GROUNDFISH MANAGEMENT TEAM REPORT ON SHORTBELLY ROCKFISH MITIGATION OPTIONS

The Pacific Fishery Management Council (Council) action is to consider adopting mitigation measures to prevent exceeding the shortbelly rockfish 2,000 mt annual catch limit (ACL) for the 2021-22 biennial cycle. The April Council motion was specific to "develop[ing] an ACT (annual catch target) alternative that would close a portion of the trawl fleet upon attainment as recommended by the GAP (Groundfish Advisory Subpanel) in Agenda Item G.6.a, Supplemental GAP Report 1, April 2020".

The first part of this report pertains to the Council having the ability to confirm, or modify, their final preferred alternative (FPA) harvest specifications for 2021-22. A new research study indicates there could be a population boom of shortbelly rockfish for the next decade, which will be discussed in greater detail below. The Council selected the 2,000 mt ACL as the FPA in part because that was twice the amount of the Groundfish Management Team's (GMT) maximum bycatch projection, but this potential population boom has led the GMT to conclude that future bycatch could be higher than our earlier projections.

The GMT also provides options to consider regarding to how the ACT could be set, which years the ACT could apply to, and which sectors could remain open or closed upon reaching the ACT. These mitigation options are discussed in the second part of this report.

Harvest specifications

Management of shortbelly rockfish has been a complex issue, given that there has been limited information available on the stock and there are a multitude of differential stakeholder and policy objectives that the Council has to balance (Agenda Item I.7.a, Supplemental GMT Report 1, June 2019). The three main objectives have always been to: (1) prevent a directed fishery from developing; (2) minimize bycatch; and (3) not constrain fisheries. In previous cycles, the Council has used low ACLs as a means to accomplish these policy objectives. The ACLs have always been set below the conservation reference points for shortbelly rockfish, which include the 6,950 mt overfishing limit (OFL) and the 4,184 mt allowable biological catch (ABC).

The Council has had to adapt their policies throughout time to meet these objectives and recognize changing fisheries and shortbelly rockfish abundance (Agenda Item I.7.a, Supplemental GMT Report 1, June 2019). This includes setting a 50 mt ACL in 2008 that was 1 percent of the ABC and raising the ACL to 500 mt in 2015 to prevent potential constraints in the re-emerging mid-water trawl rockfish fishery. The Council then raised the ACL to 3,000 mt for 2020 since the 500 mt ACL had been exceeded in 2018 and 2019. In addition, the GMT stated that raising the 2020 ACL to either 3,000 mt or to the full ABC of 4,184 mt would reduce fishery constraints while not jeopardizing conservation or forage objectives (Agenda Item H.4.a, Supplemental GMT Report 1, November 2019).

The Council also selected 3,000 mt as the preliminary preferred alternative (PPA) for 2021-2022, but decided to select 2,000 mt as the FPA at the April 2020 meeting. The 2,000 mt FPA was not expected to constrain fisheries at that time, because the GMT projected that maximum bycatch would be 1,000 mt based on simulation modeling (Agenda Item G.6 Attachment 2, April 2020).

However, new information suggests that future bycatch could be higher than the previous GMT projections (1,000 mt maximum) that the Council used to make their FPA decisions. The GMT recently became aware of a peer-reviewed research study (Schroeder et al. 2018[1]) indicating that the population boom of shortbelly rockfish could last a decade or longer (discussed more below). The GMT's previous bootstrap projections are likely low because they were based on the assumption that future bycatch patterns would be similar to those of the past (i.e., 2017-2019), and they do not account for a potential population boom.

Schroeder et al. (2018) indicate that several strong recruitment years could continue to impact the mid-water trawl fishery in 2020 and beyond. As we discussed in the GMT's November 2019 report (Agenda Item H.6.a, GMT Report 2), the 2018 and 2019 high bycatch levels were tied to relatively strong 2013 and 2014 year classes off central California. As the shortbelly rockfish recruits aged, they moved north into Oregon and Washington. Schroeder et al. (2018) show that 2013 was the highest recruitment anomaly of any rockfish in any year since records began in 1983 (Figure 1). If individuals from this record year class continue to remain in the north, off of Oregon and Washington, then they will continue to be encountered as bycatch in coming years. Furthermore, Schroeder et al. (2019) show that there were also atypically high year classes in 2014, 2015, and 2016 that could start to become encountered as bycatch in 2019, and beyond. In addition, shortbelly rockfish recruitment data provided to the GMT by the Southwest Fisheries Science Center Rockfish Recruitment and Ecosystem Assessment Survey (RREAS) indicate that recruitment off California remained high in 2017 and 2018, before decreasing in 2019. Based on the size of by-caught shortbelly rockfish from 2017-2019, we know that the majority of these individuals were 5+ years old. If shortbelly rockfish continue to behave similarly to the 2013 cohort (i.e., move north as they age), there would be a continual influx of large numbers of adult shortbelly rockfish into Oregon and Washington from 2020 through at least the 2023-24 cycle. Shortbelly rockfish live to be about 12 years old, so it is possible that high abundances in the north will continue through at least 2029.

