GROUNDFISH MANAGEMENT TEAM REPORT ON SCOPING OF MOTHERSHIP SECTOR UTILIZATION

The Groundfish Management Team (GMT) reviewed the materials provided in the advanced briefing book on this agenda item, as well as the Groundfish Advisory Subpanel's (GAP) draft purpose and need statement and list of proposals (Informational Report 4, GAP Informational Report for High Priority Groundfish Items, June 2020). The GMT appreciates the extensive public comment, testimony, and advisory body reports on matters related to this topic in addition to the work developed by the GAP in the Informational Report 4. The GMT has not yet been tasked to analyze this issue by the Pacific Fishery Management Council (Council) but provides this preliminary discussion on potential issues attributing to under attainment to inform the Council's further action at this juncture.

During a period of historically high Pacific whiting Total Allowable Catch (TAC) since 2016, the catcher-processor (CP) and shoreside (SS) Pacific whiting sectors have seen a margin of growth in both catch and revenue, while the mothership (MS) sector has not seen that same level of growth. However, the GMT notes that the whiting fleet as a whole has not been attaining the full Pacific whiting TAC in recent years. If the Council chooses to move forward with this action item, they should task staff and team analysts with providing an analysis to address the ongoing attainment issues for all three sectors of the Pacific whiting fleet and to investigate whether these sectors are meeting Amendment 20 of the Groundfish Fishery Management Plan (FMP) goals and objectives, including full utilization of resources and fair and equitable allocations. This analysis could inform finalization of the purpose and need and scoping of a preliminary range of alternatives.

As industry notes, the existing multi-sector consensus about the need for action and possible solutions will likely expedite a resolution relative to issues that have not reached the same level of consensus. However, developing an analysis to support consideration at the November 2020 Council meeting would need to be prioritized relative to all other ongoing issues given the short turnaround (i.e. October 13 advanced briefing book deadline).

## Pacific Whiting Utilization

The U.S. portion of the Pacific whiting TAC (after taking into consideration the tribal allocation and any set asides for incidental catch) is allocated 42 percent to SS, 34 percent to CP, and 24 percent to MS. When the trawl rationalization program was implemented in 2011, the at-sea sectors became formally managed via co-operatives ("co-ops")[1], while the shoreside Pacific whiting sector was integrated within the shorebased Individual Fishing Quota (IFQ) program with all catch required to be covered with quota pounds (QPs). Pacific whiting has had historically high TACs from 2014 to the present, 2017-2019 in particular. While catch in the non-tribal sectors from 2017 to 2019 has been higher than the previous 15 years, utilization across sectors has not kept pace (Figure 1). Trends through 2015 are discussed in the Five-year Review Section 3.1.3 (a)(2),

[1] The CP co-op (Pacific Whiting Conservation Cooperative) was established in 1997 and was formally included in the regulations with Amendment 20. Co-op management was new in the mothership sector with the adoption of Amendment 20.

with an explanation of numerous factors contributing to and the conclusion that "attainment of Pacific whiting was somewhat below the 2014 TAC, and it was far below the 2015 TAC. Many contributing factors are not attributable to implementation of catch shares", however "catch shares have created new flexibility that also may have affected utilization rates".

