

Council Staff Report Summarizing Relevant Council Record and Background Regarding Data-Moderate Stock Assessments within the Pacific Fishery Management Council Process

1. Introduction

This paper reflects on Council history that begins nearly ten years ago. Since that time, multiple research papers have been published that further explore the utility of using data-moderate (D-M) assessments and their appropriateness for use within the Council process. The content of this document reflects on Council history and Council perspectives about D-M assessments that did not have the benefit of these more recent research papers and their implications for Council-managed fisheries. While it is not possible to say how the Council's 2013 discussion on D-M assessments would have differed in the face of this new information, it is reasonable to conclude that it would have been different. The reader is advised to keep these considerations in mind when reviewing this paper.

This white paper was developed in response to the Council request to explore the results of the 2021 quillback rockfish D-M assessment compared to the historical removals (Table 1 in 2021 quillback rockfish assessment) and the most recent estimate of mortality from the Estimated Discard and Catch of Groundfish Species in the 2022 U.S. West Coast Fisheries ([Agenda Item G.1.b, NWFSC Report 1, September 2023](#)). As noted, in the CDFW report ([Agenda Item G.6.a, Supplemental CDFW Report 1, September 2023](#))

“CDFW wishes to point out the difficulty in reconciling the total estimated 2022 quillback mortality in California with the total estimated California stock biomass. Per the Status of quillback rockfish (*Sebastes maliger*) in U.S. waters off the coast of California in 2021 using catch and length data page 49, Table 12, the total California biomass in 2022 was estimated at 63.18 MT. Meanwhile, now that the Estimated Discard and Catch of Groundfish species for 2022 showing totally mortality is available (Agenda Item G.1.b, NWFSC Report 1, September 2023), quillback mortality in California from all available state and federal sources was estimated at 10.39 (north) +7.72 (south) = 18.11 MT (Note the 10.39 MT mortality was generated with GMT coordination to partition the data to 3 address the area between 40° 10' N. lat. and 42° N. lat.). That means 28.66 percent of the total quillback biomass was removed from the California stock as fishery mortality.”

The following is a summary review of Council documents and meeting files related to consideration and use of D-M stock assessments in general. A review of the record indicates that, from a policy perspective, concerns similar to those expressed about the 2021 quillback rockfish stock assessment were also raised in the past during Council consideration of D-M stock assessments. However, over this time frame, technical advancements have been made relative to the appropriateness of the information and research used in D-M assessments. The degree to which these advancements have addressed prior Council concerns regarding D-M assessments is not known at this time. In particular, while important technical work has been done to investigate, review, and improve assessment methodologies that are used to conduct D-M stock assessments¹;

¹ Rudd MB, Cope JM, Wetzel CR and Hastie J (2021) Catch and Length Models in the Stock Synthesis Framework: Expanded Application to Data-Moderate Stocks. *Front. Mar. Sci.* 8:663554; James T. Thorson, Jason M. Cope, Catch

further work related to the application of D-M assessments (that is, the how, when, and why) for use in status determination and, most notably, fishery management does not appear to have been conducted within the Council process. Therefore, the Council might want to consider initiating a process to build a bridge between these technical advancements and the questions around how to use D-M assessments to inform Council management.

2. 2012 and 2013

In 2013, the Council formally adopted a process for considering the use of D-M assessments for stock status determination.

