

GOA Pacific Cod Allocation Review

May 9, 2024¹

This is the Final Draft of the GOA Pacific Cod Allocation Review. This review was prepared in response to NMFS Fisheries Allocation Policy Directive 01-119, which describes a mechanism and process to ensure fisheries allocations are periodically evaluated to remain relevant to current conditions. In December 2023, the Council reviewed an initial version of the GOA Pacific Cod Allocation Review under the B1 (Executive Director) report. The Council [accepted](#) the allocation review as complete once staff included revisions to incorporate shoreside processing sector activity and community participation, and a summary of the GOA Pacific cod stock. These revisions have been incorporated into this final version, which is also archived on the [NPFMC Allocation and Program Review webpage](#). Interactive versions of the [data in dashboard form](#) can be accessed on the Alaska Fisheries Information Network (AKFIN) NPFMC Allocation Review webpage.

1	Introduction	2
1.1	Overview of allocation.....	2
1.2	GOA Pacific Cod Allocation Objectives.....	4
1.3	GOA Groundfish FMP Objectives	4
2	Summary.....	5
2.1	Allocation and Landings.....	5
2.2	Value	6
2.3	Prohibited Species Catch (PSC).....	7
2.4	Community Participation	7
2.5	Stock Status	8
3	Sector-specific Activity	9
3.1	Central GOA Pacific Cod Jig Sector	9
3.2	Western GOA Pacific Cod Jig Sector.....	9
3.3	Central GOA Pacific Cod Pot Sector.....	10
3.4	Western GOA Pacific Cod Pot Sector	10
3.5	Central GOA Pacific Cod Hook and Line<50' Catcher Vessel Sector	10
3.6	Central GOA Pacific Cod Hook and Line>=50' Catcher Vessel Sector	10
3.7	Western GOA Pacific Cod Hook and Line Catcher Vessel Sector	11
3.8	Central GOA Pacific Cod Trawl Catcher Vessel Sector	11
3.9	Western GOA Pacific Cod Trawl Catcher Vessel Sector	11
3.10	Central GOA Pacific Cod Hook and Line Catcher Processor Sector.....	11
3.11	Western GOA Pacific Cod Hook and Line Catcher Processor Sector	12
3.12	Central GOA Pacific Cod Trawl Catcher Processor Sector	12
3.13	Western GOA Pacific Cod Trawl Catcher Processor Sector	12
4	Review of the FMP and allocation objectives.....	12
5	References.....	13
6	Appendix – Sector-specific Fishing Activity from 2012-2022	13

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For definition of acronyms and abbreviations, see online list: <https://www.npfmc.org/library/acronyms>

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1 Introduction

In July 2016, NMFS issued a [Fisheries Allocation Policy Directive 01-119](#), which describes a mechanism to ensure fisheries allocations are periodically evaluated to remain relevant to current conditions. The Council adopted a 10-year time frame as the primary trigger criteria for review for non-LAPP allocations.

As noted in the 2018 Council Coordinating Committee meeting, the Allocation Review is not meant to include an in-depth analysis. The purpose of the review is to ensure allocations are periodically reviewed, remain relevant, and adhere to adaptive management. The review is to facilitate the assessment of FMP objectives and Allocation objectives while considering other relevant factors (ecological, economic, social, catch, status, etc.). This assessment then informs whether or not further consideration of allocation alternatives is warranted. If the Council decides that development of allocation options is warranted, the Council will proceed with formal analyses, and follow its amendment process for identifying alternatives, soliciting public input, etc. If the Council determines that the objectives are not up-to-date, then the Council should discuss, evaluate, and if necessary, revise the objectives. If the Council determines that the objectives are current and no amendment process is necessary the review is complete.

The Council received the GOA Pacific Cod Allocation Review in [December of 2023](#) and accepted the review to fulfill the allocation policy directive after revision to incorporate the shoreside processing sector and community participation related to shoreside processing activity and a summary of the status of the GOA Pacific cod stock. The shoreside processing activity and community participation has been included in this document as well as the status of the stock.

1.1 Overview of allocation

Amendment 83 established sector allocations of Pacific Cod TAC for each gear and operation type in the Western and Central GOA Pacific cod fisheries after deductions for Alaska state GHL fisheries starting in 2012. This allocation review covers 11 years, 2012-2022, starting the first year of the allocation and continuing through the most recent year with complete revenue and landings data. The figures and supporting data presented are available online at the allocation review [website](#). In both regulatory areas, the sectors are jig, hook-and-line (HAL) catcher/processor (CP), pot catcher vessel (CV) and CP combined, trawl CP, trawl CV, and hook-and-line CV; however, in the Central GOA, the hook-and-line CV sector is further divided by vessel length. In the Central GOA, hook-and-line CVs less than 50 ft (15.2 m) LOA (< 50 ft (15.2 m) LOA) are in one sector and hook-and-line CVs greater than or equal to 50 ft (15.2 m) (≥ 50 ft (15.2 m)) are in another sector.

The jig allocations are determined through a stepwise process with a minimum allocation of 1.5% of the Federal Pacific cod TAC in the Western GOA and 1% in the Central GOA. When harvest is above 90% of the jig TAC for the previous year, the jig allocation increases by 1%, not to exceed 6% of the Federal Pacific cod TAC in either area. When harvest is below 90% of the jig TAC for the previous two consecutive years, the jig allocation decreases by 1% until reaching the minimum allocation levels of 1.5% (WGOA) and 1% (CGOA). Table 1 indicates the percent allocated to the jig sectors by year.

Table 1 GOA Pacific Cod Jig Sector Allocation Percentages

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
WG Jig	1.5%	2.5%	2.5%	3.5%	3.5%	2.5%	1.5%	2.5%	3.5%	3.5%	3.5%	2.5%
CG Jig	1.0%	2.0%	2.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN

The jig allocations are deducted from the total Pacific cod TAC in the WGOA and CGOA before TAC is assigned to non-jig sectors. The non-jig sector allocations are then calculated from this reduced TAC as listed in Table 2.

Table 2 GOA Pacific Cod Sector Allocations

Western GOA Sector Allocation after Jig			
Sector	Annual	A season	B season
HAL CP	19.8%	55.2%	44.8%
HAL CV	1.4%	47.2%	52.8%
Pot	38.0%	52.0%	48.0%
Trawl CP	2.4%	37.9%	62.1%
Trawl CV*	38.4%	82.1%	17.9%
Central GOA Sector Allocation after Jig			
Sector	Annual	A season	B season
HAL CP	5.1%	80.3%	19.7%
HAL CV <50'	14.6%	63.9%	36.1%
HAL CV ≥50'	6.7%	84.0%	16.0%
Pot	27.8%	63.9%	36.1%
Trawl CP	4.2%	48.8%	51.2%
Trawl CV*	41.6%	60.8%	39.2%

Source: Sector allocations and seasonal apportionments as established under Amendment 83, with the exception of *Trawl CV seasonal apportionments which were modified by Amendment 109 (described below).

The GOA Pacific cod sector allocations are apportioned across an A and B season (679.20(a)(12)), with dates that vary by gear type as shown in Table 3 (679.23(d)(3)). The Pacific cod seasons were initially established to mitigate concerns surrounding prey availability for Steller sea lions with an aggregate allocation of 60% of the annual Pacific cod TAC in the A season and 40% of the TAC in the B season across all gear (trawl/non-trawl) and operational-type (CV/CP) sectors (except a set-aside for the jig gear sector). Seasonal apportionments within each sector were established to reflect the seasonal fishing behaviors of each sector. Seasonal apportionments for the Trawl CV sector were adjusted beginning in 2021 under Amendment 109. The Council acknowledged that changes had occurred in the B season Pacific cod fishery, resulting in unharvested TAC. To address this concern, Amendment 109 increased trawl CV allocations of Pacific cod TAC in the CGOA and WGOA during the A season while proportionally decreasing trawl CV allocations of Pacific cod TAC in the CGOA and WGOA during the B season. For the Pacific cod fishery in the CGOA and WGOA, the overall change in seasonal allocation across all sectors combined was 4% from the B season to the A season.

Table 3 Season dates by gear type

Gear type	A season	B season
Hook-and-line or pot	January 1- June 10	September 1-December 31
Trawl	January 20-June 10	September 1-November 1
Jig	January 1-June 10	June 10-December 31

Regulations allow for NMFS to apply any underage or overage of Pacific cod harvest by each sector from one season to the subsequent season as well as reallocation of TAC that is projected to be unharvested to other sectors to provide an opportunity for the full harvest of the GOA Pacific cod TAC (50 CFR 679.20(a)(12)(ii)). NMFS relies on its management expertise as well as communication with the fleets about their expected levels of activity and/or encounter rates of Pacific cod to reallocate TAC that will go unharvested either to sectors that have the ability and desire to catch additional Pacific cod, or to sectors that have small cod allocations that are meant to cover incidental catch and could use additional TAC as a precautionary measure to prevent an overage. The regulations provide a hierarchy to consider a

reallocation of the projected unused allocation to the CV sectors first, then to the combined CV and CP pot sector, and then to all other CP sectors, considering the capability of a sector to harvest the remaining Pacific cod TAC. The Central Gulf Pot and Western Gulf Pot sectors have received the majority of re-allocations with the allocation typically coming from the Central Gulf Catcher Vessel Trawl or Western Gulf Catcher Vessel Trawl Sector as shown in Table 4.

Table 4 Reallocations by Sector and Year

Sector	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total
CG_POT	2,250	0	500	2,000	2,500	1,500	111	0	-1,040	0	0	7,821
CG_CP_TRW	0	1,000	0	0	0	0	447	0	680	435	400	2,962
CG_JIG	300	0	-500	0	200	0	-60	0	0	0	-35	-95
CG_CP_HAL	0	0	0	0	0	0	-40	0	-180	0	0	-220
CG_CV_HAL>=50	0	0	0	0	-700	0	12	0	-100	0	35	-753
CG_CV_HAL<50	200	0	0	0	-1,000	0	110	0	-460	0	0	-1,150
CG_CV_TRW	-2,750	-1,000	0	-2,000	-1,000	-1,500	-580	0	1,100	-435	-400	-8,566
WG_POT	2,000	2,000	550	0	0	0	678	215	0	0	-150	5,293
WG_JIG	150	0	300	0	0	0	40	50	0	0	0	540
WG_CV_HAL	0	200	50	0	0	0	7	35	0	0	150	442
WG_CP_TRW	0	-100	0	0	0	0	0	30	0	0	0	-70
WG_CP_HAL	-600	0	0	0	0	0	0	0	0	0	400	-200
WG_CV_TRW	-1,550	-2,100	-900	0	0	0	-725	-330	0	0	-400	-6,005

Source: [Gulf of Alaska Pacific cod Reallocations in metric tons \(2012 -2022\) \(noaa.gov\)](https://www.noaa.gov/gulf-of-alaska-pacific-cod-reallocations-in-metric-tons-2012-2022)

1.2 GOA Pacific Cod Allocation Objectives

In general, based on the Council's problem statement and the final rule for Amendment 83 (76 Fed Reg 74670 December 1, 2011), the implicit objectives of Amendment 83 were intended to:

- Establish sector allocations for each gear and operation type in the Western and Central GOA Pacific cod fisheries, based primarily on historical catches, as well as conservation, catch monitoring and social objectives, including considerations for small boat sectors and coastal communities traditionally participating in the inshore Pacific cod processing sector
- Reduce uncertainty and enhance stability in the Western and Central GOA Pacific cod fisheries by enabling operators within each sector to plan harvesting or processing activity during a fishing year
- Reduce competition among the sectors
- Promote sustainable fishing practices
- Preserve the historical division of catch among sectors, while providing opportunities for new entrants
- Promote community participation and provide incentives for new entrants in the jig sector

1.3 GOA Groundfish FMP Objectives

The Council has developed management objectives for the GOA groundfish fisheries to guide its development of management recommendations to the Secretary of Commerce, which can be accessed at <https://www.npfmc.org/wp-content/PDFdocuments/fmp/GOA/GOAfmp.pdf>. From the comprehensive list of GOA Groundfish FMP objectives, below are those objectives that, according to staff judgement, apply to the GOA Pacific cod allocation review.

Promote Sustainable Fisheries and Communities:

- Promote management measures that, while meeting conservation objectives, are also designed to avoid significant disruption of existing social and economic structures.
- Promote fair and equitable allocation of identified available resources in a manner such that no particular sector, group or entity acquires an excessive share of the privileges.

Promote Equitable and Efficient Use of Fishery Resources:

- Provide economic and community stability to harvesting and processing sectors through fair allocation of fishery resources.
- Develop management measures that, when practicable, consider the efficient use of fishery resources considering the interest of harvesters, processors, and communities.

2 Summary

2.1 Allocation and Landings

The following figures represent the participation and harvest of GOA Pacific cod for all sectors from 2012-2022. The figures are sourced through the NMFS Alaska Region Catch Accounting System and compiled by AKFIN. The initial allocation, final allocation (after any re-allocations as displayed in Table 4) and percent of the initial allocation harvested are represented in Figure 1, and Figure 2 shows the number of vessels participating in the state fishery and the federal fishery. Prior to 2018 the total allocation averaged over 60,000 tons, in 2018 it dropped to just over 10,000 tons, rising recently in 2021 and 2022 surpassing 20,000 tons. TAC utilization has consistently been from 60%-90%. The number of vessels participating has fallen from 655 vessels in 2012 to 339 as of 2022. The majority of the decrease in participation came before the reduced allocation in 2018 which may be an indicator of reduced abundance.

Harvest as a percent of the total allocation has decreased since 2012 for both the Central and Western Gulf. The average historic harvest of TAC for 2003-2011 was 88% for the Western Gulf and 97% for the Central Gulf. For the 11 years of the allocation the harvest has been 75% for the Western Gulf and 85% for the Central Gulf. Table 5 below shows the percent harvested by year. The reduced harvest rate may be related to changes in abundance and the ability for sectors to target Pacific cod. This change in abundance may have also affected the ability of the jig sectors to reach step up provisions.

Table 5 Percent of Allocation Harvested by Area 2003-2022

Year	Central Gulf	Western Gulf	Year	Central Gulf	Western Gulf
2003	110%	105%	2013	87%	91%
2004	102%	92%	2014	101%	95%
2005	91%	79%	2015	79%	70%
2006	82%	73%	2016	65%	65%
2007	91%	66%	2017	51%	71%
2008	98%	76%	2018	94%	89%
2009	100%	96%	2019	103%	95%
2010	101%	101%	2020	93%	11%
2011	99%	98%	2021	86%	77%
2012	88%	87%	2022	89%	77%

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN

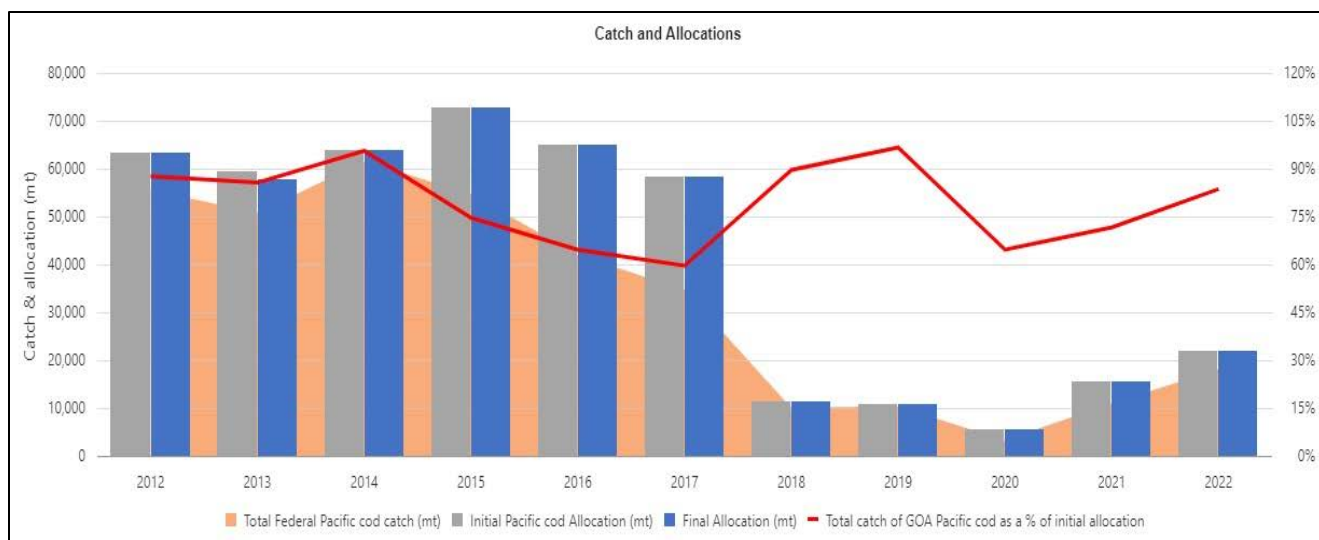


Figure 1 Total GOA Pacific Cod Allocation and Percent of Allocation Landed, 2012-2022

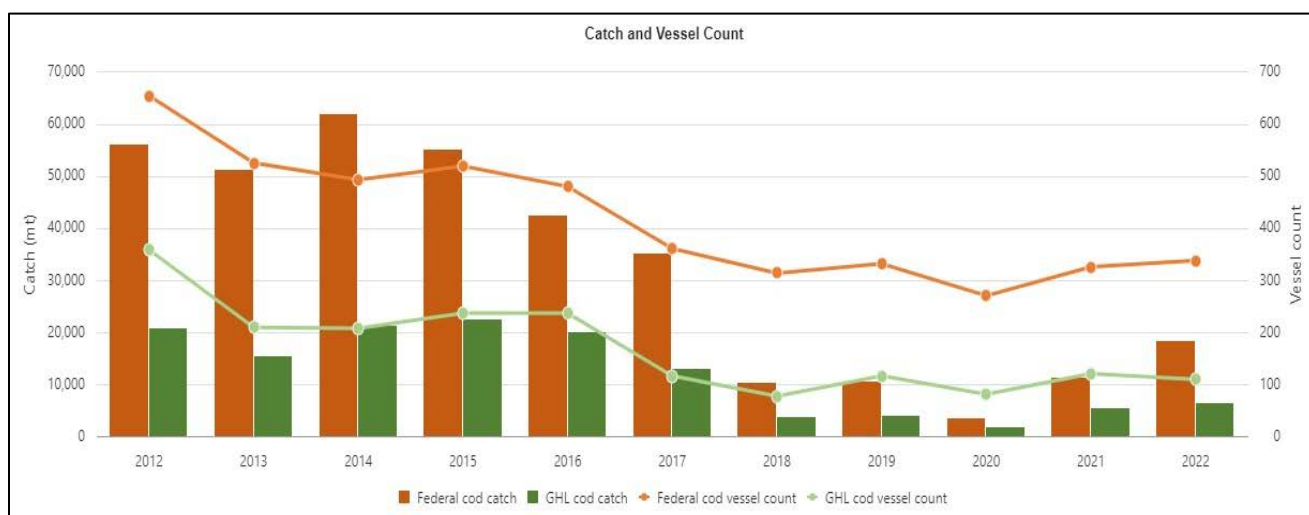


Figure 2 Total GOA Pacific Cod Harvested and Vessel Counts, 2012-2022

2.2 Value

Figure 3 represents the value and vessel diversification associated with the GOA Pacific cod allocation. GOA Pacific cod represented between 1% to 7% of the participating vessels' total revenue in the 11-year timeframe with 2020 representing the low and 2015 representing the high. The value ranged from a high of \$34.5M in 2014 to a low of \$2.1M in 2020.

