Gulf of Alaska Demersal Shelf Rockfish (DSR) Spatial Management: Moving DSR subgroup out of Other Rockfish (OR) assessment

September 25, 2023[1]

Introduction

In October 2022, the Council reviewed a discussion paper (NPFMC 2022) which summarized a proposed change to the Demersal Shelf Rockfish (DSR) and Other Rockfish (OR) stock complexes and highlighted potential fishery and management impacts of the proposed change. At that meeting, the Council made a motion supporting consideration of the proposed change but asked for information on the impacts of the proposed change to both the DSR and OR complexes during the 2023 Plan Team cycle.

At this meeting, the Council can discuss any concerns about spatial management that would interfere with the recommendation to move the DSR subgroup out of the OR assessment**.** As described in the "Next Steps and Timeline" section of this document, **if the Council does not identify any concerns, this change to DSR and OR would move forward during the 2024 Plan Team cycle for implementation in the 2025-2026 harvest specifications for 2025 fisheries, as recommended by the assessment authors.**

Background Information

In the Gulf of Alaska (GOA), the Other Rockfish (OR) and Demersal Shelf Rockfish (DSR) stock complexes share seven species: canary, China, copper, quillback, rosethorn, tiger and yelloweye rockfish. The DSR stock complex consists of only these species, but is limited in spatial extent in the stock assessment to only the East Yakutat/Southeast Outside subdistrict (EY/SEO) (i.e., Area 650) which includes East Yakutat (EY), Northern Southeast Outside (NSEO), Central Southeast Outside (CSEO), and Southern Southeast Outside (SSEO). The OR stock complex is GOA-wide, consists of 27 species, but the seven overlap species (termed DSR subgroup) are only part of the OR stock complex in the Western GOA (WG), Central GOA (CG), and West Yakutat (WY) (all GOA areas except EY/SEO).

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

Because of the overlap of these species, a joint stock structure document for both complexes was completed and included in the 2015 OR stock complex assessment (Appendix 16A of Tribuzio and Echave 2015). As a result of the stock structure analysis, concerns arose regarding the appropriateness of the species being grouped and the spatial management of the two stock complexes.

Analyses have shown that these seven species are biologically and logistically different from the remaining species within the OR stock complex and that the current stock complex assemblages should be changed. Beginning in 2017, authors from both stock assessments have worked together to propose changing the species assemblage, which would create a GOA-wide DSR assessment by moving the DSR subgroup species from the OR stock complex to the DSR stock complex. This topic has been reviewed by both the GOA Plan Team (PT) and the NPFMC Scientific and Statistical Committee (SSC); both groups have supported moving forward with the proposed change. In 2022, the NPFMC supported consideration of the proposed change for the 2023 Plan Team cycle, but asked for information on the impacts of this proposed change on both stocks.

Authors explored three alternative management groupings to try to address the spatial management needs and the biological appropriateness of the stock complexes (detailed analysis in Tribuzio et al. 2017 with updated values in Tribuzio et al. 2019, Appendix 16A). The GOA Groundfish Plan Team and SSC have repeatedly agreed with the authors' recommendation to move forward with Alternative 3: moving the DSR subgroup species that are in the OR complex in the WG, CG, and WY areas, into the DSR complex, which would allow management of DSR as a separate complex or complexes (PT Sept 2017, SSC Oct 2017, PT Nov 2019, SSC Dec 2019, PT Sept 2021, SSC Oct 2021). The authors recommend managing DSR as two complexes, for reasons described under the "Management and Fishery Impacts" section of this document. This proposal was based on four primary findings: 1) the DSR subgroup species are substantially biologically different from the slope subgroup species in the OR stock complex (Omori et al. 2021, Tribuzio et al. 2017, Tribuzio and Echave 2015); 2) the DSR subgroup species are primarily caught in fixed-gear fisheries, while the slope subgroup (the other rockfish species that mainly comprise the OR stock complex) is primarily trawl fisheries (Omori et al. 2021, Tribuzio et al. 2017, Tribuzio and Echave 2015); 3) the DSR subgroup species occupy different habitats than the slope subgroup species (Johnson et al., 2003; Conrath et al., 2019; Omori and Thorson, 2022); and 4) the larger OR stock complex may mask developing issues with DSR subgroup species and/or restrictions on OR stock complex catch (e.g., TAC overages in the trawl fishery) can adversely affect fixed-gear fleets and vice versa.