[1] Schroeder, I.D., Santora, J.A., Bograd, S.J., Hazen, E.L., Sakuma, K.M., Moore, A.M., Edwards, C.A., Wells, B.K., Field, J.C. (2018) Source water variability as a driver of rockfish recruitment in the California Current Ecosystem: implications for climate change and fisheries management. Canadian Journal of Fisheries and Aquatic Sciences 76, 950-960.

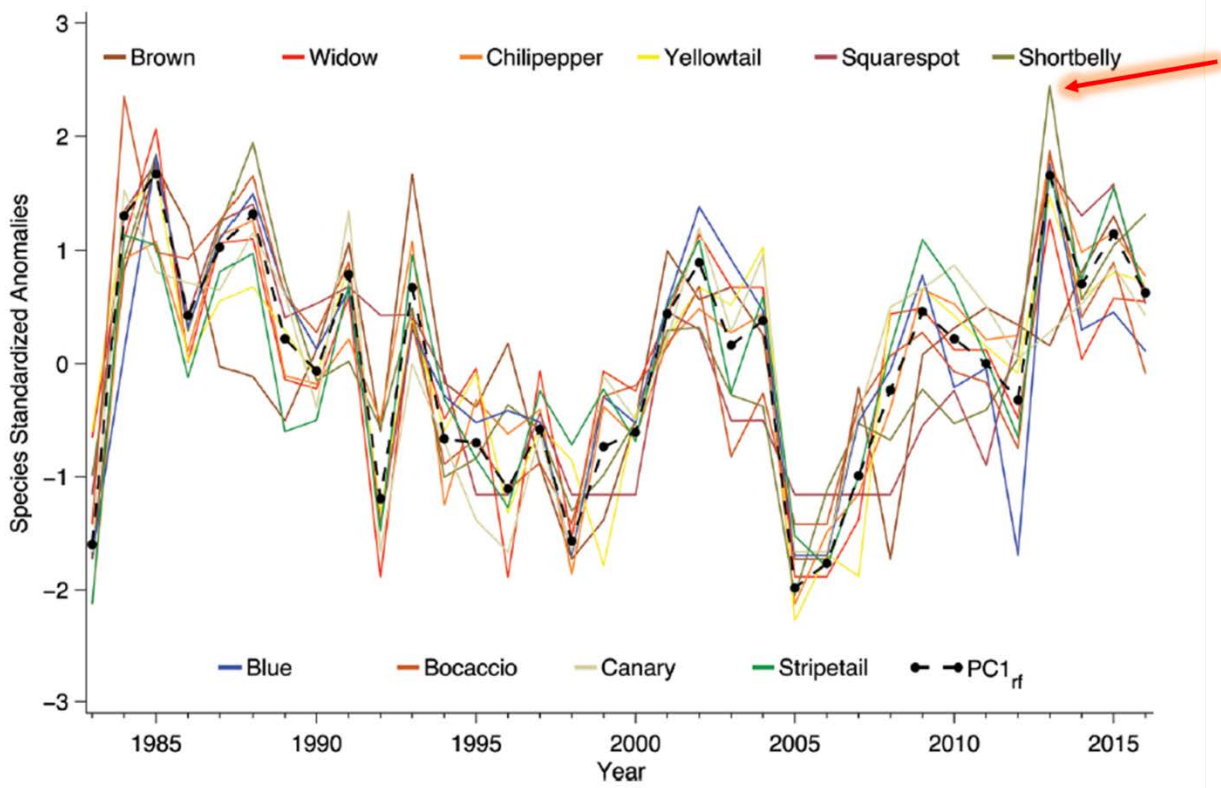

Figure 1. Standardized abundance anomalies of the top ten most abundant pelagic juvenile rockfish species and the common trend (Principle Component 1 rockfish; PC1rf) collected by the RREAS midwater trawls from 1983-2016 (this is figure 3 from Schroeder et al. 2018). The glowing red arrow is pointing to the 2013 standardized shortbelly anomaly.

The GMT emphasizes that the standardized abundance anomalies shown in Figure 1 from Schroeder et al. (2018) can obscure the massive strength of the 2013-2016 year classes and expected population boom. Standardized anomalies put all species on the same scale so that the data can be used in a multivariate Principle Components Analysis, but this can obscure true abundance variability. To better understand and put into context the actual abundance differences, the GMT obtained RREAS data abundance data from 1990-2016 for the 10 rockfish species analyzed by Schroeder et al. (2018). We then calculated mean abundances for each species in each year using delta means (delta mean is a technique to calculate means for data that are zero-inflated). Evaluation of mean abundance rather than standardized anomalies illuminates the extraordinary nature of shortbelly rockfish recruitment from 2013-2016 (Figure 2). Shortbelly rockfish mean recruit abundance in 2013 was 25 times higher than the next largest non-shortbelly yearly mean (chilipepper rockfish in 1993). Further, shortbelly rockfish recruitment in 2013 was more than three orders of magnitude (4303) times higher than the average yearly recruitment among all rockfishes from 1990-2012. Each of the shortbelly recruitment classes from 2013-2016 were larger than any recruitment class for any species besides shortbelly from 1990-2012. By all accounts, shortbelly recruitment and subsequent adult populations are currently astronomically high.

