

NATIONAL MARINE FISHERIES SERVICE REPORT ON
FEDERAL REGULATIONS TO IMPLEMENT COMPREHENSIVE ECOSYSTEM-BASED
AMENDMENT 1: PROTECTING UNFISHED FORAGE FISH SPECIES

Background

At its March 2015 meeting, the Council asked NMFS to draft regulatory language to implement Comprehensive Ecosystem-Based Amendment (CEBA) 1. CEBA 1 is a Fishery Ecosystem Plan (FEP) initiative that would amend all four of the Council’s fishery management plans (FMPs) to prohibit the future development of fisheries for the following species, collectively known as “Shared Ecosystem Component Species” or “Shared EC Species”:

- Round herring (*Etrumeus teres*) and thread herring (*Opisthonema libertate* and *O. medirastre*)
- Mesopelagic fishes of the families *Myctophidae*, *Bathylagidae*, *Paralepididae*, and *Gonostomatidae*
- Pacific sand lance (*Ammodytes hexapterus*)
- Pacific saury (*Cololabis saira*)
- Silversides (family *Atherinopsidae*)
- Smelts of the family *Osmeridae*
- Pelagic squids (families: *Cranchiidae*, *Gonatidae*, *Histioteuthidae*, *Octopoteuthidae*, *Ommastrephidae* except Humboldt squid (*Dosidicus gigas*), *Onychoteuthidae*, and *Thysanoteuthidae*)

The Council’s Purpose of and Need for CEBA 1 is:

The purpose of this action is to prohibit new directed commercial fishing in Federal waters on unmanaged, unfished forage fish species until the Council has had an adequate opportunity to both assess the scientific information relating to any proposed directed fishery and consider potential impacts to existing fisheries, fishing communities, and the greater marine ecosystem. This action is needed to proactively protect unmanaged, unfished forage fish of the U.S. West Coast Exclusive Economic Zone (EEZ) in recognition of the importance of these forage fish to the species managed under the Council’s FMPs and to the larger CCE. This action is not intended to supersede tribal or state fishery management for these species, and coordination would still occur through the existing Council process.

Shared EC Species are not targeted in the EEZ, although some are taken in small fisheries within state waters (0-3 nm offshore). NMFS and the states of Washington, Oregon, and California reviewed available landings and observer data on directed and incidental catch of Shared EC Species, to better assess which gear groups and fisheries were most likely to take Shared EC Species and in what amounts. The Council’s intent for this action, expressed in its Purpose and Need Statement, was to “prohibit new directed commercial fishing in Federal waters” for Shared EC Species, not to necessarily eliminate all existing catch and bycatch. At its March 2015 meeting, the Council gave NMFS further direction on drafting CEBA 1 regulatory language, asking that it meet the following intent:

1. Does not constrain existing directed fisheries
2. Provides reasonable certainty of discouraging new fishery targeting of these species
3. Considers discouraging development of at-sea processing of these species
4. Provides reasonable certainty of being enforceable by:
 - a. Defining “directed fishery” on Shared EC Species that constrains catch ratio, and is informed by and responsive to historical landings
 - b. Holds individual vessels accountable (at the trip level) for landing these species, but allows for unique events
 - c. Simple, clear language that is applicable across species and fisheries.

Data Review

To draft regulations for Council review, NMFS worked with the states of Washington, Oregon, and California to cooperatively review Pacific Fisheries Information Network (PacFIN) landings data for shoreside landings, North Pacific Observer Program data for incidental catch in the at-sea whiting sectors, West Coast Groundfish Observer Program data for incidental catch in the shoreside groundfish and shrimp trawl fisheries, and Individual Fishing Quota discard rate data. NMFS first reviewed PacFIN data to assess which gear types were making landings of Shared EC Species over the 1981-2014 period. Few of the Shared EC Species were commercially landed during the 1981-2014 period. PacFIN species categories that include Shared EC Species, and which showed commercial landings were: eulachon, round herring, unspecified smelt, and unspecified squid. Net gear was overwhelmingly responsible for the majority of smelt landings, while midwater trawl gear in the shoreside whiting fishery accounted for the majority of unspecified squid landings.

As the Ecosystem WorkGroup has noted in its past reports, Shared EC Species are landed infrequently, presenting challenges in data analyses required to protect data confidentiality. Landings data did not meet confidentiality requirements for reporting annual landings by species, by gear or by a combination of the two for some species, so we are reporting them aggregated over the past ten year period (2005-2014) – see Figures 4-7. Those landings were comprised of 52.5 percent unspecified squid (1892 mt), and 47.4 percent unspecified smelt (1707 mt). A trace amount of eulachon (0.002%, 0.085mt) was caught in midwater trawl gear on shorebased whiting trips. The annual species composition varied dramatically, however, ranging from zero to 86.5 percent squid.

The Council’s instructions for draft regulations suggested holding individual vessels accountable at the trip level for landing Shared EC Species while also allowing for unique events. There are several different potential approaches to trip-based landings limits for infrequently-caught species, not all of which can be effectively applied across the diverse West Coast fisheries with historic Shared EC Species landings. For example, landings limits specified as a percentage of the weight of all fish on board are more useful in fisheries regulations intended to apply to a single and more uniform fishery, such as the 2 percent forage fish retention allowance in the groundfish fisheries off Alaska. NMFS also considered whether the Council’s approach to shortbelly rockfish, setting a coastwide annual catch limit might be useful for Shared EC Species management, but that approach would not have satisfied the Council’s March 2015 request for individual vessel accountability. To take into account the varied gear and fisheries with historic Shared EC Species landings, NMFS recommends per trip and annual landings limits by weight, rather than as a percentage of the weight of all fish on board. Our data analysis for this action, described below, supports the setting of daily and annual limits for Shared EC Species.