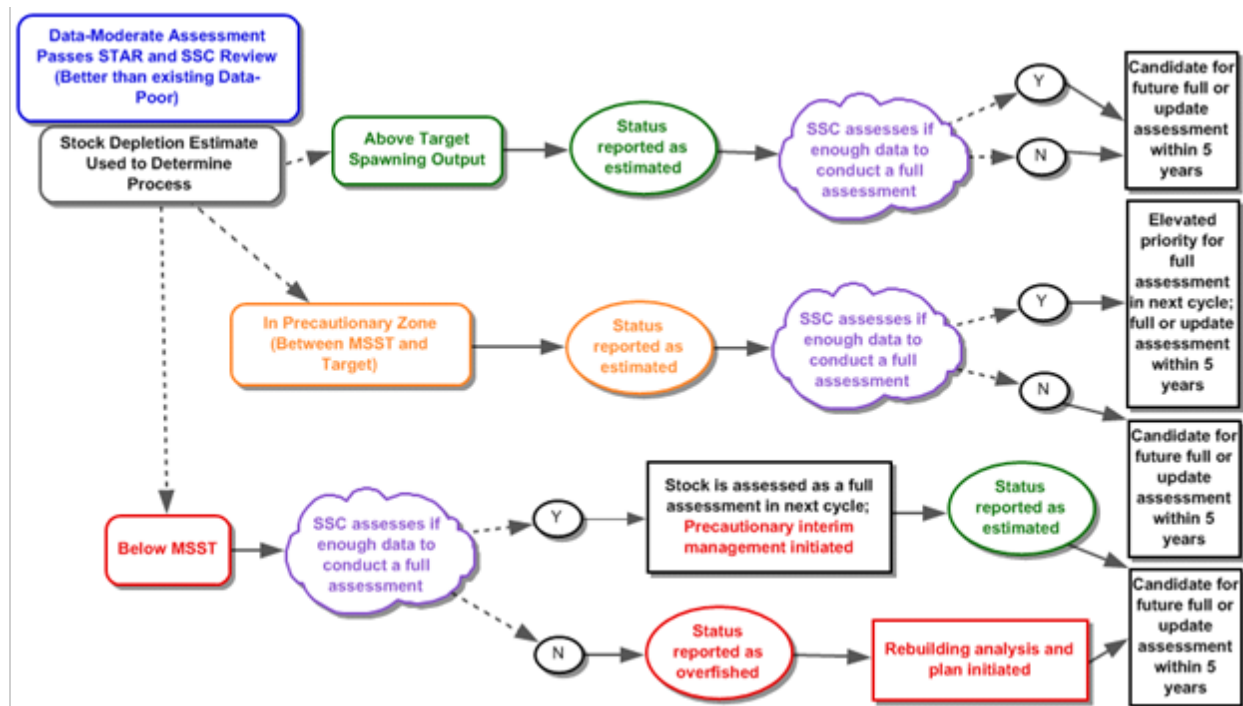


Figure 1. Proposed process for determining status of data-moderate stocks under Motion 9 at the March 2013 Pacific Fishery Management Council meeting.

The Council discussion and motion for Agenda Item H.2 is available on meeting recording file 3-9-13pm2Copy.mp3. The motion is made at time mark 0:03:20.

While, at the time of this action, Council discussion and NOAA-GC advice emphasized the need to document the process in either the groundfish FMP or COP, neither appears to have occurred. For example, Council member Michele Culver asked whether the Council needed an FMP amendment, to document the process in the stock assessment Terms of Reference, or to incorporate the process into Council COPs? NOAA-GC McCall answered that an FMP amendment should be

curve stock-reduction analysis: An alternative solution to the catch equations, Fisheries Research, Volume 171, 2015, Pages 33-41; Chantel R. Wetzel, André E. Punt, Evaluating the performance of data-moderate and catch-only assessment methods for U.S. west coast groundfish, Fisheries Research, Volume 171, 2015, Pages 170-187; Catherine M. Dichmont, Roy A. Deng, Natalie Dowling, André E. Punt, Collating stock assessment packages to improve stock assessments, Fisheries Research, Volume 236, 2021.

considered, and actually might be “needed.” Ms. Culver expressed the view that an FMP amendment might not be needed, and that incorporation into Council COPs might be sufficient.

Importantly, relative to present day Council considerations about D-M stock assessments (that is, how and whether D-M assessments could be used by the Council), in March 2013 Council member Grebel highlighted that exploration of the broader implications and policy/process decisions are needed before moving forward with D-M assessments. Ms. Grebel stressed that it was important to get the process correct for all cases (that is, for when status is above MSST, in the precautionary zone, or below MSST). Council member Kirchner stated that D-M assessments could be used as a tool for informing stock assessment planning decisions, for example, to help ascertain if sufficient data were available to do a full stock assessment. However, this review of the record appears to indicate that neither in acting upon the motion for Agenda Item H.2 in March 2013 nor in providing guidance to staff was direction provided about incorporating the adopted process into the FMP or COP. Moreover, direction or guidance about the process questions and concerns expressed by Council members during Council discussion does not appear to have been provided to staff.

Additional background information about workshops and advisory body reports that preceded the March 2013 Council discussion and action might also be informative relative to present day consideration of this issue and steps the Council might want to consider to optimize the use of D-M stock assessments in the specifications and management process.

