

Great Lakes Ruffe Initiative

Biology and Life History

6/1/95 to 5/31/98

Geographic Variation and Colonization Patterns of Ruffe (*Gymnocephalus cernuus*) in the Great Lakes Otolith Signatures and DNA Sequence Divergence

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Primary source of funds: Fiscal year 1995 aquatic nuisance federal appropriation

Objective

- Determine the European origins of ruffe *Gymnocephalus cernuus* within the Great Lakes and its colonization patterns within the streams and estuaries of Lake Superior.

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Identification of the Ruffe Oocyte Maturation-Inducing Substance and Characterization of Its Receptor

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Objectives

- Determine the hormonal basis of ruffe oocyte maturation.
- Determine the hormonal genesis of ruffe sex pheromones.
- Characterize the response of ruffe to pheromonal signals,
- Characterize the intergametic signals and isolate such signals.
- Identify the molecules involved with sperm-egg binding during fertilization.
- Test the agents designed to block or interfere with hormonal development, pheromonal signaling at the organismal or cellular level, or gamete binding for their ability to reduce or eliminate ruffe reproduction.