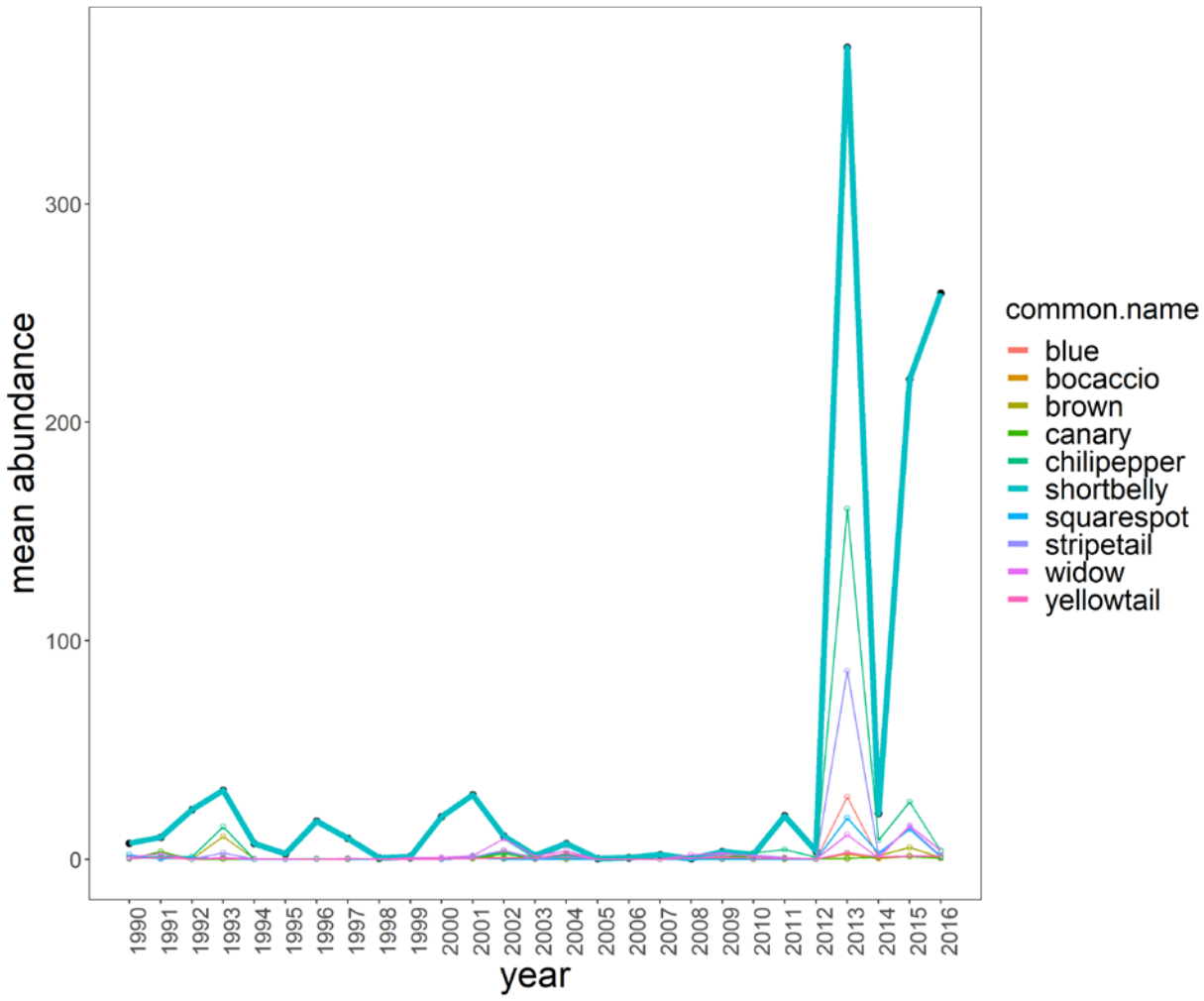

Figure 2. Mean yearly abundances, based on number of individuals per 15 minute tow time, from 1990-2016 for the ten rockfishes analyzed by Schroeder et al. (2018). The heavy, turquoise line depicts shortbelly rockfish.

The GMT would like to point out one more factor that is relevant to recent shortbelly rockfish ACL considerations. The 6,950 OFL and 4,81 mt ABC were originally based on a biomass assessment that was published in 2007 (Field et al. 2007). This biomass estimate utilized various data sources up to 2005. Shortbelly recruitment in 2013 was 51 times higher than 2004 and 1,750 times higher than 2005. This suggests that shortbelly population sizes in 2019 may be on the order of 1,000 times greater than in 2005.

