

ESSENTIAL FISH HABITAT ASSESSMENT

DECOMMISSIONING AND REMEDIATION OF THE CARPINTERIA OIL AND GAS PROCESSING FACILITIES SANTA BARBARA COUNTY, CALIFORNIA

Project No. 2002-5211

Prepared for:

Chevron West Coast Decommissioning Program
3916 State Street, Suite 200
Santa Barbara, CA 93105

Prepared by:

Padre Associates, Inc.
369 Pacific Street
San Luis Obispo, California 93401

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1.0 INTRODUCTION

This Essential Fish Habitat (EFH) assessment has been developed to support the proposed Decommissioning and Remediation of the Carpinteria Oil and Gas Processing Facilities Project (Project) located in the eastern portion of the City of Carpinteria, California, between U.S. Highway 101 State waters limited within the Pacific Ocean (Project Site) (Figure 1-1). This assessment is prepared in accordance with 50 Code of Federal Regulations (CFR) 600.920(g)(2) and addresses the managed fish and invertebrate taxa that could occur at the Project site.

EFH is defined as "...those waters and substrate necessary for fish spawning, breeding, feeding, or growth to maturity." "Waters," as used in this definition, are defined to include "aquatic areas and their associated physical, chemical, and biological properties that are used by fish." These may include "...areas historically used by fish where appropriate; 'substrate' to include 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." EFH is described as a subset of all habitats occupied by a species (NOAA, 1998).

1.1 PROPOSED ACTION

The onshore Project Site is located in the eastern portion of the City of Carpinteria, California, between U.S. Highway 101 and the Pacific Ocean (Figure 1-1). The onshore Project Site does not support any aquatic habitats. The offshore components of the Project site are located in the adjacent nearshore waters out to the State water limits (three nautical miles) in water depths from zero to 148 feet (45 meters).

The Project's purpose is to demolish and remove surface and subsurface facilities and subsequent remediation at the onshore Carpinteria Oil and Gas Processing Facility to accommodate the Project Site's potential future redevelopment. Offshore pipelines will be removed using reverse installation techniques with the help of divers excavating sections of buried pipeline, as needed. The pipelines will be lifted onto an offshore barge spread and cut into segments on the deck of the barge. Alternatively, some sections of pipeline may require cutting on the seafloor and lifting segments of pipe to the Project barge. Pipeline segments within the surf zone will be excavated (if necessary), cut, and pulled offshore for recovery to the barge deck and disposal.

1.2 SITE CHARACTERISTICS

Physical Characteristics. The offshore environmental setting for the Project includes nearshore, shallow water depths out to the continental shelf offshore Santa Barbara County. The primary substrates within the offshore segments of the pipeline corridor have been characterized as fine- to medium-grained smooth sediments, with infrequent areas of mixed smooth sediment and bedrock, coarse-grained sand, gravel, cobbles (Johnson et al., 2013). The marine habitats and biota are typical of those found in similar water depths within the Southern California Bight (SCB). The intertidal and subtidal habitats within the Project Site consists primarily of sand with a mosaic of intermittent low- to medium-relief rocks and soft-bottom sediments. In addition, the Casitas pier pilings provide submerged artificial substrates in the intertidal zone.

Vegetative Characteristics. Surf grass beds (*Phyllospadix* sp.) are commonly found along the southern California coastal areas in rocky intertidal substrate and are known to provide cover and habitat structure for intertidal invertebrates and marine alga. Surf grass is present on the surface of intertidal rocks in the study area and previous site visits during low tide events have identified surf grasses in subtidal habitats; however, its presence may fluctuate on a seasonal basis depending on the intensity of sand deposition or wave action. Eelgrass (*Zostera* spp.) is a type of marine flowering seagrass that grows in temperate marine environments and possesses important nursery and refuge qualities that are important for juvenile fish. Further study will be required to determine if eelgrasses (*Zostera* sp.) is present in the study area. The nearest recorded eelgrass bed is present in northern Ventura Harbor, approximately 16.5 miles southeast of the study area (Sherman and DeBruyckere, 2018).

