Midwater Trawl Restrictions and Prohibited Species Retention for the Shorebased Trawl Individual Fishing Quota Program

Draft Environmental Assessment

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CHAPTER 1 - INTRODUCTION

1.1 Background

A major change in the management of the Pacific Coast Groundfish fishery began with the 2011 fishery, when a trawl catch share program was implemented. Under the trawl catch share program, the trawl fishery is allocated a portion of the Annual Catch Limits (ACLs) for most groundfish stocks and stock complexes. The trawl fishery allocations are further divided among the three trawl sectors: the Catcher/Processor Cooperative, the Mothership Cooperative, and the Shorebased Individual Fishery Quota Program (Shorebased IFQ Program). An allocation of Pacific Halibut is also made to each sector to cover halibut bycatch. In the Shorebased IFQ program, groundfish and halibut allocations are further divided with individual permit holders receiving quota pounds (QP) that they can fish for, lease, or sell.

There are two categories of trawl gear used in the Pacific Coast groundfish fishery: bottom trawl and midwater trawl. Midwater trawls are primarily used to target Pacific whiting, but are also used to target some rockfish species in the Shorebased IFQ Program. Prior to widow rockfish being declared overfished in 2002, vessels targeted widow rockfish, yellowtail rockfish, and, to a lesser extent, chilipepper rockfish with midwater trawl gear. During the rebuilding of widow rockfish, access to species that co-occur with widow rockfish were constrained by the low widow rockfish ACL. Since widow rockfish was declared rebuilt in 2012, there has been increased interest in using midwater gear to target non-whiting groundfish, particularly in the management area north of 40°10' north latitude.

When the Shorebased IFQ program was implemented, the Pacific whiting shorebased fishery was merged with the bottom trawl fishery. However, several of the pre-IFQ fishery regulations were not updated for the Shorebased IFQ program, resulting in some unclear management restrictions relative to the use of midwater trawl gear, particularly as they apply to vessels targeting non-whiting species and to vessels on "maximized retention" trips.

Groundfish fishery management includes the use of time and area restrictions. The time and area restrictions applicable to the use of midwater trawl include the following:

- Pacific whiting primary season start dates;
- Trawl Rockfish Conservation Areas (RCAs) south of 40°10' north latitude;
- Klamath and Columbia river salmon conservation zones for vessels targeting Pacific whiting;
- Ocean salmon conservation zones for vessels targeting Pacific whiting;
- Bycatch Reduction Areas for all vessels using midwater trawl;
- Closed areas at the mouth of the Columbia and Klamath rivers for vessels targeting Pacific whiting;
- Trip limits for vessel operating shoreward of the 100 fathom (fm) contour in the Eureka area with midwater trawl; and

- A prohibition on night fishing south of 42° north latitude for vessels targeting Pacific whiting.

Vessel monitoring systems (VMS) that automatically transmit hourly position reports to NMFS are the primary management tool used to monitor vessel compliance with time and area restrictions. All vessels in the Shorebased IFQ program are required to have an operational VMS. In addition, each vessel operator is required to submit declaration reports to the Office for Law Enforcement (OLE), so the vessel's position data can be linked to a type of fishing gear and in some cases a target strategy. For the Shorebased IFQ Program, vessels using midwater trawl may declare either "limited entry midwater trawl, non-whiting shorebased IFQ" or "limited entry midwater trawl, Pacific whiting shorebased IFQ.".

Groundfish management includes restrictions on the retention of certain non-groundfish species including the following:

- Prohibited species – Salmonids (including both salmon listed as threatened or endangered under the Endangered Species Act (ESA) and non-listed salmon), Pacific halibut, and Dungeness crab off Oregon and Washington.

- Protected species – Species protected under federal law, including marine mammals, seabirds, and sea turtles.

Prohibited species are identified in the groundfish regulations and include all species of salmon, Pacific halibut, Dungeness crab caught off Oregon or Washington, and groundfish species for which quotas have been achieved and/or the fishery closed. Generally, prohibited species must be returned to the sea as soon as practicable with a minimum of injury. An exception to the retention restrictions may be made for tagged fish, or when retention is authorized by other applicable law. Pacific halibut may be retained until landing on "maximized retention" trips by vessels participating in the Pacific whiting IFQ fishery. Amendment 10 to the Pacific Coast Groundfish Fishery Management Plan (Groundfish FMP) and Amendment 12 to the Salmon FMP revised both FMPs to allow salmon bycatch to be retained under specific provisions approved by the Pacific Fishery Management Council (Council). The salmon FMP provisions specify that under the Groundfish FMP salmon must remain a prohibited species and must be retained and disposed of in a manner that allows accurate monitoring of the retained salmon, does not provide incentives for fishers to increase salmon bycatch, and assures fish do not reach commercial markets. In addition, during its biennial regulatory process for groundfish, the Council must consider regulations that would minimize salmon bycatch (see Salmon FMP Section 6.6.2). Although these provisions were implemented in Amendment 10 to the Groundfish FMP, implementing regulations were never completed.

Protected species are not defined in the groundfish regulations and are referred to here as any species protected by federal law, including the ESA, the Marine Mammal Protection Act (MMPA), the Migratory Bird Treaty Act (MBTA), and EO 13186. Protected species that may be encountered in the groundfish fishery include eulachon, green sturgeon, sea turtles, marine mammals, and seabirds. While some ESA-listed salmon are caught in the fishery, all salmon (listed and non-listed) are considered to be prohibited species for purposes of groundfish management. Additional requirements may apply to the retention and disposition of protected species. For example, a December 2012 ESA Section 7 biological opinion for the groundfish fishery specified monitoring and reporting procedures for eulachon, green sturgeon, and marine mammals taken in the groundfish fisheries.

From 2007 through 2010, prior to the Shorebased IFQ Program, the Pacific whiting shorebased fishery (defined as vessels landing more than 10,000 pound (lb) of Pacific whiting on a trip) was managed under

exempted fishing permits (EFPs). The terms and conditions of the EFPs established "maximized retention"[1] provisions that allowed vessels to land unsorted catch including prohibited and protected species. The EFPs specified monitoring, handling, and disposition requirements for prohibited and protected species landed at first receivers. In 2011, with implementation of the shorebased IFQ program, a maximized retention provision was added to the groundfish regulations. However, the provision did not address the retention or disposition of prohibited or protected species other than Pacific Halibut

1.2 Purpose and Need for the Action

The purpose of the action is to clarify the regulatory requirements for the Shorebased IFQ program with respect to the use of midwater trawl gear to target non-whiting groundfish species and retention and disposition requirements for "maximized retention trips." This action is needed to eliminate inconsistencies and confusion in the current regulations. For vessels targeting Pacific whiting, the action would clarify that the retention of prohibited species (salmonids, halibut, and Dungeness crab off Washington and Oregon) is allowed until landing. Allowing the retention of salmonids until landing requires the inclusion of protocols for the disposition of landed salmonids. The disposition of landed salmonids needs to be such that the groundfish regulations are consistent with the provisions of both the Groundfish FMP and the Salmon FMP.

[1] With maximized retention very large species and small amounts of target species were allowed to be discarded at sea, but all other catch was required to be retained until landing.

CHAPTER 2 - ALTERNATIVES

The current groundfish regulations contain inconsistencies regarding the use of midwater trawl gear in the Shorebased IFQ Fishery, particularly as they apply to target fishing for non-whiting species and to the retention and disposition requirements for vessels on maximized retention trips . The alternative actions presented below are intended to eliminate inconsistencies that exist under the No Action Alternative. Under all of the alternatives, the following regulatory provisions would continue to remain in place, but could be revised and/or moved to a different section of the regulations for clarity:

Coastwide

- Bycatch reduction areas (BRAs) prohibiting all midwater trawl shoreward of a boundary line approximating the 75 fathom (137-m), 100 fathom (183-m) or 150 fathom (274-m) depth contours may be established inseason.

- The targeting of Pacific whiting is prohibited south of 42°00' north latitude between 0001 hours to one-half hour after official sunrise (local time).

North of 40°10 north latitude

- Midwater trawl gear may only be used when the primary season for Pacific whiting IFQ fishery is open regardless of the target species.

- The targeting of Pacific whiting in the Klamath River Salmon Conservation Zone, the Columbia River Salmon Conservation Zone, and the Ocean Salmon Conservation Zone is prohibited.

- For all midwater trawl vessels, no more than 10,000 pound (4,536 kg) of whiting may be taken and retained, possessed, or landed by any vessel that, at any time during a fishing trip, fished in the fishery management area shoreward of the 100 fathom (183 m) contour in the Eureka management area.

South of 40°10' north latitude

- Midwater trawling will continue to be allowed seaward of the RCAs for all target species.

2.1 Alternative 1 - No Action

- North of 40°10' north latitude midwater trawl gear may be used by vessels participating in the primary Pacific whiting fishery. The regulations do not define what it means to participate in the primary Pacific whiting fishery or whether such vessels must actually target or harvest whiting in order to participate.

- Vessels on a Pacific whiting IFQ trip must have a valid declaration for limited entry midwater trawl, Pacific whiting shorebased IFQ and must fish during the open dates for the whiting primary season. It is unclear whether such vessels must actually target or harvest whiting.

- Vessels with a "Limited entry midwater trawl, Pacific whiting shorebased IFQ" declaration may fish within the RCAs after the start of the primary season. It is unclear whether such vessels must actually target or harvest whiting.

- Other than IBQ species (Pacific Halibut), prohibited species and protected species retention until landing is prohibited.

- Vessels North of 40°10' north latitude may carry multiple types of midwater trawl gear, however in order to carry midwater gear, the vessel must be participating in the primary whiting season. The regulations do not define what it means to participate in the primary whiting season or whether such vessels must actually target or harvest whiting.

2.2 Alternative 2 (preferred) - Eliminate redundancies and inconsistencies in regulations regarding the use of midwater trawl gear

- Clarify that midwater trawl gear is allowed for all target species with a valid declaration for either "limited entry midwater trawl, non-whiting shorebased IFQ" or "limited entry midwater trawl, Pacific whiting shorebased IFQ." Vessels declaring non-whiting must target non-whiting species, and vessels declaring whiting must target whiting, on the trip for which the declaration is made.

- A Pacific whiting IFQ trip is defined as a trip where the total landed catch is 50 percent or more whiting by weight.

- Clarify that midwater trawl gear is allowed within the trawl RCAs and EFH conservation areas for all target species.

- Clarify that maximized retention is only allowed on Pacific whiting IFQ trips and that prohibited and protected species must be retained until landing on maximized retention trips unless discarding at sea is expressly allowed.

- Specify disposition requirements for salmon consistent with salmon FMP.

- Specify disposition requirements for Pacific halibut and Dungeness crab consistent with Pacific halibut regulations and state regulations.

- Specify that disposition of protected species must be consistent with any applicable federal requirements including the terms and conditions of biological opinions.

- Clarify that North of 40°10' north latitude, vessels may carry multiple types of trawl gear, but:

- **Suboption A (preferred):** allow only one target strategy (whiting or non-whiting) per trip.

- **Suboption B:** allow both whiting and non-whiting target strategies on the same trip. However, "maximized retention" would not be allowed if the landed catch was greater than 50 percent non-whiting species.

2.3 Alternatives considered but rejected

The use of midwater trawl gear outside the dates of the Shorebased IFQ primary whiting season was considered, but not developed into alternatives for analysis due to concerns about salmon bycatch. Chinook salmon bycatch is addressed in ESA Section 7 biological opinions for the Pacific Coast groundfish fishery. Salmon, particularly Chinook salmon, are vulnerable to groundfish midwater trawl gear. Fishing earlier in the year with midwater trawl would potentially impact ESA listed stocks.

Changes south of 40°10' north latitude, to allow Pacific whiting targeting within RCAs, was considered, but not developed into an alternative. Although the foreign and joint venture whiting fisheries fished south of 40°10' north latitude, the current shorebased fleet targeting Pacific whiting has conducted little fishing south of 40°30' north latitude in recent years. Because the fishery primarily occurs off Washington and Oregon, greater access to the RCAs south of 40°10' north latitude is not needed.

Proceeding with an amendment to the Groundfish FMP and the Salmon FMP to remove salmon from the list of prohibited species could allow salmon to be retained. However, the Council considered removing salmon from the list of prohibited species with the adoption of Amendment 10 to the Groundfish FMP and chose not to develop it into an alternative because it would not stress the importance of reducing salmon bycatch.

An alternative that considered a single set of regulations applying to all midwater trawl that is not specific to the target species was considered, but not developed into alternatives. As the Shorebased IFQ fishery develops it may move further away from a discrete Pacific whiting fishery. However, a review of the Amendment 20 Environmental Impact Statement (EIS), and other provisions considered by the Council does not show a clear intent for the fishery to fully merge midwater trawling for Pacific whiting with midwater trawling for non-whiting.

Returning to Pre-IFQ RCAs where only Pacific whiting targeting was allowed in the RCAs was not considered, because the intent to allow all midwater trawling within the RCAs was identified by the Council during the 2011-2012 process for the harvest specifications and management measures.

CHAPTER 3 - AFFECTED ENVIRONMENT

3.1 Physical Environment

3.1.1 California Current Ecosystem (CCE)

The coastal ocean off Washington, Oregon, and California is a bio-geographic region referred to as the Coastal upwelling domain (Ware and McFarlane 1989). Coastal upwelling results in high production of phytoplankton from April through September fueled by the nearly continuous supply of nutrients, and a high biomass of copepods, euphausiids and other zooplankton during summer. The Coastal Upwelling Domain is part of the California Current system. The California current is a broad, slow, meandering current that moves toward the equator. In deep waters offshore of the continental shelf, the currents flow southward all year round; however, over the continental shelf, southward flows occur only in spring, summer, and fall. During winter months, the flow over the shelf reverses, and the water moves northward as the Davidson Current.

In 2013, the Council adopted a Fishery Ecosystem Plan (FEP). Section 3.2 of the FEP fully describes the geography of the California Current Ecosystem (CCE), including a general description and oceanographic features, and major bio-geographic sub-regions. The FEP is available on line at http://www.pcouncil.org/ecosystem-based-management/fep/. NMFS Northwest and Southwest Fisheries Science Centers provide yearly updates on the state of the CCE. The 2014 update can be found at http://www.pcouncil.org/wp-content/uploads/C1a_ATT1_IEA_STATE_of_CA_CURRENT2013b_MAR2014BB.pdf.

3.1.2 Essential Fish Habitat

Essential Fish Habitat is defined by the Magnuson-Stevens Act as those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (16 U.S.C. 1802(10)). Groundfish EFH has been deemed through the Council process to include 1) all ocean and estuarine waters and substrates in depths less than or equal to 3,500 meter, to the upriver extent of saltwater intrusion, which is defined based on ocean salt content during low runoff periods; and 2) areas associated with seamounts in depths greater than 3,500 meter. Details of the habitat types and sensitivity can be found in the Pacific Coast Groundfish FMP. http://www.pcouncil.org/groundfish/fishery-management-plan/

EFH guidelines published in Federal regulations (50 CFR 600.815(a)(8)) identify Habitat Areas of Particular Concern (HAPCs) as types or areas of habitat within EFH that are identified based on one or more of the following considerations: the importance of the ecological function provided by the habitat; the extent to which the habitat is sensitive to human-induced environmental degradation; whether, and to what extent, development activities are or will be stressing the habitat type; and the rarity of the habitat type. Within the HAPC areas, discrete areas referred to at EFH Conservation areas were identified and closed to fishing with specified gear types, or are only open to fishing with specified gear types. These ecologically important habitat closed areas are intended to mitigate the adverse effects of fishing on groundfish EFH. These areas are further described in Section 6.8.5 of the Pacific Coast Groundfish FMP.

To mitigate the adverse impacts of fishing on groundfish EFH, bottom trawl gear and bottom-contact gear are prohibited in specific EFH conservation areas. Bottom-contact gear includes gear types that are designed or modified to make contact with the sea floor during normal use. Bottom-contact gear does not

include midwater trawl. The proposed action concerns the use of midwater trawl gear. Although midwater trawl gear may occasionally make contact with the sea floor, it is exempt from the EFH conservation area restrictions.

3.2 Biological Environment

The following descriptions of the biological environment relative to target, non-target, non-groundfish, prohibited, and protected species has mostly been summarized from the October 2014 EA titled Trawl Rationalization Trailing Actions: Chafing Gear (PFMC 2014) and is incorporated by reference.

3.2.1 Target Species

Pacific whiting

The coastal Pacific whiting stock is the most abundant groundfish species in the California Current system (Stewart, et al. 2011a). Pacific whiting are distributed from the Gulf of Alaska to the Gulf of California and are an important contributor to ecosystem dynamics due to their relatively large total biomass and potentially large role as both prey and predator. The stock is characterized by highly variable recruitment patterns and a relatively short lifespan, resulting in large and rapid changes in stock biomass. Although there is considerable variability in the biomass estimates for Pacific whiting, the stock is currently considered to be at a healthy biomass level.

Pacific whiting spawn between central California and northern Baja California during the winter. In late winter, adult whiting migrate north to the summer feeding grounds off northern California, Oregon, Washington, and Vancouver Island. The peak period of northward migration begins in March and April in deep water overlying the continental slope. In summer, Pacific whiting often form extensive pelagic aggregations in association with the continental shelf break, with highest densities located over bottom depths of 200–300 meter (656-984 feet(ft)) (Dorn 1991). The southward spawning migrations of adults occur in November and December, prior to spawn. Pacific whiting undertake a diurnal vertical migration and tend to form extensive midwater aggregations during the day, these dense schools occur between the depths of 100 and 250 meters (Stauffer 1985).

***Widow rockfish* (*Sebastes entomelas*)**

Widow rockfish is an important commercial groundfish species belonging to the scorpionfish family (*Scorpaenidae*). Widow rockfish range from southeastern Alaska to northern Baja California, with adults common found from 100 meter (328 ft) to 350 meter (1,148 ft) (Eschmeyer et al. 1983, NOAA 1990, Orr et al. 2000, Love et al. 2002). Peak abundance is off northern Oregon and southern Washington, with significant aggregations occurring south to central California. Widow rockfish form midwater schools at night over bottom features such as ridges or large mounds near the shelf break (Tagart 1987). Stock spawning biomass of widow rockfish steadily decline between 1980 and 2001. The stock was declared overfished in 2001, and a rebuilding plan was put in place. The most recent stock assessment shows that the stock has rebuilt to a depletion level of 51 percent of its unfished biomass level (He et al. 2011).

Yellowtail rockfish

Yellowtail rockfish are found from Kodiak Island, Alaska to San Diego, California, however they are rare south of Point Conception. The species is wide-ranging occur from the surface to 549 m (1,800 feet or 300 fm). Yellowtail rockfish form large schools, either alone or in association with other rockfish, including widow rockfish, canary rockfish, redstripe rockfish, and silvergray rockfish. They are primarily distributed over deep reefs on the continental shelf, especially near the shelf break, where they feed on krill and other micronekton. The most recent stock assessment for yellowtail rockfish estimated that the spawning biomass has been above 40 percent of unfished spawning biomass since 1995. Restrictive

regulations needed to rebuild overfished have resulted in annual fishing mortalities less than F_{MSY} since 1997 (Wallace and Lai 2005).

Chilipepper rockfish

Chilipepper rockfish range from Queen Charlotte Sound, British Columbia to Magdalena Bay, Baja California. The area of greatest abundance is found between Point Conception and Cape Mendocino, California (Field 2007). Adults are found on deep rocky reefs, as well as on sand and mud bottoms, from 150 feet (46 m or 25 fm) to 1,400 feet (427 m or 233 fm). Spawning occurs from September to April with a peak occurring in December and January. Adults feed on krill and other small crustaceans, squid, and a variety of small fishes. Probable predators of chilipepper include marine birds and mammals, Chinook salmon, lingcod, Pacific hake, sablefish, and other rockfish (CDFG 2001). The 2007 stock assessment indicated the stock was in good condition. The spawning in 2006 was estimated to be approximately 70 percent of the unfished spawning biomass (Field 2007).

3.2.2 Non-target species

Groundfish

Midwater trawling for Pacific whiting primarily occurs on dense aggregations during daylight hours and results in a small percentage of non-whiting catch. Non-whiting groundfish species (including overfished species) are caught in the Pacific whiting and non-whiting midwater trawl fisheries. Data from the Pacific whiting shoreside fishery logbooks from 2008 to 2011 show incidental catch of a variety of fish and invertebrate species, with yellowtail rockfish, spiny dogfish, and widow rockfish making up 56 percent of the total non-whiting catch by weight (PFMC 2014, Table 3-4). Table 3.2.1. shows the most common species in catches by vessels targeting Pacific whiting in 2012 and 2013. The dominant species included yellowtail rockfish, spiny dogfish, widow rockfish, minor slope rockfish, sablefish and arrowtooth flounder. Overfished species catch included POP, canary rockfish and darkblotched rockfish.

Midwater trawling for widow rockfish historically occurred at night when they formed dense off-bottom schools (Tagart 1987). Other *Sebastes* historically landed with widow rockfish include yellowtail rockfish, POP, boccaccio rockfish, canary rockfish, and sharpchin rockfish (Tagart 1987). West Coast Groundfish Observer Program (WCGOP) data from 2002-2011 collected on vessels targeting non-whiting groundfish with midwater trawl showed that 54 percent of the groundfish catch by weight was yellowtail rockfish, chilipepper rockfish, and widow rockfish. Other species that made up considerable portions of the overall groundfish catch by weight included: Bank rockfish (16%), unidentified rockfish (10%), Pacific whiting (10%), shortbelly rockfish (5%), longnose skate (1%) bocaccio (1%) (PFMC 2014,Table 3-5). State trawl logbook data collected between 2000-2002 when the pelagic rockfish fishery had relatively high trip limits showed over 40 different groundfish species or species groups in the catch with Pacific whiting encountered in greatest volume (PFMC 2014, Table 3-6). All overfished groundfish species have been caught in the non-whiting midwater trawl fishery, which occurred as far north as Cape Flattery in Northern Washington to as far south as about Port San Luis in Central California. More recent bycatch mortality data estimated by the WCGOP the Shorebased IFQ fishery are presented in Table 3.2.1 and show that the groundfish species most commonly caught incidentally to Non-whiting include flatfish (Dover sole, arrowtooth flounder, petrale sole and rex sole), lingcod, longnose skate and minor slope rockfish. Relative to overfished species petrale sole was most frequently caught.

Table 3.2.1. Shorebased IFQ, midwater trawl groundfish target and non-target catch by species for non-whiting and Pacific Whiting targeting in 2012 (Bellman *et al*. 2013, Summers *et al*. 2014).[2]

	Non-whiting a/		Pacific whiting	
	2012	2013	2012	2013
Roundfish (mt)				
Pacific Whiting	0.68	0.01	65,416.31	96,867.81
Lingcod North	2.61	0.13	3.74	8.43
Pacific Cod	0.21	0.08	0.04	0.04
Sablefish (Blackcod) North	1.62		47.21	0.66
Flatfish (mt)				
Arrowtooth Flounder	1.90		24.84	5.46
Dover Sole	4.17		0.60	0.13
English Sole	0.12		0.20	0.03
Petrale Sole	1.69			
Rex Sole	1.15		4.39	0.39
Other Flatfish	0.02	0.01		0.08
Rockfish (mt)				
Canary Rockfish	0.49	0.54	2.14	3.35
Darkblotched Rockfish	0.07		4.33	3.25
Longspine Thornyhead N.	0.12		0.50	
Shortbelly Rockfish			0.08	2.14
Shortspine Thornyhead	1.12		8.32	3.30
Pacific Ocean Perch	0.03		12.36	7.09
Widow Rockfish	10.88	123.67	107.41	235.03
Yellowtail Rockfish	185.62	84.68	388.24	420.46
Minor Shelf Rockfish	0.67	0.07	0.81	1.45
Minor Slope Rockfish	1.28		71.94	12.4
Remaining Groundfish (mt)				
Spiny Dogfish Shark	0.21	0.01	160.10	80.56
Longnose Skate	1.56	0.14	0.24	0.10
Other Fish	0.33		1.95	0.35

a/ Target strategy is reported by the observer and is based on the vessels logbook record for the haul.

Non-groundfish

Because midwater trawling for Pacific whiting primarily occurs on dense aggregations during daylight hours only a small percentage of the catch is non-whiting and an even smaller portion is non-groundfish species. WCGOP catch data from the shoreside whiting fishery for 2008 to 2011 are presented in Table 3.2.2. Coastal pelagic species (CPS) (mackerels, market squid, northern anchovy, Pacific sardine, and Pacific herring) made up approximately 22 percent (111 mt) of the non-groundfish landings in the four year period. CPS are schooling fish, not associated with the ocean bottom, that migrate in coastal waters. For further information on CPS, see the 2011 CPS Stock Assessment and Fishery Evaluation (SAFE) document prepared by the Council (http://www.pcouncil.org/wp-content/uploads/2011_CPS_SAFE_Text_FINAL.pdf.) Notable landings of other non-groundfish species included brown cat shark, unidentified squids, and shad. Small amounts of sharks managed under the Highly Migratory Species (HMS) FMP were also caught. For further information on HMS see the 2013 SAFE document prepared by the Council (http://www.pcouncil.org/highly-migratory-species/stock-assessment-and-fishery-evaluation-safe-documents/current-hms-safe-document/).

WCGOP data from 2002-2011 collected on vessels targeting non-whiting groundfish with midwater trawl showed only minor amounts of non-groundfish catch. However, the majority of non-groundfish catch (5.51 mt) was aggregated into an unspecified category referred to as miscellaneous fish and animals.

[2] Due to confidentiality concerns, non-whiting targeting with midwater cannot be presented.