In conclusion, the GMT remains confident that long-term conservation and forage objectives would be met even if the full 4,184 mt ABC were taken, as we also explained in our November 2019 statement (Agenda Item H.4.a, Supplemental GMT Report 1, November 2019). We are, however, no longer confident that 1,000 mt accurately represents the maximum future bycatch, because the GMT bootstrap model could not take into account a potential population boom. Unfortunately, there is no modeling technique that would be able to provide reliable future

bycatch projections because so many factors are highly uncertain (e.g., if the fish will remain north, how large the population will grow with high year classes, if better avoidance techniques are developed). While we can state confidently that the overall adult shortbelly rockfish population size is currently, and will likely remain, high over the next decade, we do not fully understand why so many individuals moved north in recent years, and whether this incursion will continue.

The Council's selection of shortbelly rockfish harvest specifications has always been a balancing act between recognizing their value as an important forage stock while not constraining fisheries. We emphasize the new research results, because the Council made their April 2020 FPA recommendations based in part on the 1,000 mt maximum bootstrap projection. We are unable to provide a new and higher maximum projection because it would be too speculative. We note that 2,000 mt would still be approximately 3 times higher than the 656 mt maximum actual catch in 2019. That being said, the Council can always revisit their FPA harvest specification recommendations at this June Council meeting if the new research results affect their risk tolerance in regards to meeting the policy objectives listed above.

ACT Mitigation Options

The main Council action is to consider implementing a new ACT that would mitigate risks to exceeding the shortbelly rockfish ACL, as part of the 2021-22 biennial harvest specifications and management measures. The Council motion, made in reference to the GAP statement (Agenda Item G.6.a, Supplemental GAP Report 1, April 2020), was to analyze an ACT that would close a portion of the trawl fleet. This report lays out options for how the ACT could be implemented (ACT Formula Options), when it would apply (ACT Year Options), and which sectors it would apply to (Sector Exemption Options).

The original ACT concept that was proposed by the GMT in April 2020 is outlined in Table 1 below, as described under Action Item #11 in Agenda Item G.6.a, Supplemental GMT Report 2, April 2020. Under this option, the Council would recommend the National Marine Fisheries Service (NMFS) implement an ACT in 2022 only, and attainment of the ACT would result in closure of pre-specified high bycatch trawl fisheries. This would simultaneously help prevent consecutive ACL overages and reduce bycatch for forage purposes. The 2022 ACT would be set by taking into account the ACL overage from the prior year, along with the off-the-top deductions (see footnote of Table 1 for an example).

Table 1. Scenario of how a shortbelly rockfish ACT concept would work based on the 2021 ACL overage triggering an ACT in 2022 that is reduced by the 2021 overage amount and off-the-top deductions. All units are mt.

Year	ABC	ACL	Off-the-top deductions	ACT	Total Catch	Overage
2021	4,184	2,000	30	------	2,283	283
2022	4,184	2,000	30	1,687*	0	0

**1,687 mt ACT = 2,000 mt ACL - 30 mt off-the-top - 283 mt ACL overage in 2021*

The original ACT option would ensure that catch remains within the combined ACLs for 2021 and 2022 (4,000 mt), which is still only 48 percent of the combined ABC (8,368 mt). This option

would also make clear to the public what the exact response would be to any overage in the first year of the cycle. However, this option may also be more stringent than is necessary in light of the new information by Schroeder et al. (2018) described above. Under this option, a large overage in 2021 could severely hinder fishing in the second year. For example, if in 2021, the total mortality for shortbelly rockfish was 3,500 mt, or 1,500 mt more than the 2021 ACL (2,000 mt), the ACT in 2022 would be 500 mt. The 500 mt ACT would be further reduced to account for mortality in research, exempted fishing permits, and incidental open access fisheries, resulting in an ACT with a fishery closure mechanism in 2022 of 470 mt. Having such a small amount of shortbelly rockfish available for bycatch in 2022 could severely hinder fishing operations, particularly as we now know, due to the new research available, that shortbelly rockfish are more ubiquitous. It is highly likely that we will continue to see higher bycatch of shortbelly rockfish even as the fleets attempt to voluntarily avoid them.

If the Council chooses not to select an ACT option for shortbelly rockfish for the 2021-22 biennial cycle, they would continue to rely on mitigation tools available inseason, but there would be no automatic response to any ACL overage. If the shortbelly rockfish ACL was exceeded, the public and stakeholders would likely be again confused as to the "required" response.

The remainder of this document contains analysis of ACT options in regards to which years they could apply, if low impact sectors could be exempted from closures, and how the ACT could be set using different formulas.