Figure 1 shows a time series of combined annual landings for these species from 1981-2014. Figure 2 shows the same but excludes unspecified squid, which accounted for outlying high annual and daily vessel landings, much higher than the level of other species combined.

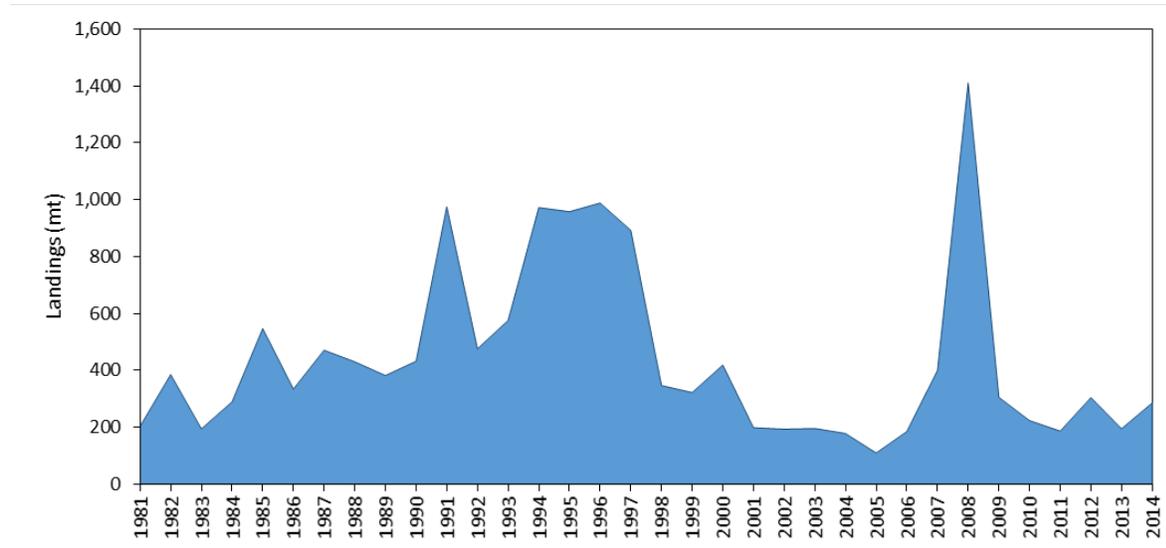


Figure 1. Combined annual reported commercial landings for Shared EC Species in PacFIN. Includes eulachon, round herring, unspecified smelt, and unspecified squid.

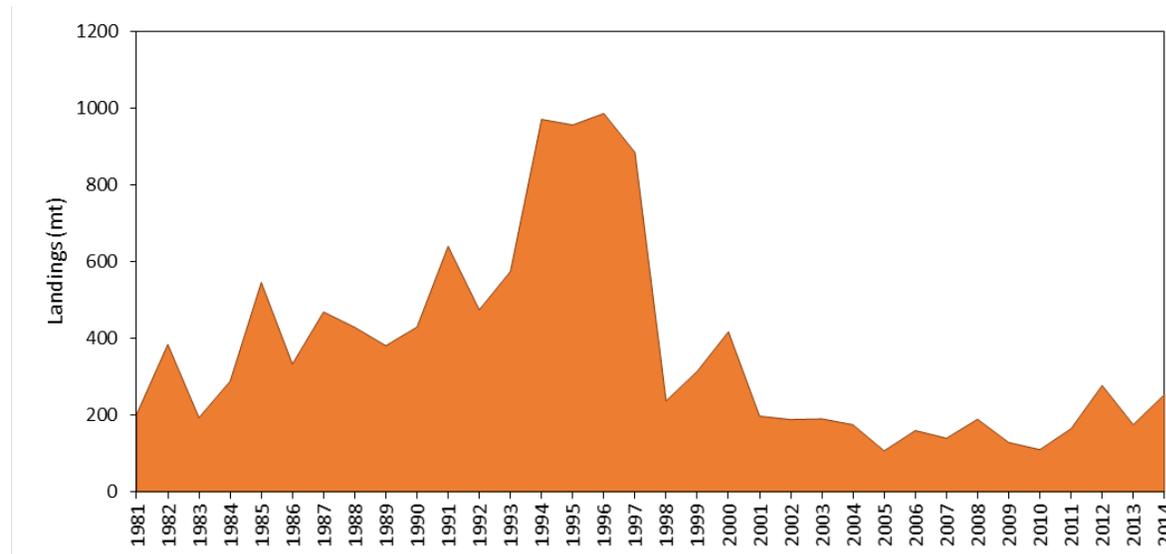


Figure 2. Combined annual reported commercial landings for Shared EC Species in PacFIN. Includes those from Figure 1; excludes unspecified squid.

As shown in Figure 3, net gear was responsible for 98.3 percent of the landings for unspecified smelt (1677 mt) over the recent ten year period (2005-2014). Dip net gear accounted for 95.2 percent of the total, and set net 2.9 percent. All other gear groups, including hook and line, pot, trolls, trawl, shrimp trawl, and miscellaneous together made up the remaining 0.8 percent. Commercial dipnet landings were all made in California, and almost entirely at the port of Eureka, as part of the beach net smelt fishery. We confirmed our estimates for the dip net fishery with California Department of Fish and Wildlife and we removed these landings from the data we examined to assess potential annual and daily Shared EC Species vessel limits.

