

Length-weight, Age, and Growth of Sheepshead in Chesapeake Bay, Virginia

Joseph C. Ballenger, *Center for Quantitative Fisheries Ecology, Old Dominion University, Norfolk, VA 23529*

Hongsheng Liao, *Center for Quantitative Fisheries Ecology, Old Dominion University, Norfolk, VA 23529*

Cynthia Jones, *Center for Quantitative Fisheries Ecology, Old Dominion University, Norfolk, VA 23529*

Abstract: Sheepshead (*Archosargus probatocephalus*) are an estuarine/marine member of the porgy family that have long supported large recreational fisheries along the southeastern coast of the United States with a recently expanding recreational fishery in Virginia waters of the Chesapeake Bay. Due to this expansion into Bay waters, fisheries managers need to develop a management plan for this species. However, before any management plan can be developed, a comprehensive understanding of the age structure and growth rates of fish in the population is needed. To characterize the age and growth of sheepshead in the Chesapeake Bay, 178 fish were collected via recreational ($n = 124$) and commercial ($n = 54$) fisheries from 9 May through 1 November 2006 and their lengths, weights, and ages determined. Sheepshead ranged in age from 0 to 33 years old, with the oldest fish being seven years older than the oldest sheepshead reported in the literature to date. Marginal increment analysis validated the formation of one annulus per year, with annulus deposition beginning in mid-May and complete by early July. A ratio test indicated that there is a difference between sexes in length-at-age, but no difference between sexes in weight-at-age. Results of the von Bertalanffy length-at-age analysis, weight-at-age analysis, and weight-length regressions indicate that Chesapeake Bay sheepshead are attaining larger sizes than sheepshead found elsewhere along the coast of the United States. This is strongly suggestive that the Chesapeake Bay sheepshead population constitutes a separate population, as large differences in vital rates are often indicative of this. These differences in growth could arise due to a variety of factors, including differences in mortality rates, environmental conditions, food sources, or genetic variation.

Proc. Annu. Conf. Southeast. Assoc. Fish and Wildl. Agencies 61:156