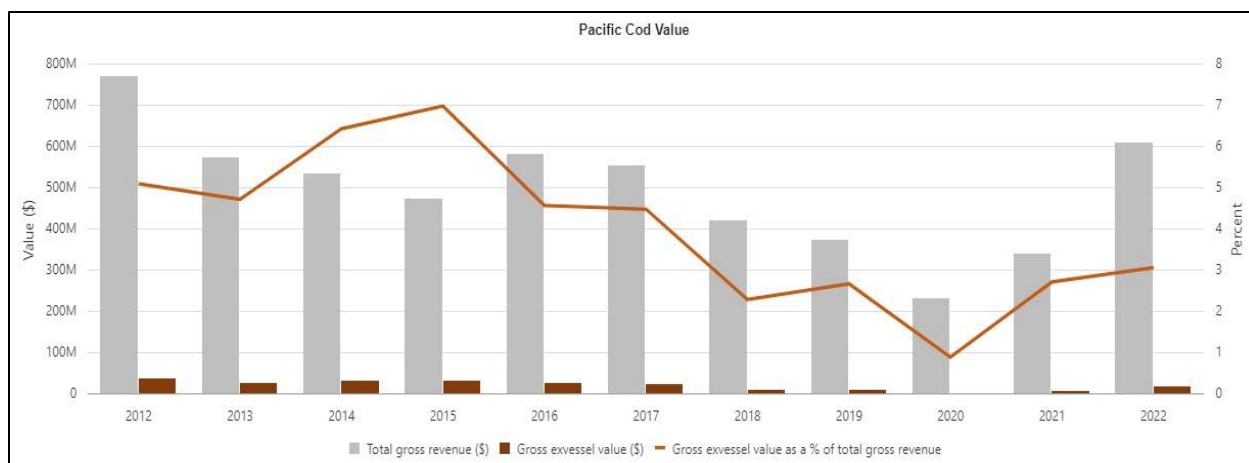


Figure 3 GOA Pacific Cod Vessels' Estimated Value of Allocated GOA Pacific Cod, GOA Pacific Cod as a Percent of Total Vessel Revenue and Total Estimated Vessel Revenue, 2012-2022

2.3 Prohibited Species Catch (PSC)

PSC species encountered are largely dependent upon the sector. Halibut mortality has declined significantly since the allocation was initiated in 2012 (736 tons) to 2022 (55 tons). Tanner crab encounters have also decreased significantly, each year prior to 2015 had over 100,00 crab and an average of approximately 259,000 crab. From 2016 to 2022 the average estimated Tanner crab encountered is approximately 24,000. As shown in Figure 4, Chinook salmon PSC estimated reached a high in 2021 of 3,827 animals.

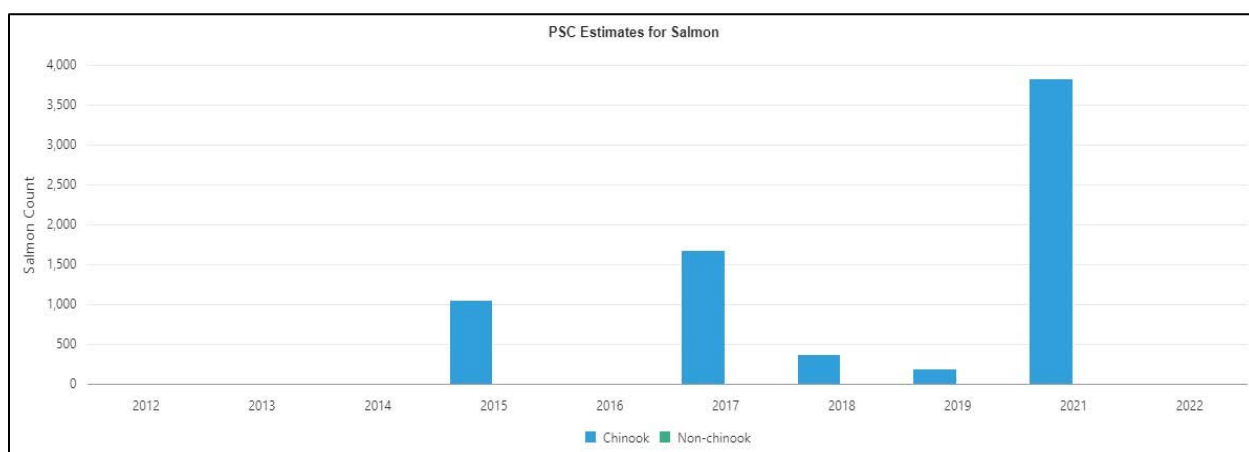


Figure 4 GOA Pacific Cod Vessels' PSC Estimates of Chinook and non-Chinook Salmon in the Pacific Cod Target, 2012-2022

2.4 Community Participation

The vessels that participate in the allocation have decreased from 655 vessels in 2012 to 339 in 2022 (Figure 5). Nearly all communities are affected by the decline in participation. Kodiak in particular has seen a decrease from 174 vessels to 86 vessels participating. Despite the decrease Kodiak remains the community with the highest participation followed by Homer with 69 vessel owners and communities in Washington State with 70 vessel owners, of which 39 reside in the Seattle MSA. Sand Point is the next highest community of participation with 11 vessels owners.

In 2012 38 processors took deliveries of Pacific cod trips in the GOA (Figure 6). That number has fallen to 16 in 2020 and 2022. The number of deliveries to processors has fallen from over 5 thousand deliveries in 2012 to just over 1,000 in 2022. Kodiak remains the port receiving the majority of deliveries for all years.

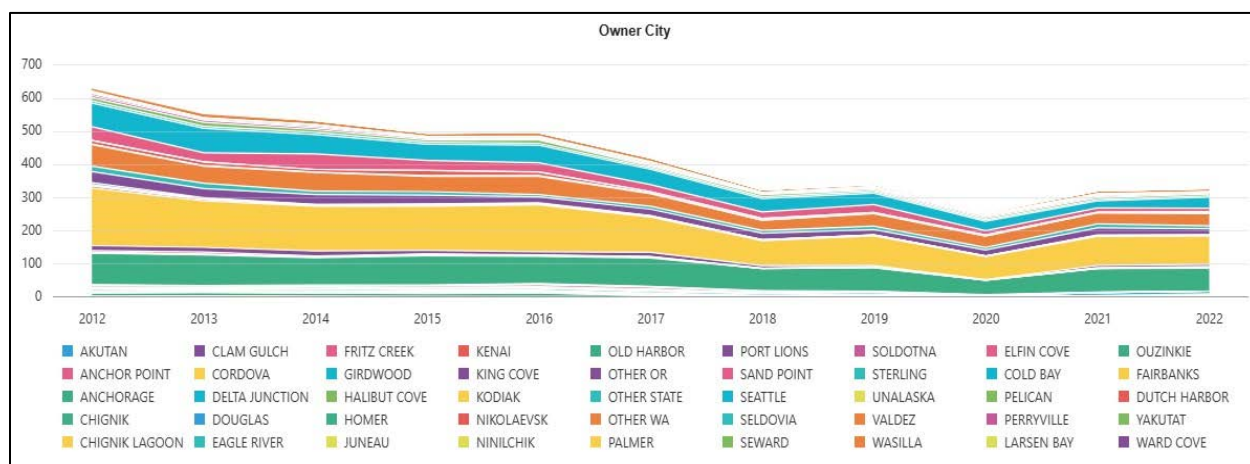


Figure 5 Vessel Ownership Community of Vessels in the Pacific Cod Target, 2012-2022

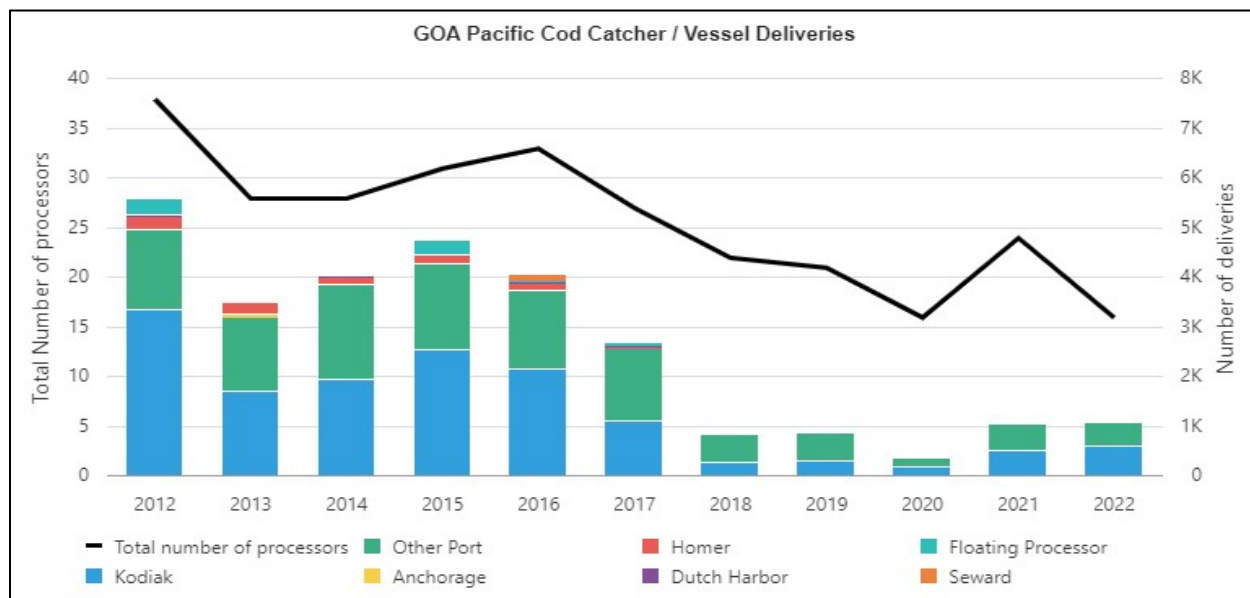


Figure 6 Processor Participation and Deliveries, 2012-2022

2.5 Stock Status

The Pacific cod stock in the GOA has been managed as one stock throughout the review period (2012-2022), and the stock has generally been managed under Tier 3 of Amendment 56. Tier 3 uses the following reference points: $B_{40\%}$, equal to 40% of the equilibrium spawning biomass that would be obtained in the absence of fishing; $F_{35\%}$, equal to the fishing mortality rate that reduces the equilibrium level of spawning per recruit to 35% of the level that would be obtained in the absence of fishing; and $F_{40\%}$, equal to the fishing mortality rate that reduces the equilibrium level of spawning per recruit to 40% of the level that would be obtained in the absence of fishing.

Pacific cod projected total (age 0+) biomass for 2012 was estimated at 521,000t and projected female spawning biomass was estimated at 121,000t, well over $B_{40\%}$ ($B_{40\%} = 104,000t$). Total biomass estimates increased to a peak in 2014, after which there was a sharp decline through 2018. Spawning biomass similarly increased from 2012- 2014 coincident with the maturation of the 2005-2008 year classes. After 2014, spawning biomass showed a sharp decline. Accordingly, catch limits for Pacific cod were set at very low amounts for 2018 and 2019 with the 2018 ABC (18,000 mt) representing an 80% reduction compared to the 2017 ABC (88,342 mt).

This decline in spawning biomass further continued to its lowest levels in 2019 and 2020. The 2019 spawning biomass was estimated to be at $B_{20\%}$ due to a large decrease in the abundance of Pacific cod which occurred in the GOA in 2017. A discussion of ecosystem processes in the 2018 Stock Assessment and Fishery Evaluation (SAFE) report suggests that this decline was the result of an unusually warm mass of water (the “warm blob”) that persisted from 2014 through 2016. This warm water in the Gulf of Alaska elevated the metabolism of Pacific cod while also reducing available food. This resulted in poor body condition and increased mortality of Pacific cod. The warm water also affected cod egg production and larval survival, reducing recruitment during these years. In 2020, the spawning stock biomass was projected to have dropped below 20% of the unfished spawning biomass ($B_{20\%}$). $B_{20\%}$ is a minimum spawning stock size threshold instituted to help ensure adequate forage for the endangered western stock of Steller sea lions. In response, the federal Pacific cod fishery in the GOA was closed by regulation to directed Pacific cod fishing. The State of Alaska directed Pacific cod fishery remained open and Pacific cod bycatch in other federally managed groundfish fisheries was allowed.

In 2021, the total and spawning stock biomass increased slightly and was above $B_{20\%}$. The federal fishery was allowed to open, and in 2022 the stock remained at low levels but was again above $B_{20\%}$.

Over the entirety of the review period 2012-2022, the GOA Pacific cod stock has not been declared overfished, overfishing has not occurred, nor has the stock approached an overfished status per the overfishing definitions under GOA FMP Amendment 56. For more information on the status of Gulf of Alaska Pacific cod the [SAFE report for the Groundfish Resources of the Gulf of Alaska](#) is available.

3 Sector-specific Activity

Each sectors activity from 2012-2022 is summarized below. The applicable figures are available in the Appendix. The figures and supporting data are also available online at the allocation review [website](#).

3.1 Central GOA Pacific Cod Jig Sector

The Central GOA Pacific cod jig sector receives a varied allocation not to exceed 6% or fall below 1% of the overall TAC. The sector allocation reached a high of 797 tons in 2014 with a low of 38 tons in 2020. The sector has utilized over 90% in one year (2012) that caused an increased allocation to 2% however utilization below 90% brought the allocation back to 1% in 2015 where it remains. The number of vessels participating has fallen from 55 in 2016 to 2 in 2022. The vessels participating in the sector are owned in large part by residents of either Kodiak or Homer. The nominal ex-vessel value of the harvest reached a high of \$268,000 in 2015, representing 4.8% of participating vessels’ total revenue. Jig landings are not currently attributed with PSC estimates; thus, no PSC figures are presented. Landings in 2022 or confidential since less than 3 vessels participated. Nearly all processing for the sector was done in Kodiak.

3.2 Western GOA Pacific Cod Jig Sector

The Western GOA Pacific cod jig sector receives a varied allocation not to exceed 6% or fall below 1.5% of the overall TAC. The sector allocation reached a high of 992 tons in 2016 with a low of 73 tons in 2020. The allocation was utilized at over 90% in 2012, 2014, 2018 and 2019 that triggered increased allocations. In the years 2015, 2016 and 2017 less than 90% was utilized causing 1% reductions in 2017

and 2018. In 2023 the sector received 2.5% of the TAC. Participation has fallen from 39 vessels in 2012 to approximately 10 vessels since 2015. The vessels participating in the sector are owned in large part by residents of Sand Point. Revenue from the allocation has accounted for 5% to 55% of total revenue. No vessels participated in the sector in 2022. Jig landings are not currently attributed with PSC estimates; thus, no PSC figures are presented. The sector had no activity in 2022. Deliveries are primarily made to Sand Point with activity also seen in Akutan, King Cove and Dutch Harbor with less than 5 processors active in all years.