The OR complex is assessed by the AFSC and managed by NPFMC, whereas the current DSR assessment for EY/SEO is conducted by the ADF&G, and the complex is managed jointly by the State of Alaska and NMFS. The two internal state water Subdistricts, Northern Southeast Inside (NSEI) and Southern Southeast Inside (SSEI), are managed entirely by the State of Alaska and are not included in the stock assessment. The proposed alternative would retain the same assessment structure, but incorporate the DSR species to the west of EY/SEO. The DSR subgroup species are currently assigned as Tier 6 with harvest limits based on historical catch. Therefore, it would be relatively simple to add these species to the existing assessment. The NMFS would participate in the GOA-wide DSR assessment, in that NMFS would provide survey data and estimates of catch from federal fisheries (and the Pacific Halibut IFQ fishery) and AFSC staff to participate in the assessment (i.e., co-authorship).

The proposed change would not change the current jurisdictional structure. The State of Alaska under Council oversight would maintain the management of the DSR fisheries in the EY/SEO and the NMFS would manage the DSR catch in the federal fisheries west of EY/SEO.

The GOA Groundfish FMP provides the Council with authority to recommend to split or combine stocks or stock complexes if sufficient biological information is available.[2] Therefore, implementing the

[2] In the GOA Groundfish FMP, Section 3.2.3.1.1: *Identification of Stocks and Stock Complexes for Which*

proposed change would not require changes to the FMP. The proposed change would require a regulatory change to Table 10 at CFR Part 679, defining basis species for retention.

The proposed change could be put into effect for the 2024 or 2025 fishery (see "Next Steps and Timeline" section).

SSC/ Council Comments from 2021[3]

"The Team recommends, based on the analyses presented, that the DSR complex be split from the ORx complex GOA-wide. The Team requests guidance from the SSC on any further analyses needed to support this proposal." – GOA PT September 2021

"The SSC concurs with the GOA GPT and recommends that the Council consider taking up this issue of separating DSR from Other Rockfish GOA-wide – thus moving to Step 2 of the Spatial Management Policy." – SSC October 2021

"The Team continues to support an earlier recommendation that the DSR subgroup be moved into the DSR assessment and make the DSR assessment GOA-wide pending a Council analysis on spatial management implications." – GOA PT November 2021

"there are several other outstanding issues and recommendations that will likely affect future assessments of the other rockfish stock complex including a Council-directed analysis on spatial management implications of separating DSR from the other rockfish complex gulf-wide, investigations into elevating some of the species (harlequin and yelloweye rockfish) into different tiers, and if there is evidence of range expansion of species from the south." – SSC December 2021

Harvest Specification Alternative

We provide examples of the status quo (Tables 1, 2; Figure 1) and proposed alternatives (Tables 3, 4; Figure 1, 2) based on the final 2023 harvest specifications as recommended by the SSC/Council and published in the Federal Register by NMFS (88 FR 13238) for both complexes. The harvest recommendations for the OR stock complex are based on the 2019 full assessment (Tribuzio et al. 2019), rather than the 2021 assessment because the harvest recommendations were rolled over from 2019. The harvest recommendations for the DSR stock complex are from the 2022 DSR stock complex assessment (Joy et al. 2022), but using the SSC recommended OFL/ABC and Council recommended TAC. The proposed alternative GOA DSR stock complex adds the harvest specifications (which are based on Tier 6 catch history) from management areas west of EY/SEO (i.e., WG, CG, and WY) provided by NMFS to harvest specifications in EY/SEO from the state DSR assessment run by ADF&G (Table 4; Figure 2).