Table 3.2.2. Shorebased IFQ, midwater trawl non-groundfish catch by species reported in West Coast Groundfish Observer Program catch data for non-whiting and Pacific Whiting targeting.[a/] (PFMC 2014, Table 3-5)

Non-groundfish Species	Non-whiting	Pacific Whiting			
	Years 2002-2011	Year			
		2008	2009	2010	2011
Coastal Pelagic Species (CPS)					
Chub Mackerel	0.00	0.76	0.00	0.01	0.11
Jack Mackerel	0.02	46.87	0.33	2.88	13.13
Market Squid	0.13	0.00	0.05	7.54	0.01
Northern Anchovy	0.00	0.05	0.00	0.00	0.00
Pacific Sardine	0.00	0.23	0.81	0.02	0.01
Unsp. Mackerel	0.17	2.67	0.00	0.00	0.00
Pacific Herring	0.18	0.13	0.01	35.46	0.19
Highly Migratory Species (HMS)					
Blue Shark	0.00	0.01	0.00	0.00	0.06
Common Thresher Shark	0.00	0.00	0.00	0.17	0.35
Remaining Non-groundfish Species					
American Shad	0.00	0.00	0.00	0.00	0.00
Armored Box Crab	0.07	0.00	0.00	0.00	0.00
Brown Cat Shark	0.00	0.13	0.00	0.64	3.25
Capelin	0.00	0.00	0.00	0.01	0.00
King of the Salmon	0.01	0.00	0.00	0.00	0.00
Misc. Fish/Animals	5.51	0.20	0.09	1.19	0.30
Mola Mola (Sunfish)	0.13	0.00	0.00	0.00	0.00
Pacific Electric Ray	0.01	0.00	0.00	0.00	0.00
Red Rock Crab	0.05	0.00	0.00	0.00	0.00
Ribbonfish Unid	0.01	0.00	0.00	0.00	0.00
Sandpaper Skate	0.04	0.00	0.00	0.00	0.00
Shark Unid	0.01	0.00	0.00	0.00	0.00
Slender Sole	0.13	0.00	0.00	0.00	0.00
Spotted Ratfish	0.00	0.00	0.00	0.01	0.00
Spot Shrimp	0.01	0.00	0.00	0.00	0.00
Unsp. Echinoderm	0.00	0.01	0.01	0.00	0.00
Unsp. Octopus	0.00	0.02	0.00	0.00	0.02
Unsp. Shad	0.00	0.99	2.52	3.23	2.90
Unsp. Squid	0.23	289.66	1.19	65.90	13.02

a/ Target strategy is reported by the observer and is based on the vessels logbook record for the haul.

3.2.3 Prohibited Species

Prohibited species are those species and species groups which must be returned to the sea as soon as is practicable with a minimum of injury when caught and brought aboard, except when their retention is authorized by other applicable law. Prohibited species catch by vessels targeting Pacific whiting in the shorebased fishery from 2001 to 2010 are shown in Table 3.2.3.

Table 3.2.3. Prohibited Species Catch in the Pacific Whiting Shorebased Fishery Under Exempted Fishing Permits (ODFW 2001, ODFW 2002, ODFW, 2003, ODFW, 2004, ODFW 2005, ODFW 2007 and NMFS NWR 2001-2006 annual Pacific whiting catch summaries)

	Pacific Halibut	Dungeness crab	Salmon				
			Chinook	Coho	Chum	Pink	Unident.
2001	23	89	2627	35	32	303	0
2002	14	207	1062	14	72	0	0
2003	16	2	425	0	0	0	0
2004	52	0	4206	8	43	0	0
2005	46	65	4018	37	6	49	0
2006	73	43	839	18	3	0	0
2007	44	289	2462	141	113	47	0
2008	46	72	1962	10	8	7	13
2009	35	104	279	37	2	26	107
2010	23	400	2997	16	8	0	0

Pacific Halibut

Pacific halibut (*Hippoglossus stenolepis*) is a bottom-dwelling, right-eyed flatfish species from the family of flounders called Pleuronectidae. A 2013 stock assessment indicated that the Pacific halibut stock has been declining continuously over the last decade, with recruitment strengths being much smaller than those observed in the 1980s and 1990s, and more typical of those seen during the last century (79 FR 05339; March 12, 2014). The 2013 stock assessment notes that decreasing size at age may also contribute to lower biomass (79 FR 05339; March 12, 2014). In response catch limits for area 2A was reduced in 2014 from 2013, due to concerns about the coastwide stock status (79 FR 05339; March 12, 2014).

Pacific halibut are taken in midwater trawls, as they co-occur with groundfish stocks. Table 3.2.5 shows the incidental catch of Pacific halibut by vessels targeting Pacific whiting in the shorebased fishery. In the Shorebased IFQ program halibut are managed with individual bycatch quotas (IBQ). All vessels must have enough IBQ to cover their incidental catch of legal and sublegal sized Pacific halibut bycatch mortality in the area north of 40°10 N latitude. Each year the total constant exploitation yield for legal sized halibut (net weight) is established for area 2A and an amount is subtracted for expected bycatch mortality of legal sized halibut (net weight) Shorebased IFQ program.

Dungeness crab

The Dungeness crab (Cancer magister) is distributed from the Aleutian Islands, Alaska, to Monterey Bay, California. Off the west coast, Dungeness crab is most abundant in nearshore areas from central California to the Washington-Canada border. Dungeness crab is found to a depth of about 180 meters (590 ft). Dungeness crab is taken incidentally and harmed unintentionally by groundfish gears. Although it occurs on mud and gravel, it is most abundant on sand bottoms; frequently it occurs in eelgrass. Routine stock assessments are not conducted on Dungeness crab stocks in the action area, and catch per unit effort (CPUE) is unknown. The states of Washington, Oregon and California examine annual landings to evaluate the condition of the stock.

Salmonids (including ESA-listed stocks)

Salmon are anadromous, spending part of their life in fresh water streams and rivers from Central California to Alaska and part of their life in marine waters. During their marine phase they occur along the U.S. and Canada seaward into the north central Pacific Ocean, including Canadian territorial waters and the high seas. Critical portions of these ranges include the freshwater spawning grounds and migration routes.

Salmon caught in the groundfish fisheries include stocks that are listed under the ESA. There are 31 West Coast salmon and Steelhead Evolutionarily Significant Units (ESUs) or distinct population segments

(DPSs) in the action area. The concept of ESUs and DPSs are used by NMFS in applying the ESA to salmon and steelhead. Of the ESA-listed species, Chinook are most likely to be encountered as bycatch. The Chinook ESUs that NMFS has concluded to be affected by the groundfish fisheries are: Snake River fall Chinook, Upper Willamette River Chinook, Lower Columbia River Chinook, Puget Sound Chinook, Sacramento River winter-run Chinook, California coastal Chinook, and Central Valley spring-run Chinook (NMFS 2006) .

Incidental take of salmonids in the shoreside whiting fishery and midwater non-whiting trawl fisheries are primarily Chinook salmon. Other salmonid species catch is relatively low. The incidental take of salmonids include species listed as endangered, threatened, or as a species of concern under the ESA. Section 7 biological opinions have been prepared for the whole groundfish fishery. The incidental take statement in a 1999 biological opinion identified an expected level of take of 11,000 Chinook salmon per year for the all sectors of the Pacific whiting fishery (mothership, catcher/processor, shoreside, and tribal) and 9,000 Chinook salmon for the bottom trawl fishery. The Section 7 ESA consultation was reinitiated in 2006, because take exceeded these estimates in 2005 for the whiting fishery and two out of three years between 2002 and 2004 for the bottom trawl fishery. NMFS issued a supplemental biological opinion on March 11, 2006 concluding that neither the higher observed bycatch of Chinook in the 2005 whiting fishery nor new data regarding salmon bycatch in the groundfish bottom trawl fishery required a reconsideration of its prior ‘‘no jeopardy’’ conclusion. The supplemental biological opinion also reaffirmed NMFS’s prior determination that implementation of the Groundfish FMP is not likely to jeopardize the continued existence of any of the affected ESUs.[3] Lower Columbia River coho (70 FR 37160, June 28, 2005) and Oregon Coastal coho (73 FR 7816, February 11, 2008) were relisted as threatened under the ESA. NMFS subsequently considered whether the consultation should be reinitiated to evaluate changes in the groundfish fishery following implementation of the Shorebased IFQ program and new information available from the WCGOP.

On January 22, 2013 the NMFS West Coast Region’s Sustainable Fisheries Division requested reinitiation of the current salmon biological opinion for the groundfish fisheries. The request resulted from the evolution of the trawl fishery under the trawl rationalization framework and improving conditions for species such as widow rockfish that are expected to change the characteristics of the fishery. In addition, WCGOP data reports contained new estimates of Chinook and coho salmon catch in the nearshore fixed gear fisheries (open access and limited entry fisheries), limited entry sablefish fishery, and open access California Halibut fishery. The update was expected to be completed prior to implementation of the 2015-2016 harvest specifications and management measures. In October 2014 prior to completion of the update, the Pacific whiting fisheries in aggregate exceeded the 11,000 Chinook threshold that reinitiates the consultation. Given the changes in the fishery identified in the January 22, 2013 reinitiation request, NMFS determined that the reinitiation should address all fishing under the Pacific Coast Groundfish FMP, including the Pacific whiting and non-whiting fisheries and all gears.

3.2.4 Protected species

Protected species are species protected under federal laws, including the ESA, the Marine Mammal Protection Act (MMPA), the Migratory Bird Treaty Act (MBTA), and EO 13186. Salmon that are incidentally caught in the groundfish fishery include both stocks listed under the ESA and unlisted fish and are defined by regulation as prohibited species, discussed above.

[3] “An ESU, or evolutionarily significant unit, is a Pacific salmon population or group of populations that is substantially reproductively isolated from other conspecific populations and that represents an important component of the evolutionary legacy of the species. The ESU policy (56 FR 58612) for Pacific salmon defines the criteria for identifying a Pacific salmon population as a distinct population segment (DPS), which can be listed under the ESA.” Source: http://www.nmfs.noaa.gov/pr/glossary.htm#esu

Marine mammals

The U.S. west coast waters support a variety of marine mammals. Approximately 30 species, including seals, sea lions, sea otters, whales, dolphins, and porpoise, occur within the EEZ. Many species seasonally migrate through west coast waters, while others are year-round residents. Table 3.2.4 summarizes observed interactions from the NWFSC report titled "Estimated bycatch of marine mammals, seabirds, and sea turtles in the U.S. west coast commercial groundfish fishery, 2002-2009" (Jannot, et al. 2011). Data specific to the shorebased fishery using midwater trawl gear to target Pacific whiting and non-whiting are not available. Therefore, observed take in the at-sea Pacific whiting fishery are presented as a proxy for potential interaction with midwater trawl while recognizing that the at-sea Pacific whiting fishery often fish in deeper waters than the shorebased IFQ fishery.

Table 3.2.4 Marine Mammal Observations in the Pacific Whiting At-sea Sectors, 2002-2009.

Cetaceans (stocks)	**Distribution**	**ESA**	**Observed Take a/**
Dall's porpoise (*Phocoenoides dalli*)	Throughout North Pacific Ocean. Distinct California-Oregon-Washington Stock.	Not listed	2002 -1 (outside observed sample)
Pacific white-sided dolphin (*Lagenorhynchus obliquidens*)	Throughout the North Pacific. Inhabits continental shelf and slope areas on the West Coast. Moves north-south seasonally	Not Listed	2003 -1 (outside observed sample)
Pinnepeds (stocks)			
California sea lion (*Zalophus californianus*) • U.S. • Baja California • Gulf of California	Canada to western Baja California and in the Gulf of California, Mexico	Not listed	2003-2 2004-2 2006-2
Harbor seal (*Phoca vitulina*) • California • Outer Oregon - Washington Coast • Inland Washington	Estuarine and nearshore habitats along the west coast of North America (Brown and Mate 1983).	Not listed	2004-1 2005-1 2006-1 2008-2
Northern elephant seal (*Mirounga angustirostris*)	Breed on peninsulas and islands from Baja California to Oregon. Found in coastal waters to Alaska (Le Boeuf *et al*. 2000). Undergo north-south migrations (Stewart and DeLong 1995).	Not listed	2004-3 2007-2 2008-7 2009-1
Steller sea lion (*Eumetopias jubatus*) • Western • Eastern	Primarily found in the North Pacific region -most abundant in Alaska and the Aleutian Islands Primarily Eastern stock on West Coast	Western - endangered Eastern - delisted in 2013	2002-1 2003-1 2005-2 2006-3 2007-3 2008-1

a/ Only years with observations are shown. Years where there were no observations are not shown.

Seabirds

The California current system supports a diverse array of seabird species. Species found on the Pacific Coast include resident species and transitory species (migrating or foraging). All the California Current system seabirds are highly mobile and require an abundant food source to support their high metabolic rates. A total of 10 species or species groups of seabird interactions with the groundfish fishery were documented during 2002-2009 (Table 3.2.5). The at-sea whiting fishery interactions were with blackfooted albatross (0-3 per year), common murre (0-3 per year), northern fulmar (0 to about 50 per year), sooty shearwater (0-8 per year), unspecified tubenose species (0-6 per year) and unspecified alcid species (0-3 per year).

A 2012 biological opinion (FWS Reference Number 01EOFW00-2012-F-0086) concluded that continued operations of the Pacific Coast Groundfish Fisheries, as described in a Biological Assessment (BA) prepared by NMFS, would not jeopardize the continued existence of short-tailed albatross. The U.S. Fish and Wildlife Service also concurred with the BA statements that the proposed action is not likely to adversely affect marbled murrelet, and California least tern. The BA estimated that 0.8 short-tailed albatross would be harmed per year due to the continued operations of the Pacific Coast Groundfish Fisheries. However, the level of take was not expected to reduce appreciably the likelihood of survival or significantly affect recovery of the species. The short-tailed albatross population is expanding, and is in the process of recovering from extremely low numbers. The expansion of the population will likely result in more conflict with the Pacific Coast Groundfish Fisheries.

Data specific to the shorebased fishery using midwater trawl gear to target Pacific whiting and non-whiting are not available. Therefore, observed take in the at-sea Pacific whiting fishery are presented as a proxy for potential interaction with midwater trawl while recognizing that the at-sea Pacific whiting fishery often fish in deeper waters than the shorebased IFQ fishery.

Table 3.2.5. Seabird Species observed in the Pacific Whiting At-sea Fisheries, 2002-2009.

Species	Distribution *	ESA	Observed Take in At-sea whiting fishery
Black-footed albatross (*Phoebastria nigripes*)	Open ocean along the entire Pacific Coast on North America. Rarely seen near shore.	Not listed	Pacific whiting fishery takes include 3 in 2003, 2 in 2005, 2 in 2006, 1 in2008
Common murre (*Uria aalge*)	Open seas and gulfs. All coasts in the Northern hemisphere with cold currents or upwelling. In the Pacific they range from Arctic Alaska and the Aleutian Islands to central California.	Not listed	Occurrence in variety of fisheries- at-sea whiting take was 3 in 2004, and 2 in 2005
Northern fulmar (*Fulmarus glacialis*)	Open ocean. In winter it is found along the Pacific Coast, occasionally to Baja California.	Not listed	Most taken in at-sea whiting
Sooty shearwater (*Puffinus griseus*) (estimate includes Shearwater, unidentified)	Open ocean throughout the Pacific Ocean, but go shoreward during foul weather. Large numbers migrate or summer from the West Coast to Alaska.	Not listed	At-sea whiting (8 in 2004, and 2 in 2005)
Unspecified tubenose species	NA	NA	At-sea whiting
Unspecified alcid species	NA	NA	At-sea whiting

Sea Turtles

Major threats to sea turtles in the U.S. include, but are not limited to, destruction and alteration of nesting and foraging habitats; incidental capture in commercial and recreational fisheries; entanglement in marine debris; and vessel strikes. Leatherback turtles are present and potentially vulnerable as bycatch in the Pacific coast groundfish fishery during the summer-fall period (June through November) (Jannot, et al. 2011). Although green and loggerhead turtles occur in the action area, there are no known interactions with the groundfish fisheries. Table 3.2.6 shows the distribution of sea turtles species on the west coast and observed occurrence in the at-sea Pacific Whiting midwater trawl fisheries.

Data specific to the shorebased fishery using midwater trawl gear to target Pacific whiting and non-whiting are not available. Therefore, observed take in the at-sea Pacific whiting fishery are presented as a proxy for potential interaction with midwater trawl while recognizing that the at-sea Pacific whiting fishery often fish in deeper waters than the shorebased IFQ fishery.

Table 3.2.6. West coast sea turtles species and observed occurrence in the at-sea Pacific Whiting midwater trawl fisheries. (Jannot et al. 2011)

Species	Distribution **	ESA	Number observed
Leatherback (*Dermochelys coriacea*)	Distinct western Pacific population is highly migratory throughout tropical and temperate waters. Off the west coast, they have been observed as far north as Alaska but are more common off of central California (Benson et al. 2007b). Sightings data from Monterey Bay, California indicate that they are most abundant in late summer and early fall (Starbird et al. 1995). Leatherbacks are more abundant during periods of intense coastal upwelling, which could create favorable foraging conditions (Benson et al. 2007b).	Endangered	None
Green turtles (*Chelonia mydas)*	Habitat includes open ocean convergence zones and coastal areas for "benthic" feeding. In the eastern North Pacific, green turtles have been sighted from Baja California to southern Alaska, but most commonly occur from San Diego south. (www.nmfs.noaa.gov/pr/species/turtles/green.htm)	Endangered	None
Loggerhead (*Caretta caretta)*	Habitat includes open ocean and nearshore coastal areas. In the eastern Pacific, loggerheads have been reported as far north as Alaska, and as far south as Chile. In the US, occasional sightings are reported from the coasts of Washington and Oregon, but most records are of juveniles off the coast of California. (www.nmfs.noaa.gov/pr/species/turtles/green.htm)	Endangered	None

Eulachon

Eulachon (*Thaleichthys pacificus*) is an anadromous smelt in the family Osmeridae that ranges from northern California to the southeastern Bering Sea coast of Alaska (Hay and McCarter 2000, Willson et al. 2006, Moody and Pitcher 2010). The southern DPS of eulachon was listed as threatened under the ESA in 2010 (75 FR 13012, March 18, 2010). The eulachon southern DPS is defined from the Mad River in northern California, north to the Skeena River in British Columbia. Adults migrate from the ocean to freshwater creeks and rivers where they spawn from late winter through early summer. The offspring hatch and migrate back to the ocean to forage until maturity. Once juvenile eulachon enter the ocean, they move from shallow nearshore areas to deeper areas over the continental shelf (Hay and McCarter 2000, Gustafson et al. 2010). There is little information available about eulachon movements in nearshore marine areas and the open ocean.

There is limited interaction between limited entry trawl fisheries and eulachon. Due to sampling conditions and time constraints, it is likely that some portion of observed eulachon catch was recorded as smelt unidentified (family *Osmeridae*) or even "other non-groundfish." In west coast trawl surveys, most juvenile eulachon are taken between 137m (449 ft or 75 fm) and 147 m (482 ft or 80 fm) (Gustafson *et al*. 2010). In the commercial fisheries between 2002 and 2010, 86 percent of the trawl caught eulachon was taken on tows that range between 60-90 fm (NWFSC 2011). On December 7, 2012, NMFS completed a biological opinion concluding that the groundfish fishery is not likely to jeopardize listed eulachon.

Green Sturgeon

The southern distinct population segment (DPS) of North American green sturgeon was listed as threatened under the ESA in 2006 (71 FR 17757; April 7, 2006). The North American green sturgeon southern DPS is defined as coastal and Central Valley populations, south of the Eel River in California. While in the ocean green sturgeon occur between 0 and 200 m (ft 109 fm) depths, but spend most of their time between 20–80 m(66-262 ft , 11-44 fm) (Nelson *et al.* 2010). They are generally demersal, but make occasional forays to surface waters (Kelly *et al.* 2007). Recent telemetry data in coastal ocean habitats suggests that green sturgeon spent a longer duration in areas with high seafloor complexity, especially where a greater proportion of the substrate consists of boulders (Huff et al. in review).

The majority of green sturgeons encountered by the west coast groundfish fishery are believed to be from the southern DPS (Al-Humaidhi, *et al.* 2011). Green sturgeon bycatch in the at-sea whiting fishery has been very low (zero catch in most years), as the at-sea observer program recorded a total of only three green sturgeon occurring in 2005 and 2006. Data were not available for green sturgeon bycatch in the shorebased whiting fishery or non-whiting midwater trawl fisheries.

3.3 Socio-economic Environment

The Pacific coast groundfish fishery is a year-round, multi-species fishery. A limited entry permit program was established in 1994 for trawl, longline, and trap (or pot) gears. In 2011, a trawl catch share program was implemented under Amendment 20 to the Pacific Coast Groundfish FMP. The catch share program consist of an IFQ program for the shorebased trawl fleet and harvester cooperatives for the at-sea mothership and catcher/processor fleets. Trawl fishery allocations were established under Amendment 21 for most groundfish stocks and stock complexes. Under the catch shares program the trawl allocations are divided among the three sectors of the trawl fishery. The portion allocated to the shorebased trawl fleet is further allocated to individuals referred to as IFQ holders. The fishermen can use their own discretion to choose when to fish.

The shorebased IFQ fishery includes vessels using midwater trawl, bottom trawl, and fixed gears (gear switching) to harvest quota pounds (QP). Vessels fish throughout the year in a wide range of depths and deliver catch shoreside. Shorebased IFQ Program data from 2011 and 2012 shows increases in target species catch and substantial reduction in the amount of groundfish bycatch when compared to the two years prior to IFQ. The 2012 data also show a greater variety of target species in 2012 with species like chillipepper and yellowtail rockfishes making comprising a larger portion of total landings and revenues. (www.westcoast.fisheries.noaa.gov/publications/fishery_management/trawl_program/yr2-rpt.pdf).

A key aspect of the Shorebased IFQ program was an increase in observer coverage, from approximately 25 to 100 percent. Observers collect valuable fisheries data, including fishing effort and location, estimates of retained and discarded catch, species composition, biological data, and protected species interactions. The data informs fisheries managers and stock assessment scientists, as well as other fisheries researchers. Observer catch data informs the vessel accounting system used for quota management. Vessels are required to land catch at IFQ first receivers where the landed catch is sorted and weighed. Catch monitors are individuals who collect date to verify that the catch is correctly sorted, weighed and reported. Landings data and at-sea discards are later combined for total catch estimation.

3.3.1 Shorebased trawl IFQ Program - Midwater Trawl Harvesters

Pacific Whiting Fishery

The whiting fishery developed in the 1960s with foreign trawler from the former Soviet Union and eastern European nations. By the 1980s, the U.S. exclusive economic zone (i.e., 200 miles seaward of state waters) had been defined and joint venture operations between foreign at-sea processing vessels and U.S. catcher vessels dominated the fishery. By the 1990s, the fishery had developed into a domestic fishery with three distinct sectors – Catcher/Processors, Motherships and Shore-based.

Whiting is a high volume fishery, with a relatively low value per pound. In the past 10 years, the ex-vessel price has ranged from $0.45 per pound in 2004 to $0.13 per pound in 2013 (PacFin). Pacific whiting catch and revenue can be quite variable from year to year, mainly due to the underlying variation in stock productivity. Since implementation of the Shorebased IFQ program in 2011, the number of vessels has been reduced from 36 vessels in 2010 to 24 vessels in 2012, while the net revenue of Pacific whiting increased considerably. Figure 3.3.1 compares ex-vessel revenue of Pacific whiting from 2010

(before IFQ) to 2012. Table 3.3.1 shows variable cost and total cost net revenue in the Pacific Whiting Shorebased IFQ fishery for 2009-2011. Since 2009, the net revenues for the fishery have increased substantially. Most Shoreside Pacific whiting vessels also fish in Alaska fisheries or in the Mothership sector of the Pacific whiting fishery.

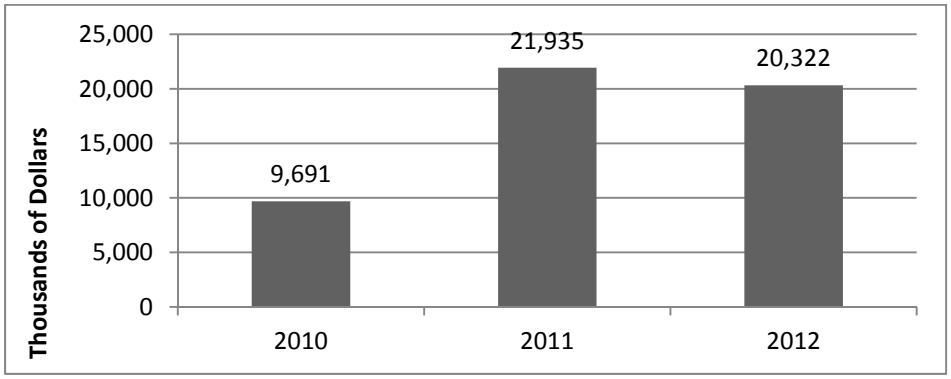

Figure 3.3.1 Shorebased Pacific Whiting Ex-vessel Revenue by Year, all Ports, 2010-2012 (Pacfin 10/27/14 query)

Table 3.3.1. Vessels Targeting Pacific Whiting in the Shorebased Fishery variable cost and total cost net revenue. Average total revenue, variable costs, variable cost net revenue, fixed cost, and total cost net revenue (N= number of vessels with non-zero, non-NA responses). Fixed costs include capitalization expenditures, capital expenses, and other fixed costs. (Steiner et al. 2014)

	2009		2010		2011	
	Mean	N	Mean	N	Mean	N
Revenue	$188,057	35	$262,367	36	$821,419	26
(Variable costs)	($102,182)	35	($148,483)	36	($366,928)	26
Variable cost net revenue	**$85,875**	**35**	**$113,884**	**36**	**$454,491**	**26**
(Fixed costs)	($117,459)	35	($101,674)	36	($308,807)	26
Total cost net revenue	**-$31,585**	**35**	**$12,211**	**36**	**$145,685**	**26**

Non-whiting Fishery

In the 1980s and 1990s, midwater trawl was used to harvest widow, yellowtail, and chilipepper rockfish. Widow rockfish was an untargeted species prior to 1979. In 1979 a midwater trawl fishery developed specifically for widow rockfish. New technology extended fishing operations into previously unfished areas and enabled vessels to follow widow rockfish concentrations throughout the year (Quirollo 1987, Demory 1987). Midwater trawling for widow rockfish occurred at night when they formed dense off-bottom schools (Tagart 1987). Although chilipepper rockfish were a commercially important midwater trawl species in waters off California, exploitation rates declined significantly, as a result of management measures implemented to rebuild other depleted rockfish species (Field 2007). The highest exploitation rates occurred from the late 1980s through the mid-1990s.

