GROUNDFISH MANAGEMENT TEAM REPORT ON 2019-20 MANAGEMENT MEASURES—YELLOWEYE ROCKFISH REBUILDING

The Groundfish Management Team (GMT) spent the majority of its time since the April Pacific Fishery Management Council (Council) meeting preparing Appendix B, Considerations of Changes to the Yelloweye Rockfish Rebuilding Plan (Agenda Item E.4., Attachment 5, June 2018) for the June Council meeting. Based on subsequent discussions, we offer the following thoughts for consideration:

# Background

The current alternatives being considered would rebuild yelloweye rockfish within ten years (ranging from 2027 and 2029). Initial assessments for many of the overfished rockfish stocks estimated that rebuilding periods would likely span 60-70 years (e.g., in the 2011 stock assessment, yelloweye rockfish was projected to be rebuilt in 2074). In the past, the Council's West Coast rockfish rebuilding plans, including the rebuilding plan for yelloweye rockfish, included rebuilding time periods that exceeded the Magnuson-Stevens Fishery Conservation and Management Act (MSA) required ten-year periods. This was because the stock biology would not support rebuilding in that time frame even in the absence of fishing, and because the shortest time frame possible would have precluded most fishing coastwide. These plans have been the subject of past litigation, and the rulings in these cases offer considerations for future changes.

The 2005 9th Circuit opinion remanding earlier limits noted that there is "some ambiguity" in the requirement to rebuild as quickly as possible taking into account stock status and Section 1854(e)(4)(A)(i) specifies that the rebuilding time period be as "short as possible," but also directs that the Agency "take into account the status and biology of [the] . . . overfished stock" and "the needs of fishing communities" (NRDC v. National Marine Fisheries Service). A subsequent decision by the Northern District Court on proposed revisions to the rebuilding plan for darkblotched rockfish expanded that "when it is possible to rebuild a species within ten years, the Agency may consider the short-term economic needs of fishing communities" but "may not use those needs to go beyond the ten year-cap set in subsection (ii)" (NRDC v. Locke). None of the alternatives considered here would extend the time to rebuild yelloweye rockfish beyond ten years, indicating the Council may have some leeway to consider changes in information about stock status and community needs.

At the March 2018 meeting, the National Marine Fisheries Service (NMFS) report specified that "any changes to the rebuilding plan will need to address why circumstances have changed such that a change to the current default harvest control rule is now warranted. Improved stock status is not sufficient to support a higher harvest rate" (Agenda Item H.7.a, Supplemental NMFS Report 2 March 2018). Appendix B (Agenda Item E.4., Attachment 5) provides a detailed analysis of how things have changed since the last revisions to the rebuilding plan in 2011, including our understanding of stock status and biology, and of developing community needs, such that a change to the current default harvest control rule is now warranted.

## Selecting a Final Preferred Alternative

Yelloweye rockfish will continue, under all alternatives, to be one of, if not the most constraining species to West Coast fisheries. It is important for the Council to consider that while the annual catch limits (ACLs) incrementally increase by 10 mt starting with no action to alternative 2, any additional yelloweye rockfish available to harvest is further divided amongst all the sectors according to status quo proportions (PPA). Table 1 provides the allocations, and projected impacts for each ACL alternative in 2019, as well as updated projected impacts based on the GMT recommendations under new management measures (Agenda Item E.4.a, Supplemental GMT Report 2). As shown, each sector (commercial trawl and fixed gear, and recreational fisheries) receives approximately 42-45 percent more allocation under Alternative 1 and 71-91 percent more under Alternative 2 compared to No Action. Yet, with the variability in yelloweye rockfish catch, and the uncertainty in some sector projections under liberalized management measures, the actual metric tons gained under Alternative 1 or 2 by each sector may limit actual additional opportunity in favor of creating stability for these dependent fishing communities.

**Table 1. Yelloweye rockfish allocations and projected impacts for 2019 under No Action, Alternative 1, and Alternative 2 ACL scenarios, and updated GMT projected impacts based on preferred season structure and management measures. All units are in metric tons.**

| | No Action = 29 mt | | Alternative 1 = 39 mt | | Alternative 2 = 48 mt | | Preliminary Projected Impacts under GMT recommended management measures |
|---|---|---|---|---|---|---|---|
| | Allocation a/ | Projected Impacts a/ | Allocation b/ | Projected Impacts b/ | Allocation c/ | Projected Impacts c/ | |
| **Off the Top Deductions** | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 |
| EFP | 0.250 | 0.250 | 0.250 | 0.250 | 0.250 | 0.250 | 0.250 |
| Research | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 |
| Incidental OA d/ | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| Tribal | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 |
| Trawl Allocations | 1.8 | 0.2 | 2.6 | 0.2 | 3.4 | 0.2 | 0.2 |
| -SB Trawl | 1.8 | 0.2 | 2.6 | 0.2 | 3.4 | 0.2 | 0.2 |
| -At-Sea Trawl | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| a) At-sea whiting MS | | | | | | | |
| b) At-sea whiting CP | | | | | | | |
| **Non-Trawl Allocation** | 21.1 | 14.8 | 30.3 | 20.9 | 38.6 | 24.8 | 15.9 |
| **Non-Nearshore** | 1.1 | 0.8 | 1.6 | 0.8 | 2.0 | 0.8 | 0.8 |
| **Directed OA: Nearshore** | 3.3 | 1.4 | 4.7 | 1.4 | 6.0 | 1.4 | 1.4 |
| **Recreational Groundfish** | | | | | | | |
| **WA** | 5.4 | 4.7 | 7.8 | 5.0 | 10.0 | 7.3 | 5.2 |
| **OR** | 4.9 | 4.6 | 7.0 | 6.5 | 8.9 | 8.1 | 5.2 |
| **CA** | 6.4 | 3.3 | 9.1 | 7.2 | 11.6 | 7.2 | 3.3 e/ |
| **TOTAL** | **29.0** | **21.1** | **39.0** | **27.2** | **48.1** | **31.1** | **22.2** |
| 2019 Harvest Specification | 29 | 29 | 39 | 39 | 48 | 48 | TBD |
| Difference | 0.0 | 7.9 | 0.0 | 11.8 | -0.1 | 16.9 | |
| Percent of ACL | 100.0% | 72.7% | 100.0% | 69.7% | 100.0% | 64.8% | |

