



Great Lakes Fishery Commission

ESTABLISHED BY CONVENTION BETWEEN CANADA AND THE UNITED STATES TO IMPROVE AND PERPETUATE FISHERY RESOURCES

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IT'S BETTER TO EAT AT A CROWDED TABLE

Critical factors affecting sea lamprey recruitment identified

ANN ARBOR, MI—Sea lamprey populations can rebound from low densities if streambed conditions are favorable for spawning, scientists at Michigan State University concluded recently in a study supported by the Great Lakes Fishery Commission. The research, which helps to identify the stream characteristics important to survival of young sea lampreys, will help sea lamprey control managers effectively adjust the rate and timing of different control methods based on environmental conditions.

Dr. Heather Dawson, lead researcher on the study, used information gathered on the number of potential spawners and the number of surviving offspring those spawners produced, as well as stream bed characteristics to analyze variation in sea lamprey survival rates among streams and years. Learning how the number of spawners relates to the number of recruits, or surviving larvae, is crucial to achieve the objective of removing individuals from the population at a greater rate than they can be replaced.

“Recruitment is highly variable among streams even after accounting for the number of eggs deposited,” said Dr. Dawson. “Stream bed conditions and temperature were important factors determining survival of young lampreys. Young lamprey survival was highest in streams with the lowest summer temperatures, with upstream areas suitable for spawning, and with downstream areas for burrowing. Surprisingly, streams with fewer competitors actually had lower sea lamprey production. Native lampreys do compete with the non-native sea lamprey; nevertheless, their presence indicates good sea lamprey habitat, which is the decisive factor in young sea lamprey survival.”

When favorable spawning conditions were present, Dr. Dawson found evidence that sea lampreys can compensate for low numbers of adults by taking advantage of favorable conditions to boost spawning success. Control efforts reduced competition and increased habitat availability, thereby increasing survival, enabling them to compensate for reductions in their numbers caused by pest control actions such as trapping. Dr. Dawson identified a threshold number of adult female spawners below which sea lamprey populations were less able to rebound, even in favorable conditions. Managers will be able to target this threshold in future control efforts to promote a low survival rate of young lampreys.

The Great Lakes Fishery Commission is an international organization established by the United States and Canada through the 1954 Convention on Great Lakes Fisheries. The commission has the responsibility to support fisheries research, control the invasive sea lamprey in the Great Lakes, and facilitate implementation of A Joint Strategic Plan for Management of Great Lakes Fisheries, a provincial, state, and tribal fisheries management agreement. Visit online at www.glfc.org