GROUNDFISH MANAGEMENT TEAM REPORT ON PRELIMINARY PREFERRED MANAGEMENT MEASURE ALTERNATIVES FOR 2021-2022 FISHERIES

Contents

The Groundfish Management Team (GMT) has reviewed the documents under this agenda item and received an overview from Mr. John DeVore and Mr. Todd Phillips of Pacific Fishery Management Council (Council) staff. We have organized and numbered our comments in the order that is presented in the Action Item Checklist (Agenda Item G.6., Attachment 1). This report covers items 2 through 10, which deal with rockfish conservation area (RCA) coordinate updates, 2021-2022 allocations, and harvest guidelines (HGs). Our report on item 1 was included in our report for Agenda Item G.4. (Agenda Item G.6.a, Supplemental GMT Report 1, April 2020). Items 11 through 17 are included in Agenda Item G.6.a, Supplemental GMT Report 2, April 2020.

This report includes an "Enhanced Action Item Checklist" that contains all the options for Council consideration along with the GMT's recommendations, which are bolded, to aid the Council in making their motions. For example, the Council could motion to: "*Select all GMT recommendations as PPA from the Enhanced Action Item Checklist in Agenda Item G.6.a., GMT Report 1, April 2020 with the following exceptions [if departing from GMT recommendations]"*.

As a general comment, the GMT notes that there are no automatic actions for closure or mitigation for any of the management measures (e.g., harvest guidelines [HGs], annual catch targets (ACTs), off-the-top deductions, or allocations) discussed in this report. This gives the Council some flexibility to manage fisheries inseason, as some sectors may be more constrained than others in a given year. However, this also means that there is a risk of exceeding HGs and allocations if the Council did not take inseason action if needed.

2. Rockfish Conservation Area (RCA) Coordinate Updates

The GMT reviewed two proposals to modify the latitude and longitude coordinates that define the RCA boundaries off of California. The first proposal is to correct the 40 fathom boundary line for a small area off central California (*Section 2.9.3 and 5.3*), where the waypoints do not accurately approximate the 40 fathom depth contour. The second is to correct several issues with the 100 fathom line used to define the RCA boundary south of 34° 27′ N. lat., as described in Agenda Item H.4.a, Supplemental CDFW Report 1, March 2020. These changes include correcting waypoints that create crossovers with the 75 fathom boundary line, and adding waypoints to include a boundary around the northern Channel Islands. These changes are intended to better align regulatory fathom lines with their corresponding fathom isobaths. **The GMT recommends that both of these RCA proposals be considered for preliminary preferred alternatives (PPAs).**

3. Off-the-Top Deductions

The GMT reviewed the off-the-top deductions from the annual catch limits (ACLs) for tribal, non-groundfish fisheries, exempted fishing permits (EFPs), and scientific research, which are presented in Tables 2-9 and 2-10 in Agenda Item G.6., Attachment 2, April 2020. Updates and recommended changes by set-aside type are described below. Tables showing the updated set-asides by species can be found in Appendix 1 in this document.

During review of Agenda Item G.6, Attachment 2, April 2020, errors in Tables 2-9 through 2-12 were discovered. Specifically, the cabezon/kelp greenling complex ACLs, off-the-top deductions, and HG values for Washington and Oregon were transposed. Corrected tables can be found in

Agenda Item G.6., Supplemental Attachment 6. The tables in Attachment 1 also include the corrected values.

Research

In March 2020, the Council provided guidance to set the research set-aside for yelloweye rockfish at 2.92 mt, based on anticipated projects by the International Pacific Halibut Commission, Washington Department of Fish and Wildlife, Oregon Department of Fish and Wildlife, California Department of Fish and Wildlife (CDFW), and National Marine Fisheries Service. Additionally, the set-aside for cowcod south of 40° 10′ N. lat. was set in November 2019 at 10 mt, which is higher than the historic maximum but will account for any new or updated projects as described in Agenda Item H.8.a, Supplemental CDFW Report 2, November 2019.

Incidental Open Access

The Council recommended that incidental open access (IOA) off-the-top deductions be set at the historical maximum values for most stocks, except petrale sole, sablefish south of 36° N. lat., darkblotched rockfish, yellowtail rockfish north of 40° 10′ N. lat., and shelf rockfish south of 40° 10′ N. lat., as shown in Appendix 1 in this document.

Petrale Sole

In November, the Council recommended using the 2007-2018 average IOA mortality of 13.3 mt rather than the historical maximum of 34.3 mt for petrale sole. Using the average is expected to accommodate bycatch in the IOA fisheries, which have attained less than the average amount since 2011. This also makes an additional 19.95 mt available to the individual fishing quota (IFQ) fishery, which has historically reached full attainment of petrale sole. Therefore, **the GMT recommends selecting the 2007-2018 average of 13.3 mt for the 2021-2022 petrale sole IOA off-the-top deduction.**

Sablefish South of 36° N. Lat.

In November, the Council recommended increasing the off-the-top deduction for sablefish south of 36° N. lat. from 11.8 to 25 mt, to accommodate potential increased interactions, as one or more strong year classes may enter the fishery in 2021 and 2022. **The GMT concurs and recommends setting IOA off-the-top deductions for sablefish south of 36° N. lat. for 2021-2022 at 25 mt**.

Darkblotched Rockfish

In November, the Council forwarded a Groundfish Advisory Subpanel (GAP) request for the GMT to examine the potential to adjust the darkblotched rockfish set-aside for IOA. The 2014 high mortality of 24.6 mt is approximately 3.5 to 7 times higher in all other years between 2005 and 2017. During the overwinter analysis, the GMT examined the historical average (9.8 mt) and median (6.6 mt) values. An additional 13.4 to 16.2 mt of darkblotched rockfish could benefit individual participants by increasing the annual vessel limits (AVLs), even though recent attainment by the trawl sector as a whole has been around 50 percent. Even if the IOA sector surpassed the set-aside in another anomalous year, low attainment across the fishery makes exceeding the ACL unlikely. In the last five years, non-trawl sectors have only caught between 3.7 and 5.7 mt annually, which is approximately eleven percent of their 2021-2022 allocation. Based on all of this, **the GMT recommends selecting the historical average of 9.8 mt for the darkblotched rockfish IOA set-aside for 2021 and 2022**.

Yellowtail Rockfish North of 40° 10′ N. Lat. and Salmon Troll Trip Limits

In November, there was a request to increase the yellowtail rockfish ratio and monthly limits in the salmon troll fishery north of 40° 10′ N. lat. As part of the 2017-2018 biennial cycle, yellowtail rockfish was removed from the open access multi-stock trip limit, and a new separate trip limit was set at 500 lbs. per month; however, the salmon troll yellowtail rockfish trip limit did not reflect this change. The presumed IOA set-aside for yellowtail rockfish is 7 mt, the historical maximum that occurred in 2005. Since that time, annual catches have been less than 4.5 mt and averaged 2.7 mt.

Agenda Item G.6., Attachment 3 contains a detailed analysis of the proposed salmon troll trip limits (Table 1). This report showed that during the non-trawl RCA era, yellowtail rockfish mortality in the salmon troll fishery ranged from 2 to 4 mt; participants are rarely constrained by the current ratio or total poundage; minimal additional mortality to yellowtail rockfish is expected under any of the trip limit options; extreme behavioral changes would be needed to double the recent landings (from 4 to 8 mt); and targeting is unlikely due to the low price for yellowtail rockfish. In addition to the three options analyzed in that report, the GMT has received a public comment request for a new option (five lbs. of yellowtail rockfish per one lb. of salmon), which the Council could elect to consider for PPA because it is within the range previously analyzed, and no additional analysis is needed; the projected impacts would be the same as the other options (see below). If the Council decides to include this requested option in the range of options forwarded, the GMT could analyze any potential impacts before June.

Table 1. Options for potential yellowtail rockfish retention by non-groundfish participants (salmon trollers) north of 40° 10′ N. lat. (Agenda Item G.6, Attachment 3, April 2020).

Option	Ratio (per trip)	Monthly Limit
1	1 lb. yellowtail rockfish per 2 lbs. of salmon landed	500 lbs.
2	**1 lb. yellowtail rockfish per 1 lb. of salmon landed**	**500 lbs.**
3	No ratio - any salmon on board	500 lbs.

The GMT projects that total IOA mortality will remain below the 7 mt set-aside for all four salmon troll options, and thus no changes to the set-aside are needed. Therefore, the **GMT recommends maintaining the IOA set-aside of 7 mt for yellowtail rockfish north of 40° 10′ N. lat. for 2021 and 2022.** Even if troll mortality was unexpectedly high and above the set-aside, exceeding the yellowtail rockfish ACL would be unlikely given the typical moderate attainment, such as 59 percent in 2018.

The GMT recommends the Council select Option 2 as PPA for salmon troll trip limits of yellowtail rockfish north of 40° 10′ N. lat. that apply both inside and outside of the non-trawl RCA.

Shelf Rockfish South of 40° 10′ N. Lat. and Salmon Troll Trip Limits

In November 2019, the Council requested the GMT analyze a yellowtail rockfish trip limit in the salmon troll fishery south of 40° 10′ N. lat., similar to the trip limit north of 40° 10′ N. lat., to provide equitable, coastwide opportunities. Option 1 would maintain the status quo (SQ) of no yellowtail rockfish retention in the salmon troll fishery south of 40° 10′ N. lat. The new trip limits

proposed in Option 2 would implement the following proposed new language south of 40° 10′ N. lat.:

> *Salmon trollers may retain and land up to 1 lb. of yellowtail rockfish for every 2 lbs. of Chinook salmon landed, with a cumulative limit of 200 lb./month, both within and outside of the RCA. This limit is within the open access (insert 2021 trip limit) shelf rockfish trip limit and not in addition to that limit. All groundfish species are subject to the open access limits, seasons, size limits and RCA restrictions listed in the table above, unless otherwise stated here.*

The GMT recommends the Council adopt Option 2 and implement the aforementioned trip limit for the salmon troll fishery south of 40° 10′ N. lat.

The analysis presented in the Appendix in the analytical document estimated 22 mt of mortality for the proposed trip limit. This projection assumed a scenario in which vessels that caught 50 percent of the Chinook salmon (80 vessels in 2019) landed the maximum amount of yellowtail rockfish based on the actual amount of Chinook salmon landed. The yellowtail rockfish projection of 22 mt for the salmon troll fishery would be incorporated into the IOA set-aside for shelf rockfish south of 40° 10′ N. lat. After review of the IOA set-aside projection for shelf rockfish south of 40° 10′ N. lat. (67.67 mt), the GMT believes the projected mortality from the proposed trip limit could be accounted for within the proposed set-aside without any changes. Therefore, the **GMT recommends maintaining the IOA set-aside of 67.67 mt for shelf rockfish south of 40° 10′ N. lat. which is based on the historic high for 2021.** If troll mortality was unexpectedly high and above the set-aside, there would not be a risk to the ACL, as the 2021 projected mortality for both trawl and non-trawl are well below their respective allocations.

EFPs

Set-asides for EFPs have been updated. The cowcod south of 40° 10´ N. lat. set-aside has increased to a total of 0.65 mt based on a request from the Real Good Fish EFP at the March Council meeting. The lingcod north of 40° 10′ N. lat. set-aside has also been increased to address the accidental omission of the requested 1.5 mt for the Platt/Emley EFP, bringing the total EFP set-aside to 1.6 mt.

4. Treaty Fisheries

The GMT recommends the Council select the proposed tribal set-asides in Agenda Item H.8.a, Supplemental REVISED Tribal Report 3, November 2019. The tribes have requested set-asides that are identical to those from the 2019-2020 biennium, with the exception of petrale sole, cabezon, longnose skate, and yelloweye rockfish.

The tribes have requested an increase in the tribal set-aside for petrale sole from 290 to 350 mt in 2021 and 2022. Petrale sole is the main target of the small footrope bottom trawl fishery and is highly utilized. The tribes have notified the Council that additional participation within the bottom trawl fishery is expected within the 2021-2022 biennium.

The tribes have also requested an increase in the tribal set-aside for longnose skate from 130 to 220 mt. From 2015 to 2017, the harvest of longnose skate increased in the treaty fishery and

exceeded the tribal set-aside. The tribes have requested an increase in the tribal set-aside of longnose skate to be more reflective of the current treaty bottom trawl fishery.

