

Report of the Pre-Assessment Workshop for 2025 Groundfish Stock Assessment of Yellowtail Rockfish north of 40° 10' North latitude

Pacific Fishery Management Council
Online Meeting

January 30, 2025

The pre-assessment workshop for the 2025 stock assessment of yellowtail rockfish north of 40° 10' North latitude was convened via webinar on January 30, 2025. The purpose of this workshop was to review proposed data inputs, modeling approaches, and other pertinent information to inform the upcoming stock assessment with a goal of promoting dialogue between the stock assessment team (STAT), data providers, and stakeholders. John Budrick from the Pacific Fishery Management Council's Scientific and Statistical Committee (SSC) Groundfish Subcommittee is serving as the chair of the stock assessment review (STAR) panel scheduled May 19-23, 2025. Kiva Oken (Northwest Fisheries Science Center), Ian Taylor (Northwest Fisheries Science Center), Megan Feddern (Northwest Fisheries Science Center), Ali Whitman (Oregon Department of Fish and Wildlife), and Fabio Caltabellotta (Washington Department of Fish and Wildlife) are authors on the STAT. In addition, Katlyn Lockhart from the Groundfish Management Team and Gerry Richter from the Groundfish Advisory Subpanel are representatives to the STAR panel.

Materials from the pre-assessment workshop are available on the Pacific Fishery Management Council's [Publicly Accessible Materials site](#). An additional [data summary](#) was prepared by the STAT which provides more detail than was available in the presentation. Yellowtail rockfish are managed as two separate stocks, a stock south and a stock north of 40° 10' North latitude. The most recent [yellowtail rockfish assessment](#) was completed in 2017 and was accepted to provide management advice for the northern stock. The yellowtail rockfish assessment north of 40° 10' N. latitude is considered data rich due to the abundance of age data from the fishery. All authors on the STAT were available to answer questions throughout the presentation.

The yellowtail rockfish fishery is dominated (>97%) by trawl catch and overall catch has increased substantially since the 2017 assessment was completed. The STAT is proposing the 2025 assessment model structure to include a catch fleet for the commercial trawl, at-sea hake, and recreational sectors. Separation of the midwater and bottom trawl sectors is not possible due to lack of data prior to 2000. However, there are no differences in the size or age structure between the trawl sectors. The majority of the landings are from Oregon and Washington. Foreign catch was inadvertently excluded during the 2017 assessment. Foreign landings are available from [Rogers \(2003\)](#). Recreational landings are proposed to be modeled as a single fleet in the 2025 assessment which is a change from the 2017 assessment where Washington landings were modeled separately. This change is possible because Washington catch reconstructions are now available as abundance and weight. A new Oregon recreational catch reconstruction is used as well. Overall, the magnitude of the recreational fishery is low compared to the commercial fishery. Discards in yellowtail rockfish fisheries are generally low and the size structure is similar to landed catch. The proposal for 2025 assessment is to simplify discarding assumptions by using external estimates from the groundfish expanded mortality multiyear reports.

Recreational landed catch is smaller on average than commercial landings (trawl sector and at-sea hake). There is a general trend of smaller and younger yellowtail rockfish landed in California while Oregon and Washington were similar. The mean lengths and ages across time from the commercial fishery are consistent with fishing the stock down through the late 1990s and a subsequent recovery. Commercial length and age data extend back into the early 1980s. Currently, only length data are available from the at-sea hake fishery, though age samples are being processed. All recreational age samples come from Washington, but lengths are available from all states. Additional length and age composition data is available from the Triennial and West Coast Groundfish Bottom Trawl Survey (WCGBTS) and will be included in the 2025 assessment.

Several fishery dependent indices are proposed to be explored in the 2025 assessment. An index based on data from the at-sea hake observer program (A-SHOP) was explored during 2017, though excluded from the final model at the STAR panel. This index will not be explored. The 2017 STAR panel recommended exploring a commercial trawl CPUE index because it uses midwater gear that more effectively targets yellowtail than a bottom trawl. Preliminary analyses from this index show a peak during 2015-2016. This information generated significant feedback from industry and state representatives. It was noted that less hake directed fishing has occurred in Washington during the last few years which is where large numbers of yellowtail rockfish have been encountered in this fishery during the past. In addition, the exempted fishing permit program changed during 2017 which could have impacted this index, though the month effect included in the model should account for changes in when during the year the fish are caught. Two fishery dependent indices were proposed for Oregon based on the Ocean Recreational Boat Survey (a dockside sampling program) which has occurred from 2001-2024 and based on the Ocean Recreational Fishing Survey (onboard observer program for charter boats) which has occurred from 2003-2024. Washington expressed interest in exploring a similar dockside sampling index, which is based on the Ocean Sampling Program (OSP).