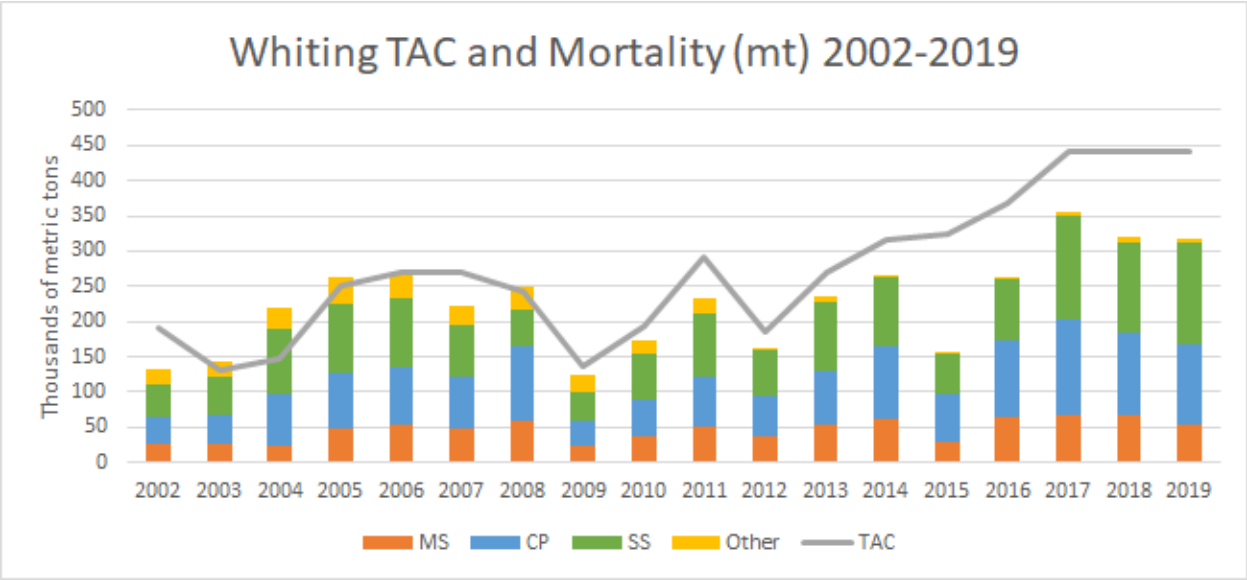


**Figure 1. TAC and mortality in thousands of metric tons for Pacific whiting 2002-2019 by sector. "Other" includes tribal catch and any incidental catch. The data were pulled from the 2002-2019 Groundfish Expanded Mortality Multiyear (GEMM) product from the NWFSC Observer Program.**

In the three years prior to the IFQ program implementation and the first three years of the IFQ program, each of the sectors attained over 90 percent on average (average TAC was 199,806 mt; Table 3). In recent years, attainment of Pacific whiting has remained stagnant with rising TACs in both at-sea sectors from 2011-2013 relative to 2008-2010, resulting in a decrease in the percentage of the TAC attained annually. Subsequently, each sector's attainment declined in 2014-2016 relative to 2011-2013, partially due to an anomalously poor fishing season in 2015 (see discussion in the Five-year Review, pg. ES-23 & 191). From 2017-2019, the MS sector attained an average of only 64 percent of their Pacific whiting allocation compared to 90 percent by the CP sector and 82 percent by the SS sector (Table 1). While the other two sectors have seen an increase in three-year average attainment since 2014 (2 percent increase in the CP sector and 21 percent increase in the SS sector), the three-year average attainment by the MS sector has decreased by 4 percent. Without accounting for tribal re-apportionment, all three sectors exceeded, on average, their respective initial allocations between 2008 and 2013 (CP = 117.1 percent; MS = 108.5 percent; SS = 100.22 percent). Since 2013, the CP sector has exceeded their initial allocation in 2014, 2016, and 2017, but neither the MS nor SS sectors have exceeded their initial allocations in any year during the same time period.

The Council may wish to consider what the goal is for utilization of Pacific whiting in each sector, recognizing that some degree of under attainment is to be expected. For example, 100 percent

attainment of allocations may be impossible due to other harvest strategies holding onto quota for bycatch incidents in the shoreside sector, or other constraining species (discussed below) limiting fishing for Pacific whiting in terms of area and time.

Further, the increase in three-year average inflation-adjusted ex-vessel revenue from 2014 to 2019 was only 2.3 percent and 0.8 percent of the CP and SS increases in that time period, respectively (Table 2). These differences suggest that, in the past three years, the MS sector has not grown to the same degree as the CP and SS sectors have. Based on the GMT's preliminary analysis, the MS sector, and to a lesser degree the CP and SS sectors, appear to not currently be meeting the Amendment 20 goal of full utilization of the trawl allocations.

