

**FISHERY RESEARCH PRIORITIES:
GREAT LAKES FISH HEALTH COMMITTEE
Great Lakes Fishery Commission**

Version October 31, 2009

This listing was compiled based on input from discussions within the Council of Lake Committees (for more information go to <http://www.glfcc.org/lakecom.php>) and the Great Lakes Fish Health Committee (<http://www.glfcc.org/boardcomm/fhealth/fhealth.php>). Order of listing does **not** imply relative ranking of priorities for the Fishery Research Program funding.

Research Priorities

- *What non-lethal field sampling techniques and tissue/fluid samples are equivalent to lethal field sampling methods to determine fish disease status?*
- *What is the ecology of important fish pathogens and diseases?*
- *Examples of GLFHC important disease and pathogens include VHSV Genotype IVb, Heterosporis sp. among other emerging diseases.*
- *What is the effectiveness of the GLFHC disinfection protocols in eliminating VHSV and Nucleospora from fish eggs? There is a need for a reliable disinfection methodology to prevent VHSV and Nucleospora transmission via eggs.*

Additional Research Interests

- i) Development and validation of new methods for detecting emerging fish pathogens or pathogens of concern in the Great Lakes Basin.
 - (a) What factors that affect sample integrity during shipment and storage
- ii) Disease Ecology and Epidemiology
 - (a) What is the susceptibility to of Great Lakes fish species to emerging fish pathogens in the Great Lakes?
 - (b) Identification of reservoirs and vectors for fish pathogens in the Great Lakes Basin
 - (c) What factors affect the virulence of fish pathogens?
 - (d) What are the effects of synthetic estrogen or other hormones on gonad development in Great Lakes fish?
 - (e) What is the effect of population size on disease expression?
 - (f) What are the effects of multiple pathogens or combination of pathogens and nutritional deficiency and/or contaminant exposure on disease expression?
- iii) Nutritional Aspects of Fish Health in the Great Lakes
 - (a) What is the role of lipids or other nutrients in determining and predicting health status?
 - (b) What is the role of thiaminase-producing organisms in Great Lakes ecosystems?

- (c) What affect do invasive species have on nutrient stores in the Great Lakes and what are the associated affects on fish health.
- (d) What is the effect of nutrition on reproductive success?
- (e) What is the relationship between genetics and thiamine deficiency complex?
- (f) Does protein substitution in hatchery feeding formulations or extrusion manufacturing methods have a negative impact on survivorship, migratory behavior and reproductive success of hatchery-reared salmonids?

iv) Fish Pathogen and Disease Management

- (a) What are the affects of fish stocking and other management decisions on the manifestation of fish disease in the Great Lakes Basin.
- (b) What effects does culling brood stock for *Renibacterium salmoninarum* have on the genetics of production fish.
- (c) When should salmonids not be moved past barriers (from a disease perspective)?
- (d) Development of an emergency response plan for disease outbreaks in the Great Lakes Basin, including (but not limited to) training of field personnel and pre-planning.
- (e) What is the effectiveness of immunostimulants against BKD in hatcheries?
- (f) What is the affect of vaccination of hatchery fish on pathogen virulence?