

ABSTRACT

Chinook salmon *Oncorhynchus tshawytscha* from the Lake Michigan sport fishery were studied to determine if changes in age and growth occurred with recent forage shifts from alewife *Alosa pseudoharengus* to bloater chub *Coregonus hoyi*. A decrease in growth may indicate that forage shift stress caused the outbreak of bacterial kidney disease (BKD) *Renibacterium salmoninarum*. Known age chinook salmon implanted with coded-wire tags were collected in 1994 to validate aging techniques and to compare growth between fish collected by anglers and gill nets. Scale and vertebra aging were 95.6% and 93.9% accurate, respectively. There were no differences in age, gender, and maturity specific mean back calculated lengths (mm) between harvest gears. There was also no difference in mean back calculated length between sexes; however, immature age-0.2 fish were smaller than mature age-0.2 fish. Mean back calculated total lengths and Fulton Indices of condition were used to analyze historic growth using data and scales from the Michigan Department of Natural Resources Lake Michigan Creel Survey from 1983 to 1993. Average age decreased from a high in 1986 of 2.59 years to a low of 1.53 years in 1993. Mean length and condition declined recently for age 0.1. Mean length increased from 1983 to 1993 for age 0.3. Condition increased after BKD for age 0.3 and 0.4 chinook salmon. The increase in length and condition of age 0.3 and 0.4 chinook salmon may be a competitive release and/or size differential mortality in response to BKD. A reduction of chinook salmon stocking in Lake Michigan might restore growth and reduce mortality associated with BKD.