Management and Fishery Impacts

The main fishery impacts of the proposed alternative relate to in-season management and TAC/ABC/OFL overages. As described in previous sections, the DSR species are currently part of the larger OR complex

Specifications are Made. Notwithstanding designated stocks or stock complexes listed by category in Table 3-1, the Council may recommend splitting or combining stocks or stock complexes in the "target species" category for purposes of establishing a new harvest specification unit if such action is desirable based on commercial importance of a stock or stock complex or if sufficient biological information is available to manage a stock or stock complex on its own merits.

[3] Full history of PT/SSC comments related to DSR spatial management are available here.

in all areas west of EY/SEO. This section provides a brief overview of fisheries that could be impacted by this change and a qualitative description of such potential impacts.

NMFS prohibits directed fishing for many rockfish species at the beginning of the year because the TAC (often equal to ABC for some rockfish species) for these species does not support directed fishing. However, both OR and DSR species must be retained and landed as incidental catch in groundfish and IFQ halibut fisheries. The full retention requirement went into effect for rockfish for hook-and-line, pot, and jig-gear catcher vessels (CVs) in 2020 (85 FR 9687). If rockfish is closed to directed fishing, only a proportion of landed rockfish may enter commerce and be sold, bartered, or traded (the maximum commerce amount or MCA, defined in regulation). There are separate MCA proportions for OR GOA-wide and DSR in the SEO. After reaching the MCA, any additional rockfish caught in hook-and-line, pot, and jig gear would still be required to be retained, but would not be able to enter commerce (i.e., the MCA would be set to zero). Similarly, when a rockfish species catch exceeds the TAC, it is prohibited for retention under § 679.20(d)(2), the MCA is set to 0 percent and no amount of that rockfish species may enter commerce through sale, barter, or trade except as fish meal. This is managed by regulatory area, so exceeding TAC in one area would not necessitate prohibiting retention in another area. Hook-and-line, pot, and jig gear CVs would still be required to retain all rockfish, and all trawl vessels and CPs would be required to discard rockfish if on prohibited retention status.

The vast majority of the catch of the OR complex comes from the rockfish trawl fishery (Tribuzio et al. 2021), which typically catch the non-DSR subgroup species. Historically annual catch of OR stocks have been less than either the Gulfwide ABC or Gulfwide TAC (Tribuzio et al. 2021). Catch of the DSR subgroup within the OR complex (in WG, CG, and WY) represents less than 18% of the OR catch on average since 2015 (Tribuzio et al. 2021).

Considering the seven DSR species in a GOA-wide context, total annual catches do not exceed 500 t (Figure 2). The state-managed directed commercial fishery for DSR in EY/SEO recently has been prosecuted almost exclusively by H&L gear targeting yelloweye and to a lesser extent, quillback. The directed DSR fishery was closed to harvest in all management areas in 2020 and remains closed due to stock health concerns. DSR species are rarely caught incidentally in the rockfish trawl fishery, but rather in the Pacific halibut and cod fisheries on H&L gear (Tribuzio et al. 2019). Of the DSR subgroup, yelloweye dominates catches (NPFMC 2022). Data indicates that while trawl vessels “top-off” for some rockfish species, fixed gear vessels do not typically have this same behavior (NMFS/NPFMC 2019). In the EY/SEO areas, full retention of all seven DSR species has been required since 2005.

Breaking the DSR species out from the OR complex would result in smaller ABCs that are potentially more difficult to manage, for both OR and DSR in WG, CG, and WY (Tables 3 and 4). Therefore, fisheries that incidentally catch OR (slope subgroup) or DSR species would be more likely to be limited by TAC, resulting in going on PSC status earlier. The most consequential impacts of reaching TAC would be for those vessels which incidentally catch whichever rockfish species is on PSC status. For example, DSR being placed on PSC status could lead to negative economic impacts to the H&L fleet, as DSR could no longer be sold except as fish meal. Similarly, once OR is placed on PSC status, vessels fishing with trawl gear would be required to discard any OR, which would result in foregone revenue. These impacts are possible under the status quo, but the likelihood of reaching a TAC is higher under a scenario with smaller TACs. In the last ten years, OR have been put on PSC status in four years due to reaching TAC in at least one regulatory area, while DSR have not been placed on PSC status (NPFMC 2022).