Kelp beds, which are designated Habitat Areas of Particular Concern (HAPC) and serve as important groundfish habitat, are seasonally present immediately adjacent to the pipeline corridors within the Project site (Figure 1-2). The Gail and Grace pipeline bundle and 10-inch oil pipeline partially intersects with a kelp bed is located approximately 470 feet east of the Casitas Pier. Fish that utilize these kelp beds could be present in the Project site during decommissioning activities.

Wildlife Characteristics. The epifauna of the shallower sedimentary habitats typically includes several species of macro-invertebrates, including sea stars, Pacific sand dollars (*Dendraster excentricus*), and slender crabs (*Cancer gracilis*), as well as polychaete worms and mollusks. The rocky substrata tend to support a generally more diverse epibiota, dominated by mussels (*Mytilus californianus*) within the intertidal zone, as well as macrophytic algae, urchins (*Strongylocentrotus* spp.), sea stars, and cnidarians (anemones and solitary corals) in subtidal and water depths from 10 to 100 feet (approximately three to 30 meters). Epifauna of deeper waters in sedimentary habitats and those species found growing or foraging on exposed pipeline segments include plumose anemone (*Metridium senile*), bat stars (*Patiria miniate*), and rockfish (*Sebastes* sp.).

The open water habitat within the offshore Project pipeline corridors support migration and foraging habitat for fish, marine mammals, reptiles, and avifauna. Water depth between the subtidal zone and the boundary of California State waters (three nautical miles) ranges between approximately 30 to 148 feet and therefore would support species that are adapted to live at those depths. Remote Operated Vehicle (ROV) surveys have reported that the majority of the pipeline corridor is buried under soft sediments from approximately -45 to -140 feet and then intermittently exposed to the State waters limit (-148 feet).