2.1. June 2012

In June 2012, a workshop was convened related to D-M stock assessments. In their [report](#), the Methodology Review Panel stated: “The Panel recommends that the data-moderate assessments be used for setting OFLs, ABCs, and ACLs. Data-moderate assessments, however, have greater uncertainty than full assessments, and the Panel recommends that a two-stage process be adopted for status determination, in which data-moderate assessments are used to evaluate whether a stock is of concern, followed by a full assessment (if warranted), which would utilize all available information.”

2.2. March 2013

At the March 2013 Council meeting, Agenda Item H.2 was scheduled for Council consideration and action related to Status Determination Criteria for Data-Moderate Stocks. Agenda Item H.2 can be found on this file in the Council’s Briefing Book Archive ([pdf](#); page 27).

2.2.1. December 2012 Data-Moderate Webinar Report

A report from a December 2012 Data-Moderate Webinar Report, Agenda Item H.2.a, Attachment 1 ([pdf](#); starting on page 29). The report states ([pdf](#); page 32), “This solidified the group’s recommendation that status should be determined from a data-moderate stock assessment that indicates the stock is above MSST.”

In this same report, it was highlighted that ([pdf](#); page 33), “Further debate by the group regarding the issue of deferring status for data-moderate stocks that are potentially overfished concluded that precautionary management and a commitment to do a full assessment in the next cycle for stocks in this category is recommended.”

However (also on page 33), the Panel discussed consistency with national policy and accepted practices in other regions. There seemed to be general acceptance that, “Clearly, an approved data-moderate assessment qualifies as a level three assessment under the SAIP (NMFS Stock Assessment Improvement Plan). The argument was made that not using such an assessment for status determination conflicts with national NMFS policy.”

2.2.2. GAP Report

The GAP Report ([pdf](#); starting on page 36) provided strong cautions about using data-moderate assessments in management and concluded (page 37):

“The GAP also believes the Council should proceed cautiously with integrating data-moderate stock assessments in the management system. The methods for conducting these assessments and the diagnostics used to evaluate the reliability of assessment results have not been fully vetted. Further evaluation of the data and methods used to construct abundance indices informing data-moderate assessments and the types of sensitivity analyses and other diagnostic tools should be investigated in a workshop environment before embarking on a stock assessment plan that includes conducting data-moderate assessments. Before proceeding with data-moderate assessments, NMFS needs to resolve the policy issues that might prevent a more thorough evaluation of stock.”

2.2.3. SSC Report

In their report ([pdf](#); starting 51), the SSC states (pages 52-53):

“The SSC considered the framework developed during the webinar workshop a reasonable approach that makes appropriate use of data-moderate assessments as a screening tool to identify stocks whose status is a potential concern and prioritizes further assessment work to reduce uncertainty where possible.”

In this same report, the SSC recommends “that stock status estimates from data-moderate assessments should not automatically be accepted for use in status determination. An evaluation of available information to conduct a full assessment should be a crucial element in deciding whether to adopt a status determination from a data-moderate assessment. Since an overfished status determination cannot easily be undone, the SSC would prefer to not to make a recommendation to the Council on overfished status until results from a full assessment are available if it is determined that a full assessment can be conducted in the next assessment cycle.”

2.2.4. Council Action

As noted above, the Council formally adopted a process for considering the use of D-M assessments for stock status determination at the March 2013 PFMC meeting, but based on a review of the record, this process does not appear to have been formally incorporated into the groundfish FMP nor COPs.

Following the March 2013 Council meeting, several data-moderate stock assessments were reviewed by a STAR Panel in preparation for Council consideration at the June 2013 PFMC meeting.

2.3. June 2013

At the June 2013 PFMC meeting, Agenda Item F.5 was scheduled for Council consideration and action related to a suite of eight D-M stock assessments (brown rockfish, China rockfish, copper rockfish, English sole, sharpchin rockfish, striptail rockfish, rex sole, and yellowtail rockfish) and full assessments for other species.

Agenda Item F.5 starts on pdf page 628 of this link to the Council's Briefing Book archive [<https://www.pcouncil.org/documents/2013/06/f-groundfish-management-june-2013.pdf>].

2.3.1. Situation Summary

The Situation Summary for Agenda Item F5 states ([pdf](#); page 628):

“Data-moderate assessments are designed to provide more information than data-poor situations, where catch-only methods are used only to determine overfishing limits for stocks with information that falls far below what is necessary to conduct a full assessment. One of the benefits of creating the new category of data-moderate stock assessments is that it provides for the expeditious review of more stock assessments.”