ACT Year Options

Year Option 1 is the original proposal that would implement an ACT in the second year of the biennium which accounts for any ACL overages in the first year of the cycle. For this biennial cycle, the ACT would be implemented in 2022. Year Option 2 would have the ACT apply in both 2021 and 2022 (Table 2). The GMT added this option in case the Council would prefer to be more stringent in minimizing risks to the ACL across all years. However, the GMT reiterates that the strong 2013-2016 year classes identified by Schroeder et al. (2018), and discussed above, could continue to appear in fisheries off of Washington and Oregon, possibly leading to more high bycatch events in the future similar to that seen in 2019. If there is currently a progressing population boom, as suggested by this new information, reaching or exceeding the ACL in Year 1 would likely create little to no conservation risk to the stock or negative impact to forage bases. Therefore, having a strict ACT to enforce the ACL in 2021 would likely be unnecessarily burdensome and would likely create negative consequences for the fishery.

Table 2. Year options for the ACT concept in 2021-2022.

Year Option	Description
1	ACT only in 2022
2	ACT in both 2021 and 2022

Sector Exemption Options

As part of the motion, the Council tasked the GMT with analyzing what happens if an ACT for shortbelly rockfish is reached inseason. The GAP, GMT, and Council all supported restricting, or closing, a portion of trawl fisheries in order to not negatively impact sectors that have low shortbelly rockfish bycatch. This is similar to the preservation of 500 Chinook salmon upon closure of the trawl fishery that the Council designed in order to help ensure that recreational and fixed gear commercial fisheries remain open (Agenda Item H.9.a, Supplemental GMT Report 1, November 2019).

It could be beneficial to consider exempting all non-whiting fisheries from any closures since these are low impact sectors (Table 3). The maximum total mortality for all the non-whiting sectors was 39 mt in 2019, which is low relative to the 606 mt of whiting bycatch that same year. The whiting sectors have been responsible for 92.4 percent of the total bycatch during the high bycatch years of 2017-2019.

Table 3 . Historical total mortality (mt) of shortbelly rockfish by sector.

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019
CP whiting	0	0	0	0	0	0	141	86	31
MS whiting	0	0	1	0	0	2	28	142	344
SS whiting	0	0	2	0	1	23	125	244	230
Mid-water non-whiting trawl	NA - fishery "fully re-emerged" in 2017						4	32	36
Bottom trawl	11	5	18	8	4	1	1	1	3
Non-trawl (Rec; LEFG OA; IFQ FG)	< 0.1								
Off-top (IOA/tribe/research)	2	2	4	10	4	4	22	4	9
Total all sectors	12	7	25	18	9	30	320	508	656
Total whiting	0	0	3	0	1	25	294	472	606
Total non-whiting groundfish (excludes off-the-tops)	11	5	18	8	4	1	5	33	39

Source: 2011-18 = GEMM; 2019 = PacFIN projection

Exemption Option 1 would exempt all non-trawl fisheries from ACT closures or restrictions (Table 4). This would include recreational, limited entry fixed gear (LEFG) and Open Access (OA), as well as individual fishing quota (IFQ) fixed gear ("gear switchers"). Annual mortality is negligible from these sectors (< 0.1 mt) (Table 3).

Exemption Option 2 would exempt the non-whiting trawl fisheries from ACT closures (i.e., bottom and mid-water rockfish trawl) since these are also low impact sectors. The maximum mortality from these sectors was 39 mt in 2019, which was only six percent of total mortality that year. To facilitate Exemption Option 2 without causing risk to the ACL, the GMT recommends distributing 170 mt to these sectors. This will accommodate the maximum historical non-whiting trawl bycatch (maximum = 39 mt) with buffering to account for higher abundance of shortbelly rockfish and also for potential increases in bycatch by the bottom trawl fishery due to the reopening of the trawl rockfish conservation area (RCA). Bottom trawl bycatch of shortbelly rockfish is expected to

increase with the reopening of the trawl RCA since the 100-150 fathom depths are where whiting bycatch has been highest.

Exemption Options 1 and 2 are not mutually exclusive (Table 4), and selecting both could be beneficial. The GMT has provided some new options for how the ACT formula could be set to better facilitate sector exemptions without causing risks to ACLs, which will be discussed in the next section.

When the Council was briefed on the proposed ACT concept in April 2020, they discussed the possibility that a Bycatch Reduction Area (BRA) that closes an area from the shore to X fathoms could be a more preferable mitigation option than a whiting closure upon reaching the ACT. The GMT did not develop options for this because it was outside the scope of the motion and because our previous analysis indicates that BRAs would be better suited for the inseason process than via automatic ACT triggers (see Appendix for more detail and Agenda Item I.7.a, Supplemental GMT Report 1, June 2019).

Table 4. Sector Exemption Options, which are not mutually exclusive (both can be selected).