The directed, beach- and truck-based smelt fishery necessarily occurs entirely in state waters; therefore, the fishery is not subject to this Council action for federal waters.

Trawl gear made up 90.4 percent of the landings for unspecified squid. Hook and line gear made up 8.1 percent, while net, pot, trolls, and shrimp trawl combined made up the remaining 1.5 percent. The majority of trawl landings were from the shorebased whiting fishery (61.5 percent), 19 percent was treaty sector landings with midwater gear; the remainder was from bottom gear. Evaluating the potential species composition of the unspecified squid category is particularly complex for this action, because the landings category likely includes at least some Humboldt squid landings, a species that is not included in the Shared EC Species group. While the state of California records Humboldt squid landings separately from the unspecified squid species category, the states of Oregon and Washington do not. Therefore, any Humboldt squid (not a Shared EC Species) landed into Oregon or Washington is recorded as landings of unspecified squid. Below, we present annual and daily vessel landings with unspecified squid both included and excluded; the differences are substantial and important to consider when establishing management measures.

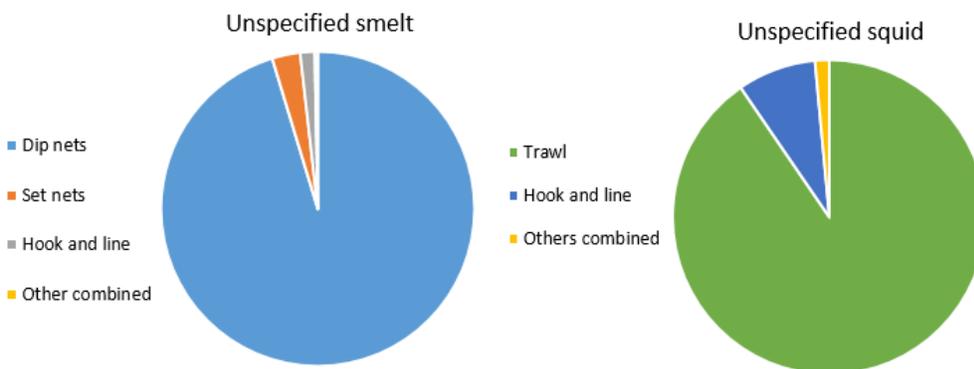


Figure 3. Gear composition of commercial landings for unspecified smelt (left) and unspecified squid (right), over the period of 2005-2014.

Daily vessel landings

To protect data confidentiality, Figure 4 shows randomized, unnamed vessel-day (trip) landings with all EC forage species included. Figure 5 shows the same, but with unspecified squid removed. Most annual vessel landing amounts for the combined species are lower than 5 mt, but many outliers are much higher, between 5 and 55 mt. Similar to the annual data, these large daily amounts suggest targeting. The median annual value was 0.37 mt, the maximum was 52.2 mt, and the minimum was 0.0005 mt. When unspecified squid are removed, however, all remaining combined daily vessel landings are an order of magnitude lower, less than 6 mt (Figure 5). The median value is then 0.0025 mt, the maximum is 5.3 mt, and the minimum is the same. The number of vessel-days is cut dramatically by removing unspecified squid, from nearly 5500 to less than 900.

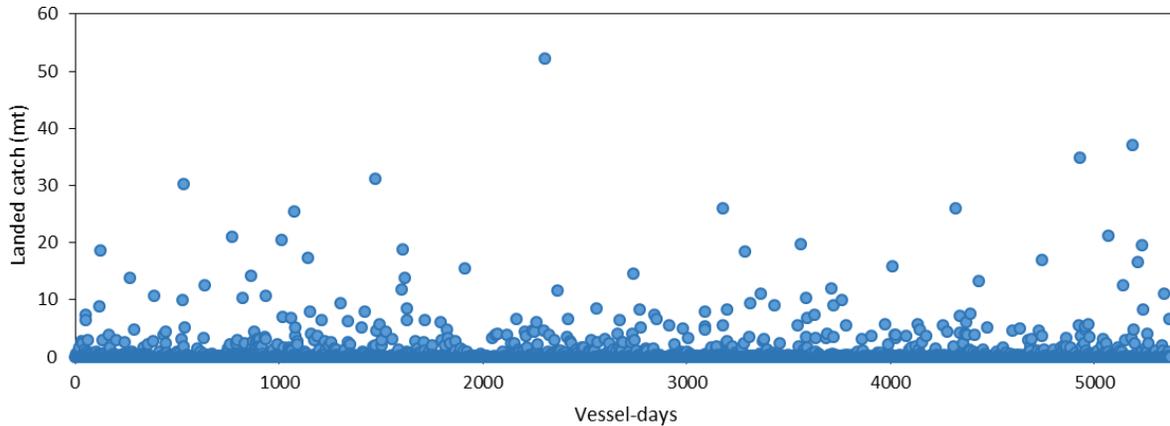


Figure 4. Daily vessel landings of combined Shared EC Species. Vessel landings are randomized over 2005-2014 and aggregated to preserve confidentiality. Beach net landings of smelt are not included.