3.3 Central GOA Pacific Cod Pot Sector

The Central GOA Pacific cod pot sector receives 27.8% of the area allocation after the jig allocation. The sector allocation reached a high of 12,660 tons in 2015 with a low of 1,048 tons in 2020. The sector has consistently utilized over 80% of its allocation except for 2020 and 2021. The number of vessels participating fell from 2017 (61) to 2018 (17) rising to 30 vessels participating in 2022. The vessels participating in the sector are owned in large part by residents of Kodiak and Homer. Pot cod revenue made up 26% of vessels overall revenue in 2015, in 2022 8% of sector revenue came from the Federal allocation. Tanner crab is the PSC species most often encountered by the sector, the estimates show consistent declines in the estimated Tanner crab PSC with 4,224 tanner crab in 2022. No salmon PSC has been reported for the sector in the timeframe. The sector typically delivers to processors in Kodiak with between 17 and 7 processors active in the time period.

3.4 Western GOA Pacific Cod Pot Sector

The Western GOA Pacific cod pot sector receives 38% of the area allocation. The sector allocation reached a high of 10,397 tons in 2016 with a low of 761 tons in 2020. The sector utilized over 60% of its allocation prior to 2020. The number of vessels participating reached a high of 46 in 2014, and dropped to 20 vessels participating in 2021 and 2022. The vessels participating in the sector are owned by residents of many communities, historically King Cove, Kodiak and Sand Point had the largest portion of vessel owners. Pot cod revenue made up 16% of vessels overall revenue in 2013 and just 2.4% in 2022. Tanner crab is the PSC species most often encountered by the sector, the estimates show declines in the estimated Tanner crab PSC with stable estimates since 2017. In 2022 an estimated 20,438 tanner crab were encountered by the sector. No salmon PSC has been reported for the sector in the timeframe. King Cove, Sand Point, Dutch Harbor and Akutan all process Pacific cod deliveries from the sector with the number of deliveries decreasing significantly from over 750 in 2017 to less than 200 in the years since.

3.5 Central GOA Pacific Cod Hook and Line<50' Catcher Vessel Sector

The Central GOA Pacific cod hook and line <50' CV sector receives 14.6% of the area allocation. The sector allocation reached a high of 6,648 tons in 2015 with a low of 550 tons in 2020. The utilization of the allocation by the sector has varied greatly in the 10-year time period with a low of 4% in 2020 and a high of 104% in 2018. The number of vessels participating has consistently been over 90 vessels except for 2018 when it fell to 66 vessels. The vessels participating in the sector are owned in large part by residents of Homer. Hook and line Pacific cod revenue made up 4.1% of vessels' overall revenue in 2022 and has been less than 5% since 2017. Halibut is the PSC species most often encountered by the sector, the estimate had a high in 2015 and 2016 of 110 tons and 106 tons of mortality respectively and was 17 tons in 2022. No salmon PSC has been reported for the sector in the timeframe. The majority of deliveries for the sector are to processors located in Kodiak. In 2012 15 processors were active with 8 processors active for the sector in 2022.

3.6 Central GOA Pacific Cod Hook and Line>=50' Catcher Vessel Sector

The Central GOA Pacific cod hook and line >=50' CV sector receives 6.7% of the area allocation. The sector allocation reached a high of 3,054 tons in 2015 with a low of 253 tons in 2020. The utilization of

the allocation by the sector has varied greatly in the 10-year time period with a low of 11.9% in 2020 and a high of 99.5% in 2013. The number of vessels participating has consistently fallen since the high of 124 in 2012 vessels to 52 vessels in 2022. The vessels participating in the sector are owned in large part by residents of Kodiak. Hook and line Pacific cod revenue made up less than 2% of total vessel revenue for all years. Halibut is the PSC species most often encountered by the sector, the estimate had a high in 2013 of 38 tons with a low of 5 tons reached in 2022. No salmon PSC has been reported for the sector in the timeframe.

3.7 Western GOA Pacific Cod Hook and Line Catcher Vessel Sector

The Western GOA Pacific cod hook and line CV sector receives 1.4% of the area allocation. The sector allocation reached a high of 383 tons in 2016 with a low of 28 tons in 2020 and is mainly utilized when targeting species other than Pacific cod. The allocation represents less than 0.5% of the participating vessels revenue in all years and was 0.06% in 2022. Communities of vessel owners in the sector are in Washington State followed by Homer and a diverse group of other communities. The PSC estimates are not significant for any species due to the small amounts of Pacific cod targeted by vessels in the sector. The vessels typically deliver to Sand Point, King Cove or Akutan.

3.8 Central GOA Pacific Cod Trawl Catcher Vessel Sector

The Central GOA Pacific cod trawl catcher vessel sector receives 41.6% of the area allocation. The sector allocation reached a high of 18,934 tons in 2015 with a low of 1,567 tons in 2020. A high number of vessels consistently participate in the sector ranging from 62 in 2014 to 42 vessels in 2022. The utilization of the allocation by the sector was less than 50% in 2016 and reached a low of 35% in 2017. The majority of vessels participating are owned by residents of Kodiak (19), Washington State (12) and Oregon (9). Central Gulf Trawl Pacific cod revenue made up between 1.5% (2018) and 8.3% (2014) of total vessel revenue for the sector. The sector has PSC encounters with halibut, salmon and crab. PSC estimates are based on targeted landings, due to the allocation being largely used by the sector as incidental catch since 2017, little PSC is estimated after that time. The sector typically delivers to Kodiak with a minor amount of deliveries to King Cove and Sand Point prior to 2018.

3.9 Western GOA Pacific Cod Trawl Catcher Vessel Sector

The Western GOA Pacific cod trawl catcher vessel sector receives 38.4% of the area allocation. The sector allocation reached a high of 10,506 tons in 2016 with a low of 769 tons in 2020. A high number of vessels consistently participate in the sector ranging from 35 in 2017 to 26 vessels in 2015. The utilization of the allocation by the sector has been between 71% and 87% for all years except 2020 (14%). Vessel owners in the sector in 2022 are from a wide range of communities including Washington (8), Sand Point (6), Kodiak (5), King Cove (3) and Oregon (3). Western Gulf Trawl Pacific cod revenue contributed from 0.2% in 2020 to 15% in 2014 of the sectors total revenue. The sector has PSC encounters with halibut, salmon and crab. In 2021, 3,827 chinook salmon PSC were estimated for the sector.

3.10 Central GOA Pacific Cod Hook and Line Catcher Processor Sector

The Central GOA Pacific cod hook and line catcher processor sector receives 5.1% of the area allocation, 80.3% of that as A season Pacific cod. The sector allocation reached a high of 2,324 tons in 2015 with a low of 192 tons in 2020. Less than three vessels participated in the years 2018-2021 making reported catch in those years confidential. Between 2 and 8 vessels have participated throughout the time series with the higher participation prior to 2018. The vessels participating are owned by residents of Washington, Kodiak, Seward and Petersburg. Hook and line Pacific cod revenue made up over 2% of total vessel revenue in several years for the sector, trends are difficult to identify with the confidentiality of the sector however. Halibut is the PSC species most often encountered, the estimate had a high in 2015 of 24 tons. The sector encountered 12 non-Chinook salmon in 2016 with no other reported salmon PSC.

3.11 Western GOA Pacific Cod Hook and Line Catcher Processor Sector

The Western GOA Pacific cod hook and line catcher processor sector receives 19.8% of the area allocation. The sector allocation reached a high of 5,417 tons in 2016 with a low of 397 tons in 2020. Less than three vessels participated in 2020 and 2021 making reported catch in those years confidential. The vessels participating since 2017 are owned by residents of Washington and Kodiak (1). Hook and line Pacific cod revenue made up from 1.9% (2022) to 4.6% (2016) of total vessel revenue. Halibut is the PSC species most often encountered, the estimate had a high in 2016 of 63 tons. The sector encountered 15 non-Chinook salmon from 2014-2016 with no other reported salmon PSC.

3.12 Central GOA Pacific Cod Trawl Catcher Processor Sector

The Central GOA Pacific cod trawl catcher processor sector receives 4.2% of the area allocation. The sector allocation reached a high of 1,911 tons in 2015 with a low of 158 tons in 2020. The allocation is utilized as incidental catch by the sector. The utilization of the allocation by the sector varied substantially with a low of 326% (2016) and a high of 420% (2020), this is likely due to the small allocation and the nature of incidental landings. The revenue associated with the allocation makes up a small percentage of the participating vessels' overall revenue (.1% to .6%). Vessels participating are owned by residents of Washington (7) and Maine (1). PSC estimates are associated with target fisheries, since the sector does not target Pacific cod, no estimates are available.

3.13 Western GOA Pacific Cod Trawl Catcher Processor Sector

The Western GOA Pacific cod trawl catcher processor sector receives 2.4% of the area allocation. The sector allocation reached a high of 657 tons in 2016 with a low of 48 tons in 2020. The allocation is utilized as incidental catch by the sector. The utilization of the allocation by the sector has varied greatly with a low of 12% (2017) and a high of 122% (2019). The revenue associated with the allocation makes up a small percentage of the participating vessels' overall revenue only exceeding 0.1% in 2022. In 2021 2 vessels participated making activity in that year confidential. Vessels participating are owned by residents of Washington (2) and Maine (1). PSC estimates are associated with target fisheries, since the sector does not target Pacific cod, no estimates are available.

4 Review of the FMP and allocation objectives

As noted in Section 1, this allocation review was triggered because it has been 10 years since Amendment 83 established sector allocations of Pacific Cod TAC for each gear and operation type in the Western and Central GOA Pacific cod fisheries. One of the basic charges of this review is to evaluate allocation objectives relative to the current fisheries and to determine whether the objectives are being met by the current allocation. If Amendment 83 and the appropriate GOA groundfish FMP objectives are being met and no major changes have occurred within the fishery, then the allocation review is complete, and the time trigger for GOA Pacific cod fishery allocation review is reset. If, however, the objectives of Amendment 83 and those appropriate GOA groundfish FMP objectives are not being met and/or if other relevant factors have changed enough to warrant an in-depth formal analysis of the allocation, then the standard Council process for an FMP amendment is initiated.

The relevant FMP and allocation objectives are outlined in sections 1.1 and 1.2. Evaluation of these objectives is inherently somewhat subjective; however, the analysts use the summary information and data in section 2 and the Appendix to provide a preliminary assessment of whether these objectives are being met with the current allocation. Generally, the act of establishing allocations and seasonal apportionments of Pacific Cod TAC for each gear and operation type in the Western and Central GOA Pacific cod fisheries fulfilled many of the goals and objectives of A83 and the GOA FMP. The sector allocations combined with the framework for reallocating Pacific cod between sectors provides stability, reduces competition, and promotes sustainable fishing. Overall, the allocation review notes that some

sectors do not fully harvest all their GOA Pacific cod allocations, which has resulted in unharvested GOA Pacific cod on annual basis (Figure 2). Allocations (in mt) remained relatively stable from 2012-2017 before declining dramatically in 2018. Despite relative increases in 2021 and 2022 allocations have continued to be at much lower levels than the pre-2018 time period. In many sectors this 2018 decline in allocations coincided with a decline in the number of participating vessels and communities represented. This is especially noticeable in the jig sectors which have seen large declines in participating vessels and communities (although in the WGOA this preceded the decline in allocations). These trends demonstrate that current participation may not be meeting the allocation objective of promoting community participation and providing incentives for new entrants in the jig sector.

Given changes in abundance, TAC, participation, and less than full utilization of allocations, the Council could initiate an in-depth formal analysis of the allocation, move the allocation review to advisory bodies or initiate relevant discussion papers. In general, it is likely challenging to design or amend the GOA Pacific cod allocation program to increase participation and guarantee a fully harvested TAC each year due to the dynamic nature of the GOA Pacific cod fishery and the Council's allocation objectives of the GOA groundfish FMP and Amendment 83.

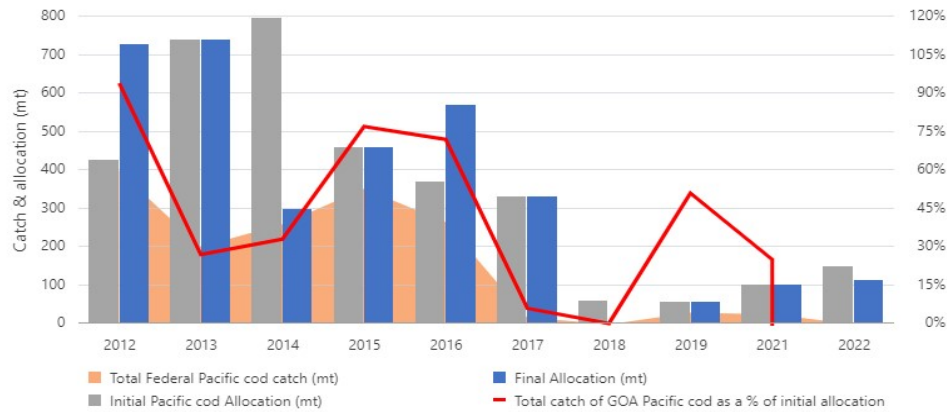
5 References

Hulson, P.-J. F., S. J. Barbeaux, B. Ferriss, K. Echave, J. Nielsen, S.K. Shotwell, B. Laurel, and I. Spies. 2023. Assessment of the Pacific cod stock in the Gulf of Alaska. In Stock assessment and fishery evaluation report for the groundfish resources of the Gulf of Alaska. North Pacific Fishery Management Council, 605 W. 4th Avenue Suite 306, Anchorage, AK 99501.

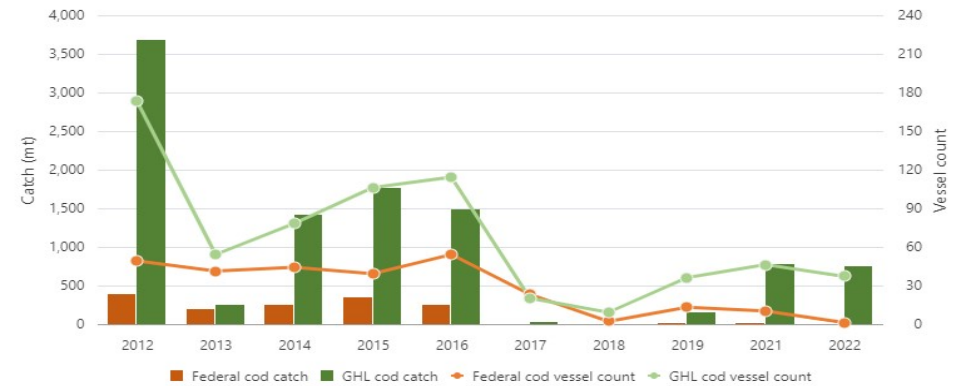
6 Appendix – Sector-specific Fishing Activity from 2012-2022

