

Draft Intersector Allocation Review

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Evaluating the Performance of Intersector Allocations Since Implementation of the Trawl Catch Share Program

Pacific Coast Groundfish Fishery Management Plan (FMP) Amendment 21 (Am 21) established long-term, formal allocations to trawl and non-trawl sectors of the groundfish fishery. Sector allocations, designed to support the trawl catch share program, were implemented in 2011. The Pacific Management Council (Council) scheduled a five-year review of the performance of the trawl catch share program, including the Am 21 sector allocations, when developing the program. The Council amended that schedule with the adoption of the first catch share and intersector allocation review to occur every six years after the previous review. This paper evaluates the performance of Am 21 allocations by considering annual catches by sector relative to their allocations of the available harvest of FMP stocks managed with formal allocations. The analysis and discussions of allocation issues provided in this document are meant to support the review of formal allocations that was called for in Am 21, in conjunction with the review of the trawl catch share program. The issues raised in this document are not inclusive; other issues associated with formal allocations may arise in the scoping process.

Considerations for Evaluating the Performance of Intersector Allocations

In considering the way forward on the review of intersector allocations, it is useful to review the practices and factors to be considered in that process, as recommended in the relevant National Marine Fisheries Service (NMFS) policy directive: [01-119-02](#). The following are the relevant topics covered in that directive.

Recommended Practices When Reviewing and Making Allocation Decisions

The NMFS policy directive identifies four practices when reviewing and making allocation decisions that would “improve the allocation process by increasing transparency and minimizing conflict.” This list is not comprehensive however and may not be applicable to all circumstances.

- a. Evaluate and Update Council and Fishery Management Plan (FMP) Objectives. The Groundfish FMP goals and objectives can be found in [Appendix B](#) of this document. As a part of the allocation review, the policy guidance states that “If FMP objectives are not current, clear, or measurable, a Council should re-assess the FMP objectives prior to or concurrent to initiating the allocation discussion.” If the Council believes that the FMP objectives are not current, clear, or measurable, the Council may want to consider taking that evaluation up under a broader action.
- b. Identify User Needs. The specific needs and interests of the different types of fishery participants or sectors within a fishery may vary. With the groundfish fishery evolving due to climate change and other factors such as loss of fishing opportunities like salmon since the implementation of Am 21, there may be differing needs for each sector compared to when the allocations were established. As an example, if the Council identifies that a sector is potentially constrained and another sector may be stranding fish, a change in the allocation structure may meet the needs of all participants.
- c. Minimize Speculative Behavior. This practice is focused on providing stakeholders with a clear understanding of possible changes to allocations and states that the Council should consider announcing a control date by sector when appropriate. Since implementation of Am 21, a control date for changes to allocations subject to formal intersector allocations has not been needed and therefore this consideration is likely not to apply.
- d. Plan for Future Conditions. NMFS guidance for this practice includes the concept of providing a mechanism within the FMP for expediting a change in allocations. An example given is in the Bering Sea and Aleutian Islands FMP which has pre-arranged “if/then” allocations for yellowfin sole between two sectors depending on the total allowable catch (TAC). Historically, three species (widow, darkblotched, and POP) had allocations based on this structure to allocate within the trawl fishery (shoreside and at-sea). With groundfish being on a two year cycle and formal trawl/non-trawl allocations able to be reviewed during the development of the forthcoming biennial specifications and management measures, it is likely that this concept may not be appropriate for the groundfish fishery unless it were done mid-biennium. Changes during a fishing year between trawl and non-trawl allocations would only be allowed one way (from non-trawl to trawl) given that trawl IFQ is issued at the start of the year and can not be taken away.

Factors to Consider When Reviewing and Making Allocation Decisions

In addition to the four practices described above, the NMFS Policy Directive also lists four factors to consider when reviewing and making allocation decisions. However, this is not all-inclusive and other factors may be appropriate to consider.

1. Ecological Factors

- a. What are expected ecological impacts on target species?
- b. What are the expected ecological impacts on other fisheries? What is the status of non-target species? What are the expected impacts on bycatch and bycatch mortality of both non-target species and protected species?
- c. What are the impacts on the marine ecosystem? What are the impacts on habitat? What are the impacts on the ecological community (e.g., relevant predator, prey, or competitive dynamics)?

The ecological impacts associated with West Coast groundfish fisheries were analyzed using the Atlantis model when the Council considered and ultimately adopted FMP Am 24, which concerned the identification of harvest control rules that would be implemented in the biennial specifications process as a default in the absence of a discrete Council decision to make changes to those rules. That analysis indicated removals of groundfish species other than Pacific whiting across a wide range of removals analyzed did not result in any significant ecological impacts to the California Current ecosystem (PFMC and NMFS 2015). Each biennium since Am 24 has tiered off that analysis and most recently concluded that there would be no significant impacts to the marine ecosystem, habitat or other non-target and protected species through the full attainment of any of the groundfish stocks.

2. Economic Factors

- a. Can economic efficiency be improved?
- b. What are the economic impacts of potential changes in allocation?

Economic efficiency is defined as “when all goods and factors of production in an economy are distributed or allocated to their most valuable uses and waste is eliminated or minimized.” ([Investopedia](#)). National Standard 5 (NS5) on efficiency states that “In theory, an efficient fishery would harvest the OY with the minimum use of economic inputs such as labor, capital, interest, and fuel”. In considering changes to allocations, NS5 states that management measures aimed at efficiency do not simply redistribute gains and burdens without an increase in efficiency. As discussed below, some stocks have been changed from formal allocations to biennial allocation to reduce instances of stranded yield and increase harvest of OY. The analysis below provides an assessment of recent landings and revenue of the remaining formal allocation species for the Council and advisory bodies to consider whether or not there is evidence of stranded yield or other economic inefficiencies and whether allocation changes should be considered. The economic impacts of potential changes in allocation would be analyzed depending on the scope set by the Council and whether changes in any of the formal allocations were proposed.

3. Social Factors

- a. Is an allocation fair and equitable?
 - b. Are there disproportionate adverse effects on low income and/or minority groups?
 - c. What is the importance of fishery resources to fishing communities?
 - d. What is the individual, local, and regional dependence and engagement in each sector?
- ii. What is the community’s vulnerability and adaptive capacity?
 - iii. Are there other social impacts?

NS 4 discusses allocations and states that allocations should be fair and equitable. While the original allocations were analyzed to meet this standard, NS 4 states that “an allocation need not preserve the status quo in the fishery to qualify as”fair and equitable” if a restructuring of fishing privileges would maximize overall benefits.” Some of the information provided in this document related to attainment of current allocations may help address some of these considerations if for example, one sector is continuously attaining a allocation where the other sector is not. However, other factors are likely not addressed explicitly.

Dependence (define) and involvement (define) is examined for each port group for trawl and non-trawl sector. Vulnerability of each port group was assessed by using the most recent [CCIEA report](#).

4. Indicators of Performance and Change
 - a. What are the trends in catch/landings?
 - b. What is the status of fishery resources?
 - c. Has the distribution of the species changed?
 - d. What is the quality of information available for each sector or group?

Many of the indicators of Performance and Change are addressed to some degree in this document. Catches by sector, provided below, cover trends in catch and landings. Information on the status of the fishery resource and the distribution of the stocks can be found in the 2023 Groundfish Stock Assessment and Fishery Evaluation (SAFE) document. Information quality by each sector/group varies.

Stocks Considered in This Evaluation

Stocks with formal sector allocations include arrowtooth flounder, chilipepper rockfish south of 40° 10' N. lat., darkblotched rockfish, Dover sole, English sole, lingcod north of 40° 10' N. lat., longspine thornyhead north of 34° 27' N. lat., Other Flatfish complex, Pacific cod, Pacific ocean perch (POP) north of 40° 10' N. lat., Pacific whiting, sablefish north of 36° N. lat., sablefish south of 36° N. lat., stocks in the Slope Rockfish complex north of 40° 10' N. lat., splitnose rockfish south of 40° 10' N. lat., starry flounder, and yellowtail rockfish north of 40° 10' N. lat.

Since the 2017 review, five formal allocations have been changed into biennial allocations through the biennial specifications process and are not considered in the following review.

- Slope rockfish south of 40° 10' N. lat. (Am 29)
- Widow rockfish (Am 29)
- Petrale sole (Am 29)
- Lingcod south of 40° 10' N. lat. (Am 29)
- Shortspine thornyhead north and south of 34° 27' N. lat. (anticipated for 2025-2026 biennium pending final rulemaking for Am 33)

Sector allocations of sablefish north of 36° N lat. were decided prior to development of Am 21, but are included in this evaluation since Am 21 called for a review of all formal allocations included in the FMP. Pacific whiting allocations only affect the trawl sectors (non-trawl set-asides are specified). Both of these species are discussed below separately from the other formally allocated stocks.

Sector catches for the species in this review are from the NMFS West Coast Groundfish Observer Program (WCGOP) [groundfish expanded mortality matrix \(GEMM\)](#) for 2011-2022 with preliminary 2023 estimates from PacFIN and estimated discard mortality from the GEMM.

Trawl/Non-Trawl Allocations

Many of the stocks formally allocated under Am 21 are trawl-dominant (defined in Am 21 as 90 percent of the average total directed non-tribal landings in the 1995-2005 time period). A minimum allocation of 5 percent of the fishery harvest guideline (fishery HG) of the trawl-dominant species was allocated to non-trawl sectors under Am 21 creating the potential for stranded yield in non-trawl fisheries based on this allocation scheme. This resulting stranded yield and limited targeting in the non-trawl sectors was the impetus for changing this percentage formula for petrale sole- a highly attained trawl stock.

Compared to previous review period (2011-2015), allocations for the trawl sector in particular have increased by 43.3 percent (2016-2023 compared to 2011-2015) mostly due to increases in the Dover sole ACL in 2015 (doubled) and then another increase in 2017 due to arrowtooth flounder (over 3 fold) (Figure 1). While the total harvested amount has remained relatively flat (with a decline in recent years), the overall utilization by the trawl sector has declined on average from 23.5% percent to 13.8% percent comparing 2016-2023 and 2011-2015. For the non-trawl sector, utilization has declined as well but to a lesser degree than trawl (from 16.3% percent to 11.2% percent).

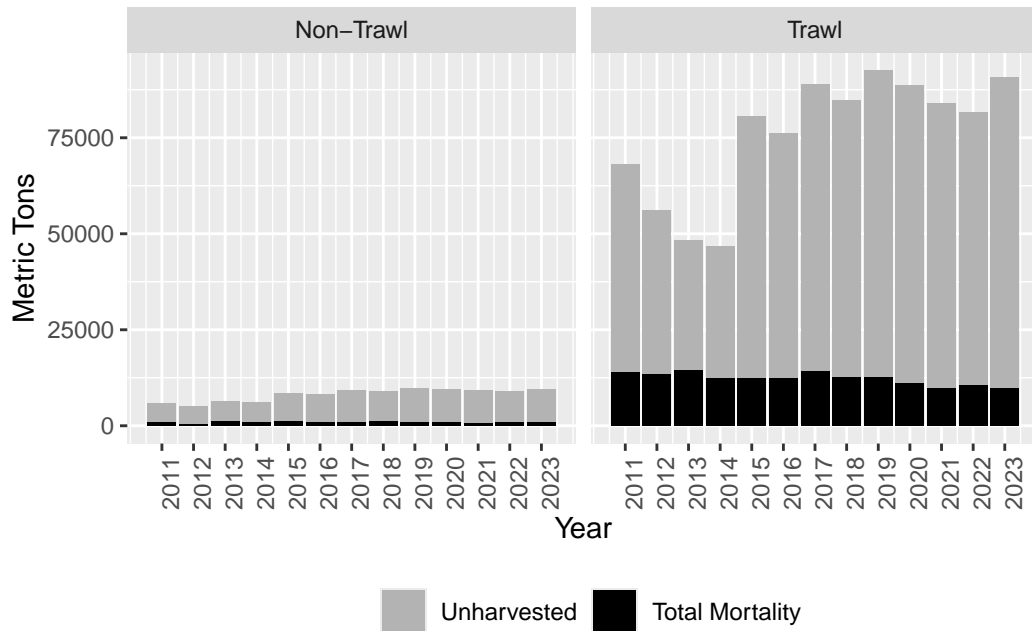


Figure 1: Amendment 21 Allocations- Harvested and Unharvested by Sector, 2011-2023

On an individual species level, of the remaining Am 21 stocks, there are few instances where attainment has exceeded 90 percent since the implementation of Am 21 in either sector. The average allocations, catches, and attainment rates for trawl and non-trawl sectors during 2011-2015 compared to 2016-2019 and 2020-2023 are provided in Table 1 and Table 2 respectively. In fact, there are few stocks that have allocation attainments greater than 50 percent since 2016 with the exception of POP (2017/2018), yellowtail rockfish (2017-2023), and chilipepper in 2023 (Table 3). The latter two increases were likely due to the midwater rockfish fisheries that have developed in both sectors in recent years. All of these instances occurred in the trawl sector. Since Am 21 was implemented (and of the remaining stocks), the only stock with over 50 percent attainment of the non-trawl allocation was sablefish south from 2011-2014 (which declined from 105 percent to 54 percent over that timespan). Average attainments for sablefish south have further declined in 2020-2023 below 10 percent for trawl and 20 percent for non-trawl- although the attainment decline is also likely due to the higher allocations in recent years. For an annual assessment of allocation, mortality, and attainment for all stocks, see Appendix A.