**Table 1. Pre-Catch Share Program average attainment (in percentage) of the Pacific whiting allocation for 2008-2010 and three-year average attainment for the years 2014-2016 and 2017-2019 by the Pacific whiting sectors. Attainment is shown for both pre- and post-tribal reapportionment and any within-sector reapportionment. Data are from the Pacific States Marine Fisheries Commission's PacFIN and NorPAC databases.**

| Sector | Tribal Reapportionment | Three Year Average Annual Attainment (percent) | | | | Change in Three-Year Average Attainment, 2014-2019 |
|---|---|---|---|---|---|---|
| | | 2008-2010 | 2011-2013 | 2014-2016 | 2017-2020 | |
| **MS** | Pre | 110.5 | 106.4 | 77.6 | 71.2 | - 6.4 |
| | Post | 104.4 | 95.1 | 68.2 | 64 | - 4.2 |
| **CP** | Pre | 124.6 | 109.6 | 99.6 | 99.9 | + 0.3 |
| | Post | 98.6 | 97.9 | 87.7 | 89.9 | + 2.2 |
| **SS IFQ** | Pre | 91.7 | 108.8 | 70.2 | 92.1 | + 21.9 |
| | Post | 95.3 | 97.4 | 61.7 | 82.9 | + 21.2 |

a/ 2019 attainment is derived from the Estimated Discard and Catch of Groundfish Species in the 2019 U.S. West Coast Fisheries report (Agenda Item C.1.a, NWFSC Report 3, September 2020)

**Table 2. Pre-Catch Share Program average ex-vessel revenue for Pacific whiting by sector for 2008-2010 and three-year average ex-vessel revenue for the years 2014-2016 and 2017-2019 by Pacific whiting sector. All revenues are in millions of dollars and adjusted for inflation. Data are from the Pacific States Marine Fisheries Commission's PacFIN and NorPAC databases.**

| Sector | Three Year Average Annual Ex-vessel Revenue (millions of dollars) | | | | Change in Three-Year Average Ex-vessel Revenue, 2014-2019 |
|---|---|---|---|---|---|
| | 2008-2010 | 2011-2013 | 2014-2016 | 2017-2020 | |
| **MS** | $10.3 | $14.7 | $11.4 | $11.4 | + $0.066 |
| **CP** | $16.8 | $21.4 | $20.6 | $23.6 | + $2.9 |
| **SS IFQ** | $10.5 | $25.5 | $16.6 | $25.1 | + $8.5 |

## Potential Causes of Under-Attainment

The following sections provide a preliminary description of some potential causes of under attainment of the Pacific whiting fishery, and specifically the MS sector, allocations. This list is not exhaustive, but highlights issues currently under discussion.

### Processor Availability and Alaska Walleye Pollock Interactions

As described in Informational Report 4, processor availability during the Pacific whiting season has been limited due to the Alaska walleye pollock fishery's record high catch limits in recent years. Catch (and TAC) has increased substantially in both fisheries over the past ten years. Many Pacific whiting vessels earn the majority of their revenue in Alaska fisheries, and most West Coast permitted MS and CP processors process about 60-90 percent of their annual product in Alaska each year (EDC FishEye). As shown in Table 3 below, and heard in public comment, the higher volume and price of walleye pollock incentivize portfolio vessels and processors to prioritize this fishery above Pacific whiting. Processors may be responding to the higher volumes in both the walleye pollock and Pacific whiting fisheries by increasing capacity, as public comment indicates that a new mothership processor vessel currently being developed is expected to be larger than any existing vessels in the fishery and is planned for use in primarily the Alaska walleye pollock fishery.