Exemption Option	Description
1	Non-trawl exemption (Rec., LEFG OA, IFQ fixed gear)
2	Non-whiting trawl exemption (with specified amount to accommodate potential bycatch)*

**GMT is recommending 170 mt, which would be in addition to the 30 mt off-the-top deduction*

ACT Formula Options

ACT Formula Options are presented in Table 5. ACT Formula Option 1 would use the approach that was discussed in April and includes the ACL "overage carryover" concept (Table 1). For example, if the 2021 ACL was exceeded by 283 mt, then the 2022 ACT would be 1,687 mt (i.e., subtracting 30 mt off-the-top and 283 mt overage from the 2,000 mt ACL). A benefit to the ACT Formula Option 1 is that it would help keep multi-year mortality at or below the 2,000 mt level, on average. However, the GMT does not believe that overage carryover is necessary for shortbelly rockfish conservation, or forage stock objectives, based on our conclusion that catching the full 4,184 mt ABC would not be problematic for either.

Table 5. Shortbelly rockfish ACT options that could be applicable for 2022 and/or 2021 (see Year Options).

ACT Option	2022 ACT Formula
1 (April proposal)	Includes a deduction for ACL overages in prior year
2 (New)	Fixed at 1,800 mt regardless of ACL overages

The GMT also determined that ACT Formula Option 1 would make it more difficult to accommodate sector exemptions while minimizing risks to the ACL, given that the size of future ACTs would be unknown since it depends on the magnitude of future ACL overages. If the ACL overage is small (e.g., 5 mt), then the ACT would be set close to the ACL (1,965 mt) the next year,

which could cause risks to the ACL if non-trawl sectors were exempted from closures (Table 6). Another potential issue is if the ACL overage is high, then the ACT could be at low levels the next year that could cause fisheries to close early when there is no risk to the ACL. The GMT discussed potentially capping the amount of overage at X mt to rectify this issue, but decided there were more preferable options to explore.

Table 6. Scenario of how a low ACL overage could cause the ACT to approach the ACL the next year and thus cause potential risks to the ACL if non-whiting trawl fisheries were exempt from closure.

Year	ABC	ACL	Off-the-top deductions	ACT	Total Catch	Overage
2021	4,184	2,000	30	------	2,005	5
2022	4,184	2,000	30	1,965*	0	0

***1,965 ACT = 2,000 mt ACL - 30 mt off-the-top - 5 mt 2021 overage**

ACT Formula Option 2 uses an 1,800 mt fixed ACT regardless of the size of ACL overages in prior years. The 1,800 mt is based on the 2,000 mt ACL minus a 200 mt deduction, which includes 170 mt to exempt all fisheries other than whiting from closure (Exemption Option 2) plus the standard 30 mt off-the-top deduction. The regulatory language could likely be crafted so that the Council could take action to transfer the unused portion of the 200 mt deduction to raise the ACT inseason to prevent whiting closures, if necessary.

ACT Formula Option 2 is best at accommodating sector exemptions while reducing risks to the ACL. The ACT is also predetermined at an established number which could help the whiting cooperatives better avoid uncertain risk during their preseason planning. A potential downside is that ACT Formula Option 2 would not be as good as ACT Formula Option 1 at keeping multi-year mortality at, or below, the 2,000 mt mark because there would not be any overage carryover. However, we once again point out that we do not believe strictly keeping multi-year average mortality to 2,000 mt is necessary to meet conservation or forage objectives.

Overarching decision tree for shortbelly rockfish in 2021-2022

All the potential action points are outlined in Figure 3. The Council could reconsider their FPA ACL of 2,000 mt based on new research information that there could be a potential boom in the shortbelly rockfish population. The Council made their FPA before the GMT became aware of this information, and their decision was made in part due to our earlier 1,000 mt maximum projection that we now conclude is likely an underestimate.

The second main action is whether or not to establish an ACT that could prompt fishery closures if reached inseason. The first question is whether or not the ACT should be in just 2022 or both 2021 and 2022. The second question is whether or not to exempt the low impact non-trawl and/or non-whiting trawl sectors. The final question is whether to set the ACT at an amount deducted by the previous overage or at a pre-specified fixed amount. Establishing a fixed ACT at 200 mt below the ACL would be better at accommodating sector exemptions without causing risk to the ACL. However, carryover of any ACL overages from the year prior would be better if the preference was to keep multi-year mortality at or below the 2,000 mt ACL.