However, for the trawl sector, while sector attainment rates may be low, there could be some individual constraints on the vessel level given the nature of the IFQ program. Further investigation of these situations could be examined if the Council were interested.

Table 1: Amendment 21 Mortality, Allocation, and Attainment Averages for Trawl Sector, 2011-2015, 2016-2019, 2020-2023

Stock/Complex	Mort			Alloc			Attain		
	2011-2015	2016-2019	2020-2023	2011-2015	2016-2019	2020-2023	2011-2015	2016-2019	2020-2023
Arrowtooth Flounder	2,199.6	1,190.8	710.7	6,501.1	9,516.7	9,830.8	42.8	18.8	8.2
Chilipepper Rockfish (South Of 40 10)	299.1	211.8	759.9	1,235.2	1,700.3	1,656.0	24.8	12.0	46.2
Dover Sole	7,178.6	6,656.6	4,315.4	26,989.0	45,985.5	45,983.1	29.4	14.8	9.2
English Sole	214.8	259.0	217.8	9,805.3	8,060.8	8,657.4	3.0	3.5	2.5
Lingcod (North Of 40 10) ¹	148.2	430.8	340.7	711.9	1,453.6	2,039.8	20.7	30.5	17.0
Longspine Thornyhead (North Of 34 27)	912.3	522.5	75.1	2,107.6	2,628.8	2,289.4	45.2	19.5	3.2
Other Flatfish	779.3	683.5	437.9	4,910.1	6,450.9	4,417.0	16.6	10.8	10.0
Pacific Cod	270.3	110.1	15.1	1,115.8	1,037.0	1,039.2	24.6	10.8	1.5
Pacific Ocean Perch (North Of 40 10)	54.0	233.9	436.4	133.3	1,170.8	3,598.0	40.6	45.5	12.2
Sablefish (South Of 36)	223.8	109.3	83.8	604.1	812.6	844.8	38.8	13.5	9.8
Splitnose Rockfish (South Of 40 10)	47.9	17.0	21.9	1,509.6	1,655.0	1,554.9	3.2	1.0	1.5
Starry Flounder	8.3	6.0	0.1	725.6	563.2	183.0	1.0	1.0	0.0
Yellowtail Rockfish (North Of 40 10)	1,111.9	2,686.0	3,110.7	3,633.8	4,551.0	4,264.8	30.4	59.2	73.0

¹Excludes 2011-2012 in 2011-2015 average due to different management line

Table 2: Amendment 21 Mortality, Allocation, and Attainment Averages for Non-Trawl Sector, 2011-2015, 2016-2019, 2020-2023

Stock/Complex	Mort			Alloc			Attain		
	2011-2015	2016-2019	2020-2023	2011-2015	2016-2019	2020-2023	2011-2015	2016-2019	2020-2023
Arrowtooth Flounder	39.1	46.2	33.0	342.3	500.9	517.4	12.8	10.8	6.8
Chilipepper Rockfish (South Of 40 10)	7.9	8.5	84.8	411.7	566.8	552.0	1.8	1.5	16.2
Dover Sole	7.3	5.7	4.3	1,420.3	2,420.3	2,420.2	0.6	0.0	0.0
English Sole	0.1	0.0	1.2	516.2	424.3	455.7	0.0	0.0	0.2
Lingcod (North Of 40 10) ¹	297.3	518.5	475.5	870.2	1,776.6	2,493.1	34.3	31.0	19.2
Longspine Thornyhead (North Of 34 27)	7.1	5.7	2.3	111.0	138.3	120.5	6.6	4.0	2.0
Other Flatfish	83.0	40.9	40.5	545.7	716.8	490.8	16.8	5.5	8.2
Pacific Cod	3.6	3.7	2.1	58.8	54.7	54.7	6.0	6.8	3.8
Pacific Ocean Perch (North Of 40 10)	0.4	0.3	0.6	6.9	61.6	189.4	5.4	2.2	0.2
Sablefish (South Of 36)	543.0	387.4	204.4	834.1	1,122.1	1,166.6	67.2	34.2	17.8
Splitnose Rockfish (South Of 40 10)	0.2	0.0	0.0	79.5	87.1	81.8	0.2	0.0	0.0
Starry Flounder	1.3	1.5	2.6	725.6	563.2	183.0	0.0	0.5	1.2
Yellowtail Rockfish (North Of 40 10)	50.3	68.2	106.6	495.5	620.6	581.6	10.4	10.8	18.5

¹Excludes 2011-2012 in 2011-2015 average due to different management line

Table 3: Amendment 21 Minimum and Maximum Attainment by Sector and Number of Years with Over 50% Attainment, 2011-2023

Stock/Complex	Trawl					Non-Trawl				
	min	max	2011-2015	2016-2019	2020-2023	min	max	2011-2015	2016-2019	2020-2023
Arrowtooth Flounder	4	63	3	0	0	5	19	0	0	0
Chilipepper Rockfish (South Of 40 10)	6	59	0	0	1	1	47	0	0	0
Dover Sole	8	36	0	0	0	0	1	0	0	0
English Sole	1	6	0	0	0	0	1	0	0	0
Lingcod (North Of 40 10) [†]	13	44	0	0	0	17	41	0	0	0
Longspine Thornyhead (North Of 34 27)	2	57	1	0	0	2	9	0	0	0
Other Flatfish	9	20	0	0	0	3	22	0	0	0
Pacific Cod	0	37	0	0	0	2	17	0	0	0
Pacific Ocean Perch (North Of 40 10)	10	66	0	2	0	0	10	0	0	0
Sablefish (South Of 36)	5	85	1	0	0	14	105	4	0	0
Splitnose Rockfish (South Of 40 10)	0	4	0	0	0	0	1	0	0	0
Starry Flounder	0	2	0	0	0	0	5	0	0	0
Yellowtail Rockfish (North Of 40 10)	24	82	0	3	4	7	23	0	0	0

[†]Excludes 2011-2012 in 2011-2015 average due to different management line

Average commercial landings of stocks that are formally allocated to trawl and non-trawl sectors from the five years leading up to the original trawl program review (2011-2015) and the eight years since the last review (2016-2019, 2020-2023) are shown in Table 4, respectively. Inflation-adjusted ex-vessel revenue averages (adjusted to 2023 dollars) associated with those landings are provided in Table 5 .

Overall, there have been declines in landings and the associated revenue since the start of Am 21- particularly for the trawl sector(Figure 2, Figure 3). While some stocks (as discussed above) have seen increases in landings and attainment, it was not enough to compensate for the total decline in revenue for Am 21 stocks. From 2017, where a noticeable decline in landings and revenues begins, to 2023, there was an 66.2 percent decrease in landings in the trawl sector compared to 50.4 percent in revenues. The non-trawl sector saw declines of 89.6 and 69.4 percent respectively.

Table 4: Landings Averages by Period, 2011-2023

Stock/Complex	2011-2015		2016-2019		2020-2023	
	Non-Trawl ¹	Trawl ¹	Non-Trawl	Trawl	Non-Trawl	Trawl
Arrowtooth Flounder	12.8	9,070.8	7.8	3,095.5	5.2	886.5
Chilipepper Rockfish (South Of 40 10)	5.0	1,285.6	18.3	797.0	149.9	2,777.7
Dover Sole	14.2	35,288.6	9.9	26,425.3	3.6	16,880.9
English Sole	0.3	851.5	0.0	785.8	0.0	340.6
Lingcod (North Of 40 10)	260.7	710.2	462.8	1,670.3	590.6	1,279.5
Longspine Thornyhead (North Of 34 27)	15.7	4,379.7	13.4	2,037.3	8.9	269.5
Other Flatfish	27.2	3,039.1	21.2	2,102.8	13.8	1,203.2
Pacific Cod	10.9	1,317.3	8.7	438.1	2.6	59.3
Pacific Ocean Perch (North Of 40 10)	1.5	236.4	0.8	694.5	0.4	1,538.4
Sablefish (South Of 36)	2,616.1	1,099.1	1,522.1	414.1	807.5	347.5
Slope Rockfish South (South Of 40 10)	321.7	443.1	105.9	223.6	113.9	174.9
Splitnose Rockfish (South Of 40 10)	1.0	64.9	0.2	38.6	0.1	26.3
Starry Flounder	1.1	41.9	0.5	21.5	0.2	0.4
Yellowtail Rockfish (North Of 40 10)	7.8	5,063.9	8.3	9,835.1	27.8	11,900.4

¹Excludes lingcod N in average due to different management line in 2011-2012

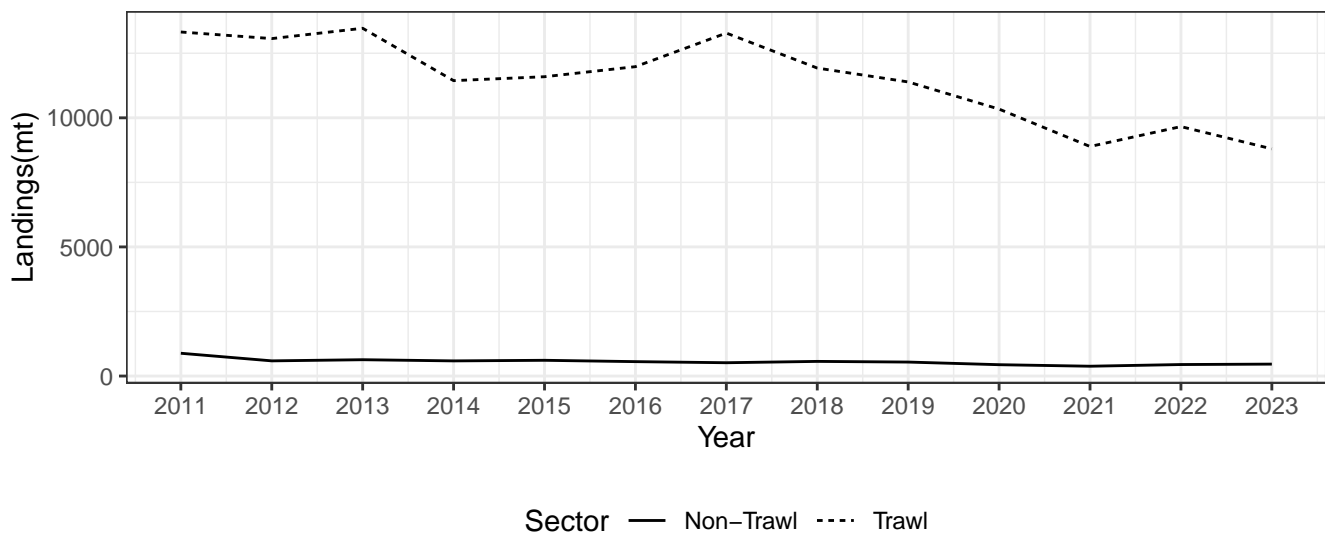


Figure 2: Amendment 21 Landings by Sector, 2011-2023

Table 5: Amendment 21 Average Ex-Vessel Revenues (1000s of 2023\$)

Stock/Complex	2011-2015		2016-2019		2020-2023	
	Non-Trawl ¹	Trawl ¹	Non-Trawl	Trawl	Non-Trawl	Trawl
Arrowtooth Flounder	\$5	\$2,779	\$3	\$794	\$1	\$163
Chilipepper Rockfish (South Of 40 10)	\$27	\$2,503	\$88	\$1,046	\$633	\$2,775
Dover Sole	\$29	\$43,511	\$18	\$30,444	\$5	\$15,921
English Sole	\$1	\$760	\$0	\$605	\$0	\$137
Lingcod (North Of 40 10)	\$1,715	\$1,529	\$3,210	\$4,175	\$3,807	\$2,607
Longspine Thornyhead (North Of 34 27)	\$49	\$5,479	\$44	\$2,429	\$29	\$144
Other Flatfish	\$256	\$3,747	\$249	\$2,080	\$158	\$1,018
Pacific Cod	\$17	\$2,139	\$16	\$696	\$8	\$60
Pacific Ocean Perch (North Of 40 10)	\$5	\$320	\$1	\$668	\$1	\$945
Sablefish (South Of 36)	\$18,614	\$7,325	\$11,091	\$2,347	\$5,211	\$1,168
Slope Rockfish South (South Of 40 10)	\$1,247	\$961	\$525	\$372	\$586	\$192
Splitnose Rockfish (South Of 40 10)	\$5	\$52	\$1	\$18	\$1	\$4
Starry Flounder	\$7	\$49	\$2	\$20	\$1	\$0
Yellowtail Rockfish (North Of 40 10)	\$29	\$7,033	\$33	\$8,112	\$102	\$6,145