a/ from Table A-45 in Appendix A.

b/ from Table A-91 in Appendix A

c/ from Table A-108 in Appendix A

d/ Previous IOA set-aside plus the average impacts of proxy yelloweye rockfish bycatch rates from lingcod in the salmon troll fishery

e/ projected impacts may change depending on the FPA season structure selected

Regardless of the Alternative selected, the GMT would like to remind the Council that management measures can be set at precautionary levels. As will be discussed below, the GMT

believes that evidence shows that No Action does not meet the needs of West Coast fishing communities. Alternative 1 would provide 10 additional metric tons to the fishery over no action and 19 metric tons over 2018 levels, however, this provides only limited flexibility to expand opportunities while maintaining some degree of operational stability within the sectors (e.g., not closing a sector prematurely). Alternative 2 provides more flexibility for the Council to consider the liberalization of certain management measures in the long-term (e.g., annual catch targets, trip limits, depth restrictions, etc.), and could allow the gradual phasing in of these regulations. Therefore, even if the Council selects Alternative 2, management measures could be developed to stay well within allocations (i.e. not aim to attain the yelloweye rockfish ACL).

## Stock Status and Biology

Based on the 2017 stock assessment, our understanding of the stock status of yelloweye rockfish has improved, which resulted in predicted rebuilding within 7 years versus the last estimate of 40 years. The 2017 assessment indicates rebuilding probability is relatively insensitive to removals across the alternatives, which may be due to a series of strong year classes expected to enter the spawning population around 2020. The assumption of full removals results in median rebuild time under No Action to 2027, Alternative 1 to 2028, and Alternative 2 to 2029 (Figure 1, top panel). As with most stock assessments, the yelloweye rockfish rebuilding projections assume full ACL removals annually.

The GMT notes that actual removals have been on average 68.5 percent of the ACL from 2011-2016. Therefore, the 8-10 year rebuilding timeframes should be considered an upper bound on when the stock could rebuild, other parameters remaining constant. In other words, it is expected that the stock would rebuild faster than predicted under the full removal assumption. This is addressed in the rebuilding analysis report, where a removal rate of 65 percent of the ACL results in *no difference in rebuilding timelines for any of the alternatives.* (See Figure 1, bottom panel). Meaning, the yelloweye rockfish stock is predicted to be rebuilt in 2027 under *any* of the Alternatives at the average rate of removal observed from 2011-2016.