The tribes have requested an increase in the yelloweye rockfish set-aside from 2.3 to 5.0 mt. The tribes have never exceeded the current treaty set-aside of 2.3 mt, but have significantly restricted tribal fishing to reduce impacts on yelloweye rockfish. The tribes are requesting this increase primarily to accommodate impacts associated with targeting lingcod.

Currently, the tribes do not have a set-aside for cabezon (Washington cabezon/greenling complex), but minor landings of this species have occurred as incidental catch within the treaty fisheries. The tribes are requesting a new set-aside of 2 mt to more accurately reflect treaty impacts to this complex.

5. Annual Catch Target

The GMT recommends that the Council select a cowcod rockfish ACT in June 2020 within the range previously analyzed (40 to 60 mt) to provide more time for discussion with stakeholders. The Council specified that their preferred approach to conservatively managing this stock is to set the ACT below the ACL, as has been done since cowcod were declared overfished. The Council's PPA harvest specification of ACL = acceptable biological catch, P* = 0.40 would facilitate the entire 40 to 60 mt range, while additionally accounting for future decreases in the ACL resulting from the application of time-varying sigmas.

The GMT notes that a specific ACT is mainly a policy decision to set the long-term management strategy for cowcod now that the stock has been declared rebuilt. For instance, the ACT range is not expected to constrain fisheries in 2021-2022, because landing cowcod will remain prohibited for all non-trawl sectors. While some of the RCA management measure proposals are likely to increase cowcod bycatch mortality, these impacts are still projected to fall well below the lower end of the proposed range. The Council should consider how the 2021-2022 ACT will set the stage for other rule-making actions that provide access to additional fishing grounds, such as the stand-alone agenda item to consider re-openings of the Cowcod Conservation Area and Non-Trawl RCAs.

6. Harvest Guidelines/State Shares for Stocks in a Complex

The Council is considering custom two-year allocations for blackgill rockfish from within the southern slope rockfish complex. This includes a proposal to use an HG for blackgill rockfish, which would be set equal to the component ACL and then be shared to the trawl and non-trawl fisheries (see Action Item #8).

The GMT recommends the Council select the SQ sharing arrangement used to set state HGs of the nearshore rockfish north complex, as shown in Table 2-20 of the analytical document. Each of the stocks in this complex are apportioned to each state based on the best available biological data and implied relative distributions.

7. Two-Year Allocations

The GMT recommends the Council select for PPA the SQ trawl and non-trawl allocations for stocks that do not have alternative allocations as shown in Table 2.

Table 2. SQ trawl and non-trawl allocations (percent) of stocks under two-year allocations.

Stock	Trawl	Non-Trawl
Bocaccio south of 40° 10′ N. lat.	39%	61%
Cowcod south of 40° 10′ N. lat.	36%	64%
YELLOWEYE ROCKFISH	8%	92%
Big skate	95%	5%
Longnose skate	90%	10%
Minor shelf rockfish north of 40° 10′ N. lat.	60.2%	39.8%
Minor shelf rockfish south of 40° 10′ N. lat.	12.2%	87.8%

None of these allocations are expected to constrain either the trawl or non-trawl sectors, except yelloweye rockfish, which constrains both.

Canary Rockfish

The GMT recommends the Council select the newly GAP-proposed Option 4 for canary rockfish allocations. The canary rockfish two-year allocations have been a main focus of analysis and discussion, given the species' unique potential to constrain every sector. The Council and GAP have already been briefed on the history and rationale behind the options being considered, so we will focus on our recommendations for 2021-2022.

As shown in Table 3, the Oregon and California recreational fisheries could be constrained, if the catch targets are treated as hard caps by the Council. However, because the Council has elected to set HGs for the recreational fishery, and HGs are not defined in the Fishery Management Plan (FMP) as hard caps, the GMT does not anticipate a need to restrict or constrain these fisheries inseason without a demonstrated risk to the ACL. Flexible non-trawl management would continue to require that each non-trawl sector set pre-season management measures to achieve their HG (Table 3).

Table 3. Proposed canary rockfish two year allocations (mt) in relation to 2019 actual mortality (mt) and 2021-2022 projected mortality (mt) and the GMT's bolded recommendation.

Option	Option 1	**Option 4 (GAP)**	Option 2	Option 3	2019 estimated mort.	2021-2022 projected mort*
Description	SQ proportions from 2017; at-sea at 46 mt	**Same as Option 1, but combine FG HG and at-sea 36 mt**	Same approach as 2017; non-trawl fixed #s and at-sea 36	Same as option 2; non-trawl fixed #s and at-sea 36 mt		
Fishery HG	1,268.6				575.3	649.4
Trawl	917.2	**917.2**	862.1	862.1	427.7	385
--IFQ	871.2	**881.2**	826.1	826.1	422.2	380
--CP	16	**36****	36**	36**	5.0	5.0
--MS	30					
Non-trawl	351.4	**351.4**	406.5	406.5	147.6	269.4
--Non-nearshore	40.1	**126.5**	46.5	146.5	5.8	37.8
--Nearshore	86.4		100		17.0	37.2
--WA Rec.	43.2	**43.2**	50	50	13.5	15.34
--OR Rec	65.0	**65.0**	75	75	40.1	61.7
--CA Rec.	116.7	**116.7**	135	135	71.2	117.4

*Based on proposed liberalizations to recreational depth restrictions, raising limited entry fixed gear (LEFG) open access (OA) trip limits, and allowing combination longleader and all-depth halibut trips in Oregon recreational fisheries.

** Increased from 20 mt in overwinter analysis to be consistent with the 36 mt industry proposed at-sea set-aside.

The overwinter analysis (Agenda Item G.6,Attachment 2, April 2020) projected that the IFQ fisheries would not be constrained by either Option 1 or Option 2 allocations, since both options are nearly double the actual 2019 and projected 2021 and 2022 mortalities (Table 3). Options 3 and 4 are virtually identical to Options 2 and 1, respectively, but combine guidelines for the non-nearshore and nearshore sectors. The GMT and GAP agreed that the IFQ projection for 2021-2022 could be an underestimate, because the model uses a weighted 2017-2019 average. However, 2021-2022 bycatch is expected to increase in response to greater widow rockfish allocations for the mid-water trawl fishery and the reopening of the trawl RCA. As such, IFQ constraints could be higher than initially projected for all options, and more so for the lower IFQ allocations proposed in Options 2 and 3.

8. Amendment 21 Allocation Changes

The GMT has been supportive of the proposals that would revise Amendment 21 (A-21) allocations and convert them to two year allocations. These proposals have been carefully

designed to increase benefits without constraining any single sector in 2021-2022. The projected economic benefits of these proposals, including selecting Method 2 for sablefish, are up to ~$8 to 9 million ex-vessel revenue in 2021-2022 and approximately ~$18 to 20 million in income when including benefits to processors and fishing support businesses.

There has, however, been concern that the revised allocations could become constraining to the non-trawl sectors in future biennium. The GMT reminds the Council that all of the A-21 proposals would convert the hardwired FMP formulas into two year allocations that can be revisited and customized each cycle. For example, the proposal to transfer widow rockfish from non-trawl to IFQ is not expected to constrain non-trawl fisheries in 2021-2022, as the proposed allocation is more than three times their projected impacts. The Council could consider different allocations in 2023-2024 if the non-trawl sector becomes constrained. This should take into account that the non-trawl sector had supported a transfer to IFQ in 2021-2022, with the expectation that allocations could flow back if needed. Clear documentation of the allocation histories will help prevent future debates and better facilitate proposals that optimize benefits without constraining any sectors.

Petrale Sole:

Option 1 (SQ): A-21 allocations: 95 percent trawl, 5 percent non-trawl
Option 2: Two year allocations: 30 mt non-trawl, remainder trawl

The GMT recommends the Council select Option 2 for petrale sole allocations for 2021 and 2022. On average annually, Option 2 would shift 133 mt to the IFQ sector and could increase ex-vessel revenue by $347,000. Option 2 is not expected to constrain the non-trawl sector, as allocation would be approximately double the historical maximum mortality and the predicted mortality for 2021-2022 (Figure 1).

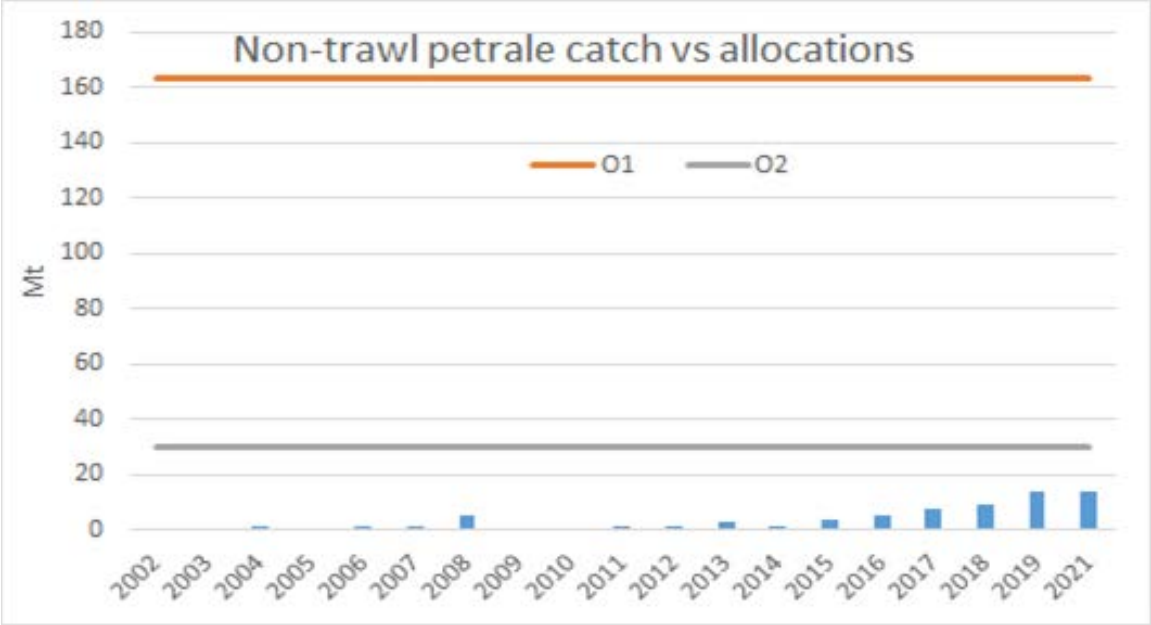

Figure 1. Non-trawl historical and projected (2021) petrale sole mortality (mt) in relation to the proposed 2021-2022 allocation options (O1 = Option 1; O2 = Option 2).

Widow Rockfish

Option 1 (SQ): A-21 allocations: 91 percent trawl, 9 percent non-trawl
Option 2: Two-year allocations: 300 mt non-trawl, remainder to trawl (average of 13,708 mt for 2021-22)

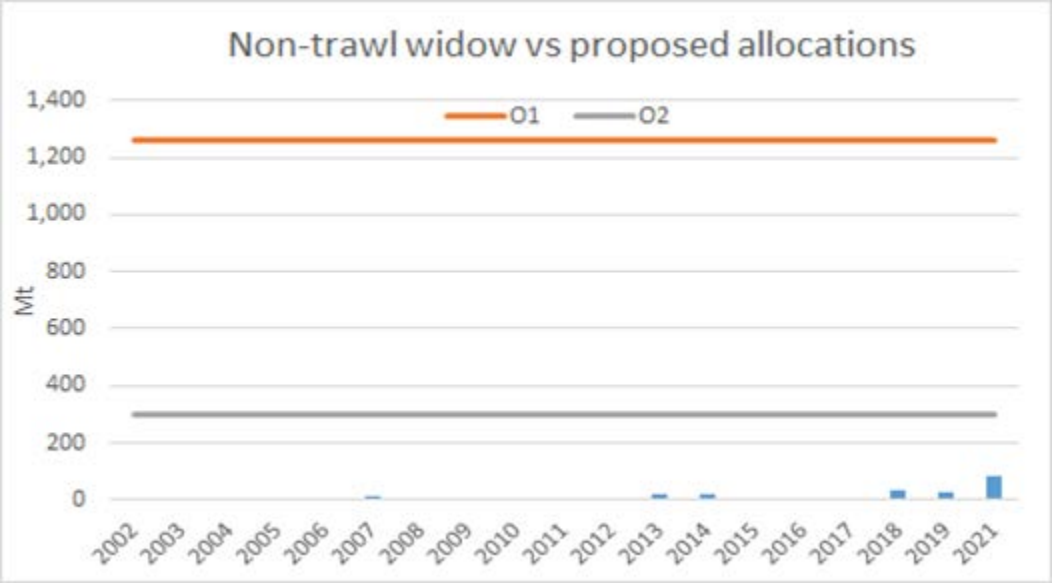

Figure 2. Non-trawl historical and projected (2021) widow rockfish mortality (mt) in relation to the proposed 2021-2022 allocation options (O1 = Option 1; O2 = Option 2).