¹Excludes lingcod N in average due to different management line in 2011-2012

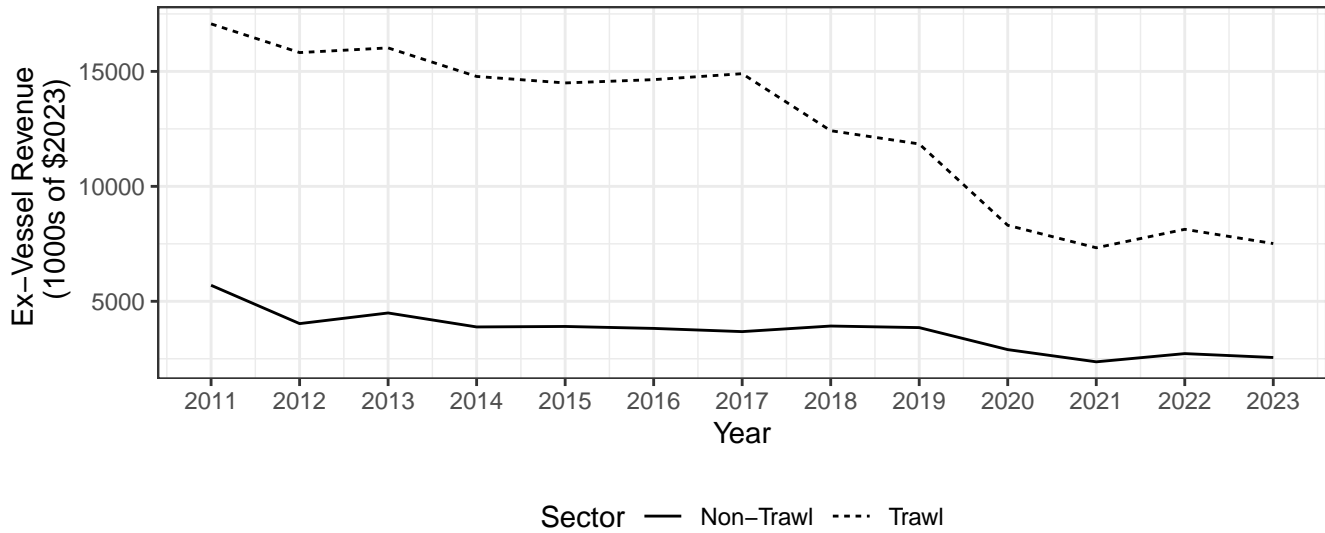


Figure 3: Amendment 21 Revenues (1000s of 2023\$) by Sector, 2011-2023

Landings and revenues within a port by each sector by Am 21 stock may provide some information relative to the importance of those stocks to West Coast communities. Table 6 and Table 7 below show the average landings and revenues (1000s of 2023\$) for each port group across 2011-2015, 2016-2019, and 2020-2023. ¹ Major trawl ports (Eureka, Astoria, and Ft. Bragg) have seen a decline in average revenues and landings compared to the last intersector allocation review period and the former two a decline from the 2016-2019 period (noting potential influences from COVID in 2020). South and Central Washington coastal ports and Bodega Bay on the other hand have seen an increase in the landings and revenue associated with the non-trawl sector across the three time periods. Morro Bay has seen a decline in both trawl and non-trawl sector revenues for Am 21 stocks across time.

Table 6: Average Amendment 21 Landings by IOPAC Port Group (“c” denotes confidential strata)

IOPAC Port Group	2011-2015		2016-2019		2020-2023	
	Non-Trawl ¹	Trawl ¹	Non-Trawl	Trawl	Non-Trawl	Trawl
PUGET SOUND	8.3	C	11.8	1,838.0	19.8	C
NORTH WA COAST	15.2	0.0	13.7	C	3.2	0.0
SOUTH AND CENTRAL WA COAST	6.6	3,574.5	7.1	2,617.7	14.8	4,645.2
ASTORIA	3.1	26,112.9	8.7	20,587.4	9.7	16,860.0
TILLAMOOK	45.6	0.0	68.6	0.0	52.4	0.0
NEWPORT	29.3	4,695.8	67.9	6,310.0	128.7	4,105.5
COOS BAY	48.1	5,268.2	55.3	C	64.3	C
BROOKINGS	118.1	4,118.2	202.1	C	245.3	830.8
CRESCENT CITY	21.9	491.2	36.4	C	65.4	C
EUREKA	9.3	7,721.1	23.0	6,846.5	26.0	5,110.0
FORT BRAGG	41.6	4,867.8	22.0	2,190.1	19.1	3,382.8
BODEGA BAY	10.3	C	13.1	0.0	57.1	0.0
SAN FRANCISCO	6.2	1,068.4	4.7	448.2	11.1	482.5
MONTEREY	34.3	1,193.1	30.6	49.2	105.3	378.3
MORRO	1,300.1	1,974.5	419.0	514.3	267.3	C
SANTA BARBARA	899.3	C	776.0	0.0	406.6	0.0
LOS ANGELES	292.6	0.0	153.6	0.0	112.6	0.0
SAN DIEGO	405.9	0.0	266.1	0.0	115.4	0.0

¹Excludes lingcod N in average due to different management line in 2011-2012

Table 7: Average Amendment 21 Revenues (1000s of 2023\$) by IOPAC Port Group (“c” denotes confidential strata)

IOPAC Port Group	2011-2015		2016-2019		2020-2023	
	Non-Trawl ¹	Trawl ¹	Non-Trawl	Trawl	Non-Trawl	Trawl
PUGET SOUND	\$11.3	C	\$14.0	\$2,599.0	\$31.2	C
NORTH WA COAST	\$31.4	\$0.0	\$37.8	C	\$12.3	\$0.0
SOUTH AND CENTRAL WA COAST	\$9.5	\$3,550.3	\$20.5	\$1,159.3	\$53.0	\$1,952.6
ASTORIA	\$5.6	\$28,562.1	\$44.8	\$21,642.1	\$31.9	\$13,814.4
TILLAMOOK	\$320.6	\$0.0	\$494.6	\$0.0	\$354.7	\$0.0
NEWPORT	\$198.0	\$4,955.4	\$502.2	\$6,154.9	\$868.5	\$3,423.5
COOS BAY	\$260.2	\$5,803.9	\$321.2	C	\$355.1	C
BROOKINGS	\$761.5	\$4,953.4	\$1,438.2	C	\$1,627.7	\$704.2
CRESCENT CITY	\$133.1	\$592.4	\$235.6	C	\$431.3	C
EUREKA	\$60.5	\$9,493.7	\$160.5	\$8,695.9	\$162.9	\$4,836.7
FORT BRAGG	\$133.9	\$6,773.2	\$57.6	\$2,718.9	\$55.4	\$3,336.9
BODEGA BAY	\$45.4	C	\$70.6	\$0.0	\$269.9	\$0.0
SAN FRANCISCO	\$34.0	\$1,609.8	\$22.5	\$504.3	\$40.2	\$425.4
MONTEREY	\$133.7	\$1,534.4	\$119.7	\$181.0	\$382.0	\$362.2
MORRO	\$8,464.1	\$7,902.8	\$2,550.1	\$2,465.4	\$1,359.3	C
SANTA BARBARA	\$6,671.1	C	\$5,895.5	\$0.0	\$2,741.7	\$0.0
LOS ANGELES	\$2,114.9	\$0.0	\$1,418.0	\$0.0	\$864.1	\$0.0
SAN DIEGO	\$2,616.7	\$0.0	\$1,875.8	\$0.0	\$900.1	\$0.0

¹Excludes lingcod N in average due to different management line in 2011-2012

¹0.94 mt were removed from query due to no IOPAC port code

Port involvement is a measure of a port’s contribution to the West Coast groundfish fishery landings (measured as the ex-vessel value from the fishery landed in the area as a share of the total exvessel value of the entire groundfish fishery). In this case, the analysis looks in particular at the involvement of a port group in the Am 21 fisheries (trawl/non-trawl) from 2016-2024. Due to confidentiality, a relative ranking of the port groups involvement in the Am 21 fisheries (trawl and non-trawl) is provided.

For trawl Am 21 landings, Astoria had the highest degree of involvement averaging about 32 percent of the revenue from Am 21 stocks in trawl landings from 2016-2023. Eureka and Newport were the second and third most involved port groups in these fisheries. Bodega Bay, Los Angeles, San Diego, Santa Barbara, and Tillamook had no recorded trawl landings of Am 21 stocks since 2016. Newport and Astoria were noted to be the most engaged in commercial fishing activity overall (with Westport) in 2021 (CCIEA report). Engagement refers to the total extent of fishing activity in a community; it can be expressed in terms of commercial activity (e.g., landings, revenues, permits, processing, etc).

For the non-trawl fisheries, non-trawl revenue was a fraction of the total revenue which aligns with the allocation schemes that these stocks are considered “trawl dominant”. Santa Barbara ports were the most involved with non-trawl A21 landings followed by Brookings and Morro Bay. Of the most socially vulnerable in 2021, Crescent City, Port Orford and Fort Bragg were the three commercial ports with the highest level of engagement. (Table 8)

Table 8: Ranking of Port Involvement by IOPAC Port Group

Trawl	Non-Trawl
ASTORIA	SANTA BARBARA
EUREKA	MORRO
NEWPORT	BROOKINGS
FORT BRAGG	SAN DIEGO
COOS BAY	LOS ANGELES
BROOKINGS	NEWPORT
SOUTH AND CENTRAL WA COAST	TILLAMOOK
MORRO	CRESCENT CITY
PUGET SOUND	COOS BAY
SAN FRANCISCO	MONTEREY
MONTEREY	BODEGA BAY
CRESCENT CITY	EUREKA
NORTH WA COAST	FORT BRAGG
BODEGA BAY	SOUTH AND CENTRAL WA COAST
LOS ANGELES	ASTORIA
SAN DIEGO	SAN FRANCISCO
SANTA BARBARA	PUGET SOUND
TILLAMOOK	NORTH WA COAST

Port dependence is considered in terms of the commercial fishing businesses in a particular port and their relative reliance on the groundfish fishery (in this case Am 21 stocks) as compared to other regionally caught landings from ocean areas that are first delivered to the port. In general, the ports that are more involved in the fishery are more dependent on the fishery- with Eureka, Astoria, and Fort Bragg having the highest average level of dependence on trawl landings of A21 stocks. Morro Bay, San Diego, and Santa Barbara are the top three relative to non-trawl landings. Relative to the trawl ports dependence, Morro Bay has a similar level of dependence on non-trawl fisheries in the period analyzed (averaging 9.8 percent of total revenues coming from non-trawl fisheries landings of Am 21 stocks) which is similar percentage wise compared to Eureka (12.1), Astoria (10.3) and Fort Bragg (9.8) for trawl landings. (Table 9)

Table 9: Ranking of Port Dependence by IOPAC Port Group

Trawl	Non-Trawl
EUREKA	MORRO
ASTORIA	SAN DIEGO
FORT BRAGG	SANTA BARBARA
MORRO	BROOKINGS
BROOKINGS	TILLAMOOK
PUGET SOUND	LOS ANGELES
NEWPORT	CRESCENT CITY
COOS BAY	BODEGA BAY
MONTEREY	MONTEREY
CRESCENT CITY	NEWPORT
SAN FRANCISCO	EUREKA
SOUTH AND CENTRAL WA COAST	COOS BAY
NORTH WA COAST	FORT BRAGG
BODEGA BAY	PUGET SOUND
LOS ANGELES	NORTH WA COAST
SAN DIEGO	SAN FRANCISCO
SANTA BARBARA	ASTORIA
TILLAMOOK	SOUTH AND CENTRAL WA COAST

Sablefish North of 36° N. lat.

Sablefish north of 36° N. lat. were formally allocated through Am 6, but were cemented as a part of Am 21 (Figure 4). The allocations, estimated mortality, and percent of the annual allocation attained of sablefish north of 36° N. lat. by the non-tribal commercial sectors of the groundfish fishery during 2011-2023 are provided in Table 10. Grey shading denotes values greater than 90 percent attainment of the respective allocation. The LE (trawl and fixed gear) share of the commercial HG has averaged 84.9% percent attainment since 2016, with notable declines in 2020, 2021, and 2023 down to around 71.1% percent attainment. Similar patterns of decline were seen in both the trawl and fixed gear sectors. The attainment of the OA share (which includes accounting for all incidental OA catch of sablefish north) has been extremely variable since 2016.