Central GOA Jig Sector

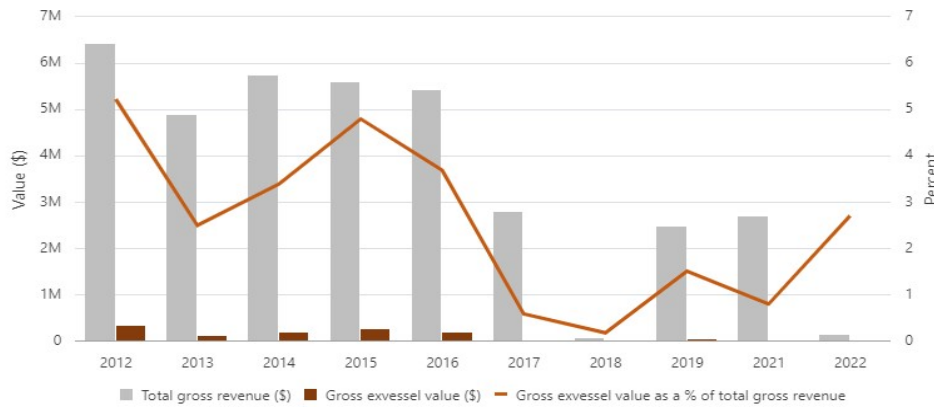
Catch and Allocations



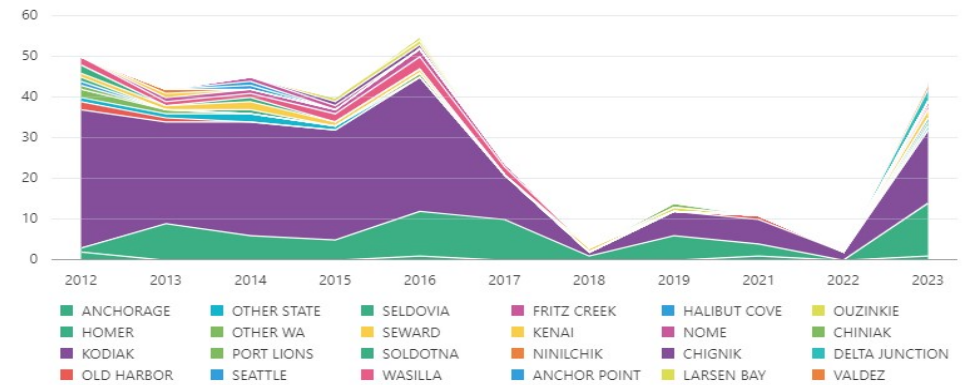
Catch and Vessel Count



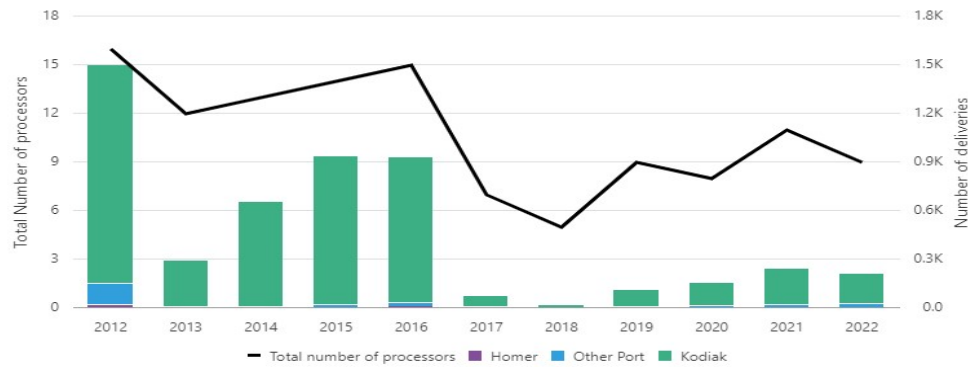
Pacific Cod Value



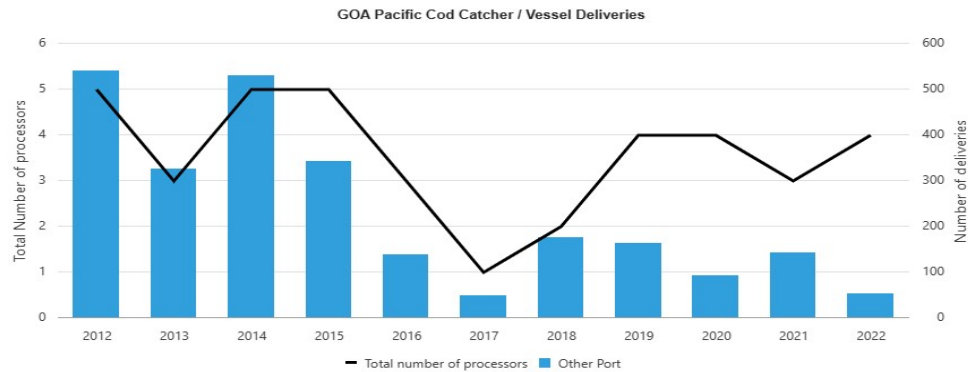
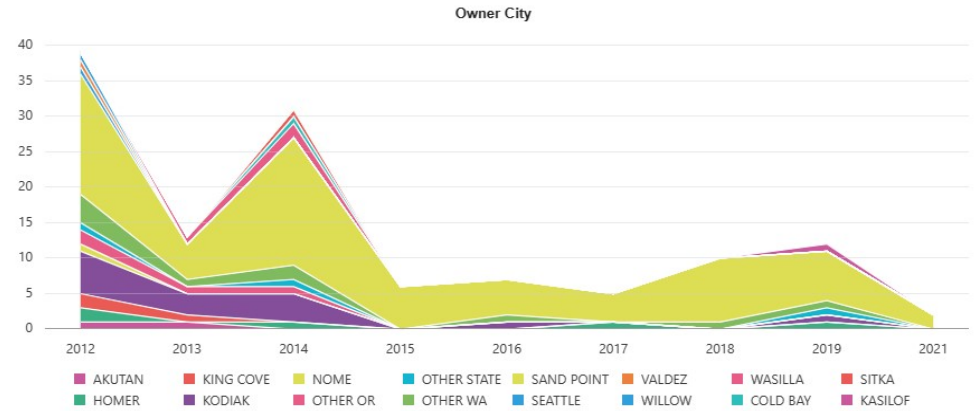
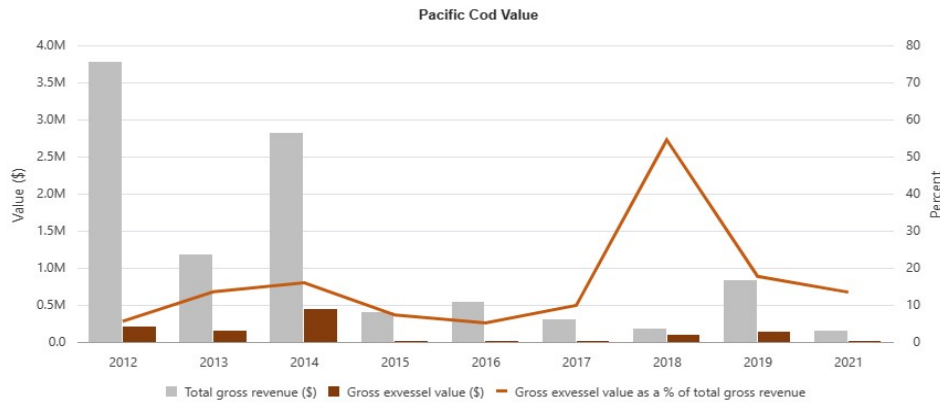
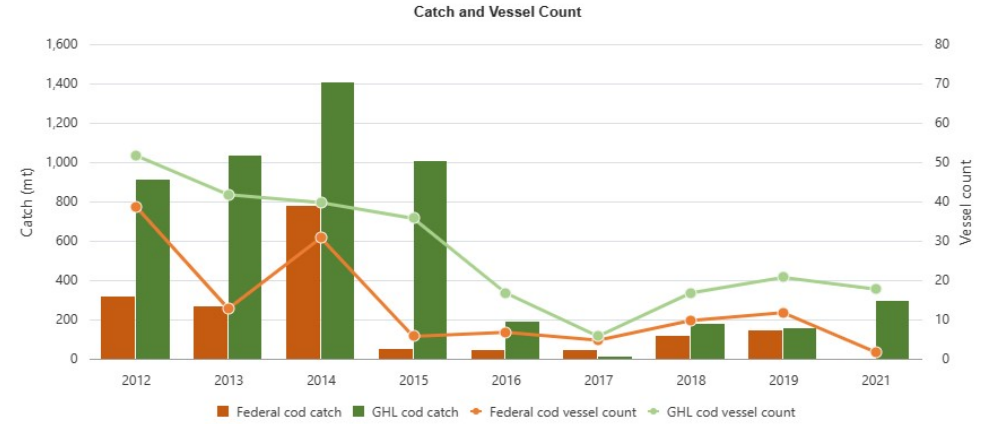
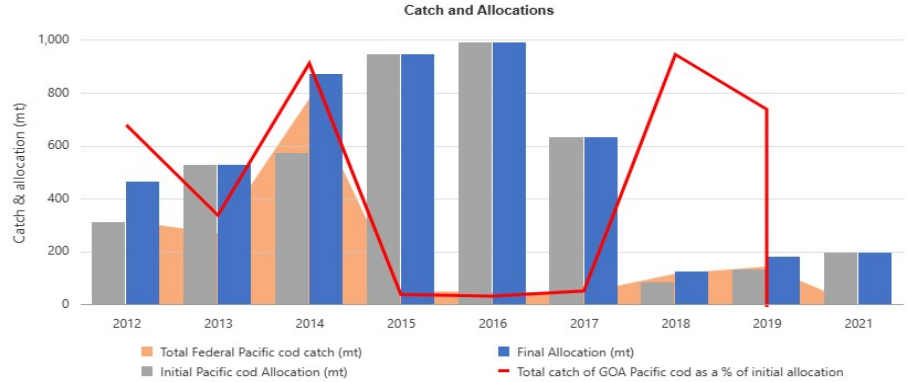
Owner City



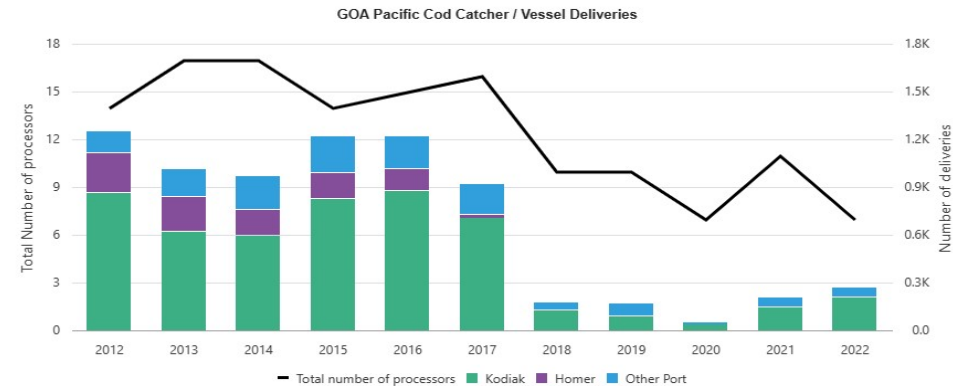
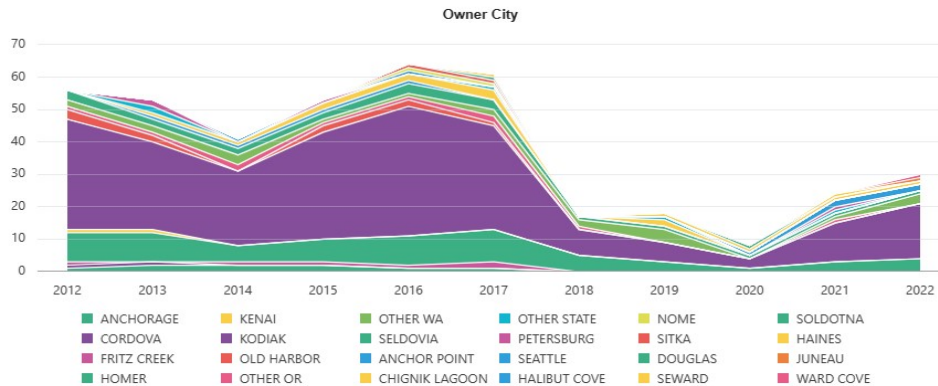
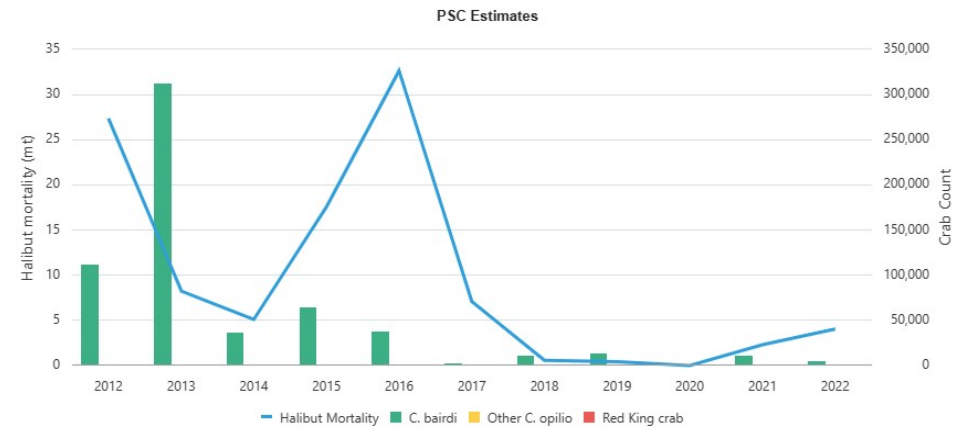
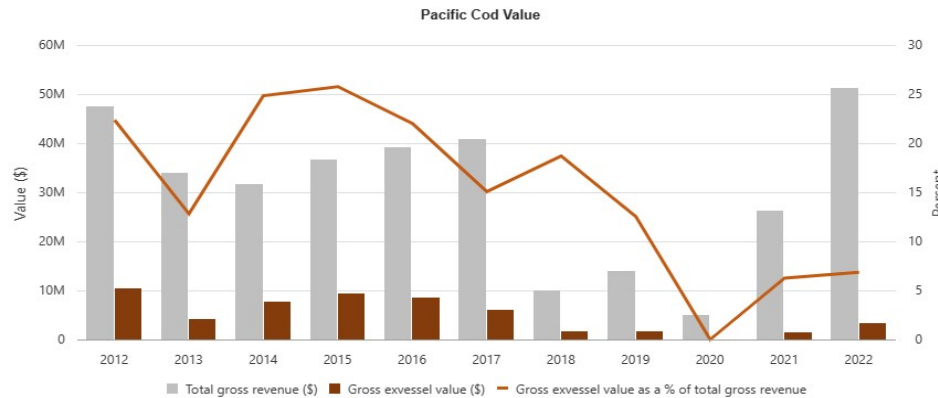
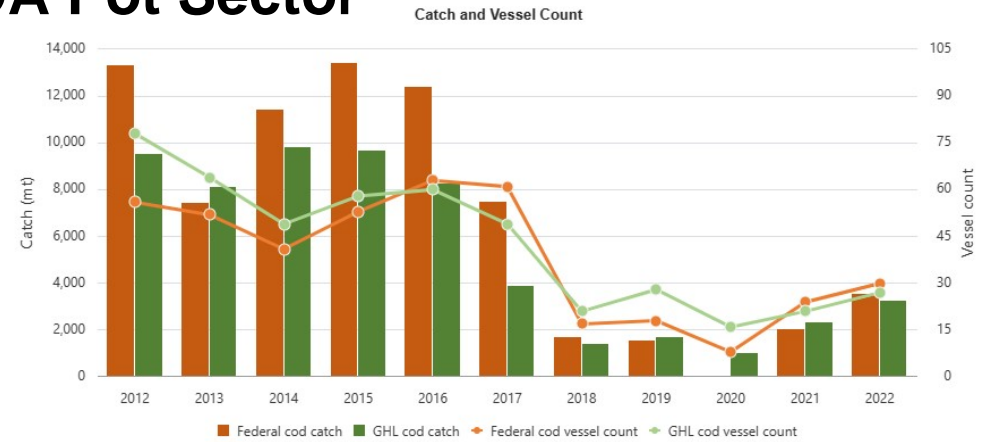
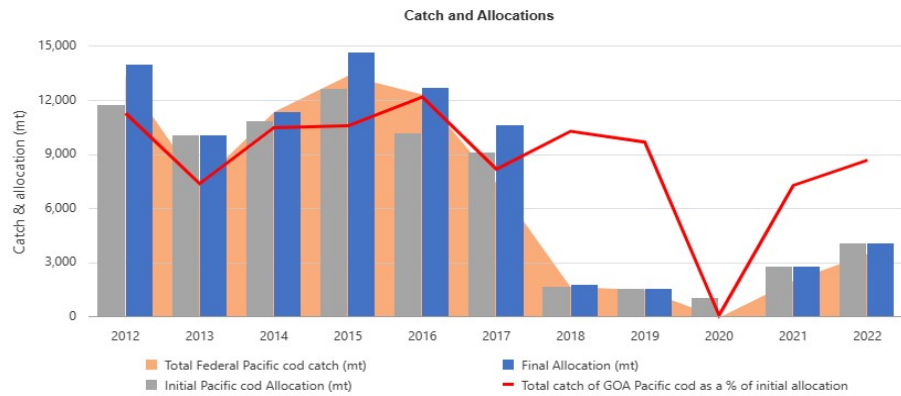
GOA Pacific Cod Catcher / Vessel Deliveries