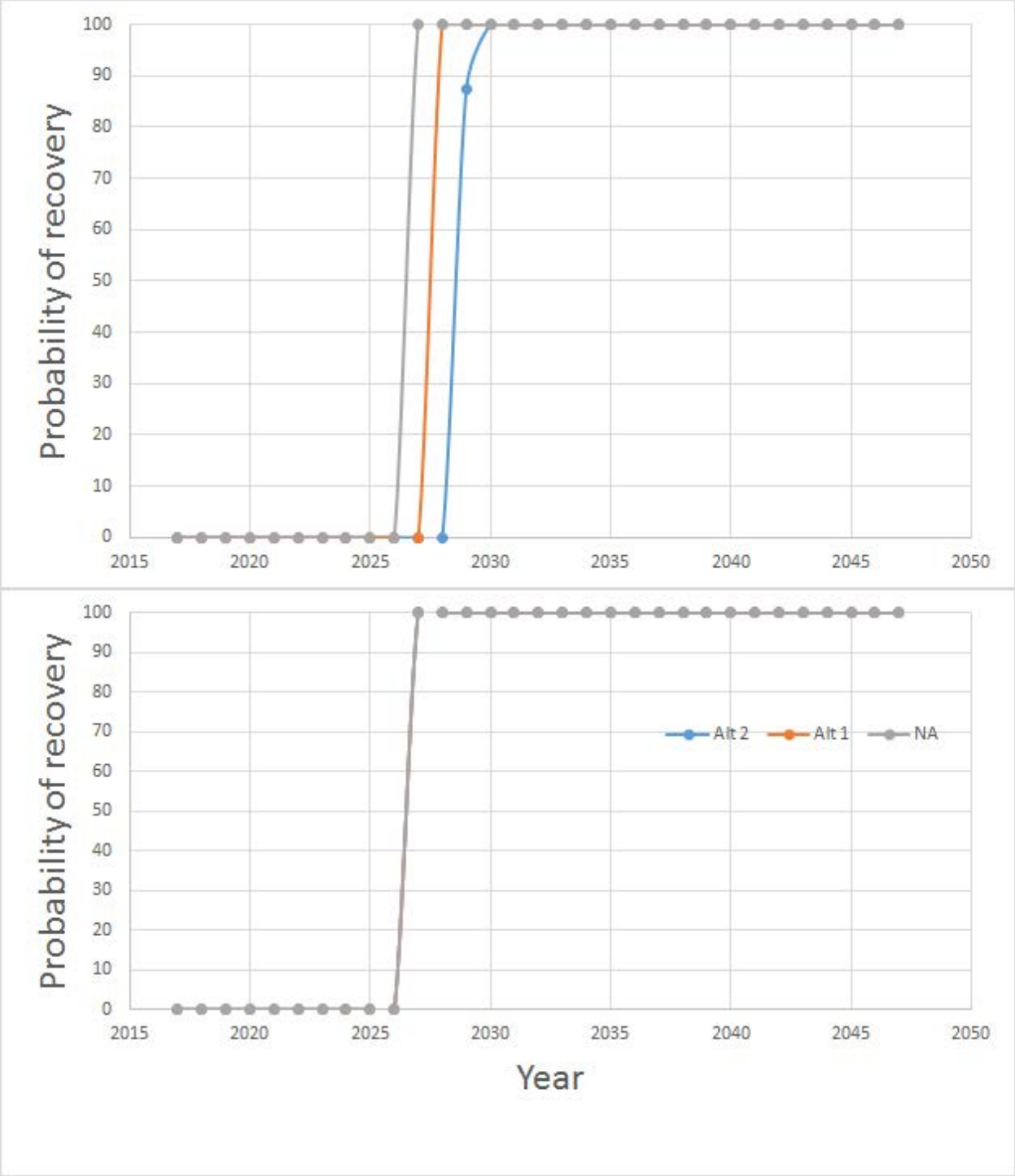


**Figure 1. Probability of recovery based on No Action (NA; grey), Alternative 1 (orange) and Alternative 2 (blue) for full (top plot) or 65 percent attainment (bottom plot, with no difference in recovery times among Alternatives assuming 65 percent attainment in the bottom plot). Reproduced from Table 8 of 2017 Yelloweye Rebuilding Analysis.**

As with any assessment, there is an axis of maximum uncertainty, and for the 2017 yelloweye rockfish assessment, that axis was the rate of natural mortality (M). The analysis of uncertainty in the assessment's decision table evaluated M as low as 0.037 and as high as 0.056, although the assessment and rebuilding analysis used the fixed value of 0.044. The uncertainty expressed in these values is implicit in the results of the rebuilding analysis. This uncertainty extends to the time-to-rebuild under any of the scenarios examined in the rebuilding analysis.

As required by the MSA, the Council should take this stock status and biology information into account in addition to the needs of communities when selecting a rebuilding plan alternative.

## Long-Term Impacts of Alternatives

All three ACL alternatives end up at the roughly the same place in terms of cumulative ACLs over the long-term (Figure 2); however, they deviate greatly in what the annual ACLs would be. No Action would make it difficult for the Council to slowly begin phasing in liberalizations as the ACLs would remain low during the rebuilding timeframe and then would suddenly surge by a large degree as the stock rebuilds to maximum sustainable yield (MSY) levels; it would be difficult for the Council to quickly adapt to the large and sudden surge of ACLs that would go from 35 mt in 2026 to 109 mt 2027. For example, it would be impractical to assume that large-scale re-openings of the non-trawl rockfish conservation area (RCA) and sport depth restrictions could be done quickly under No Action based on the ACL jump of 35 mt in 2026 to 109 mt 2027. Alternative 1 would better provide the Council the ability to phase in regulations since the ACLs would be higher during the rebuilding period, and also because there would be less of a jump to MSY levels (i.e., 46.2 mt in 2027 to 109 mt in 2028). Alternative 2 would provide the Council the best ability for slowly phasing regulations as the ACLs would be highest during the rebuilding period and there would be a smoother transition as the stock rebuilds (i.e., 56.6 mt in 2028 to 109 mt in 2029).