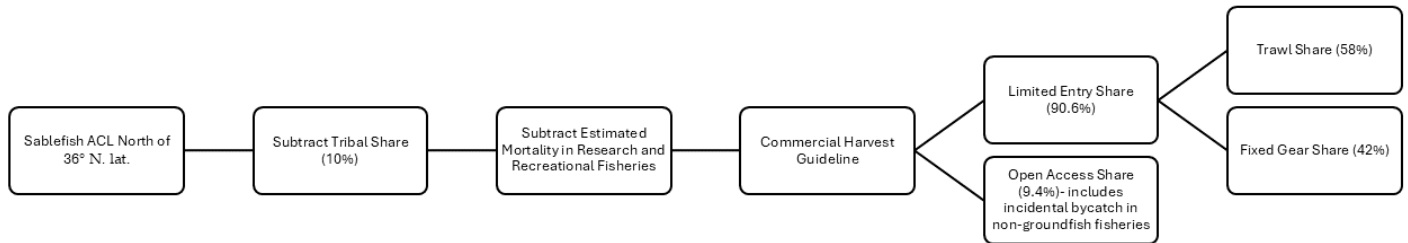


Figure 4: Diagram of sablefish N allocations

Table 10: Sablefish North Allocation (mt), Mortality (mt) and Attainment (%) by Sector, 2011-2023

YEAR	Comm HG			LE Share			Trawl			LEFG			OAN		
	Mort.	Alloc.	Attain	Mort.	Alloc.	Attain	Mort.	Alloc.	Attain	Mort.	Alloc.	Attain	Mort.	Alloc.	Attain
2011	4,827.9	4,941.0	98%	4,385.2	4,476.0	98%	2,384.8	2,597.0	92%	2,000.3	1,880.0	106%	442.8	464.0	95%
2012	4,167.4	4,790.0	87%	3,899.4	4,340.0	90%	2,215.2	2,517.0	88%	1,684.2	1,823.0	92%	268.0	450.0	60%
2013	3,244.6	3,575.0	91%	3,085.9	3,239.0	95%	1,848.7	1,878.0	98%	1,237.2	1,360.0	91%	158.7	336.0	47%
2014	3,386.9	3,878.0	87%	3,120.3	3,513.0	89%	1,872.5	2,038.0	92%	1,247.7	1,476.0	85%	266.7	365.0	73%
2015	4,160.9	4,281.0	97%	3,741.0	3,878.0	96%	2,191.1	2,249.0	97%	1,549.9	1,629.0	95%	420.0	402.0	104%
2016	4,414.1	4,684.0	94%	4,016.4	4,244.0	95%	2,311.8	2,461.0	94%	1,704.6	1,782.0	96%	397.6	440.0	90%
2017	4,802.4	4,693.7	102%	4,363.9	4,252.5	103%	2,652.5	2,466.4	108%	1,711.4	1,786.0	96%	438.5	441.2	99%
2018	4,493.6	4,894.4	92%	4,121.1	4,434.3	93%	2,398.7	2,571.9	93%	1,722.4	1,862.0	93%	372.5	460.1	81%
2019	4,639.2	5,007.2	93%	4,267.4	4,536.5	94%	2,619.0	2,631.2	100%	1,648.4	1,905.0	87%	371.8	470.7	79%
2020	3,492.6	5,113.2	68%	3,300.3	4,632.6	71%	1,825.5	2,686.9	68%	1,474.7	1,946.0	76%	192.4	480.6	40%
2021	4,292.6	6,165.0	70%	4,027.1	5,585.5	72%	2,342.1	3,239.6	72%	1,685.0	2,346.0	72%	265.5	579.5	46%
2022	5,783.3	5,871.6	98%	5,193.8	5,319.7	98%	3,216.8	3,085.4	104%	1,977.0	2,234.0	88%	589.5	551.9	107%
2023	5,369.7	7,552.0	71%	4,896.7	6,842.1	72%	2,749.8	3,968.4	69%	2,146.9	2,874.0	75%	473.0	709.9	67%

The previous review discussed potential issues regarding the management line at 36° N. lat. This management boundary is used only for sablefish and was established when the stock was first assessed due to the trawl surveys extending only down to that latitude. However, it has been noted that this line is likely not a meaningful biological boundary and led to sablefish being defined as a coastwide stock in the groundfish FMP (Am 31). In the last two biennia, a new apportionment method using the five-year rolling biomass average (rather than the long-term average) from the bottom trawl survey is used to apportion the coastwide biomass north and south of the 36 N. lat line for management.

The Council has previously discussed removing the management line for the trawl sector only, but elected to not pursue that route at the time as the reasons for under-attainment were “not fully understood and difficult to access. The lack of local markets and limited fishing grounds for groundfish trawlers were a contributing factor”. (SaMTAAC Final Report, May 2020) Given the complexities of the non-trawl sector allocation scheme of sablefish north compared to sablefish south, there has not been consideration of moving the line for the non-trawl sector. The last review did bring up the concept of moving the management line to 34° 27' N. lat. for the stock, however, that still would result in looking at allocational impacts to primary tier permit holders versus those that fish in the area between 34° 27' and 36° N. lat. who may not have historically qualified for that opportunity.

Most recently in terms of trawl and fixed gear allocations and opportunity, the Council recommended putting a limit on the amount of gear switching allowed in the IFQ program in years where limited sablefish (<6,000 mt ACL) was available. While permitted as a part of the development of the catch shares program, there was a consideration of the overall harvest of sablefish with non-trawl gear compared to trawl gear versus the outlined percentages of Am 6 (see Figure 4).

If the Council would like to consider further changes to the intersector allocations of sablefish north, they could provide direction at this meeting to examine the issues identified above or others not previously considered.

Within-Trawl Sector Allocations

The only stock that has formal within-trawl allocations is Pacific whiting. Pacific whiting is allocated 42 percent to shoreside IFQ, 34 percent to CPs and 24 percent to MS. The allocations to each sector were established in 1997 (62 FR 27519) and formalized in the FMP as a part of Am 21 and therefore are included within this review. During the 2017 review, there was also evaluation of further allocations for canary rockfish, darkblotched rockfish, POP north of 40° 10' N. lat, and widow rockfish for the shorebased IFQ, CP, and MS sectors. Management of these four stocks in the at-sea sectors has evolved since 2016, with all four stocks now being managed as set-asides off the top of the trawl allocations as is done for the remainder of species caught as bycatch in the at-sea fishery (see discussion below). The tables below depict the trawl sector allocations, catches, and allocation attainment percentage for Pacific whiting by sector and year since implementation of the trawl catch share program. The CP sector has had overall higher attainment of their allocation- averaging 88.2% percent of the final allocation (i.e. post-tribal reapportionment) since 2016 (Table 11). SS whiting has seen an average of 77.8% percent (Table 13) whereas the MS sector has averaged 53.7% percent (Table 12). The overall underutilization of the MS sector allocation led to the Council adopting regulatory amendments in March 2022 intended to increase utilization of the sector. That amendment also included a change in the season start date to May 1st for all sectors starting in 2023. For a summary of that action, see the Council webpage on [Pacific Whiting Utilization in the At-Sea Sectors](#).

Table 11: CP Landings, Allocation, and Attainment of Pacific Whiting, 2011-2023

Year	Total Mortality (mt)	Initial Allocation (mt)	Initial Attainment (%)	Post-Tribal Reapportionment (mt)	Post-Tribal Reapportionment Attainment (%)
2011	71,610	75,138	95.3%	75,138	95.3%
2012	55,602	46,064	120.7%	55,584	100.0%
2013	77,942	69,374	112.4%	79,574	97.9%
2014	103,267	88,186	117.1%	103,486	99.8%
2015	68,483	90,673	75.5%	100,873	67.9%
2016	108,804	102,589	106.1%	114,149	95.3%
2017	137,129	123,312	111.2%	137,252	99.9%
2018	116,049	123,312	94.1%	136,912	84.8%
2019	116,379	123,312	94.4%	136,912	85.0%
2020	111,015	118,649	93.6%	132,249	83.9%
2021	103,357	103,362	100.0%	115,141	89.8%
2022	126,158	112,687	112.0%	126,287	99.9%
2023	107,053	129,266	82.8%	144,566	74.1%

Table 12: MS Landings, Allocation, and Attainment of Pacific Whiting, 2011-2023

Year	Total Mortality (mt)	Initial Allocation (mt)	Initial Attainment (%)	Post-Tribal Reapportionment (mt)	Post-Tribal Reapportionment Attainment (%)
2011	50,111	53,039	94.5%	53,039	94.5%
2012	38,152	32,515	117.3%	39,235	97.2%
2013	52,479	48,970	107.2%	56,170	93.4%
2014	62,039	62,249	99.7%	73,049	84.9%
2015	27,669	64,004	43.2%	71,204	38.9%
2016	65,019	72,415	89.8%	80,575	80.7%
2017	66,257	87,044	76.1%	96,884	68.4%
2018	67,145	87,044	77.1%	96,644	69.5%
2019	52,416	87,044	60.2%	96,644	54.2%
2020	38,110	83,752	45.5%	93,352	40.8%
2021	35,912	72,961	49.2%	81,276	44.2%
2022	59,183	79,544	74.4%	89,144	66.4%
2023	32,744	91,247	35.9%	102,047	32.1%

Table 13: SS Landings, Allocation, and Attainment of Pacific Whiting, 2011-2023

Year	Total Mortality (mt)	Initial Allocation (mt)	Initial Attainment (%)	Post-Tribal Reapportionment (mt)	Post-Tribal Reapportionment Attainment (%)
2011	90,759	92,818	97.8%	92,818	97.8%
2012	65,416	56,902	115.0%	68,662	95.3%
2013	97,328	85,697	113.6%	98,297	99.0%
2014	98,477	108,935	90.4%	127,835	77.0%
2015	58,040	112,007	51.8%	124,607	46.6%
2016	85,757	126,727	67.7%	141,007	60.8%
2017	145,916	152,327	95.8%	169,547	86.1%
2018	129,443	152,327	85.0%	169,127	76.5%
2019	144,083	152,327	94.6%	169,126	85.2%
2020	138,503	146,567	94.5%	163,367	84.8%
2021	126,110	127,682	98.8%	142,233	88.7%
2022	104,803	139,202	75.3%	156,002	67.2%
2023	100,392	159,681	62.9%	178,581	56.2%

Set-Aside Considerations

To account for the at-sea mortality of non-whiting groundfish, Am 21 developed at-sea set asides which are removed from the trawl allocation before the trawl sector IFQ is dispersed. The list of species for which at-sea set asides are defined have varied since 2011, but the following table shows the list and values proposed for 2025 and 2026 (Table 14).

Allocations were initially set for four species: canary rockfish, darkblotched rockfish, widow rockfish, and POP through the development of Am 20. All four stocks were overfished at the time of Am 21 and the latter three were considered trawl-dominant stocks and had formal allocations specified in the FMP via formulas. Each at-sea sector was allocated a specific amount with an expectation that the at-sea cooperatives managed their operations to exceed that value. If they exceeded or were projected to exceed the allocations for these stocks, one of both of the sectors would be closed automatically (50 CFR 660.60(d)(1)(ii)). Each at-sea sector exceeded their initial allocation of darkblotched rockfish (CPs in 2011 and MS in 2014). The 2014 overage resulted in an emergency Council meeting in order to re-open the fishery since the allocation overage was not expected to result in a conservation concern, jeopardize the ACL, or adversely affect other sectors. To provide more flexibility, reduce the risk of inseason closure, reduce operational costs, and take into account that ACLs for these stocks were generally underattained, the Council moved to using set-asides rather than allocations for the four stocks (and removed the formula for setting the values for darkblotched, widow and POP) through Am 21-3 and 21-4 to the FMP. [Amendment 21-3 and 21-4](#) By moving to set aside management, it was posited that it might provide flexibility to the whiting sectors to continue fishing in years where bycatch exceeded those amounts- as long as the harvest specifications were not in jeopardy. This was particularly in light of other constraining stocks like sablefish or Chinook salmon that were resulting in co-ops having to prioritize which stocks to avoid and finding it difficult to maximize avoidance of all of them at the same time.

In recent meetings, there have been several discussions at the Council regarding at-sea set-aside overages and the expectation that the sectors were to stay within those set-asides. However, as noted in Am 21 FEIS

In the trawl rationalization program, several species/sector combinations are not scheduled to be managed using IFQs or bycatch limits. It is these sector/species combinations where set-asides are necessary and where allocations are not necessarily appropriate. The perspective taken to establish a set-aside is different from the perspective taken for establishing allocations. Since set-asides are not accompanied with a firm and direct management tool, the appropriate amount of fish attributed to a set aside is best examined as an amount that can reasonably accommodate the incidental amount of fish that a sector could take. This differs from an allocation where a firm catch level is established that is a direct target, and that target may be lower than historic catch amounts.

An expectation that set-asides would be reviewed and adjusted as needed through the biennial harvest specifications process, with inseason management only if specific criteria are met, is defined at 50 CFR 660.150(c)(2)(i)(B)(1) and 50 CFR 660.160(c)(3)(i):

“At-sea set-asides of non-whiting groundfish species will be managed on an annual basis unless there is a risk of a harvest specification being exceeded, unforeseen impact on other fisheries, or conservation concerns, in which case inseason action may be taken. Set asides may be adjusted through the biennial specifications and management measures process as necessary.”

As a part of this review, the Council should clarify its intent regarding at-sea set-asides. Depending on that intent, the Council could consider whether it wishes to change the means by which access to these stocks is provided to the at-sea sectors. If there is an expectation that the at-sea sectors are to remain within the set-aside values, then another accountability measure should be used to clarify that intent to the sector, the Council, and the public.

If there is not an expectation that the sectors remain within the set-aside and that the set-aside amount is truly intended to be an estimate of the mortality expected to be taken in the fishery, then a set-aside may continue to be appropriate. This decision may differ by species- similar to the rationale used under Am 21 to create allocations (rather than set-asides) for the four species discussed above. Additionally, the Council may wish to consider whether the set-asides or other management measure values should be set for the sector as a whole (as currently done for set-asides) or for the individual at-sea co-ops (as was done for the Am 21 allocations). When the Council changed from allocations to set asides for Am 21-3 and 21-4, the Council elected to combine the once sector specific values into a single value like the remainder of the set asides. With a single set-aside value, there is additional flexibility that may help accommodate significant interannual variability in each sector’s bycatch for various species.