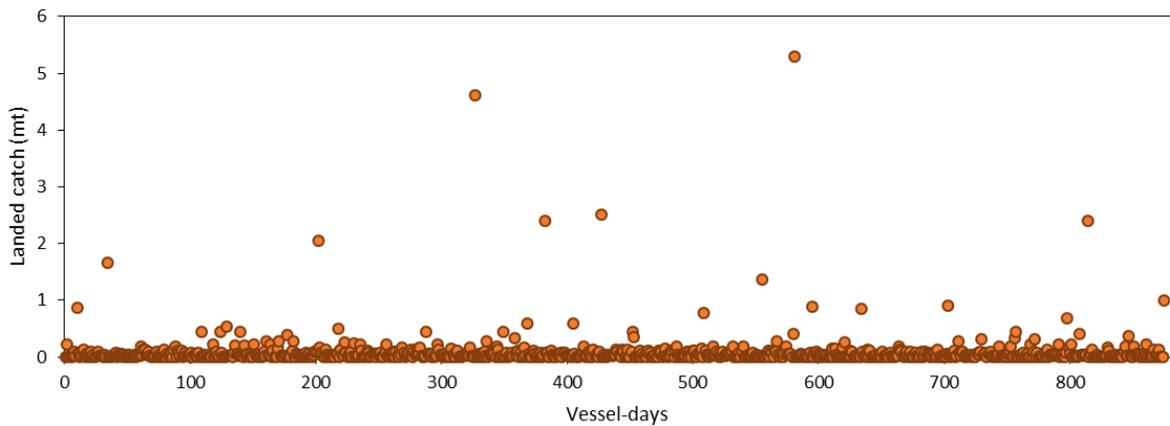


Figure 5. Daily vessel landings of combined Shared EC Species, with unspecified squid removed. Vessel landings are randomized over 2005-2014 and aggregated to preserve confidentiality. Beach net landings of smelt are not included.

Annual vessel landings

To protect data confidentiality, Figure 6 shows randomized unnamed, per vessel annual landings of Shared EC Species over the 2005-2014 period. Most annual vessel landing amounts for the combined species are lower than 10 mt, but many outliers are much higher, between 10 and 120 mt, or even greater than 200 mt. The median annual value was 0.14 mt, the maximum was 226.7 mt, and the minimum was 0.0005 mt. Such sizable landings suggest targeting, particularly for the unspecified squid category. When unspecified squid are removed, however, all remaining combined annual vessel landings are less than 10 mt (Figure 7). The median value is then 0.016 mt, the maximum is 7.7 mt, and the minimum is the same. The number of vessel-years is cut dramatically by removing unspecified squid, from nearly 700 to less than 170. Figure 6 shows randomized, unnamed vessel-day (trip) landings with all Shared EC Species included. Figure 7 shows the same, but with unspecified squid removed.

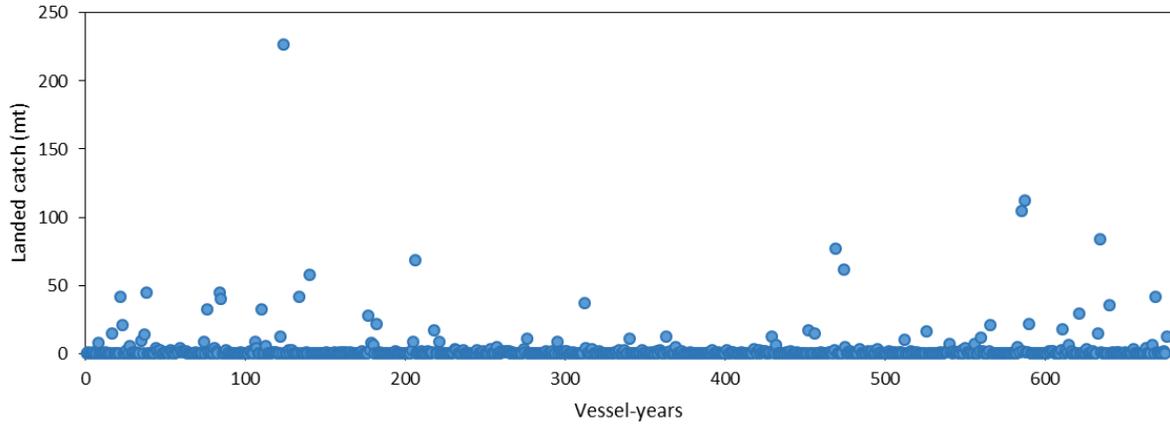


Figure 6. Annual vessel landings of combined Shared EC Species. Vessel landings are randomized over 2005-2014 and aggregated to preserve confidentiality. Beach net landings of smelt are not included.