**Table 3. Eastern Bering Sea walleye pollock and U.S. Pacific whiting TAC (mt), catch (mt), and price (in $2020) 2008-2019. (SS = Shoreside IFQ; MS = Mothership)**

| | Alaska Walleye pollock | | | Pacific whiting | | | |
|---|---|---|---|---|---|---|---|
| Year | TAC | Catch | Price per lb. | TAC | Catch | SS price per lb. | MS price per lb. |
| 2008 | 1,000,000 | 990,578 | $0.22 | 269,545 | 250,292 | $0.14 | N/A |
| 2009 | 815,000 | 810,784 | $0.20 | 135,939 | 124,270 | $0.08 | $0.09 |
| 2010 | 813,000 | 810,206 | $0.22 | 193,935 | 171,887 | $0.10 | $0.12 |
| 2011 | 1,252,000 | 1,199,041 | $0.20 | 290,903 | 232,250 | $0.13 | $0.11 |
| 2012 | 1,200,000 | 1,205,212 | $0.20 | 186,037 | 160,639 | $0.16 | $0.12 |
| 2013 | 1,247,000 | 1,270,768 | $0.18 | 269,745 | 234,500 | $0.14 | $0.10 |
| 2014 | 1,267,000 | 1,297,420 | $0.16 | 316,206 | 265,122 | $0.12 | $0.10 |
| 2015 | 1,310,000 | 1,321,581 | $0.14 | 325,072 | 155,936 | $0.09 | $0.10 |
| 2016 | 1,340,000 | 1,352,707 | $0.13 | 367,553 | 263,436 | $0.08 | $0.08 |
| 2017 | 1,345,000 | 1,343,217 | $0.12 | 441,433 | 356,840 | $0.08 | $0.08 |
| 2018 | 1,364,341 | 1,379,306 | $0.12 | 441,433 | 319,093 | $0.08 | $0.08 |
| 2019 | 1,397,000 | 1,387,000 | N/A | 441,433 | 317,705 | $0.09 | N/A |

(Ianelli et al. Assessment of the Walleye Pollock Stock in the Eastern Bering Sea, 2019).

CP days at sea in the Pacific whiting fishery have been generally trending upward since 2010, coinciding with the increasing TAC (Figure 2). Comparatively, in the past three years, MS

processor participation, using days-at-sea as a proxy, seems to be trending downward since 2016. Processor availability (as measured by days with deliveries) in the MS sector appears to vary from year to year within seasons relative to the CP sector, possibly related to opportunities for catcher vessels and processing platforms in other fisheries. The implementation of the catch share program also impacted shoreside processing of Pacific whiting; Guldin and Anderson[2] explain in a 2018 paper that, through eliminating the derby fishery,

> The IFQ program was "expected to result in a decline in processing demand, thus reducing the value of processing capital and potentially leading to a contraction in the number of processing companies" (PFMC and NMFS 2010). The allocation of 20% of the harvest quota to the processing sector was partially justified by the argument that longer seasons with lower daily landings would reduce the processing capacity needed in the sector, "stranding" processing capital, which was both defended (Matulich 2010) and critiqued (Wilen 2009) by researchers. The number of firms purchasing Pacific whiting has decreased since the implementation of IFQs...Many firms that exited had comparatively small market shares that were then distributed across firms under IFQs.
>
> In addition to consolidation, there have been some geographical shifts in Pacific whiting landings over the last decade. The percentage of coast-wide Pacific whiting purchased south of Newport, OR, which was as high as 14% in 2008, dropped to 0 under IFQs, and the majority of the buying locations that no longer received Pacific whiting under IFQs were located in California and southern Oregon. This shift in the location of landings is likely due to the opportunities afforded in the California Pacific whiting fishery under derby conditions that were no longer relevant under IFQs. These vessels would deliver to several locations, some of which offloaded fish that was then trucked out of state for processing (PFMC and NMFS 2010). Fleet consolidation may have influenced this regional shift in landings as about one-third of the vessels that landed fish in California no longer participated in the Pacific whiting fishery. In addition, the majority of these California landings occurred prior to the primary season opening and, without a race to fish under IFQs, vessels and processors have increased flexibility to determine when and where to fish and process, and less incentive to take advantage of the earlier opening in California.