Figure 1-1. Project Location

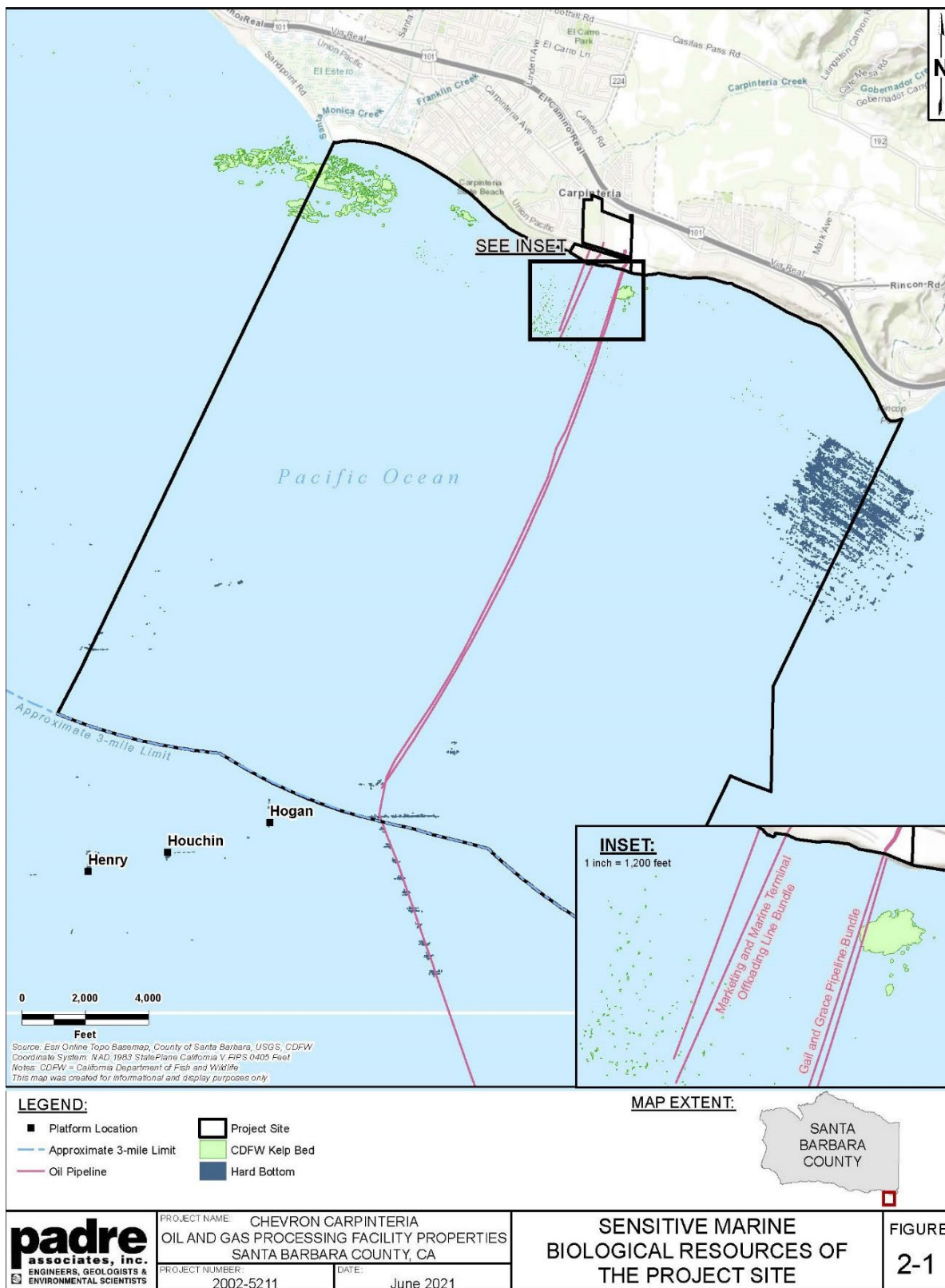


Figure 1-2. Sensitive Marine Resources in Project Area

2.0 MANAGED SPECIES OF INTEREST

The National Marine Fisheries Service (NMFS) EFH online mapper was utilized to identify which management units are located within the offshore Project area (NMFS, 2021). Species distribution and habitat information was used to develop Table 2-1 which lists the managed species that could occur within the geographical region, water depth range, and habitat types found within the Project area (McCain et al., 2019).

The Pacific Fishery Management Council (PFMC) manages economically important fish under four Fishery Management Plans: 1) Coastal Pelagics Fishery Management Plan (CPFMP); 2) Pacific Salmon Fishery Management Plan; 3) Pacific Groundfish Fishery Management Plan (PGFMP); and 4) Highly Migratory Species Fishery Management Plan (HMS FMP). A list of managed species that could be found during all or part of their life cycle within the Project area is provided in Table 2-1. At least 46 species listed under the PGFMP, seven species listed under the CPFMP, and two species under the HMS FMP frequent kelp beds, rock reefs, benthic, and open water habitats in less than 148 feet (45 meters) of water off the coast of Santa Barbara, California, and could be present during some life stages in the nearshore Project area. The pelagic species could be present for short-time periods as schooling adults whereas many of the groundfish species could be present for longer time periods as both juveniles and adults. The juveniles of many rockfish species use the shallow-water algae and kelp canopies during early development before settling over deeper water or to the bottom. Benthic rockfish juveniles could be found in Sargassum and algae beds. Cabezon, lingcod, and greenlings could be present as adults, in egg masses (nests) on substrate, and as settled juveniles in adjacent kelp beds (CDFW, 2001; Love, 1996).

Table 2-1. Fish Species Managed Under Pacific Fishery Management Plans

Management Plan	Common Name	Scientific Name
Fin Fish Managed under CPFMP	Northern anchovy	<i>Engraulis mordax</i>
	Pacific mackerel	<i>Scomber japonicus</i>
	Jack mackerel	<i>Trachurus symmetricus</i>
	Pacific sardine	<i>Sardinops sagax caerulea</i>
	Krill	<i>Thysanoessa spinifera</i>
		<i>Euphausia pacifica</i>
	Market squid	<i>Doryteuthis (Loligo) opalescens</i>
	Total	7
Groundfish Managed under PGFMP	Flatfish	
	Arrowtooth flounder	<i>Atheresthes stomias</i>
	Butter sole	<i>Isopsetta isolepis</i>
	Curlfin sole	<i>Pleuronichthys decurrens</i>
	Dover sole	<i>Microstomus pacificus</i>
	English sole	<i>Parophrys vetulus</i>
	Flathead sole	<i>Hippoglossoides elassodon</i>
	Pacific sanddab	<i>Citharichthys sordidus</i>
	Petrable sole	<i>Eopsetta jordani</i>

