

EXECUTIVE SUMMARY

Stock: California Sheephead (*Semicossyphus pulcher*) is found along the coast of California from Monterey Bay southward down into Baja California, Mexico. Sheephead have been fished recreationally and commercially for most of the last century.

Catches: Post-1950 commercial landings peaked both in the 1950s and the 1990s with recreational fishing showing an increase in landings in the 1980s and both commercial and recreational landings have been lower in recent years.

Data and assessment: The California population of California Sheephead was assessed using a “Stock Synthesis” (hereafter called Synthesis) length-based model. Landings data were summarized as four distinct fisheries: three commercial fisheries (hook and line, setnet and trap) and one recreational fishery. Landings data were supplemented by four abundance indices and length composition data associated with each of the four fisheries. Three of the four abundance indices were catch per unit effort (CPUE) measures based on landings and effort data from the California Passenger Fishing Vessel (CPFV) logbook recreational fishery for different time frames and units of effort. The fourth abundance index was based on the California Cooperative Oceanic Fisheries Investigation (CalCOFI) larval survey data. Selectivity curves differed among fisheries and the selectivity of the three CPUE indices from the recreational fishery were assumed to have the same selectivity as estimated for the recreational fishery.

Status of the stock: Changes in the spawning potential ratio based on estimated current and unfished mature female and male spawning biomass indicates that the stock is below the target level of 50% of the unfished condition described by the Nearshore Fishery Management Plan (NFMP). For the most likely scenario, the spawning potential ratio of California Sheephead (based on mature biomass) has been reduced to 20% of the unfished condition. Application of the NFMP 60/20 policy indicates that a reduction in allowable catch is warranted.

Recommendations: Data needs include sex-specific age and length records of individual fish (also by location and fishing depth, if possible) from the recreational and commercial fisheries. These data are needed to 1) resolve uncertainty about growth rates and the coefficient of variation in individual size at age; 2) specify current age and lengths at maturity; 3) specify current age and length at sex change; and to determine the extent of spatial variability in these life history features. Further refinement of the sex change dynamics and relevant life history parameters (especially individual variation in growth) would also improve our ability to interpret the fishery data. Behavioral studies of the effect of removing territorial males and the speed with which replacement dominant males and harems are re-established would help resolve whether total fishing closure in some areas is more or less effective than reduced fishing intensity in all areas. Finally, further information on the abundance and exploitation of Sheephead in Mexico would improve the ability to assess and manage Sheephead.