Consolidation was anticipated with the formation of the program; the number of dealers decreased from 20 (owned by 15 companies) in 2010 to nine (owned by seven companies) in 2011 and has averaged only 8.6 dealers to date in the IFQ era. As described in Agenda Item D.1, Attachment 1, September 2020, between 12 and 15 receivers in 2009 and 2010 received trawl landings but did not obtain a First Receiver license when the IFQ program started. A number of these dealers had previously purchased only Pacific whiting.

[2] Guildin, Marie and Chris Anderson, "Catch Shares and Shoreside Processors: A Costs and Earnings Exploration into the Downstream Sector". *Marine Resource Economics*, volume 33, number 3. 2018

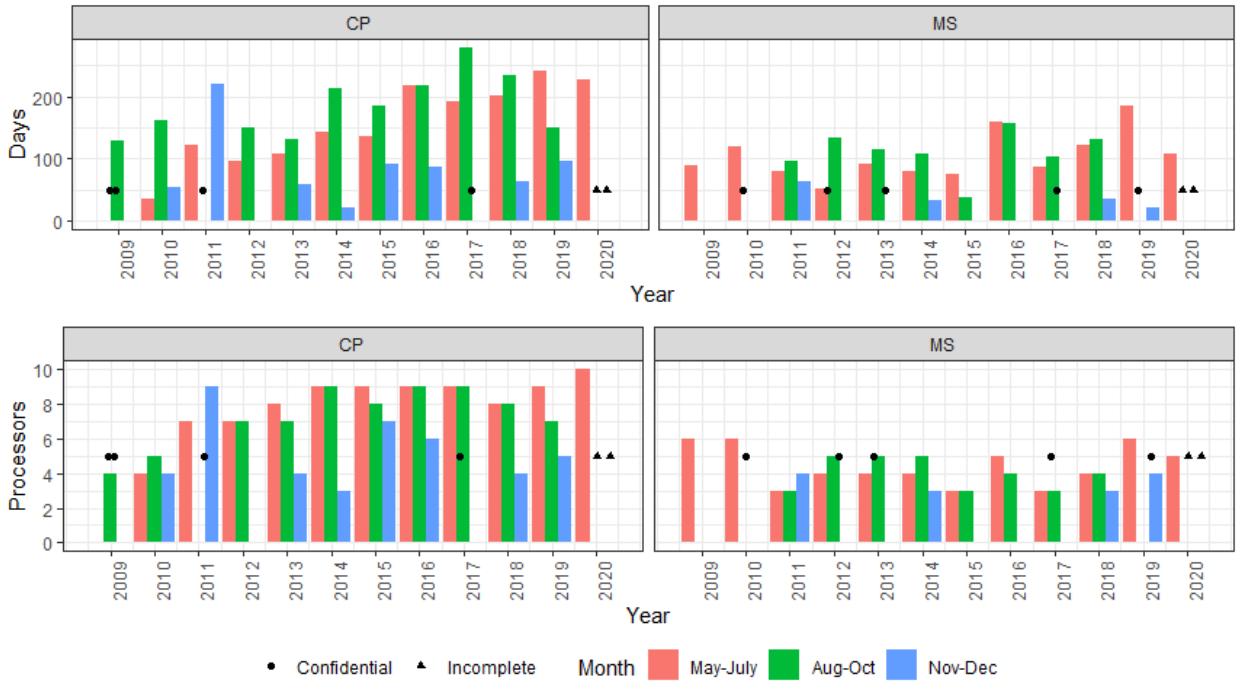


**Figure 2. Unique haul dates by vessel (days at sea proxy; top panel) and number of processors (bottom panel) by sector and month ranges for the at-sea Pacific whiting sectors, 2009-2020 (to date).**

## Catcher Vessel Availability and Inter-sector Interactions

There is substantial (greater than 75 percent) overlap in participation by MS catcher vessels in the shoreside fishery. This effort appears to be steadily shifting from the MS to SS fishery. From 2008-2010, MS sector boats caught 0.85 lbs. in the SS sector for every pound of MS catch. From 2018-2020 (to date), that ratio has flipped, to 2.3 lbs. of SS catch for every pound in the MS sector. As discussed in the Five-Year Review referenced above, the provisions of the catch share program brought catcher vessels greater flexibility with which to maximize performance across a portfolio of fisheries, including between the at-sea and shoreside Pacific whiting sectors, and other West Coast and Alaska fisheries (the latter discussed in detail above).