Table 14: 2025-2026 At-Sea Set-Asides

Species	Set Aside (mt)
Arrowtooth Flounder	100
Canary Rockfish	20
Darkblotched Rockfish	100
Dover Sole	10
Lingcod	15
Longnose Skate	5
Other Flatfish	100
Pacific Ocean Perch	300
Petrable Sole	5
Shortspine Thornyhead	70
Widow Rockfish	300
Yellowtail Rockfish	360

Pacific Halibut

Pacific halibut is a prohibited species in the trawl fishery and the trawl catch share program was designed to minimize Pacific halibut bycatch. Pacific halibut bycatch in the IFQ fishery north of 40° 10’ N. lat. is managed under a system of individual bycatch quotas (IBQ) where the dead discarded catch of Pacific halibut in the fishery is debited against the permit’s IBQ. The FMP sets the trawl bycatch mortality limit at 15 percent of the Area 2A total constant exploitation yield (TCEY) established by the International Pacific Halibut Commission and federal regulations at 50 CFR Part 300 Subpart E for legal-size (i.e., 32”) halibut (net weight), not to exceed 100,000 pounds annually. Additionally, the FMP specifies that 10 mt will be used to accommodate bycatch in the at-sea whiting fishery and the trawl fishery south of 40° 10’ N. lat. Historically, this has been split evenly between the two fisheries and the amount can be adjusted through the biennial specifications process.

The IBQ values in Table 15 are the quota pounds (converted to mt) of Pacific halibut IBQ issued to the IFQ fishery north of 40° 10’ N. lat. ([IFQ Vessel Account Webpage](#)). The total estimated mortality of Pacific halibut in trawl fisheries was obtained from the Halibut Mortality Report (cite) for 2011-2022 and the preliminary estimate for 2023 was from the IFQ Vessel Account System and PacFIN. ²

Since the last ISA review, the percent attainment of Pacific halibut limits (IBQ + set-asides) in trawl fisheries has ranged from 24.2% percent to 41.5% percent (Table 15). The average for the last review period (2011-2015) was 30.8% percent compared to 35.5% percent from 2016-2023.

²Bycatch from 2020 IFQ Pot (gear switching), 2019-2020 shoreside whiting, and 2011 midwater rockfish fisheries were not included in the totals due to confidentiality.

Table 15: Halibut Allocations and Mortality, 2011-2023

Year	At-Sea Total Mortality	At-Sea Set Aside	At-Sea Attainment	IFQ Total Mortality	IFQ Allocation	IFQ Attainment	Total Mortality	Trawl Allocation	Total Attainment
2011	0.6	5.0	12%	33.3	121.8	27%	33.9	126.8	27%
2012	0.6	5.0	13%	39.5	110.6	36%	40.2	115.6	35%
2013	1.1	5.0	21%	34.3	112.3	31%	35.4	117.3	30%
2014	0.4	5.0	7%	28.3	112.3	25%	28.6	117.3	24%
2015	0.1	5.0	1%	36.0	89.5	40%	36.1	94.5	38%
2016	0.1	5.0	3%	35.6	95.7	37%	35.7	100.7	35%
2017	0.6	5.0	11%	36.5	84.3	43%	37.1	89.3	41%
2018	0.7	5.0	13%	33.1	84.9	39%	33.8	89.9	38%
2019	0.5	5.0	11%	31.3	74.6	42%	31.8	79.6	40%
2020	0.4	5.0	8%	27.2	76.1	36%	27.6	81.1	34%
2021	0.7	5.0	13%	33.5	82.4	41%	34.2	87.4	39%
2022	1.8	5.0	35%	35.0	109.5	32%	36.8	114.5	32%
2023	0.2	5.0	4%	27.7	110.1	25%	27.9	115.1	24%

Appendix A: Annual Tables

Table 16: Annual Mortality, Allocation, and Attainment by Sector, 2011-2012

Species/Stock Complex	2011									2012					
	Trawl	Non-Trawl	Trawl			Non-Trawl			Trawl			Non-Trawl			
	Percent	Percent	Mort	Alloc	Attain	Mort	Alloc	Attain	Mort	Alloc	Attain	Mort	Alloc	Attain	
Arrowtooth Flounder	95.0	5.0	2,571.9	12,441.0	21.0	71.7	655.0	11.0	2,491.5	9,472.0	26.0	42.8	499.0	9.0	
Chilipepper Rockfish (South Of 40 10)	75.0	25.0	317.4	1,475.0	22.0	6.0	492.0	1.0	288.1	1,331.0	22.0	8.9	443.0	2.0	
Dover Sole	95.0	5.0	7,832.8	22,240.0	35.0	8.2	1,170.0	1.0	7,289.0	22,240.0	33.0	9.8	1,170.0	1.0	
English Sole	95.0	5.0	137.6	18,678.0	1.0	0.0	983.0	0.0	147.1	9,548.0	2.0	0.3	503.0	0.0	
Lingcod (North Of 40 10)	45.0	55.0													
Longspine Thornyhead (North Of 34 27)	95.0	5.0	948.7	1,971.0	48.0	7.7	104.0	7.0	896.8	1,919.0	47.0	6.0	101.0	6.0	
Other Flatfish	90.0	10.0	705.0	4,217.0	17.0	93.6	469.0	20.0	694.4	4,217.0	16.0	80.6	469.0	17.0	
Pacific Cod	95.0	5.0	258.0	1,140.0	23.0	4.3	60.0	7.0	396.3	1,140.0	35.0	2.8	60.0	5.0	
Pacific Ocean Perch (North Of 40 10)	95.0	5.0	54.1	137.0	39.0	0.7	7.0	10.0	57.4	137.0	42.0	0.4	7.0	6.0	
Sablefish (South Of 36)	42.0	58.0	448.8	531.0	85.0	769.0	733.0	105.0	223.3	514.0	43.0	479.8	710.0	68.0	
Splitnose Rockfish (South Of 40 10)	95.0	5.0	39.5	1,381.3	3.0	0.1	72.7	0.0	59.8	1,454.5	4.0	0.3	76.5	0.0	
Starry Flounder	50.0	50.0	8.7	672.5	1.0	1.4	672.5	0.0	8.3	676.5	1.0	1.1	676.5	0.0	
Yellowtail Rockfish (North Of 40 10)	88.0	12.0	819.9	3,394.2	24.0	67.1	462.8	14.0	1,037.6	3,407.4	30.0	34.9	464.6	8.0	

Table 17: Annual Mortality, Allocation, and Attainment by Sector, 2013-2014

Species/Stock Complex	2013									2014					
	Trawl	Non-Trawl	Trawl			Non-Trawl			Trawl			Non-Trawl			
	Percent	Percent	Mort	Alloc	Attain	Mort	Alloc	Attain	Mort	Alloc	Attain	Mort	Alloc	Attain	
Arrowtooth Flounder	95.0	5.0	2,450.4	3,866.1	63.0	27.8	203.5	14.0	1,748.6	3,487.1	50.0	30.5	183.5	17.0	
Chilipepper Rockfish (South Of 40 10)	75.0	25.0	396.2	1,099.5	36.0	8.3	366.5	2.0	301.5	1,067.3	28.0	8.9	355.8	2.0	
Dover Sole	95.0	5.0	7,978.4	22,239.5	36.0	6.9	1,170.5	1.0	6,495.4	22,239.5	29.0	5.5	1,170.5	0.0	
English Sole	95.0	5.0	221.1	6,376.4	3.0	0.1	335.6	0.0	239.5	5,265.9	5.0	0.0	277.2	0.0	
Lingcod (North Of 40 10)	45.0	55.0	332.3	1,241.2	27.0	463.2	1,517.1	31.0	231.7	1,170.1	20.0	444.5	1,430.2	31.0	
Longspine Thornyhead (North Of 34 27)	95.0	5.0	1,065.4	1,864.5	57.0	8.6	98.2	9.0	894.2	1,816.4	49.0	6.7	95.6	7.0	
Other Flatfish	90.0	10.0	812.7	4,213.0	19.0	102.5	468.0	22.0	842.8	4,213.0	20.0	92.7	468.0	20.0	
Pacific Cod	95.0	5.0	154.1	1,131.4	14.0	2.6	59.5	4.0	166.0	1,131.4	15.0	2.0	59.5	3.0	
Pacific Ocean Perch (North Of 40 10)	95.0	5.0	55.4	126.8	44.0	0.3	6.7	4.0	44.9	129.7	35.0	0.3	6.8	4.0	
Sablefish (South Of 36)	42.0	58.0	86.9	602.3	14.0	532.8	831.7	64.0	198.6	653.1	30.0	485.0	901.9	54.0	
Splitnose Rockfish (South Of 40 10)	95.0	5.0	47.0	1,518.1	3.0	0.0	79.9	0.0	64.2	1,575.1	4.0	0.4	82.9	1.0	
Starry Flounder	50.0	50.0	3.5	756.5	0.0	1.3	756.5	0.0	14.7	760.5	2.0	1.7	760.5	0.0	
Yellowtail Rockfish (North Of 40 10)	88.0	12.0	965.6	3,235.3	30.0	41.6	441.2	9.0	1,205.2	3,238.8	37.0	56.1	441.7	13.0	

Table 18: Annual Mortality, Allocation, and Attainment by Sector, 2015-2016

Species/Stock Complex	2015									2016					
	Trawl	Non-Trawl	Trawl			Non-Trawl			Trawl			Non-Trawl			
	Percent	Percent	Mort	Alloc	Attain	Mort	Alloc	Attain	Mort	Alloc	Attain	Mort	Alloc	Attain	
Arrowtooth Flounder	95.0	5.0	1,735.5	3,239.1	54.0	22.8	170.5	13.0	1,426.5	3,078.6	46.0	31.0	162.0	19.0	
Chilipepper Rockfish (South Of 40 10)	75.0	25.0	192.2	1,203.0	16.0	7.1	401.0	2.0	75.1	1,196.3	6.0	5.9	398.8	1.0	
Dover Sole	95.0	5.0	6,297.3	45,985.8	14.0	5.9	2,420.3	0.0	7,158.6	45,985.8	16.0	5.7	2,420.3	0.0	
English Sole	95.0	5.0	328.8	9,158.2	4.0	0.0	482.0	0.0	377.4	6,641.6	6.0	0.0	349.6	0.0	
Lingcod (North Of 40 10)	45.0	55.0	176.7	1,148.3	15.0	579.0	1,403.5	41.0	253.6	1,098.4	23.0	500.5	1,342.4	37.0	
Longspine Thornyhead (North Of 34 27)	95.0	5.0	756.4	2,967.3	25.0	6.7	156.2	4.0	652.6	2,820.1	23.0	9.0	148.4	6.0	
Other Flatfish	90.0	10.0	841.6	7,690.5	11.0	45.5	854.5	5.0	857.1	6,335.1	14.0	38.3	703.9	5.0	
Pacific Cod	95.0	5.0	377.2	1,036.0	36.0	6.2	55.0	11.0	385.0	1,036.0	37.0	9.3	55.0	17.0	
Pacific Ocean Perch (North Of 40 10)	95.0	5.0	58.3	135.9	43.0	0.2	7.2	3.0	64.8	141.6	46.0	0.3	7.5	4.0	
Sablefish (South Of 36)	42.0	58.0	161.5	719.9	22.0	448.4	994.1	45.0	194.7	787.5	25.0	416.4	1,087.5	38.0	
Splitnose Rockfish (South Of 40 10)	95.0	5.0	28.8	1,619.3	2.0	0.1	85.2	0.0	13.1	1,648.7	1.0	0.0	86.8	0.0	
Starry Flounder	50.0	50.0	6.4	761.9	1.0	1.2	761.9	0.0	12.7	764.4	2.0	0.3	764.4	0.0	
Yellowtail Rockfish (North Of 40 10)	88.0	12.0	1,531.3	4,893.2	31.0	52.0	667.2	8.0	1,187.7	4,676.7	25.0	46.9	637.7	7.0	