2.3.2. STAR Panel Report

The Panel recommended base models for each of the D-M stock assessments, however, relevant to present day Council consideration of D-M assessments, the 2013 STAR Panel Report highlights that ([pdf](#); Page 914):

“While historical catch reconstructions have been used extensively, the Panel notes that historical catch estimates are highly uncertain, and there has been regrettably little effort to evaluate the magnitude of that uncertainty. Catch reconstructions for both commercial and recreational fisheries have also not been completed for all states. Consequently, it was difficult for this Panel to evaluate the effects of uncertainty in catch reconstruction on assessment results. This concern applies to all assessments that use these data but is particularly acute for data-poor and data-moderate approaches in which historical catch is a major determinant of assessment results.”

2.3.3. SSC Report

In June 2013, the SSC stated ([pdf](#); page 1978):

“The SSC views the data-moderate assessment methods as being very useful tools for assisting the Council's groundfish management process and a substantial improvement over the Council's data-poor methods. The SSC concludes that 1) the assessments described in the table below represent the best available science, 2) they should be accepted as valid data-moderate stock assessments, and 3) they should be used as the basis for management decisions in the 2015-2016 groundfish management cycle.”

And concluded, ([pdf](#); page 1979):

“In conclusion, the SSC regards the process of developing and reviewing the data-moderate assessments in the current assessment cycle has been highly successful. Data-moderate

assessments fill an important gap in the assessment tools available to assessment scientists, and improve the Council's ability to assess and manage the stocks in the Council's groundfish FMP. These stocks have varying economic and ecological importance, and different types of data available for assessment. A range of assessment tools gives the Council and National Marine Fisheries Service (NMFS) the flexibility to set priorities for assessment and at the same time ensure that there is some minimal level of assessment that can be conducted for all stocks."

In question and answer with the SSC representative (meeting recording file 6-22-13am2Copy.mp3, at 01:01:30, Agenda Item F.5), Council members posed several questions about the appropriateness of the data indices used in the D-M assessments for brown rockfish, China rockfish, and copper rockfish; as well as questions about the appropriateness of how the data was used in the respective D-M assessments, notably in how the data was used relative to assessing status of these nearshore stocks in California, Oregon, and Washington, especially given the paucity (and, in some cases, lack) of data to inform the D-M assessments. It was noted by the SSC representative that often times these types of questions are discussed by STAR Panels and the SSC, but also often not fully resolved and they do the best they can do.

2.3.4. GMT Report

The June 2013 GMT Report ([pdf](#); page 1976) expressed concerns primarily about the D-M assessment for China rockfish, noting: "The relatively low removals between 40°10' and 42° N. lat. and use of indices of abundance from data predominantly collected in Oregon make applicability of results of the assessment to California waters questionable to some on the GMT."

Furthermore, the GMT concludes by stating: "Such issues may arise in future assessments where the contribution of data across the assessed area is not proportional and depletion may vary within assessed regions. Development of indices of abundance from additional data sources as well as evaluation of the trends in indices and historical catch across ports or counties etc. would help address these issues to better inform relative abundance and stratification future assessments respectively."

In question and answer with the GMT representative (meeting recording file 6-22-13am2Copy.mp3, at 01:21:21, Agenda Item F.5), several Council members asked if the specific issues highlighted by the GMT about China rockfish were also indicative of a prevalence of data issues in the D-M stock assessments up for Council consideration, and whether the GMT had raised these concerns to the STAR Panel or SSC. The GMT representative stated that, yes, these issues were brought forward at the STAR Panel as well as to the SSC. It was specifically stated that the lack of data to inform the indices was of particular concern. The GMT representative summarized their perspective of the SSC response as – the issue was noted as a concern, it was considered and acknowledged, and then the SSC moved on (meeting recording file 6-22-13am2Copy.mp3, at 01:24:26, Agenda Item F.5).

2.3.5. Council Action

The Council adopted a motion to send the brown rockfish, China rockfish, and copper rockfish D-M stock assessments to the "mop-up" STAR Panel (meeting recording file 6-22-13pm1Copy.mp3, at 00:06:30, Agenda Item F.5). Motion rationale and Council discussion focused specifically on the need to address concerns about the paucity of data and how the limited data was used in the D-M assessments of these nearshore rockfish species.