The GMT recommends the Council select Option 2 for widow rockfish allocations for 2021 and 2022. Per year on average, Option 2 would shift 961 mt to IFQ and increase ex-vessel revenue by ~$400,000. Option 2 is not projected to constrain the non-trawl sector in the 2021-2022 biennium, as the 300 mt allocation would be approximately ten times the historical maximum mortality from 2002-2019. This allocation is also more than 100 mt higher than the historical maximum from the 1980's and 1990's before there were restrictive RCAs and trip and bag limits. Finally, this allocation is 3.8 times the predicted mortalities for 2021-2022 (Figure 2) which reflect proposals to liberalize trip limits and recreational depth restrictions.

However, there have been some concerns that the proposed 300 mt for non-trawl could be constraining in future biennium. As a reminder, the Council is considering providing all non-trawl fisheries greater access to the shelf, where widow rockfish occur, as part of the 2021-2022 biennium (e.g., higher trip limits and reduction of recreational depth restrictions). The Council may also consider future liberalizations such as the Non-Trawl RCA Modification package that is tentatively scheduled on the year-at-a-glance. Additionally, demand for fresh, local, and sustainably-caught fish is increasing, so the Council may want to support these new markets by revisiting this allocation for 2023-2024.

Slope Rockfish South of 40° 10′ N. lat.:

Option 1 (SQ): A-21 allocations: 63 percent trawl; 37 percent non-trawl

Option 2: Two-year allocations: Custom shares of blackgill rockfish, "other slope" rockfish, and the complex

The GMT recommends the Council select Option 2 for the slope rockfish south of 40° 10′ N. lat. complex, that includes custom trawl/non-trawl shares of blackgill rockfish, "other slope" rockfish, and the complex as a whole for 2021 and 2022. Option 2 would include the adoption of a blackgill HG (referenced in Action Item #6) at the component ACL level.

Option 2 optimizes sector and overall benefits without constraining sectors. Blackgill rockfish is economically important to the non-trawl fishery, while "other slope" rockfish are of more economic importance to the trawl sectors. Option 2 accomplishes the Council's desire to increase allocations of blackgill rockfish to non-trawl and of "other slope" rockfish to trawl. Option 2 also achieves the Council's desired allocation objectives, while addressing the concerns of the IFQ industry to keep blackgill rockfish in the slope rockfish complex. Although Option 2 adds to the GMT workload each cycle to create the custom shares, the increase is minimal and remains far less complex than some custom allocations (e.g., state shares of nearshore rockfish north).

In theory, the trawl sector could catch all of, or more than, the blackgill rockfish component ACL with their multi-species southern slope rockfish quota pounds (QP). To address this concern, the GMT supports potentially implementing a new IFQ blackgill rockfish trip limit that would be unlimited at first, and could be adjusted inseason if needed. The analysts determined that a trip limit could be highly effective for ensuring the IFQ sector remains below their share as the majority of mortality has been from landings from a few boats that have targeted them in the past. See Action Item #13 in Supplemental GMT Report 2 for further discussion on the blackgill trip limit for the trawl fishery.

Table 4. Customized Option 2 sharing approach for the slope rockfish south of 40º 10' N. lat. complex that includes trawl/non-trawl shares of blackgill rockfish, "other slope" rockfish, and the complex as a whole. Option 1 allocations would be 422.2 mt (63%) to trawl and 247.9 mt (37%) to non-trawl.

Category	2021 allocations (mt)	
	Trawl	Non-Trawl
Blackgill rockfish shares (of component ACL)	72.4 (41%)	104.2 (59%)
"Other slope" rockfish share (of sum of component ACLs)	484.5 (91%)	47.9 (9%)
Total share	556.9	152.1
% of total share	80%	20%
Off-top for complex	38.9	
Apportioned off-top based on % of total share	30.5	8.4
Option 2 slope complex allocations	526.4	113.2

Lingcod South of 40° 10′ N. lat.:

The Council has recognized for many years that revising the A-21 allocations for lingcod south of 40° 10′ N. lat. (hereafter "southern lingcod") could be beneficial, given that non-trawl is typically constrained, while trawl attainments are low. In March 2020, the Council had concerns that the low (Option 2) and high (Option 3) bookends for non-trawl allocations for southern lingcod were

too broad to make an informed decision. The Council requested that the GMT explore new intermediate options between these bookends that could better optimize sector benefits without constraining others. These new options (4-6) will better inform southern lingcod allocation decisions for 2021-2022 and are not expected to constrain the IFQ fishery as a whole or individual IFQ participants (Figure 3 and Figure 4). Altogether, six allocation options are being considered for southern lingcod, as shown in Table 5.

Table 5. Average 2021-2022 trawl and non-trawl allocations for the range previously analyzed (Options 1, 2, and 3) and new GMT proposals (Options 4, 5, and 6) within that range. GMT recommendation is bolded.

Option	Fishery HG (mt)	Trawl Allocations			Non-Trawl Allocations	
		Percent	Mort (mt)	13.3% AVL (lbs.)	Percent	Mort (mt)
1 (SQ): A-21	1,124	45	505.8	148,307	55	618.2
2 (low bookend)		43	483.3	141,715	57	640.7
3 (high bookend)		25	281.0	82,393	75	843.0
4 (new)		**40**	**449.6**	**131,828**	**60**	**674.4**
5 (new)		35	393.4	115,350	65	730.6
6 (new)		30	337.2	98,871	70	786.8

Option 1 (SQ), a two percentage point shift from trawl to non-trawl, is intended to provide some relief to non-trawl by increasing their allocation and reducing the likelihood of inseason reductions. Option 1 does not provide high enough allocations to consider increases to trip or bag limits, but increases stability for the non-trawl fisheries. Option 1 is not expected to negatively impact the IFQ sector as a whole or individual participants (Figure 3 and Figure 4). Option 2 would increase the non-trawl allocation by an additional two percentage points to 57 percent, resulting in 640.7 mt, and further decreasing the potential need for inseason reductions. Option 4 shifts five percentage points from IFQ to non-trawl. None of these options (1, 2, or 4) would allow for increased trip or bag limits.

Options 3, 5, and 6 could potentially support higher trip and bag limits, since the respective average non-trawl allocation would increase by 112.4 mt (Option 5) or 168.6 mt (Option 6) compared to SQ (Option 1). Option 3, a 20 percentage point shift from trawl to non-trawl, was proposed by the GMT mainly as a high bookend for analysis. Option 3 would not be expected to negatively impact the trawl IFQ sector as whole (Figure 3), but could constrain a small number of individual vessels, as one trawl vessel's 2019 catch approached Option 3's annual vessel QP limit.

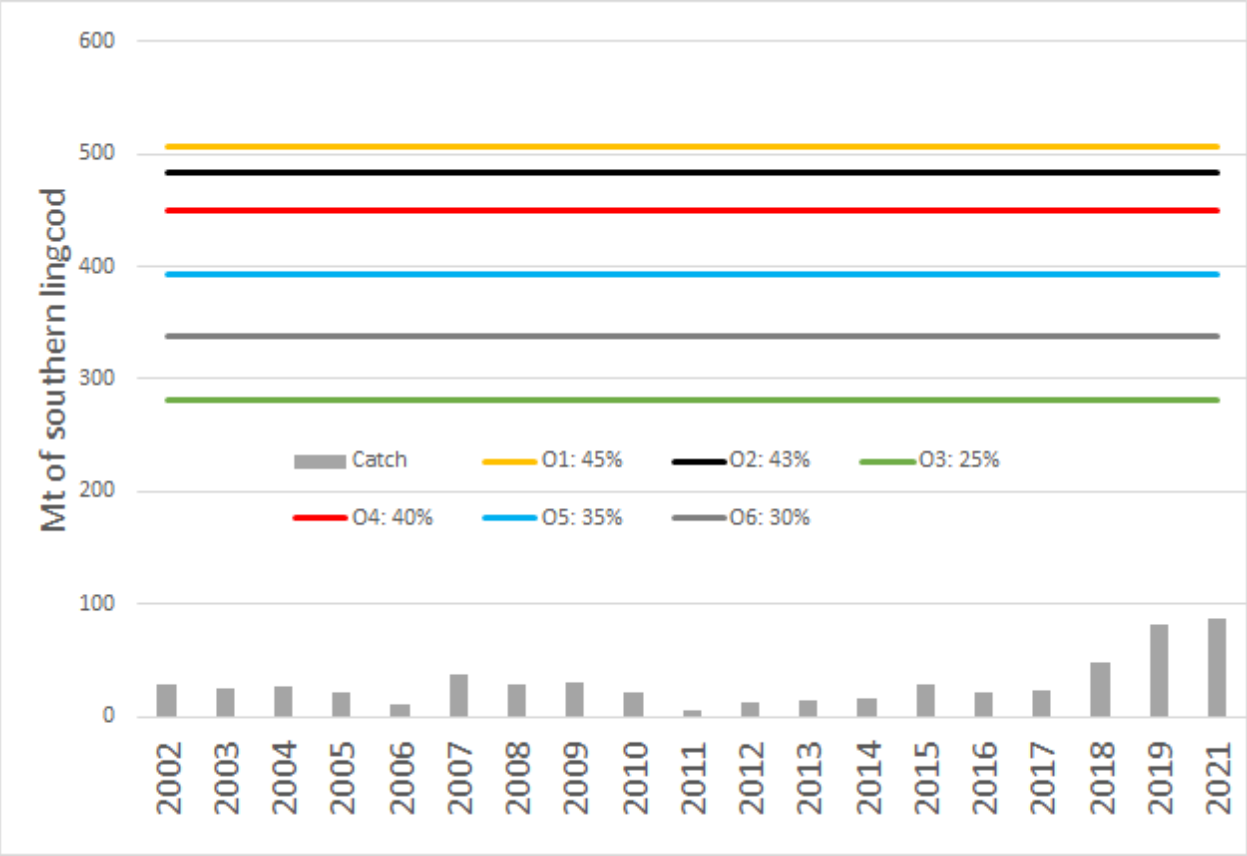

Figure 3. Historical and predicted 2021-2022 mortality (mt) by the trawl sector of southern lingcod in relation to the six allocation proposals for 2021-2022 (each option is indicated as O1 = option 1, O2 = option 2, and so forth).

Figure 4 shows historical IFQ vessel attainment in relation to annual vessel quota pound limits. The GMT notes that simply because vessels are not at the cap does not indicate the species is not a constraint: vessels may be self-modifying catch and targeting strategies to slow catch of lingcod upon reaching a certain threshold. Exceedance of a vessel cap can result in a premature end to the season, so vessels are likely to be precautionary to the point of lowering revenues or increasing operational costs. The degree to which vessels approach the cap in historic data may better indicate personal risk tolerance rather than unneeded allocation. The GMT further notes that if individual caps are limiting while overall attainment is low, revising the annual vessel limits would be a more efficient means to addressing the constraint than increasing overall allocation to the trawl fishery.