Table 19: Annual Mortality, Allocation, and Attainment by Sector, 2017-2018

Species/Stock Complex	2017									2018					
	Trawl	Non-Trawl	Trawl			Non-Trawl			Trawl			Non-Trawl			
	Percent	Percent	Mort	Alloc	Attain	Mort	Alloc	Attain	Mort	Alloc	Attain	Mort	Alloc	Attain	
Arrowtooth Flounder	95.0	5.0	1,385.1	11,120.6	12.0	35.9	585.3	6.0	1,066.9	11,062.6	10.0	48.7	582.2	8.0	
Chilipepper Rockfish (South Of 40 10)	75.0	25.0	105.9	1,920.8	6.0	3.7	640.3	1.0	280.0	1,845.8	15.0	4.8	615.3	1.0	
Dover Sole	95.0	5.0	7,340.5	45,986.0	16.0	6.3	2,420.3	0.0	6,376.1	45,986.0	14.0	5.4	2,420.3	0.0	
English Sole	95.0	5.0	244.0	9,263.6	3.0	0.0	487.6	0.0	209.5	6,958.0	3.0	0.1	366.2	0.0	
Lingcod (North Of 40 10)	45.0	55.0	607.6	1,374.7	44.0	516.2	1,680.2	31.0	432.2	1,274.3	34.0	538.3	1,557.5	35.0	
Longspine Thornyhead (North Of 34 27)	95.0	5.0	806.7	2,704.8	30.0	7.6	142.4	5.0	364.7	2,565.2	14.0	4.0	135.0	3.0	
Other Flatfish	90.0	10.0	738.8	7,475.4	10.0	45.2	830.6	5.0	646.1	6,369.3	10.0	48.2	707.7	7.0	
Pacific Cod	95.0	5.0	43.2	1,036.4	4.0	2.8	54.5	5.0	6.4	1,036.4	1.0	1.4	54.5	3.0	
Pacific Ocean Perch (North Of 40 10)	95.0	5.0	120.7	220.0	55.0	0.3	11.6	2.0	144.7	220.0	66.0	0.4	11.6	3.0	
Sablefish (South Of 36)	42.0	58.0	113.5	814.4	14.0	353.1	1,124.6	31.0	44.2	814.4	5.0	417.5	1,124.6	37.0	
Splitnose Rockfish (South Of 40 10)	95.0	5.0	12.5	1,661.8	1.0	0.1	87.5	0.0	35.3	1,662.8	2.0	0.0	87.5	0.0	
Starry Flounder	50.0	50.0	9.6	635.9	2.0	3.6	635.9	1.0	1.6	635.9	0.0	0.8	635.9	0.0	
Yellowtail Rockfish (North Of 40 10)	88.0	12.0	2,734.4	4,546.1	60.0	64.4	619.9	10.0	3,315.9	4,375.4	76.0	77.5	596.6	13.0	

Table 20: Annual Mortality, Allocation, and Attainment by Sector, 2019-2020

Species/Stock Complex	2019									2020					
	Trawl	Non-Trawl	Trawl			Non-Trawl			Trawl			Non-Trawl			
	Percent	Percent	Mort	Alloc	Attain	Mort	Alloc	Attain	Mort	Alloc	Attain	Mort	Alloc	Attain	
Arrowtooth Flounder	95.0	5.0	884.6	12,805.1	7.0	69.1	674.0	10.0	634.9	10,122.3	6.0	27.7	532.8	5.0	
Chilipepper Rockfish (South Of 40 10)	75.0	25.0	386.2	1,838.3	21.0	19.7	612.8	3.0	644.6	1,743.8	37.0	20.4	581.3	4.0	
Dover Sole	95.0	5.0	5,751.4	45,984.2	13.0	5.3	2,420.2	0.0	4,816.2	45,984.2	10.0	5.3	2,420.2	0.0	
English Sole	95.0	5.0	205.0	9,380.1	2.0	0.0	493.7	0.0	128.1	9,422.9	1.0	0.0	495.9	0.0	
Lingcod (North Of 40 10)	45.0	55.0	429.8	2,066.8	21.0	518.8	2,526.2	21.0	341.9	1,918.4	18.0	446.8	2,344.7	19.0	
Longspine Thornyhead (North Of 34 27)	95.0	5.0	266.2	2,425.0	11.0	2.1	127.6	2.0	120.7	2,298.6	5.0	1.9	121.0	2.0	
Other Flatfish	90.0	10.0	492.1	5,623.7	9.0	32.1	624.9	5.0	469.9	5,212.4	9.0	18.6	579.1	3.0	
Pacific Cod	95.0	5.0	5.7	1,039.1	1.0	1.3	54.7	2.0	3.2	1,039.1	0.0	2.1	54.7	4.0	
Pacific Ocean Perch (North Of 40 10)	95.0	5.0	605.3	4,101.7	15.0	0.3	215.9	0.0	541.3	3,996.3	14.0	0.2	210.3	0.0	
Sablefish (South Of 36)	42.0	58.0	84.8	834.0	10.0	362.6	1,151.8	31.0	61.9	851.7	7.0	264.6	1,176.1	23.0	
Splitnose Rockfish (South Of 40 10)	95.0	5.0	7.1	1,646.7	0.0	0.0	86.7	0.0	16.7	1,628.7	1.0	0.1	85.7	0.0	
Starry Flounder	50.0	50.0	0.1	216.6	0.0	1.3	216.6	1.0	0.2	216.6	0.0	0.4	216.6	0.0	
Yellowtail Rockfish (North Of 40 10)	88.0	12.0	3,506.1	4,605.8	76.0	84.0	628.1	13.0	3,555.7	4,348.0	82.0	102.7	592.9	17.0	

Table 21: Annual Mortality, Allocation, and Attainment by Sector, 2021-2022

Species/Stock Complex	2021									2022					
	Trawl	Non-Trawl	Trawl			Non-Trawl			Trawl			Non-Trawl			
	Percent	Percent	Mort	Alloc	Attain	Mort	Alloc	Attain	Mort	Alloc	Attain	Mort	Alloc	Attain	
Arrowtooth Flounder	95.0	5.0	746.0	7,446.0	10.0	29.6	391.9	8.0	776.0	6,044.8	13.0	25.8	318.1	8.0	
Chilipepper Rockfish (South Of 40 10)	75.0	25.0	710.9	1,695.2	42.0	32.2	565.1	6.0	766.4	1,621.0	47.0	43.7	540.3	8.0	
Dover Sole	95.0	5.0	4,027.1	45,982.7	9.0	2.2	2,420.1	0.0	4,636.8	45,982.7	10.0	3.1	2,420.1	0.0	
English Sole	95.0	5.0	231.7	8,478.2	3.0	0.1	446.2	0.0	309.3	8,407.9	4.0	0.0	442.5	0.0	
Lingcod (North Of 40 10)	45.0	55.0	346.3	2,290.8	15.0	476.7	2,799.8	17.0	272.2	2,105.8	13.0	582.9	2,573.8	23.0	
Longspine Thornyhead (North Of 34 27)	95.0	5.0	73.1	2,451.3	3.0	2.1	129.0	2.0	74.5	2,278.4	3.0	2.3	119.9	2.0	
Other Flatfish	90.0	10.0	455.9	4,123.0	11.0	19.6	458.1	4.0	441.5	4,155.4	11.0	38.5	461.7	8.0	
Pacific Cod	95.0	5.0	1.4	1,039.2	0.0	2.5	54.7	4.0	18.5	1,039.2	2.0	2.8	54.7	5.0	
Pacific Ocean Perch (North Of 40 10)	95.0	5.0	494.0	3,637.7	14.0	0.1	191.5	0.0	399.3	3,501.9	11.0	0.2	184.3	0.0	
Sablefish (South Of 36)	42.0	58.0	80.8	786.1	10.0	177.1	1,085.5	16.0	98.1	748.3	13.0	187.7	1,033.3	18.0	
Splitnose Rockfish (South Of 40 10)	95.0	5.0	19.5	1,565.2	1.0	0.0	82.4	0.0	27.7	1,531.0	2.0	0.0	80.6	0.0	
Starry Flounder	50.0	50.0	0.1	171.8	0.0	0.3	171.8	0.0	0.1	171.8	0.0	0.3	171.8	0.0	
Yellowtail Rockfish (North Of 40 10)	88.0	12.0	2,778.0	4,411.1	63.0	100.0	601.5	17.0	2,946.5	4,218.2	70.0	130.0	575.2	23.0	

Table 22: Annual Mortality, Allocation, and Attainment by Sector, 2023

Species/Stock Complex	2023							
	Trawl	Non-Trawl	Trawl			Non-Trawl		
	Percent	Percent	Mort	Alloc	Attain	Mort	Alloc	Attain
Arrowtooth Flounder	95	5	685.7480	15710.169	4	48.936	826.85100	6
Chilipepper Rockfish (South Of 40 10)	75	25	917.7560	1563.784	59	242.681	521.26134	47
Dover Sole	95	5	3781.5880	45982.745	8	6.660	2420.14450	0
English Sole	95	5	202.0790	8320.556	2	4.702	437.92400	1
Lingcod (North Of 40 10)	45	55	402.6010	1844.267	22	395.554	2254.10350	18
Longspine Thornyhead (North Of 34 27)	95	5	32.1070	2129.226	2	2.800	112.06450	2
Other Flatfish	90	10	384.2430	4177.089	9	85.354	464.12100	18
Pacific Cod	95	5	37.3500	1039.300	4	1.212	54.70000	2
Pacific Ocean Perch (North Of 40 10)	95	5	311.1160	3256.144	10	1.853	171.37600	1
Sablefish (South Of 36)	42	58	94.3129	993.132	9	188.057	1371.46800	14
Splitnose Rockfish (South Of 40 10)	95	5	23.8140	1494.726	2	0.019	78.66979	0
Starry Flounder	50	50	0.1040	171.860	0	9.357	171.86000	5
Yellowtail Rockfish (North Of 40 10)	88	12	3162.7190	4081.836	77	93.923	556.61400	17

Table 23: Annual Landings by Sector, 2011-2015

Species/Stock Complex	2011		2012		2013		2014		2015	
	Non-Trawl	Trawl	Non-Trawl	Trawl	Non-Trawl	Trawl	Non-Trawl	Trawl	Non-Trawl	Trawl
Arrowtooth Flounder	4.3	2,261.2	3.2	2,277.8	3.2	1,980.5	1.4	1,231.3	0.7	1,320.1
Chilipepper Rockfish (South Of 40 10)	0.7	292.4	1.2	234.8	1.0	321.4	1.0	263.3	1.2	173.8
Dover Sole	3.0	7,647.0	3.2	7,197.2	2.4	7,865.2	2.6	6,366.0	3.0	6,213.2
English Sole	0.0	106.7	C	114.9	0.0	197.6	0.0	191.4	0.0	241.0
Lingcod (North Of 40 10)					69.0	321.9	64.5	222.1	127.2	166.3
Longspine Thornyhead (North Of 34 27)	4.7	905.1	2.9	859.0	3.4	1,030.1	2.5	852.4	2.2	733.2
Other Flatfish	5.5	561.0	5.8	582.4	5.6	628.7	5.6	620.5	4.7	646.4
Pacific Cod	2.2	249.2	2.2	388.9	1.8	139.1	0.9	165.3	3.9	374.8
Pacific Ocean Perch (North Of 40 10)	0.7	46.5	0.4	51.7	0.2	49.0	0.2	39.8	0.1	49.5
Sablefish (South Of 36)	727.7	447.5	450.7	222.8	521.0	C	478.0	196.9	438.6	C
Slope Rockfish South (South Of 40 10)	131.2	49.1	115.6	117.5	22.1	112.1	27.7	97.7	25.0	66.6
Splitnose Rockfish (South Of 40 10)	0.1	8.6	0.3	19.4	0.0	14.0	0.4	16.2	0.1	6.7
Starry Flounder	0.1	10.7	0.2	8.1	0.3	3.2	0.2	13.6	0.3	6.3
Yellowtail Rockfish (North Of 40 10)	1.2	738.5	1.4	994.4	1.5	719.1	1.6	1,163.1	2.1	1,448.8

Table 24: Annual Landings by Sector, 2016-2019

Species/Stock Complex	2016		2017		2018		2019	
	Non-Trawl	Trawl	Non-Trawl	Trawl	Non-Trawl	Trawl	Non-Trawl	Trawl
Arrowtooth Flounder	1.4	1,092.5	2.6	1,011.1	2.0	594.0	1.9	397.9
Chilipepper Rockfish (South Of 40 10)	0.5	73.1	0.9	105.4	2.8	270.7	14.0	347.9
Dover Sole	2.4	7,149.9	3.2	7,260.1	2.4	6,312.2	1.9	5,703.2
English Sole	0.0	294.3	C	197.7	C	156.8	C	137.0
Lingcod (North Of 40 10)	96.2	246.3	117.3	593.2	121.3	419.5	128.0	411.4
Longspine Thornyhead (North Of 34 27)	4.7	638.0	4.1	795.0	2.7	357.2	1.8	247.1
Other Flatfish	4.5	662.8	5.1	558.4	6.6	505.6	5.0	375.9
Pacific Cod	6.1	384.6	1.8	42.8	0.2	5.1	0.7	5.6
Pacific Ocean Perch (North Of 40 10)	0.2	53.9	0.2	92.8	0.2	88.7	0.2	459.2
Sablefish (South Of 36)	412.3	C	347.1	C	403.1	C	359.5	C
Slope Rockfish South (South Of 40 10)	27.4	48.3	30.6	56.1	23.2	71.0	24.8	48.1
Splitnose Rockfish (South Of 40 10)	0.0	1.8	0.1	9.9	0.0	25.9	0.0	0.9
Starry Flounder	0.0	10.8	0.1	8.9	0.1	1.6	0.3	0.1
Yellowtail Rockfish (North Of 40 10)	1.5	1,142.9	2.0	2,446.2	1.7	3,074.7	3.1	3,171.2