In 2001, widow rockfish was declared overfished. By 2002 targeting opportunities for widow and yellowtail rockfish with midwater gear were eliminated and retention was restricted to the whiting fishery in trips with greater than 10,000 lb of whiting. Trip limits for widow and yellowtail rockfish were reduced to accommodate incidental catch and prevent targeting by vessels in the Pacific whiting fishery. With implementation of the IFQ program, the restrictive trip limits that allowed widow and yellowtail retention only by vessels harvesting Pacific whiting during the primary fishery was eliminated. South of 40°10' north latitude, targeting opportunities for chilipepper rockfish with midwater gear were eliminated in 2003, but limits large enough to allow targeting were reinstated seaward of the RCAs in 2005.

Since widow rockfish was declared to be rebuilt in 2012 the ACL for the stock has steadily increased. With an increased ACL midwater trawl fishing targeting non-whiting groundfish, particularly yellowtail and widow rockfish in the management area north of 40°10' north latitude has emerged. Both the widow rockfish and yellowtail rockfish ACL are expected to further increase in 2015-2016 allowing for greater opportunity for midwater trawl fishing targeting non-whiting groundfish. Figure 3.3.1 shows the historical trend for landings of widow and yellowtail rockfish by midwater trawl gear. The number of IFQ vessels and trips using midwater trawl to target non-whiting species has increased each year since implementation of the shorebased IFQ program.

Landings and revenue from trips where widow and yellowtail rockfish made up at least 50 percent of the total landing by weight are shown in Table 3.3.2. Overall landings and revenue in 2013 exceeded the summed amounts in previous years. To target a species with midwater gear, a vessel needs to acquire sufficient quota pounds to cover its catch and bycatch. North of 40°10' north latitude vessels may only use midwater trawl during the dates of the Pacific whiting primary season.

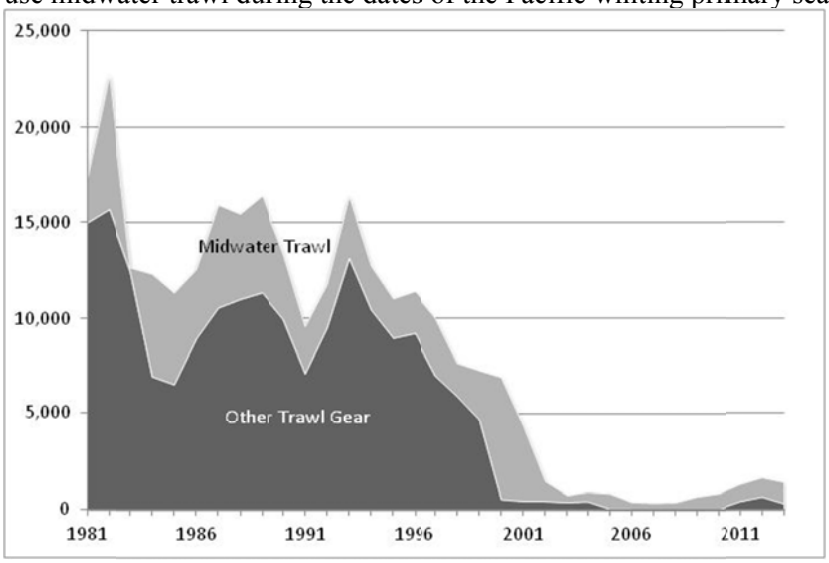

Figure 3.3.2. Landings of widow and yellowtail rockfish by trawl gear, 1981-2013

Table 3.3.2. Landings and inflation adjusted revenue for trips with midwater trawl gear targeting widow/yellowtail, 2010-2013. (Source: PacFIN vdrfd 3/18/2014)

Species	2010		2011		2012		2013	
	MT	Revenue	MT	Revenue	MT	Revenue	MT	Revenue
Widow	25	$19,929	12	$9,356	9	$9,265	214	$226,943
Yellowtail	166	$123,204	11	$12,581	239	$274,806	391	$415,777
Pacific Whiting	0	0	11	$2,364	9	$1,253	11	$1
Other	24	$1,394	<1	$136	5	$2,529	5	$3,874

Table 3.3.3. Non-whiting midwater trawl [a/] IFQ groundfish trips and vessels non-whiting) for 2011-present (NMFS 2014)**.**

	Vessels	Trips	Percent of Non-whiting Landings	Percent of Non-whiting Revenue
2011	5	5	0.2%	0.1%
2012	7	17	1.6%	1.3%
2013	6	23	3.4%	2.5%

a/ Less than 50 percent of the weight of the landing was Pacific whiting.
b/ Trips were defined as vessel days

3.3.2 Shorebased IFQ Program - Time/Area Management

Rockfish Conservation Areas

RCAs are large-scale closed areas that extend along the entire length of the West Coast, from the Mexican border to the Canadian border. The boundaries are defined by a series of latitude/longitude coordinates that are intended to approximate particular depth contours. RCAs are specified for particular gear types (trawl, non-trawl, and exempted trawl) and differ north and south of 40°10' north latitude. RCA boundaries have changed over time, as shown in Table 3.3.3. The trawl fishery management measures at 50 CFR § 660.130 define the rules regarding trawl RCAs. The operation of a vessel with trawl gear onboard is prohibited in a trawl RCA, except for the purpose of continuous transiting. However, midwater trawl fishing within the RCAs north of 40°10' N. latitude is allowed for vessels fishing with midwater trawl gear on Pacific whiting trips during the primary whiting season, provided a valid declaration report is one file . The current regulations are unclear whether a vessel must actually target or land Pacific whiting in order to fish within the RCAs.

From 2002 to 2011, midwater trawl gear used to target Pacific whiting (trips with more than 10,000 lb of whiting) was exempted from RCA restrictions north of 40°10' N. latitude during the primary whiting season. Beginning in 2011, the groundfish midwater trawl fishery was expanded, and it now includes all midwater trawling during the primary whiting season. Since 2005, midwater trawling has been allowed in the area south of 40°10' north latitude for all groundfish species when fishing seaward of the trawl RCA. (see National Marine Fisheries Service, West Coast Region web page at http://www.nwr.noaa.gov/Groundfish-Halibut/Groundfish-Fishery-Management/Groundfish-Closed-Areas/Index.cfm#CP_JUMP_30284).

Table 3.3.4: Changes in trawl RCAs depth restrictions over time (fathoms).

Year	Area	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2012[a]	North of 48°10'	0 - [m]200		0 - 200		0 - 150				0 - 200		0 - [m]200	
	48°10' - 45°46'	75 - [m]200		75 - 150		100 - 150						75 - 150	
	45°46' - 40°10'			75 - 200		100 - 200						75 - [m]200	
	40°10' - 34°27'	100 - 150											
	South 34°27' (mainland)												
	South 34°27' (islands)	0 - 150											
2011[a]	North of 48°10'	0 - [m]200		0 - 200		0 - 150				0 - 200		0 - [m]200	
	48°10' - 45°46'	75 - [m]200		75 - 200		75 - 150		100 - 150		75 - 150			
	45°46' - 40°10'					75 - 200		100 - 200		75 - 200		75 - [m]200	
	40°10' - 34°27'	100 - 150											
	South 34°27' (mainland)												
	South 34°27' (islands)	0 - 150											
2010[a]	North of 48°10'	0 - [m]200		0 - 200		0 - 150				0 - 200		0 - [m]200	0 - 250
	48°10' - 45°46'	75 - [m]200		75 - 200		75 - 150		100 - 150		75 - 200		75 - [m]200	75 - 250
	45°46' - 40°10'					75 - 200		100 - 200					
	40°10' - 34°27'	100 - 150											
	South 34°27' (mainland)												
	South 34°27' (islands)	0 - 150											
2009[a]	North of 48°10'	0 - [m]200			0 - 200	0 - 150				0 - 200		0 - [m]200	
	48°10' - 45°46'	75 - [m]200			75 - 200	75 - 150		100 - 150		75 - 200		75 - [m]200	
	45°46' - 40°10'					75 - 200		100 - 200					
	40°10' - 34°27'	100 - 150											
	South 34°27' (mainland)												
	South 34°27' (islands)	0 - 150											
2008[a]	North of 48°10'	0 - [m]200		0 - 200		0 - 150						0 - [m]200	
	48 10 - 46 38.17	75 - [m]200		60 - 200		60 - 150					75 - 150	75 - [m]200	
	46 38.17 - 46 16			60 - 200				60 - 150					
	46 16 - 45 46			75 - 200		75 - 150				75 - 200			
	45 46 - 43 20.83			75 - 200									
	43 20.83 - 42 40.50	0 - [m]200		0 - 200								0 - [m]200	
	42 40.5 - 40 10	75 - [m]200		75 - 200		60 - 200					75 - 200	75 - [m]200	
	40 10 - 34 27	100 - 150											
	South 34 27 (mainland)												
	South 34 27 (islands)	0 - 150											
2007[a]	North of 48°10'	75 - [m]250		75 - 250		0 - 150				0 - 200	75 - 200	75 - [m]200	
	48°10' - 46°38'					75 - 150				75 - 200			
	46°38' - 46°16'					60 -150				60 -200			
	46°16' - 45°03'					75 - 150			75 - 200				
	45°03' - 43°20'					75 - 200							
	43°20' - 42°40'					0 - 200					75 - 200		
	42°40' -40°10'					75 - 200							
	40°10' - 38'	100 - [m]200		100 - 150								100 - [m]200	
	38° - 34°27'	100 - 150											
	South 34°27' (mainland)												
	South 34°27' (islands)	0 - 150											
2006[a]	North 40 10	75 - [m]200		75 - 200				100 - 250		75 - 250		75 - [m]250	
	40 10 - 38	75 - 150		100 - 150				100 - 200		100 - 250			
	38 - 34 27							100 - 150				75 - 150	
	South 34 27 (mainland)												
	South 34 27 (islands)	0 - 150											
2005[a]	North 40 10	75 - [m]200		100 - 200							0 - 250		
	40 10 - 38	75 - 150		100 - 200		100 - 150							
	38 - 36			100 - 150							0 - 200		
	36 - 34 27										50 - 200		
	South 34 27 (mainland)												
	South 34 27 (islands)	0 - 150									0 - 200		
2004	North 40 10	75 - [m]200		60 - 200		60 - 150		75 - 150			0 - 250		
	40 10 - 38	75 - 150[z]				100 - 150[z]				75 - 150[z]			
	38 - 36										0 - 200[z]		
	36 - 34 27										0 - 150		
	South 34 27 (mainland)												
	South 34 27 (islands)	0 - 150											
2003	North 40 10	100 - [m]250		100 - 250		50 - 200		75 - 200		50 - 200			
	40 10 - 38	50 - [m]250		60 - 250		60 - 200						0 - [m]200	
	38 - 34 27	50 - 150		60 - 150									
	South 34 27 (mainland)	100 - 150				100 - 200							
	South 34 27 (islands)	0 - 150				0 - 200							
2002	North 40 10	Within DBCA - CLOSED TO TRAWLING, September - December, special footrope requirements outside DBCA											

[m] The "modified" depth line is modified to exclude certain petrale sole areas from the RCRA.

[a] Selective flatfish trawl required shoreward of the RCRA north of 40 10.

[z] Additional closure 0-10fm around Farallon Islands.

***The Rockfish Conservation Area is an area closed to fishing by particular gear types, bounded by lines specifically defined by latitude and longitude coordinates set at 660.391-660.394. This RCA is not defined by depth contours, and the boundary lines that define the RCA may close areas that are deeper or shallower than the depth contour. Vessels that are subject to the RCA restrictions may not fish in the RCA, or operate in the RCA for any purpose other than transiting

In contrast to the area north of 40°10′ N. latitude, midwater trawl is not restricted to vessels with a valid "Limited entry midwater trawl, Pacific whiting shorebased IFQ fishing" declaration and may include a vessels with a valid declaration for "Limited entry midwater trawl, non-whiting shorebased IFQ" (660.13(d)). In addition, **v**essels can use midwater trawl regardless of their involvement in Pacific whiting sector as defined in regulations at 50 CFR § 660.130(c)(4). For the area south of 40°10′ N. latitude, the regulations at 50 CFR § 660.130 limit the use of all midwater trawl gear to seaward of the RCA. Midwater trawl is prohibited shoreward of the RCA and within the RCAs. The only allowance for fishing within the RCAs south of 40°10′ N. latitude is for vessels fishing with demersal seine gear (also referred to as demersal trawl) between 38° N. lat. and 36° N. lat. shoreward of a boundary line approximating the 100 fm (183 m) depth contour.

Declaration reports

Regulations at 50 CFR § 660.13(d) require the operator of any vessel registered to a limited entry permit to submit a declaration report to NMFS OLE before the vessel leaves port on a trip in which a gear type that is different from the gear type most recently declared for the vessel will be used. The vessel is then only allowed to fish with the gear that has been declared. Vessels using midwater trawl gear in the Shorebased IFQ Program may only declare one of the following trawl gear types: 1) Limited entry midwater trawl, Pacific whiting shorebased IFQ; or 2) Limited entry midwater trawl, non-whiting shorebased IFQ. Although the declaration regulations at § 660.13(d) restrict a trawl vessel to one gear type declaration, the regulations at § 660.130(c)(4) are confusing in that they do not restrict a vessel from having multiple types of midwater trawl nets on board.

The Shorebased IFQ Program fishery is composed of vessels making Pacific whiting IFQ trips or non-whiting trips during the primary whiting season fishery dates. Pacific whiting IFQ trips are defined by regulation as those trips in which a vessel registered to a limited entry permit uses legal midwater groundfish trawl gear with a valid declaration for "limited entry midwater trawl, Pacific whiting shorebased IFQ". Prior to 2011, Pacific whiting trips were defined as those in which more than 4,000 pounds of Pacific whiting were landed.[4] The Amendment 20 EIS analysis defined a Pacific whiting trip as a trip where 50 percent or more of the landed catch was Pacific whiting by weight. The Amendment 20 EIS identified Pacific whiting trips for the purpose of initial issuance of QP and relative to catch whiting on a Pacific whiting IFQ trip. Under the current regulations, an IFQ trip is defined as a trip where the vessel has a declaration for whiting, but there is no requirement that the vessel target or land a specified amount of whiting.

Salmon Conservation Zones

Regulations at 50 CFR § 660.131 for the Pacific whiting fishery include descriptions of closed areas at the mouth of the Klamath river and the Columbia river where Chinook salmon abundance may be concentrated. These Klamath and Columbia River conservation zones were established in 1993.

In 2005, Ocean Salmon Conservation Zones (OSCZs) were added to the regulations by emergency action and were effective from August 26, 2005 to February 27, 2006 (70 FR 51682, August 31, 2005). The OSCZ was a mitigation measure adopted when the 11,000 chinook threshold had been exceeded. The intent of these closed areas was to moved whiting fishing (targeting of whiting) offshore of a boundary line approximating the 100-fm (183-m) depth contour to reduce that Chinook salmon catch rates. The data indicated that incidental catch rates of Chinook salmon by vessels targeting Pacific whiting tended to be higher in the nearshore areas. On January 1, 2007, the OSCZs were added to the regulations through a

[4] Pacific whiting shoreside vessel means any vessel that fishes using midwater trawl gear to take, retain, possess and land 4,000 lb (1,814 kg) or more of Pacific whiting per fishing trip from the Pacific whiting shore-based sector allocation for delivery to a Pacific whiting shoreside first receiver during the primary season.

full rulemaking process (71 FR 78638, December 29, 2006). These closures are specific to vessels targeting whiting during the Pacific whiting primary seasons.

Bycatch Reduction Areas

Regulations at 50 CFR § 660.131 include closed areas referred to as bycatch reduction areas (BRAs). BRAs may be implemented inseason under automatic action authority when NMFS projects that a whiting sector will exceed an allocation for a non-whiting groundfish species specified for that sector before the sector's whiting allocation is projected to be reached. The BRAs are depth closures that use the 75-fm (137-m), 100-fm (183-m) or 150-fm (274-m) depth contours to shift the Pacific whiting fishery into deeper waters. Because the Pacific whiting fishery is exempt from the RCA restrictions North of 40°10' north latitude, when necessary the BRAs allow a depth based management for all vessels declared as "Limited entry midwater trawl, Pacific whiting shorebased IFQ" regardless of target species.

During 2006, the Pacific whiting primary seasons for the catcher/processors, motherships, and shore-based sectors were closed on July 26, 2007 (72 FR 46176) because the fleetwide bycatch limit for widow rockfish had been reached. At its September 2007 meeting the Council recommended increasing the widow rockfish bycatch limit and reopening all sectors of the Pacific whiting fisheries, but recommended depth-based measures be taken to reduce the risk of increased canary rockfish catch. The fisheries were reopened on October 5, 2007 (72 FR 56664) with voluntary depth restrictions in effect in the at-sea sectors and revised exempted fishing permits (EFPs) with depth based restrictions for the shore-based sector. Because most all shore-based fishing activity was conducted under EFPs, the EFPs were effective in moving EFP fishing seaward of the150 fathom (274 m) depth contour.

In response to the 2007 whiting fishery closure, sector-specific bycatch limits and BRAs were implemented with the 2009-2010 Harvest Specification and Management Measures for the Pacific whiting fishery. At its June 2008 meeting, the Council recommended that a regulatory provision be added to allow NMFS to impose depth-specific closures using the specified depth-based management lines in the 75 fm to 150 fm zone in the non-tribal whiting fishery by sector, if a sector is projected to attain a bycatch limit prior to attaining their whiting quota.

Pacific whiting fishery bycatch limits were removed from regulation with implementation of trawl rationalization. The use of BRAs was further refined in 2011 and in 2013 (76 FR 53833, August 30, 2011 and 78 FR 580, January 3, 2013). Since implementation of the trawl IFQ program, the authority to close the Pacific whiting sector of the Shorebased IFQ fishery through an automatic action has been removed, and the use of the BRAs has been modified such that they are now considered to be a type of groundfish conservation area (GCA) (50 CFR 660.11). Like RCAs, the BRAs, are areas closed to fishing by particular gear types, bounded by lines approximating particular depth contours (50 CFR 660.11). Regulations at 50 CFR 660.55 (c)(3)(i) continue to allow BRAs to be implemented through automatic action, but they can also be implemented through routine inseason action.

Eureka Area Closure

Regulations at 50 CFR § 660.131 for the Pacific whiting fishery, including the Shorebased IFQ Program, **s**tate that unless otherwise specified, no more than 10,000-lb (4,536 kg) of whiting may be taken and retained, possessed, or landed by a vessel that, at any time during a fishing trip, fished in the fishery management area shoreward of the 100 fm (183 m) contour (as shown on NOAA Charts 18580, 18600, and 18620) in the Eureka management area.

In 1992, management actions were taken to limit bycatch, particularly in Monterey and Eureka management areas (south of 43° north latitude). The actions included restrictions on fishing for whiting inside of 100-fathoms in the Eureka area. Action was taken because a depth effect had been observed in the Eureka area with higher salmon bycatch rates observed inside of the 100 fathom contour.

Higher bycatch rates were also observed in the bottom trawl fishery. The continental shelf off the Eureka area is narrow and the 100 fathom contour generally occurs 6 to 10 nautical miles Offshore (NMFS 1992).

Night Fishing

Regulations at 50 CFR 660.131 prohibit vessels in the Shorebased IFQ Program from targeting Pacific whiting south of 42°00′ north latitude between 0001 hours to one-half hour after official sunrise (local time). Official sunrise is determined, to the nearest 5° latitude in the Nautical Almanac issued annually by the Nautical Almanac Office, U.S. Naval Observatory, and available from the U.S. Government Printing Office.

In 1992, management actions were taken to limit bycatch, particularly in Monterey and Eureka management areas (south of 43° north latitude). Night fishing targeting on Pacific whiting was originally prohibited coastwide because the rate of Chinook salmon incidental catch was higher in night tows. The night time closure was recommended by the Council, but was not a condition of the biological opinions because the analyses did not clearly demonstrate the desired benefit of reducing the bycatch rate (NMFS 1992).

Pacific Whiting Primary Season

Midwater trawl may be used to harvest Pacific whiting or non-whiting only after the opening dates of the whiting primary season. Since 1997 a framework was established for setting Pacific whiting fishery season dates for the area north of 40°30 N. lat. North of 42° N. lat. the season opens June 15; between 42°–40°30' N. lat. the season opens April 1; and south of 40°30' N. lat. the season opens April 15.

In 1992, the whiting season start date was delayed until April 15 as a measure to reduce Chinook bycatch. Beginning in 1996 the start of the whiting fishery north of 42°00' north latitude was further delayed from April 15 to May 15. The delay was in part to further reduce Chinook bycatch, which was particularly high early in the 1995 season. Data indicated that the bycatch rates in the shoreside fishery had been higher prior to mid-May since 1992, suggesting that the delayed opening could reduce bycatch.

3.3.3 Shorebased IFQ Program - Landing Restrictions

Maximized retention

All catch from trawl IFQ trips is required to be sorted to the specified groundfish species and species groups before it is first weighed after offloading. The only exception is for Pacific Whiting taken with midwater trawl gear; IFQ first receivers may use an in-line conveyor or hopper type scale meeting the regulatory requirements for scales at § 660.15(c) to derive an accurate total catch weight prior to sorting. Immediately following weighing of the total catch and prior to processing or transport away from the point of landing, the catch must be sorted to the species groups and all incidental catch (groundfish and non-groundfish species) must be accurately weighed and the weight of incidental catch deducted from the total catch weight to derive the weight of a single predominant species.

In an August 31 2010 proposed rule (75 FR 53380) and a December 15, 2010 Final rule (75 FR 78344) for the IFQ program, maximized retention was specifically considered for the Pacific whiting IFQ fishery. Before IFQ, most of the shorebased whiting fishery was conducted under Exempted Fishing Permits (EFPs) issued to vessels and first receivers. Under EFPs, vessels were allowed to land unsorted whiting and to retain prohibited species until landing, and first receivers were allowed to derive the weight of Pacific whiting by subtracting the weight of all other species from the weight of unsorted catch. Consistent with the Salmon FMP, the allowed disposition of prohibited species landed in the shorebased whiting fishery were specified in the vessel EFPs and the first receiver EFPs, and the states of landing had

signed agreements with processing facilities. During the development of Amendment 20, maximized retention by non-whiting vessels, identified in the analysis and Final Preferred Alternative (groundfish FMP Appendix E), as those landing with less than 50 percent Pacific whiting by weight was rejected by the Council. In addition, Pacific halibut mortality considerations were specific to the targeting of whiting. During the rulemaking process, NMFS received comments that the maximized retention in the Shorebased IFQ Program should be consistent with the existing maximized retention fishery. NMFS agreed with the commenters.

Regulations at § 660.140(g) specify the retention requirements for maximized retention vessels participating in the Pacific whiting IFQ fishery. On a maximized retention trip, minor operational amounts of catch may be discarded at sea if the observer has accounted for the discard. Unlike pre-IFQ provisions under EFPs, the current regulations do not define what is meant by minor operational amounts[5] of catch. Pacific whiting vessels that sort at sea must discard Pacific halibut, and the discard mortality must be accounted for and deducted from IBQ pounds in the vessel account. The regulations do not address retention of prohibited species by maximized retention vessels participating in the Pacific whiting IFQ fishery.

Maximized Retention and Prohibited Species

Species identified as prohibited (any salmonid, halibut, Dungeness crab off Oregon and Washington) must be returned to the sea as soon as practicable with a minimum of injury when caught and brought aboard, after allowing for sampling by an observer, unless other disposition procedures are specified by regulation. It is prohibited for any person to retain trawl-caught prohibited species unless authorized by 50 CFR Part 300, Subparts E or F; or Part 600, Subpart H. The Salmon FMP specifies the procedures governing retention of salmon bycatch in trawl nets. The Groundfish FMP requirements are consistent with the procedures identified in the Salmon FMP.

Salmon caught incidentally in trawl nets while legally fishing under the groundfish FMP are a prohibited species as defined by the groundfish regulations (50 CFR Part 660, Subpart G). However, in cases where the Council determines it is beneficial to the management of the groundfish and salmon resources, salmon bycatch may be retained under the provisions of a Council-approved program that defines the handling and disposition of the salmon. The provisions must specify that salmon remain a prohibited species and, as a minimum, include requirements that allow accurate monitoring of the retained salmon, do not provide incentive for fishers to increase salmon bycatch, and assure fish do not reach commercial markets. In addition, during its annual regulatory process for groundfish, the Council must consider regulations that would minimize salmon bycatch in the monitored fisheries.

Unlike pre-IFQ management under EFPs, the current groundfish regulations do not address handling and disposition of trawl caught salmon. Under the pre-IFQ maximized retention EFPs for the Pacific whiting fishery, vessels could retain prohibited species if they were abandoned to the state of landing immediately upon offloading. Under EFPs, first receivers were required to label prohibited species by delivery, immediately ice or refrigerated them, store them in a secure location, and follow all protocols specified by the state of landing. State protocols included signed agreements with designated processing plants, restrictions on participation by vessel/operator combinations, and defined options for disposal. The two options for disposal of prohibited species included: donation to a local food share or other appropriate charitable organization, or reduction into fish meal. Option 1 was preferred, but the states recognized that

[5] Operational discards. Pacific whiting removed from the deck and fishing gear during cleaning may be discarded, provided that the total operational discards must not exceed one basket from any single haul, with the maximum dimensions of the basket being 24 inches by 16 inches by 16 inches. If net cleaning results in a greater amount, all catch in excess of the one basket must be placed into the fish hold. Discarding operational discards of more than one basket of Pacific whiting per haul is prohibited. Discarding any quantity of groundfish species other than Pacific whiting is prohibited (Maximized Retention And Monitoring For Vessels Participating In The 2010 Coastwide Pacific Whiting Shoreside Fishery).

salmon caught by trawls are often in poor condition, and perishable (http://www.pcouncil.org/bb/2006/1106/Sup_Ag_D4a_Att4.pdf).

In the State of Washington, vessels are prohibited from selling or offering for sale or purchase, any food fish or shellfish unless taken with lawful commercial gear, in an area open to commercial fishing for that species, and the fisherman has in his possession at the time of sale a valid commercial fishing license (WAC 220-20-012). It is unlawful to fish for or possess for commercial purposes or possess aboard a commercial fishing vessel for any purpose any species of halibut (*Hippoglossus*) unless permitted by the current regulations of the International Pacific Halibut Commission (WAC 220-20-020). Relative to Dungeness crab, Washington State regulations at WAC 220-52-040 prohibit net fishing boats from having crab on board. It is unlawful for any person to possess any crab on board a vessel geared or equipped with commercial net fishing gear or when commercial quantities of food fish or shellfish are on board. Violations are a gross misdemeanor or class C felony depending on the quantity of crab taken or possessed.