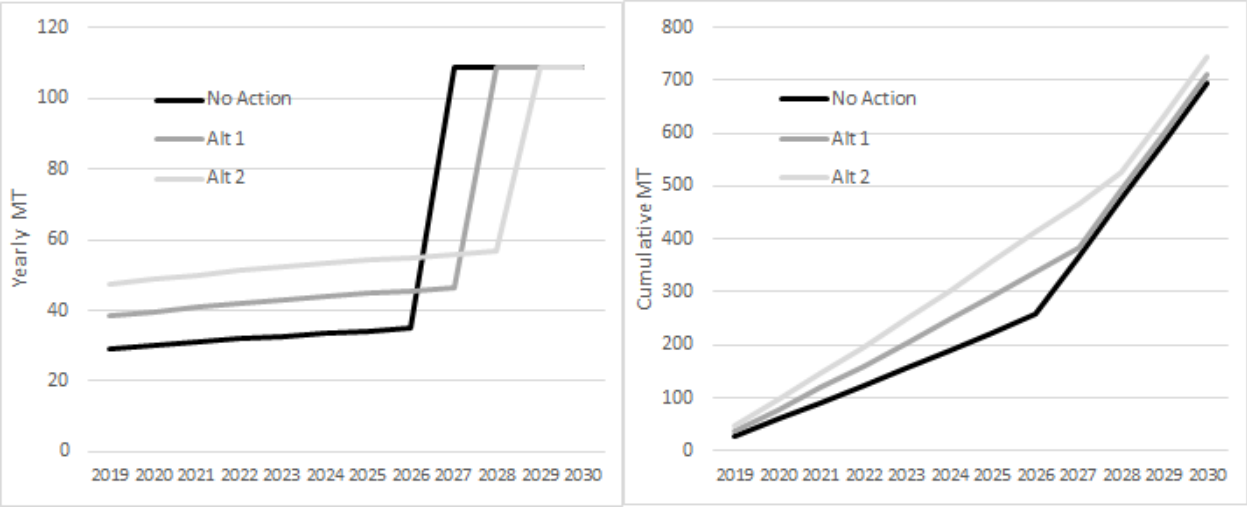


**Figure 2. Annual and cumulative yelloweye rockfish ACLs by alternative.**

The Council has described themselves as a "slow-moving ship" and has been very precautionary in the past with yelloweye rockfish. The 5 Year Review of the catch share program discussed more generally, challenges related to relaxing conservative management restrictions, for example,

actions on the removal of the trawl RCA and the trawl gear rule has been in discussion at the Council for years, and on average trawl-follow on actions take between 2-3 years to implement. Policy changes where, because of management closures or, little or no recent data available to inform decisions, are slower to move through the process. The delay between rebuilding of groundfish stocks in the individual fishing quota (IFQ) sector and relaxing of the management regime in place to protect those stocks contributes to persistent low attainments; as does the lag in which harvesters adjust fishing practices to account for increased availability of bycatch quota, and the gradual process for processors to reintroduce products to markets.

Providing more yelloweye rockfish with which to access recreational and commercial target fisheries through research projects and exempted fishing permits will support analytical data needs for large scale management changes in the future. Providing more yelloweye rockfish with which to access recreational and commercial target fisheries, and slowly relaxing management measures over the next decade, will accommodate expected gradual changes in risk averse fishing behavior. Gradual, steady increases in the amount of lingcod, chilipepper rockfish, and other mid-water shelf species delivered to processors will best support redevelopment of markets for these products.

## Evaluation of the Needs of Fishing Communities

### No Action

As shown in Appendix B, there is clear evidence that the No Action Alternative does not meet the needs of West Coast fishing communities. Since the last evaluation of the "needs of the fishing community" in the 2011 rebuilding plan analysis for yelloweye rockfish, there have been dramatic declines in West Coast fishing opportunities that have severely negatively impacted local economies. Although the No Action alternative would provide an additional 9-10 mt of yelloweye rockfish to communities selection of this alternative would provide limited, if any, additional opportunities to offset the recent fishery declines and increase the consistency of fishing opportunities. No Action would, therefore, limit opportunities for the stability of West Coast fishing community economies to improve.

Commercial fishery ex-vessel revenues have declined by over $100 million in 2017 (see Figure B-6 of Appendix B). Overall ex-vessel revenues increased from 2008 through 2010 and then began to fall in 2011. Annual revenues were approximately $450-$500 million per year from 2011-2016 and declined by 30 percent to ~$350 million in 2017 due to loss in opportunities from salmon, Dungeness crab, and coastal pelagic species (CPS) fisheries.

These declines have disproportionately impacted certain communities. In particular, northern California ports experienced an almost 80 percent reduction in ex-vessel revenue in five years, as revenues decreased from $50-$60 million in 2012-2013 to $13 million in 2017 (see Figure B-38 of Appendix B). Overall commercial revenues have remained relatively stable for Washington and Oregon ports; however, this is most likely due to strong Dungeness crab seasons offsetting losses in sardine, salmon, and shrimp fisheries (see sections b.5.4 and b.5.4.4). As demonstrated in the Oregon scenarios, if Dungeness crab harvest declined to more historically typical levels, then overall revenues could fall by a third or more. The GMT notes that the value of underutilized commercial groundfish quotas constrained by yelloweye rockfish is estimated to be worth an annual $24 million in ex-vessel revenue, $43.6 million in income, and 2,300 jobs (Table 2). This could provide the basis for diversifying and offsetting recent losses, but by what degree depends on the ACL alternative as will be described below.

**Table 2. Projected value of underutilized stocks constrained by yelloweye rockfish (from Table B-6 of Appendix B).**

| Unutilized allocation type | Ex-vessel revenue ($ million) | Income ($ million) | # Jobs |
|---|---|---|---|
| Fixed Gear- N. lingcod and rockfish | 20.6 | 35.6 | 2,205 |
| IFQ N. lingcod | 2.5 | 6.2 | 73 |
| IFQ S. lingcod | 0.9 | 1.8 | 22 |
| Total | 24.0 | 43.6 | 2,300 |

No Action provides limited opportunities for the commercial groundfish sectors to increase access to healthy, underutilized stocks. For the shore-based IFQ sector, No Action provides six additional pounds of yelloweye rockfish quota to the median catch share quota owner (Table 3). This will likely result in only limited, if any, alleviation of quota pound trading, and little to no changes to lingcod trip limits and the non-trawl RCA. Tribal sectors would not be able to access additional opportunities for lingcod-directed fisheries. For commercial fixed gear fisheries, there are expected to be little to no changes to lingcod trip limits and the non-trawl RCA, which would limit the expected benefits to ~$1 million or less per year during the rebuilding period (Table 4).