Some Pacific whiting MS-permitted processors operate as CPs in Alaska; in 2020 industry requested an emergency rule to allow Pacific whiting CPs to also act as MSs within the 2020 season (85 FR 37027), but industry has noted that no vessels have used this allowance to date. The recently finalized Vessel Movement Monitoring rule provided catcher vessels additional flexibility to change declarations mid-trip between MS and SS sectors (85 FR 35594). The Council has considered, but not forwarded, proposals in the past to allow inter-sector trading of IFQ pounds, however the 2021-2022 biennial harvest specifications and management measures recommended by the Council in June eliminated sector-specific bycatch constraints, allowing greater flexibility, and the need for increased coordination between, the CP and MS sectors (June 2020 Decision Document).

Further analysis to support consideration of rationale and alternatives should take this interplay into consideration. The GMT suggests seeking increased utilization as a whole for the SS and MS sector, or if the analysis identifies obstacles to doing so, then focusing on improving MS sector utilization without merely shifting effort back away from the SS sector.

## Bycatch Management

The Council has discussed and taken action on bycatch management within the Pacific whiting sectors, specifically the at-sea sectors, several times. The Pacific whiting sectors have historically been managed with sector-specific bycatch caps since 2007. Under the trawl rationalization program, the at-sea co-ops initially received sector-specific allocations for widow rockfish, darkblotched rockfish, canary rockfish, and Pacific ocean perch. As noted above, any bycatch in the shoreside Pacific whiting sector must be covered with QPs. With all four bycatch cap species being overfished and having low annual catch limits, allowances for each of the sectors were constraining at the fleet and individual level. As an example, in 2014, high bycatch of darkblotched rockfish resulted in exceedance of the MS sector allocation and premature closure of the sector.

Over time, through various follow-on actions (Amendment 21-3 and 21-4) along with the rebuilding of the four stocks (canary rockfish, darkblotched rockfish, widow rockfish, and Pacific ocean perch), the Council recommended establishing bycatch set asides, rather than allocations, as is custom for all other species with some incidental take. The at-sea sector is meant to manage their bycatch to set asides without any regulatory enforcement. Despite a lack of regulatory enforcement, industry makes a concerted effort to avoid bycatch species to free up space in both their nets and processing infrastructure, which is specifically designed for Pacific whiting, and to avoid unintended impacts to these species that could result in once again needing to formally regulate them. This voluntary management could also contribute to their inability to fully attain their whiting allocation.

At that same time, sablefish north of 36° N. lat., shortbelly rockfish, and Chinook salmon have all been a constraint in the Pacific whiting sectors (both shoreside and at-sea). This has led to NMFS requesting voluntary avoidance through public notice and, consequently, vessels have moved to other areas where Pacific whiting may not be as prevalent, leading to increased operational costs and possibly lost fishing opportunity. Figure 3 below provides a look at the bycatch rates (mt per 1,000 mt of Pacific whiting) of four select species (darkblotched rockfish, sablefish north of 36° N. lat., shortbelly rockfish, and widow rockfish) across the three Pacific whiting sectors from 2011 to September 10, 2020. Excluding 2020, recent years have seen a significant increase in the bycatch rate of each of the four species, both in the MS and SS sectors. To a lesser degree, bycatch rates in the CP sector have also increased compared to the first five years of trawl rationalization.

