WASHINGTON DEPARTMENT OF FISH AND WILDLIFE REPORT ON GROUNDFISH STOCK ASSESSMENT PLANNING

The Washington Department of Fish and Wildlife (WDFW) would like to offer the following comments on the groundfish stocks selected to be assessed in 2015. For clarification, in general, we do not have concerns about the data moderate assessment methods, but do have a concern about how data are used to fill gaps in assessments, particularly for nearshore stocks. We describe our concerns below and how we would recommend they be addressed.

Our primary concern stems from not having sufficient data from waters off the Washington coast, collected either through fishery-independent or –dependent means, to populate an assessment model. While this general concern applies to all assessments, specific to nearshore stocks, this concern arises when stock assessments borrow data from adjacent areas to populate the model and the borrowed data are affected by management measures that do not apply off Washington. Because of the disparity in management measures across state boundaries, we believe that the results are likely not an accurate reflection of the status of the stock in Washington waters. This sentiment appears to be shared by the Council's Scientific and Statistical Committee (SSC) as they stated, "The spatial structure of assessments should be based on biological considerations but avoid inferring stock status for areas for which there are no index data, particularly for nearshore species." (Agenda Item D.5.b, March 2014)

Black rockfish is one nearshore stock where we have had sufficient data for a state-specific assessment in Washington (i.e., the data borrowing situation described above would not apply). In June, the Council voted to keep the question of assessment areas for black rockfish open. However, for the reasons given below, we remain strongly supportive of using the existing assessment boundaries for the Washington stock and certainly for retaining the use of state boundaries for management.

For the 2015 cycle, the Council is again considering assessing nearshore stocks off Washington. While we agree that biological stock structure is a matter for the Stock Assessment Team (STAT) to consider and the SSC to decide, stock structure in the nearshore stocks is uncertain. WDFW does not believe that genetic (i.e., "evolutionary") stock structure must be proven to justify area-based estimates; we think evidence of ecological independence is sufficient. Studies have demonstrated that large genetic differences can be prevented with the exchange of only a relatively few individuals (i.e., more than ten) (Miller *et al.*, 2005), and given that rockfish do not reach maturity until five to ten years of age, a demographically relevant migrant exchange may take decades to occur (Lotterhos *et al.*, 2014). That being said, if there are significant conservation risks associated with a specific area-based approach, we want to be aware of those and recognize that addressing those risks may require using geographic boundaries that deviate from state boundaries for management.

For black rockfish, evidence suggests that adult movement is limited. That is, we see evidence of a high degree of ecological independence among spawning populations through the WDFW tagging studies, which we initiated in 1981 and that continue today. Since 2004, when Oregon and Washington have had comparable tagging protocols in place, 0.3% of our tag recoveries have been from waters adjacent to Oregon.

Our conclusion is that black rockfish spawners off Washington are most likely to be spawning with other mature fish off Washington. Therefore, as a matter of policy, WDFW recommends that the Council manage to where the spawners are even if there is exchange of larvae between areas (i.e, because we do not know where the seeds are coming from, we believe it makes sense to assume they are coming in proportion to where the spawners are); again, this is supported by over three decades of tagging results.

Black rockfish is our key recreational bottomfish stock (accounting for almost 97% of total nearshore catch in the last decade), which is why WDFW has invested significant staff and funding resources into the tagging studies (tagging over 133,000 fish) and its management for over 30 years. As such, we want full attention paid to the assessment. We are concerned that combining multiple area assessments and giving it to one STAT would result in the Washington area receiving less focus than it would if assessed by a separate STAT. Given our extensive experience in working with our tagging data, it is important that WDFW be on the STAT.

Nearshore fisheries are currently managed by the individual states, and unless there is a conservation concern relative to our management actions, this practice should continue for black rockfish and other nearshore stocks. The SSC has said that for nearshore stocks, we do not want to use trend information from one area where management history has been different, and apply it to another area. The fishery-independent data we have for black rockfish is focused on measuring trends off of Washington, and the fishery-dependent data we collect also reflects the Washington fishery. WDFW believes that the black rockfish assessment—whether conducted coastwide or on two or three separate areas—needs to be modeled in a manner that allows for state-specific management to continue.

Finally, based on the recent data-poor assessment, the kelp greenling stock off Washington appears to be at low risk. Therefore, WDFW recommends not reassessing kelp greenling off Washington in 2015 and focusing the Council's limited assessment resources on higher priority stocks.

References

Miller, J. A., M. A. Banks, D. Gomez-Uchida, and A. L. Shanks. "A Comparison of Population Structure in Black Rockfish () as Determined with Otolith Microchemistry and Microsatellite DNA." *Canadian Journal of Fisheries and Aquatic Sciences* 62.10 (2005): 2189-198.

Lotterhos, Katie E., Stefan J. Dick, and Dana R. Haggarty. "Evaluation of Rockfish Conservation Area Networks in the United States and Canada Relative to the Dispersal Distance for Black Rockfish ()." *Evolutionary Applications* 7.2 (2014): 238-59.