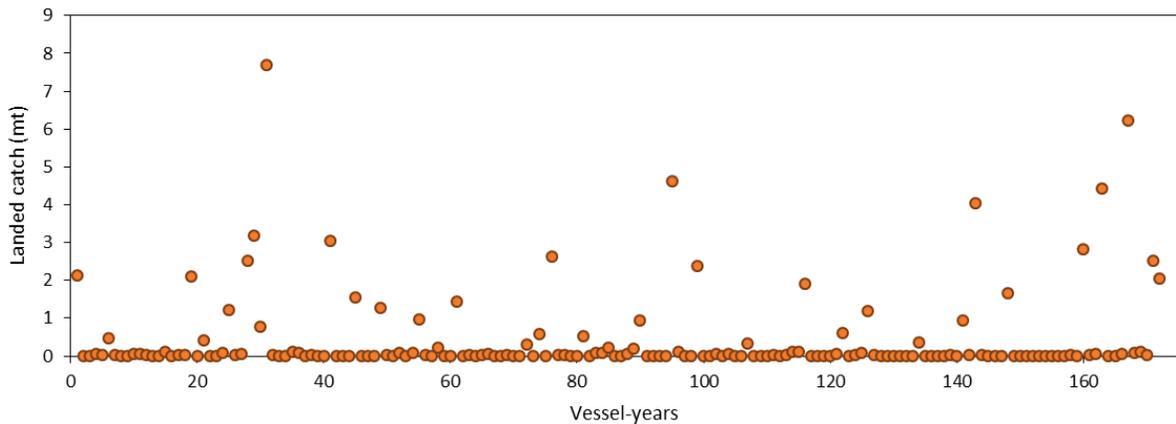


Figure 7. Annual vessel landings of combined Shared EC Species, with unspecified squid removed. Vessel landings are randomized over 2005-2014 and aggregated to preserve confidentiality. Beach net landings of smelt are not included.

To account for most historic landings of Shared EC Species while allowing for different fishing patterns in diverse West Coast fisheries, while also not accommodating the highest outlying landings, NMFS recommends a daily, per vessel limit of 10 mt, with an annual per vessel limit of 30 mt, as shown in draft NMFS regulations for this action. Limits at these levels would take into account for 99 percent of all Shared EC Species daily vessel landings, and 97 percent of annual vessel totals from the 2005-2014 period. NMFS recommends that limits not exceed the highest landings that have occurred for that period, which would be a daily, per vessel limit of 52 mt, with an annual per vessel limit of 225 mt.

At-sea fleet data

Within its request to NMFS on draft federal regulations to implement CEBA 1, the Council asked that the agency consider regulations that would discourage development of at-sea processing of Shared EC Species. Of the four FMPs, only the Groundfish FMP and its implementing regulations allow at-sea processing of any species. With limited exceptions, federal groundfish regulations only allow processing at sea in the

mothership and catcher-processor whiting fishery sectors. In those sectors, bycatch of species other than Prohibited Species (marine mammals, birds, Pacific halibut, salmon, and Dungeness crab) may be processed into fishmeal or oil. There are nine vessels permitted to participate in the groundfish fisheries as whiting catcher-processors, with one permit currently unassigned to a vessel. Six vessels are permitted to participate in the groundfish fisheries as motherships. Two non-whiting groundfish trawl vessels and one limited entry fixed gear sablefish vessel are exempt from at-sea processing prohibitions when they are participating in those fisheries. Shared EC Species are less likely to be taken by the gear used on the exempted vessels and may be more easily sorted from target species prior to processing on the exempted vessels; therefore, regulations for at-sea processing of Shared EC Species may be drafted using at-sea whiting sector data and reflecting at-sea whiting fishing practices.

NMFS analyzed recent (2002-2014) observer data from the at-sea whiting sectors for patterns of Shared EC Species retention. In each of the years for which we analyzed observer data, the at-sea whiting sectors took small amounts of some Shared EC Species, some of which may have been processed into fishmeal or oil. Observer data species categories do not match Shared EC Species exactly; therefore, we included all catch that *could* have been Shared EC Species, some of which was *likely not* Shared EC Species. For example, the observer data category SMELT/HERRING UNIDENTIFIED probably includes catch of some species that are colloquially known as “smelt,” but which may not be the Osmerid smelts of the Shared EC Species. However, since some of the unidentified smelt could be Osmerid smelts, we retained that data category in our analyses. The unidentified herring in that category is probably not round or thread herring, since those are southern EEZ species that do not range into the northern waters used by the whiting fisheries.

As with shoreside landings of Shared EC Species, the weights of incidentally-caught Humboldt and unidentified squid were notably higher than the weights of all other species or species groups that could be considered Shared EC Species. Figure 8 shows the annual weights of incidentally-caught Shared EC