One option that could reduce the potential for TAC overages due to small DSR TACs is to combine the WY ABC (and therefore TAC) with that of the WG and CG areas, so ABC (and therefore TAC) would be apportioned into two sub-areas: (1) WG/CG+WY and (2) EY/SEO. This has been recommended by authors, PT, and SSC in the past (Tribuzio et al. 2017, Tribuzio et al. 2019, NPFMC 2022), because the

fishery characteristics differ between EY/SEO and the rest of the GOA. In EY/SEO there are state-managed directed fisheries, and non-directed fisheries included in the assessment. The catch in the EY/SEO has been much less than the ABC for the last 5 years. In all other areas catch of the DSR species is incidental.

The proposed change would result in ABCs and OFLs being spatially apportioned in the following ways:

> OR: One Gulf-wide OFL with three separate ABCs for WG/CG, WY ABC, EY/SEO (Table 3). These are the same as the current status quo, but would no longer include species in the DSR-subgroup.
>
> DSR: Two stock complexes with separate OFLs and ABCs for WG/CG/WY and EY/SEO (Table 4). Until more is known about the DSR stock structure in the Gulf, the EY/SEO DSR stock complex would be managed separately from the WG/CG/WY stock complex, with different OFLs and ABCs. This will enable monitoring of catch of each complex to ensure that underharvested catch for one complex is not utilized in another area, which is a particular concern for DSR in EY/SEO.

If a fishery were to exceed the TAC or approach the OFL, other fisheries could be limited. For example, if a TAC were exceeded due to overages in the trawl fishery, fixed-gear fleets could be adversely affected, or vice versa, because retention is prohibited once TAC is reached (except for vessels subject to full retention requirements, in which case additional rockfish must be retained but cannot enter commerce). NMFS may also limit fisheries to prevent overfishing of any stock or stock complex (50 CFR 679.25). In recent years, these fisheries have not closely approached their OFLs, and Figures 1 and 2 indicate that the proposed change does not have a large impact on these fisheries reaching their respective OFLs.

Next Steps and Timeline

While this action could be implemented in the 2024-2025 harvest specifications for the 2024 fishery, doing so would result in the SAFE reports authored in 2023 with different stock assemblages than what would be included in final harvest specifications for 2024. The OR complex is scheduled for an operational full assessment (previously known as a "full" assessment) in the 2023 assessment cycle, but the DSR assessment is not scheduled for an operational full/update assessment until 2024. The SAFE reports could be updated during the 2024 assessment cycle to reflect the changes to the assemblages. The action would then be implemented in the 2025-2026 harvest specifications so that the harvest specifications are consistent with the SAFE reports authored in 2024.

Unless the SSC/Council recommend otherwise, the 2023 full assessment for the OR stock complex and the harvest projections/partial assessment for the DSR stock complex will contain harvest recommendations under the status quo. This document will be an appendix to the 2023 SAFE for informational purposes. Regardless of the year for which this change would be implemented, NMFS would publish harvest specifications on the standard annual timeline and separately modify regulations to capture the change to the DSR subgroup and OR complex. This approach avoids any delay in publishing the annual harvest specifications for the GOA.

If the Council does not identify any concerns, this change to the DSR subgroup would move forward during the 2024 Plan Team cycle for implementation in the 2025-2026 harvest specifications for 2025 fisheries, as recommended by the assessment authors. If the Council does identify specific obstacles or constraints, staff requests additional direction as to how to move forward, including an appropriate timeline.

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Tables

Table 1. Gulf of Alaska Other Rockfish Stock Complex final harvest specifications for 2021 - 2023 (Federal register).