2.4. September and November 2013

Meeting documents from September and November 2013 were reviewed. Nothing newly substantive nor notable that is not already summarized in notes from previous Council meetings above was found. Review of the archived meeting records could reveal additional information.

3. 2014 and 2015

3.1. March 2014

The following March, as the Council was developing harvest specifications for 2015-2016 groundfish fisheries, the topic of D-M stock assessments was noted in reports provided by the state management agencies.

Agenda Item D.5. (Biennial Harvest Specifications for 2015-2016 and Beyond Groundfish Fisheries) starts on pdf page 295 of this link to the Council's Briefing Book archive [<https://www.pcouncil.org/documents/2014/03/d-groundfish-management-march-2014.pdf/>].

3.1.1. WDFW/ODFW/CDFW

In their joint report to the Council, the state agencies provided their perspectives about management of nearshore stocks, in general, and D-M stock assessments, in specific. The text of that report ([pdf](#); page 328) is copied here in full:

The Washington, Oregon, and California Departments of Fish and Wildlife have identified the need to change the direction the Pacific Fishery Management Council (Council) and the National Marine Fisheries Service (NMFS) are headed with regard to the management for our nearshore groundfish stocks, particularly minor nearshore rockfish and nearshore roundfish.

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) clearly indicates that the states' jurisdiction and authority within its respective boundaries, to include state waters, is not diminished by the MSA (see Section 306. State Jurisdiction). In addition, the MSA allows for an FMP to delegate management of a fishery within federal waters to a state. There is a strong positive track record of the West Coast states' ability to manage species and fisheries within their control.

Nearshore rockfish and roundfish stocks (e.g., China, copper, and brown rockfish; cabezon; and kelp greenling) occur almost exclusively in state waters. There are no federal fishery-independent surveys of these nearshore stocks, and research conducted to examine life history characteristics and habitat associations in most cases is state-sponsored. The data collection programs that are responsible for collecting data used in assessments are run by the states. Fisheries that intercept nearshore species are state-licensed or permitted fisheries that are regulated by the states. The states work with our respective stakeholders to develop and discuss conservation measures and regulatory changes to these fisheries. The states are the most knowledgeable about how the regulations for these nearshore fisheries have changed over time and how the data may be affected by these regulatory changes, rather than reflective of changes in abundance.

Nearshore rockfish and roundfish are included in federal stock assessment considerations. As part of the preparation for the 2015-2016 biennial groundfish management process, the Council received a presentation from the NMFS Northwest Fisheries Science Center (NWFSC) on proposed stock assessments to be conducted during the off-year. In that presentation, NWFSC referenced a national initiative to assess a greater number of stocks within the fishery management plan (FMP) with an

acknowledgment that there were trade-offs associated with doing so—in essence, sacrificing quality for quantity.

NWFSC representatives worked with the Council’s advisory bodies to develop a proposed list of stock assessments to be conducted during the off-year. There were many new stocks added to the list, including China, copper, and brown rockfish. These assessments were characterized as “data moderate” because they were developed using catch history and an index of abundance, rather than running a full model.

When this proposal was brought forward by NWFSC, the states’ representatives on the Scientific and Statistical Committee (SSC), Groundfish Management Team (GMT), and the Council raised concerns, particularly about the lack of data for these stocks, implications for management, and questioned the benefits of doing “data moderate” assessments. The answer provided can be interpreted as, “we don’t know unless we try.” In other words, we don’t know to what degree the assessment may or may not be “data moderate” and what concerns may arise from a management perspective by using these assessments until these assessments are developed. We were essentially told by the NWFSC to let them develop the assessments and see how they turn out; then, the Council can decide whether it is appropriate to use them for management—which is the definition of “results-based management.”

In addition, as the Council restructured the stock complex for “Other Fish,” there was a request to have “data poor” assessments (i.e., catch history and life history characteristics, without indices of abundance) for cabezon (Washington only) and kelp greenling (separately for Washington and Oregon), in order to meet status determination criteria in the MSA.

In September and November 2013, the results of these particular “data poor” and “data moderate” assessments were brought forward to the SSC, GMT, Groundfish Advisory Subpanel, and the Council. Again, state representatives on the SSC, GMT, and the Council raised concerns about the data that were not available; the data that are available but were not considered; the selection of the indices of abundance; and the application of those indices, which were not consistently treated across these assessments, even when the assessments used the same data. All of these items could, however, be considered and addressed through a full assessment development and review process, which we think would be the appropriate step prior to using these assessments for management.