Western GOA Jig Sector

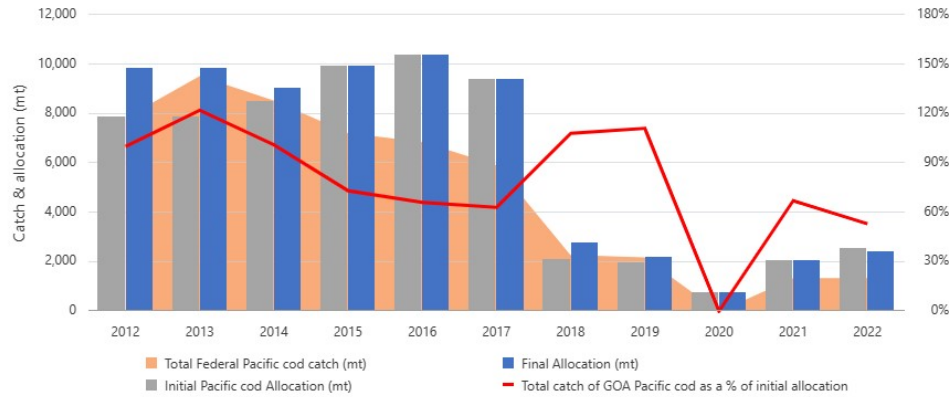


Central GOA Pot Sector

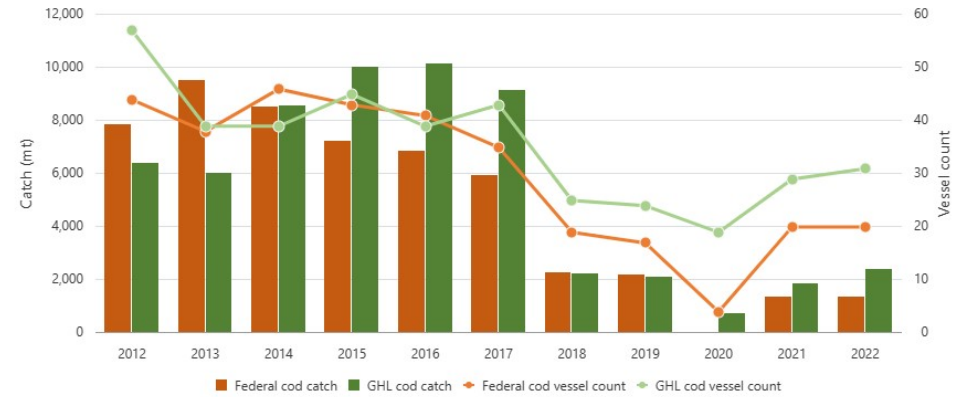


Western GOA Pot Sector

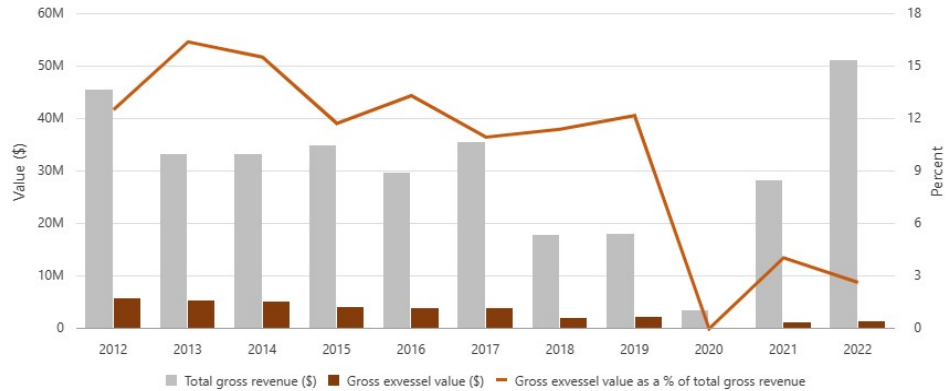
Catch and Allocations



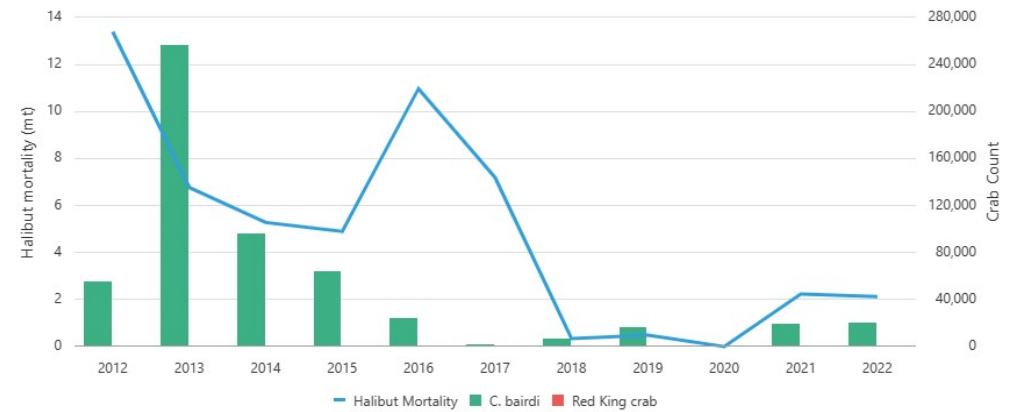
Catch and Vessel Count



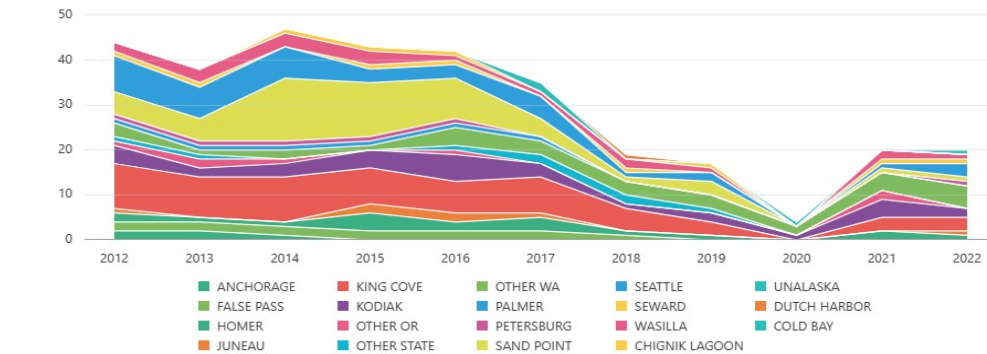
Pacific Cod Value



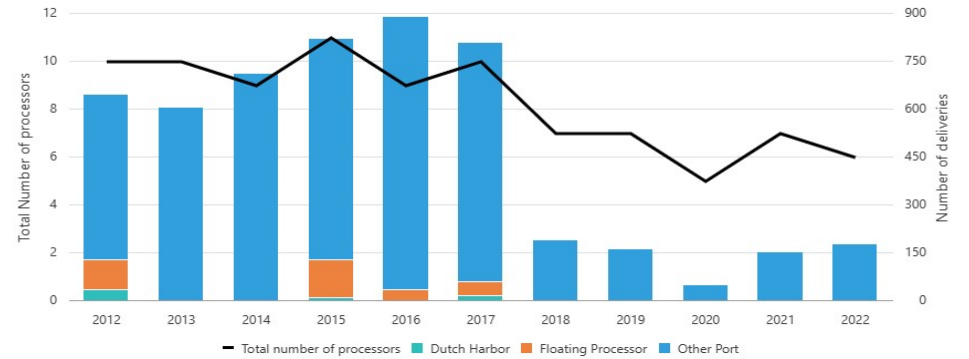
PSC Estimates



Owner City

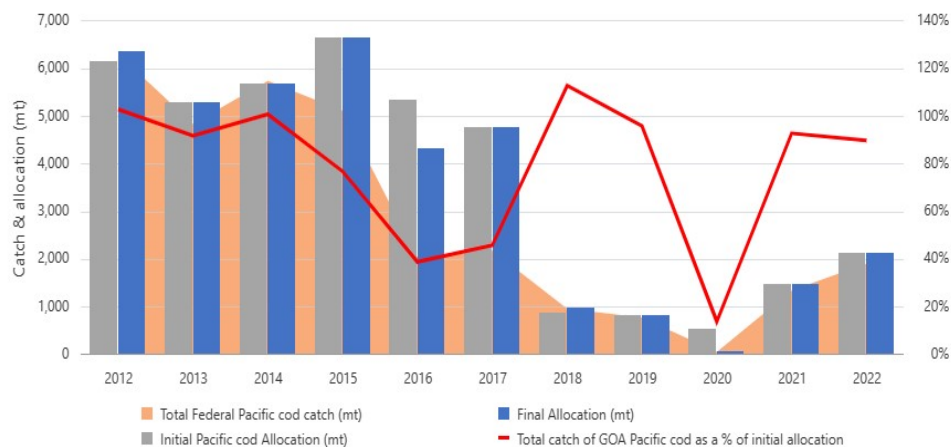


GOA Pacific Cod Catcher / Vessel Deliveries

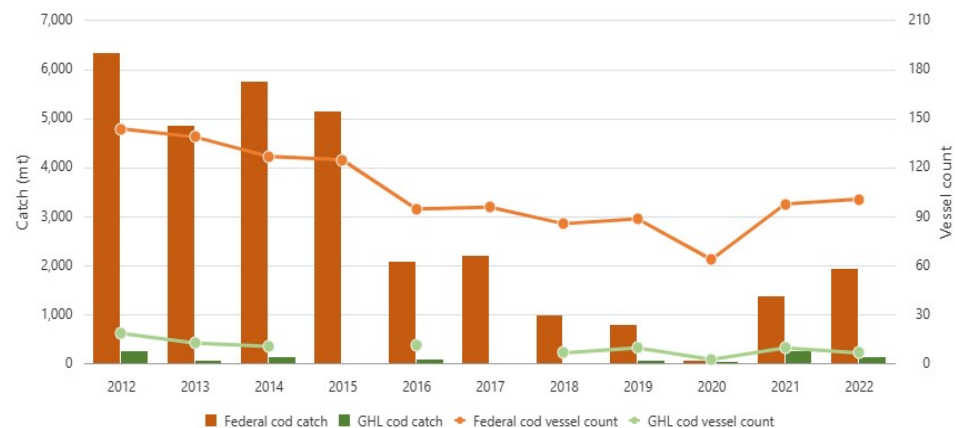


Central GOA Hook and Line<50' Catcher Vessel Sector

Catch and Allocations



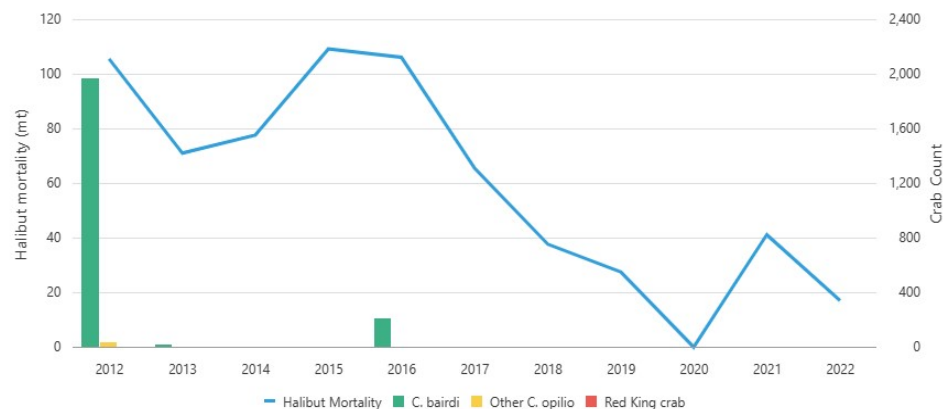
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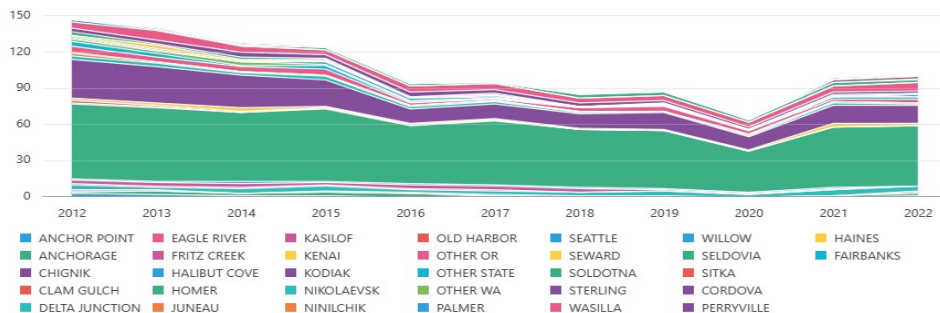
Pacific Cod Value



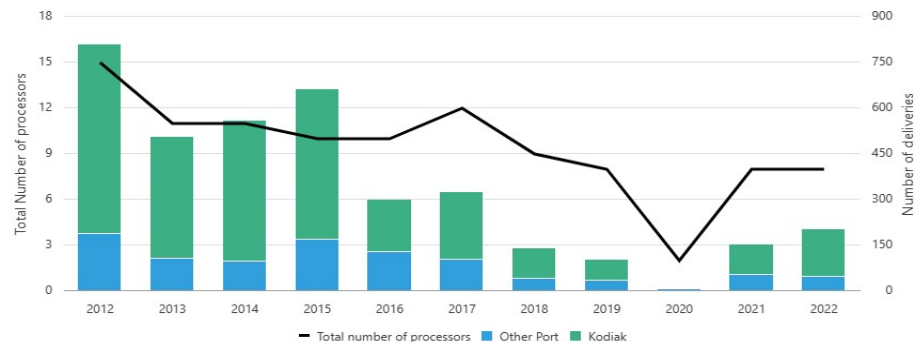
PSC Estimates



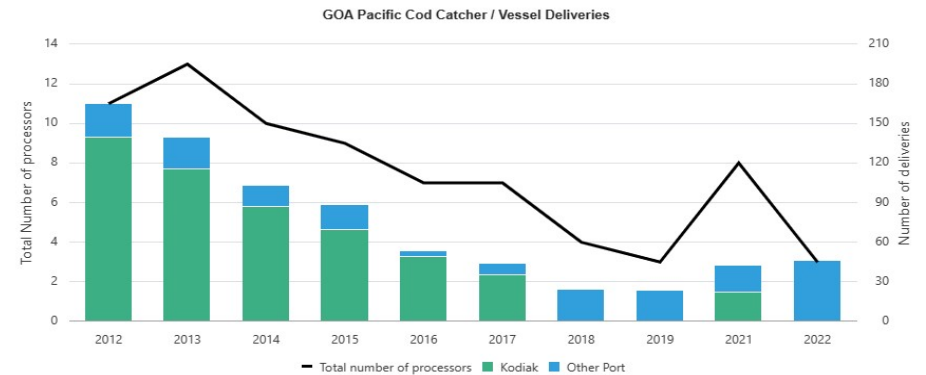
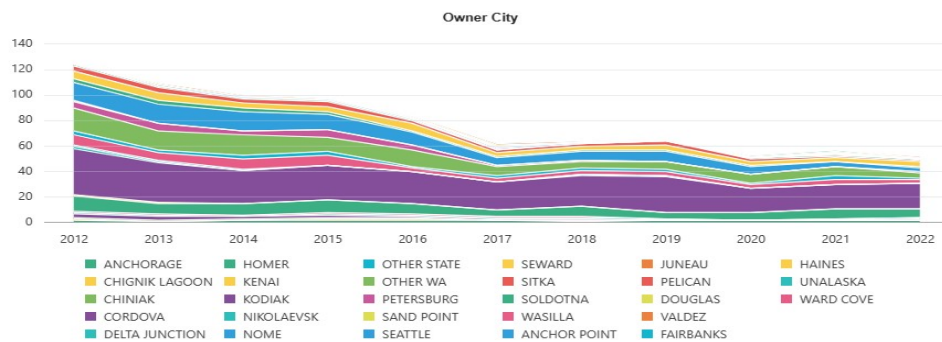
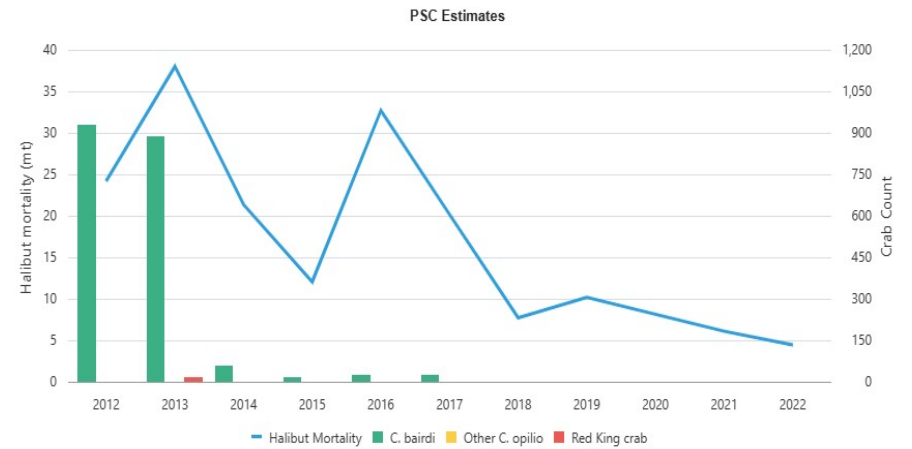
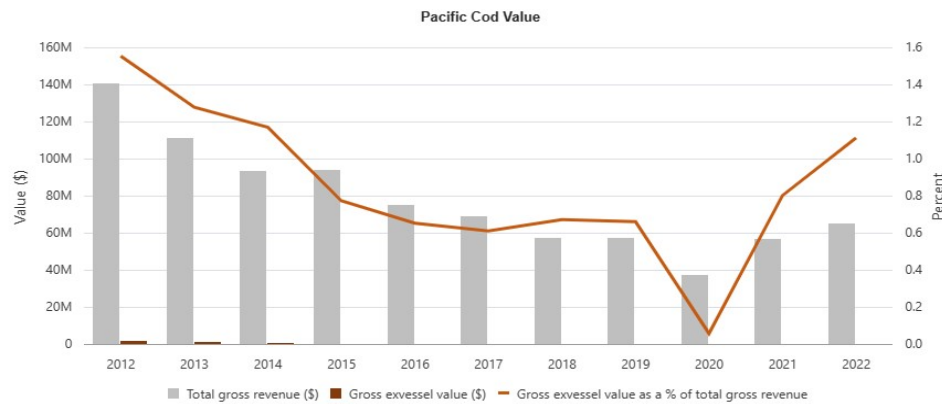
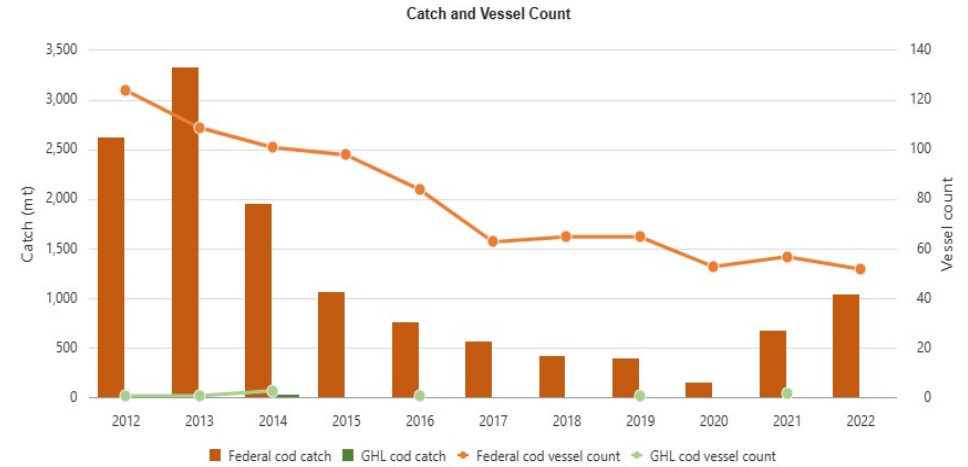
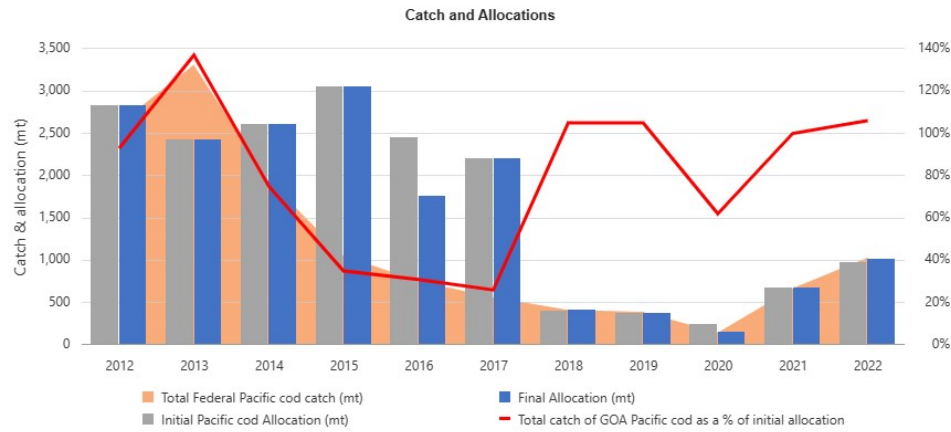
Owner City