Table 2-1. Fish Species Managed Under Pacific Fishery Management Plans

Management Plan	Common Name	Scientific Name
	Rex sole	<i>Glyptocephalus zachirus</i>
	Rock sole	<i>Lepidopsetta bilineata</i>
	Sand sole	<i>Psettichthys melanostictus</i>
	Starry flounder	<i>Platichthys stellatus</i>
	Rockfish and Scorpaeniform Roundfishes	
	Kelp greenling	<i>Hexagrammos decagrammus</i>
	Lingcod	<i>Ophiodon elongates</i>
	Bank rockfish	<i>Sebastes rufus</i>
	Black Rockfish	<i>Sebastes melanops</i>
	Black-and-yellow rockfish	<i>Sebastes chrysomelas</i>
	Blue rockfish	<i>Sebastes mystinus</i>
	Bocaccio	<i>Sebastes paucispinis</i>
	Brown rockfish	<i>Sebastes auriculatus</i>
	Calico rockfish	<i>Sebastes dalli</i>
	California scorpionfish	<i>Scorpaena guttata</i>
	Canary rockfish	<i>Sebastes pinniger</i>
	Chilipepper	<i>Sebastes goodei</i>
	China rockfish	<i>Sebastes nebulosus</i>
	Copper rockfish	<i>Sebastes caurinus</i>
	Cabazon	<i>Scorpaenichthys marmoratus</i>
	Cowcod	<i>Sebastes levis</i>
	Darkblotched rockfish	<i>Sebastes crameri</i>
	Dusky rockfish	<i>Sebastes variabilis</i>
	Dark rockfish	<i>Sebastes ciliatus</i>
	Flag rockfish	<i>Sebastes rubrivinctus</i>
	Gopher rockfish	<i>Sebastes carnatus</i>
	Grass rockfish	<i>Sebastes rastrelliger</i>
	Greenblotched rockfish	<i>Sebastes rosenblatti</i>
	Greenspotted rockfish	<i>Sebastes chlorostictus</i>
	Greenstriped rockfish	<i>Sebastes elongatus</i>
	Harlequin rockfish	<i>Sebastes variegatus</i>
	Honeycomb rockfish	<i>Sebastes umbrosus</i>
	Kelp rockfish	<i>Sebastes atrovirens</i>
	Mexican rockfish	<i>Sebastes macdonaldi</i>
	Olive rockfish	<i>Sebastes serranoides</i>
	Pacific Ocean perch	<i>Sebastes alutus</i>
	Quillback rockfish	<i>Sebastes maliger</i>
	Rosethorn rockfish	<i>Sebastes helvomaculatus</i>
	Rosy rockfish	<i>Sebastes rosaceus</i>
	Rougheye rockfish	<i>Sebastes aleutianus</i>
	Shortracker rockfish	<i>Sebastes borealis</i>
	Shortspine thornyhead	<i>Sebastolobus alascanus</i>

Table 2-1. Fish Species Managed Under Pacific Fishery Management Plans

Management Plan	Common Name	Scientific Name
	Speckled rockfish	<i>Sebastes ovalis</i>
	Squarespot rockfish	<i>Sebastes hopkinsi</i>
	Starry rockfish	<i>Sebastes constellatus</i>
	Tiger rockfish	<i>Sebastes nigrocinctus</i>
	Treefish rockfish	<i>Sebastes serriceps</i>
	Vermilion rockfish	<i>Sebastes miniatus</i>
	Widow rockfish	<i>Sebastes entomelas</i>
	Yelloweye rockfish	<i>Sebastes ruberrimus</i>
	Yellowtail rockfish	<i>Sebastes flavidus</i>
	Roundfish	
	Pacific cod	<i>Gadus macrocephalus</i>
	Sharks and Rays	
	Leopard shark	<i>Triakis semifasciata</i>
	Longnose skate	<i>Raja rhina</i>
	Total	46
Migratory Fish Managed under HMS FMP	Common Thresher Shark	<i>Alopias vulpinus</i>
	Dorado	<i>Coryphaena hippurus</i>
	Total	2