All OR combined	OFL (t)	ABC (t)	TAC (t)
WG/CG	n/a	940	940
WY	n/a	370	370
EY/SEO	n/a	2,744	300
Total	5,320	4,054	1,610

Table 2. Gulf of Alaska DSR final harvest specifications for 2023 (Federal register). Note that the 2022 DSR assessment (for 2023 specifications) had an ABC of 244t.

DSR	OFL (t)	ABC (t)	TAC (t)
EY/SEO	376	283	283

Table 3. Proposed alternative Gulf of Alaska Other Rockfish Stock Complex harvest specifications for 2021-2023, which excludes Demersal Shelf Rockfish subgroup GOA-wide.

All OR Combined	OFL (t)	ABC (t)
WG/CG	n/a	768
WY	n/a	336
EY/SEO	n/a	2744
Total	5045	3848

Table 4. Proposed alternative Gulf of Alaska Demersal Shelf Rockfish Stock Complex harvest specifications for 2021-2023.

DSR	OFL (t)	ABC (t)
WG/CG+WY	275	206
EY/SEO	376	283

Figures

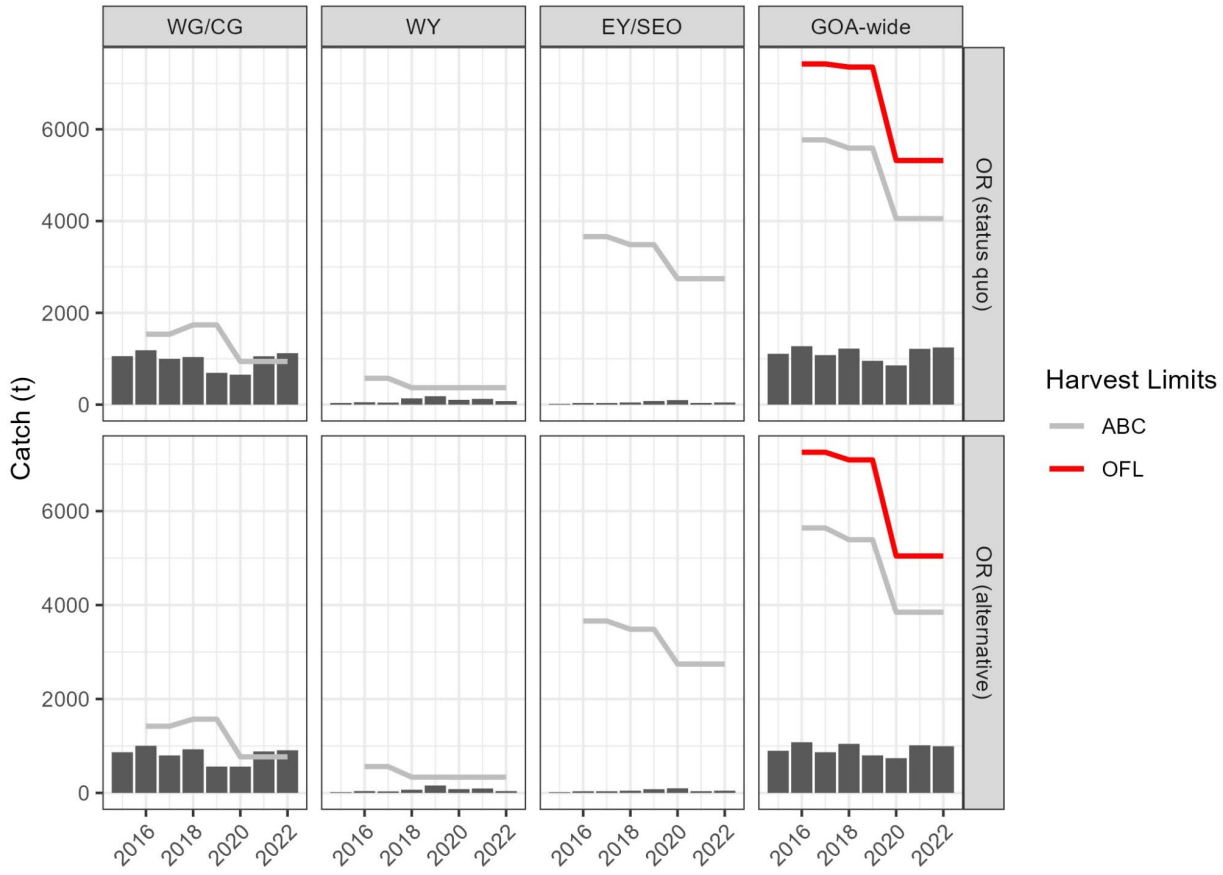

Figure 1. Historical catch from 2015 – 2022 for status quo Other Rockfish complex (OR (status quo, top)) and proposed alternative complex (OR (alternative), bottom) in each management area (Western and