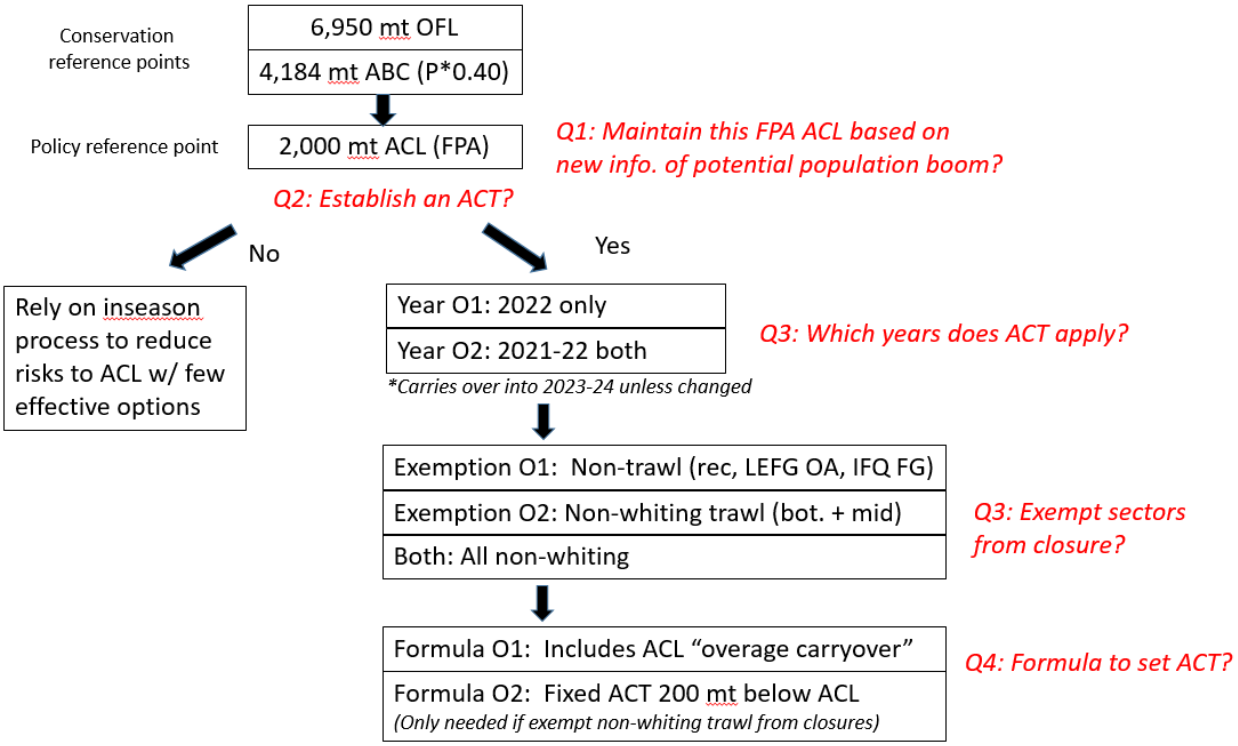

Figure 3. Potential shortbelly rockfish mitigation options for 2021-2022.

APPENDIX
RATIONALE WHY BRAS COULD BE BETTER SUITED FOR INSEASON MANAGEMENT THAN VIA AUTOMATIC ACT TRIGGERS

The Council discussed alternatives to closure during April 2020, such as check-ins and/or depth restrictions for the whiting sectors. The GMT was specifically asked if depth restrictions could be a viable alternative instead of closures for the whiting fisheries. Our response to that question has been that area restrictions would have limited effectiveness given that bycatch has been widespread in both space and time in the main whiting fishery footprint (Figure A- 1). As such, implementing depth restrictions to limit shortbelly rockfish bycatch could also result in de facto closures of the whiting fisheries.