**Table 3. QS distributions of yelloweye rockfish for each ACL alternative (from Table B-13 of Appendix B).**

| | Quota Pound Allocations | | | |
|---|---|---|---|---|
| **Quota Share Account Owners** | **SQ** | **NA** | **1** | **2** |
| 25 percent of accounts receive less than or equal to | 2 | 5 | 7 | 8 |
| 50 percent of accounts receive less than or equal to | 8 | 14 | 19 | 24 |
| 75 percent of accounts receive less than or equal to | 23 | 41 | 58 | 73 |
| Average account increase from SQ | -- | 87% | 170% | 235% |
| Accounts receiving pounds* | n=116 | n=117 | n=119 | n=120 |

*as harvest guideline increases, owners of small percentages will start receiving allocation, which are issued as whole quota pounds. Because of this change in n, about 29-30 quota share owners fall into each category listed above.

**Table 4. Projected potential gains for commercial fixed gear fisheries for each alternative (from Table B-9 of Appendix B). Revenue and income are in millions of $USD.**

| Year | NO ACTION | | | ALT 1 | | | ALT 2 | | |
|---|---|---|---|---|---|---|---|---|---|
| | Revenue | Income | Jobs | Revenue | Income | Jobs | Revenue | Income | Jobs |
| 2019 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2020 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2021 | 0.4 | 0.7 | 42 | 2.3 | 3.9 | 242 | 4.0 | 7.0 | 431 |
| 2022 | 0.6 | 1.0 | 63 | 2.5 | 4.2 | 263 | 4.1 | 7.1 | 441 |
| 2023 | 0.7 | 1.2 | 73 | 2.6 | 4.6 | 284 | 4.4 | 7.6 | 473 |
| 2024 | 1.0 | 1.7 | 105 | 2.8 | 4.9 | 305 | 4.5 | 7.8 | 483 |
| 2025 | 1.1 | 1.9 | 116 | 2.9 | 5.1 | 315 | 4.7 | 8.1 | 504 |
| 2026 | 1.1 | 1.9 | 116 | 3.1 | 5.4 | 336 | 4.9 | 8.5 | 525 |

Recreational sectors have been heavily constrained by yelloweye rockfish since it was declared overfished in 2002, and have seen inseason restrictions and closures resulting in significant impacts to coastal communities. Coastwide recreational annual angler trips have also recently declined by nearly 50 percent from the 2011-2014 average of between 1-1.2 million trips to around 0.7 million in 2017 (see Figure B-10 of Appendix B).

For boat-based modes that could see relief from higher yelloweye rockfish ACLs, angler trips declined by 190,000 which is estimated to be worth $50 million in income and 850 jobs. For recreational fisheries, the declines have been most concentrated in Winchester Bay/Florence, Oregon as closure of their groundfish fishing grounds to protect yelloweye rockfish led to collapse of their charter industry (Agenda Item F.2.a, Supplemental GMT Report 1; April 2018).

Under the No Action alternative, the recreational fisheries are expected to see limited changes to season structures and depth restrictions in all three states. Under No Action, there would be a modest increase in state harvest guidelines which would likely not provide much relief from the potential of an early recreational fishery closure. Because recreational projections can be highly uncertain (as shown in Table B-3 of Appendix B), the Council and States have traditionally taken a more conservative approach to recreational management. As shown for the Washington recreational fishery (Appendix B) under the no action alternative, there is a 0.3 mt difference between the projected impacts and the allocation; in the past, projections have varied from actual impacts by -0.65 to 0.95 mt and are on average off by 0.46 mt each year (2007-2017). Uncertainty in catch projection leads to an increased likelihood of inseason closures when effort or impacts exceed the expectation.

In Agenda Item E.4., Supplemental REVISED Attachment 6, the GMT analyzed the impacts of coastwide recreational bottomfish closures by month. These (summarized in Table 5 below) would be an upper bound for the statewide or partial statewide closures that occurred in 2007, 2012, 2017 and were scaled down to exclude trips occurring south of Point Conception since that is outside the range of yelloweye rockfish. In an extreme situation, September closures in recreational fisheries in all three states would result in an income loss of $28.6 million for West Coast communities.

**Table 5. Projected loss in income and jobs associated with coastwide recreational fishery closures by month within the range of yelloweye rockfish (north of Pt. Conception, CA).**

| Recreational Closure Month | Loss of Income | Loss of Jobs |
|---|---|---|
| September | $9.8 mil | 179 |
| October | $7.5 mil | 137 |
| November | $6.3 mil | 117 |
| December | $5.2 mil | 93 |
| TOTAL | $28.8 mil | -- |