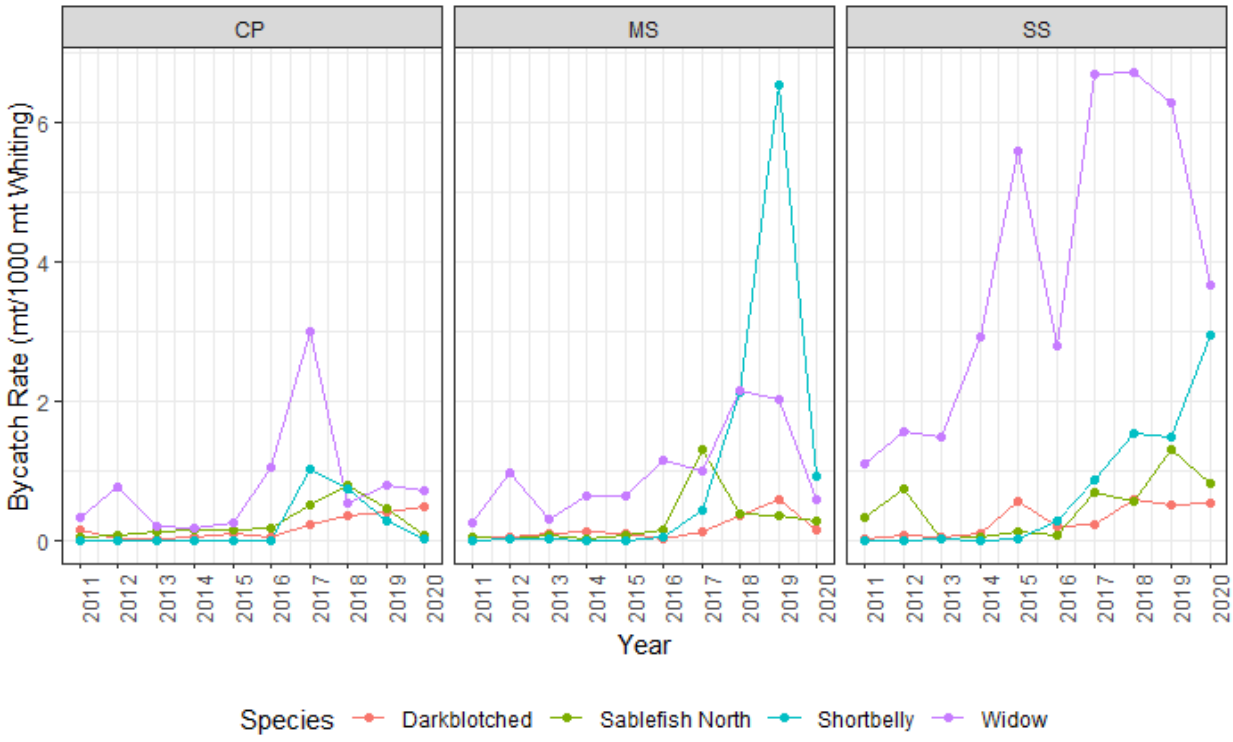


**Figure 3. Bycatch rate (mt per 1,000 mt of Pacific whiting) from 2011-2020 (through 9/10/20) by sector (CP = catcher processor, MS = mothership, and SS = shoreside) for select constraining species: darkblotched rockfish, sablefish north of 36° N. lat., shortbelly rockfish, and widow rockfish.**

Through the 2021-22 harvest specifications and management measures process, the Council recommended increasing many of the set asides for constraining species based on industry agreed upon levels (Agenda Item G.6.a, Supplemental GMT Report 1, April 2020). The stocks under those set asides now have biomass levels above the management target and have no conservation concern, so the primary purpose of setting those amounts was to account for expected mortality in the at-sea sectors while minimizing the risk of stranding quota that may otherwise be used in the shoreside sector. While these values will likely provide some relief in terms of bycatch management, given changing ocean conditions, high Pacific whiting TACs, and Chinook salmon avoidance measures, some bycatch species could still constrain the at-sea sectors in fully attaining Pacific whiting allocations.

## Regulatory Issues

The GMT briefly discussed regulatory mechanisms that could potentially be impacting attainment in the whiting fishery (raised in Informational Report 4, GAP Informational Report for High Priority Groundfish Items, June 2020).

