

ABSTRACT

FACTORS INFLUENCING THE YEAR-CLASS STRENGTH OF REEF SPAWNED WALLEYE IN WESTERN LAKE ERIE

By

Edward Francis Roseman

Variation in egg and larval survival have been suspected to be principal sources of walleye *Stizostedion vitreum* recruitment variability in Lake Erie. I examined walleye egg deposition and survival and larval vital rates in western Lake Erie in 1994 and 1995. Densities of eggs and larvae were higher in 1994 than 1995. Growth of larval walleye was greater in 1994. Larval densities were greater at western sites in 1994 and greater at eastern and south-eastern sites in 1995. Slow water warming rates and frequent intense winds contributed to the low density and survival of eggs on reefs in 1995 by prolonging incubation periods and increasing the vulnerability of eggs to mortality factors. Optimal year-class strength could result with precisely timed events providing high egg densities, fast water warming rates and few wind storms in spring providing good egg survival and high larval densities.