The WCGBTS index is used in many U.S. west coast groundfish stock assessments. The WCGBTS was used in the 2017 yellowtail rockfish assessment and will be updated (data range and modeling software) for the 2025 assessment. The Triennial Trawl Survey index is a historic survey that ended in 2004 but does provide important information for the time period. It will be included and similarly be updated with the latest modeling software similar to other index standardizations. A new hook and line index based on combined Oregon and Washington surveys is proposed for exploration at the STAR panel. Both surveys sample rocky reef habitat, the Washington survey was conducted from 2009-2024, and the Oregon survey was conducted from 2013-2024. There are still some minor configuration differences that need to be accounted for in the modeling, such as limiting the index to only spring or including all seasons. For California, there is an insufficient time series of available data and only one location north of 40° 10' N. latitude from the California Collaborative Fisheries Research Program to include in the combined hook and line index.

Few yellowtail rockfish are observed prior to age-6, particularly in the trawl fisheries. Therefore, indices that capture early life dynamics prior to entering the fishery would be useful for management. In Oregon, Standard Monitoring Unit for the Recruitment of fishes (SMURFS) is

proposed as an index for the 2025 assessment. SMURFS data are available from 2011-2024 from two locations, one in central and one in southern Oregon. These data are paired with temperature and dissolved oxygen measurements from moorings. Preliminary examinations indicate more yellowtail rockfish are sampled in southern Oregon, abundance is higher earlier in the year, and settlement peaks between 8-10 °C. A complementary survey occurs in Washington, the Olympic Coast Dive Survey. Young-of-the-year yellowtail and black rockfish are difficult to distinguish, therefore both species are counted as part of a complex (BYT). Data for the BYT complex is available from 2015-2024 from 5 sites all adjacent to kelp forests. A third potential index of early life stages is the rockfish recruitment survey which has been used in many U.S. west coast rockfish assessments. Potential indices can be coastwide or north of 40° 10' N. Preliminary results suggest the coastwide index may be more informative and more consistent with the WCGBTS. Oceanographic indices of recruitment will be explored in the 2025 yellowtail assessment. Previous research has linked oceanographic conditions to recruitment for sablefish and petrale sole that have been used to develop oceanographic indices of recruitment. The 2025 assessment will apply the same methodological approach to develop an oceanographic index.

Maturity information will be updated for the 2025 assessment with up to 635 samples. Only 141 samples were available for the 2017 assessment. These data may be modeled spatially to account for differences across the assessed area. The sex ratio becomes male dominated at older ages, but females are consistently larger at age. Natural mortality will be modeled as sex specific to account for this observation. The maximum age in the literature is 64 years but the maximum age observed in commercial fisheries is 53 for females and 60 for males. The maximum age observed in survey data is 37 for females and 42 for males. Data overwhelmed the natural mortality prior in the 2017 assessment and is expected to behave similarly in the current assessment. Growth is sexually dimorphic with females attaining larger sizes and occurs by 8-10 years of age. There are subtle trends in the age and size by latitude with a larger maximum size and older fish farther north. There are no sex specific differences in weight at length, but the STAT will explore time-varying weight at length as sensitivities in the model as some patterns could be present.

At the conclusion of the presentation, there was extended discussion about how fishery patterns may have impacted the available data. Yellowtail rockfish are a concern in the hake fishery, particularly in the early part as they are actively avoided to prevent closures. There have not been any consistent trends in yellowtail rockfish encounters, though the general feeling is they are increasing. Targeting yellowtail rockfish does not occur until fall and even then it is limited by canary rockfish encounters. It was noted that recreational fishing for yellowtail rockfish outside 40 fathoms is difficult and highly weather dependent.