelgrass beds from barging activity is not expected because barges will not be moored over eelgrass beds for Project activities. To ensure eelgrass is protected, an Eelgrass Monitoring Plan shall be prepared.



Figure 2.2.1-1 - Approximate Extent and Location of Eelgrass within the Action Area



Source: PG&E 2020a and Tenera 2023.

2.3. Listed Species

The Federal ESA of 1973 (16 USC 1361 et seq), administered by the USFWS and NOAA Fisheries authorizes the determination and listing of species as 'endangered' or 'threatened',¹ and prohibits unauthorized 'taking' of these species. The Federal ESA was put in place to protect and recover at risk species and the ecosystems upon which they depend.

Various listed finfish species may occur within the NOAA Fisheries Action Area and USFWS Action Area within the USACE AoR due to the oceanic distribution overlapping with the bounds of the Action Areas but have not been recorded during the many diver surveys performed for PG&E (PG&E 2022).

Two salmon species which could occur within the Action Areas but have not been sited during diver surveys are chinook salmon (*Oncorhynchus tshawytscha*) and steelhead salmon (*Oncorhynchus mykiss irideus*) (PG&E 2020a). Chinook salmon and steelhead salmon are anadromous salmonid fish that spawn in freshwater streams and spends part of their life in the ocean (PFMC 2022b; CDFW 2022). It was mentioned in the MBRA that no suitable habitat within the Corps jurisdictional areas was identified for chinook salmon or steelhead salmon (PG&E 2020a). As support for this finding, it is worth noting that the NOAA EFH Mapper² report confirms that there is no Pacific Salmon EFH identified in the Action Area.

Table 2.3-1 lists the species under the Federal ESA or California Endangered Species Act (CESA) which may occur within the NOAA Action Area or in surrounding waters; however, this is not associated with EFH. Marine Critical Habitat is addressed in detail in the accompanying BA.

Table 2.3-1 – Species L	isted und	er the Feder	al ESA or t	the CESA that Ma	y Occur at the NOAA
Action Area					

Species and Management Unit (ESU, DPS, or Stock)	Scientific name	Federal ESA †	Likelihood of Occurrence
Southern sea otter	Enhydra lutris nereis	FT ⁸	High
Humpback whale	Megaptera novaeangliae		Medium
- Central America DPS		FT	
- Mexico DPS		FE	
Chinook salmon	Oncorhynchus tshawytscha		Low
- Upper Klamath and Trinity rivers ESU		С	
- California coastal ESU		FT	
- Sacramento River winter-run ESU		FE	

¹ 'Endangered' means a species is in danger of extinction throughout all or a significant portion of its range. 'Threatened' means a species is likely to become endangered within the foreseeable future.

² The NOAA Essential Fish Habitat Mapper is an interactive mapping application to assist with viewing spatial boundaries for those habitats that NOAA Fisheries and the regional fishery management councils have identified as necessary to fish (NOAA Fisheries 2022).



Species and Management Unit (ESU, DPS, or Stock)	Scientific name	Federal ESA †	Likelihood of Occurrence
Chinook salmon - Central Valley spring-run ESU	Oncorhynchus tshawytscha	FT	Low
- Central Valley spring-run in the San Joaquin River		е	
Black abalone	Haliotus cracherodii	FE	High
Steelhead salmon	Oncorhynchus mykiss irideus		Low
- Southern California DPS		FE	
- California Central Valley DPS		FT	
- Northern California DPS		FT	
- Summer run		NL	
- Central California coast DPS		FT	
- South-central California coast DPS		FT	
Blue whale	Balaenoptera musculus	FE	Low
Fin whale	Balaenoptera physalus	FE	Low
Sperm whale	Physeter macrocephalus	FE	Low
Guadalupe fur-seal	Arctocephalus townsendi	FT	Low
Green turtle - east Pacific DPS	Chelonia mydas	FT	Low
Leatherback turtle	Dermochelys coriacea	FE	Low
Pacific olive Ridley turtle	Lepidochlys olivacea		Very Low
- Mexico's Pacific Coast breeding population		FE	
- All other populations		FT	
Loggerhead turtle - North Pacific DPS	Caretta	FE	Very Low
Tidewater goby	Eucyclogobius newberryi	FE ^{†††}	Very Low*
Green sturgeon - southern DPS	Acipenser medirostris	FT	Very Low

Notes:

* Likelihood refers to encountering adult tidewater goby in the marine environment, not an assessment of their presence in brackish streams within the NOAA Action Area.