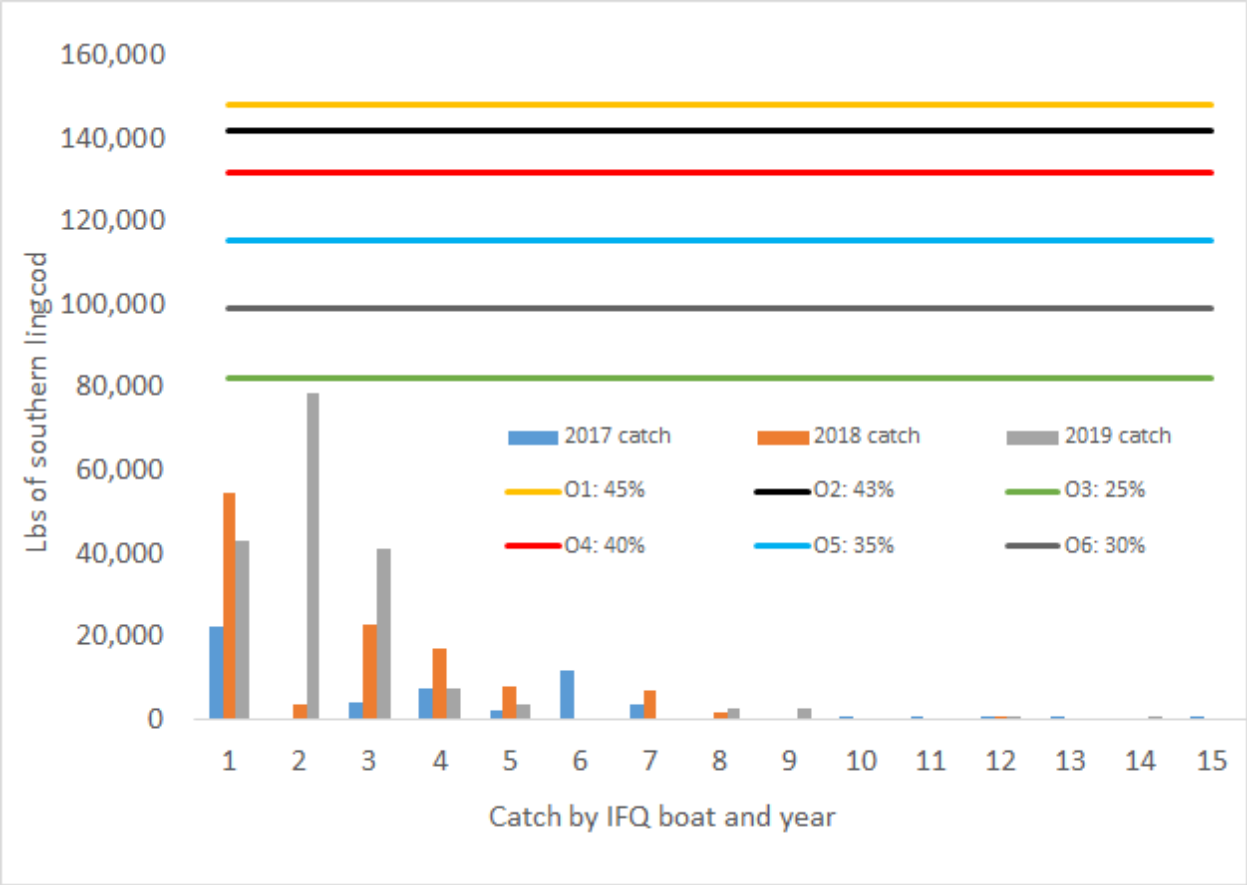

Figure 4. Historical IFQ vessel attainment (lbs.) in relation to the annual vessel QP limits associated with each allocation option (O1 = option 1, O2 = option 2, and so forth).

The GMT believes that there is good rationale to support Option 4. First, Option 4 will reduce the need for inseason trip and bag limit reductions, which was a main reason for the proposal to revise the A-21 southern lingcod allocations this cycle. Second, some IFQ participants indicated that that they would support transferring slightly more than two percentage points (Option 1) to non-trawl, such as under Option 4 (5 percentage point transfer), but have concerns that some of the higher proposals would negatively impact their ability to rebuild IFQ fisheries off of California. **Overall, the GMT recommends Option 4 because it can provide a balance between the allocation needs among sectors and would require limited inseason adjustments to stay below the ACL.**

9. At-Sea Whiting Set-Asides

The objectives of set-asides are defined in the fishery management plan's Amendment 20 as:

> *For the at-sea sectors, groundfish species other than whiting are managed as set-asides, amounts for which are based on the best available information on bycatch by these sectors and other relevant factors, including, but not limited to, status of the set-aside stocks, expected utilization in other sectors of the fishery, and expected management conditions in any sector in upcoming fishing years, as determined in the biennial harvest specifications and management measures decision process.*

As a reminder, since at-sea set-asides are taken off-the-top of trawl allocation, higher set-asides result in lower allocations to IFQ and vice versa.

The GMT recommends that the Council consider the GAP proposal for at-sea set-asides. This proposal was developed as part of a collaborative process between select representatives of the catcher-processor (CP), mothership (MS), and shoreside trawl IFQ sectors. The GMT believes that the proposed values (shown in Table 6) would accomplish all the objectives of set-asides, including minimizing risks to ACLs, accommodating expected at-sea bycatch, and optimizing benefits to the fishery as a whole and to individual sectors. There is a joint report from all three trawl sectors that speaks more to meeting these balanced objectives (Agenda Item G.6, Supplemental Public Comment, April 2020) from an industry perspective.

Table 6. Stocks proposed by industry to be removed from at-sea set-asides. For detailed analysis of each option for each stock/species, see Section 2.4.2 of Agenda Item G.6, Attachment 2, April 2020.

Stock/Species	Area	2019 Regulations (mt)	Approach	Industry Proposal (mt)
YELLOWEYE ROCKFISH	Coastwide	0	Remove	n/a
English sole	Coastwide	5	Remove	n/a
Longspine thornyhead	N. of 34° 27' N. lat.	5	Remove	n/a
Pacific cod	Coastwide	5	Remove	n/a
Starry flounder	Coastwide	5	Remove	n/a

Although some of the initial proposals included sector-specific set-asides, the values listed in Table 6 would be for both sectors (CP and MS), combined. **The GMT supports this method, because the at-sea whiting sectors could jointly and flexibly manage their set-asides, and because high catch from one sector can be offset by lower catch amounts in the other within the same year.**

Proposed set-asides were determined using customized approaches for three general categories. The first category, shown in Table 6, consists of stocks with negligible mortality in the at-sea sectors. The at-sea mortality contributions for these stocks are so minor that an at-sea set-aside is not needed. As shown in Table 2-33 of Agenda Item G.6, Attachment 2, April 2020, the at-sea sectors have contributed to less than 0.2 mt of mortality for these stocks annually from 2015 to 2019, with most years having zero associated mortality. Given these extremely low levels, significant mortality for any of these five stocks in 2021-2022 is unlikely. Unprecedented high levels of bycatch in the at-sea sector are unlikely to negatively impact the trawl sector or the stocks as a whole because attainment of the most constraining of these, the rebuilding yelloweye rockfish, was 50-80 percent of the ACL in the last three years. Given this background, the GMT supports the proposal to remove these five stocks from the list of at-sea set-asides.

The second category, shown in Table 7, are stocks where the risk of exceeding the ACL in the 2021-2022 biennium is low. These stocks have low ACL attainments, have minor (but not negligible) mortality in the at-sea sector, and/or would provide little potential benefit to the IFQ

sector if the Council selected a set-aside lower than the SQ approach of the historic maximum. For example, at-sea set-aside values based on the SQ approach (i.e., the 2019 values, based on the historical or 2015-2019 maximums) for stocks such as arrowtooth flounder, lingcod north of 40° 10′ N. lat., and longnose skate are minor relative to their underutilized IFQ allocations. The GMT supports using the SQ for these stocks in this and future biennium to ensure consistency and decrease future unnecessary work for the GMT, the GAP, and the Council.

Table 7. Industry-proposed set-asides and 2019 regulations for stocks with low likelihood of exceeding their ACLs. For detailed analysis of each option for each stock/species see Section 2.4.2 of Agenda Item G.6, Attachment 2, April 2020.

Stock/Species	Area	2019 Regulations (mt)	Approach	Industry Proposal (mt)
Arrowtooth flounder	Coastwide	70	Option A (SQ)	70
Dover sole	Coastwide	5	Option A (SQ)	10
Lingcod	N. of 40°10' N. lat.	15	Option A (SQ)	15
Longnose skate	Coastwide	5	Option A (SQ)	5
Minor shelf rockfish	N. of 40°10' N. lat.	35	Option A (SQ)	35
Minor slope rockfish a/	N. of 40°10' N. lat.	100	Option A (SQ)	300
Other flatfish	Coastwide	20	Option A (SQ)	35
Pacific halibut b/	Coastwide	10	Option A (SQ)	10
Shortspine thornyhead	N. of 34° 27' N. lat.	30	Option A (SQ)	70
Yellowtail rockfish	N. of 40°10' N. lat.	300	Option A (SQ)	320

a/ The threefold increase helps better accommodate at-sea whiting while not negatively impacting IFQ for this low attainment stock (e.g., 553 mt of 1,746 mt ACL in 2019).
b/ The set-aside for Pacific halibut is determined via a separate process and is not under consideration for being changed for the 2021-2022 biennium.

The final category, shown in Table 8, includes stocks that potentially risk exceeding the ACL and/or require a more customized approach to optimize benefits for the IFQ and at-sea sectors. A detailed overview of the custom rationale for each of these is provided below.

Table 8. Industry proposed set-asides in relation to the 2019 set-asides in regulation. For detailed analysis of each option for each stock/species, see Section 2.4.2 of Agenda Item G.6, Attachment 2, April 2020. Note that significant digits differ to reflect that the A-21 formula specifies the set-aside to the nearest tenth of a metric ton, unlike maximum values which are rounded to integer values.

Stock/Species	Area	2019 Regulations (mt)	Approach	Industry Proposal (mt)
Canary rockfish	Coastwide	46	Custom	36
Darkblotched rockfish	Coastwide	36.3	Maximum mortality (2015-2019)	76.4
Pacific ocean perch	N. of 40°10' N. lat.	404.5	Custom	300
Petrale sole	Coastwide	5	Option A (SQ)	5
Sablefish	N. of 36° N. lat.	50	Option B	100
Widow rockfish	Coastwide	611.4	Maximum mortality (2015-2019)	476

Sablefish North of 36° N. Lat.

There was consensus agreement among all three sectors (MS, CP, and IFQ) to raise the at-sea set-aside from the SQ 50 mt to 100 mt, as suggested by the Council in November 2019. Sablefish was the GMT's top concern, because mortality has been above the 50 mt set-aside the past three years, and the ~100 mt overage by the at-sea sectors in 2017 was a contributing factor to the ACL being exceeded that year (Figure 5). The GMT notes that predictions of 2021-2022 at-sea bycatch are highly uncertain, reflecting the unquantified strength of the 2019 year class that would be caught as Ages-1 and 2 in 2021-2022, respectively. That being said, **the GMT supports a 100 mt combined at-sea set-aside,** because it would: (1) better accommodate expected at-sea mortality and reserve that amount for the at-sea sector before allocating the remainder to the IFQ sector thereby reducing the risk of the ACL being exceeded by both sectors; (2) reduce high avoidance costs for the at-sea whiting sector; and (3) the IFQ sector has indicated that the ~550-600 mt increase in allocations associated with the 2021-2022 sablefish harvest specifications (i.e., FPA Alternative 1 Method 2) would offset negative impacts of the necessary 50 mt deduction.