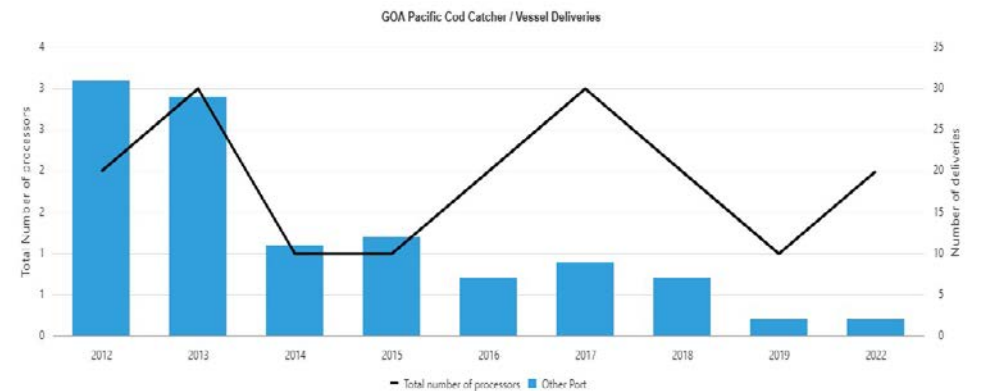
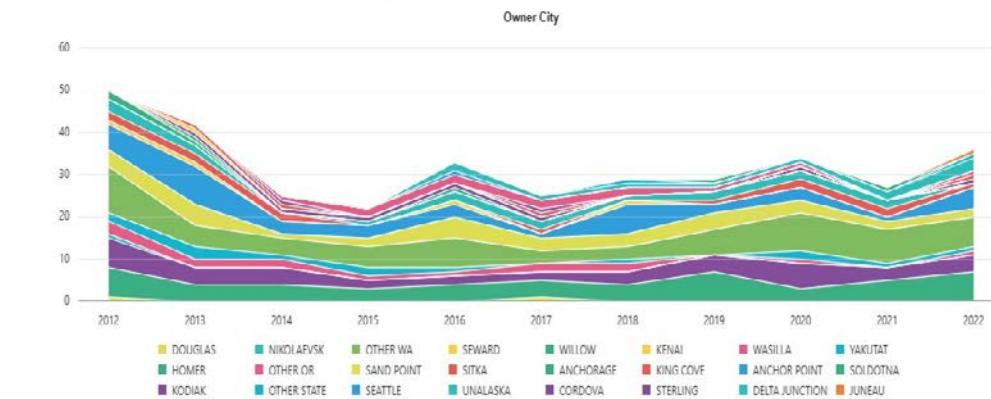
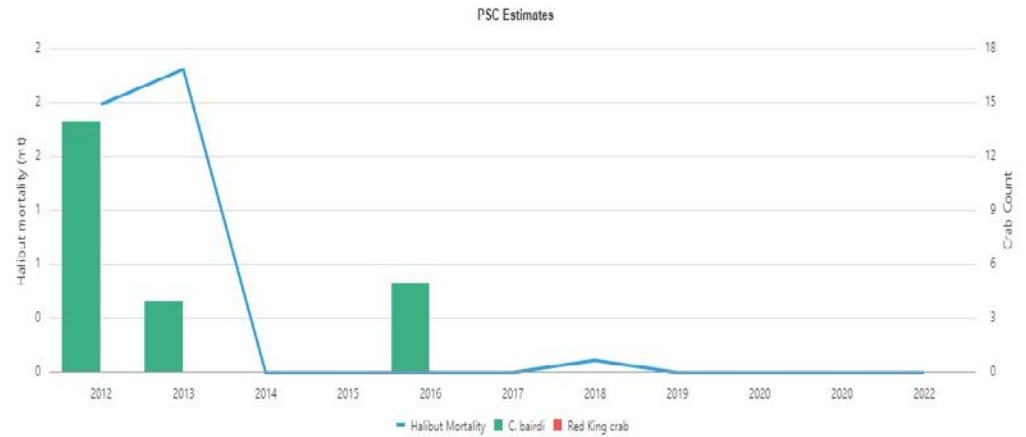
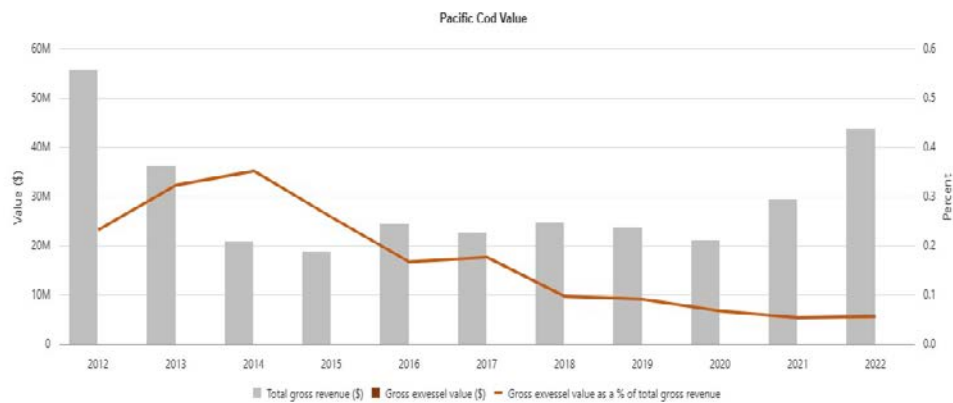
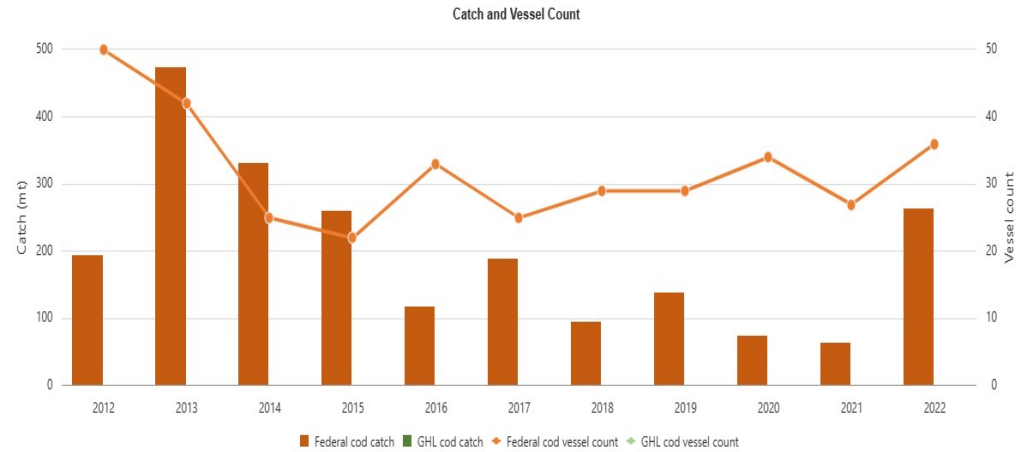
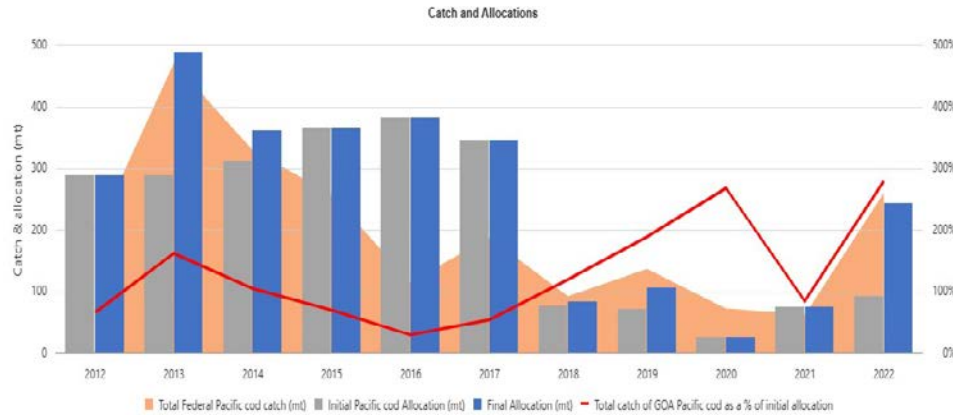
GOA Pacific Cod Catcher / Vessel Deliveries



Central GOA Hook and Line $\geq 50'$ Catcher Vessel Sector

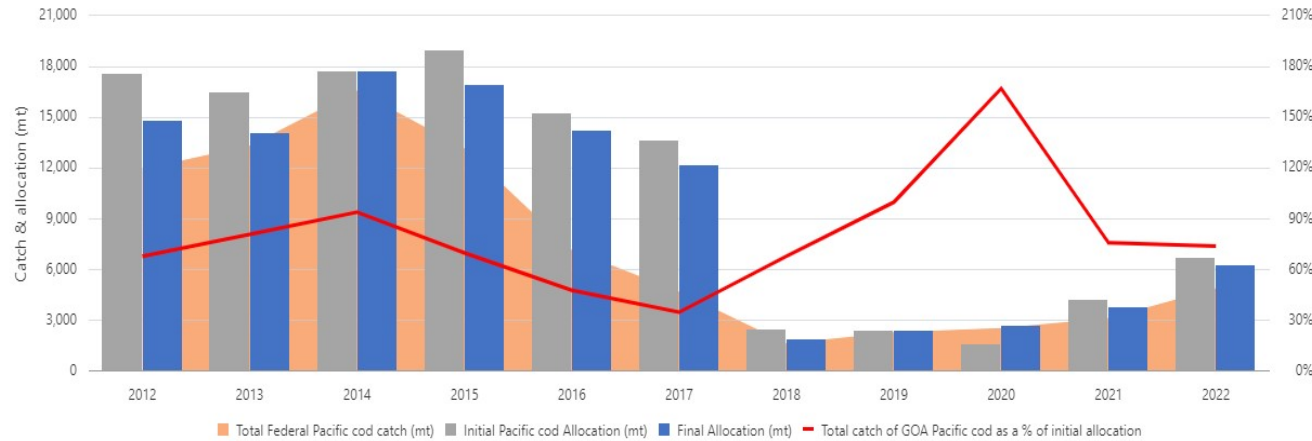


Western GOA Hook and Line Catcher Vessel Sector

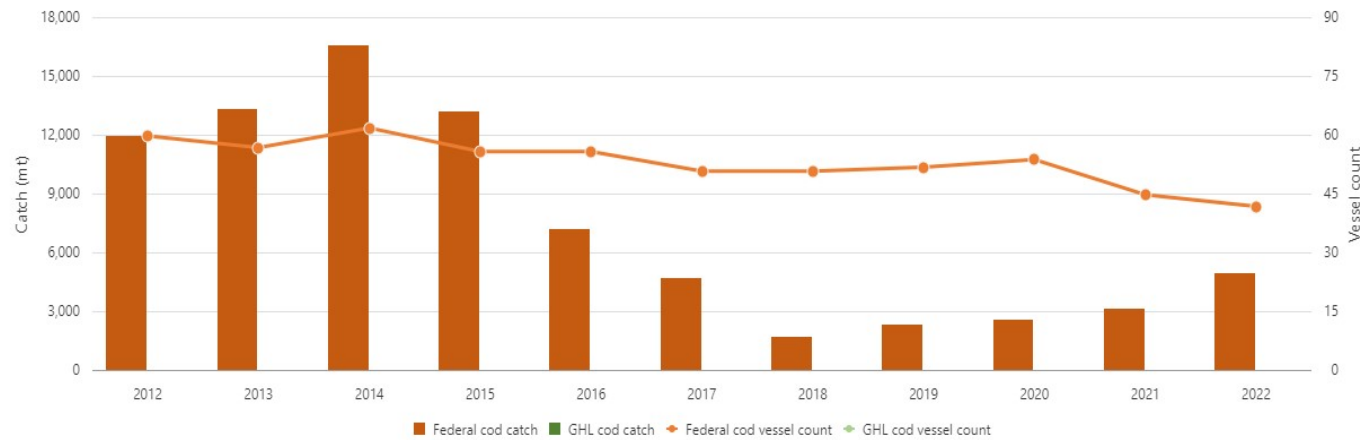


Central GOA Trawl Catcher Vessel Sector

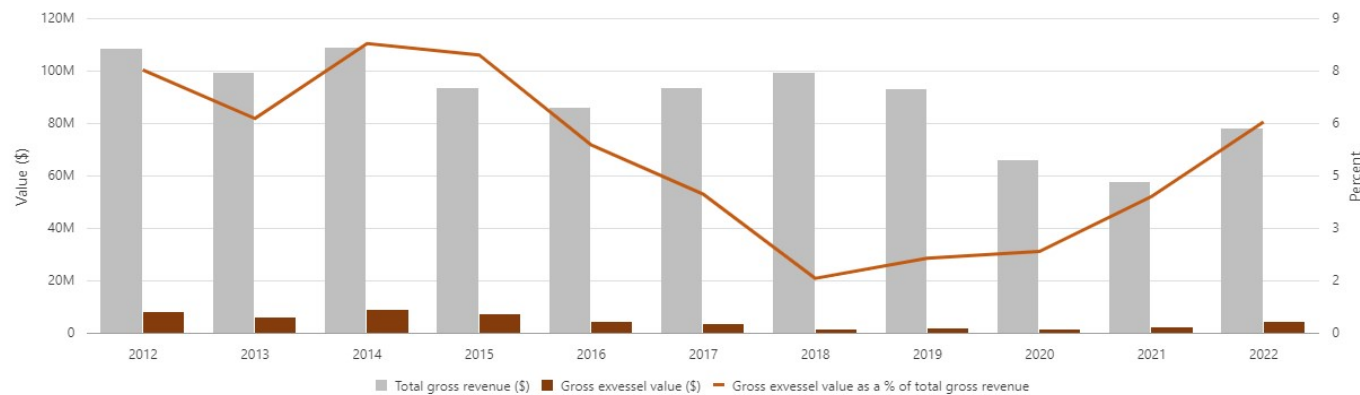
Catch and Allocations



Catch and Vessel Count

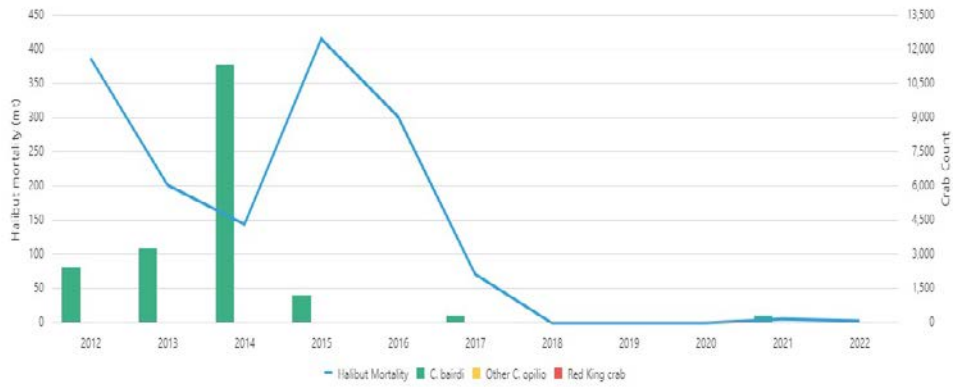


Pacific Cod Value

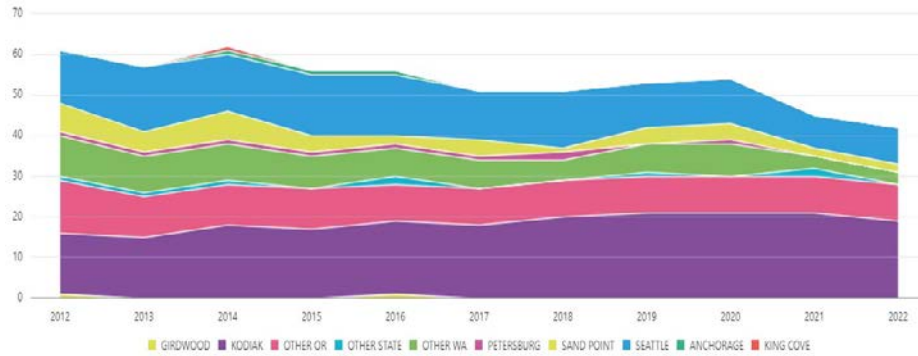


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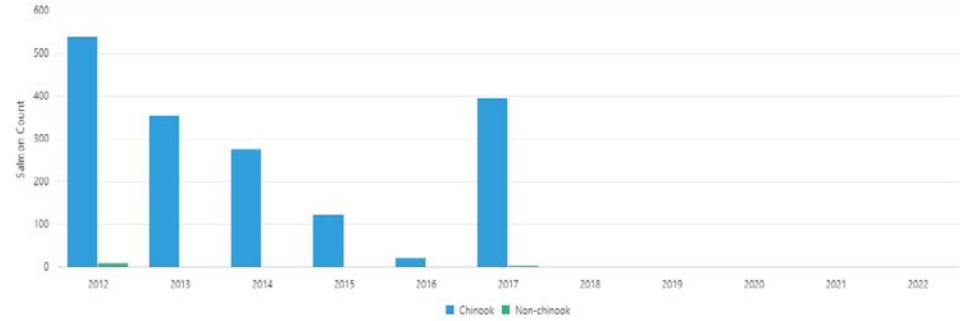
PSC Estimates