In the State of Oregon, trawl nets meeting the federal specifications for groundfish trawl gear may not be used to target salmon, Pacific halibut, or shellfish whether found in freshwater or saltwater. The State of Oregon State Fish and Wildlife Commission also has jurisdiction over species of fish, shellfish transported into or landed in the state even if they were taken in waters outside the state (ORS 506.036).

Under California State code, salmon taken with any type of trawl net may not be possessed or landed, except that salmon taken incidentally with other species with a trawl net may be possessed and landed if authorized to be taken incidentally consistent with 50 CFR 663.10 of Part 663 of Title 50 of the Code of Federal Regulations, pursuant to a permit issued by the commission (Cal. Civ. Code § 8834). Dungeness crab are not prohibited in the state of California, north of Point Reyes. However south of Point Reyes vessels using any type of trawl gear may not take or possess Dungeness crabs, or to transfer Dungeness crab to another vessel.

Annual Halibut Management Measures #19 (I)(3), specifically states that no person shall possess halibut while on board a vessel carrying any trawl nets or fishing pots capable of catching halibut, except that in Areas 2C, 3A, 3B, 4A, 4B, 4C, 4D, or 4E, halibut heads, skin, entrails, bones or fins for use as bait may be possessed on board a vessel carrying pots capable of catching halibut, provided that a receipt documenting purchase or transfer of these halibut parts is on board the vessel. Annual Halibut Management Measures #19 (II) allows, a person to retain, possess and dispose of halibut taken with trawl gear only as authorized by Prohibited Species Donation regulations of NMFS.

Maximized Retention and non-groundfish

Coastal Pelagic Species

The CPS FMP allows a reasonable limit on the incidental CPS catch to be established using the best available information for non-CPS fisheries. Incidental limits may be imposed or adjusted consistent with the CPS FMP. CPS restrictions are intended to minimize discards in the non-CPS fisheries by allowing retention and sale, and thereby increasing fishing income, and discourage targeting on CPS by the non-CPS fleets. CPS fishery prohibitions at 50 CFR 660.505 prohibit vessels from selling CPS without an applicable commercial state fishery license.

Washington State restrictions prohibit selling or offering for sale or purchase, any food fish or shellfish unless taken with lawful commercial gear, in an area open to commercial fishing for that species, and the fisherman has in his possession at the time of sale a valid commercial fishing license (WAC 220-20-012). In the State of Oregon, trawl nets meeting the federal specifications for groundfish trawl gear may be used to take Ocean Food Fish in the Pacific Ocean only. Ocean Food Fish include all saltwater species of food

fish (any animal over which the State Fish and Wildlife Commission has jurisdiction, ORS 506.036) except salmon, Pacific halibut, and shellfish whether found in freshwater or saltwater.

The state of California has the most specific state restrictions for CPS. Sardines may not be taken or possessed on any boat, barge, or vessel except as authorized in federal fishery regulations (Cal. Civ. Code § 8150.5). No person shall receive, possess, or sell sardines for any purpose except for that purpose specified on the fish receipt completed at the time of landing of those sardines (Cal. Civ. Code § 8154). Pacific mackerel may be taken under a revocable nontransferable permit issued by the department to boat owners or operators under conditions prescribed by the department (Cal. Civ. Code § 8412). No person shall purchase squid from a vessel or vessels unless that person holds a license, employs a certified weighmaster, and the facilities operated by the person are located on a permanent, fixed location (Cal. Civ. Code § 8424).

Highly Migratory Species
General catch restrictions at 50 CFR 660.711 address incidental landings of HMS in trawl fisheries. Incidental landing of HMS caught with trawl gear may only be landed in incidental amounts as follows: trawl vessels may land up to 1 percent by weight of management unit sharks in a landing of all species or 2 individual sharks of the species in the management unit, whichever is greater.

State Managed Species

Washington
WAC 220-20-012 prohibits selling or offering for sale or purchase, any food fish or shellfish unless taken with lawful commercial gear, in an area open to commercial fishing for that species, and the fisherman has in his possession at the time of sale a valid commercial fishing license.

Oregon
Trawl nets meeting the federal specifications for groundfish trawl gear may be used to take ocean food fish in the Pacific Ocean. Ocean food fish include all saltwater species of food fish (any animal over which the State Fish and Wildlife Commission has jurisdiction, ORS 506.036) except salmon, Pacific halibut, and shellfish whether found in freshwater or saltwater. Under ORS 506.036 the State of Oregon State Fish and Wildlife Commission also has jurisdiction over species of fish, shellfish and all other animals transported into or landed in the state even if they were taken in waters outside the state.

California
In addition to the restrictions already addressed above, the following restrictions apply in the State of California. Herring may be taken for commercial purposes only under a permit, subject to regulations adopted by the commission (Cal. Civ. Code § 8550). Vessels using trawl gear are prohibited from possessing more than 500 pounds of crabs (Cal. Civ. Code § 8834). Any person taking, possessing on board a boat, or landing any species of nearshore fish stock for commercial purposes shall possess a valid nearshore fishery permit issued to that person (Cal. Civ. Code § 8587). Relative to the handling of incidentally caught species in full retention landings, in the State of California it is unlawful to cause or permit any deterioration or waste of any fish taken in the waters of California, or brought into the state, or to take, receive or agree to receive more fish than can be used without deterioration, waste, or spoilage (Cal. Civ. Code § 7704).

Maximized Retention and Protected Species

Marine Mammals

Regulations implementing the Marine Mammal Protection Act, at 50 CFR 229.3(e), prohibit the retention of any marine mammal incidentally taken in commercial fishing operations unless authorized by NMFS personnel, by designated contractors or an official observer, or by a scientific research permit that is in the possession of the vessel operator. Regulations at 50 CFR 229.5(c) provide the disposition requirements for marine mammals incidentally caught in commercial fishing gear by category III fisheries. Any marine mammal incidentally taken must be immediately returned to the sea with a minimum of further injury, unless directed otherwise by NMFS personnel, a designated contractor or an official observer, or authorized otherwise by a scientific research permit that is in the possession of the operator.

Eulachon

The conservation recommendations for eulachon in the 2012 Section 7 Biological Opinion indicated that NMFS should retain eulachon bycatch for archiving: whole body eulachon specimens should be retained to further understanding of the species. Eulachon marine life history is poorly understood; therefore, the impact of fishing under the Pacific Coast Groundfish FMP upon eulachon is not well understood. Whole body specimens can allow for stock identification (genetic samples), diet (stomach analysis), sex ratios (examination of gonads), age (Ba:Ca ratios in otoliths), presence (locations of captures), and general morphology measurements. Eulachon sampling procedures for sample size, collection location and frequency, and archiving details are determined by NMFS PRD, NWFSC, and Groundfish Observer Programs. Handling procedures for those landed shoreside are not specified in the biological opinion.

Green Sturgeon

The incidental take statement within the December 2012, biological opinion, indicates that NMFS shall collect biological samples and data on incidental take of Southern DPS green sturgeon associated with the operation of the PCGF. However, the biological opinion did not specify disposition or handling requirements for green sturgeon landed on maximized retention trips.

Relative to state restrictions, in the State of Washington it is unlawful to fish for, possess, or retain green sturgeon taken with commercial gear. Green sturgeon taken with any type of commercial gear incidental to a lawful fishery shall immediately be returned to the water unharmed. California State code prohibits the possession of sturgeon aboard commercial fishing vessels.

Seabirds

Seabirds can be killed or injured when they are unintentionally entangled in trawl fishing gear. The birds drown when they are dragged under the surface during the setting of the net or when fishing gear is retrieved from the water. The Migratory Bird Treaty Act (16 U.S.C. 703-712) makes it illegal for anyone to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird, or the parts, nests, or eggs of such a bird except under the terms of a valid permit issued pursuant to Federal regulations. Injury and mortality as a result of fishing meet the definition of "take" (50 CFR 10.12).

In 2012, the U.S. Fish and Wildlife Service (USFWS) issued a biological opinion evaluating the impacts of the Pacific Coast groundfish fisheries on several ESA-listed seabirds, including the short-tailed albatross. USFWS determined that continued operations of the Pacific Coast Groundfish Fisheries would likely harm 0.8 short-tailed albatross per year due to the continued operations of the Pacific Coast Groundfish Fisheries. The biological opinion specifie that any birds incidentally caught birds should be retained alive or dead and surrendered as soon as possible as directed by the US Fish and Wildlife Service (503-231-6179). If an observer is on board, they are responsible for the disposition of dead, injured, or sick birds, otherwise the boat captain is responsible.

3.3.4 Shorebased IFQ Program - First Receivers/Processors

A first receiver is "a person who receives, purchases, or takes custody, control, or possession of catch onshore directly from a vessel. While a shorebased processor is "a person, vessel, or facility that engages in commercial processing ... at a facility that is permanently fixed to land" (660.11). Since 2011, all IFQ catch must be received by first receivers with a valid IFQ first receiver site license. Table 3.3.5 show the count of first receivers from 2003 to 2012. The count of first receivers (Table 3.3.6) shows a decline for both Pacific whiting and non-whiting. The largest decline has been in the first receivers accepting non-whiting. This may represent consolidation within the buyer/processor sector.

Table 3.3.6. Count of First Receivers (based on Pacfin processor ID) that Accepted Groundfish, 2003-2012. (Source: vdrfd 8/29/13.)

Fishery Sector	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Shorebased IFQ Trawl (Whiting)	12	10	10	14	14	15	17	20	9	9
Non-whiting Trawl	65	57	52	49	49	47	45	36	26	25

When the trawl fishery transitioned to a catch share program with an IFQ program for the shorebased trawl fleet, the quota for 30 different groundfish species, rockfish complexes, and Pacific halibut were allocated to qualifying vessels. In addition, 20 percent of the Pacific whiting allocation was allocated to shorebased processors. Table 3.3.6 shows the initial allocation to processors which are also the licensed as first receivers. Eligibility and initial allocation percentage were determined by historical participation levels in the fishery based on control dates (1994 to 2004). No quota allocation was given to processors for non-whiting IFQ groundfish.

Table 3.3.6 Pacific Whiting Quota Shares Allocated to Processors

Processing Company	Initial Quota Allocation (%)
Trident Seafoods Corporation	4.67
Ocean Gold Seafoods Inc	3.87
Pacific Coast Seafoods Company	3.79
Pacific Shrimp Company	2.85
Point Adams Packing Company	1.99
Ocean Beauty Seafoods LLC	0.87
Bandon Pacific Inc	0.74
Jessies Ilwaco Fish Company	0.65
Pacific Choice Seafoods	0.56

3.3.5 Communities

The ex-vessel value of Pacific whiting in the shorebased fishery has roughly doubled in value since implementation of the Shorebased IFQ program increasing from $9,691,000 in 2010 to $26,539,000 in 2013 (Table 3.3.7). In 2010 there were seven port comunities that received Pacific whiting taken with midwater trawl. By 2012, only four port community were receieving Pacific whiting taken with midwater trawl. The three most southern comminities (Crescent City, Eureka, and Coos Bay/Charlston) have not received landings since 2011.

Table 3.3.7 Pacific whiting midwater trawl Landings and Ex-vessel Value for all Ports 2010-2013 (Pacfin 10/28/2014 query)

Year	Landings (mt)	Revenue (1000s of dollars)
2010	62,319	9,691
2011	91,060	21,935
2012	65,628	20,322
2013	97,886	26,539

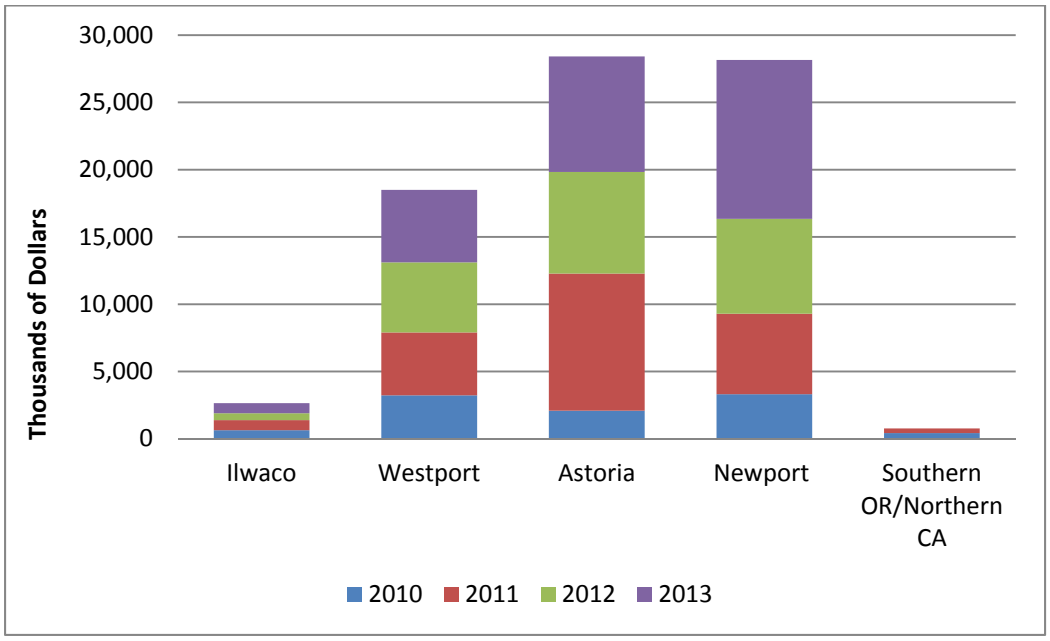

Figure 3.3.3 Pacific Whiting Ex-vessel Value by Community 2010-2012 (Pacfin 10/28/2014)

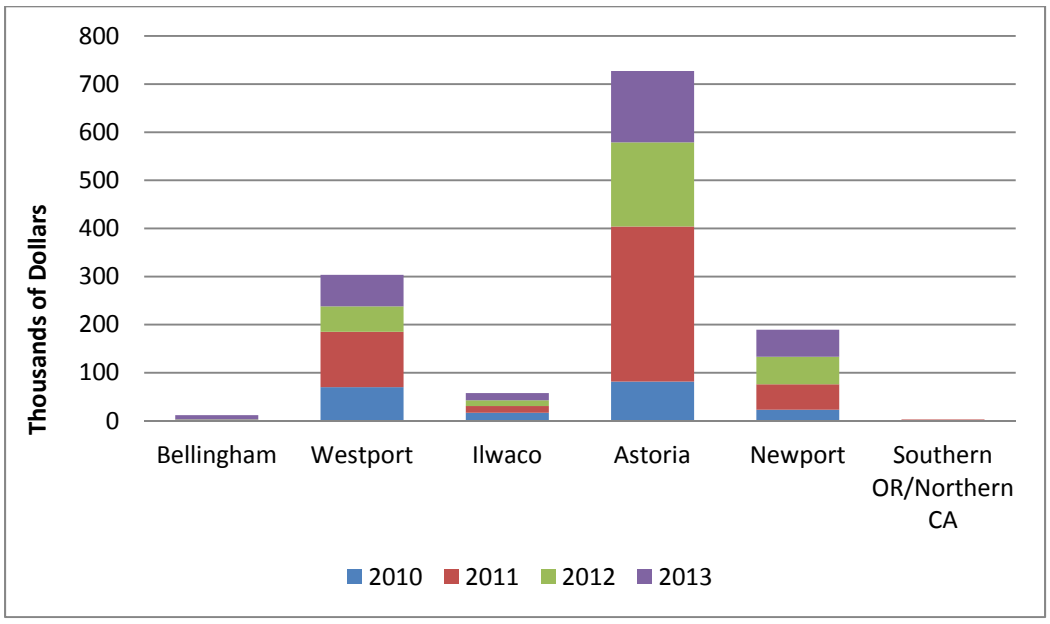

Figure 3.3.4 Yellowtail and Widow Rockfish Ex-vessel Value by Community, Includes Landing from Pacific Whiting and non-whiting Midwater Trawling. (Pacfin 10/28/2014)

Relative to the overall value of all commercial fishing (Table 3.3.8), the importance of Pacific whiting revenue, and yellowtail/Widow Rockfish revenue varies by community. From 2010 to 2013 Pacific whiting landings were mors important relative to the contribution to all commercial fishing revenue in the ports of Astoria (16 percent) and Newport (17 percent). During this same period, Pacific whiting was less important relative to the contribution to all commercial fishing revenue in the ports in southern Oregon and California, Ilwaco (3 percent), and Westport (8 percent).

Table 3.3.8 Value of all Commercial Fish by Community, 2012 and 2013 Millions of Dollars (NMFS 2014b)

Port	2010	2011	2012	2013	Sum
Westport, WA	39	61	59	65	224
Ilwaco, WA	18	24	22	30	94
Astoria, OR	31	44	39	50	164
Newport, OR	31	44	37	55	167
Coos Bay/Charleston, OR	24	36	27	34	121
Eureka, CA	NA	9	25	25	--
Crescent City , CA	NA	9	28	34	--

CHAPTER 4 - IMPACT ON THE AFFECTED ENVIRONMENT

4.1 Impacts on the Physical Environment

A summary of impacts of the alternatives on the physical environment are summarized in Table 4.1.1.

Table 4.1.1 Physical Environment Impacts of Alternative 2 compared to No Action (Alternative 1)

	Effects to Physical Environment (Compared with No Action)	
Alternative 2 Elements	CA Current Ecosystem	EFH
Midwater trawl gear allowed with a valid declaration for either "limited entry midwater trawl, non-whiting shorebased IFQ" or "limited entry midwater trawl, Pacific whiting shorebased IFQ". Non-whiting vessel would not be obligated to also target Pacific whiting.	* Neutral	* Neutral to low negative - increase in non-whiting targeting in EFH conservation areas is expected. * Low positive benefit if impacts differ between whiting and non-whiting targeting and aligning declaration with targeting activity allows closely aimed management response to EFH concerns.
A Pacific whiting IFQ trip is 50% or more whiting by weight at landing.		*Low positive benefit from eliminating ambiguity in regulations relative to fishing activity as it allows declaration reports and management restrictions to better align.
Midwater trawl gear allowed in the trawl RCAs north of 40°10' N. lat. for all target species		* Neutral
Prohibited species retention allowed on Pacific whiting, "maximized retention" trips.		
The disposition of protected species consistent with current Biological Opinions, MMPA, MBTA.		
North of 40°10' N. lat. allow vessels to carry multiple types of midwater gear, but: ***Suboption A**: Only one target strategy (whiting or non-whiting) on a trip.* ***Suboption B:** Both whiting and non-whiting target strategies allowed on the same trip. However, "maximized retention" would not be allowed if the landed catch was greater than 50 percent non-whiting species.*		* Neutral

4.1.1. California Current Ecosystem (CCE)

The ongoing impacts under No Action are neutral. The number of trawl vessels participating in the fishery will likely continue to decrease slightly as the fleet consolidates under the Shorebased IFQ program. The authorized gears are not expected to change. However the use of midwater trawl is

expected to increase north of 40°10' north latitude due to increased ACLs for widow and yellowtail rockfish and less restrictive area closures that have been in place since 2011. The Pacific whiting fishery midwater trawl effort would continue to be concentrated from June to November. However, the fishery is proposed to start a month earlier (May 15) beginning in 2015 though the geographic location is not expected to change. The non-whiting midwater trawl fishery has not shown a distinct seasonality or geographic pattern. Alternative 2 is not expected to change the type of gear used in the fishery, the seasonality of the fishery, or the geographical location. Relative to the CCE, Alternative 2 is not expected to result in measurable direct or indirect impacts over No Action.

4.1.2 Essential Fish Habitat

The most common direct effect of fishing on EFH results from fishing gear coming in contact with bottom habitats. Fishing gear can cause physical harm to corals, sponges, rocky reefs, sandy ocean floor, eelgrass beds, and other components of the seafloor. Indirect effects to habitats include physical contact of a vessel underway or abandoned, chemical effects derived from paints or oils used on the vessel, and bilge waste release. Bilge waste release can also introduce invasive species that have a wide range of biological and environmental impacts. The ongoing impacts under No Action are neutral. The number of trawl vessels participating in the fishery will likely continue to decrease slightly as the fleet consolidates under the Shorebased IFQ program. The authorized gears are not expected to change. However the use of midwater trawl is expected to increase north of 40°10' north latitude due to increased ACLs for widow and yellowtail rockfish and less restrictive area closures that have been in place since 2011. The Pacific whiting fishery midwater trawl effort would continue to be concentrated from June to November. However, the fishery is proposed to start a month earlier (May 15) beginning in 2015 though the geographic location is not expected to change. The non-whiting midwater trawl fishery has not shown a distinct seasonality or geographic pattern. Relative to No Action, Alternative 2 is not expected to change the number or type of vessels participating in the fishery, the authorized gears, the duration or seasonality of the fishery, or the geographical location of where the fishery occurs. However, clarity in the regulations resulting from Alternative 2 may result in a modest increase in non-whiting targeting, some of which may occur in EFH conservation areas where bottom contact gears are prohibited.

Under No Action, regulations at 50 CFR 660.13(d) require the operator of any vessel registered to a limited entry permit to submit a declaration report before the vessel leaves port on a fishing trip. A new declaration report must be submitted before leaving port on a trip in which a gear type that is different from the gear type most recently declared for the vessel will be used. North of 40°10' north latitude, midwater trawl gear is permitted only for vessels participating in the primary Pacific whiting fishery. . Until 2011, only vessels targeting Pacific whiting with midwater trawl gear (landings with more than 4,000 pounds of Pacific whiting) were allowed to fish within the EFH conservation bottom contact areas and RCAs. Since 2011, midwater trawling has occurred within these areas by vessel with a limited entry midwater trawl, Pacific whiting shorebased IFQ declaration, regardless of target species. There is currently no requirement that vessels with a whiting declaration actually target Pacific whiting.

Due to the regulatory ambiguity, currently all midwater trawl is treated as exempt from the EFH conservation area and RCA restrictions. Under Alternative 2, which would clarify that both whiting and non-whiting targeting vessels using midwater gear are exempt, it is possible that a small number of vessels that do not also participate in the Pacific whiting fishery may begin targeting non-whiting species north of 40°10' north latitude in areas closed to bottom trawling. As discussed in Section 3.1.2 and the Groundfish FMP, midwater trawl is not considered to be a bottom-contact gear. However, midwater trawl does make occasional contact with benthic habitats. The modest increase in participation is likely to result in occasional bottom contact over what is currently occurring under No Action. Alternative 2 is

likely to result in neutral to low negative direct effects on the EFH north of 40°10' north latitude over No Action.

An analysis of bottom contact in the at-sea whiting fishery based on June 2006 to December 2013 observer data was conducted by the Northwest and Southwest Fisheries Science Centers. An informational report provided to the Council at its September 2014 meeting indicated that approximately 4.7 percent of the hauls in the at-sea sectors occurred within EFH conservation areas. Of the hauls that occurred within the conservation areas, 12.1 percent were interpreted as having made contact with the bottom (PFMC September 2014). Approximately 95.3 percent of the hauls that occurred outside of EFH conservation areas and approximately 22.8 percent of those hauls were interpreted as having made contact with the bottom (PFMC September 2014). Pacific whiting Shoreside data from 2011 to 2013 were also examined. The data which are reported at the landing level included 2,574 unique landings comprised of 4,989 hauls. Of the 2,574 unique landings, approximately 70.2 percent were interpreted as having made contact with the bottom (PFMC September 2014). The modest increases in targeting non-whiting with midwater trawl gear that is likely to occur in EFH area under Alternative 2 would likely result in some increases in bottom contact. However, non-whiting species may be targeted over harder substrate resulting in less bottom contact than occurs by vessels targeting Pacific whiting (PFMC 2014).

The potential indirect impacts to EFH would likely differ between whiting and non-whiting targeting. Eliminating ambiguity in regulations under Alternative 2 would allow declaration reports and management restrictions to better align. Should EFH concerns differ between the two target strategies, an indirect benefit of Alternative 2 is that it would allow for a focused management response to EFH concerns. Because non-whiting targeting has been increasing since the widow rockfish stock was rebuilt, and little is known about how the fishery will develop, being able to take a focused management response if needed is a low positive benefit.

4.2 Impacts on the Biological Environment

Impacts relative to the biological environment are summarized in Table 4.2.1. Alternative 2 is not expected to change the type of gear used, seasonality, or the geographical location of the fishery. Therefore, no direct biological impacts are expected. Indirect biological impacts on non-targeted groundfish, prohibited species and protected species may result from Alternative 2.

Table 4.2.1 Biological Impacts of Alternative 2 compared to No Action (Alternative 1)

Alternative 2 Elements	Biological Impacts (Compared with No Action)			
	Target Species	*Non-targeted groundfish*	*Prohibited species*	*Protected species*
Midwater trawl gear allowed with a valid declaration for either "limited entry midwater trawl, non-whiting shorebased IFQ" or "limited entry midwater trawl, Pacific whiting shorebased IFQ". Non-whiting vessel would not be obligated to also target Pacific whiting.	* Neutral	* Low to moderate positive if aligning declaration with targeting activity allows closely aimed management response to biological concerns * Neutral to low negative - increase in non-whiting targeting in EFH conservation areas is expected.		
A Pacific whiting IFQ trip is 50% or more whiting by weight at landing.	* Neutral	* Low to moderate positive if eliminating ambiguity in regulations relative to fishing activity allows declaration reports and management restrictions to align to achieve the intended response on catch of non-target species including prohibited and protected species.		
Midwater trawl gear allowed in the trawl RCAs north of 40°10' N. lat. for all target species	* Neutral			
Prohibited species retention allowed on Pacific whiting, "maximized retention" trips.	* Neutral		* Neutral to low positive if non-whiting vessels sort prohibited species at sea and reduce fishing mortality of some species.	
The disposition of protected species consistent with current Biological Opinions, MMPA, MBTA.	* Neutral		* Indirect low positive if disposition requirements prohibit sale and eliminate incentives for landing.	
North of 40°10' N. lat. allow vessels to carry multiple types of midwater gear, but: ***Suboption A**: Only one target strategy (whiting or non-whiting) on a trip.* ***Suboption B:** Both whiting and non-whiting target strategies allowed on the same trip. However, "maximized retention" would not be allowed if the landed catch was greater than 50 percent non-whiting species.*	* Neutral			

4.2.1 Target Species

The primary target species of the Shorebased IFQ Fishery are Pacific whiting, widow rockfish, yellowtail rockfish and chilipepper rockfish. Under No Action, these species would continue to be managed to sustainable levels under provisions of the Groundfish FMP. Within the trawl fishery, the target species catch would continue to be managed under an IFQ structure, and the fishery would continue to be well monitored. Under No Action, there is a low risk of catch exceeding the trawl allocations. Neither No Action or Alternative 2 are likely to jeopardize the sustainability of any target species because it would not increase the harvest of available target species over what is currently available for the IFQ program as

established under the biennial harvest specifications and management measures; the total mortality (catch and discard) would continue to be set at sustainable levels.