Table 25: Annual Landings by Sector, 2020-2023

Species/Stock Complex	2020		2021		2022		2023	
	Non-Trawl	Trawl	Non-Trawl	Trawl	Non-Trawl	Trawl	Non-Trawl	Trawl
Arrowtooth Flounder	1.3	252.2	1.1	237.8	1.1	208.8	1.7	187.7
Chilipepper Rockfish (South Of 40 10)	19.8	575.3	28.3	645.8	39.4	699.0	62.4	857.5
Dover Sole	0.9	4,633.9	1.0	3,950.0	0.8	4,556.2	0.8	3,740.8
English Sole	C	79.5	C	89.4	C	100.8	0.0	70.9
Lingcod (North Of 40 10)	121.7	317.6	126.3	320.4	178.3	258.3	164.4	383.2
Longspine Thornyhead (North Of 34 27)	1.7	113.6	2.1	65.8	2.3	65.3	2.7	24.9
Other Flatfish	4.7	338.7	3.0	319.0	3.5	288.2	2.6	257.3
Pacific Cod	0.5	2.8	0.5	1.3	0.9	18.1	0.7	37.1
Pacific Ocean Perch (North Of 40 10)	0.2	509.1	0.1	433.1	0.1	373.7	0.1	222.5
Sablefish (South Of 36)	263.1	C	176.6	C	181.9	C	185.9	C
Slope Rockfish South (South Of 40 10)	20.9	40.3	31.0	45.7	28.8	63.2	33.2	25.7
Splitnose Rockfish (South Of 40 10)	0.1	3.9	0.0	2.4	0.0	11.2	0.0	8.8
Starry Flounder	0.0	0.2	0.0	0.1	0.1	C	0.0	0.1
Yellowtail Rockfish (North Of 40 10)	3.7	3,394.4	9.3	2,692.7	7.8	2,921.6	6.9	2,891.6

Table 26: Annual Revenues (2023\$) by Sector, 2011-2015

Species/Stock Complex	2011		2012		2013		2014		2015	
	Non-Trawl	Trawl	Non-Trawl	Trawl	Non-Trawl	Trawl	Non-Trawl	Trawl	Non-Trawl	Trawl
Arrowtooth Flounder	\$1,459	\$654,714	\$1,303	\$816,502	\$1,025	\$625,262	\$871	\$331,485	\$220	\$351,069
Chilepepper Rockfish (South Of 40 10)	\$3,566	\$547,804	\$6,657	\$465,873	\$5,869	\$602,080	\$5,362	\$548,454	\$5,926	\$339,017
Dover Sole	\$6,051	\$9,219,518	\$10,176	\$8,702,176	\$3,265	\$9,905,888	\$4,077	\$7,990,949	\$5,407	\$7,692,023
English Sole	\$0	\$98,556	C	\$111,955	\$81	\$177,987	\$0	\$169,839	\$0	\$201,426
Lingcod (North Of 40 10)					\$455,268	\$658,577	\$425,599	\$448,122	\$834,013	\$422,152
Longspine Thornyhead (North Of 34 27)	\$17,097	\$1,128,504	\$10,233	\$1,123,043	\$9,423	\$1,294,192	\$7,294	\$1,039,039	\$4,937	\$894,360
Other Flatfish	\$42,044	\$775,721	\$55,441	\$792,059	\$55,335	\$719,487	\$59,553	\$738,971	\$44,032	\$720,720
Pacific Cod	\$1,791	\$408,120	\$3,116	\$671,309	\$2,601	\$218,212	\$1,100	\$241,531	\$8,099	\$600,154
Pacific Ocean Perch (North Of 40 10)	\$1,923	\$67,393	\$1,324	\$72,009	\$598	\$66,039	\$550	\$47,927	\$159	\$67,086
Sablefish (South Of 36)	\$5,125,569	\$2,985,745	\$3,469,921	\$1,333,878	\$3,868,946	C	\$3,262,354	\$1,367,601	\$2,887,697	C
Slope Rockfish South (South Of 40 10)	\$491,432	\$95,302	\$461,881	\$250,063	\$82,695	\$247,472	\$107,739	\$225,148	\$102,981	\$143,266
Splitnose Rockfish (South Of 40 10)	\$356	\$6,422	\$1,560	\$15,445	\$158	\$11,788	\$2,046	\$11,916	\$450	\$6,312
Starry Flounder	\$1,093	\$14,955	\$1,212	\$10,119	\$1,299	\$4,085	\$1,436	\$13,748	\$1,999	\$6,177
Yellowtail Rockfish (North Of 40 10)	\$3,911	\$1,065,151	\$4,957	\$1,455,324	\$5,315	\$1,008,999	\$6,216	\$1,605,127	\$8,487	\$1,898,772

Table 27: Annual Revenues (2023\$) by Sector, 2016-2019

Species/Stock Complex	2016		2017		2018		2019	
	Non-Trawl	Trawl	Non-Trawl	Trawl	Non-Trawl	Trawl	Non-Trawl	Trawl
Arrowtooth Flounder	\$391	\$289,518	\$822	\$265,416	\$555	\$149,859	\$829	\$89,607
Chilepepper Rockfish (South Of 40 10)	\$3,003	\$170,830	\$6,285	\$146,009	\$16,211	\$339,156	\$62,369	\$389,754
Dover Sole	\$4,200	\$8,532,712	\$6,563	\$8,376,155	\$3,800	\$7,282,648	\$2,974	\$6,252,457
English Sole	\$0	\$250,344	C	\$162,570	C	\$106,542	C	\$85,499
Lingcod (North Of 40 10)	\$635,079	\$641,864	\$824,067	\$1,492,495	\$849,457	\$1,037,736	\$901,259	\$1,002,827
Longspine Thornyhead (North Of 34 27)	\$16,272	\$802,565	\$20,839	\$1,010,802	\$3,415	\$372,615	\$3,826	\$243,088
Other Flatfish	\$59,121	\$704,751	\$57,021	\$561,464	\$75,182	\$455,772	\$57,178	\$357,941
Pacific Cod	\$11,900	\$614,531	\$2,571	\$65,610	\$300	\$7,999	\$765	\$8,234
Pacific Ocean Perch (North Of 40 10)	\$455	\$64,057	\$352	\$84,685	\$372	\$64,836	\$273	\$454,481
Sablefish (South Of 36)	\$2,955,456	C	\$2,607,053	C	\$2,852,052	C	\$2,676,044	C
Slope Rockfish South (South Of 40 10)	\$129,042	\$113,511	\$146,713	\$99,281	\$115,506	\$106,416	\$133,711	\$53,055
Splitnose Rockfish (South Of 40 10)	\$17	\$1,650	\$504	\$3,593	\$179	\$12,640	\$318	\$238
Starry Flounder	\$239	\$11,448	\$496	\$7,255	\$382	\$1,454	\$874	\$105
Yellowtail Rockfish (North Of 40 10)	\$4,599	\$1,340,596	\$7,716	\$1,966,109	\$5,880	\$2,280,153	\$14,829	\$2,525,262

Table 28: Annual Revenues (2023\$) by Sector, 2020-2023

Species/Stock Complex	2020		2021		2022		2023	
	Non-Trawl	Trawl	Non-Trawl	Trawl	Non-Trawl	Trawl	Non-Trawl	Trawl
Arrowtooth Flounder	\$267	\$52,083	\$272	\$51,014	\$251	\$32,574	\$369	\$26,998
Chilipepper Rockfish (South Of 40 10)	\$81,824	\$520,655	\$117,302	\$528,665	\$166,933	\$747,520	\$267,381	\$977,715
Dover Sole	\$764	\$4,484,198	\$805	\$3,770,077	\$1,487	\$4,171,027	\$1,575	\$3,495,310
English Sole	C	\$40,255	C	\$30,329	C	\$39,998	\$0	\$25,953
Lingcod (North Of 40 10)	\$819,007	\$647,386	\$849,619	\$673,748	\$1,176,249	\$530,261	\$962,163	\$755,694
Longspine Thornyhead (North Of 34 27)	\$9,547	\$50,817	\$6,421	\$29,765	\$3,457	\$46,403	\$10,038	\$16,842
Other Flatfish	\$60,901	\$276,128	\$35,287	\$281,514	\$37,768	\$240,150	\$24,315	\$220,593
Pacific Cod	\$371	\$3,094	\$175	\$1,019	\$6,610	\$19,009	\$557	\$36,403
Pacific Ocean Perch (North Of 40 10)	\$476	\$338,654	\$240	\$267,406	\$124	\$218,376	\$346	\$120,274
Sablefish (South Of 36)	\$1,796,664	C	\$1,167,979	C	\$1,150,747	C	\$1,095,509	C
Slope Rockfish South (South Of 40 10)	\$111,577	\$40,443	\$151,799	\$40,155	\$151,855	\$80,449	\$170,270	\$30,716
Splitnose Rockfish (South Of 40 10)	\$300	\$931	\$46	\$557	\$234	\$1,767	\$150	\$673
Starry Flounder	\$301	\$101	\$179	\$80	\$611	C	\$226	\$52
Yellowtail Rockfish (North Of 40 10)	\$16,087	\$1,568,649	\$36,113	\$1,351,911	\$27,590	\$1,691,037	\$22,334	\$1,533,704

Table 29: Annual Landings by IOPAC Port Group and Sector, 2011-2015

IOPAC Port Group	2011		2012		2013		2014		2015	
	Non-Trawl ¹	Trawl ¹	Non-Trawl ¹	Trawl ¹	Non-Trawl	Trawl	Non-Trawl	Trawl	Non-Trawl	Trawl
PUGET SOUND	C	C	C	C	2.0	C	1.1	C	4.3	C
NORTH WA COAST	C	0.0	2.7	0.0	3.2	0.0	1.7	0.0	5.0	0.0
SOUTH AND CENTRAL WA COAST	0.7	949.0	1.2	1,313.2	1.3	668.7	1.7	478.0	1.7	165.6
ASTORIA	C	5,238.7	C	4,861.4	0.9	5,581.6	C	4,993.5	C	5,437.7
TILLAMOOK	0.1	0.0	0.1	0.0	10.7	0.0	13.9	0.0	20.7	0.0
NEWPORT	0.5	647.3	1.2	718.2	7.7	1,036.7	6.4	845.0	13.4	1,448.6
COOS BAY	3.5	1,480.5	3.4	1,426.8	10.3	C	8.6	C	22.3	C
BROOKINGS	1.9	C	0.8	C	38.3	985.7	29.4	955.8	47.8	676.1
CRESCENT CITY	C	C	C	C	4.3	C	5.5	C	11.5	0.0
EUREKA	0.1	1,573.6	0.1	1,330.7	0.3	1,665.6	1.5	1,465.5	7.3	1,685.6
FORT BRAGG	8.0	1,011.9	16.1	873.2	5.3	1,089.2	6.0	930.0	6.2	963.5
BODEGA BAY	0.6	C	1.1	C	2.4	0.0	2.8	0.0	3.4	0.0
SAN FRANCISCO	1.1	255.3	1.0	187.2	0.5	429.7	2.1	156.4	1.5	C
MONTEREY	8.6	231.5	11.0	356.9	5.5	108.9	6.8	383.7	2.5	C
MORRO	474.3	531.5	211.4	635.5	259.3	289.1	197.3	C	157.8	C
SANTA BARBARA	249.3	0.0	177.0	0.0	172.8	0.0	155.4	C	144.9	C
LOS ANGELES	68.3	0.0	58.3	0.0	60.5	0.0	59.1	0.0	46.3	0.0
SAN DIEGO	60.2	0.0	101.3	0.0	46.4	0.0	86.9	0.0	111.1	0.0

¹Excludes lingcod N in average due to different management line in 2011-2012

Table 30: Annual Landings by IOPAC Port Group and Sector, 2016-2019

IOPAC Port Group	2016		2017		2018		2019	
	Non-Trawl	Trawl	Non-Trawl	Trawl	Non-Trawl	Trawl	Non-Trawl	Trawl
PUGET SOUND	C	C	C	C	C	C	C	C
NORTH WA COAST	6.3	0.0	3.0	0.0	2.3	C	2.2	0.0
SOUTH AND CENTRAL WA COAST	2.2	186.7	1.4	595.6	1.4	C	2.1	970.0
ASTORIA	2.5	5,530.8	2.2	5,743.2	2.0	4,450.4	2.0	4,863.0
TILLAMOOK	13.8	0.0	20.9	0.0	17.7	0.0	16.2	0.0
NEWPORT	14.3	1,408.2	16.3	1,700.9	15.7	1,720.8	21.6	1,480.1
COOS BAY	12.1	C	17.9	C	12.3	C	13.1	C
BROOKINGS	38.9	C	46.8	C	56.6	C	59.8	C
CRESCENT CITY	8.5	C	10.7	C	8.1	C	9.0	0.0
EUREKA	4.6	1,650.2	4.3	C	8.8	1,849.4	5.3	1,585.4
FORT BRAGG	4.4	589.2	7.3	605.4	5.4	C	4.9	C
BODEGA BAY	3.1	0.0	2.4	0.0	4.1	0.0	3.6	0.0
SAN FRANCISCO	0.7	C	1.1	114.3	1.7	200.2	1.2	101.5
MONTEREY	4.4	C	5.4	16.7	3.8	C	17.0	0.0
MORRO	127.1	C	103.7	C	121.6	58.0	66.6	C
SANTA BARBARA	185.0	0.0	154.4	0.0	218.3	0.0	218.3	0.0
LOS ANGELES	38.8	0.0	45.9	0.0	32.7	0.0	36.2	0.0
SAN DIEGO	86.6	0.0	69.1	0.0	51.9	0.0	58.5	0.0