Given our ability and current state management of nearshore stocks, general concerns about the evolution of these “data moderate” and “data poor” stock assessments, and our specific concerns about how these nearshore assessments may be used for management, we request that the Council add the following alternatives for consideration under the 2015-2016 Biennial Harvest Specifications and Management Measures process:

1. Remove minor nearshore rockfish and nearshore roundfish (cabezon and kelp greenling) from the West Coast Groundfish FMP
2. Retain the nearshore stocks within the FMP and delegate the management of the nearshore fisheries to the individual states

For each of these alternatives, allow flexibility in geographic application. For example, either of these alternatives could apply to only one or two states. The intent would be to add these alternatives to the process, analyze them, and have them available for Council consideration at the June 2014 meeting.

3.1.2. April 2014

Agenda Item C.4. (Fisheries in 2015-2016 and Beyond: Adopt Biennial Specifications Final Preferred Alternatives) starts on pdf page 213 of this link to the Council's Briefing Book archive [<https://www.pcouncil.org/documents/2014/04/c-groundfish-management-april-2014.pdf>].

Similar to the March 2014 joint state report, the April 2014 WDFW report ([pdf](#); starting page 1096) highlights the state's perspective about management of nearshore stocks and D-M assessments and nearshore stocks.

The WDFW report states ([pdf](#); page 1098): "Data moderate assessments, on the other hand, do not incorporate the parameters listed above for Stock Synthesis, and use catch history and an index of abundance in the XDB-SRA model, which is also reviewed by a STAR Panel. However, in the case of these minor nearshore rockfish stocks, there are no fishery independent surveys, so fishery-dependent CPUE is typically used. As noted previously, WDFW's concerns with the data moderate assessment for China rockfish are rooted in the use of Oregon's recreational CPUE to the entire northern area without considering the significant differences between the Washington and Oregon recreational fisheries, including CPUE, bag limits, discard rates, lengths, and competition for resources from commercial fisheries. While there have been other situations when stock assessments produced unanticipated results, we do not believe that these data moderate assessments nearshore stocks do not reflect the reality off our coast. We hope this can be addressed through state-specific full assessments for minor nearshore rockfish in the next cycle."

WDFW specifically recommends ([pdf](#); pages 1104-1105): "We think that data moderate assessments may be applicable for areas, such as the slope, which are managed under regulations that apply to a broader area; however, their use in informing management decisions for the nearshore rockfish fishery that has vastly different regulations among the states may be limited.

"In general, we believe that there are likely more discrete subpopulations of nearshore rockfish stocks distributed along the West Coast than the data can demonstrate. However, we also believe that these data moderate assessments for minor nearshore rockfish do not accurately reflect their status off Washington as the estimates of biomass are likely more reflective of fishing regulations, rather than abundance."

3.2. June 2014

Agenda Item F.7. (Fisheries in 2015-2016 and Beyond: Harvest Specifications, Management Measures, and Amendment 24) starts on pdf page 786 of this link to the Council's Briefing Book archive [<https://www.pcouncil.org/documents/2014/06/f-groundfish-management-june-2014.pdf>].

3.2.1. DEIS

The Draft 2015-2016 harvest specifications and management measures EIS in the June 2014 Briefing Book states the following, which might be of interest to the Council as it considers the use of D-M stock assessments ([pdf](#); page 915):

"Harvest Guidelines for China Rockfish North of 40°10' N lat.

“The Council initially considered an analysis of state-specific or regional harvest guidelines (HGs) of China rockfish north of 40°10’ N lat. given its status in the precautionary zone. The Council rejected a detailed analysis of HGs for China rockfish north of 40°10’ N lat. The HGs were so low they would have caused a significant disruption of nearshore groundfish fisheries. The lack of confidence in the data- moderate assessment results for China rockfish compelled the Council to prioritize a full assessment or a more thorough data-moderate assessment) of China rockfish next year before considering the necessity of a more conservative management strategy for this stock.”

3.2.2. CDFW Report

In their report to the Council, CDFW expressed their perspective about management of nearshore stocks, in general, and D-M assessments ([pdf](#); page 2122):

“During adoption of the 2013 data moderate stock assessments, many complexities were identified in the application of assessment results to nearshore rockfish management. Since these complexities will require ongoing discussion about how to proceed in the future and will likely take time to resolve, CDFW is supportive of the general management approach outlined by WDFW and ODFW for 2015 and 2016. We believe these interim measures strike a balance between responding to the newest science and minimizing disruptions to the fishery.”