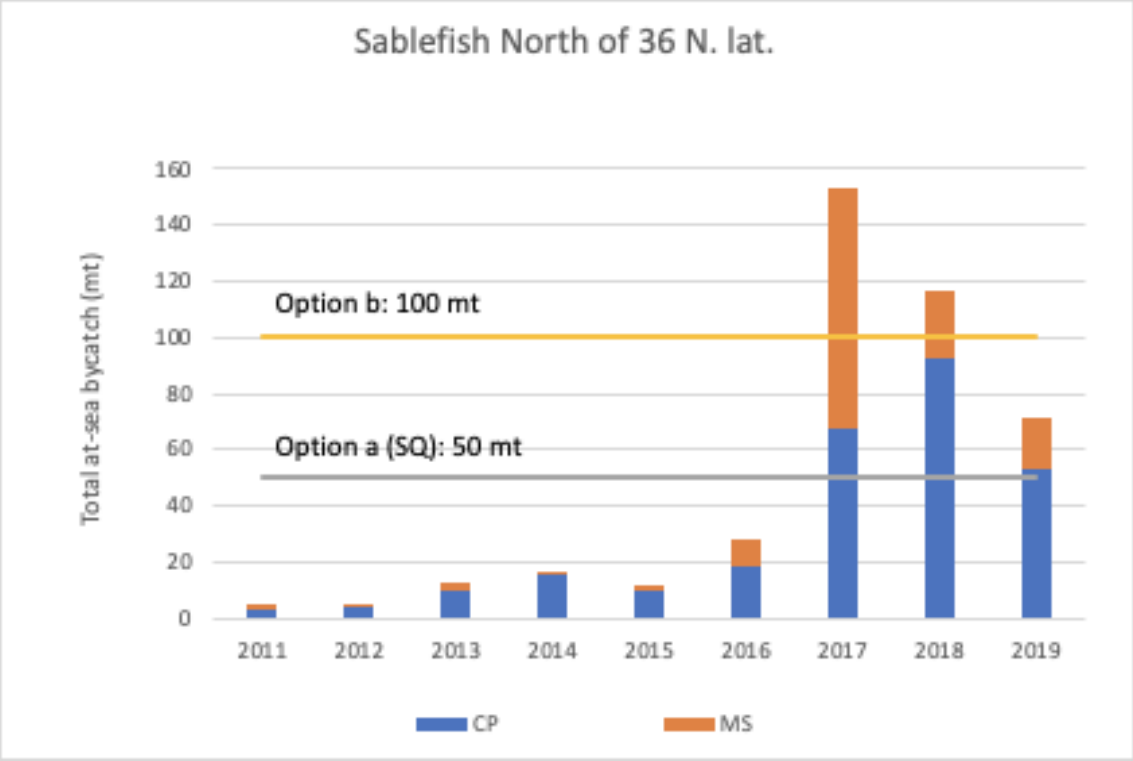

Figure 5. Historical at-sea sablefish bycatch mortality (mt) in relation to the set-aside options for 2021-2022.

Canary Rockfish

As described under Action Item #7, industry is proposing a 36 mt at-sea set-aside for canary rockfish, which would allocate an additional 10 mt to the IFQ sector compared to SQ. The at-sea sector would be allocated an additional 16 mt compared to the Option 2 allocation. Annual mortality has typically averaged only 3.6 mt from 2015 to 2019, with a high of 6.6 mt (Figure 6). Increasing the set-aside to 36 mt in response to management changes and the now rebuilt status of this stock may allow industry to reduce avoidance measures and associated high costs. While mortality has been low historically, the large catches within the shoreside whiting fishery (including a single haul of over 13+ mt) in recent years that may be more reflective of future ocean and fishing conditions for the at-sea fleet.

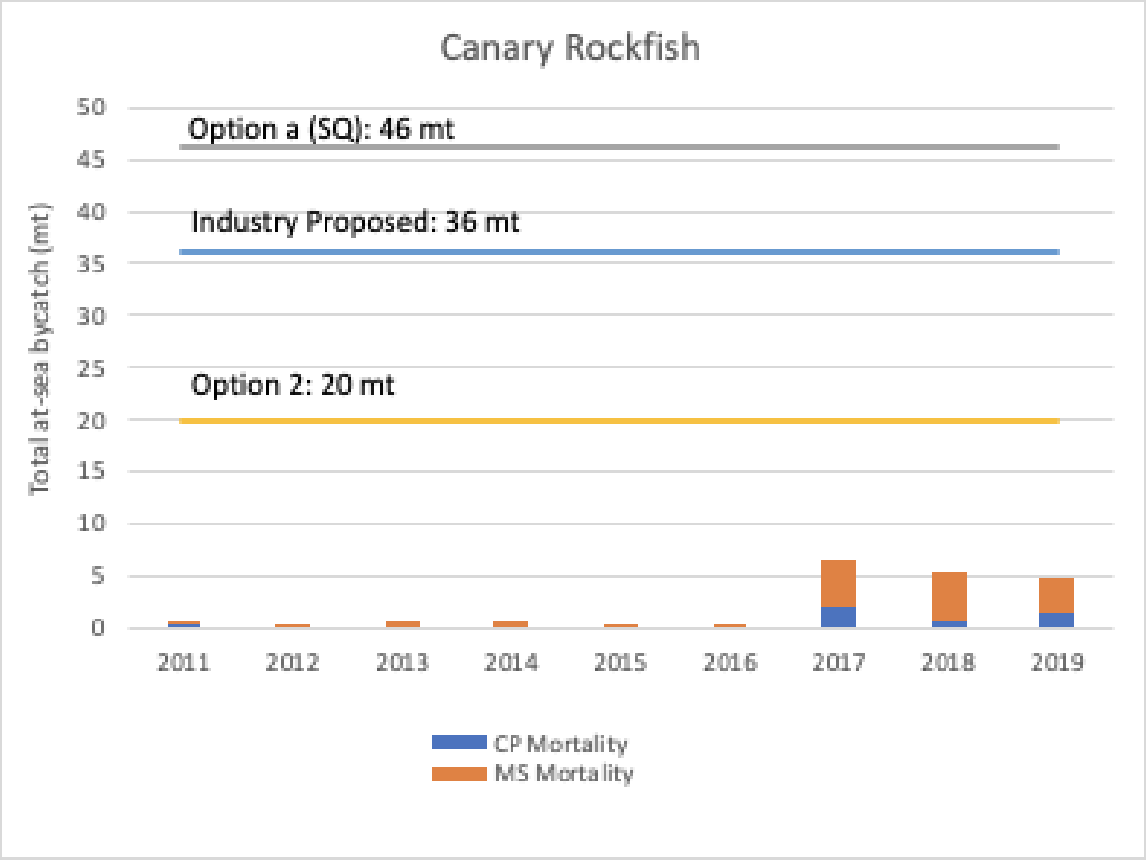

Figure 6. Historical at-sea canary rockfish bycatch mortality (mt) for CP and MS in relation to the set-aside options for 2021-2022.

Darkblotched Rockfish

Catch of darkblotched rockfish in the MS, CP, and IFQ sectors has risen dramatically in the past three years (2017-2019), since the stock was declared rebuilt and quotas were increased. The 2017 update stock assessment for darkblotched rockfish estimated a very large 2013 year class entering the fishery (Wallace and Gertseva, 2017). Low attainment (40 percent) in the shoreside IFQ sector in 2019 may support using the recent five-year maximum mortality (2015-2019) of 76.4 mt for the at-sea set-aside. This amount is higher than the 42.1 mt SQ amount under Option A, which was the sector-combined amount of the A-21 formulas based on the No Action ACLs, and would provide relief from the constraints that darkblotched rockfish imposes on the at-sea sectors (see Figure 7).

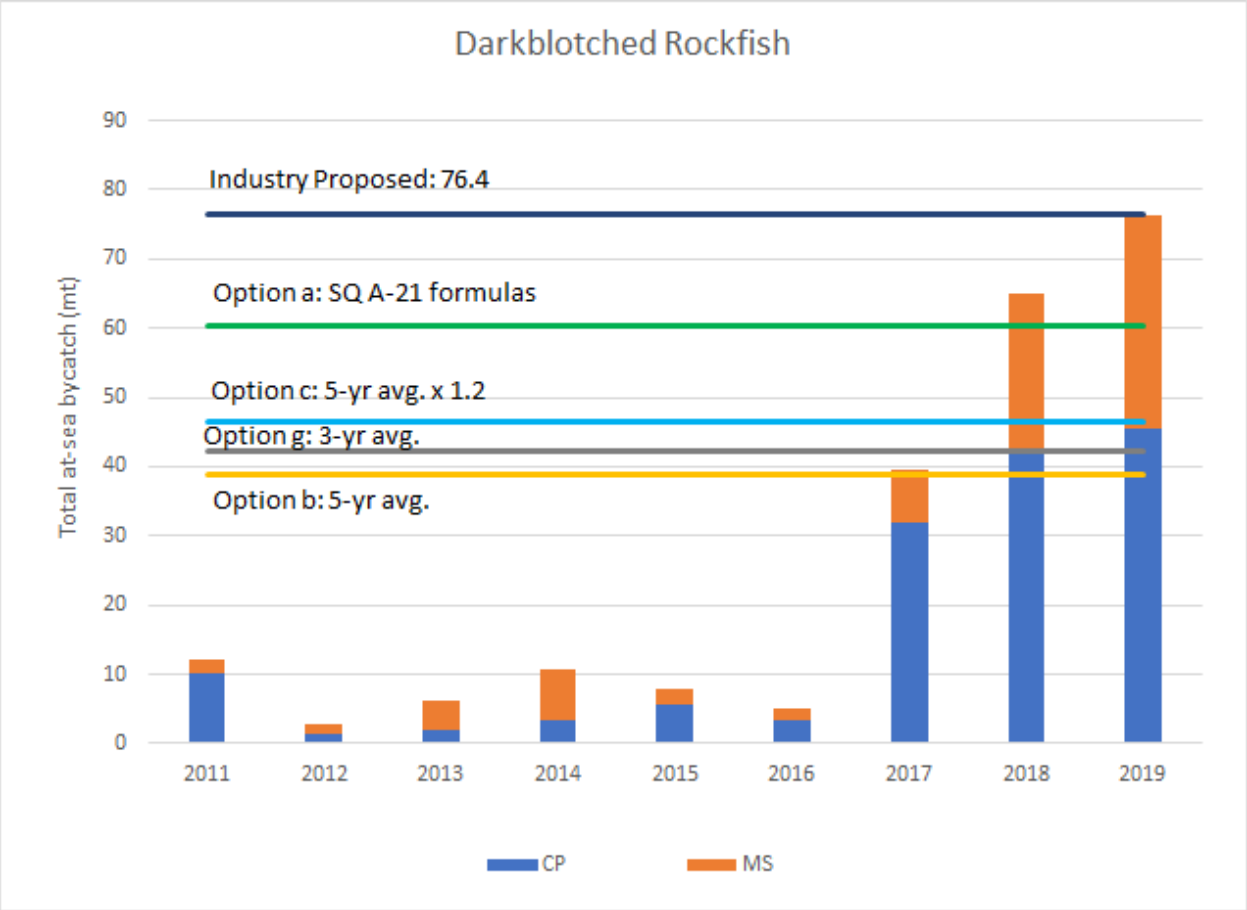

Figure 7. At-sea darkblotched rockfish bycatch mortality (mt) for CP and MS in relation to the set-aside options for 2021-2022.

The GMT supports setting the at-sea set-aside for darkblotched rockfish at the higher five-year maximum mortality of 76.4 mt which would best accommodate the recent increase in catch, compared to the other proposals. This stock is attained at low rates in the shoreside IFQ sector, so using the 76.4 mt maximum as the 2021-2022 at-sea set-aside is unlikely to impact IFQ participants. However, the GMT notes that with the re-opening of the trawl RCA off Oregon and California, the IFQ sector expects additional encounters with darkblotched rockfish in these areas which may lead to higher attainment. Setting the set-aside at the historical maximum would reduce the likelihood of exceeding the ACL even if IFQ attainments were to increase.

Table 9. ACL, trawl and IFQ allocations, at-sea set-asides, and resulting annual vessel limit (AVL) for 2021-2022 based on Option A (SQ; A-21 formulas) and industry proposed set-asides. The GMT recommendation is bolded.

	Option A (SQ)		Industry Proposal	
Year	**2021**	**2022**	**2021**	**2022**
ACL (mt)	882	831	**882**	**831**
Trawl Allocation (mt) a/	805.7	757.7	**805.7**	**757.7**
At-Sea Set-Asides (mt)	42.1	39.6	**76.4**	**76.4**
IFQ (mt)	763.6	718.1	**729.3**	**681.3**
AVL (lbs.) (6.8%)	114,475	107,652	**109,333**	**102,137**

a/ Includes off-the-top deduction of 24.7 mt for IOA

With the proposed increase in the set-aside compared to 2019, the GMT investigated whether there would be constraints at the individual level in the IFQ fishery given the ~5,000 lb. reduction in the AVL shown in Table 9. The GMT notes that simply because vessels are not at the cap does not indicate the species is not a constraint: vessels may be self-modifying catch and targeting strategies to slow catch of darkblotched rockfish when they reach a certain threshold. Vessels are likely to avoid approaching the caps, even if doing so reduces revenues or increases operational costs, because exceeding a cap results in being compelled to stop fishing for the remainder of the season. The degree to which vessels approach the cap in historic data better indicate personal risk tolerance rather than unneeded allocation. The GMT further notes that if individual caps are limiting while overall attainment is low, revising the annual vessel limits would be a more efficient means to addressing the constraint than decreasing the set-aside.