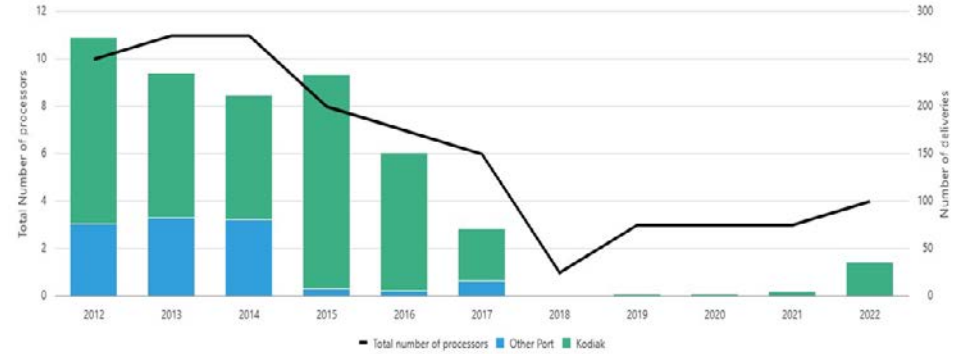
Owner City



PSC Estimates for Salmon

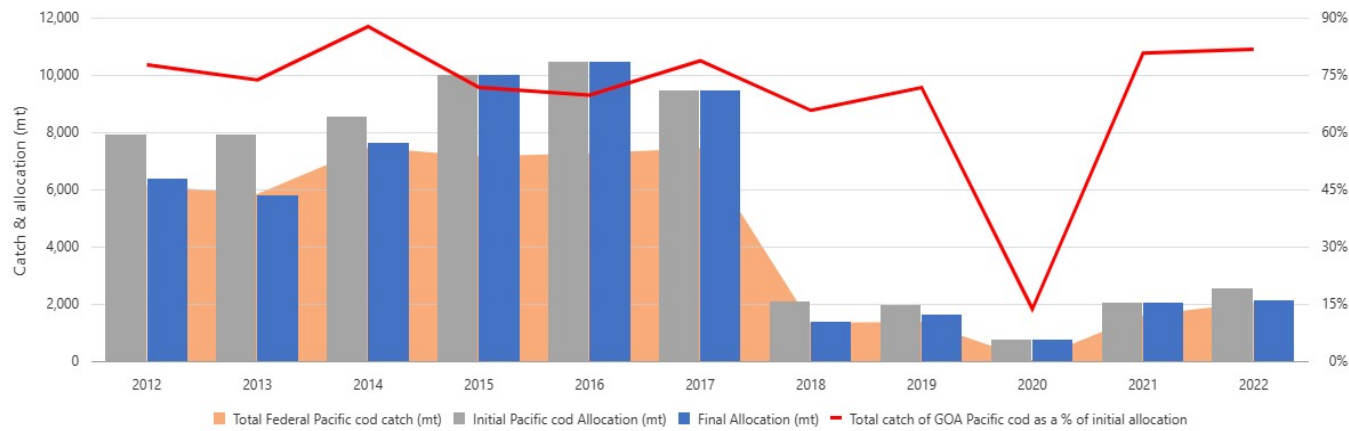


GOA Pacific Cod Catcher / Vessel Deliveries

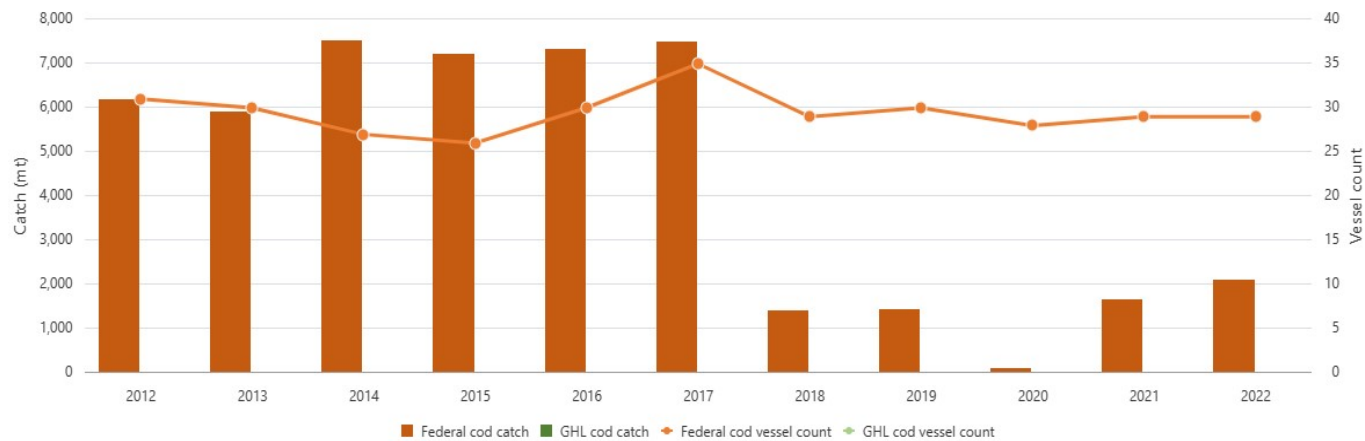


Western GOA Trawl Catcher Vessel Sector

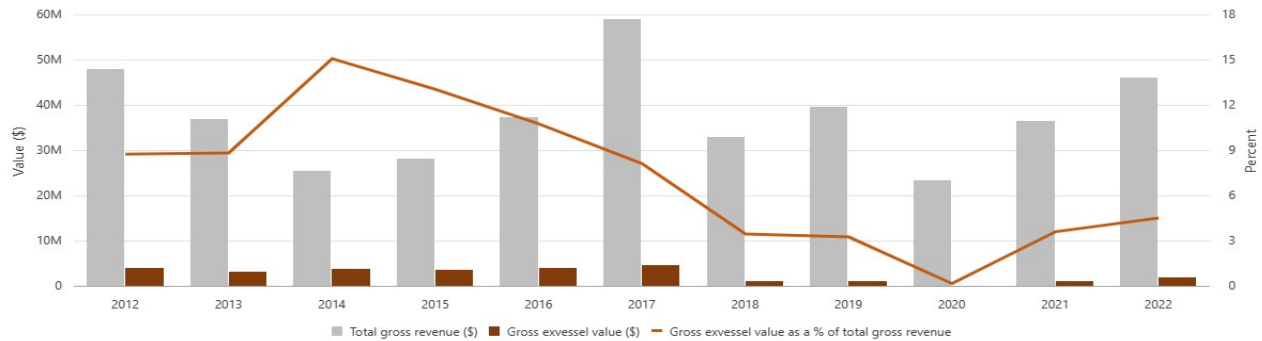
Catch and Allocations



Catch and Vessel Count

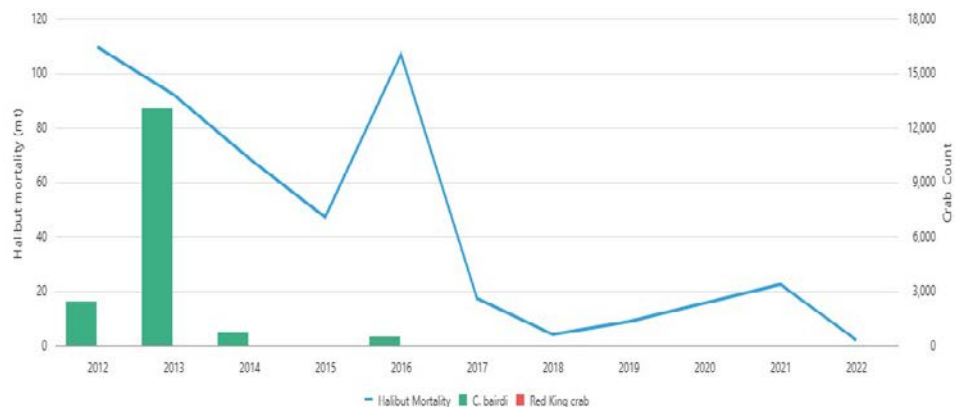


Pacific Cod Value

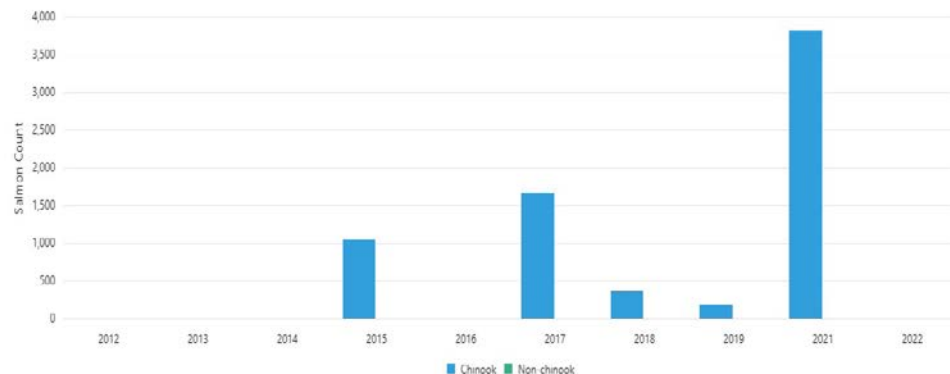


Western GOA Trawl Catcher Vessel Sector (continued)

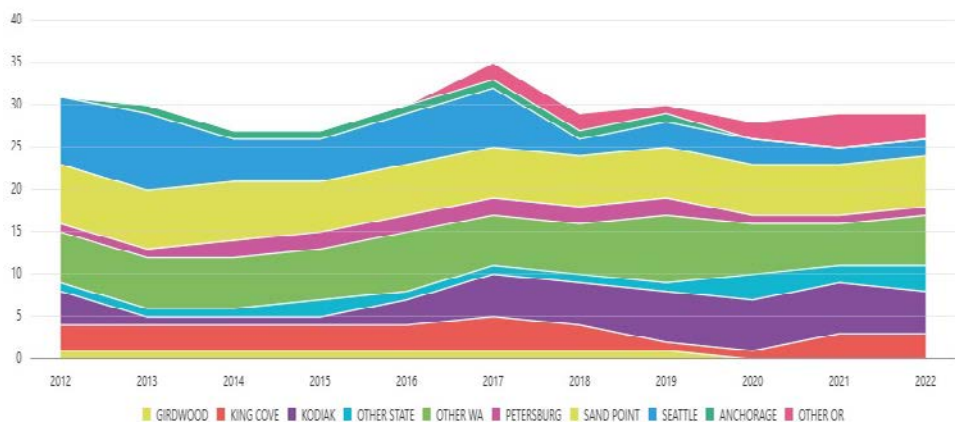
PSC Estimates



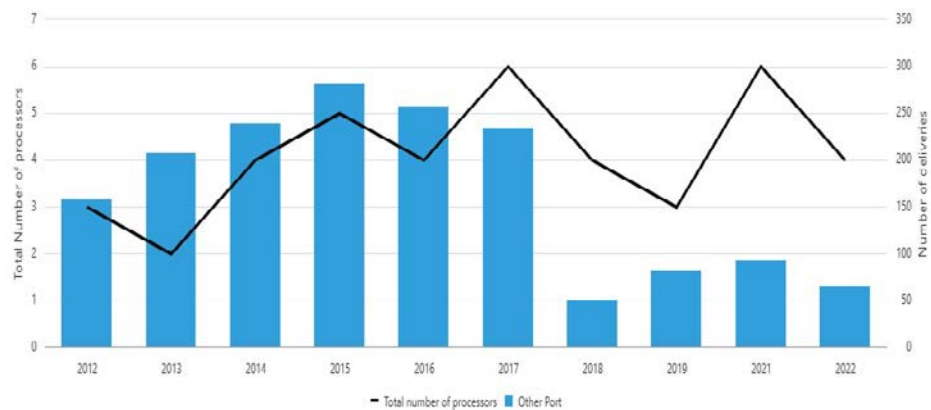
PSC Estimates for Salmon



Owner City

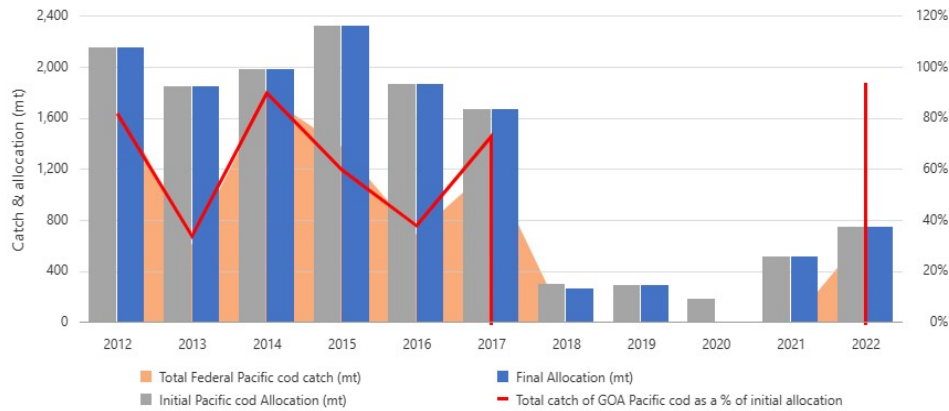


GOA Pacific Cod Catcher / Vessel Deliveries

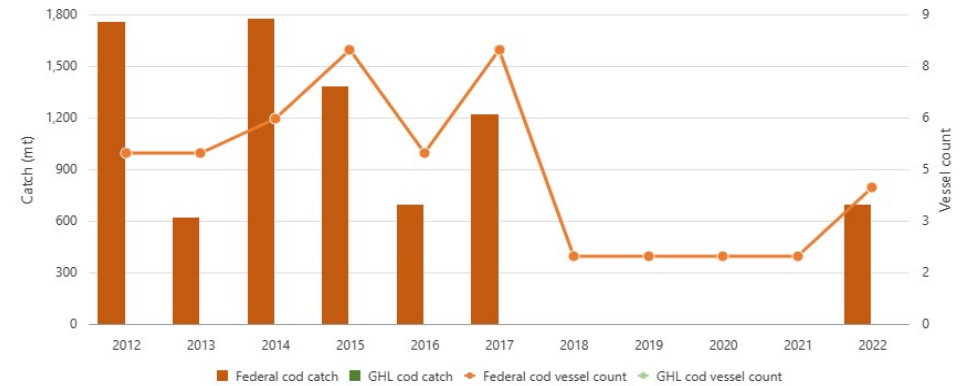


Central GOA Hook and Line Catcher Processor Sector

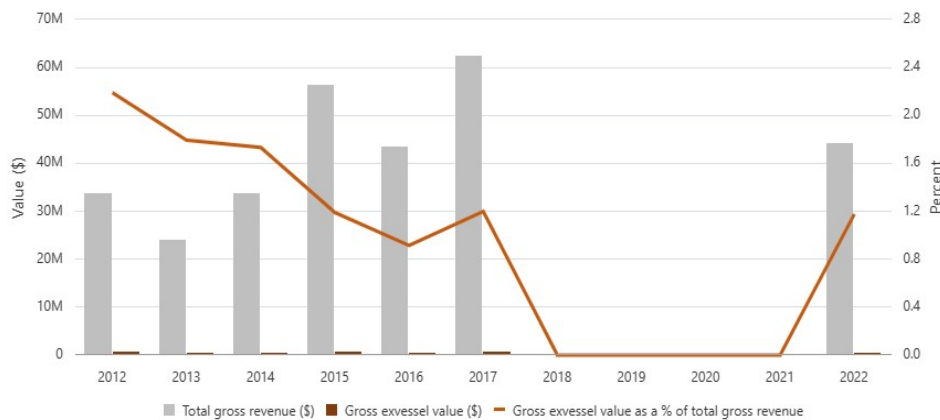
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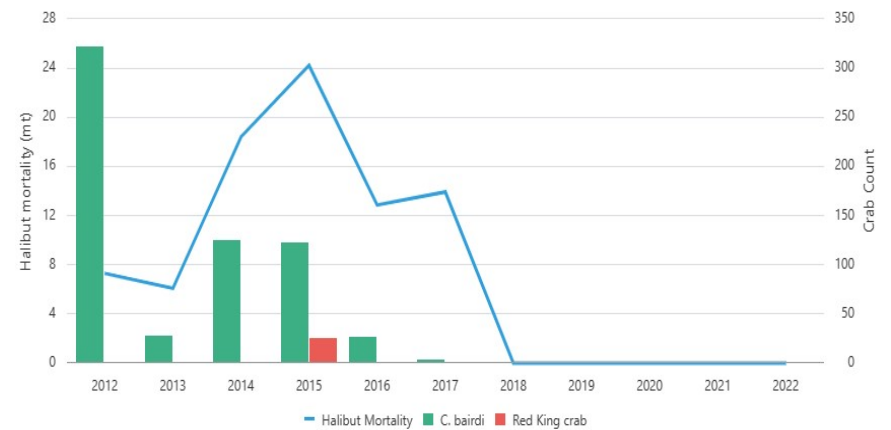
Catch and Vessel Count