4.2.2 Non-target Species

Groundfish

Because Pacific whiting targeting primarily occurs on dense aggregations during daylight hours and results in only a small percentage of non-whiting catch. Midwater trawling for widow rockfish historically occurred at night when they formed dense off-bottom schools (Tagart 1987). Section 3.2.2 discusses the species most likely to be encountered, by vessels targeting Pacific whiting and non-whiting. Figures 3.2.1 and 3.2.1 shows groundfish species most frequently landed in whiting and non-whiting midwater trawls since the Shorebased IFQ program was implemented, 2011-2013.

IFQ species most frequently occurring in midwater trawl catches include yellowtail rockfish, widow rockfish, sablefish, arrowtooth flounder, POP, bocaccio, canary rockfish and darkblotched rockfish, Dover sole, petrale sole, rex sole, lingcod, longnose skate and minor slope rockfish. Under No Action, these non-target species would continue to be managed to sustainable levels under the groundfish FMP. Within the trawl fishery, the target species catch would continue to be managed under an IFQ structure which is well monitored. Under No Action, there is a low risk of catch exceeding the trawl allocations. Neither No Action or Alternative 2 change the harvest levels or allocations for species managed with IFQs, trip limits or within complexes. IFQ issuance and trip limits are driven by trawl allocations specified in the biennial harvest specifications. IFQs have been effective in keeping harvest within the trawl allocations. With the exception of Pacific whiting, sablefish and petrale sole, the attainment of the trawl allocation for the dominant non-target species has been relatively low (Table 4.2.2.). It is important to evaluate the impacts on attainment of allocation by species rather than the allocation poundage.

As noted above, Alternative 2 would have no direct biological effect on groundfish stocks including the component stocks managed within minor slope rockfish complex. A low to moderate positive indirect benefit may result from Alternative 2 if having more accurate declaration reports eliminates the ambiguity in the groundfish regulations and allows for clear and effective management responses to biological concerns that align with targeting activity. Under No Action, management responses cannot be directed at biological concerns for the different midwater trawl target strategies. Having a less ambiguous line in the use of declarations is expected to be beneficial because interactions with non-target species vary between vessel using midwater trawl to target Pacific whiting and non-whiting.

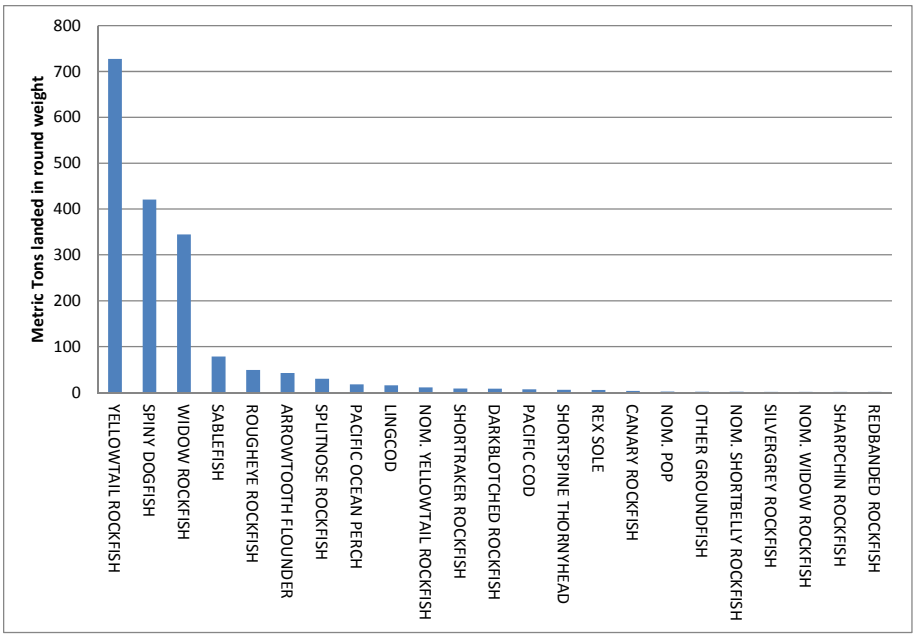

Figure 3.2.1 - Species other than Pacific whiting landed in midwater trawls targeting Pacific whiting (≥50% Pacific whiting) where aggregate catch was greater than 1 metric ton, 2011-2013 (PacFin 11/5/2014 query)

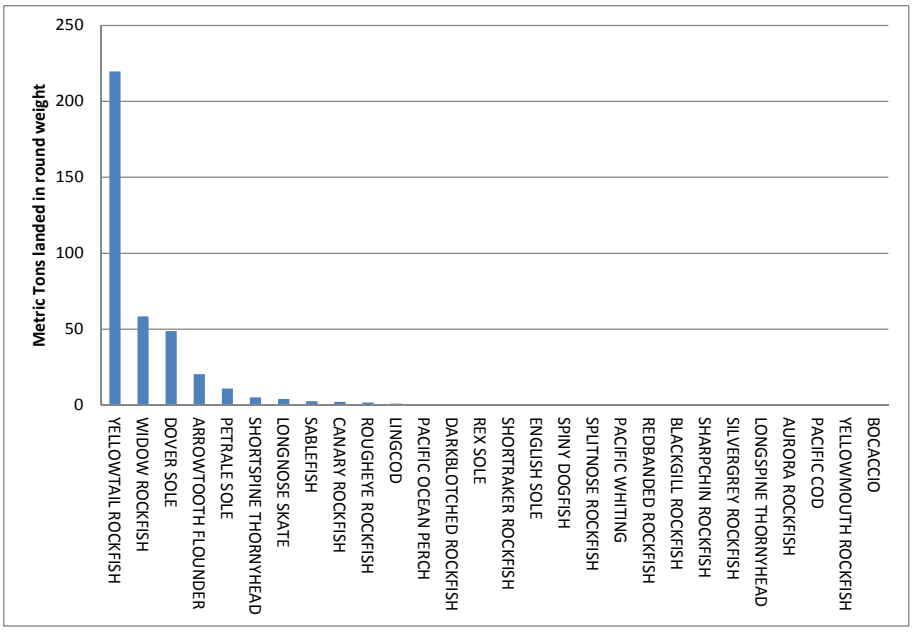

Figure 3.2.2 - Non-whiting midwater trawl landed catch by species, 2011-2013 (PacFin 11/5/2014 query)

Table 4.2.2. Percent attainment of trawl allocations by IFQ species and species groups (http://www.westcoast.fisheries.noaa.gov/publications/fishery_management/trawl_program/analytical%20docs/year2report-april2013.pdf.)

	2011 allocation attainment	2012 allocation attainment
Arrowtooth flounder	20%	26%
Bocaccio rockfish South of 40°10' N.	9%	15%
Canary rockfish	14%	28%
Chilipepper rockfish South of 40°10' N.	21%	22%
Cowcod South of 40°10' N.	1%	5%
Darkblotched rockfish	36%	36%
Dover sole	35%	33%
English sole	1%	2%
Lingcod	16%	21%
Longspine thornyheads North of 34°27' N.	49%	48%
Minor shelf rockfish North of 40°10' N.	3%	8%
Minor shelf rockfish South of 40°10' N.	3%	13%
Minor slope rockfish North of 40°10' N.	17%	27%
Minor slope rockfish South of 40°10' N.	14%	33%
Other flatfish	17%	16%
Pacific cod	22%	35%
Pacific ocean perch North of 40°10' N.	39%	45%
Pacific whiting	98%	96%
Petrale sole	93%	100%
Sablefish North of 36° N.	94%	90%
Sablefish South of 36° N.	86%	44%
Shortspine thornyheads North of 34°27' N.	50%	50%
Shortspine thornyheads South of 34,°27' N.	17%	1%
Splitnose rockfish South of 40°10' N.	3%	4%
Starry flounder	2%	1%
Widow rockfish	40%	45%
Yelloweye rockfish	10%	6%
Yellowtail rockfish North of 40°10' N.	24%	32%

Non-groundfish

A variety of non-groundfish species are incidentally caught in the Pacific whiting shoreside midwater trawl fishery. Table 3.2.2 shows catch of non-groundfish reported in WCGOP catch data for non-groundfish stocks from the shoreside whiting fishery for 2008 to 2011 and the non-whiting midwater trawl fishery from 2002 to 2011. The catch of non-target species by vessels targeting Pacific whiting is generally very low. Midwater trawling for Pacific whiting primarily occurs on dense aggregations during daylight hours only a small percentage of the catch is non-whiting and an even smaller portion is non-groundfish species. Midwater trawling for widow rockfish historically occurred at night when they formed dense off-bottom schools (Tagart 1987). Fishing practices that result in low bycatch are likely to continue under No Action.

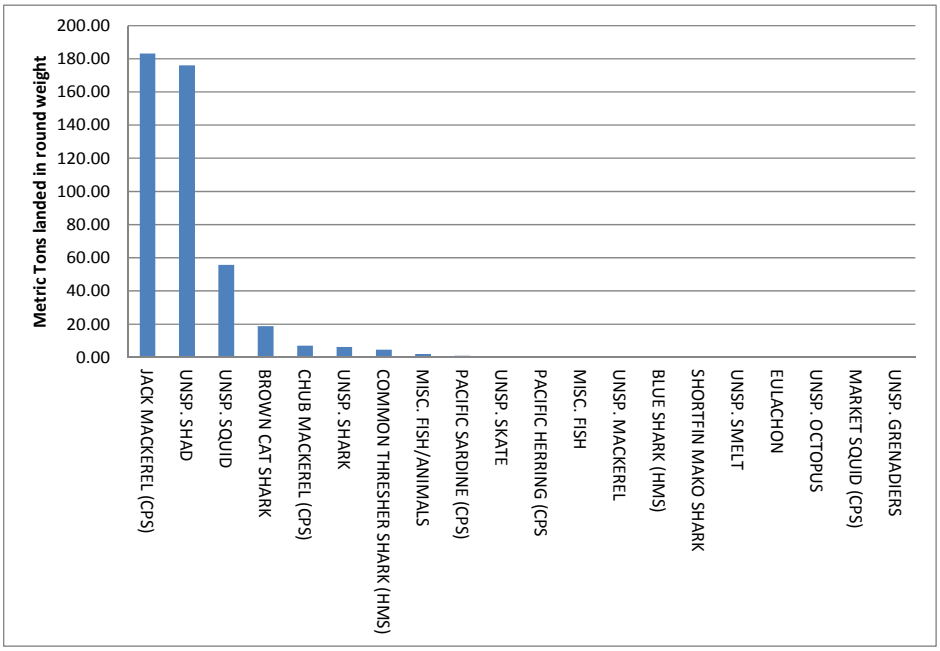

Figure 3.2.3 - Non-groundfish species landed by midwater trawls targeting Pacific whiting (≥50% Pacific whiting), 2011-2013 (PacFin 11/5/2014 query)

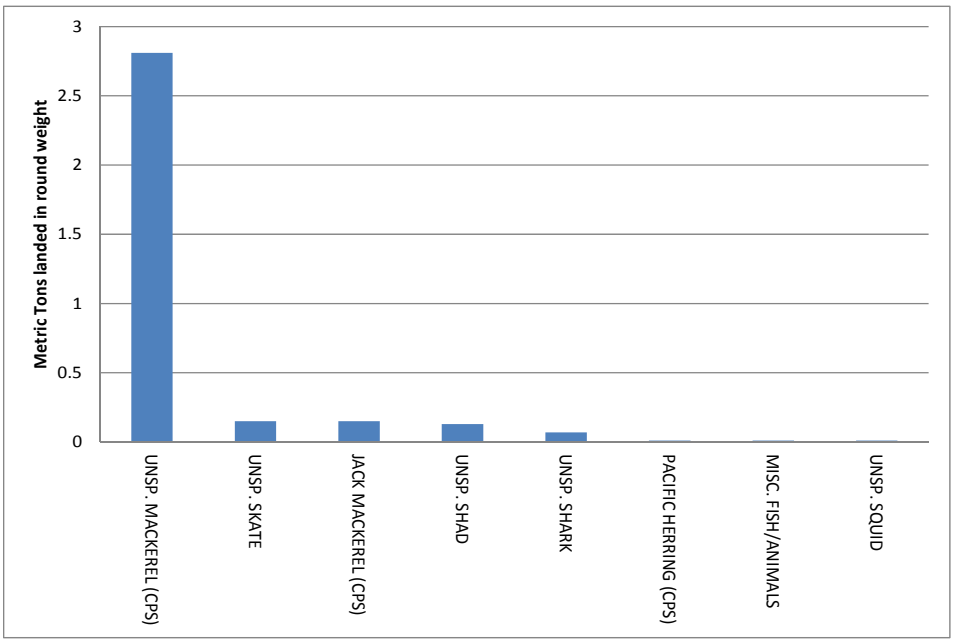

Figure 3.2.4 - Non-groundfish species landed by non-whiting midwater trawl vessels 2011-2013. (Pacfin 11/5/2014 query)

Between 2008 and 2011, CPS (mackerels, market squid, northern anchovy, and Pacific sardine) made up approximately 15 percent (75 mt) of the non-groundfish landings for vessels targeting Pacific whiting (Table 3.2.2). An additional 36 mt was Pacific herring, an ecosystem component species under the CPS FMP. Other non-groundfish species with substantial landings included unidentified squids, brown cat shark, and shad. For vessels targeting non-whiting groundfish with midwater trawl only minor amounts

of non-groundfish were observed. However, the majority of non-groundfish catch (5.51 mt) were aggregated into an unspecified category referred to as miscellaneous fish and animals.

Under No Action, annual harvest specifications for CPS, include an estimate of the incidental catch of each species caught by fishermen who are targeting non-CPS, which reduces the risk of overfishing as a result of catch in the groundfish midwater trawl fisheries. NMFS and the west coast states actively monitor the incidental catch of CPS which further reduces the risk of overfishing. The impacts under No Action are expected to be neutral for CPS. Alternative 2 is not expected to substantially change the type of gear, the seasonality, or the geographical location of fishing activity relative to No Action. Therefore, Alternative 2 is not likely to result in measureable changes in the direct biological effects on non-groundfish stocks over what has previously been considered relative to No Action. The ACL for Pacific mackerel (also called chub mackerel) is 52,358 metric tons (mt). The annual catch target (ACT), which is the directed fishing harvest target, is 39,268 mt. If the fishery attains the ACT, NMFS will close the directed fishery, reserving the difference between the ACL and ACT (which is 13,089 mt) as a set aside for incidental landings in other CPS fisheries and for other sources of mortality.

Large landings of unidentified squid shown in Table 3.2.2 are believed to be Humboldt squid, a fast growing predatory squid. The Humboldt squid is a short lived species that lives approximately 1 year with a growing biomass that has expanded its historical range in recent years (Stewart *et al*. 2014). As shown in Table 3.2.2, relatively small amounts of other non-groundfish species have been taken by vessels targeting Pacific whiting or landed by non-whiting midwater vessels. Each vessel in the shorebased trawl IFQ program is currently required to carry one observer to monitor catch and estimate at-sea discards. Incidental catch levels of non-groundfish will continue to be monitored allowing biological concerns with incidental catch levels to be monitored. Should a non-groundfish conservation concern arise under either alternative, a similar management response would result.

Under No Action moderate amounts of non-groundfish species such as skates, sharks and invertebrates survive trawl capture if immediately discarded at sea (Bellman and Heery 2013). However, the retention of these species until landing results in 100 percent mortality under No Action. Alternative 2 clarifies the maximized retention allowances, to specify that only Pacific whiting trips (≥50% Pacific whiting by weight at landing) are allowed to retain unsorted catch that includes non-groundfish and prohibited species until landing. Under Alternative 2, reduced mortality is likely to occur in landings by non-whiting vessels (<50% Pacific whiting) that have not been sorted at sea and are landed due to the ambiguity in the regulations (No Action). However, under No Action there have been relatively few unsorted non-whiting midwater trawl landings annually since 2011, generally less than 20 landings per year (pers. comm. Lori Jessie, PSMFC). The benefit under Alternative 2 would be low positive over No Action.

Alternative 2 includes revisions to the regulations to clearly state that all midwater trawl (Pacific whiting and non-whiting targeting) is allowed within the trawl RCAs North of 40°10’ north latitude after the start of the primary whiting season. The RCAs were created in the early 2000s to reduce catch rates of overfished stocks so harvest under a trip limit management regime stayed within the specifications established for stock rebuilding. As discussed relative to groundfish stocks (target and non-targeted stocks) IFQ management since 2011 has reduced concerns about exceeding trawl allocation to the degree that an OFL would be exceeded. This minor change from No Action reduces the ambiguity in the regulations and may result in a modest increase in midwater non-whiting targeting within the RCA over No Action. The level of activity under No Action is neutral and similar to that considered within the EA regarding chafing gear revisions (PFMC 2014). The impacts on non-groundfish stocks from a modest increase in fishing over No Action is neutral to low negative for species encountered with midwater trawl and which are more abundant in waters over the continental shelf.

An indirect benefit of Alternative 2 could occur from having declaration reports align with actual targeting activity (whiting or non-whiting midwater trawl). Eliminating the ambiguity in declarations could allow for more effective management responses to biological concerns about catch levels over No Action. Interactions with non-groundfish species vary between vessel using midwater trawl to target Pacific whiting and non-whiting. Alternative 2 is expected to have a low positive benefit to non-groundfish species over No Action which is neutral.

4.2.3 Prohibited species

Prohibited species catch by vessels targeting Pacific Whiting in the Shorebased fishery is shown in Table 3.2.3. This section discusses the impacts on Pacific halibut, Dungeness crab off Oregon and Washington, and salmon. Because the catch of ESA-listed salmon is directly related to the overall catch of salmon, the discussion on salmon addresses impacts of both ESA listed and unlisted stocks.

Pacific halibut

As shown in Table 3.2.3, incidental catch of Pacific halibut by vessels targeting Pacific whiting in the shorebased fishery has been very low, ranging between 14 and 73 fish per year between 2001 and 2010. Preliminary data since the implementation of IFQs, shows a similar trend in the aggregate midwater trawl fishery, ranging between 40 and 154 fish per year. (Table 4.2.3). No Pacific halibut were landed by non-whiting midwater trawl vessels since 2011. In the Shorebased IFQ Program, halibut are managed with individual bycatch quotas (IBQs). All vessels must have enough IBQ to cover their incidental catch of legal and sublegal sized Pacific halibut bycatch mortality in the area north of 40°10 N latitude. Each year the total constant exploitation yield for legal sized halibut (net weight) is established for area 2A and an amount is subtracted for expected bycatch mortality of legal sized halibut (net weight) Shorebased IFQ program. The impacts on Pacific Halibut are expected to be neutral given the use of IBQs to control catch. Alternative 2 is unlikely to result in overfishing or threaten the sustainability of Pacific halibut because it would not increase the harvest over what is currently available for the Shorebased IFQ program; the total mortality (catch and discard) would continue to be set at sustainable levels. Since the implementation of the Shorebased IFQ in 2011, the bycatch mortality has dropped substantially for the Pacific Coast groundfish trawl fishery as a whole, bottom and midwater trawl (IPHC 2012).

Table 4.2.3 Pacific halibut landings by Shorebased Pacific whiting midwater trawl, , 2011-2013 (Pacfin 10/28/2014) a/

Year	2011	2012	2013
Number	40	64	154
Weight (lbs)	697	1373	2787
a/ Landed catch only, does not include minor amounts discarded at sea.			

Pacific halibut can survive trawl capture if immediately discarded at sea. Retention until landing results in 100 percent mortality. Alternative 2 clarifies the maximized retention allowances, but is not expected to result in changes in mortality levels when compared to the activities occurring under No Action. The regulations under Alternative 2 would clarify that Pacific halibut catch occurring in non-whiting midwater trips would be required to be discarded at sea. Since no Pacific halibut have been landed by these vessels since 2011, no change in mortality is expected.

Dungeness crab of Oregon and Washington

As shown in Table 3.2.5, incidental catch of Dungeness crab by vessels targeting Pacific whiting in the shorebased fishery has been very low, ranging between 0 and 400 crab per year between 2001 and 2010. Only one Dungeness crab has been landed by non-whiting midwater trawl vessels since 2011. Under No Action, the effect is neutral with similar catch levels expected in the future.

Dungeness crab can survive trawl capture if immediately discarded at sea. Retention until landing results in high mortality. Alternative 2 clarifies the maximized retention allowances, but is not expected to result in changes in mortality levels when compared to the activities occurring under No Action. The regulations under Alternative 2 would clarify that Dungeness crab caught off Washington and Oregon occurring in non-whiting midwater trips would be required to be discarded at sea. Although non-whiting midwater trawl vessels fish in relatively shallow waters where Dungeness crab are founds, since 2011, only one Dungeness crab has been landed by non-whiting midwater trawl vessels.

Salmonids

The bycatch of salmonids in the midwater trawl fisheries is primarily Chinook salmon. The Incidental Take Statement in the 1999 opinion defined the level of expect bycatch of Chinook salmon as 11,000 Chinook (listed and unlisted fish combined) per year in the Pacific whiting fishery. The 11,000 was based on a bycatch rate of up to 0.05 chinook/mt whiting and an assumption that the harvest of whiting would average about 221,000 mt annually (221,000 * 0.05 = 11,050). Incidental catch of salmonids for the Pacific whiting shoreside fishery from 2001 to 2010 per data collected under EFPs are shown in Table 3.2.5. Table 4.2.4 shows the Chinook catch for all sectors (Shoreside, mothership, catcher/processor and tribal) since trawl rationalization and the Shorebased IFQ Program. The only year in which the overall bycatch rate of was above 0.05 Chinook/mt of whiting was 2014.

Table 4.2.4. Preliminary Catch Estimates of Chinook salmon by vessels fishing in the Pacific whiting fisheries by sector (whiting and non-whiting targeting). (Pacfin)

	2011	**2012**	**2013**	**2014***
Catcher/processor	2695	1934	1759	3780
Mothership	1296	2302	1981	2907
Shorebased	3674	2318	1274	7554
Tribal	906	17	1025	154
TOTAL	**8571**	**6571**	**6039**	**14395**
Whiting TAC	220995	186037	269745	316206
Whiting Catch	218832	159772	232633	263901
Annual bycatch rate	0.039	0.041	0.026	0.055

* preliminary data

On January 22, 2013 the NMFS West Coast Region's Sustainable Fisheries Division requested reinitiation of the current salmon biological opinion for the groundfish fisheries. The request resulted from the evolution of the trawl fishery under the trawl rationalization framework and improving conditions for species such as widow rockfish that are expected to change the characteristics of the fishery. In addition, WCGOP data reports contained new estimates of Chinook and coho salmon catch in the nearshore fixed gear fisheries (open access and limited entry fisheries), limited entry sablefish fishery, and open access California Halibut fishery. The update was expected to be completed prior to implementation of the 2015-2016 harvest specifications and management measures. In October 2014 prior to completion of the update, the Pacific whiting fisheries in aggregate exceeded the 11,000 Chinook threshold that reinitiates the consultation. Given the changes in the fishery identified in the January 22, 2013 reinitiation request, NMFS determined that the reinitiation should address all fishing under the Pacific Coast Groundfish FMP, including the Pacific whiting and non-whiting fisheries and all gears.

Chinook values for the Pacific whiting fishery shown in Table 4.2.4 include data from non-whiting vessels that targeted yellowtail and widow rockfish within the Shorebased IFQ Program whiting fishery. Table 4.2.5 shows an increasing trend in the targeting of yellowtail rockfish on trips where Pacific whiting targeting is not also occurring. In 2015 and 2016 the ACLs for yellowtail and widow rockfish are proposed to increase and may result in more midwater trawl effort than occurred in 2013 or 2014.

Table 4.2.5 Preliminary Estimates of Shorebased IFQ Landed Catch of Widow and Yellowtail Rockfish by Midwater Trawl, 2011-2014 (Pacfin 10/27/14 Query)

	2011	2012	2013	2014*
Widow - Non Whiting (<50% Hake)	0	4.57	53.90	46.53
Widow -Whiting (≥50% Hake)	103.51	102.00	144.20	269.90
Total Widow	103.51	106.57	198.1	316.43
Yellowtail Non-whiting (<50% Hake)	0	156.14	63.57	384.09
Yellowtail - Whiting (≥50% Hake)	409.76	205.16	112.23	308.56
Total Yellowtail	409.76	361.3	175.8	692.65

*preliminary data through 10/27/14

Under No Action, the expected catch of salmon is neutral. Change in overall salmon catch is more closely related to changes in allowed harvest levels for Pacific whiting and non-whiting target species. Changes in the catch of listed species may also be linked to changes in fishing season and geographic distribution of fishing. Regulations specific to the targeting of Pacific whiting have been established to reduce incidental catch of salmon consistent with the salmon FMP and with the terms and conditions of the Section 7 biological opinion on ESA listed salmon. These regulations would remain in place under No Action. Because salmon catch rates and overall catch in hauls targeting Pacific whiting differ from catch targeting non-whiting species, eliminating the ambiguity in declarations could allow for clear and effective management responses to concerns about salmon catch. An indirect benefit of Alternative 2 results from declaration reports aligning with actual targeting activity (whiting or non-whiting midwater trawl). Given difference in catch rates between the different target strategies, regulations could be specified relative to the target strategy. Alternative 2 is expected to have a low positive benefit to salmon. Under Alternative 2 the disposition restrictions would clearly state that prohibited species cannot reach commercial markets, reducing any incentives for landing that may exist under No Action due to the lack of clarity.