Central Gulf (WG/CG), West Yakutat (WY), and EY/SEO- East Yakutat/ Southeast Outside) and Gulf of Alaska- wide (GOA-wide) with harvest limits. Solid gray line indicates the ABC, solid red line designates the OFL. Catch in the OR (alternative) row represents catch of OR without DSR subgroup species.

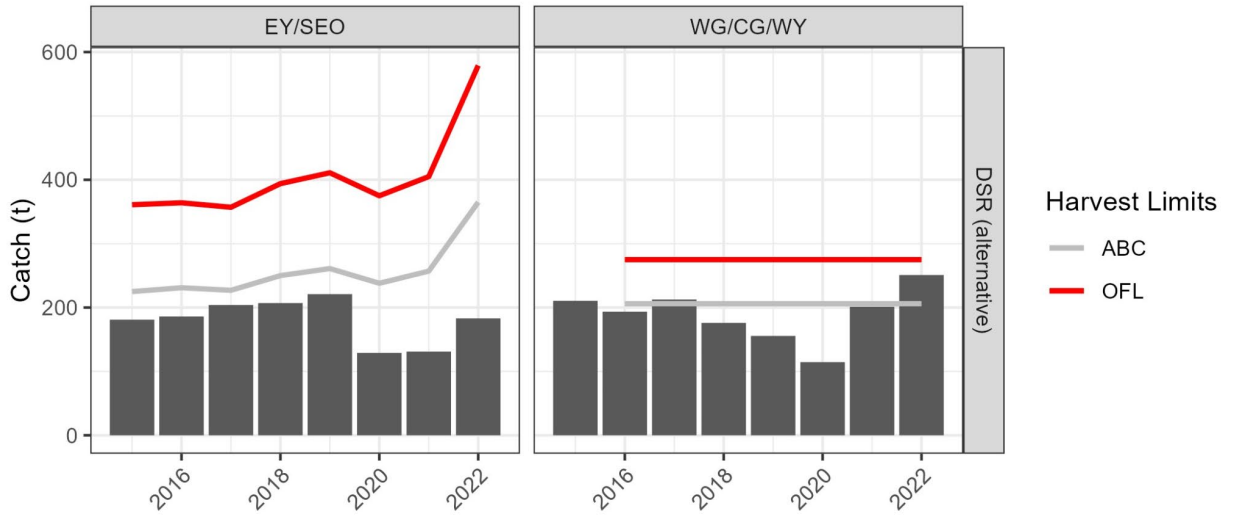

Figure 2. Historical catch from 2015 – 2022 for the proposed alternative Demersal Shelf Rockfish complex (DSR (alternative)) in the two management area groupings (Western Gulf, Central Gulf, and West Yakutat (WG/CG/WY), and EY/SEO- East Yakutat/ Southeast Outside) with harvest limits. Status quo for DSR would be the same as EY/SEO figure, with no figure for WG/CG/WY because DSR subgroup is included in OR in WG/CG and WY areas in status quo (Figure 1 top row). Solid gray line indicates the ABC, solid red line designates the OFL. Note, the historical catch for DSR (alternative) are from Catch Accounting System (CAS) for WG/CG/WY and the 2022 DSR stock complex assessment for EY/SEO.