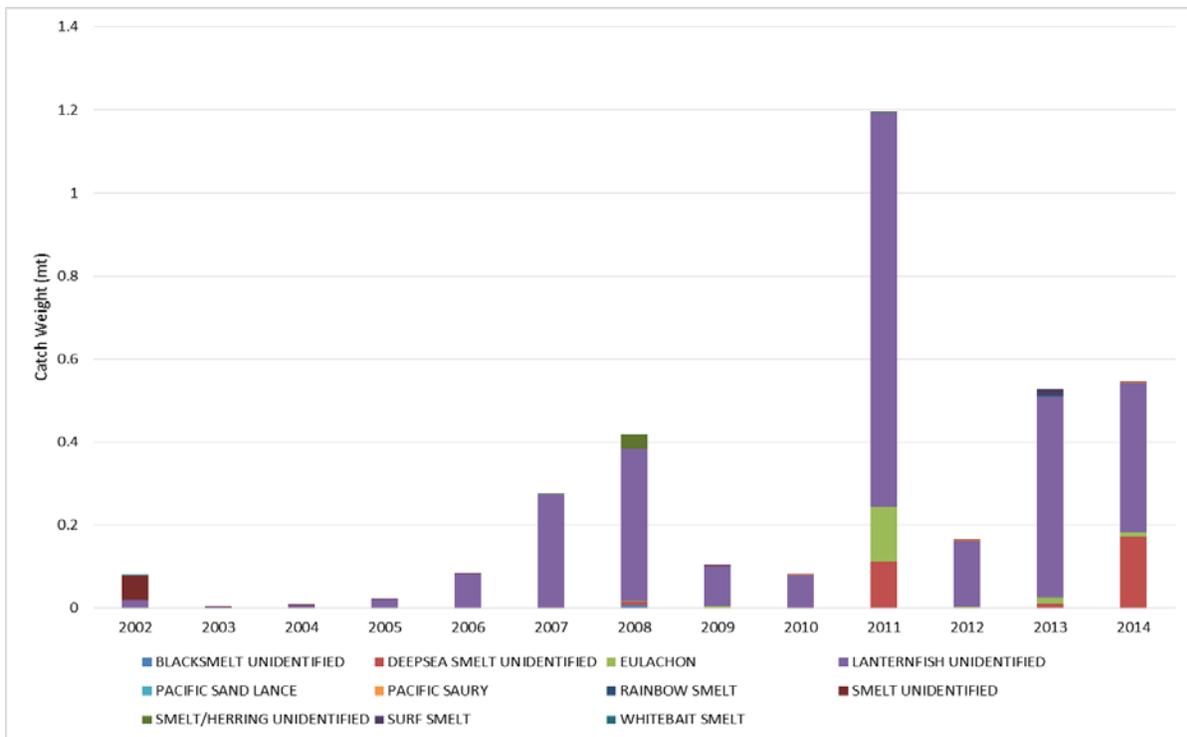


Figure 8. At Sea Whiting Sectors: Summed Weights of Incidentally-Caught Fish (Squid Excluded) in Data Categories that Include Shared Ecosystem Component Species, by year, in mt (North Pacific Observer Program Data)

Species other than unidentified squid for the 2002-2014 period. Blacksmelt and deepsea smelt are Bathylagids in the mesopelagic fish category within Shared EC Species; lanternfish are Myctophids in the mesopelagic fish category within Shared EC Species. Rainbow smelt, surf smelt, whitebait smelt, and eulachon are all Osmerids within Shared EC Species. The highest level of fleet-wide Shared EC Species catch within the at-sea whiting sectors occurred in 2011, when the sectors took 1.2 mt of Shared EC Species other than unidentified squid while catching 121,730 mt of whiting.

Figure 9 shows the annual weights of incidentally-caught Humboldt squid and unidentified squid for the 2002-2014 period. We do not know whether the lack of incidental Humboldt squid catch prior to 2006 indicates that no Humboldt squid were caught, or if Humboldt squid were not speciated from the larger group of unidentified squid species before 2006. From 2006-2014, incidental catch of unidentified squid ranged from a low of 44 mt in 2009 to a high of 233 mt in 2013.

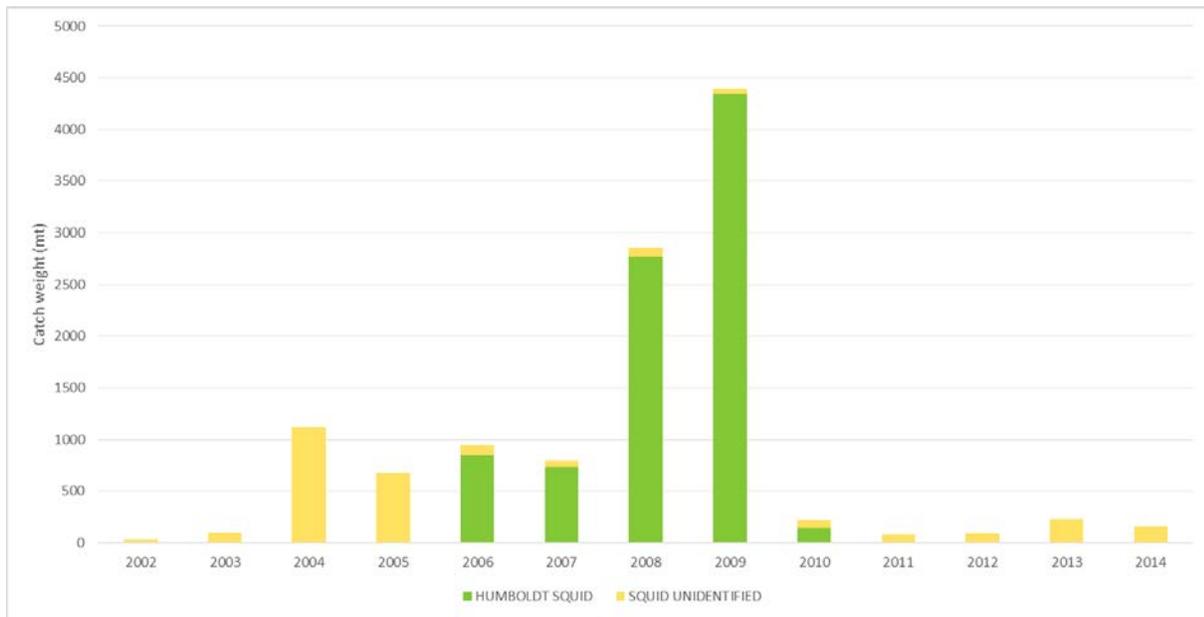


Figure 9. At Sea Whiting Sectors: Summed Weights of Incidentally-Caught Humboldt and Unidentified Squid (could include Shared EC Species squid) by year, in mt (North Pacific Observer Program Data)

Similar to shoreside landings for all fisheries, we assessed the annual weights of unspecified squid processed by individual processing vessels in the at-sea whiting sectors. To protect data confidentiality, Figure 10 shows randomized, unnamed, delivered weights per processing vessel of unspecified squid over the 2002-2014 period. Figure 11 shows randomized, unnamed, delivered weights per processing vessel of unspecified squid over 2006-2014. By comparing these two figures, we see that most annual delivered amounts for unspecified squid are near or below 40 mt per vessel, with a few high outliers in the 2002-2014 period shown in Figure 10, and one moderate outlier in the 2006-2014 period shown in Figure 11.