4.2.4 Protected species

This section discussed the impacts on marine mammals, sea birds, sea turtles, eulachon, and green sturgeon. Because the catch of ESA listed salmon is directly related to the overall catch of salmon, the discussion on salmon in the previous section on prohibited species addressed impacts to both ESA listed and unlisted stocks.

Marine Mammals

The incidental catch of marine mammals is known to occur in midwater trawl gear. The total catch of marine mammals is monitored by on-board observers. Although marine mammals are required to be discarded at sea, some have inadvertently made it to the first receiver in Pacific whiting maximized retention landings where catch monitors record their presence. Levels of observed take of marine mammals in the at-sea Pacific whiting fishery were presented in Table 3.2.4 as a proxy for potential midwater trawl interactions by midwater trawl vessels in the Shorebased IFQ Program. Pinnepeds taken in midwater trawls in the groundfish fishery include Elephant seals, Steller sealions, California sealions, and harbor seals. Cetaceans include Pacific Whiteside dolphins and Dall's porpoise. Historical data from the Pacific whiting at-sea fishery shows relatively low impacts on marine mammals. Under No Action, marine mammal interactions are neutral and would likely be similar to those observed in the past for the at-sea sectors. Alternative 2 does not change fishing behavior in a way that is expected to result in any new direct impacts on marine mammals.

Specifying handling and disposition of protected species that are landed in maximized retention deliveries under Alternative 2 may have a positive low impact if biological data are collected from the landed catch and used to inform future fishery management. Aligning declarations with targeting activity under

Alternative 2 may allow for management restrictions that align with fishing behavior to achieve an intended response. Alternative 2 is likely to result in be neutral to low positive indirect impacts.

Seabirds

Seabirds can be killed or injured when they are unintentionally entangled in trawl fishing gear. The birds drown when they are dragged under the surface during the setting of the net or when fishing gear is retrieved from the water. Data specific to the shorebased fishery using midwater trawl gear to target Pacific whiting and non-whiting are not available. Therefore, Table 3.2.5 shows observed take in the at-sea Pacific whiting fishery as a proxy for potential interaction with shorebased midwater trawl. Observed interactions occurred with Black-footed albatross, Common murre , northern fumar, sooty shearwater, unspecified tubenose, and unspecified alcids. Under No Action, seabird interactions would likely be similar to what has been observed in the past for the at-sea sectors. Alternative 2 does not change the allowed gear, the seasonality of the target fisheries, or the geographic distribution of fishing effort. The impacts of both No Action and Alternative 2 are neutral.

The Migratory Bird Treaty Act (16 U.S.C. 703-712) makes it illegal for anyone to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird, or the parts, nests, or eggs of such a bird except under the terms of a valid permit issued pursuant to Federal regulations. Injury and mortality as a result of fishing meet the definition of "take" (50 CFR 10.12). The incidental take statement of the 2012 biological opinion for the groundfish fishery requires that any short tailed albatross retained alive or dead must be surrendered as soon as possible as directed by the US Fish and Wildlife Service (503-231-6179). If an observer is on board, they are responsible for the disposition of dead, injured, or sick birds, otherwise the boat captain is responsible. Specifying handing and disposition of protected species that are landed in maximized retention deliveries may have a positive low impact if it allow for biological data collection that would otherwise not be available.

Sea Turtles

There are no known sea turtle interactions with the midwater trawl fisheries targeting Pacific whiting or non-whiting. No expected to result in change the location or timing of the target fisheries or expected increase in the harvest of sea turtle pre and is expected under either No Action or Alternative 2. Therefore, Sea turtle impacts under both No Action and Alternative 2 are expected to be neutral.

Eulachon

There is limited interaction between limited entry trawl fisheries and eulachon. Eulachon marine life history is poorly understood; therefore, the impact of fishing under the Pacific Coast Groundfish FMP upon eulachon is not well understood. Due to sampling conditions and time constraints, it is likely that some portion of observed eulachon catch was recorded as smelt unidentified (family Osmeridae) or even "other non-groundfish."

The conservation recommendations for eulachon in the 2012 Section 7 biological opinion indicate that NMFS should retain eulachon bycatch for archiving: Whole body eulachon specimens should be retained to further understanding of the species. Whole body specimens can allow for stock identification (genetic samples), diet (stomach analysis), sex ratios (examination of gonads), age (Ba:Ca ratios in otoliths), presence (locations of captures), and general morphology measurements. Handling procedures for those landed Shoreside are not specified in the biological opinion. Specifying handling and disposition of protected species that are landed in maximized retention landings Under Alternative 2, may have a positive low impact if biological data are collected from the landed catch and used to inform future fishery management. Although the groundfish fishery takes only a small proportion of the eulachon biomass, without handling and disposition requirements, valuable biological data that could be used to

improve the understanding of the stock would not be collected under No Action. Therefore, the impacts of No Action are neutral.

Green Sturgeon

Green sturgeon bycatch in the at-sea whiting fishery has been very low (zero catch in most years). The at-sea observer program recorded a total of only three green sturgeon occurring in 2005 and 2006. Data were not available for green sturgeon bycatch in the shorebased whiting fishery or non-whiting midwater trawl fisheries. Under No Action, green sturgeon catch by vessels using midwater trawl is expected to be infrequent. Therefore, impacts under No Action are considered to be neutral. Alternative 2 is not expected to result in change the location or timing of the target fisheries and is not expected to change the frequency of catch.

The incidental take statement within the December 2012, biological opinion, indicates that NMFS shall collect biological samples and data on incidental take of Southern DPS green sturgeon associated with the operation of the PCGF. However, the biological opinion did not specify disposition and handling requirements for green sturgeon landed on maximized retention trips. Specifying handling and disposition of protected species that are landed in maximized retention landings under Alternative 2, may have a positive low impact if biological data are collected from the landed catch and used to inform future fishery management.

4.3 Impacts on the Socio-economic Environment

Table 4.3.1 Overview of Socio-economic Impacts of Alternative 2 Relative to No Action				
Elements of Alternative 2	*Socio-economic Impacts*			
	Midwater trawl Harvesters	*Management and enforcement*	*First receivers/ processors*	*Communities*
Midwater trawl gear allowed with a valid declaration for either "limited entry midwater trawl, non-whiting shorebased IFQ" or "limited entry midwater trawl, Pacific whiting shorebased IFQ". Non-whiting vessel would not be obligated to also target Pacific whiting.	* Low positive - More equitable opportunity for non-whiting vessels	* Low positive - Improved tracking of activity relative to time/area restrictions specific to target strategy * Low positive -Aligning the declaration with the activity could allow for a more precise management response	* Neutral	* Neutral
A Pacific whiting IFQ trip is 50% or more whiting by weight at landing.	* Low positive -Less complicated regulations in relation to area restrictions. *Neutral - Prohibition on night fishing specific to the targeting of Pacific whiting. * Low positive -Easier to identify which trips "maximized retention" would be allowed for.	* Low positive - Regulations in relation to time/area restrictions would be easier to enforce.	* Low positive - Easier to identify which trips "maximized retention" would be allowed for.	* Neutral
Midwater trawl gear allowed in the trawl RCAs north of 40°10' N. lat. for all target species	* Low positive -Less complicated regulations in relation to RCA restrictions for midwater trawl.	* Low positive - Reduces time to resolve confusion about RCA restrictions for midwater trawl .	* Neutral	* Neutral
Prohibited species retention allowed on Pacific whiting, "maximized retention" trips.	* Low positive - Reducing time sorting catch at-sea helps maintain whiting quality		* Low positive - Clear protocols for the disposition of prohibited catch	* Neutral
The disposition of protected species consistent with current Biological Opinions, MMPA, MBTA.	* Low positive -Clarity on which species must be discarded at sea		* Low positive - Clear protocols for the disposition of prohibited catch	* Neutral

Table 4.3.1 (continued)				
Elements of Alternative 2	*Socio-economic Impacts*			
	Midwater trawl Harvesters	*Management and enforcement*	*First receivers/ processors*	*Communities*
North of 40°10' N. lat. allow vessels to carry multiple types of midwater gear, but: ***Suboption A**: Only one target strategy (whiting or non-whiting) on a trip.* ***Suboption B:** Both whiting and non-whiting target strategies allowed on the same trip. However, "maximized retention" would not be allowed if the landed catch was greater than 50 percent non-whiting species.*	* Neutral - Either option eliminates inconsistencies, making the regulations easier to understand and comply with. **Suboption A**: Most similar to how fishers behave under No Action. **Suboption B:** Provides greatest flexibility as fishers decide their strategy based on available catch, but could require sorting at sea.	* Neutral - Either option provides clarity and eliminates inconsistencies , making the regulations less complicated to enforce.	***Suboption A**:* Neutral ***Suboption B:*** Neutral to mixed low - Interest in non-whiting varies by first receiver. Those interested in non-whiting species could see increase landings.	* Neutral

The proposed action affects harvesting vessels in the Shorebased IFQ Program using midwater trawl to harvest Pacific whiting and non-whiting groundfish; the agencies that manage and enforce Shorebased IFQ program regulations; shorebased processors/first receivers who receive landings of Pacific whiting and non-whiting groundfish taken with midwater trawl gear; and communities where midwater trawl landings are received, and. Table 4.3.1 provides an overview of the socio-economic impacts.

4.3.1 Shorebased trawl IFQ Program - Midwater Trawl Harvesters

Section 3.3.1 describes the harvesting vessels in the Shorebased IFQ Program that are affected by the action. The affected harvesting vessels all use midwater trawl, with some targeting Pacific whiting and others targeting non-whiting, primarily yellowtail and widow rockfish. Under No Action, the current regulations may be interpreted as requiring vessels using midwater trawl north of 40°10' north latitude to submit a declaration for "limited entry midwater trawl, Pacific whiting shorebased IFQ" even if they intend to target non-whiting species. Fishing with midwater trawl is only allowed for vessels participating in the Pacific whiting shorebased IFQ fishery. Impacts of No Action are neutral as it would continue to allow the fishery to operate under Pacific whiting declarations, regardless of the true target species. Alternative 2 results in a low positive impact over No Action as it would clarify that vessels fishing north of 40°10' north latitude must use the declaration that reflects their targeting strategy. Alternative 2 would improve tracking of activity relative to time/area restrictions and the specific target strategy. Aligning the declaration with the activity could allow for a more surgical management response that can be clearly understood by harvesters.

Under No Action, Pacific whiting trips would continue to be undefined. The impact on the socio-economic environment of No Action is neutral. Alternative 2 establishes criteria for a Pacific whiting trip as being a trip with landings that are 50 percent or more Pacific whiting by weight; it would clarify that all midwater trawl north of 40°10' north latitude is allowed regardless of target species; and would allow for the submission of a valid declaration for either "limited entry midwater trawl, non-whiting shorebased IFQ" or "limited entry midwater trawl, Pacific whiting shorebased IFQ," depending on the target species Alternative 2 is not expected to have any effect on the vast majority of midwater trawl trips targeting Pacific whiting. Only a small number of vessels may have reduced flexibility under Alternative 2 suboption A (one target strategy per trip) because a vessel operator cannot change the target fishing strategy after they leave port. However, suboption A appears to be most similar to how harvesters currently operate. Suboption A provides the most clarity and eliminates inconsistencies, making the regulations less complicated for harvesters and easier to enforce. Suboption B, provides greatest flexibility allowing fishers to decide their strategy based on available catch on any particular trip, but could require sorting at sea. However, suboption B could result in declarations that do not align with fishing activity. Revising the groundfish regulations for clarity under Alternative 2 is expected to provide more equitable opportunity for non-whiting vessels north of 40°10' north latitude as it would specify that they do not need to also fish for Pacific whiting.

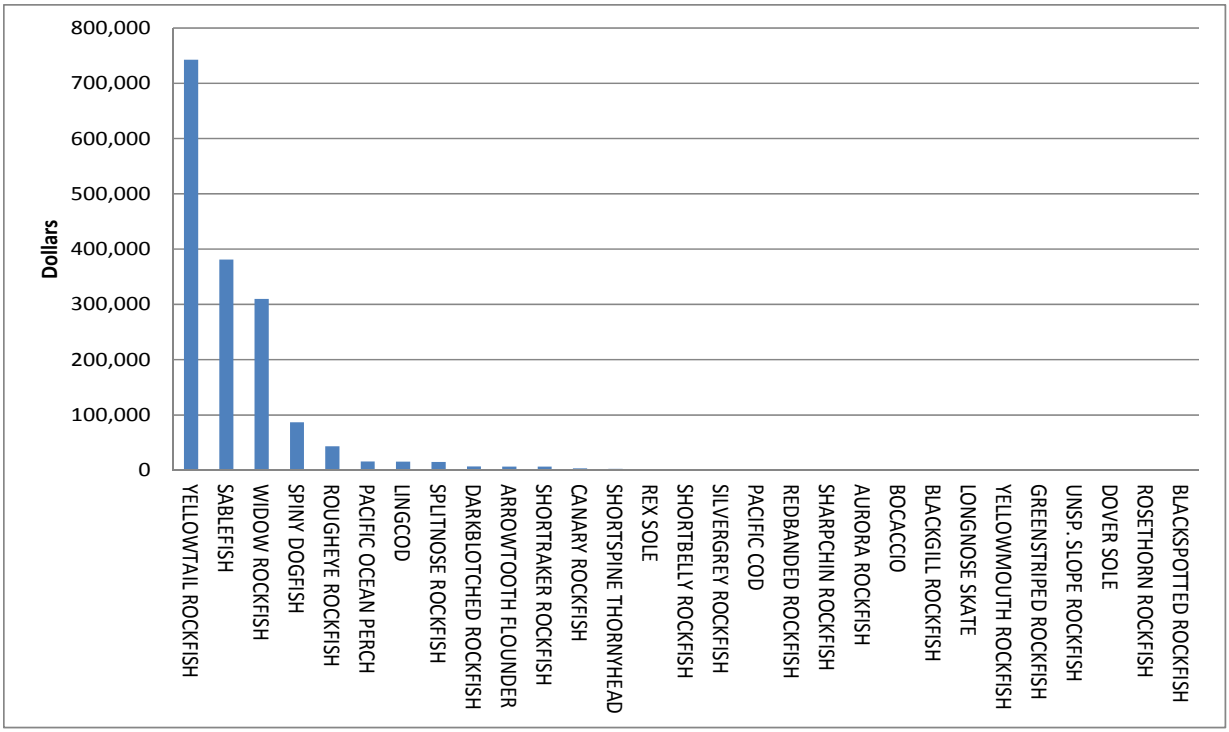

Figure 4.3.2 - Revenue (>$100) by species for midwater trawl landings by vessels targeting Pacific whiting (≥50% Pacific whiting), 2011-2013 excluding Pacific Whiting revenue (PacFin 11/5/2014 query)

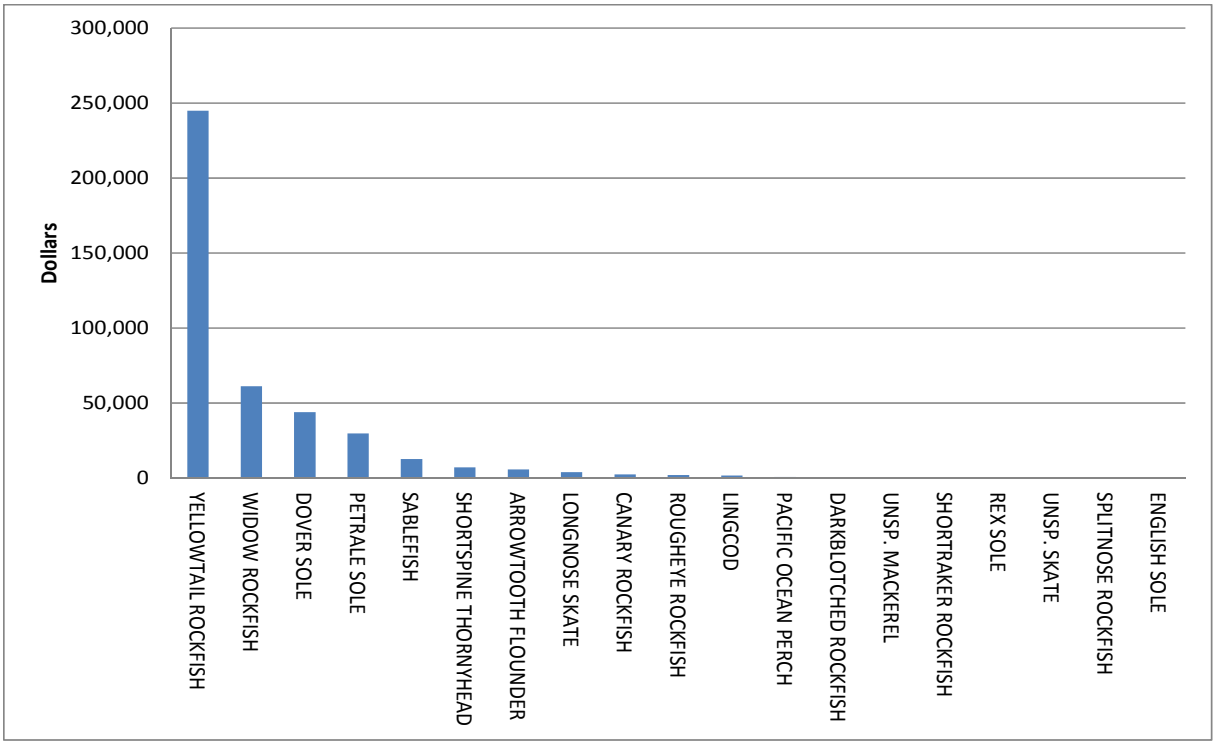

Figure 4.3.2 - Revenue (>$100) landed by midwater trawls targeting non- whiting (<50% Pacific whiting), 2011-2013 (PacFin 11/5/2014 query)

4.3.2 Shorebased IFQ Program - Closed area management

Time/Area restriction under No Action include RCAs, Klamath river conservation zone, Columbia river conservation zone, OSCZs, BRAs, the Eureka area 100-fm restriction, prohibition on night fishing south of 42°00′ north latitude and the Pacific whiting primary season dates. These restrictions were initially implemented to reduce incidental catch of Chinook salmon in the Pacific whiting fisheries. Klamath river conservation zone, Columbia river conservation zone, OSCZs, and the prohibition on night fishing are specific to the targeting of Pacific whiting and would remain linked to the targeting of whiting Under both No Action and Alternative 2. The impacts of No Action on the closed areas are neutral as no changes would be made to reduce the confusion by fishermen or enforcement about prohibited or allowed activities. Because widow rockfish were historically targeted at night with low bycatch, Alternative 2 revisions would clearly state that the prohibition on night fishing does not apply to non-whiting targeting. BRAs have evolved since their initial implementation in 2007 when they applied specifically to the targeting of whiting, since 2013 the BRAs have been considered as tool for use in the Pacific whiting sectors (all midwater trawl). Alternative 2 revisions would clearly state that the BRAs apply to all midwater trawl.

Since 2011 NMFS has received numerous requests from fishermen for interpretations of the groundfish regulations relative to the use of midwater trawl gear with in the RCAs. Alternative 2 would clearly state that all midwater trawl would be exempt from the RCA restrictions. Providing clarification on how time/area restrictions relate to specific target fishing activity under Alternative 2 is expected to reduce regulatory complexity and eliminates contradictory regulations. Changes under Alternative 2 are expected to be beneficial to the harvesters, managers and enforcement.

4.3.3 Shorebased IFQ Program - Landing Restrictions

Under the No Action alternative, maximized retention would continue to be allowed, however supporting regulations would not be added to clarify the retention and disposition requirements for landings of maximized retention catch. This would continue the status quo, where retaining prohibited species is not expressly allowed, even though maximized retention is addressed in the regulations, potentially creating confusion for both fishers and enforcement. Alternative 2 would revise the regulations to clearly state that maximized retention would only be allowed for trips targeting Pacific whiting, consistent with the provisions of Amendment 20. Because of relatively low bycatch by vessels targeting Pacific whiting, maximized retention allows sorting to be delayed until landing. Because whiting flesh deteriorates rapidly once the fish are caught, whiting must be minimally handled and immediately chilled to maintain the flesh quality. Allowing Pacific whiting shoreside vessels to retain unsorted catch benefits harvesters by enabling whiting quality to be maintained. Under Alternative 2 provisions would be added to allow Pacific whiting vessels to retain otherwise prohibited species until landing. Non-whiting vessels would have to continue to sort prohibited and protected species at sea. Some non-whiting landings under maximized retention have had a greater variety in bycatch than is typically seen in Pacific whiting landings and have been landed at first receivers with only one catch monitor. Long offloads associated with sorting and weighing non-whiting maximized retention catch has resulted in offload time exceeded the catch monitor's allowed work hours in a 24 hour period. Alternative 2 would also provide clarification on the disposition of protected species for maximized retention landings. Revisions to the maximized retention requirements under Alternative 2 are expected to reduce regulatory complexity and eliminate contradictory regulations which is expected to be beneficial to the harvesters.

4.3.4 Shorebased IFQ Program - First Receivers/ Processors

Table 3.3.5 show the count of first receivers from 2003 to 2012. In 2011 and 2012 there were nine Pacific whiting first receivers and 25-26 non-whiting first receivers. Only two to three of the non-whiting first receivers process midwater trawl caught species. Table 4.3.2 shows protected species that have been landed at first receivers from 2010 to 2013 and disposition as reported by catch monitors.

Table 4.3.2 - Protected species landed in maximized retention deliveries, 2010-2013.

Year	Protected species landed	Disposition
2010	One unidentified bird	Unknown
2011	One harbor seal	WDFW personnel picked up
2012	One unidentified gull	Unknown
2013	One unidentified bird, possible murrelet	Unknown

Tables 3.2.3, 4.2.3 and 4.2.4 show historical catch of prohibited species that have been landed at first receivers and cannot be sold when they have been caught by trawl gear. As noted in section 3.3, current protocols for handling these species are not specified in the groundfish regulations and vary by state. In Oregon prohibited species are documented on an "overage ticket" by the first receiver. All crab are ground after the weights and numbers are recorded as are fish that are not suitable for human consumption. For salmon and halibut that are fit for human consumption, ODFW either contacts or delivers the fish to a non-profit food bank/food pantry. Although processors can process the fish for food banks (ORS 616.223) with processing costs being covered, to date it appears that few processors have used this provision (Carla Sowell, ODFW per comm. February 11, 2014). No information is available for the States of California or Washington. No midwater trawls have been landed in California since 2012.

Under No Action Pacific whiting trips would continue to be undefined and no protocols for handling or disposing of prohibited or protected species would be defined. The impacts of No Action are neutral as first receivers would use current methods to identify maximized retention deliveries and determine how to handle and dispose of prohibited and protected species. Defining Pacific whiting trips under Alternative 2 should make it easier for first receivers/processors to identify which trips are classified as "maximized retention" such that it would be more clear which groundfish regulations apply. Alternative 2 specifies handling and disposition of prohibited and protected species. Clear protocols for the disposition of prohibited catch should reduce complexity and reduce confusion for first receivers/processors in that provision that affect the disposition of prohibited or protected species and which currently exist in various federal regulations and non-groundfish FMPs (Salmon FMP and 50 CFR Part 600, Subpart H. Pacific Halibut Management Measures #19 (I)(3), 50 CFR Part 300 Subparts E or F; Seabirds-16 U.S.C. 703-712; Marine mammals - 50 CFR 229.3(e), 50 CFR 229.5(c)).

4.3.5 Communities

In the State of Oregon, prohibited species are currently donated to any non-profit organization; with most of the fish going to the Oregon Food Bank. Other non-profit organizations are sometimes used, such as county food banks, other non-profit food pantries, Senior Centers, Oregon Youth Authority, Rescue Missions, the Siletz tribe, and battered women shelters, etc. A few fish surrendered to the State have been used for education and research. Similar charitable donations are expected to continue under No Action resulting in neutral impacts. No change in the amount of fish making it to food banks in Oregon is expected under Alternative 2. Clarity in the disposition and handling in Washington and California is not expected to result in increased numbers of prohibited species being donated to non-profit organizations. It is most likely that catch at first receivers in Washington and California has been disposed of and has not

reach commercial markets or charitable organizations under No Action. Under Alternative 2, similar disposal methods would likely be used, resulting in neutral benefits to communities.

4.4 Cumulative Impacts

A cumulative effects analysis is required by the Council on Environmental Quality (CEQ) (40 CFR part 1508.7). The purpose of a cumulative effects analysis is to consider the combined effects of many actions on the human environment over time that would be missed if each action were evaluated separately. CEQ guidelines recognize that it is not practical to analyze the cumulative effects of an action from every conceivable perspective, but rather, the intent is to focus on those effects that are truly meaningful. During the review of cumulative impacts, the EPA determined that a formal cumulative impact assessment is not necessarily required as part of an EA as long as the significance of cumulative impacts has been considered (U.S. EPA 1999). The following addresses the significance of the expected cumulative impacts as they relate to the Pacific Coast groundfish fishery.

4.4.1 Consideration of the Affected Resources

The affected resources that relate to the Shorebased IFQ Program midwater trawl fishery are described in Chapter 3. The significance of the cumulative effects will be discussed in relation to these affected resources listed below.

- The physical environment, including the CCE and EFH.
- The biological environment, including target species, non-target species, prohibited species, and protected species.
- The Shorebased IFQ Program socio-economic environment, including midwater trawl harvesters, time/area management, catch restrictions, first receivers/ processors, and communities.

4.4.2 Geographic Boundaries

The analysis focuses on actions related to the use of midwater trawl gear in the Shorebased IFQ program. The core action area is California Current Ecosystem in the Eastern Pacific Ocean (Section 3.1.1). The Pacific whiting coastal stock is highly migratory with adults migrating north during spring and summer from southern California and northern Baja California spawning grounds to feeding grounds off Oregon, Washington, and Vancouver Island, Canada. During fall and winter the adults migrate back to the spawning grounds. For habitat, the core geographic scope is focused on EFH within the EEZ Section 3.1.2), but includes all habitat utilized by Pacific whiting and other non-target species in the Eastern Pacific Ocean. Non-whiting species targeted with midwater trawl tend to be more localized than Pacific whiting, although their young may be broadly distributed within the California current system. For non-target species, those ranges may be expanded and would depend on the biological range of each individual non-target species. The core geographic scope for endangered and protected resources can be considered the overall range of these resources in the Eastern Pacific Ocean. For human communities, the core geographic boundaries are defined as those U.S. fishing communities directly involved in the harvest or processing of IFQ groundfish caught with midwater trawl, most notably Bellingham WA, Ilwaco WA, Westport WA, Astoria OR, and Newport, OR, Coos Bay/Charleston OR, Eureka CA, and Crescent City CA.