3.0 IMPACT ASSESSMENT

The rocky substrate within the immediate Project area is limited and, when present, appears to be routinely subjected to substantial sand scour and supports only a limited algal and invertebrate community. In the case that rocky substrate occurs in the pipeline decommissioning area(s), potential damage to that substrate from removing pipelines or from diver activities uncovering buried pipelines could result in short-term impacts to EFH. Further, kelp, eelgrass, and algae-covered rocky substrates are included in the group of Habitats of Particular Concern (HAPC) called “shallow water living substrates” and are considered important for some managed groundfish species (Dobrzynski and Johnson, 2001). Damage to that habitat could be considered significant to essential habitat for some of the nearshore rockfish listed in Table 2-1.

Habitat Areas of Particular Concern. Based on the proposed activities and the assessment of existing habitats, only the adjacent kelp beds adjacent to the Project area represent essential habitat and potential HAPC for managed species. By avoiding these features (see Section 4.0, Mitigation), potential impacts related to removal of the pipelines and associated diver activities would not result in a significant impact to the EFH of any of the managed species that could occur within the area. Specifically, anchoring of any work vessel will only occur in sedimentary habitats and will be situated so that anchor lines will not impact kelp or algae-covered rocks. In small sections where pipeline bundles intersect with kelp beds, removal operations will avoid existing kelp beds. To avoid impacts to kelp and hardbottom, the pipeline segment will be lifted or floated to the surface further offshore and outside of the kelp canopy to ensure that no interaction would result or damage to hardbottom will occur. There are no HAPCs designated for highly migratory or coastal pelagic species; and there will be no permanent impacts to EFH for those species. Offshore decommissioning activities will be limited to narrow corridors of primarily sedimentary seafloor within which the pipelines will be removed. The sedimentary bottom will be disturbed only during removal activities and Project vessels will not anchor in deep-water hard bottom habitat or within areas of sensitive resources.

Turbidity/Suspended Sediments. Potential underwater activities associated with decommissioning of structures includes anchoring, underwater cutting, excavating and securing the pipelines to the lifting equipment and recovering pipelines to an offshore barge. Resuspended sandy sediments are expected to settle quickly to the seafloor after disturbance. Little, if any, long-term water column turbidity is expected.

The sandy and exposed bedrock habitat that characterizes most of the seafloor within the area immediately adjacent to the pipelines and within the proposed anchor locations is not unique and is common throughout the region. Impacts to that habitat are expected to be short-term and insignificant to the EFH of managed species that may utilize it.

4.0 MITIGATION

An anchor pre-plot will be developed specific to the Project site and Project activities, will be submitted with the Contractor Project Work and Safety Plan (PWSP) for review and approval. The anchor pre-plot will identify designated anchoring locations that avoid hard-bottom habitat. In addition, all anchors will be lowered vertically to the seafloor in a controlled manner. Each anchor will be recovered using a crown line to pull it vertically through the water column. Those methods will reduce sediment resuspension, seafloor alteration, and potential damage to rocky substrate. In addition, pre-decommissioning nearshore marine biological surveys will be conducted to identify any sensitive sea grass beds or rocky reef habitats that intersect with the pipeline corridors. Avoidance of these areas will reduce or eliminate impacts sensitive habitats.

The depression in the sedimentary seafloor that is expected to result from removal of the pipelines offshore or toward the shore is expected to quickly fill with surrounding sediments driven by near-bottom currents and by wave-generated currents. The Project area is an exposed coastline and is subject to storm waves. As mitigated, only short-term effects (sediment resuspension) are expected. No long-term impacts to the essential fish habitat, which consists of sedimentary and rocky habitats and the water column, are expected to result from the proposed action as mitigated.

5.0 REFERENCES

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