**Time and area restrictions**

The start of the Pacific whiting season has varied since the conversion of the fishery from foreign to domestic, when the start date was set at January 1. Foreign fisheries typically moved into the

fishery in April when "fishable concentrations of whiting were available", and the start date was moved to April 15 in 1992 to approximate this natural start time (PFMC 2015). In 1996, the season was moved back to May 15 in some areas to minimize bycatch of Chinook salmon, which was unusually high in 1995. The dates have fluctuated between April and June in the shorebased fishery to accommodate participation in shoreside, at-sea, and Alaska fisheries.

The Final Environmental Impact Statement (EIS) for Amendment 20 noted that, "the spatial/temporal overlap between the Pacific whiting fishery and the distribution of Chinook salmon... could result in incidental take of listed salmon. The season start dates are, in part, meant to limit targeting on whiting fishing when listed Chinook salmon are most likely to be taken incidentally" (PFMC 2010). The June 15 start date for shoreside whiting (North of 40° 30′ N. lat.) was moved to be consistent with the May 15 start date in the at-sea sectors in 2016. Fishing south of 40° 30′ N. lat. can start April 15 (80 FR 19034, April 9, 2015). The analysis indicates that the conversion to a rationalized cooperative structure in 2011 minimized some of the bycatch issues addressed by the May and June start dates used in a derby style fishery (PFMC 2015).

The Amendment 20 EIS noted that Pacific whiting "become increasingly difficult to prosecute in a shoreside fishery around October 1". Members of the GAP indicated that this may be due to the difference in horsepower between catcher vessels and CPs. CPs are generally more successful in prosecuting the fall Pacific whiting fishery than catcher vessels, as shown in Figure 2 above. Economic Data Collection data indicate that the mean horsepower for catcher vessels in the MS fishery is about 1,500 hp (mean length 105 ft), compared to about 6,500 hp (mean length 305 ft) for CPs (EDC FISHEyE). Moving the start date earlier for the Pacific whiting season north of 40° 30′ N. lat. may increase flexibility for processors returning from the walleye pollock "A" season; however, this option would require consideration of potential changes in bycatch, particularly for Chinook salmon.

Changes in the current regulatory footprint for fishing and processing at sea in the fishery would require similar considerations. The EIS for the season start change mentions spatial considerations in historical management stating that, "the fishery was prohibited from operating south of 39° N. lat. to protect rockfish and juvenile whiting. The potential impact to Sacramento winter-run Chinook was also a concern if the whiting fishery were to expand in the Monterey area during January-March, before the maturing salmon left the ocean to spawn" (PFMC 2015).

An emergency interim rule published in 1992 at 57 FR 14663 prohibited

(1) at-sea processing of whiting south of 42° N. lat.;
(2) directed fishing for whiting shoreward of the 100-fathom contour in the Eureka subarea (40° 30' – 43° 00' N. lat.);
(3) fishing for whiting between midnight and one-half hour after official sunrise; and
(4) fishing for whiting in the Klamath and Columbia River Salmon Conservation Zones.

These actions were taken because many Pacific salmon stocks appeared to be at record low levels. An exempted fishing permit (EFP) was established in 2015 but not utilized. A GMT report discusses the background and considerations in further detail (Agenda Item I2 GMT Report November 2015). The Reinitiation of Section 7 Consultation Regarding the Pacific Fisheries Management Council's Groundfish Fishery Management Plan in 2018 referenced both the area

and season start date restrictions “to minimize Chinook bycatch for the duration of this opinion” (NMFS 2018).

**Closed-class processor permits and processing and accumulation limits**

While there are no regulatory limits on shoreside processing that exist in other regions, there are limits on processing in the MS sector. Public comment has indicated that these limits may be constraining in seasons with few MS platforms operating. The GMT reminds the Council of our discussion on the closed class of MS permits, processing, and accumulation limits for the 5-Year Review Follow On Action (Agenda Item I.7.a, Supplemental GMT Report, September 2018).

PFMC
09/14/20