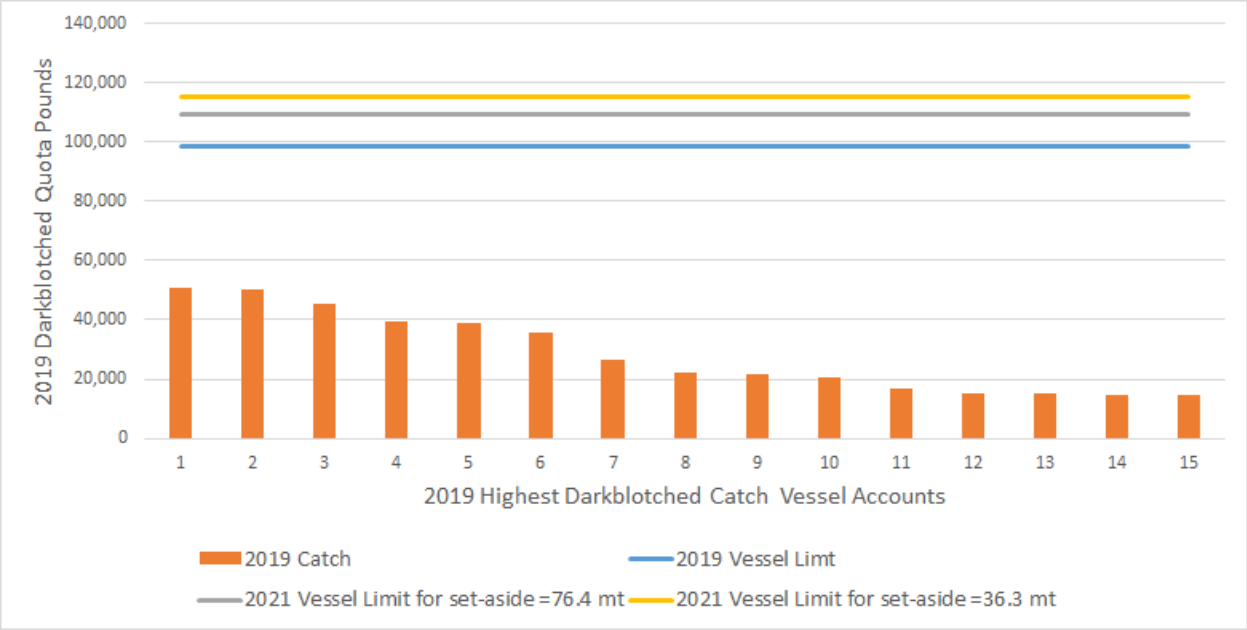

Figure 8. 2019 IFQ vessel attainment (lbs.) in relation to the annual vessel QP limits associated with each allocation option; proposed vessel limits are shown by horizontal lines.

Pacific Ocean Perch

During the overfished era, Pacific ocean perch (POP) had considerably lower ACLs and hard cap allocations that constrained both at-sea and IFQ sectors. The stock was declared rebuilt in 2017, partially driven by an exceptionally large 2013 year class (Wetzel et al. 2017), leading to management using set-asides and ACLs increasing by nearly sixteen-fold in 2019-2020. As shown in Figure 10, the proposals using averages are not expected to accommodate projected at-sea bycatch in higher years, such as 2019. Under the 300 mt set-aside, the IFQ sector would receive an additional ~50 mt. The industry proposed at-sea set-aside of 300 mt is higher than their maximum mortality of 141.7 mt (Figure 9); however, given the increase in catch by 2.5 times from 2018 to 2019, providing some additional buffer above the maximum mortality will provide flexibility in fishing should bycatch of Pacific ocean perch continue to increase into the 2021-2022 biennium. Specifically, this stock could create additional constraints and high avoidance costs for the at-sea whiting sectors, as fishing in areas where Pacific ocean perch are prevalent off of northern Washington allows the sectors to avoid areas where other more constraining species (e.g., salmon, sablefish) occur. **Therefore, the GMT recommends the 300 mt set-aside.**

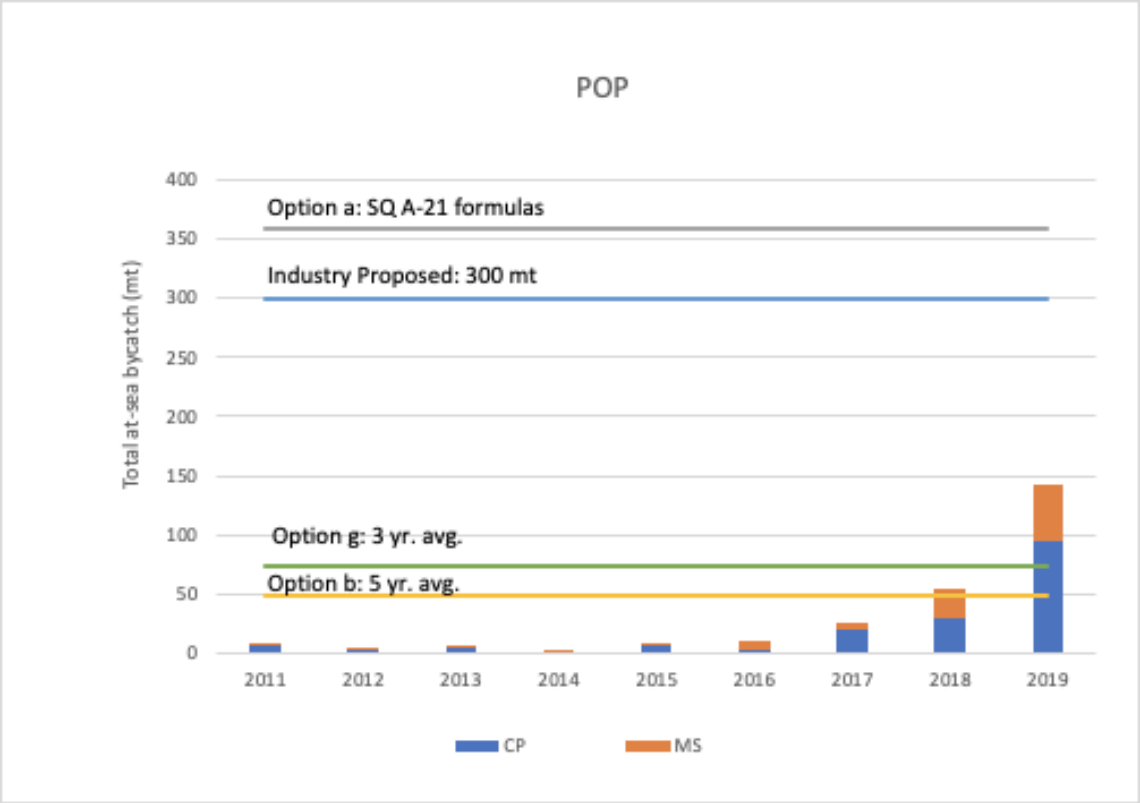

Figure 9. The total at-sea bycatch mortality (mt) over the years of 2011-2019 for the CP and MS sectors. The alternative options are indicated by horizontal lines.

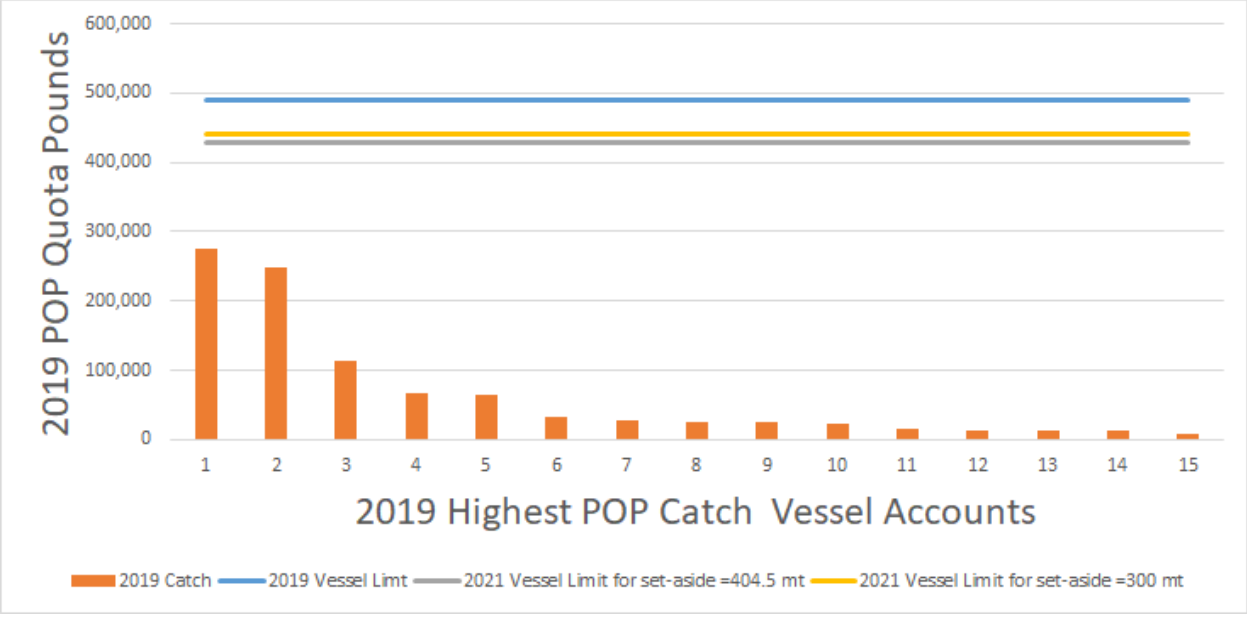

Figure 10. 2019 IFQ vessel attainment (lbs.) in relation to the annual vessel QP limits associated with each allocation option; proposed vessel limits are shown by horizontal lines.

With the proposed increase in the set-aside compared to 2019, the GMT investigated whether there would be constraints at the individual level in the IFQ fishery. The GMT notes that simply because vessels are not at the cap does not indicate the species is not a constraint: vessels may be self-modifying catch and targeting strategies to slow catch of darkblotched rockfish when they reach a certain threshold. Vessels are likely to avoid approaching the caps, even if doing so reduces revenues or increases operational costs, because exceeding a cap results in being compelled to stop fishing for the remainder of the season. The degree to which vessels approach the cap in historic data better indicate personal risk tolerance rather than unneeded allocation. The difference between the at-sea set-aside value in 2019-2020 regulations, 404.5 mt, and a 300 mt set-aside, would provide some additional buffer for the IFQ sector in vessel limits and both of these would be lower than the SQ value due to the reduction in the ACL. The GMT further notes that if individual caps are limiting while overall attainment is low, revising the annual vessel limits would be a more efficient means to addressing the constraint than decreasing the sea-aside.

