

Experiments on Tolerance of Incubating Walleye Eggs to Temperature Fluctuations^a

James C. Schneider^b

*Institute for Fisheries Research
212 Museums Annex Building
Ann Arbor, Michigan 48109-1084*

James Copeland^b and Martha Wolgamood

*Wolf Lake State Fish Hatchery
34270 C.R. 652
Mattawan, Michigan 49071*

Abstract.—Eggs of walleyes *Stizostedion vitreum* incubating under hatchery conditions were subjected to one of five temperature fluctuations compared to normal rearing temperatures: -8.8°C on days 3-6, -9.3°C on days 7-10, +13.6°C on days 7-8, +20.2°C on days 7-8, or -9.4°C followed by +21.1°C on days 7-10. The maximum rate of temperature change was 2.5°C/hr. We found that eye-up rates remained at approximately 70% for all control and test lots. Swim-up rates of approximately 90% for the control and the first three temperature variations were reduced to 42% and 13.6% for the last two temperature variations (>20°C). We conclude that temperature fluctuations great enough to directly affect incubating walleye eggs are unlikely to occur in hatcheries or on natural spawning grounds.

^aContents of this report were published in the North American Journal of Aquaculture 64:75-78, as “Tolerance of incubating walleye eggs to temperature fluctuation.”

^bRetired