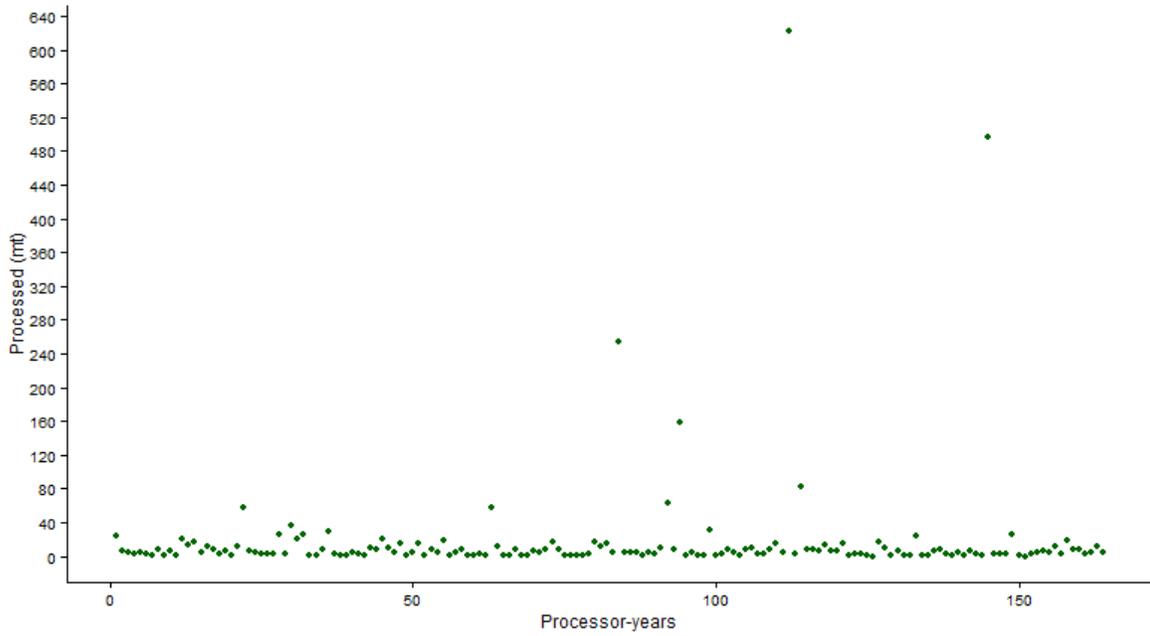


Figure 10. Annual weights of unspecified squid processed by individual processing vessels in the at sea whiting sectors over the years 2002-2014. Weights are randomized over 2002-2014 and aggregated to preserve confidentiality.

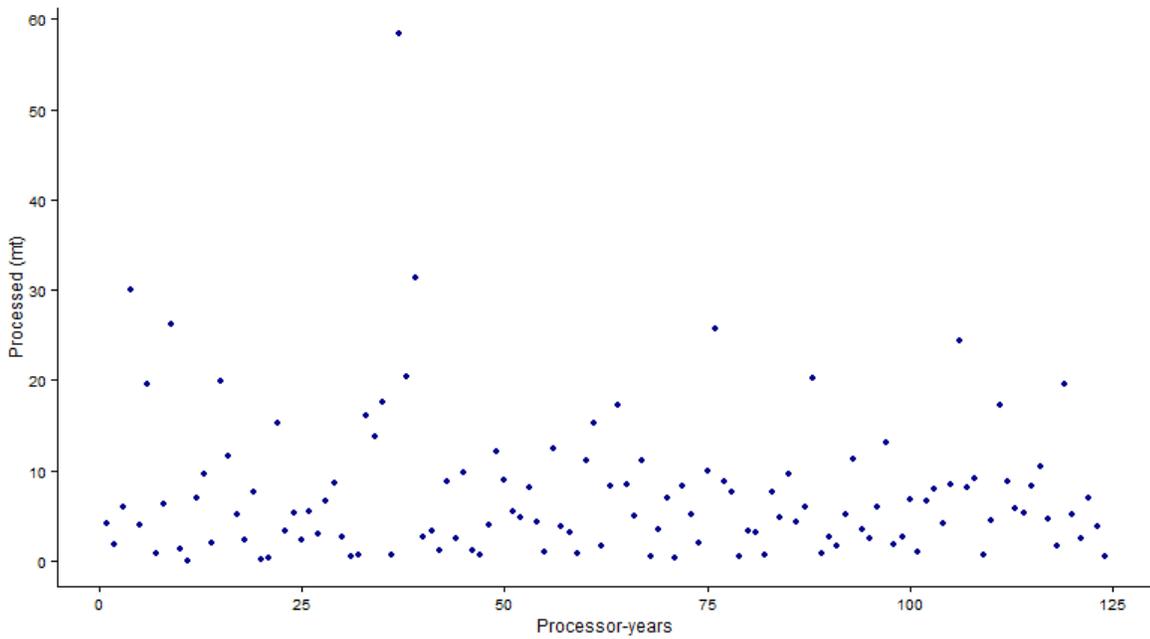


Figure 11. Annual weights of unspecified squid processed by individual processing vessels in the at sea whiting sectors over the years 2006-2014 (note different Y-axis values in Figures 10 and 11). Weights are randomized over 2006-2014 and aggregated to preserve confidentiality.