## Alternative 1

Alternative 1 would provide 39 mt of yelloweye rockfish in 2019-2020 and would increase the current time to rebuild by one year (Table B-5, in Appendix B). Under Alternative 1, the median quota share owner in the shorebased IFQ in 2019 would receive an additional eleven pounds compared to 2018 (five more pounds of yelloweye rockfish quota compared to No Action), which may stimulate some quota pound trading, but likely isn't enough to promote a significant shift in fishing behavior to expand fishing for lingcod or other shelf targets. For example, commercial ports off northern Washington are expected to see limited additional bottom trawl activity. As described in Appendix B, the area north of Cape Alava is prone to high yelloweye rockfish bycatch. Assuming the average bottom trawler north of 40° 10' N Latitude makes 125 hauls on average annually (with a median of 85 hauls), it is likely that additional quota would be needed after 75-100 hauls under the Alternative 1 allocation to fish in the area. Additionally, the yelloweye rockfish vessel limit will increase by 42 percent compared to No Action and 145 percent over 2018 levels, which could provide some relief against lightning-strike tows if vessels begin to be more risk averse and target lingcod. Commercial ports off the Washington North Coast and Puget Sound have lost a total of 22 buyers since 2011. Increases in commercial trawling activity would provide not only benefits to non-tribal communities, but tribal communities that rely on non-tribal activities (e.g., processing, buyer, ice) as well. Tribal fisheries may also see some increased opportunity in directed lingcod fisheries with the additional yelloweye rockfish buffer against the set asides.

Under Alternative 1, fixed gear commercial fisheries may see some increases to lingcod and shelf rockfish trip limits in the near-term, and the potential for adjustments to open limited areas of the non-trawl RCA in the long-term. While there are likely no additional benefits to higher yelloweye rockfish allocations in 2019-2020 due to the limited management measures adopted as preliminary preferred alternative (PPA) by the Council, there is potential for up to an additional 200 jobs and $3.2 million in income in 2021 with potential for this increase to continue over the remainder of the rebuilding time frame (Table 4). Alternative 1 would provide approximately 15-16 percent additional yelloweye rockfish to the fixed-gear sectors, under status quo proportions, compared to No Action. This may provide some opportunity to communities that have been excluded from large amounts of shelf rockfish habitat since 2003 when the non-trawl RCA was implemented.

However, with the uncertainty in bycatch of yelloweye rockfish in the area, and the traditionally conservative approach to management taken by the Council, opportunities for liberalizing management measures to provide more access to healthy target stocks are limited under Alternative 1. Additionally, while the fixed gear fisheries potential benefits are about three times higher under Alternative 1 than No Action during the rebuilding years (Table 2), the projected ex-

vessel revenue gains of ~$3 million or less during the rebuilding years are minor compared to the recent $100 million overall commercial loss in 2017.

As shown in Figure B-25 in Appendix B, the non-trawl RCA off Oregon has an extensive amount of rocky substrate, which is the primary habitat for yelloweye rockfish. Shifting the seaward or shoreward boundaries of the RCA to provide additional access in these areas could result in additional yelloweye rockfish bycatch, but the level of bycatch is uncertain. Yet without changes to the non-trawl RCA, it is unlikely that the fixed gear sectors will be able to attain a significant amount of their shelf target stocks. Similar to the trawl fishery, increased activity to the non-trawl sectors off the coast of Washington provide benefits to tribal communities that have invested considerable amounts of money into infrastructure to assist commercial fishery operations including a new commercial dock, fillet plant, and ice house. Neah Bay, WA, a port that is capable of offloading treaty and non-treaty vessels is located about 100 nautical miles from Westport or Blaine, WA which are the two closest ports that have the ability to offload large volumes of groundfish catch. Any fishing operation that fishes in the northern waters off Washington, where yelloweye rockfish impacts are constraining fishing operations, have the option of offloading at these facilities. The decreased operational costs and increased flexibility to expand fishing operations under Alternative 1 or Alternative 2 within the northern waters could provide significant benefits to both the treaty communities and the non-treaty fishing fleet.

In the recreational sector, anglers may be able to access some areas that have not been open to recreational fishing since 2004-2006 (depending on state), and fishing seasons could be extended under Alternative 1 beyond what would be allowed under the No Action alternative. Yelloweye rockfish bycatch in the recreational sectors is particularly variable and can be unpredictable as described above, and in further detail in Appendix B. Projections under PPA management measures are based on historical data before closures were in place, thereby exacerbating the uncertainty in the projected values. Alternative 1 may allow for additional opportunity; however, it would not provide the stability that these communities need and have not received under No Action.

Recreational sectors have been restricted or closed in seven of the last ten years due to yelloweye rockfish impacts (Table B-2 of Appendix B). With salmon, halibut, and albacore opportunities declining in recent years, there is enhanced pressure on groundfish fisheries. Additional opportunities to target groundfish will likely be critical to sustaining communities that rely on the fishing industry. A closure to the recreational bottomfish fishery would lead to severe negative impacts on these local communities such as the premature closing of various fishing and fishing-related businesses. For example, in 2012 the Washington recreational fishery on the North Coast closed prior to Labor Day, and in 2017 the entire Oregon recreational fishery closed in mid-September because sector-specific harvest guidelines (HGs) were met or exceeded. Closing the Washington recreational fishery in 2012 resulted in nearly a 50 percent reduction in angler trips relative to the previous September. As the recreational fishery on the North Coast also supports the tribal communities of Neah Bay and La Push, these impacts are felt in both tribal and non-tribal communities. Notably, although sector-specific HG were met in 2012 and 2017, the total impacts on yelloweye rockfish from all sectors combined were well below the ACL in both years.

