

Density, Growth, Mortality, Food Habits, and Lipid Content of Age-0 Largemouth Bass in El Dorado Reservoir, Kansas

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ABSTRACT

Studies focusing on survival of largemouth bass *Micropterus salmoides* during the first year of life are critical to understanding recruitment variability. This study was conducted to provide baseline information on age-0 largemouth bass population characteristics and examine the factors influencing recruitment of largemouth bass in El Dorado Reservoir, Kansas.

Littoral shoreline areas were sampled biweekly from June 1 through August 30 in 1997 and 1998. During both years, the most common form of physical habitat among littoral areas was submerged terrestrial vegetation. Biomass of submerged terrestrial vegetation was approximately six times higher in 1997 than in 1998. Age-0 largemouth bass hatched as early as April 15 in 1997 and 1998. Density of age-0 largemouth bass was approximately three times greater in 1997 (631 per ha) than in 1998 (240 per ha). Growth and mortality rates of age-0 largemouth bass were similar between years. In both years, age-0 largemouth bass consumed macroinvertebrates during all sampling periods and over all length groups, while piscivory by age-0 largemouth bass was low. Triacylglyceride content (TAG) relative to the dry weight of each age-0 largemouth bass (TAGDW) decreased with increases in size and age

The experimental portion of the study compared survival, growth, and lipid content of age-0 largemouth bass in vegetated and non-vegetated mesocosms. Physicochemical variables and total zooplankton abundance were not different between vegetated and non-vegetated mesocosms. In general, macroinvertebrate production was higher in vegetated mesocosms than non-vegetated mesocosms. Catch per unit effort (CPUE; number per minute of electrofishing) of *Leopomis* spp. was four times greater in vegetated than non-vegetated areas. Survival of age-0 largemouth bass was similar between treatments. Growth rates and TAGDW of age-0 largemouth bass varied between treatments, and were lowest in vegetated mesocosms.

These results indicate the importance of high-quality littoral habitat for age-0 largemouth bass and *Leopomis* spp. production and recruitment. However, poor growth rates of age-0 largemouth bass may also be linked to decreased feeding efficiency in dense aquatic vegetation. In water bodies with low densities of aquatic vegetation, such as El Dorado

Reservoir, increasing the quality and quantity littoral habitat will increase recruitment success of age-0 largemouth bass.