4.4.3 Temporal Boundaries

The temporal scope of past and present actions for the affected resources is primarily focused on actions that have occurred after FMP implementation (1982) and more importantly, since implementation of the trawl rationalization program in 2011. For endangered species and other protected resources, the scope of past and present actions is on a species-by-species basis (Sections 3.2.3 and 2.3.4) and is largely focused on the 1990s through the present. The temporal scope of future actions for all affected resources extends about three years into the future. This period was chosen because the dynamic nature of resource management and lack of information on future projects make it very difficult to predict impacts beyond this timeframe with any certainty.

4.4.4 Actions Other than the Proposed Action -Past, Present, and Reasonably Foreseeable Future Actions

Fishery Related Actions

Historical management practices have resulted in positive impacts on groundfish species taken with midwater trawl gear. The fishery management process provides the opportunity for the status of the fisheries to be assessed every two years (annually for Pacific whiting) and adjustments made to harvest specifications as necessary to meeting the objectives of the Pacific Coast groundfish FMP, including rebuilding overfished stocks. The statutory basis for Federal fisheries management is the Magnuson-Stevens Act. The cumulative impacts of past, present, and reasonably foreseeable future actions on the affected resources are generally associated with positive long-term outcomes. Constraining fishing effort through regulatory actions can have negative short-term socioeconomic impacts. However, the same regulatory actions are generally necessary for long-term sustainability, which should, in the long-term, promote positive effects on communities, especially those that are economically dependent on fishing.

Pacific whiting OYs vary considerably between years, given the stocks highly variable recruitment patterns and a relatively short lifespan. Other midwater trawl target species (yellowtail, widow and chilipepper rockfish) have been stable or have an increasing biomass. Widow rockfish was determined to be rebuilt in 2012. As a result, trawl allocations established during rebuilding are being re-evaluated by the Council and may be redistributed with a larger proportion allocated to permits that historically targeted widow rockfish with midwater trawl. The reallocation of widow rockfish to the Shorebased IFQ program is likely to allow greater access to a valuable midwater trawl target species.

The 2015-2016 harvest specifications and management measures substantially increase ACLs to widow and yellowtail rockfish, which is projected to result in increased landings with midwater trawl. There are habitat implications associated with the increased ACLs if it results in increased fishing activity with the trawl RCAs (PFMC 2014). There has likely been substantial habitat recovery within RCAs stemming from prohibition on bottom trawling, and the allowance of only Pacific whiting targeting within the RCAs from 2002 to 2011. Midwater trawls make occasional contact with the seafloor (PFMC 2014). Increased midwater trawling within RCAs is likely to result in increased gear contacts with bottom habitats. However, the rate of contact is expected to be very low, lower than the observed rate of contact in the Pacific whiting at-sea fishery, which is 8 percent or less of tows (PFMC 2014). There are important disincentives associated with gear contact with demersal habitats including the high cost of net repair or replacement, reduced gear efficiency, and increased operating costs (PFMC 2014). Gear restrictions that reduce the incentive to make bottom contact with midwater gear include: a bare footrope requirement on all midwater nets and a requirement for large mesh webbing between the net opening and the main fishing net. Increased allowance for chafing gear coverage is expected to result in small increases in bottom contact.

The Council recently implemented adoption of a Fishery Ecosystem Plan (FEP) that is primarily advisory in nature and functions across all FMPs managed by the Council. Reasonably foreseeable future actions under the FEP include management of forage fish, defining trophic associations and ecological roles of unmanaged species not included in any FMP, and potential processes for their management. The FEP is expected to have positive environmental and biological impacts on forage fish and unmanaged species. Such protections could accrue benefits to managed species such as groundfish which depend on forage fish. While adverse impacts on forage fish and unmanaged fish under any of the alternatives are expected to be minimal, actions taken under the FEP are expected to benefit the groundfish resources by helping to offset any negative impacts. It could potentially have negative short-term socioeconomic impacts if actions taken to protect forage species and unmanaged species resulted in reduced harvest opportunity for managed species.

The following actions affecting midwater trawl vessels are expected in the reasonable foreseeable future.

2015-2016 Biennial Harvest Specifications and Management Measures, Amendment 24 - Establishes harvest specifications and trawl allocations for 2015 and 2016. Increases in ACLs for yellowtail and widow rockfish are projected to result in increased midwater trawl opportunity.

Pacific Whiting Harvest Specifications and Set-asides - Established the annual U.S. Harvest allocations for commercial and tribal sectors. Above average U.S. OYs are projected in the near future.

Widow rockfish reallocation - Reallocation of widow rockfish QS among trawl fishery participants with consideration for greater allocations from permit holders who landed incidental catch of widow rockfish to permit holders that historically targeted widow rockfish with midwater trawl. May result in midwater fishing outside the Pacific whiting fishery.

Whiting Season and California early season limit - Establishes May 15 as the start date for the Shorebased IFQ Program Pacific whiting fishery and eliminates the early California season. All midwater trawling north of 40°10' north latitude would be allowed to start on May 15. The action does not change the total amount of trawling with midwater gear, but it may alter the timing of that harvest.

Gear Issues -- Allowances for multiple types of trawl gears on a single fishing trip, gear modifications to increase efficiency and flexibility, and restrictions on times and areas in which gears may be used including the use of midwater trawl to outside the primary whiting season.

Electronic Monitoring as a Replacement for the 100 percent Observer Coverage Requirement - A preliminary study would be conducted under EFPs followed by a rulemaking. Retention requirements will be evaluated and further specified. Maximized retention may be allowed on a broader range of vessels to land unsorted catch.

Revisions to Flow Scale Regulations - NMFS Alaska Region is currently revising at-sea flow scale regulations for the North Pacific because incidences of manipulation were discovered. Regulations at 660.15 may need to be revised to be consistent with revisions to North Pacific regulations. New regulations are required to address the need for daily scale testing criteria for the new shoreside flow scales. The weighing of Pacific whiting IFQ landings are expected to be most affected by changes in shoreside flow scale requirements.

4.4.5 Non-fishing Actions

Non-fishing activities in the marine environment introduce chemical pollutants and sewage; and result in changes in water temperature, salinity, dissolved oxygen, and suspended sediment which poses a risk to the affected resources. Human-induced non-fishing activities tend to be localized in nearshore areas and marine project areas. When these activities co-occur, they are likely to work additively or synergistically to decrease habitat quality and may indirectly constrain the sustainability of the managed resources, non-target species, and protected resources. Decreased habitat suitability tends to reduce the tolerance of affected species to the impacts of fishing effort. Mitigation through regulations that would reduce fishing effort could negatively impact human communities. The overall impact to the affected species and their habitats on a population level is unknown, but likely neutral to low negative, since a large portion of these species have a limited or minor exposure to the localized non-fishing perturbations.

For many of the proposed non-fishing activities to be permitted by other Federal agencies, those agencies would examine the potential impacts on the affected resources. The Magnuson-Stevens Act (50 CFR 600.930) imposes an obligation on other Federal agencies to consult with the Secretary of Commerce on actions that may adversely affect EFH. The eight fishery management councils engage in the review process by making comments and recommendations on any Federal or state action that may affect habitat, including EFH, for their managed species and by commenting on actions likely to substantially affect habitat, including EFH. In addition, under the Fish and Wildlife Coordination Act (Section 662), "whenever the waters of any stream or other body of water are proposed or authorized to be impounded, diverted, the channel deepened, or the stream or other body of water otherwise controlled or modified for any purpose whatever, including navigation and drainage, by any department or agency of the U.S., or by any public or private agency under Federal permit or license, such department or agency first shall consult with the U.S. Fish and Wildlife Service (USFWS), Department of the Interior, and with the head of the agency exercising administration over the wildlife resources of the particular state wherein the" activity is taking place. This act provides another avenue for review of actions by other Federal and state agencies that may impact resources that NMFS manages in the reasonably foreseeable future. In addition, NMFS and the USFWS share responsibility for implementing the ESA. ESA requires NMFS to designate "critical habitat" for any species it lists under the ESA (i.e., areas that contain physical or biological features essential to conservation, which may require special management considerations or protection) and to develop and implement recovery plans for threatened and endangered species. The ESA provides another avenue for NMFS to review actions by other entities that may impact endangered and protected resources whose management units are under NMFS' jurisdiction.

The effects of climate on the biota of the California Current ecosystem have been recognized for some time. The El Niño/Southern Oscillation (ENSO) is widely recognized to be the dominant mode of inter-annual variability in the equatorial Pacific, with impacts throughout the rest of the Pacific basin and the globe. During the negative (El Niño) phase of the ENSO cycle, jet stream winds are typically diverted northward, often resulting in increased exposure of the Pacific Coast of the U.S. to subtropical weather systems. The impacts of these events to the coastal ocean generally include reduced upwelling winds, deepening of the thermocline, intrusion of offshore (subtropical) waters, dramatic declines in primary and secondary production, poor recruitment, reduced growth and survival of many resident species (such as salmon and groundfish), and northward extensions in the range of many tropical species. Concurrently, top predators such as seabirds and pinnipeds often exhibit reproductive failure. In addition to inter-annual variability in ocean conditions, the North Pacific seems to exhibit substantial inter-decadal variability, which is referred to as the Pacific (inter) Decadal Oscillation (PDO).

Within the California Current itself, Mendelssohn, et al. (2003) described long-term warming trends in the upper 50 to 75 m of the water column. Recent paleoecological studies from marine sediments have indicated that 20th century warming trends in the California Current have exceeded natural variability in

ocean temperatures over the last 1,400 years. Statistical analyses of past climate data have improved our understanding of how climate has affected North Pacific ecosystems and associated marine species productivities. Our ability to predict future impacts on the ecosystem stemming from climate forcing events remains poor at best.

4.4.6 Magnitude and Significance of Cumulative Effects

In determining the magnitude and significance of the cumulative effects, the additive and synergistic effects of the proposed action, as well as past, present, and future actions, must be taken into account. The following section presents the effects of past, present, and reasonably foreseeable future actions on each of the managed resources. This is followed by a discussion on the synergistic effects of the proposed action, as well as past, present, and reasonably foreseeable future actions.

Physical Environment, including Habitat and Ecosystem

Those past, present, and reasonably foreseeable future actions, whose effects may impact habitat (including EFH) and the direction of those potential impacts, are listed in Table 4.4.1, below. The direct and indirect negative impacts described in Table 4.4.1 are localized in nearshore areas and marine project areas where they occur. Therefore, the magnitude of those impacts on habitat is expected to be limited due to a lack of exposure to habitat at large. Agricultural runoff may be much broader in scope, and the impacts of nutrient inputs to the coastal system may be of a larger magnitude, although the impact on habitat and EFH is unquantifiable. As described above, NMFS has several means under which it can review non-fishing actions of other Federal or state agencies that may impact NMFS' managed resources and the habitat on which they rely prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of direct and indirect negative impacts those actions could have on habitat utilized by resources under NMFS' jurisdiction.

Past fishery management actions taken through the FMP process have had a positive cumulative effect on habitat and EFH. It is anticipated that future management actions will result in additional direct or indirect positive effects on habitat through actions which protect EFH for federally-managed species and protect ecosystem services on which these species' productivity depends. These impacts could be broad in scope. All of the affected resources are interrelated; therefore, the linkages among habitat quality and EFH, managed resources and non-target species productivity, and associated fishery yields should be considered. For habitat and EFH, there are direct and indirect negative effects from actions which may be localized or broad in scope; however, positive actions that have broad implications have been, and it is anticipated will continue to be, taken to improve the condition of habitat. There are some actions, which are beyond the scope of NMFS and PFMC management such as coastal population growth and climate change, which may indirectly impact habitat and ecosystem productivity. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to habitat have had a neutral to positive cumulative effect.

Table 4.4.1: Summary of the effects of past, present, and reasonably foreseeable future actions on habitat.

Action	Past to the Present		Reasonably Foreseeable Future
Original FMP and subsequent Amendments to the FMP	**Indirect Positive**		
Agricultural runoff	**Direct Negative**		
Port maintenance	**Uncertain – Likely Direct Negative**		
Offshore disposal of dredged materials	**Direct Negative**		
Marine transportation	**Direct Negative**		
Installation of pipelines, utility lines and cables	**Uncertain – Likely Direct Negative**		
Offshore Energy Facilities (wind, tidal, etc.)			**Potentially Direct Negative**
2015-2016 Biennial Harvest Specifications			**Mixed - Low Negative to Low Positive**
Pacific Whiting Harvest Specifications and Set-asides			**Neutral**
Widow rockfish reallocation			**Neutral**
Whiting season date change and early California Season			**Neutral**
Gear Issues			**Direct - Low Negative**
Electronic Monitoring as a Replacement for the 100 percent Observer Coverage Requirement			**Indirect - Low Negative**
Revisions to Flow Scale Regulations			**Neutral**
Summary of past, present, and future actions excluding those proposed in this document	**Overall, actions have had, or will have, neutral to positive impacts on habitat, including EFH**		

Biological Environment

Those past, present, and reasonably foreseeable future actions, and the direction of those potential impacts, are summarized in Table 4.4.2, below. The indirectly negative actions described in Table 4.4.2 are localized in nearshore areas and marine project areas where they occur. Therefore, the magnitude of those impacts on the managed resources is expected to be limited due to a lack of exposure to the population at large. Agricultural runoff may be much broader in scope, and the impacts of nutrient inputs to the coastal system may be of a larger magnitude, although the impact on productivity of the managed resources is unquantifiable. As described above, NMFS has several means under which it can review non-fishing actions of other Federal or state agencies that may impact NMFS' managed resources prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of indirect negative impacts those actions could have on resources under NMFS' jurisdiction.

Past fishery management actions consistent with the FMP have had a positive cumulative effect on the managed resources. It is anticipated that the future management actions will result in additional indirect positive effects on the managed resources through actions which reduce and monitor bycatch, protect habitat, and protect ecosystem services on which Pacific whiting and other midwater trawl caught species productivities depend. In addition, past fishery management actions taken through the FMP process have had a positive cumulative effect on ESA-listed and MMPA-protected species through the reduction of fishing effort (potential interactions) and implementation of gear requirements. It is anticipated that the future management actions will continue to result in additional indirect positive effects on protected resources. The impacts of these future actions could be broad in scope, and it should be noted the biological resources are often coupled in that they utilize similar habitat areas and ecosystem resources on which they depend. Overall, the past, present, and reasonably foreseeable future actions are meaningful to the biological resources as they have had a positive cumulative effect.

Table 4.4.2: Summary of the effects of past, present, and reasonably foreseeable future actions on biological resources.

Action	Past to the Present		Reasonably Foreseeable Future
Original FMP and subsequent Amendments to the FMP	**Indirect Positive**		
Agricultural runoff	**Indirect Negative**		
Port maintenance	**Uncertain – Likely Indirect Negative**		
Offshore disposal of dredged materials	**Indirect Negative**		
Marine transportation	**Indirect Negative**		
Installation of pipelines, utility lines and cables	**Uncertain – Likely Negative**		
Offshore Energy Facilities (wind, tidal, etc.)			**Uncertain – Likely Indirect Negative is the project area**
2015-2016 Biennial Harvest Specifications			**Indirect Positive**
Pacific Whiting Harvest Specifications and Set-asides			**Mixed but mostly indirect**
Widow rockfish reallocation			**Likely Neutral**
Whiting season date change and early California Season			**Likely Neutral**
Gear Issues			**Likely Neutral**
Electronic Monitoring as a Replacement for the 100 percent Observer Coverage Requirement			**Uncertain - Indirect Neutral to Low Negative**
Revisions to Flow Scale Regulations			**Indirect low Positive**
Summary of past, present, and future actions excluding those proposed in this document	**Overall, actions have had, or will have, positive impacts on the biological resources**		

Socio-Economic Environment

Those past, present, and reasonably foreseeable future actions, whose effects may impact the socio-economic environment and the direction of those potential impacts, are summarized in Table 4.4.3. Indirect neutral to low positive effects are localized to vessels using midwater trawl gear, first receivers accepting maximized retention deliveries and communities where maximized retention landing are made.. Therefore, the magnitude of those impacts on the managed resources is expected to be limited due to a lack of exposure to the population at large. Agricultural runoff may be much broader in scope, and the impacts of nutrient inputs to the coastal system may be of a larger magnitude, although the impact on productivity of the managed resources is unquantifiable. As described above, NMFS has several means under which it can review non-fishing actions of other Federal or state agencies that may impact NMFS' managed resources prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of indirect negative impacts those actions could have on resources under NMFS' jurisdiction.

Past fishery management actions taken through the FMP have had a positive cumulative effect on the managed resources. It is anticipated that the future management actions will result in additional indirect positive effects on the managed resources that the midwater trawl fisheries depend on. It is anticipated that the future management actions will continue to result in additional indirect positive effects on resources that the midwater trawl fishery, first receivers and communities depend on. The impacts of these future actions could be broad in scope. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to the socio-economic aspects of the fishery have had a positive cumulative effect.

Table 4.4.3: Summary of the effects of past, present, and reasonably foreseeable future actions on human communities

Action	Past to the Present		Reasonably Foreseeable Future
Original FMP and subsequent Amendments to the FMP	**Indirect Positive**		
Agricultural runoff	**Indirect Negative**		
Port maintenance	**Uncertain – Likely Mixed**		
Offshore disposal of dredged materials	**Indirect Negative**		
Marine transportation	**Mixed**		
Installation of pipelines, utility lines and cables	**Uncertain – Likely Mixed**		
Offshore Energy Facilities (wind, tidal, etc.)			**Uncertain – Likely Mixed project area**
2015-2016 Biennial Harvest Specifications			**Positive**
Pacific Whiting Harvest Specifications and Set-asides			**Positive**
Widow rockfish reallocation			**Mixed**
Whiting season date change and early California Season limit			**Low Positive**
Gear Issues			**Low Positive**
Electronic Monitoring as a Replacement for the 100 percent Observer Coverage Requirement			**Neutral to Low Positive**
Revisions to Flow Scale Regulations			**Neutral**
Summary of past, present, and future actions excluding those proposed in this document	**Overall, actions have had, or will have, positive impacts on human communities**		

Preferred Action on all of the Affected Resources

Alternative 2 is the preferred action alternative (Chapter 2). The magnitude and significance of the cumulative effects include the additive and synergistic effects of the proposed action, as well as past, present, and reasonably foreseeable future actions, are discussed throughout this section.

Impacts to the physical environment are not expected to result in measurable direct or indirect impacts on the California Current Ecosystem over No Action. All midwater trawl is currently exempt from the EFH conservation area and RCA restrictions. Under Alternative 2, a small number of vessels that do not also participate in the Pacific whiting fishery are expected to begin targeting non-whiting species north of 40°10' north latitude in areas closed to bottom trawling. Because midwater trawl has been shown to make occasional contact with benthic habitats, a moderate increase in participation is likely to result in a moderate increase in the amount of occasional bottom contact over what is currently occurring under No Action. Moderate increases in occasional bottom contact under Alternative 2 is likely to result in neutral to low negative direct effects on the EFH north of 40°10' north latitude over No Action. Should EFH concerns differ between Pacific whiting and non-whiting target strategies, an indirect benefit of Alternative 2 is that it could allow for a management response to EFH concerns specific to the target fishing activity. Because the non-whiting targeting has been increasing since the widow rockfish stock was rebuilt, and little is known about how the fishery will develop, being able to take a focused management response if needed is a low positive benefit.

Impacts on the biological resources are primarily a function of the areas fished, gear types used, and level of effort; and of these; area fished is the only factor that might be affected. No direct biological impacts are expected. Alternative 2 is not expected to change the type of gear used, seasonality, or the geographical location of the fishery. Alternative 2 is unlikely to jeopardize the sustainability of any target species because it would not increase the harvest of available target species over what is currently

available for the IFQ program as established under the biennial harvest specifications and management measures; the total mortality (catch and discard) would continue to be set at sustainable levels.

Indirect biological impacts on non-targeted groundfish, prohibited species and protected species may result from Alternative 2. A variety of non-groundfish species are incidentally caught in the Pacific whiting shoreside midwater trawl fishery. Alternative 2 is not likely to result in measureable changes in the direct biological effects on non-groundfish stocks over what has previously been considered. Annual harvest specifications for CPS and HMS species include estimates of incidental catch by fishermen not in the directed fisheries, which reduces the risk of overfishing as a result of catch in the groundfish midwater trawl fisheries. Relatively small amounts of other non-groundfish species have been taken by vessels targeting Pacific whiting or landed by non-whiting midwater vessels. Each vessel in the shorebased trawl IFQ program is currently required to carry one observer to monitor catch and estimate at-sea discards. Incidental catch levels of non-groundfish will continue to be monitored allowing biological concerns relative to incidental catch of non-groundfish to be monitored.

Relative to protected and prohibited species, Alternative 2 clarifies the maximized retention allowances, but is not expected to result in changes in mortality levels when compared to the activities occurring under No Action. An indirect benefit of Alternative 2 results from declaration reports aligning with actual targeting activity (whiting or non-whiting midwater trawl). Given difference in catch rates between the different target strategies, regulations could be specified relative to the target strategy. Alternative 2 is expected to have a low positive benefit to salmon since catch rates for the different target strategies very considerably. Specifying handling and disposition of protected species that are landed in maximized retention deliveries, may have a positive low impact if biological data are collected from the landed catch and used to inform future fishery management.

The proposed action would affect harvesting vessel in the Shorebased IFQ Program using midwater trawl to harvest Pacific whiting and non-whiting groundfish; the agencies that manage and enforce Shorebased IFQ program regulations; shorebased processors/first receivers who receive landings of Pacific whiting and non-whiting groundfish taken with midwater trawl gear; and communities where midwater trawl landings are received.

Defining a Pacific whiting trip under Alternative 2 as trips with landings that are 50 percent or more Pacific whiting by weight clarifies that all midwater trawl north of 40°10’ north latitude is allowed regardless of target species. Revising the groundfish regulations for clarity on where midwater trawl vessels can fish, under Alternative 2, is expected to provide more equitable opportunity for non-whiting vessels north of 40°10’ north latitude as it would clarify that they do not need to also fish for Pacific whiting. Providing clarification on how time/area restrictions relate to specific target fishing activity under Alternative 2 is also expected to reduce regulatory complexity and eliminate contradictory regulations. Alternative 2 is not expected to have a measureable effect on the vast majority of midwater trawl trips targeting Pacific whiting. Only a small number of vessels may have reduced flexibility under Alternative 2 suboption A (one target strategy per trip) because a vessel operator cannot change the target fishing strategy after they leave port. Providing clarification on the disposition of protected species for maximized retention landings is expected to reduce regulatory complexity and eliminate contradictory regulations which is expected to be beneficial to the harvesters. In summary, Alternative 2 would result in a low positive benefit to first receivers/processors. No change in impacts over those occurring under No Action are expected for fishing communities.

Magnitude and significance of the cumulative effects are summarized in Table 4.4.4. When taking the expected impacts of the preferred alternative into account, including past, present, and reasonably foreseeable future actions, no significant impacts are expected relative to the affected physical, biological

of socio-economic environment. Impacts to the physical environment are not expected to result in measurable direct or indirect impacts on the California Current Ecosystem over No Action. No direct biological impacts are expected and neutral to low positive indirect biological impacts on non-targeted groundfish, prohibited species and protected species may result. Eliminating redundancies and inconsistencies in the current regulations regarding the use of midwater trawl gear, particularly as it applies to target fishing for non-whiting species and adding supporting regulations to the maximized retention allowances is expected to be moderately beneficial to the harvesters, first receivers and processors. The expected effect on fishing communities is neutral.

Table 4.4.4: Magnitude and significance of the cumulative effects; the additive and synergistic effects of the proposed action, as well as past, present, and reasonably foreseeable future actions.

Affected Resources Affected Resources	Status in 2014	Magnitude of Net Impact of Past, Present, and Reasonably Foreseeable Future Actions	Magnitude of the Impact of the Proposed Action	Significant Cumulative Effects
Habitat	Complex and variable (Section 3.1)	Neutral-Positive (Section 4.4.6)	Mixed -Neutral to low positive to low negative	None
Biological Resources	Complex and variable (Section 3.2)	Positive (Section 4.4.6)	Indirect - Neutral to low positive	None
Socio-economic/ Human Communities	Complex and variable (Section 3.3)	Positive (Section 4.4.6)	Low positive	None

CHAPTER 5 - CONSISTENCY WITH THE FMP AND OTHER APPLICABLE LAWS

5.1 Pacific Coast Groundfish FMP

The proposed action would revise the groundfish regulations to clarify retention and disposition requirements for prohibited and protected species on Pacific whiting maximized retention trips. The revisions would be consistent with the following sections of the Groundfish FMP.

Section 2.2 Operational Definition of Terms

"Prohibited species are those species and species groups which must be returned to the sea as soon as is practicable with a minimum of injury when caught and brought aboard except when their retention is authorized by other applicable law. Exception may be made in the implementing regulations for tagged fish, which must be returned to the tagging agency, or for examination by an authorized observer."

Section 6.7.2

"Prohibited Species. It is unlawful for any person to retain any species of salmonid or Pacific halibut caught by means of fishing gear authorized under this FMP, unless authorized by 50 CFR Part 300, Subparts E or F; or Part 600, Subpart H except where a Council-approved monitoring program is in effect. State regulations prohibit the landing of crab incidentally caught in trawl gear off Washington and Oregon. However, trawl fishermen may land Dungeness crab in the State of California north of Point Reyes in compliance with the state landing law. Specifically, salmonids are prohibited species for trawl, longline, and pot gear. Halibut may be retained and landed by troll and longline gear only during times and under conditions set by International Pacific Halibut Commission and/or other Federal regulations. Salmon taken by troll gear may be retained and landed only as specified in troll salmon regulations. Groundfish species or species groups under this FMP for which the quota has been reached shall be treated in the same manner as prohibited species. Species identified as prohibited must be returned to the sea as soon as practicable with a minimum of injury when caught and brought aboard, after allowing for sampling by an observer, if any, unless other disposition procedures are specified by regulation. Exceptions may be made for the recovery of tagged fish."