Petrale Sole

Although total at-sea bycatch is *de minimis* (0 or < 0.1 mt per year since 2011), lowering the 5 mt at-sea set-aside would not provide much benefit to the IFQ sector and could pose risks to the ACL if an unexpectedly high amount were caught in the at-sea whiting sectors for this stock with high IFQ attainment. **Therefore, the GMT recommends the 5 mt set-aside for petrale sole in 2021-2022.**

Widow Rockfish:

Under SQ, widow rockfish set-asides would be determined by the A-21 formulas, which would result in a combined 764.1 mt and 714.6 mt in 2021 and 2022, respectively. Given that historical mortality has averaged 220.6 mt, industry suggested applying the status quo approach of using the maximum mortality for non-A-21 species: 476 mt for 2021-2022. This would provide ~250-300 mt in addition to the opportunity provided through the proposed allocation shift discussed above to the IFQ sector, which has seen an average of 95 percent attainment of widow rockfish in 2018 and 2019. Furthermore, at-sea sectors would still be able to prosecute their fisheries without being constrained if bycatch levels were to be similar to 2017. **Therefore, the GMT recommends the 476 mt set-aside for widow rockfish 2021-2022.**

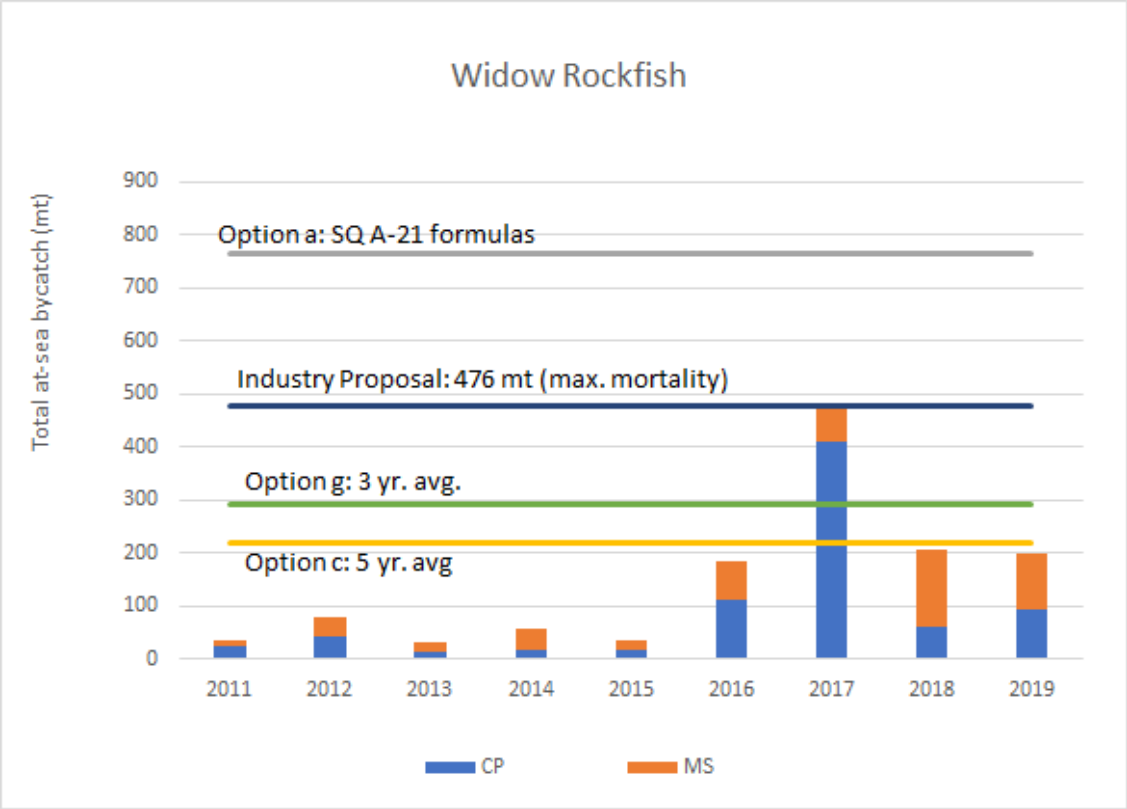

Figure 11. The at-sea bycatch mortality (mt) for 2011-2019 for the CP and MS sectors. The alternative options are indicated by horizontal lines.

10. Within Non-Trawl Harvest Guidelines, Annual Catch Targets, or Shares

The GMT recommends the Council adopt the SQ within non-trawl HGs, ACTs, and shares for all stocks except the following stocks, which have options for consideration.

Yelloweye Rockfish:

In November 2019, the Council forwarded analysis of the use of status quo proportions to set the HGs, ACTs, and shares for yelloweye rockfish within each non-trawl fishery. The GMT is proposing a new Option 2 (Table 10) that would create a single HG and ACT for yelloweye rockfish for all commercial non-trawl fisheries for the same reasons as being proposed for canary rockfish (see Action Item #7 and Agenda Item G.6 Supplemental Attachment 4 April 2020). This would be accomplished by combining the coastwide non-nearshore HGs and ACTs, the coastwide nearshore HGs and ACTs, and the Oregon nearshore (72.7 percent) and California nearshore (27.3 mt) shares. The recreational and IFQ allocations would not be affected by Option 2.

Option 2 will reduce sector constraints for yelloweye rockfish and provide more opportunity for all non-trawl sectors. The GMT notes that the non-nearshore fishery is projected to attain 1.5 mt of their 1.6 mt ACT in 2021 whereas the nearshore fisheries are only expected to catch roughly half of their ACT shares (Oregon = 1.5 mt of 3.3 mt; California = 0.7 mt of 1.2 mt). Combining

the HGs, ACTs, and shares will reduce overall commercial non-trawl constraints (3.7 mt of average 6.2 mt ACT), which can support higher trip limits and RCA re-openings in the future. Given that the Non-trawl RCA Modifications stand-alone agenda item is being considered in 2020 on the year-at-a-glance for potential implementation next cycle, it is important that Option 2 be considered now to reduce commercial non-trawl constraints.

The GMT recommends Option 2 for yelloweye rockfish within non-trawl allocations in order to reduce sector constraints and provide additional opportunity for all commercial non-trawl fisheries.

Table 10. Proposed yelloweye rockfish two year allocations (mt) for 2021 with bolded GMT recommendation.

	Option 1 SQ		**Option 2**	
ACL	**50**			
Fishery HG	**41.2**			
IFQ (8%)	**3.3**			
Non-trawl (92%)	HG	ACT	HG	ACT
	37.9	29.5	**37.9**	**29.5**
Non-nearshore (5.4%)	2.0	1.6	**7.9**	**6.2**
Nearshore (15.5%)	5.9	4.6		
---OR (72.7%)	4.3	3.3		
---CA (27.3%)	1.6	1.2		
WA Rec (25.6%)	9.7	7.5	**9.7**	**7.5**
OR Rec (23.3%)	8.8	6.9	**8.8**	**6.9**
CA Rec (30.2%)	11.4	8.9	**11.4**	**8.9**

Sablefish South of 36 N. Lat.:

The GMT recommends maintaining the 70 percent LEFG/ 30 percent OA shares split from 2019-2020. Neither sector is projected to be constrained by these allocations.

Cowcod South of 40° 10´ N. Lat.:

There is currently no sharing arrangement for this species, however **the GMT recommends creating a formal 50/50 split between the non-trawl commercial and recreational sectors.** The main benefit of creating a formal split is to allow each sector the opportunity to track respective projected impacts separately as a measure to keep one sector from impacting the other. The recommendation is to begin with an equal split as there is minimal current information to inform differently. Retention of cowcod has been prohibited since the stock was declared overfished in 2001 (and will remain so in this biennium) and historic catch prior to that time reflects when the stock was declining. Proposals to increase access through RCA adjustments for 2021-2022 in this area will result in additional cowcod bycatch for both sectors but potentially at differential rates given the geographic distribution of cowcod, newly rebuilt status of the stock and differing RCA

depths for each area and sector. Given the future impacts are likely to be variable but will provide more data, the 50/50 ratio can be re-evaluated and amended in future regulatory cycles based on this new information.

Bocaccio South of 40° 10´ N. Lat.:

The GMT is not proposing any substantive changes to the within non-trawl shares, **but does recommend combining the 0.4 percent nearshore and 30.5 percent non-nearshore shares together.** The SQ structure was implemented when the stock was still overfished. The GMT sees this as a remnant of an older management regime that necessitated more fine-scale sharing agreements. Bocaccio has been rebuilt since 2017, therefore this measure does not provide for any identifiable management need. This measure does not impact any of the proposed trip limit or bag limit measures and does not change the recreational share of 69.1 percent.

Enhanced Action Item Checklist

GMT Recommendations are bolded

Item #	Category	Sector	Specifications:
RCA Coordinate Updates			
2	Area Management	All	**Select the RCA proposals off California as PPA.**
2021-2022 Allocations and HGs			
3	Non-tribal Off-the-Top Deductions	All	Research, EFP, and IOA set-asides: **Select values in Attachment 1 that include values forwarded in November 2019 and corrections/clarifications as noted above.** **For stocks with different options, select bolded GMT recommendations.** Darkblotched Rockfish (max 24.5 mt): • Median: 6.8 mt • **Average: 9.8 mt** Petrale Sole: • Maximum: 34.3 mt • **Average: 13.3 mt** Sablefish South of 36° N. Lat.: • Maximum (from Nov 2019): 11.8 mt • **Increase to 25.0 mt** Salmon troll* yellowtail rockfish north of 40°10’ N. lat.: • **Max IOA yellowtail rockfish north set-aside: 7.0 mt** • O1: 1 lb. yellowtail rockfish per 2 lbs. salmon landed, 500 lb. monthly limit • **O2: 1 lb. yellowtail rockfish per 1 lb. salmon landed, 500 lb. monthly limit** • O3: No ratio - any salmon on board, 500 lb. monthly limit

Item #	Category	Sector	Specifications:
			Salmon troll* yellowtail rockfish south of 40°10': • **Max IOA shelf RF south set-aside: 67.67 mt** • O1: Prohibited when inside non-trawl RCA • **O2: 1 lb. yellowtail rockfish per 2 lbs. salmon with 200 lb. monthly limit** ***all salmon troll proposals are limits that pertain to both inside and outside the non-trawl RCA and are more restrictive than the OA limits for outside the non-trawl RCA*
4	Treaty Off-the-Top Deductions	Treaty Fisheries	**Adopt all requests including following changes for 2021-2022:** **• Petrale sole: 350 mt** **• Cabezon: 2 mt** **• Longnose skate: 220 mt** **• Yelloweye rockfish: 5 mt**
5	ACTs	All	Cowcod South of 40° 10′ N. Lat.: **• Specify a specific number within 40-60 mt range either now or in June 2020**
6	HGs / State Shares for Stocks in a Complex	All	Blackgill Rockfish South of 40° 10′ N. Lat.: **• Set HGs = component ACLs** Nearshore Rockfish North Complex: **• Set state HGs using SQ sharing approach**
7	Two Year Allocations	Trawl/ Non-Trawl	**SQ Allocations for Stocks Without Different Options:** • Bocaccio south of 40°10′ N. lat.: 39% trawl; 61% non-trawl • Cowcod south of 40°10′ N. lat.**:** 36% trawl, 64% non-trawl • Yelloweye rockfish: 8% trawl; 92% non-trawl • Big skate: 95% trawl, 5% non-trawl • Longnose skate: 90% trawl; 10% non-trawl •Shelf rockfish north of 40°10' N. lat.: 60.2% trawl, 39.8% non-trawl • Shelf rockfish south of 40°10′ N. lat.: 12.2% trawl, 87.8 % non-trawl Canary Rockfish (O = Option): • O1 (SQ): SQ proportions from 2017-18 • O2: Non-trawl=fixed #'s from 2017-18, at-sea reduced

Item #	Category	Sector	Specifications:
			• O3: O2 but w/ a combined commercial non-trawl HG • **O4: O1 but w/ a combined commercial non-trawl HG**
8	Amendment 21 Allocation Changes	Trawl/ Non-Trawl	<u>Petrale Sole</u> • O1 (SQ): A-21 95% trawl, 5% non-trawl • **O2: Two year: 30 mt non-trawl, remainder trawl** <u>Widow Rockfish</u> • O1 (SQ): A-21 91% trawl, 9% non-trawl • **O2: Two year: 300 mt non-trawl, remainder trawl** <u>Lingcod South of 40° 10′ N. Lat.:</u> • O1 (SQ): A-21 45% trawl, 55% non-trawl • O2: Two year: 43% trawl, 57% non-trawl • O3: Two year: 25% trawl; 75% non-trawl • **O4: Two year: 40% trawl; 60% non-trawl** • O5: Two year: 35% trawl; 65% non-trawl • O6: Two year: 30% trawl; 70% non-trawl <u>Slope Rockfish South of 40° 10′ N. Lat., Including Blackgill Rockfish:</u> •O1 (SQ): A-21 63% trawl, 37% non-trawl **•O2: Two year custom sharing approach**
9	At-Sea Set-Asides	At-Sea Whiting	**The GMT recommends all options below that are not in strikethrough.** <u>Sector-Combined (CP and MS) At-Sea Set-Asides:</u> Option A: SQ approach (i.e. maximum mortality) for majority of species and A-21 formulas for ~~widow rockfish~~, ~~darkblotched rockfish~~, ~~Pacific ocean perch~~; 50 mt for sablefish; ~~16 mt [CP] and 30 mt [MS] for canary rockfish~~ Option B: 5-year avg for ~~all species except~~ sablefish north (100 mt) and canary rockfish (20 mt)

Item #	Category	Sector	Specifications:
			~~Option C: Option B with 1.2 multiplier for all species except sablefish north (100 mt) and canary rockfish (20 mt)~~ Industry Proposed Option (Tables X1-X3): • 2015-2019 maximum mortality for darkblotched rockfish (76.4 mt) and widow rockfish (476 mt) • Custom amounts for canary rockfish (36 mt) and Pacific ocean perch (300 mt) ~~Sector-Specific At-Sea Set-Asides:~~ ~~Option D: Maximum mortality for all species except A-21 formulas for widow rockfish, darkblotched rockfish, and Pacific ocean perch; 16 mt [CP] and 30 mt[MS] for canary rockfish~~ ~~Option E: Option B split pro rata (58.6% CP, 41.4% MS)~~ ~~Option F: Five year average for all species~~ ~~Option G: Three year average for all species~~
10	Within Non-Trawl HGs, ACTs, or Shares	LEFG OA Recreational	**Adopt SQ for Stocks without Options.** • Sablefish south of 36° N. lat.: 70% LEFG; 30% OA Yelloweye Rockfish • Option 1: SQ proportions for HGs and ACTs that are separated for the commercial non-trawl sectors **• Option 2: Same as option 1, but has a combined HG and ACT for all the commercial non-trawl sectors** Cowcod South of 40°10´ N. Lat.: • Single non-trawl allocation for all **• 50/50 split to commercial non-trawl and recreational** Bocaccio South of 40°10´ N. Lat.: • 0.4% nearshore, 30.5% non-nearshore; 69.1% recreational **• 30.9% commercial non-trawl; 69.1% recreational**

Appendix 1. Off the Top Deduction Tables

Table A-1. ACLs (mt) and off-the-top deductions (mt) for 2021.