Table 31: Annual Landings by IOPAC Port Group and Sector, 2020-2023

IOPAC Port Group	2020		2021		2022		2023	
	Non-Trawl	Trawl	Non-Trawl	Trawl	Non-Trawl	Trawl	Non-Trawl	Trawl
PUGET SOUND	4.1	C	C	C	C	C	10.2	C
NORTH WA COAST	C	0.0	C	0.0	0.7	0.0	0.7	0.0
SOUTH AND CENTRAL WA COAST	3.4	C	4.1	C	1.3	C	6.0	C
ASTORIA	3.7	4,739.2	1.2	3,632.6	1.4	4,140.4	3.5	4,347.8
TILLAMOOK	12.5	0.0	11.9	0.0	13.3	0.0	14.8	0.0
NEWPORT	23.5	859.3	24.8	1,018.7	38.1	1,220.1	42.3	1,007.4
COOS BAY	8.8	C	11.0	C	22.3	C	22.2	C
BROOKINGS	51.6	C	54.2	293.9	80.5	C	58.9	C
CRESCENT CITY	12.8	0.0	18.3	C	22.2	C	12.1	0.0
EUREKA	6.4	C	7.1	C	6.2	C	6.3	845.3
FORT BRAGG	3.5	C	2.8	C	4.3	982.6	8.5	883.9
BODEGA BAY	3.9	0.0	3.6	0.0	18.6	0.0	31.0	0.0
SAN FRANCISCO	1.1	84.6	1.4	213.9	3.8	93.7	4.8	90.4
MONTEREY	21.3	C	32.5	C	23.7	C	27.9	C
MORRO	49.5	C	52.8	C	74.0	C	90.9	C
SANTA BARBARA	147.3	0.0	91.1	0.0	85.2	0.0	83.1	0.0
LOS ANGELES	38.9	0.0	29.7	0.0	27.1	0.0	16.9	0.0
SAN DIEGO	45.6	0.0	28.2	0.0	20.4	0.0	21.4	0.0

Table 32: Annual Revenue (2023\$) by IOPAC Port Group and Sector, 2011-2015

IOPAC Port Group	2011		2012		2013		2014		2015	
	Non-Trawl ¹	Trawl ¹	Non-Trawl ¹	Trawl ¹	Non-Trawl	Trawl	Non-Trawl	Trawl	Non-Trawl	Trawl
PUGET SOUND	C	C	C	C	\$3	C	\$2	C	\$6	C
NORTH WA COAST	C	\$0	\$4	\$0	\$6	\$0	\$5	\$0	\$14	\$0
SOUTH AND CENTRAL WA COAST	\$1	\$789	\$2	\$1,223	\$2	\$740	\$2	\$608	\$3	\$190
ASTORIA	C	\$5,285	C	\$5,304	\$2	\$6,034	C	\$5,672	C	\$6,267
TILLAMOOK	\$1	\$0	\$1	\$0	\$73	\$0	\$98	\$0	\$149	\$0
NEWPORT	\$1	\$713	\$2	\$751	\$47	\$1,116	\$46	\$890	\$102	\$1,486
COOS BAY	\$3	\$1,670	\$6	\$1,552	\$57	C	\$53	C	\$142	C
BROOKINGS	\$2	C	\$2	C	\$257	\$1,205	\$187	\$1,153	\$314	\$799
CRESCENT CITY	C	C	C	C	\$26	C	\$35	C	\$71	\$0
EUREKA	\$0	\$1,918	\$0	\$1,638	\$1	\$2,049	\$8	\$1,811	\$50	\$2,078
FORT BRAGG	\$24	\$1,455	\$57	\$1,273	\$15	\$1,534	\$21	\$1,254	\$17	\$1,258
BODEGA BAY	\$2	C	\$5	C	\$11	\$0	\$12	\$0	\$15	\$0
SAN FRANCISCO	\$6	\$397	\$6	\$318	\$3	\$623	\$11	\$218	\$8	C
MONTEREY	\$38	\$320	\$40	\$347	\$24	\$124	\$24	\$585	\$9	C
MORRO	\$3,089	\$3,056	\$1,238	\$1,818	\$1,786	\$777	\$1,331	C	\$1,020	C
SANTA BARBARA	\$1,748	\$0	\$1,489	\$0	\$1,319	\$0	\$1,103	C	\$1,012	C
LOS ANGELES	\$478	\$0	\$464	\$0	\$431	\$0	\$410	\$0	\$332	\$0
SAN DIEGO	\$299	\$0	\$713	\$0	\$429	\$0	\$537	\$0	\$639	\$0

¹Excludes lingcod N in average due to different management line in 2011-2012

Table 33: Annual Landings by IOPAC Port Group and Sector, 2016-2019

IOPAC Port Group	2016		2017		2018		2019	
	Non-Trawl	Trawl	Non-Trawl	Trawl	Non-Trawl	Trawl	Non-Trawl	Trawl
PUGET SOUND	C	C	C	C	C	C	C	C
NORTH WA COAST	\$17	\$0	\$7	\$0	\$6	C	\$7	\$0
SOUTH AND CENTRAL WA COAST	\$5	\$141	\$3	\$240	\$4	C	\$9	\$511
ASTORIA	\$9	\$6,181	\$11	\$5,941	\$11	\$4,569	\$13	\$4,952
TILLAMOOK	\$103	\$0	\$153	\$0	\$124	\$0	\$115	\$0
NEWPORT	\$103	\$1,489	\$118	\$1,681	\$119	\$1,600	\$162	\$1,385
COOS BAY	\$67	C	\$106	C	\$70	C	\$78	C
BROOKINGS	\$261	C	\$337	C	\$405	C	\$436	C
CRESCENT CITY	\$54	C	\$72	C	\$52	C	\$58	\$0
EUREKA	\$32	\$2,043	\$30	C	\$62	\$2,420	\$37	\$2,053
FORT BRAGG	\$11	\$751	\$21	\$829	\$13	C	\$13	C
BODEGA BAY	\$14	\$0	\$11	\$0	\$23	\$0	\$23	\$0
SAN FRANCISCO	\$4	C	\$6	\$141	\$8	\$217	\$4	\$103
MONTEREY	\$15	C	\$23	\$69	\$13	C	\$68	\$0
MORRO	\$788	C	\$623	C	\$713	\$234	\$426	C
SANTA BARBARA	\$1,492	\$0	\$1,193	\$0	\$1,601	\$0	\$1,609	\$0
LOS ANGELES	\$342	\$0	\$442	\$0	\$314	\$0	\$320	\$0
SAN DIEGO	\$499	\$0	\$523	\$0	\$380	\$0	\$472	\$0

Table 34: Annual Landings by IOPAC Port Group and Sector, 2020-2023

IOPAC Port Group	2020		2021		2022		2023	
	Non-Trawl	Trawl	Non-Trawl	Trawl	Non-Trawl	Trawl	Non-Trawl	Trawl
PUGET SOUND	\$7	C	C	C	C	C	\$20	C
NORTH WA COAST	C	\$0	C	\$0	\$3	\$0	\$1	\$0
SOUTH AND CENTRAL WA COAST	\$9	C	\$21	C	\$6	C	\$17	C
ASTORIA	\$16	\$3,626	\$3	\$2,925	\$3	\$3,574	\$11	\$3,690
TILLAMOOK	\$85	\$0	\$82	\$0	\$93	\$0	\$96	\$0
NEWPORT	\$158	\$732	\$177	\$867	\$254	\$958	\$279	\$867
COOS BAY	\$57	C	\$68	C	\$131	C	\$99	C
BROOKINGS	\$362	C	\$371	\$251	\$527	C	\$367	C
CRESCENT CITY	\$93	\$0	\$119	C	\$151	C	\$69	\$0
EUREKA	\$45	C	\$38	C	\$38	C	\$41	\$766
FORT BRAGG	\$11	C	\$9	C	\$10	\$1,013	\$24	\$962
BODEGA BAY	\$23	\$0	\$22	\$0	\$93	\$0	\$133	\$0
SAN FRANCISCO	\$4	\$64	\$4	\$170	\$14	\$95	\$18	\$97
MONTEREY	\$86	C	\$122	C	\$80	C	\$94	C
MORRO	\$291	C	\$270	C	\$350	C	\$448	C
SANTA BARBARA	\$973	\$0	\$626	\$0	\$596	\$0	\$547	\$0
LOS ANGELES	\$320	\$0	\$213	\$0	\$210	\$0	\$121	\$0
SAN DIEGO	\$353	\$0	\$213	\$0	\$165	\$0	\$169	\$0

Appendix B: FMP Goals and Objectives

The Council is committed to developing long-range plans for managing the Washington, Oregon, and California groundfish fisheries that will promote a stable planning environment for the seafood industry, including marine recreation interests, and will maintain the health of the resource and environment. In developing allocation and harvesting systems, the Council will give consideration to maximizing economic benefits to the United States, consistent with resource stewardship responsibilities for the continuing welfare of the living marine resources. Thus, management must be flexible enough to meet changing social and economic needs of the fishery as well as to address fluctuations in the marine resources supporting the fishery. The following goals have been established in order of priority for managing the west coast groundfish fisheries, to be considered in conjunction with the national standards of the Magnuson-Stevens Act.

Management Goals

Goal 1 - Conservation. Prevent overfishing and rebuild overfished stocks by managing for appropriate harvest levels and prevent, to the extent practicable, any net loss of the habitat of living marine resources.

Goal 2 - Economics. Maximize the value of the groundfish resource as a whole.

Goal 3 - Utilization. Within the constraints of overfished species rebuilding requirements, achieve the maximum biological yield of the overall groundfish fishery, promote year-round availability of quality seafood to the consumer, and promote recreational fishing opportunities.

Objectives

To accomplish these management goals, a number of objectives will be considered and followed as closely as practicable:

Conservation

Objective 1. Maintain an information flow on the status of the fishery and the fishery resource which allows for informed management decisions as the fishery occurs.

Objective 2. Adopt harvest specifications and management measures consistent with resource stewardship responsibilities for each groundfish species or species group. Achieve a level of harvest capacity in the fishery that is appropriate for a sustainable harvest and low discard rates, and which results in a fishery that is diverse, stable, and profitable. This reduced capacity should lead to more effective management for many other fishery problems.

Objective 3. For species or species groups that are overfished, develop a plan to rebuild the stock as soon as possible, taking into account the status and biology of the stock, the needs of fishing communities, recommendations by international organizations in which the United States participates, and the interaction of the overfished stock within the marine ecosystem.

Objective 4. Where conservation problems have been identified for non-groundfish species and the best scientific information shows that the groundfish fishery has a direct impact on the ability of that species to maintain its long-term reproductive health, the Council may consider establishing management measures to control the impacts of groundfish fishing on those species. Management measures may be imposed on the groundfish fishery to reduce fishing mortality of a non-groundfish species for documented conservation reasons. The action will be designed to minimize disruption of the groundfish fishery, in so far as consistent with the goal to minimize the bycatch of

non-groundfish species, and will not preclude achievement of a quota, harvest guideline, or allocation of groundfish, if any, unless such action is required by other applicable law.

Objective 5. Describe and identify EFH, adverse impacts on EFH, and other actions to conserve and enhance EFH, and adopt management measures that minimize, to the extent practicable, adverse impacts from fishing on EFH.

Economics

Objective 6. Within the constraints of the conservation goals and objectives of the FMP, attempt to achieve the greatest possible net economic benefit to the nation from the managed fisheries.

Objective 7. Identify those sectors of the groundfish fishery for which it is beneficial to promote year-round marketing opportunities and establish management policies that extend those sectors fishing and marketing opportunities as long as practicable during the fishing year.

Objective 8. Gear restrictions to minimize the necessity for other management measures will be used whenever practicable. Encourage development of practicable gear restrictions intended to reduce regulatory and/or economic discards through gear research regulated by EFP.

Utilization

Objective 9. Develop management measures and policies that foster and encourage full utilization (harvesting and processing), in accordance with conservation goals, of the Pacific Coast groundfish resources by domestic fisheries.

Objective 10. Recognize the multispecies nature of the fishery and establish a concept of managing by species and gear or by groups of interrelated species.

Objective 11. Develop management programs that reduce regulations-induced discard and/or which reduce economic incentives to discard fish. Develop management measures that minimize bycatch to the extent practicable and, to the extent that bycatch cannot be avoided, minimize the mortality of such bycatch. Promote and support monitoring programs to improve estimates of total fishing-related mortality and bycatch, as well as those to improve other information necessary to determine the extent to which it is practicable to reduce bycatch and bycatch mortality.

Social Factors

Objective 12. When conservation actions are necessary to protect a stock or stock assemblage, attempt to develop management measures that will affect users equitably.

Objective 13. Minimize gear conflicts among resource users.

Objective 14. When considering alternative management measures to resolve an issue, choose the measure that best accomplishes the change with the least disruption of current domestic fishing practices, marketing procedures, and the environment.

Objective 15. Avoid unnecessary adverse impacts on small entities.

Objective 16. Consider the importance of groundfish resources to fishing communities, provide for the sustained participation of fishing communities, and minimize adverse economic impacts on fishing communities to the extent practicable.

Objective 17. Promote the safety of human life at sea.