Appendix E - Table 1. Full description of the IFQ program

" It is the Council intent to provide NMFS flexibility sufficient to design and implement a tracking and monitoring program that will achieve the goals and objectives of the trawl rationalization program.

Discarding by Shoreside Sector

Nonwhiting – Discarding of IFQ species allowed, discarding of IBQ species required, discarding of nongroundfish species allowed.

Whiting

- *Maximized retention vessels: Discarding of fish covered by IFQ or IBQ, and nongroundfish species prohibited.*
- *Vessels sorting at-sea: Same as for nonwhiting."*

Appendix E - Table 1. Full description of the IFQ program. A-1.4

Management of NonWhiting Trips

"Nonwhiting trips are those with less than 50 percent whiting. …….."

The proposed action reduces redundancies and inconsistencies in the groundfish regulations such that it reduces regulatory complexity in the management measures recommended by the Council.

6.10.1 Managing Enforcement Risks

"The objective of enforcement is to ensure in a cost-effective way that all fishing is conducted in accordance with fishery regulations. During the development of new management measures, the Council will consider what measures are also needed to facilitate enforcement. When managing the enforcement risks, consideration should be given to:

• *Complexity: Complexity in a management regime can reduce enforceability by making the regime confusing to both fishery participants and enforcement agents. When the Council is developing new management measures, it shall evaluate those measures for their complexity to determine whether management complexity is necessary and whether there are ways to reduce the complexity of new management recommendations."*

The proposed action clarifies that all midwater trawl is allowed within the RCAs and EFH areas that prohibit bottom-contact fishing gears north of 40°10' north latitude. This is consistent with Section 6.6.3 of the FMP, which recognizes that midwater trawl makes occasional contact but is not considered bottom-contact gear. Clarifying that midwater trawl is allowed within the RCAs regardless of target species, does not interfere with the ongoing EFH review which may result in revisions to EFH conservation areas specified in the FMP.

Section 6.6.3 Bottom-contact Gear

"In order to mitigate the adverse impacts of fishing on groundfish EFH, the Council may impose restrictions on a range of gear types collectively termed bottom-contact gear. …….. Other gear, midwater trawl gear for example, although it may occasionally make contact with the sea floor during deployment, is not considered a bottom contact gear because the gear is not designed for bottom contact, is not normally deployed so that it makes such contact, nor is such contact normally more than intermittent."

5.2 Magnuson-Stevens Conservation and Management Act

An FMP or plan amendment and any pursuant regulations must be consistent with ten national standards contained in the MSA (§301). These are:

National Standard 1 *states that conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the OY from each fishery for the United States fishing industry.*

This action does not change the risk of exceeding an OFL for groundfish species. For groundfish species managed with IFQs, the risk of overfishing those stocks is low. For groundfish species managed within complexes, the risk of overfishing is similar to that considered in the 2015-2016 Harvest Specifications and Management Measures, EIS. Some species managed within species complexes may be more vulnerable to overfishing due to the current composition of the complexes; this is particularly true for species identified as "highly vulnerable" to overfishing within the minor rockfish complexes. Species managed on a per trip basis, are not expected to be more vulnerable to overfishing than what was already considered in the 2015-2016 Proposed Harvest Specifications and Management Measures, EIS. The shorebased trawl fishery is an IFQ program with a high level of individual accountability intended to keep harvest within the trawl allocations. High levels of monitoring have been effective in keeping harvest within the trawl allocations and preventing overfishing.

National Standard 2 *states that conservation and management measures shall be based on the best scientific information available.*

Information to understand the baseline conditions and potential impacts were gathered from peer-reviewed literature, unpublished scientific reports, observer data bases, Pacfin landing reports, as well as business and members of the fishing industry. Where quantitative data were not available on to the shorebased midwater trawl fishery, data from other similar fisheries (at-sea Pacific whiting) were used to identify potential environmental effects.

The preferred alternative would occur within areas described as EFH in the following Fishery Management Plans: Pacific Coast Groundfish, Pacific Coast Salmon, CPS, and HMS. EFH for Salmon, CPS, and HMS within the affected area is pelagic and not subject to adverse impacts by fishing gear. The impacts of the alternatives on groundfish EFH are considered in the EA and are within the scope of fishery management actions analyzed in the EIS for groundfish EFH (NMFS 2005). The EA concludes that all of the action alternative would be expected to result in, at most, minimal increases in bottom contact relative to No Action.

All of the alternatives include continuance of Amendment 19 to the Pacific Coast Groundfish FMP which established a comprehensive strategy to conserve EFH, including its identification, designation of Habitat Areas of Particular Concern, and the implementation of measures to minimize, to the extent practicable, adverse impacts to EFH from fishing. NMFS published the final rule to implement Amendment 19 on May 11, 2006 (71 FR 27408). The rule remains in effect under the proposed action and preferred alternative. In addition, the status quo includes mandatory review of the EFH provisions of the groundfish FMP every 5 years. That review is currently underway. Should NMFS determine through the 5-year review that new conservation measures are necessary to minimize adverse impacts to EFH, conservation recommendations will be made to the Pacific Fishery Management Council and considered through an FMP Amendment process (50 CFR 600.815). Because the impacts associated with the proposed action and preferred alternative to groundfish EFH are anticipated to be minimal, no conservation recommendations pursuant to MSA Section 305(b)(4)(A) are included at this time.

National Standard 3 *states that, to the extent practicable, an individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or in close coordination.*

This standard is not affected by the alternative actions.

National Standard 4 *states that conservation and management measures shall not discriminate between residents of different states. If it becomes necessary to allocate or assign fishing privileges among various United States fishers, such allocation shall be (A) fair and equitable to all such fishers; (B) reasonably calculated to promote conservation; and (C) carried out in such manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges.*

The proposed measures will not discriminate between residents of different states.

National Standard 5 *states that conservation and management measures shall, where practicable, consider efficiency in the utilization of fishery resources; except that no such measure shall have economic allocation as its sole purpose.*

This standard is not affected by the alternative actions.

National Standard 6 *states that conservation and management measures shall take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches.*

This standard is not affected by the alternative actions.

National Standard 7 *states that conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication.*

The preferred Alternative is expected to eliminate redundancies and inconsistencies that make the regulations unnecessarily complex and difficult to enforce.

National Standard 8 *states that conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), … take into account the importance of fishery resources to fishing communities in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities*.

This EA evaluates the effects of the alternatives on fishing communities (Section 4.3) and is therefore consistent with this standard. No impacts on communities are expected as a result of the preferred alternative.

National Standard 9 *states that conservation and management measures shall, to the extent practicable, (A) minimize bycatch and (B) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch.*

Only minor changes in regulatory discard of groundfish is expected to result from the preferred alternative. Non-whiting midwater trawl vessels that have been retaining salmon until landing will have to discard them at-sea. No other species that would be required to be discarded have been identified as being retained until landing. The fishery will continue to be monitored with full observer coverage.

National Standard 10 *states that conservation and management measures shall, to the extent practicable, promote the safety of human life at sea.*

The proposed action is not expected to have an effect on the safety of human life at sea.

5.3 Endangered Species Act

The Endangered Species Act of 1973 (ESA) was signed on December 28, 1973, and provides for the conservation of species that are endangered or threatened and the conservation of the ecosystems on which they depend. The ESA replaced the Endangered Species Conservation Act of 1969; it has been amended several times. A "species" is considered endangered if it is in danger of extinction throughout all or a significant portion of its range. A species is considered threatened if it is likely to become an endangered species within the foreseeable future.

Federal agencies are directed, under section 7(a)(1) of the ESA, to utilize their authorities to carry out programs for the conservation of threatened and endangered species. Federal agencies must also consult with NMFS or USFWS, under section 7(a)(2) of the ESA, on activities that may affect a listed species. These interagency consultations, or section 7 consultations, are designed to assist Federal agencies in fulfilling their duty to ensure Federal actions do not jeopardize the continued existence of a species or destroy or adversely modify critical habitat. Should an action be determined to jeopardize a species or result in the destruction or adverse modification of critical habitat, NMFS or USFWS will suggest Reasonable and Prudent Alternatives (RPAs) that would not violate section 7(a)(2).

Biological opinions document whether the Federal action is likely to jeopardize the continued existence of listed species, or result in the destruction or adverse modification of critical habitat. Where appropriate, biological opinions provide an exemption for the "take" of listed species while specifying the extent of take anticipated, the Reasonable and Prudent Measures (RPMs) necessary to minimize impacts from the take, and the Terms and Conditions with which the action agency must comply.

NMFS issued biological opinions under the Endangered Species Act (ESA) on August 10, 1990, November 26, 1991, August 28, 1992, September 27, 1993, May 14, 1996, and December 15, 1999 pertaining to the effects of the PCGFMP fisheries on Chinook salmon (Puget Sound, Snake River spring/summer, Snake River fall, upper Columbia River spring, lower Columbia River, upper Willamette River, Sacramento River winter, Central Valley spring, California coastal), coho salmon (Central California coastal, southern Oregon/northern California coastal), chum salmon (Hood Canal summer, Columbia River), sockeye salmon (Snake River, Ozette Lake), and steelhead (upper, middle and lower Columbia River, Snake River Basin, upper Willamette River, central California coast, California Central Valley, south/central California, northern California, southern California). These biological opinions concluded that implementation of the PCGFMP is not expected to jeopardize the continued existence of any endangered or threatened salmonids species under the jurisdiction of NMFS, or result in the destruction or adverse modification of critical habitat.

NMFS issued a supplemental biological opinion on March 11, 2006 concluding that neither the higher observed bycatch of Chinook in the 2005 whiting fishery nor new data regarding salmon bycatch in the groundfish bottom trawl fishery required a reconsideration of its prior ''no jeopardy'' conclusion. NMFS also reaffirmed its prior determination that implementation of the PCGFMP is not likely to jeopardize the continued existence of any of the affected ESUs. Lower Columbia River coho (70 FR 37160, June 28, 2005) and Oregon Coastal coho (73 FR 7816, February 11, 2008) were recently relisted as threatened under the ESA. The 1999 biological opinion concluded that the bycatch of salmonids in the Pacific whiting fishery were almost entirely Chinook salmon, with little or no bycatch of coho, chum, sockeye, and steelhead.

On January 22, 2013 the NMFS West Coast Region's Sustainable Fisheries Division requested reinitiation of the current salmon biological opinion for the groundfish fisheries. The request resulted from the evolution of the trawl fishery under the trawl rationalization framework and improving conditions for species such as widow rockfish that are expected to change the characteristics of the

fishery. In addition, WCGOP data reports contained new estimates of Chinook and coho salmon catch in the nearshore fixed gear fisheries (open access and limited entry fisheries), limited entry sablefish fishery, and open access California Halibut fishery. In October 2014 prior to completion of the update, the Pacific whiting fisheries in aggregate exceeded the 11,000 Chinook threshold that requires reinitiation of the consultation. Given the changes in the fishery identified in the January 22, 2013 reinitiation request, NMFS determined that the reinitiation should address all fishing under the Pacific Coast Groundfish FMP, including the Pacific whiting and non-whiting fisheries and all gears.

On November 21, 2012, the U.S. Fish and Wildlife Service (FWS) issued a biological opinion concluding that the groundfish fishery will not jeopardize the continued existence of the short-tailed albatross. The (FWS) also concurred that the fishery is not likely to adversely affect the marbled murrelet, California least tern, southern sea otter, bull trout, nor bull trout critical habitat.

On December 7, 2012, NMFS completed a biological opinion concluding that the groundfish fishery is not likely to jeopardize non-salmonid marine species including listed eulachon, green sturgeon, humpback whales, Steller sea lions, and leatherback sea turtles. The opinion also concludes that the fishery is not likely to adversely modify critical habitat for green sturgeon and leatherback sea turtles. An analysis included in the same document as the opinion concludes that the fishery is not likely to adversely affect green sea turtles, olive ridley sea turtles, loggerhead sea turtles, sei whales, North Pacific right whales, blue whales, fin whales, sperm whales, Southern Resident killer whales, Guadalupe fur seals, or the critical habitat for Steller sea lions. NMFS considered whether the 2012 opinion should be reconsidered for eulachon in light of new information from the 2011 fishery and the proposed chafing gear modifications and determined that information about the eulachon bycatch in 2011 and chafing gear regulations did not change the extent of effects of the action, or any other basis to require reinitiation of the December 7, 2012 biological opinion. Therefore, the December 7, 2012 biological opinion meets the requirements of section 7(a)(2) of the ESA and implementing regulations at 50 CFR 402.

As Steller sea lions and humpback whales are also protected under the Marine Mammal Protection Act, incidental take of these species from the groundfish fishery must be addressed under MMPA section 101(a)(5)(E). On February 27, 2012, NMFS published notice that the incidental taking of Steller sea lions in the West Coast groundfish fisheries is addressed in NMFS' December 29, 2010 Negligible Impact Determination (NID) and this fishery has been added to the list of fisheries authorized to take Steller sea lions (77 FR 11493, February 27, 2012). On September 4, 2013, based on its negligible impact determination dated August 28, 2013, NMFS issued a permit for a period of three years to authorize the incidental taking of humpback whales by the sablefish pot fishery (78 FR 54553, September 4, 2013).

5.4 Marine Mammal Protection Act

The MMPA of 1972 is the principal Federal legislation that guides marine mammal species protection and conservation policy in the United States. Under the MMPA, NMFS is responsible for the management and conservation of whales, dolphins, porpoise, as well as seals, sea lions, and fur seals; while the USFWS is responsible for walrus, sea otters, and the West Indian manatee.

Off the west coast, the Steller sea lion (*Eumetopias jubatus*) eastern stock, Guadalupe fur seal (*Arctocephalus townsendi*), and Southern sea otter (*Enhydra lutris*) California stock are listed as threatened under the ESA. The sperm whale (*Physeter macrocephalus*) Washington, Oregon, and California stock, humpback whale (*Megaptera novaeangliae*) Washington, Oregon, and California - Mexico Stock, blue whale (*Balaenoptera musculus*) eastern north Pacific stock, and Fin whale (*Balaenoptera physalus*) Washington, Oregon, and California stock are listed as depleted under the

MMPA. Any species listed as endangered or threatened under the ESA is automatically considered depleted under the MMPA.

Pursuant to the MMPA, the List of Fisheries (LOF) classifies U.S. commercial fisheries into one of three Categories according to the level of incidental mortality or serious injury of marine mammals:

I. Frequent incidental mortality or serious injury of marine mammals
II. Occasional incidental mortality or serious injury of marine mammals
III. Remote likelihood of/no known incidental mortality or serious injury of marine mammals

The Marine Mammal Protection Act (MMPA) mandates that each fishery be classified by the level of serious injury and mortality of marine mammals that occurs incidental to each fishery, as reported in the annual Marine Mammal Stock Assessment Reports for each stock. The sablefish pot fishery is listed as a category II fishery due to interactions with humpback whales. All other west coast groundfish fisheries are listed as category III fisheries. Commercial fishing vessels participating in Category I or II fisheries must be covered by a Federal permit under the MMPA. For most fisheries, including all west coast fisheries, a blanket permit is issued for all Federal or state permits authorizing participation in the fishery.

Section 3.2 describes the incidental take of marine mammals and Section 4.2 assesses the effects of the proposed action on marine mammals. Steller sea lions and humpback whales are protected under the ESA and the MMPA. Incidental take of these species from the groundfish fishery must be addressed under MMPA section 101(a)(5)(E). On February 27, 2012, NMFS published notice that the incidental taking of Steller sea lions in the West Coast groundfish fisheries is addressed in NMFS' December 29, 2010 Negligible Impact Determination (NID) and this fishery has been added to the list of fisheries authorized to take Steller sea lions. 77 FR 11493 (Feb. 27, 2012). NMFS is currently developing MMPA authorization for the incidental take of humpback whales in the fishery. There is no projected change in the trawl fishery impacts over what was previously considered in the recently completed 2013-2014 Proposed Harvest Specifications and Management Measures, EIS. The fishery will continue to be monitored with full observer coverage (at least one observer on every IFQ vessels and mothership catcher vessels, and at least 2 observers on every at-sea processing vessel.

5.5 Migratory Bird Treaty Act and Executive Order 13186

The MBTA of 1918 was designed to end the commercial trade of migratory birds and their feathers that, by the early years of the 20th century, had diminished the populations of many native bird species. The MBTA states that it is unlawful to take, kill, or possess migratory birds and their parts (including eggs, nests, and feathers) and is a shared agreement between the United States, Canada, Japan, Mexico, and Russia to protect a common migratory bird resource. The MBTA prohibits the directed take of seabirds, but the incidental take of seabirds does occur.

EO 13186 supplements the MBTA (above) by requiring Federal agencies to work with the USFWS to develop memoranda of understanding to conserve migratory birds. NMFS is in the process of implementing a memorandum of understanding. The protocols developed by this consultation will guide agency regulatory actions and policy decisions in order to address this conservation goal. The EO also directs agencies to evaluate the effects of their actions on migratory birds in environmental documents prepared pursuant to the NEPA.

The proposed action is unlikely to cause the incidental take of seabirds protected by the Migratory Bird Treaty Act to differ substantially from levels previously considered in the 2013-2014 Proposed Harvest Specifications and Management Measures EIS. (Section 4.2 evaluated impacts of the proposed action on protected species, including seabirds).

5.6 Coastal Zone Management Act

Section 307(c)(1) of the Federal Coastal Zone Management Act (CZMA) of 1972 requires all Federal activities that directly affect the coastal zone be consistent with approved state coastal zone management programs to the maximum extent practicable. A determination as to whether the proposed action is would be implemented in a manner that is consistent to the maximum extent practicable with the enforceable policies of the approved coastal zone management programs of Washington, Oregon, and California will be submitted to the responsible state agencies for review under Section 307(c)(1) of the CZMA. The relationship of the groundfish FMP with the CZMA is discussed in Section 11.7.3 of the Groundfish FMP. The Groundfish FMP has been found to be consistent with the Washington, Oregon, and California coastal zone management programs.

5.7 Paperwork Reduction Act

The Paperwork Reduction Act requires that agency information collections minimize duplication and burden on the public, have practical utility, and support the proper performance of the agency's mission. There is no Paperwork Reduction Act collection associated with this action.

5.8 Executive Order 12866

This action is not significant under E.O. 12866. This action will not have a cumulative effect on the economy of $100 million or more, nor will it result in a major increase in costs to consumers, industries, government agencies, or geographical regions. No significant adverse impacts are anticipated on competition, employment, investments, productivity, innovation, or competitiveness of U.S.-based enterprises.

5.9 Executive Order 12898 (Environmental Justice)

EO 12898 obligates Federal agencies to identify and address "disproportionately high adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations in the United States" as part of any overall environmental impact analysis associated with an action. NOAA guidance, NAO 216-6, at Section 7.02, states that "consideration of EO 12898 should be specifically included in the NEPA documentation for decision-making purposes." Agencies should also encourage public participation, especially by affected communities during scoping, as part of a broader strategy to address environmental justice issues. The proposed action will not result in disproportionate adverse impacts to low income and minority communities.

5.10 Executive Order 13175 (Tribal government)

Executive Order 13175 is intended to ensure regular and meaningful consultation and collaboration with tribal officials in the development of Federal policies that have tribal implications, to strengthen the United States government-to-government relationships with Indian tribes, and to reduce the imposition of unfunded mandates upon Indian tribes. The proposed action implements provisions of Amendment 20 which was developed after meaningful consultation and collaboration with Tribal officials from the area covered by the FMP. Under the Magnuson-Stevens Act at 16 U.S.C. 1852(b)(5), one of the voting members of the PFMC must be a representative of an Indian Tribe with Federally recognized fishing rights from the area of PFMC's jurisdiction. The provisions of the proposed action do not directly affect the Washington Coast tribes.

5.11 Executive Order 13132 (Federalism)

EO 13132, which revoked EO 12612, an earlier federalism EO, enumerates eight "fundamental federalism principles." The first of these principles states "Federalism is rooted in the belief that issues that are not national in scope or significance are most appropriately addressed by the level of government closest to the people." In this spirit, the EO directs agencies to consider the implications of policies that may limit the scope of or preempt states' legal authority. Preemptive action having such "federalism implications" is subject to a consultation process with the states; such actions should not create unfunded mandates for the states; and any final rule published must be accompanied by a "federalism summary impact statement." The proposed action does not have federalism implications subject to EO 13132

5.12 Administrative Procedure Act

The Administrative Procedure Act, or APA, governs the Federal regulatory process and establishes standards for judicial review of Federal regulatory activities. Most Federal rulemaking, including regulations promulgated pursuant to the MSA, are considered "informal," which is determined by the controlling legislation. Provisions at 5 U.S.C. 553 establish rulemaking procedures applicable to the proposed action. the FMP requires a 'full notice-and-comment rulemaking' to implement the regulations necessary to implement the Council recommendation. The rulemaking associated with this proposed action will be conducted in accordance with the APA and procedures identified in section 304 of the MSA.

5.13 Regulatory Flexibility Act

The Regulatory Flexibility Act requires government agencies to assess the effects that regulatory alternatives would have on small entities, including small businesses, and to determine ways to minimize those effects. A fish-harvesting business is considered a "small" business by the Small Business Administration if it has annual receipts not in excess of $4.0 million. For related fish-processing businesses, a small business is one that employs 500 or fewer persons. For wholesale businesses, a small business is one that employs not more than 100 people. For marinas and charter/party boats, a small business is one with annual receipts not in excess of $6.5 million. If the projected impact of the regulation exceeds $100 million, it may be subject to additional scrutiny by the Office of Management and Budget.

Regulatory Impact Review (Executive Order 12866) **- EO 12866,** Regulatory Planning and Review, covers a variety of regulatory policy considerations and establishes procedural requirements for analysis of the benefits and costs of regulatory actions. It directs agencies to choose those approaches that maximize net benefits to society, unless a statute requires another regulatory approach. The agency must assess both the costs and the benefits of the intended regulation and, recognizing that some costs and benefits are difficult to quantify, propose or adopt a regulation only after reasoned determination the benefits of the intended regulation justify the costs. In reaching its decision, the agency must use the best reasonably obtainable information, including scientific, technical and economic data, about the need for and consequences of the intended regulation. NMFS requires the preparation of a regulatory impact review (RIR) for all regulatory actions of public interest. The purpose of the analysis is to ensure the regulatory agency systematically and comprehensively considers all available alternatives, so the public welfare can be enhanced in the most efficient and cost-effective way. The RIR addresses many of the items in the regulatory philosophy and principles of EO 12866.

Regulatory Impact Review and the Regulatory Flexibility Act Analysis- NMFS develops the necessary analysis and documentation needed to address these mandates as part of the Federal rulemaking process

implementing groundfish harvest specifications and management measures. These analyses rely substantially on the contents of this EA and the socioeconomic impact evaluation in Chapter 4 and baseline information in Chapter 3, which have been developed in conjunction with NMFS West Coast Region staff to provide information needed for the Regulatory Impact Review and Regulatory Flexibility Act analyses. A separate Regulatory Impact Review and regulatory Flexibility Act Analyses will be prepared for the rulemaking to implement the FPA.

CHAPTER 6 -CONSISTENCY WITH THE NATIONAL ENVIRONMENTAL POLICY ACT

6.1 National Environmental Policy Act

The CEQ has issued regulations specifying the requirements for NEPA documents (40 CFR 1500 – 1508), and NOAA's agency policy and procedures for NEPA can be found in NOAA Administrative Order 216-6 (NAO 216-6). The following are core elements of an EA (40 CFR § 1508.9):

1. The need for the proposal,

2. Alternatives as required by NEPA § 102(2)(E),

3. The environmental impacts of the proposed action and the alternatives, and

4. The agencies and persons consulted.

6.2 Related NEPA documents

The following NEPA documents provide information related to the effects of this proposed action. As noted in section 3.2, the biological environment relative to target, non-target, non-groundfish, prohibited, and protected species was summarized from the October 2014 EA titled Trawl Rationalization Trailing Actions: Chafing Gear (PFMC 2014).

- Rationalization of the Pacific Coast Groundfish Limited Entry Trawl Fishery (Amendment 20 to the Groundfish FMP); Final Environmental Impact Statement Including Regulatory Impact Review and Initial Regulatory Flexibility Analysis. Prepared by the Pacific Fishery Management Council and NMFS in June 2010.

- Proposed Harvest Specifications and Management Measures for the 2011-2012 Pacific Coast Groundfish Fishery and Amendment 16-5 to the Pacific Coast Groundfish Fishery Management Plan to Update Existing Rebuilding Plans and Adopt a Rebuilding Plan for Petrale Sole; Final Environmental Impact Statement. Prepared by PFMC and NMFS in February 2011.

- Harvest Specifications And Management Measures For 2015-2016 And Biennial Periods Thereafter. Final Environmental Impact Statement. Prepared by PFMC and NMFS in January 2015.

- Trawl Rationalization Trailing Actions: Chafing Gear. Environmental Assessment Prepared by PFMC and NMFS in November 2014.

- Trawl rationalization trailing actions: season date change for midwater trawl fishery (whiting and nonwhiting) Prepared by PFMC and NMFS March 2015.

6.3 Finding of No Significant Impact (FONSI)

National Oceanic and Atmospheric Administration Administrative Order 216-6 (NAO 216-6) (May 20, 1999) contains criteria for determining the significance of the impacts of a proposed action. In addition, the Council on Environmental Quality regulations at 40 C.F.R. 1508.27 state that the significance of an action should be analyzed both in terms of "context" and "intensity". Each criterion listed below is relevant in making a finding of no significant impact and has been considered individually, as well as in combination with the others. The significance of this action is analyzed based on the NAO 216-6 criteria and CEQ's context and intensity criteria.

[To be completed after comment period ends]

6.4 List of Persons and Agencies Consulted

Main authors:

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The following people were also consulted or were involved in reviewing Council drafts of the document:

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Copies of this Environmental Assessment and Magnuson-Stevens Act Analysis and other supporting documents are available from Becky Renko, (becky.renko@noaa.gov) National Marine Fisheries Service, 7600 Sand Point Way NE, BIN C15700, Seattle, WA 98115-0070

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