And, also stating ([pdf](#); page 2123)

“To prevent future confusion or delays in management and regulatory development, CDFW believes a broader discussion on nearshore species assessments and management needs to occur outside the stock assessment cycle before engaging in additional full or data moderate nearshore rockfish assessments. Addressing these complex issues during a stock assessment review or on the Council floor is not optimal. If this does not occur, the issues experienced during the 2013 assessment cycle (i.e., boundary issues) are likely to be repeated again especially as the Council is currently considering the use of data moderate assessments for nearshore stocks that have been previously assessed at state boundaries (e.g. blue and gopher rockfish). CDFW also believes that these discussions should be holistic and address the complex as a whole instead of focusing solely on a few individual species as is currently being done now.”

3.2.3. WDFW/ODFW

In their joint report, WDFW and ODFW highlight several areas of interest related to D-M stock assessments. For completeness, the entire report is copied here.

Agenda Item F.7.b, Supplemental WDFW/ODFW Report, June 2014 ([pdf](#); starting page 2204)

“The Washington and Oregon Departments of Fish and Wildlife would like to reiterate our understanding regarding the management of stocks in state waters and our concerns with the use of data moderate assessments for nearshore stocks north of 40°10’ N. latitude, and describe our preferred management approach for 2015 and 2016 (and, potentially, beyond).”

“Again, as stated previously in March, the states have concerns with the use of the data moderate assessment approach, which uses catch history and—in these cases—recreational fishery-dependent indices of abundance, to determine the status of nearshore stocks as our respective nearshore fisheries are significantly different and have changed over time. It is likely that the catch histories, on which

these nearshore assessments were based, were affected by these state-specific regulatory changes, rather than reflective of changes in abundance.”

“We believe that these concerns could be addressed through the development of reliable full assessments to the extent that data are available, which we think would be the appropriate next step. These full assessments should provide coastwide and state-specific information useful to management. While most, if not all, of these particular stocks occur exclusively in state waters, those assessments could also apportion overfishing limits between state and federal waters for management purposes, as appropriate.”

“While the states have considered alternatives for non-retention of these stocks, which could be specified pre-season, the minor nearshore rockfish species are not targeted and our respective nearshore fisheries are the best (and, in some cases, the only) opportunity to collect biological data (e.g., age structures, maturity information, lengths and weights, etc.) on these stocks. Having non-retention restrictions in place at the start of our seasons would significantly hamper our abilities to have to full assessments in the future.”

“So, until those full assessments for nearshore stocks are completed and accepted for management, with the understanding that full assessments may not be available in the near future due to the lack of available data in some fisheries and areas, given the abilities of the states to monitor and manage our fisheries, we would propose the following management approach:

1. WDFW and ODFW commit to monitoring the harvest levels of their nearshore fisheries in season and to coordinating with the other states if in season action were needed.
2. Each state would manage its fisheries in a manner that would essentially treat “status quo” harvest levels as harvest guidelines.
3. Collectively, the states’ “status quo” harvest levels of nearshore rockfish would exceed the nearshore rockfish complex annual catch limits (ACLs) for 2015 and 2016; therefore, WDFW and ODFW commit to consult and coordinate with the other states upon attainment of 75% of our respective “status quo” harvest levels. Table 1 describes what the states’ harvest guidelines would be and what 75% of those respective guidelines are. We would conduct a conference call; each state would report its current harvest and projected catch estimate and decide whether any in season action was needed.
 - a. As ODFW and WDFW can take in season action expeditiously, the harvest guidelines for Oregon and Washington would be state harvest guidelines and would not be specified in federal regulations.
 - b. We would ask the California Department of Fish and Wildlife how they would like California’s harvest guideline for nearshore rockfish north of 40°10’ N. latitude specified and what their proposed management approach is, if different than this.
4. ODFW and WDFW commit to providing in season updates on our respective nearshore fisheries to the Council at the September and November meetings in 2015 and 2016.”

3.3. June 2015

In June 2015, the Council was considering adoption of new stock assessments under Agenda Item D.8, Final Stock Assessments and Catch Reports, including a new D-M assessment for arrowtooth flounder.

