SCIENTIFIC AND STATISTICAL COMMITTEE REPORT ON PHASE 2 STOCK DEFINITIONS – FINAL ACTION

The Scientific and Statistical Committee (SSC) reviewed the Council's preliminary preferred alternatives (PPAs) for the stock definition options for five species (Table 5 of Agenda Item G.2, Attachment 3), the PPAs for ecosystem component species (Table 3 of Agenda Item G.2, Attachment 3), and the process for evaluating stocks in terms of whether they should be included in the Groundfish Fishery Management Plan based on their need for conservation and management within the US Exclusive Economic Zone (EEZ). The focus for SSC discussion was on spatial population structure and the consequences of stock definitions for monitoring and stock assessment, whereas the 10-factor analysis is focused on defining "management stocks". Katrina Bernaus (PFMC staff) and Keeley Kent (NOAA) provided clarifications on the Phase 2 process and the analyses conducted to support Council decision making.

The SSC reiterates that the current evidence for stock structure remains uncertain but that considerable evidence for connectivity among the currently defined stocks exists for some species. Even when there is evidence of stock structure, the boundaries are generally difficult to identify and unlikely to coincide with political borders. Moreover, the SSC continues to assert that removal of a subset of the spatial components of a species from the FMP will adversely affect the ability to design monitoring and assessment strategies and define essential fish habitat at the species level. Thus, removing a spatial component from the FMP will reduce the ability to manage stocks of fish throughout the depth and latitudinal ranges of their populations. Consequently, the SSC maintains its recommendation that if some spatial component (e.g., the part of a species offshore of one or more states) is to be retained in the FMP based on the 10-factor analysis, all of its spatial components should be retained in the FMP. This recommendation is supported by National Standard 3, which states "To the extent practicable, an individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or in close coordination".

For example, the 2023 stock assessment for black rockfish off California synthesized information related to stock structure for black rockfish off the West Coast, highlighting considerable uncertainty and northward movement that suggests substantial connectivity between populations found off California and Oregon (Dick et al. 2023). Tagging information also confirms movement from Washington to Oregon and California (Wallace et al. 2010). Retaining black rockfish off Oregon and Washington in the FMP but excluding black rockfish off California is not in accordance with the new information about population connectivity from the 2023 assessment. The SSC is willing to review an updated analysis for black rockfish, or any other species for which some spatial components are considered as being in need of conservation and management in the EEZ and others not, if this new information is to be considered prior to a final decision on stock definitions.

The SSC agrees that the stock delineations in Table 5 of Agenda Item G.2, Attachment 3 are consistent with the best available information on stock structure. However, this table does not reflect the SSC recommendation that if some spatial component is to be retained in the FMP, all

of its spatial components should be retained in the FMP. The SSC also notes that a mtDNA study (Villablanca and Nakamura 2008) found seven distinct cabezon subpopulations in the California Current: one in southern Oregon, three north of Point Conception, and three south of Point Conception. The SSC recommends an alternative Table 5 of Agenda Item G.2, Attachment 3, which includes additional stocks in italic underline that reflect the recommendation about species with multiple spatial components should be treated as one unit and the new information on cabezon stock structure:

Species	**Opt.**	**Potential Stock Delineations**
Blue / Deacon Rockfish	3	*California,* Oregon, Washington
Cabezon	*3*	*California, Oregon,* Washington
Kelp Greenling	*3*	*California, Oregon,* Washington
Rosethorn Rockfish	1	Coastwide
Stripetail Rockfish	1	Coastwide

The vulnerability assessment (the Productivity/Susceptibility Analysis, PSA) documented in Patrick et al. (2010) does not appear to have influenced the outcomes related to Ecosystem Component (EC) species. This PSA was developed to evaluate the vulnerability of stocks to overfishing, such that stocks with high vulnerability are generally in need of conservation and management measures. Consequently, the SSC continues to have concerns over the designation of EC species for large-bodied species likely to be retained and desired by the fishery, particularly those with high vulnerability due to their life history characteristics (slow growth, large size, greater longevity). The SSC recommends that the EC designation be reserved for species with low (or at most moderate) vulnerability to fisheries impacts and those most likely to be discarded due to small size or poor marketability, generally the 'diminutive' species referred to within Agenda Item, G.2 Attachment 1. The shallow and deep shelf species proposed for EC status with high vulnerability (Alternative 3 in Table 3 of Agenda Item G.2, Attachment 3) include bronzespotted, speckled, and tiger rockfish (Cope et al. 2011). Shallow and deep shelf species proposed for EC status with medium vulnerability include flag, rosy, greenblotched and Mexican rockfishes. While not primary fisheries targets, greenblotched, speckled, flag, bronzespotted, and rosy have historical (1916 to 2009) catches between 1,000 and 2,500 tons coastwide and most others have historical landings of several to many hundred tons (Dick and MacCall 2010; Table 4). Although current catches are low, this is partially a consequence of past area closures, particularly the Cowcod Conservation Area closures that have constrained southern California fisheries for well over two decades. Therefore, the SSC recommends that these species be retained in the FMP, and that they are considered species "in the fishery", with stock definitions.

The potential PPA stock definitions in Table 7 of Agenda Item G.2, Attachment 3 places leopard shark in stock definitions options 1 and 2 that would combine states, though leopard sharks have fine-scale spatial genetic structure at the level of bays and estuaries used for pupping, with natal homing (Lewallen et al. 2007). Although most of its mortality is in state waters and they are likely to be removed from the FMP, if they are retained, the spatial structure would indicate option 2 would be the most appropriate definition with separate stocks in California, Oregon/Washington.

The SSC raises three additional issues related to stock definitions:

- The 10-factor analysis does not identify how various factors were weighted for making

decisions, other than specifying that factors 1-3 are more heavily weighted.

- Many of the stocks in Table 3 of Agenda Item G.2, Attachment 3 tend to be considerably more data poor relative to many co-occurring species, and the SSC recognizes that the next phase of this process relates to defining stock complexes. The SSC recommends that highly vulnerable species be considered for management as part of a complex with co-occurring species.
- New information could lead to changes to the best available scientific information regarding spatial population structure and the level of mortality in the EEZ. In addition, climate change is likely to change stock distributions. The process of changing stock definitions and adding/removing species or spatial components from the FMP is unclear and guidance should be developed for the Council and stock assessment scientists that effectively describes this process.

References

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09/21/25