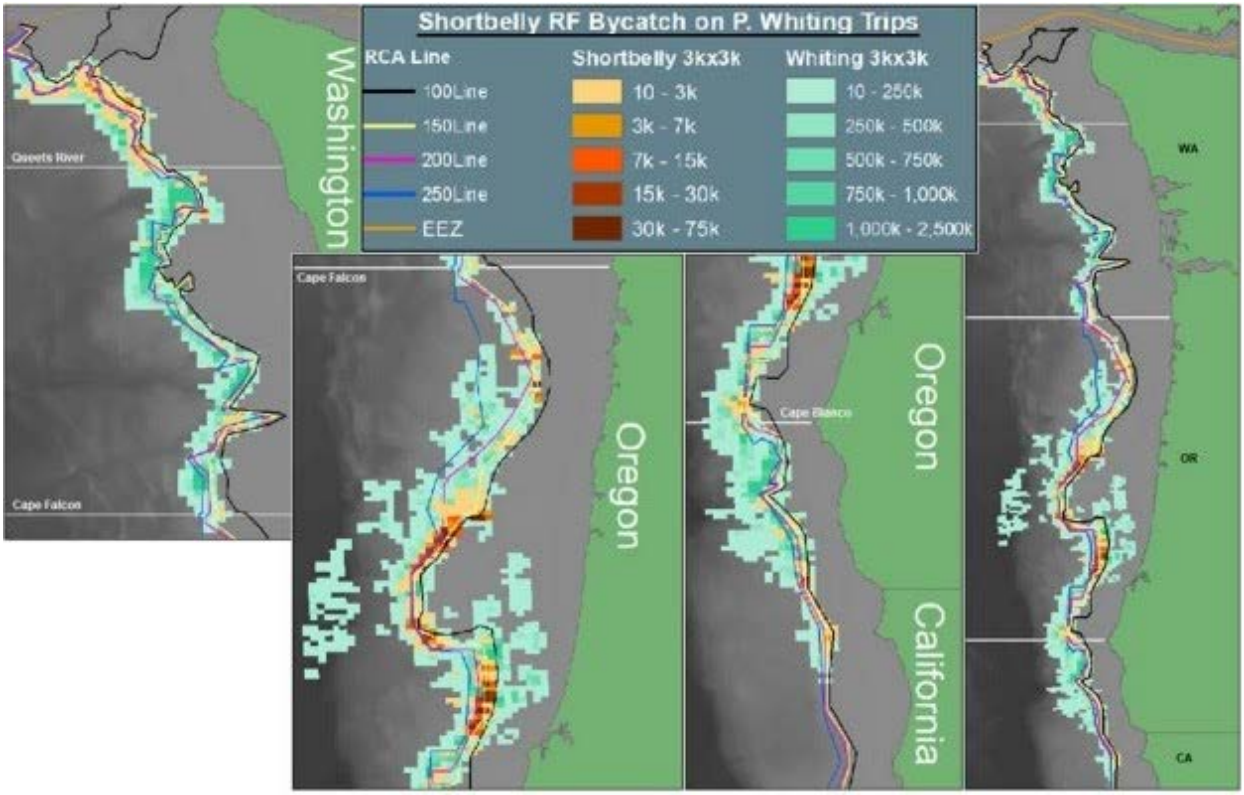

Figure A- 1. Heatmap of shortbelly rockfish bycatch hotspots from all whiting fisheries during the high bycatch years (2017-2019) in relation to the footprint of where the whiting fishery occurs.

The GMT did however conduct further analysis to evaluate if a whiting bycatch reduction area (BRA) could provide an effective ACT mitigation response instead of a complete closure. The main issue for BRAs instead of closures is that they would only slow, but not eliminate, catch, and this "extra catch" would have to be accounted for to prevent risks to the ACL. For example, if a BRA was triggered at 100 mt below the ACL, then the whiting sectors would remain open and their extra bycatch could cause risk to the ACL.

The main question for using BRAs, instead of closures, is therefore how low should the ACT trigger point for BRAs be in order to prevent the extra bycatch causing risk to the ACL? The GMT evaluated this question by running simulation models of how much extra bycatch it would take the whiting fisheries to catch their remaining whiting allocations after a 200 fathom BRA is implemented. The scenario results indicated a BRA could be effective at reducing but not eliminating bycatch, and that ~100-200 mt of additional bycatch could have to be accommodated in order to prevent risks to the ACL (Table A- 1). Simulations of the other BRAs in regulation (75, 100, 150 fathoms) had limited ability to reduce bycatch as the results were similar to not having any depth restrictions at all.

Table A- 1. Scenario modeling of the potential effectiveness of a 200 fathom BRA during a high bycatch year approaching 2,000 mt ACL.

Action	Scenario 1: 50,000 mt whiting left to catch	Scenario 2: 100,000 mt whiting left to catch	Scenario 3: 150,000 mt whiting left to catch
No BRA	+240 mt shortbelly	+480 mt shortbelly	+720 mt shortbelly
BRA (0-200 fm)	+90 mt shortbelly	+180 mt shortbelly	+280 mt shortbelly

A potential solution for accommodating 100-200 mt of additional bycatch after a BRA is implemented would be to deduct that amount from the ACL when setting the ACT trigger. Given that the Council is already considering a 200 mt deduction to exempt the non-trawl fisheries from closures, this would create redundant deductions. The ACT that would trigger a 200 fathom BRA would therefore have to be set as low as 400 mt below the ACL in order to reduce risks to the ACL from all fisheries.

There are also several other issues when considering a whiting BRA that would be triggered via an ACT. First, the simulation projections of how much extra bycatch could be needed after the BRA is implemented are highly speculative and uncertain. Setting another 100-200 mt deduction from the ACL to accommodate a whiting BRA may not be adequate in the future if bycatch patterns change. A main concern is that another deduction to accommodate a BRA would decrease the amount that would be available to the whiting fisheries, which would reduce their ability to take voluntary actions to reduce bycatch of other stocks of concern (e.g., salmon). The GMT believes that voluntary avoidance might be the best approach for reducing shortbelly rockfish bycatch since they can communicate hotspots as they develop and can share techniques to better differentiate schools of shortbelly rockfish on their sounders.

Another main issue is that a 200-fathom BRA could disproportionately affect the mothership and shoreside sectors that rely on smaller catcher boats to catch the fish, which industry has stated do not have enough horsepower to fish the deeper 200+ fathom depths. Although the larger catcher-processors are capable of fishing deep waters, they have stated that a 200 fathom BRA could close their fishery because sometimes whiting are only found in shallower depths. These same issues were extensively discussed during salmon mitigation in April and November of 2019.

The GMT does cautiously recognize there could be some future utility of a BRA to reduce bycatch of shortbelly rockfish in the whiting fisheries, but it would be more beneficial to consider them via the inseason process instead of via ACT triggers.