If the Council wishes to discourage development of at-sea processing of Shared EC Species, NMFS recommends prohibiting any at-sea processing of Shared EC Species except for those that are taken incidentally in the at-sea whiting sectors. NMFS particularly seeks comment from participants in the at-sea whiting sectors on whether catcher-processor or mothership vessels are actually processing the larger-bodied squid species, or if those squid are discarded at sea. Smaller-sized Shared EC Species, such as those shown as incidental catch in Figure 8 would be difficult to sort from Pacific whiting prior to processing, and could be processed into fishmeal or oil. NMFS is uncertain whether larger-sized squid, several of which are naturally ammonia-filled to improve buoyancy, could reasonably be processed into fishmeal or oil. For regulating the at-sea whiting sectors to prevent the development of new processing of Shared EC Species, NMFS recommends addressing unspecified squid separately from the remaining Shared EC Species, as shown in NMFS's draft regulations, below. NMFS also recommends relatively high annual processing limits for the 16 potential processing vessels in the at-sea whiting fisheries, since these species tend to be taken sporadically and data confidentiality requirements prevent us from presenting vessel-specific Shared EC Species incidental catch information: 1 mt of Shared EC Species other than squid annually and per processing vessel, and 40 mt of Shared EC squid species annually and per processing vessel.

NMFS Pre-Deeming Regulatory Language to Implement CEBA 1

For the reasons stated in the preamble, 50 CFR part 660 is proposed to be amended as follows:

PART 660—FISHERIES OFF WEST COAST STATES

1. The authority citation for part 660 continues to read as follows: Authority: 16 U.S.C. 1801 et seq., 16 U.S.C. 773 et seq., and 16 U.S.C. 7001 et seq.

2. In § 660.1 revise paragraphs (a) to read as follows:

§ 660.1 Purpose and scope.

(a) The regulations in this part govern fishing activity of vessels of the United States that fish or support fishing inside the outer boundary of the EEZ off the states of Washington, Oregon, and California.

* * * * *

3. Subpart B is revised to read as follows:

Subpart B -- All West Coast EEZ Fisheries

§ 660.5 Shared Ecosystem Component Species.

(a) General. The FMPs implemented in this part 660 each contain ecosystem component species specific to each FMP, as well as a group of ecosystem component species shared between all of the FMPs. Ecosystem component species shared between all of the Pacific Fishery Management Council's FMPs, and known collectively as "Shared EC Species," are:

(1) Round herring (*Etrumeus teres*) and thread herring (*Ophisthonema libertate* and *O. medirastre*).

(2) Mesopelagic fishes of the families *Myctophidae*, *Bathylagidae*, *Paralepididae*, and *Gonostomatidae*.

(3) Pacific sand lance (Ammodytes hexapterus).

(4) Pacific saury (Cololabis saira).

(5) Silversides (family Atherinopsidae).

(6) Smelts of the family Osmeridae.

(7) Pelagic squids (families: Cranchiidae, Gonatidae, Histioteuthidae, Octopoteuthidae, Ommastrephidae except Humboldt squid [Dosidicus gigas], Onychoteuthidae, and Thysanoteuthidae).

(b) Directed Commercial Fishing Within the EEZ. For the purposes of this section, “directed fishing” means that a fishing vessel lands Shared EC Species without landing any species other than Shared EC Species, or lands Shared EC Species with other species in amounts more than:

(1) 10 mt combined weight of all Shared EC Species from any fishing trip; or

(2) 30 mt combined weight of all Shared EC Species in any calendar year.

§ 660.6 Prohibitions. In addition to the general prohibitions specified in §600.725 of this chapter, and the prohibitions specified in § 660.12, § 660.112, § 660.212, § 660.312, and § 660.505 of this part, it is unlawful for any person to:

(a) Directed Commercial Fishing. Engage in directed fishing for Shared EC from a vessel engaged in commercial fishing within the EEZ off Washington, Oregon, or California. This prohibition does not apply to:

(1) fishing authorized by the Hoh, Makah, or Quileute Indian Tribes, or by the Quinault Indian Nation, or

(2) fishing trips conducted entirely within state marine waters (0-3 nm offshore).

(b) Transfer at Sea. Transfer Shared EC Species from one vessel to another at sea unless both vessels are participating in the primary Pacific whiting fishery as part of the mothership or catcher/processor sectors identified in Subpart D of this section.

(c) At-sea Processing. At-sea processing of Shared EC Species is prohibited within the EEZ, except while processing groundfish in accordance with Subpart D of this part.

* * * *

4. In § 660.112, new paragraphs (d)(16) and (e)(10) are added to read as follows:

§ 660.112 Trawl fishery -- prohibitions.

(d) * * *

(16) Process more than 1 mt of Shared EC Species other than squid species in any calendar year; or, process more than 40 mt of any Shared EC squid species in any calendar year.

* * *

(e) * * *

(10) Process more than 1 mt of Shared EC Species other than squid species in any calendar year; or, process more than 40 mt of any Shared EC squid species in any calendar year.

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