Stock/Complex	Area	ACL	Tribal	EFP	Research	IOA	Set-aside Total	Fishery HG
Arrowtooth flounder	Coastwide	9,933	2,041	0.1	12.98	41.00	2,095.08	7,837.9
Big skate	Coastwide	1,477	15	0.1	5.49	36.72	57.31	1,419.7
Black rockfish (WA)	Washington	293	18	0.0	0.10	0.00	18.10	274.9
Black rockfish (CA)	California	348	-	0.0	0.08	1.18	1.26	346.7
Bocaccio	S of 40º10' N. lat.	1,748	-	40.0	5.60	2.22	47.82	1,700.2
Cabezon (CA)	S of 42º N. lat.	211	-	1.0	0.02	0.26	1.28	209.2
California scorpionfish	S of 34°27' N. lat.	291	-	0.0	0.18	3.71	3.89	287.1
Canary rockfish	Coastwide	1,338	50	8.0	10.08	1.31	69.39	1,268.6
Chilipepper	S of 40º10' N. lat.	2,358	-	70.0	14.04	13.66	97.70	2,260.3
Cowcod	S of 40º10' N. lat.	87	-	0.65	10.00	0.17	10.82	76.2
Darkblotched rockfish	Coastwide	882	0.2	0.6	8.46	9.80	19.06	862.9
Dover sole	Coastwide	50,000	1,497	0.1	50.84	49.27	1,597.21	48,402.8
English sole	Coastwide	9,175	200	0.1	8.01	42.52	250.63	8,924.4
Lingcod	N of 40'10º N. lat.	5,369	250	1.6	16.60	11.68	279.88	5,089.1
Lingcod	S of 40'10º N. lat.	1,102	-	1.5	3.19	8.31	13.00	1,089.0
Longnose skate	Coastwide	1,823	220	0.1	12.46	18.84	251.40	1,571.6
Longspine thornyhead	N of 34º27' N. lat.	2,634	30	0.0	17.49	6.22	53.71	2,580.3
Longspine thornyhead	S of 34º27' N. lat.	832	-	0.0	1.41	0.83	2.24	829.6
Pacific cod	Coastwide	1,600	500	0.1	5.47	0.53	506.10	1,093.9
Pacific ocean perch	N of 40º10' N. lat.	3,854	9.2	0.1	5.39	10.04	24.73	3,829.3
Pacific whiting	Coastwide	TBD	TBD	1.1	TBD	1,500.00	1,501.10	TBD
Petrale sole	Coastwide	4,115	350	0.1	24.14	13.30	387.54	3,727.5
Sablefish	N of 36º N. lat.	6,049	See Attachment 3					
Sablefish	S of 36º N. lat.	2,159	-	0.0	2.40	25.00	27.40	2,131.6
Shortbelly rockfish	Coastwide	3,000	-	0.1	8.20	21.57	29.87	2,970.1
Shortspine thornyhead	N of 34º27' N. lat.	1,428	50	0.1	10.48	17.82	78.40	1,349.6
Shortspine thornyhead	S of 34º27' N. lat.	756	-	0.0	0.71	6.00	6.71	749.3

Stock/Complex	Area	ACL	Tribal	EFP	Research	IOA	Set-aside Total	Fishery HG
Spiny dogfish	Coastwide	1,621	275	1.1	34.27	33.63	344.00	1,277.0
Splitnose rockfish	S of 40°10' N. lat.	1,666	-	1.5	11.17	5.75	18.42	1,647.6
Starry flounder	Coastwide	392	2	0.1	0.57	45.71	48.38	343.6
Widow rockfish	Coastwide	14,725	200	28.0	17.27	3.05	248.32	14,476.7
YELLOWEYE ROCKFISH	Coastwide	50	5	0.24	2.92	0.69	8.85	41.2
Yellowtail rockfish	N of 40°10' N. lat.	6,050	1,000	40.0	20.55	7.00	1,067.55	4,982.5
Stock Complexes								
Nearshore rockfish north	N of 40°10' N. lat.	77	1.5	0.5	0.47	0.61	3.08	73.9
Nearshore rockfish south	S of 40°10' N. lat.	1,016	-	0.0	2.68	1.74	4.42	1,011.6
Shelf rockfish north	N of 40°10' N. lat.	1,511	30	4.5	15.32	25.62	75.44	1,435.6
Shelf rockfish south	S of 40°10' N. lat.	1,438	-	30.0	15.10	67.67	112.77	1,325.2
Slope rockfish north	N of 40°10' N. lat.	1,595	36	1.5	10.51	18.88	66.89	1,528.1
Slope rockfish south	S of 40°10' N. lat.	709	-	1.0	18.21	19.73	38.94	670.1
Other fish	Coastwide	223	-	0.1	6.29	14.95	21.34	201.7
Other flatfish	Coastwide	4,802	60	0.1	23.63	137.16	220.89	4,581.1
Oregon black/blue/deacon rockfish	Oregon	603	-	0.5	0.08	1.74	2.32	600.7
Oregon cabezon/kelp greenling	Oregon	198	-	0.1	0.05	0.06	0.21	197.8
Washington cabezon/kelp greenling	Washington	20	2	0.0	-	-	2.00	18.0

Table A-2. ACLs (mt) and off-the-top deductions (mt) for 2022.

Species	Area	ACL	Tribal	EFP	Research	IOA	Set-aside Total	Fishery HG
Arrowtooth flounder	Coastwide	8,458	2,041	0.1	12.98	41.00	2,095.08	6,362.9
Big skate	Coastwide	1,389	15	0.1	5.49	36.72	57.31	1,331.7
Black rockfish (WA)	Washington	291	18	0.0	0.10	0.00	18.10	272.9
Black rockfish (CA)	California	341	-	0.0	0.08	1.18	1.26	339.7
Bocaccio	S of 40º10' N. lat.	1,724	-	40.0	5.60	2.22	47.82	1,676.2
Cabezon (CA)	S of 42º N. lat.	195	-	1.0	0.02	0.26	1.28	193.7
California scorpionfish	S of 34°27' N. lat.	275	-	0.0	0.18	3.71	3.89	271.1
Canary rockfish	Coastwide	1,307	50	8.0	10.08	1.31	69.39	1,237.6
Chilipepper	S of 40º10' N. lat.	2,259	-	70.0	14.04	13.66	97.70	2,161.3
Cowcod	S of 40º10' N. lat.	85	-	0.65	10.00	0.17	10.82	74.2
Darkblotched rockfish	Coastwide	831	0.2	0.6	8.46	9.80	19.06	811.9
Dover sole	Coastwide	50,000	1,497.0	0.1	50.84	49.27	1,597.21	48,402.8
English sole	Coastwide	9,108	200.0	0.1	8.01	42.52	250.63	8,857.4
Lingcod	N of 40'10º N. lat.	4,958	250.0	1.6	16.60	11.68	279.88	4,678.1
Lingcod	S of 40'10º N. lat.	1,172	-	1.5	3.19	8.31	13.00	1,159.0
Longnose skate	Coastwide	1,761	220.0	0.1	12.46	18.84	251.40	1,509.6
Longspine thornyhead	N of 34º27' N. lat.	2,452	30.0	0.0	17.49	6.22	53.71	2,398.7
Longspine thornyhead	S of 34º27' N. lat.	774	-	0.0	1.41	0.83	2.24	772.2
Pacific cod	Coastwide	1,600	500.0	0.1	5.47	0.53	506.10	1,093.9
Pacific ocean perch	N of 40º10' N. lat.	3,711	9.2	0.1	5.39	10.04	24.73	3,686.3
Pacific whiting	Coastwide	TBD	TBD	1.1	TBD	1,500.00	1,501.10	TBD
Petrale sole	Coastwide	3,660	350	0.1	24.14	13.30	387.54	3,272.5
Sablefish	N of 36º N. lat.	5,757	See Attachment 3					
Sablefish	S of 36º N. lat.	2,054	-	0.0	2.40	25.00	27.40	2,026.6
Shortbelly rockfish	Coastwide	3,000	-	0.1	8.20	21.57	29.87	2,970.1
Shortspine thornyhead	N of 34º27' N. lat.	1,393	50	0.1	10.48	17.82	78.40	1,314.6
Shortspine thornyhead	S of 34º27' N. lat.	737	-	0.0	0.71	6.00	6.71	730.3
Spiny dogfish	Coastwide	1,585	275	1.1	34.27	33.63	344.00	1,241.0
Splitnose rockfish	S of 40º10' N. lat.	1,630	-	1.5	11.17	5.75	18.42	1,611.6

Species	Area	ACL	Tribal	EFP	Research	IOA	Set-aside Total	Fishery HG
Starry flounder	Coastwide	392	2	0.1	0.57	45.71	48.38	343.6
Widow rockfish	Coastwide	13,788	200	28.0	17.27	3.05	248.32	13,539.7
YELLOWEYE ROCKFISH	Coastwide	51	5	0.24	2.92	0.69	8.85	42.2
Yellowtail rockfish	N of 40º10' N. lat.	5,831	1,000	40.0	20.55	7.00	1,067.55	4,763.5
Stock Complexes								
Nearshore rockfish north	N of 40º10' N. lat.	76	1.5	0.5	0.47	0.61	3.08	72.9
Nearshore rockfish south	S of 40º10' N. lat.	1,010	-	0.0	2.68	1.74	4.42	1,005.6
Shelf rockfish north	N of 40º10' N. lat.	1,450	30	4.5	15.32	25.62	75.44	1,374.6
Shelf rockfish south	S of 40º10' N. lat.	1,428	-	30.0	15.10	67.67	112.77	1,315.2
Slope rockfish north	N of 40º10' N. lat.	1,568	36	1.5	10.51	18.88	66.89	1,501.1
Slope rockfish south	S of 40º10' N. lat.	705	-	1.0	18.21	19.73	38.94	666.1
Other fish	Coastwide	233	-	0.1	6.29	14.95	21.34	211.7
Other flatfish	Coastwide	4,838	60	0.1	23.63	137.16	220.89	4,617.1
Oregon black/blue/deacon rockfish	Oregon	6,000	-	0.5	0.08	1.74	2.32	5,997.7
Oregon cabezon/kelp greenling	Oregon	190	-	0.1	0.05	0.06	0.21	189.8
Washington cabezon/kelp greenling	Washington	17	2	0.0			2.00	15.0

Table A-3. Sablefish North of 40° 10’ N. lat. set-asides (mt) for 2021 and 2022.

Year	ACL	Tribal Share	Research	Rec.	EFP	Commercial HG
2021	6,049.3	604.0	30.7	6.0	1.1	5,407.5
2022	5,756.7	575.0	30.7	6.0	1.1	5,143.9

PFMC
04/08/20