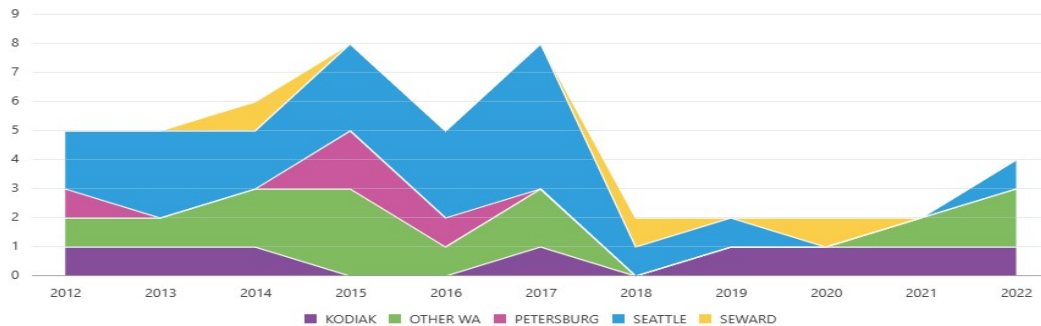
Pacific Cod Value



PSC Estimates

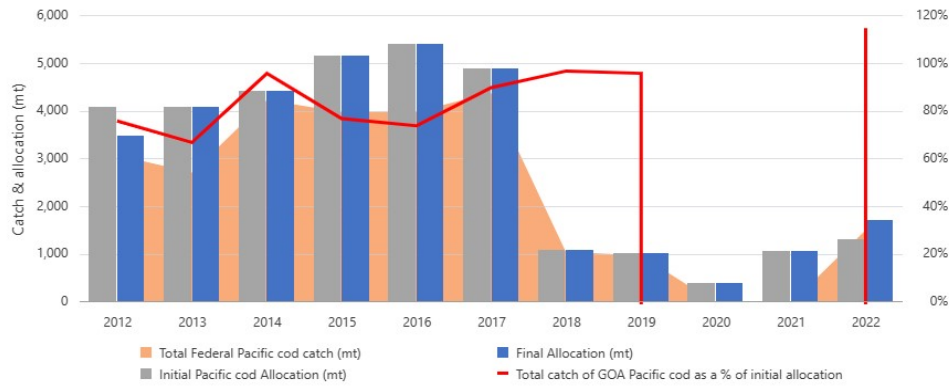


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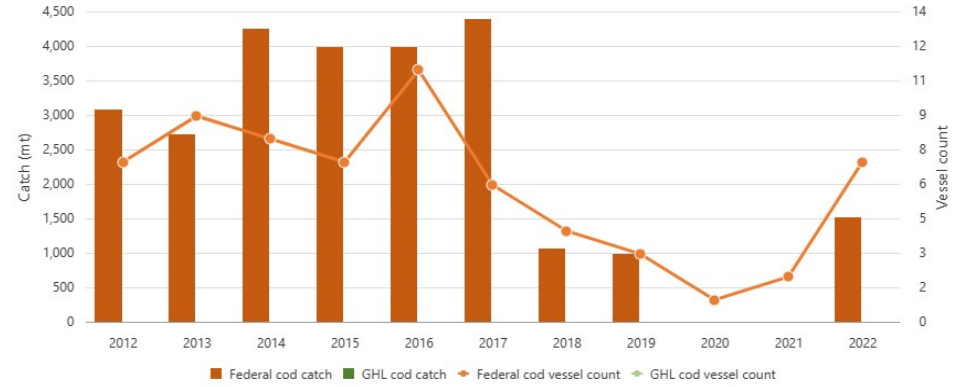


Western GOA Hook and Line Catcher Processor Sector

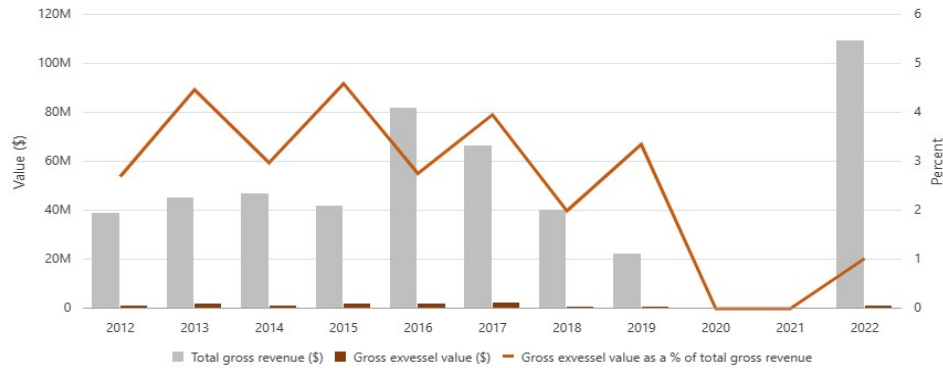
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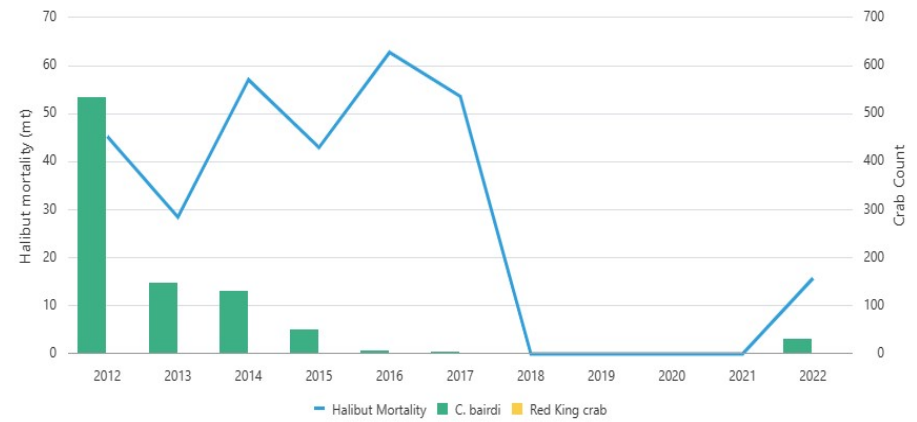
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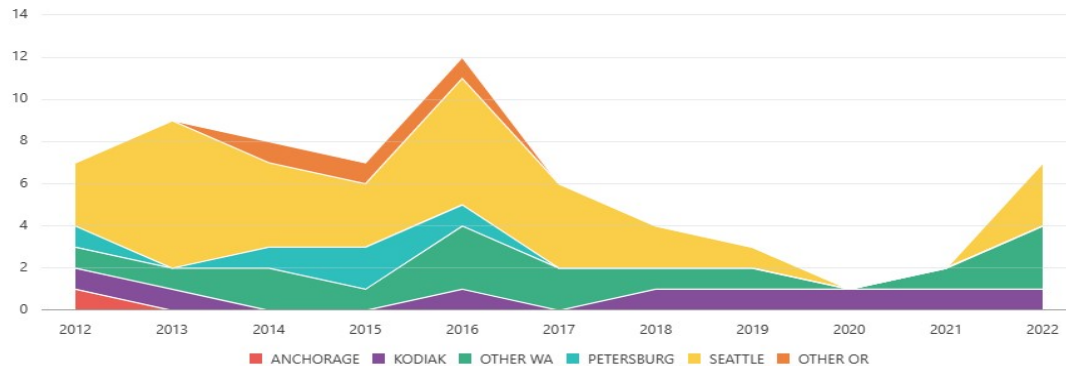
Pacific Cod Value



PSC Estimates

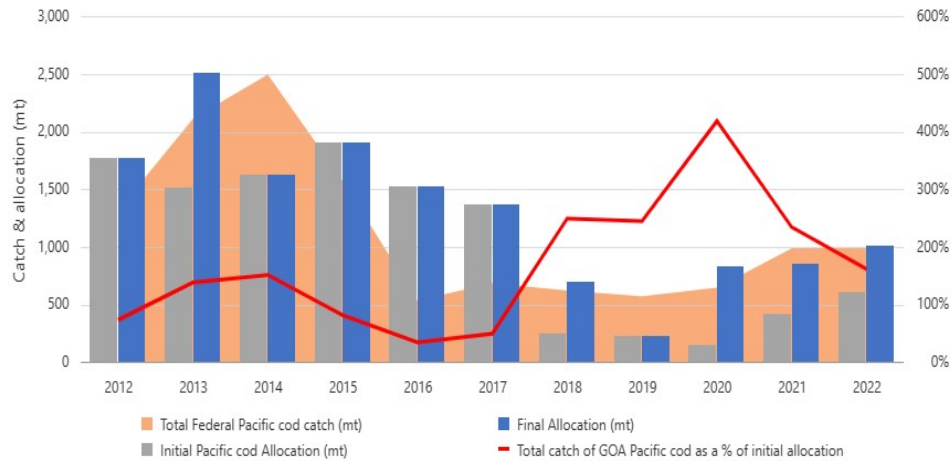


Owner City

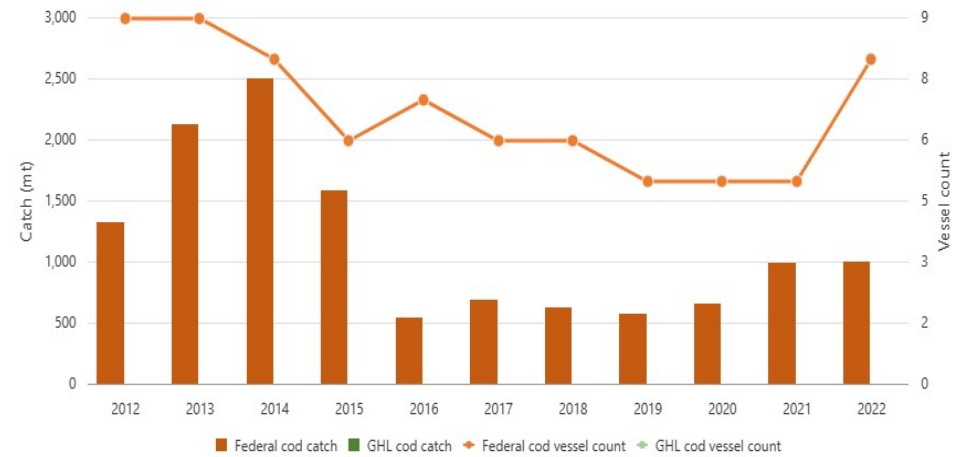


Central GOA Trawl Catcher Processor Sector

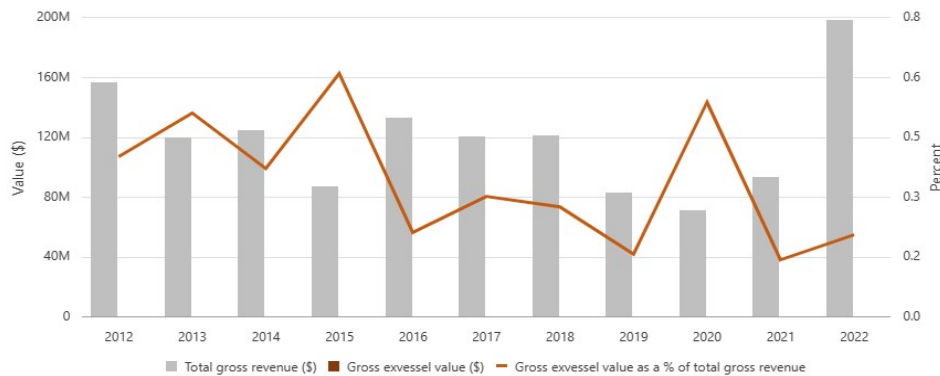
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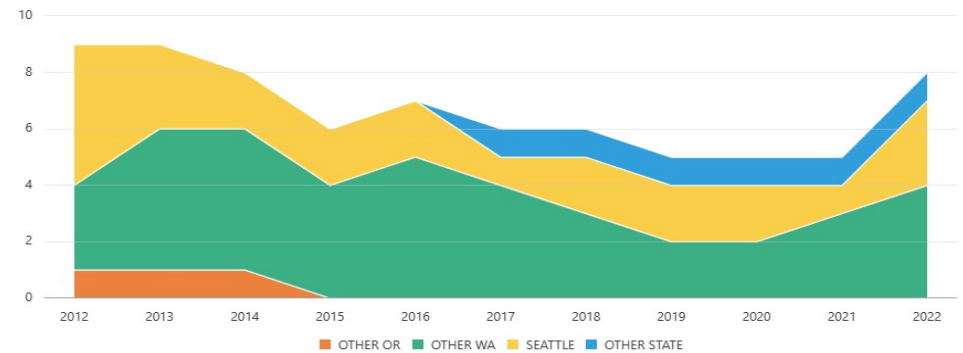
Catch and Vessel Count



Pacific Cod Value

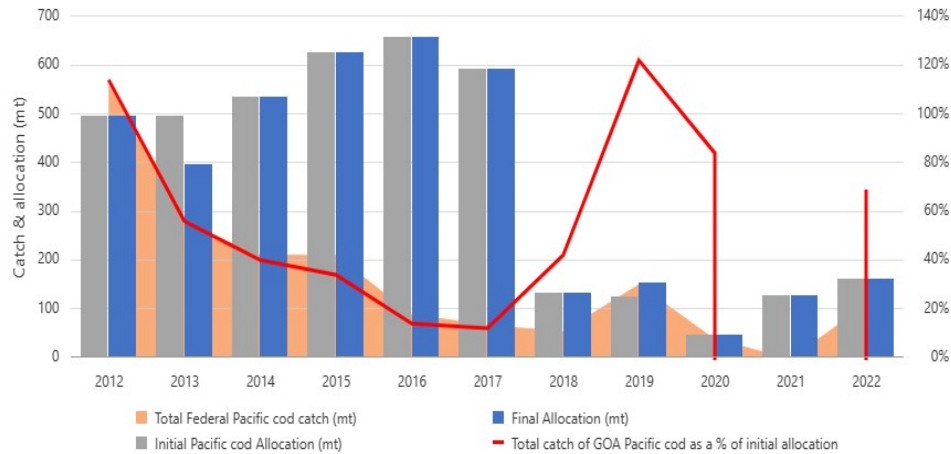


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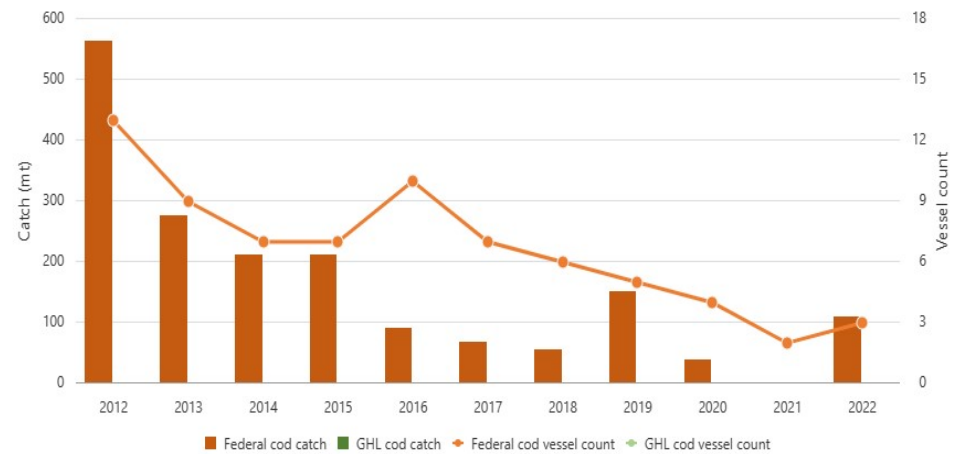


Western GOA Trawl Catcher Processor Sector

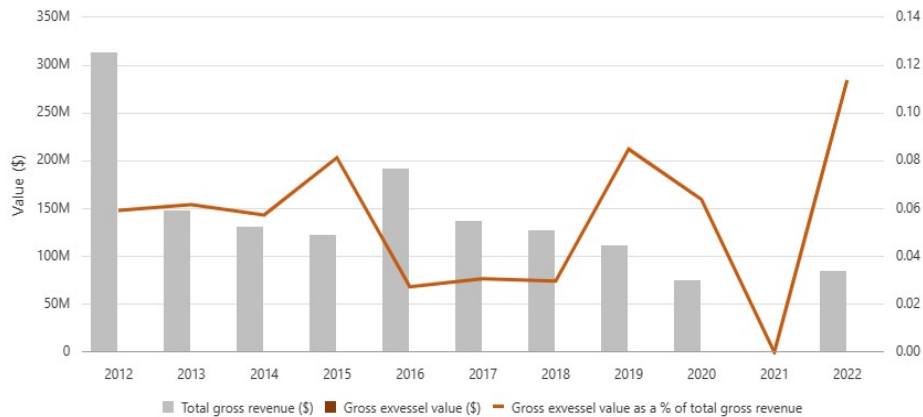
Catch and Allocations



Catch and Vessel Count



Pacific Cod Value



Owner City