In light of the yelloweye rockfish ACL alternatives, stakeholders and managers are contemplating management measures that could reduce the time period during which depth restrictions are in place in recreational fisheries in all three states. These depth restrictions have been in place for at

least 15 years, with access to deep water (< 20, 30 or 40 fathoms) prohibited for the majority, if not all, of the recreational groundfish season. Estimating yelloweye rockfish catch that might occur if access to deep water is allowed under any of the alternatives is challenging. Because deep water has not been accessed in many years, projecting impacts of recreational catch and effort are highly uncertain due to outdated historical data, and uncertainty as to changes in angler behavior that may occur in response to these new management actions. Recognizing this uncertainty, proposed opportunities to fish in deeper water were developed for Alternative 1 in a very precautionary manner with projected catch estimated to fall below yelloweye rockfish harvest guidelines for all three states.

Alternative 1 could help diversify and offset recent the recent losses of $50 million of income for recreational fisheries and $100 million in ex-vessel revenue for the commercial fisheries as describe above; however, Alternative 1 ACLs would not be high enough to fully re-establish lost benefits. For example, the expected fixed gear gains ~$3 million or less during the rebuilding years are minor compared to the recent $100 million overall commercial loss in 2017.

### Alternative 2

Alternative 2 would provide an additional 10 mt compared to Alternative 1 for 2019-2020 and an additional 19 mt over No Action (Table B-5, Appendix B). Because the additional quota lessens the chance of early closures, Alternative 2 could provide consistency in groundfish fishing opportunities resulting in greater economic stability for these communities. As described above, West Coast communities have seen significant losses in revenue in past several years due to declines in shrimp, salmon, CPS, and Dungeness crab fishing opportunities. In 2017, there was a $100 million decline in commercial fishery ex-vessel revenue compared to 2011-2016 levels and decline of 190,000 boat-based angler trips compared to 2011-2014 levels estimated to be worth $50 million in income and 850 jobs.

Under Alternative 2, the majority of quota share (QS) holders in the shorebased IFQ program would get 24 lbs or more of yelloweye rockfish (Table 3). The additional quota pounds would likely encourage an increase in quota pounding trading as more pounds are available on the market. Annual vessel limits would increase by 79 percent (compared to No Action) in the trawl fishery, potentially alleviate concerns about fishery shutdowns prior to achieving their allocations due to an unexpected high bycatch event of yelloweye rockfish. The combination of available quota and increased annual vessel limits is anticipated to encourage a return to shelf fishing strategies which will allow the targeting of underutilized IFQ allocations, such as lingcod, worth potentially $3.4 million in ex-vessel revenue to trawlers (Table 1).

At 276 pounds, the current (2017) yelloweye rockfish annual vessel limit is noted as highly constraining by participants, although no vessel has exceeded the limit in the first seven years of the program, indicating extreme avoidance measures by vessels to remain under the limit. Alternative 2 would increase this limit by 209 percent. The Five Year Review and Appendix B both provide an overview of challenges in the quota pound trading market, and available data indicate most vessels catching yelloweye rockfish do not purchase available quota pounds to cover their catch. For highly constraining species, such as canary rockfish prior to rebuilding, cowcod, and yelloweye rockfish, vessels that do not elect to join voluntary risk pools appear to prefer holding a level of quota pounds in their accounts through the end of the year sufficient to insure against unexpected catch.

Trawl vessels had a catch ratio of about 2,300 pounds of lingcod to each pound of yelloweye rockfish. As would be expected, there is a positive correlation between quota pound account holdings of yelloweye rockfish and lingcod landings. Therefore, for those vessels pursuing a lingcod strategy, there may be an incentive to maintain an individual "cushion" of yelloweye rockfish quota within their account to account for any unforeseen high bycatch tows, with about 2.5 pounds held in reserve to every pound needed. In 2017, five vessels appear to have been fishing under a lingcod-targeting strategy, harvesting 47 percent of all IFQ lingcod landed (about 305mt) and had an average quota pound balance of 46 pounds of yelloweye rockfish remaining at the end of the year. In comparison, the "non-lingcod" vessel accounts had an average 19 pounds of yelloweye rockfish quota in their accounts at the end of 2017, which would be the allocation for 50 percent of quota share accounts under Alternative 1. For perspective, under Status Quo, less than 20 percent of trawl vessels have at least 46 pounds of yelloweye rockfish quota pounds allocated to accommodate this yelloweye rockfish "cushion", under No Action this would increase to about a third, under Alternative 1 about a half, and more than 70 percent under Alternative 2.

As discussed above, and in more detail in Appendix B, the North Coast of Washington has seen a decline in groundfish activity in terms of vessels and buyers. The potential for additional quota pound trading and the increase in the vessel limit under Alternative 2 may promote more consistent fishing opportunity off the North Coast of Washington.

Tribal fisheries may see increased opportunity in directed lingcod fisheries with the additional yelloweye rockfish available against the set-asides. Currently, the tribes have relaxed tribal fishing regulations on lingcod but effort has been minimal because the available yelloweye rockfish is limited and impacts are uncertain within this developing fishery. If there was a high bycatch event and the entire treaty set aside was taken, all tribal fisheries that impact yelloweye rockfish would be closed. Additional yelloweye rockfish available under Alternative 2 could allow the Council to consider reopening portions of the non-trawl RCA to the fixed gear vessels and increases to lingcod and shelf rockfish trip limits. As described under Alternative 1, the non-trawl RCA off of Oregon has a significant amount of rocky substrate, which is primary yelloweye rockfish habitat. Under Alternative 1, the nearshore and non-nearshore fisheries would only receive one additional mt combined compared to No Action. However, under Alternative 2, the sectors would receive an additional 2.8 mt each year. Given that total mortality can vary under status quo regulations by over one metric ton (Table B-7 of Appendix B), it is likely that Alternative 2 would be the only alternative to allow for broader access to the non-trawl RCA.