3.3.1. SSC Report

The [SSC Report](#) (page 3) did not approve the D-M assessment of arrowtooth flounder.

3.3.2. GMT Report

The SSC's disapproval of the arrowtooth flounder D-M assessment led the GMT to opine broadly about D-M assessments in their [report](#) to the Council, stating that: "This [i.e., arrowtooth flounder] data moderate assessment led the GMT to discuss the use and applications of data moderate assessments in general."

"We have learned a lot since the 2012 data moderate workshops and 2013 assessments, and will learn more after this round of assessments is complete. The GMT finds benefit in potentially stepping back, and with the knowledge accumulated over the past three years, asking questions that might improve the process and application of data moderate assessments. As such, the GMT thinks that an off-year science exercise, such as a data moderate workshop would be beneficial. **The GMT recommends that the Council consider exploring data moderate assessments and methods and their applications under off-year science.**" (Bold in original report)

4. 2016-2019

No D-M assessments were conducted. And, relevant to present day considerations, no workshops were convened to, as recommended by the [GMT in 2015](#), "exploring data moderate assessments and methods and their applications."

5. 2020-2020

5.1. June 2020

In June 2020, under [Agenda Item F.2.](#), the Council took final action to adopt a Stock Assessment Plan and Terms of Reference for new groundfish stock assessments that are anticipated to be completed in 2021 and 2023, and which will be used to inform the harvest specifications and management measures decisions for groundfish fisheries in 2023 and beyond.

Specific to quillback rockfish, for stocks to be assessed in 2021, neither [NMFS](#), the [SSC](#), the [GMT](#), nor the [GAP](#) recommended this species be assessed (neither full nor D-M in 2021).

The GMT and GAP recommended (and NMFS suggested) a full quillback assessment in 2023.

However, as summarized in the [June 2020 decision document](#), "[t]he Council adopted groundfish stock assessments to be conducted in 2021 as follows: full assessments for vermilion and sunset rockfishes (to be assessed as a complex of the two species), Dover sole, and lingcod; data-moderate assessments for spiny dogfish, copper rockfish, quillback rockfish, and squarespot rockfish; an update assessment of sablefish; and catch-only projection updates for arrowtooth flounder, canary rockfish, darkblotched rockfish, and Petrale sole."

The motion adopted by the Council is copied below. A review of the [transcript](#) indicates little rationale was provided for the inclusion of quillback rockfish as a D-M stock assessment other than that "[it] was ranked relatively high in the NMFS summary listing" and "currently we are working on a category 3 assessment from a relatively long time ago and look forward to seeing what can be done with the existing data, although admittedly may be sparser than we would like" (motion made and Council discussion begins on page 112).

[Motion 8](#) [mp3: 6-17-20am3 00:03:18]: Council adopt the following list of stocks for assessment in 2021:

- Full: vermilion/sunset rockfish off Oregon and California (data moderate or limited for Washington, as appropriate), dover sole, and lingcod
- Data moderate: spiny dogfish, copper rockfish, quillback rockfish, and squarespot rockfish
- Update assessment: sablefish
- Catch Only projections: arrowtooth flounder, canary rockfish, darkblotched rockfish, and Petrale sole

Corey Niles/Marci Yaremko (Motion 8 carried unanimously)

<https://www.pcouncil.org/documents/2020/11/june-2020-meeting-record.pdf/> (page 19)

6. Conclusion

As noted in the Introduction, this report was produced to provide background information about the history of D-M stock assessments in the Pacific Council groundfish management and specifications process. Interest in this topic was generated by Council questions about the 2021 quillback rockfish stock assessment. As summarized above, questions similar to those expressed about the 2021 quillback rockfish stock assessment have also been expressed throughout the history of the Council's consideration of the use D-M stock assessments in management.

A review of Council meeting records and documents seems to indicate that important and meaningful work has been done to further investigate, review, improve, and approve assessment methodologies that are used to conduct D-M stock assessments, typically via NMFS science center research endeavors and Council assessment methodology review workshops. However, it appears that work related to the application (that is, the how, when, and why) of D-M assessments for use in status determination, specifications setting, and management does not appear to have been conducted. Moreover, the process formally adopted by the Council (in March 2013) for the use of D-M assessments for stock status determination appears to not have been formally incorporated into the groundfish FMP nor the COPs, perhaps due to a lack of a workshop or expert panel to fully flesh out how best to incorporate D-M assessments in Council management.

PFMC

10/26/23