[†] NOAA Fisheries 2020 unless otherwise indicated

^{††} CDFW 2022

††† USFWS 2022.

c = Candidate

e = Federal ESA Experimental Population

DPS = Distinct Population Segment

DCPP = Diablo Canyon Power Plant

ESU = Evolutionarily Significant Unit

FE = Federal ESA Endangered

FT = Federal ESA Threatened

NL = Not Listed

RWMP = Receiving Water Monitoring Program



2.4. Effects of Proposed Action on EFH

The rocky substrate within the Action Area would be most impacted due to the installation of the cofferdam and dewatering of Diablo Cove. While the cofferdam would be removed upon completion of the demolition and remediation, there is potential for concrete remnants to be left behind that might not detach from the seafloor, which by definition, is considered 'fill'. To conservatively estimate the amount of concrete that may be considered fill material, the amount of concrete left behind is assumed to be the size of the base of the cofferdam. Aside from the dewatered areas of the Proposed Action, anchoring of work vessels (both in the Discharge and Intake Coves) would be conducted in sedimentary habitats and it is not expected to impact kelp or algae covered rocks.

Table 2.4-1 below summarizes interactions between the effects of the Proposed Action on the environment and the marine biological resources in the area (PG&E 2020a). Where interactions between effects of the Proposed Action and resources have been identified, a black dot has been inserted into the matrix cell to represent a potential impact. Substantial impacts require Avoidance and Minimization Measures to avoid or reduce their harmful impacts to less than substantial.

There are no permanent substantial impacts predicted on EFH due to the Proposed Action.

Recommended Avoidance and Minimization Measures are provided in Section 2.4.1.

	Marine Biological Resource			ce
Effect of Proposed Action	Discharge Cove Subtidal Habitat and Species	Discharge Cove Intertidal Habitat and Species	Discharge /Intake Cove Essential Fish Habitat	Listed Species
1. Benthic habitat damage during discharge cofferdam construction, operation, barging, and removal including associated anchoring activities.	٠	٠	٠	0
2. Turbid plume generation during decommissioning activities.	٠	•	0	•
3. Noise generation during decommissioning activities (including vessel traffic).	0	0	0	0
4. Water Quality changes due to stormwater runoff during decommissioning activities.	•	•	•	•

Table 2.4-1 - Proposed Action Effects Matrix

Source: PG&E 2020a

Notes: The filled circles (•) signify that the "effect of the Proposed Action" is likely to affect the listed "marine biological resource" associated with that column. The open circles (o)signify that the "effect of the Proposed Action" is not likely to impact that "marine biological resource."



2.4.1. Recommended Avoidance and Minimization Measures

The installation of the cofferdam would help to limit interaction with EFH during construction. However, there will be temporary impacts associated with installing the cofferdam. Impacts to marine areas after cofferdam construction would likely come from vessel traffic and anchoring activities.

An anchor pre-plot would be developed for any of the anchoring activities within both the Discharge and Intake Coves. To ensure anchors avoid hard-bottom habitat and associated kelp beds or algae covered rocks, anchors shall be lowered in a controlled manner and shall be recovered vertically through the water column.

Marine surveys have been conducted prior to construction and marine monitoring shall occur during construction to help minimize impact to EFH. Additional biological pre-construction survey efforts are described in the Marine Habitat Restoration and Monitoring Plan (PG&E 2020b) and additional conservation and mitigation measures are described in the accompanying BA (PG&E 2024).

2.4.2. Mitigation Measures

As discussed in the accompanying BA (PG&E 2024), there is one mitigation measure established to avoid and minimize impact specifically to EFH:

MBIO-2: Marine Safety and Anchoring Plan

During Phase 1 and prior to submittal of any permits related to any in-water construction activity in the Intake Cove and the Discharge Cove, the applicant or its designee shall prepare a Marine Construction Activity Plan, comprised of updates to the Discharge Demolition Anchoring Plan and the Intake Structure and Barge Loading Plan; and supplemented with a Marine Safety and Anchoring Plan to avoid or minimize, as feasible, impacts to EFH Habitat of Particular Concern such as rocky reef habitat, canopy kelp, or eelgrass beds. The Marine Safety and Anchoring Plan component would be developed following the analysis of a pre-construction seafloor habitat and bathymetric survey performed after the Discharge Structure flow ceases. Additionally, a confirmation or ground truthing survey shall be conducted to ensure that all pre-determined anchor locations are positioned in sedimentary habitats and avoid impacts to rocky substrata, kelp, or eelgrass beds. The Marine Safety and Anchoring Plan shall also include the types and sizes of vessels to be anchored, anchoring and mooring systems that may be utilized, and general anchoring procedures. The Marine Construction Activity Plan composed of the three elements noted above shall be submitted to County Planning & Building, California State Lands Commission, California Coastal Commission, CDFW, and NOAA Fisheries for review prior to the commencement of Project activities and shall be approved prior to County issuance of any marine-related construction permits for implementation. The Marine Construction Activity Plan shall be incorporated into any permits related to barge loading, Discharge Structure demolition, and Intake closure. Documentation of the mooring system installation shall be submitted to the County within 30 days of installation to document compliance with this measure.



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