Commercial non-trawl participants may be able to access their unutilized lingcod and shelf rockfish allocations and offset the losses that have occurred in other fishing sectors. Specifically, Alternative 2 has the potential for fixed-gear benefits near $5 million per year during the rebuilding timeframe, which is approximately 1.6 times higher than Alternative 1 and nearly 4.5 times higher than No Action. This could help best offset the $100 million overall loss in overall commercial fisheries that occurred in 2017 compared to 2011-2016 levels.

For recreational fisheries, the ability to liberalize management measures under Alternative 2 may provide the opportunity for greater access to deep water. Alternatively, the higher yelloweye rockfish ACL under Alternative 2 could be seen as a "cushion" between projected catch and yelloweye rockfish HGs, as managers and stakeholders have noted in public comment. As described above, projections for the sectors are uncertain, and Alternative 2 would help protect industry and recreational anglers against some of that uncertainty, and provide for more consistent

fishing opportunities to coastal communities that have been limited during the rebuilding timeframe. Consistency in fishing opportunities has the potential to allow communities to recover as businesses are able to rely on income from these opportunities. The importance of the "cushion" and the potential it has to affect behavior is highlighted even more when looking to potential future opportunities to expand fishing access.

If the Council were to recommend any additional (and precautionary) fishing opportunities either under Alternative 1 or Alternative 2; projecting yelloweye rockfish impacts in areas and sectors that have been previously constrained will be challenging for the GMT to produce, due to lack of current data informing encounter rates. The GMT notes that when early shutdown, or other inseason actions, to reduce yelloweye rockfish interactions have occurred, corresponding changes to fishing behaviors have been observed both in that year following the closure as well as the subsequent year (e.g., race to fish or derby mentality). A benefit of Alternative 2 over Alternative 1 is that the additional poundage could provide increased stability and security for fishing communities in the event of unforeseen catch events or if inaccurate catch projections were to occur as there may be more of a cushion between projected impacts and allocations. In addition, as described above, the difference between the projected catch and the HG could be used over time to gradually relax management restrictions as more is known about actual yelloweye rockfish encounters in new areas and with a stock that is approaching rebuilt status.

In addition, the GMT notes that when the Council took action to close or restrict sectors, the overall ACL attainments were low (Table B-2 of Appendix B). In general, there was not enough cushion at the time within the individual sector HGs for the Council to feel comfortable enough with "letting sectors ride" above their HGs. Alternative 2 would provide additional room for uncertainty for all sectors, which could then be managed to more precautionary levels. By having room between projections and HGs to account for unforeseen bycatch of yelloweye rockfish, the Council can provide more stability to sectors without the negative consequences of a restriction or closure.

## ACL Conclusion

Based on the information provided in Appendix B and above, the GMT concludes the needs of fishing communities are not met under No Action, and **recommends the Council not select the No Action Alternative for the 2019-2020 yelloweye rockfish ACL.** Because the rebuilding requirements are a tradeoff between the time to rebuild, stock status and biology, and the needs of communities, the GMT does not have a recommendation on which action Alternative the Council should choose. The trade-offs between a longer time to rebuild and suitability to meet the needs of communities (as outlined above and in Appendix B) would better be decided by the Council, as that is a matter of policy.

## $T_{TARGET}$

If the Council chooses Alternative 1 or 2, both of which would revise the yelloweye rockfish rebuilding plan, and select a different harvest control rule for the stock, the $T_{TARGET}$ would have to be revised. As described in the Groundfish Fishery Management Plan:

> "Policy flexibility comes into play in determining $T_{TARGET}$, or the time by which the stock is projected to rebuild. As explained earlier, the time to rebuild must be as short as possible, taking into account the status and biology of the stock, the needs of fishing communities, and the interaction of the stock of fish within the marine ecosystem. When developing a

management strategy the Council can choose a fishing mortality rate and corresponding annual level of fishing. However, when rebuilding overfished species, the choice of F is based on the value of $T_{TARGET}$, keeping in mind that these values cannot be chosen independently of one another. In other words, the Council may choose one value and derive the other from it, but they cannot choose these values independently of the other."

Currently, the $T_{TARGET}$ is 2074, which was the median time to rebuild based on the harvest control rule associated with an SPR of 76 percent, according to the 2011 rebuilding analysis. While the median time to rebuild under No Action has dropped to 2027, there is no need for the Council to revise the $T_{TARGET}$ as adequate progress is being made towards rebuilding. However, under Alternative 1, the Council's PPA, or Alternative 2, the Council would need to revise the $T_{TARGET}$ to reflect the new harvest control rate.

**Therefore, the GMT recommends that if the Council selects a FPA of Alternative 1, the Council adopts a $T_{TARGET}$ of 2028. If the Council selects a FPA of Alternative 2, the GMT recommends a $T_{TARGET}$ of 2029.**

# Recommendations

**The GMT recommends:**

- **The Council not choose the No Action alternative for the 2019-2020 yelloweye rockfish ACL, as the needs of fishing communities are not met.**
- **If the Council selects a FPA of Alternative 1, they adopt a $T_{TARGET}$ of 2028. If the Council selects a FPA of Alternative 2, they adopt a $T_{TARGET}$ of 2029.**

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