

# PERM Newsletter

Volume 1, Issue 1

August – December 2009

This is the first of what we hope will be regular news updates from the PERM faculty at MSU.

## Publications in Print – fourteen publications were co-authored by PERM faculty.

### Fisheries

**Wagner C.M.**, M.B. Twohey, J.M. Fine. 2009. Conspecific cueing in the sea lamprey: do reproductive migrations consistently follow the most intense larval odour? *Animal Behaviour*, 78: 593–599.

Burroughs, B.A., **D.B. Hayes**, K.D. Klomp, J.F. Hansen, and J. Mistak. 2009. Effects of Stronach Dam removal on fluvial geomorphology in the Pine River, Michigan, United States. *Geomorphology* 110: 96–107.

Pratt, T., L.M. O'Connor, A.G. Hallett, R.L. McLaughlin, C. Katopodis, **D.B. Hayes**, and R.A. Bergstedt. 2009. Balancing aquatic habitat fragmentation and control of invasive species: enhancing selective fish passage at sea lamprey control barriers. *Trans. Am. Fish Soc.* 138:652–665.

Claramunt, R.M, Kolb, T.L., Clapp, D.F., **Hayes, D.B.**, Dexter, J. L. Jr., Warner, D.M., C.P. Madenjian. 2009. Effects of increasing Chinook salmon bag limits on alewife abundance: implications for Lake Michigan management goals. *North Am. J. of Fish. Mgt.* 29:829–842.

**Hayes, D.B.**, M. Jones, N. Lester, C. Chu, S. Doka, J. Netto, J. Stockwell, B. Thompson, C.K. Minns, B. Shuter, and N. Collins. 2009. Linking fish population dynamics to habitat conditions: insights from the application of a process-oriented approach to several Great Lakes species. *Reviews in Fish Biology and Fisheries* 19:295–312.

Crossman, J.A., P. S. Forsythe, E.A. Baker, **K.T. Scribner**. 2009. Over-winter survival of stocked age-0 lake sturgeon reared in natal and non-natal environments. *Journal of Applied Ichthyology* 25: 516–521.

Dawson, H.A., **Jones, M.L.**, **Scribner, K.T.** and Gilmore, S.A. 2009. An assessment of age determination methods for Great Lakes larval sea lampreys (*Petromyzon marinus*). *North American Journal of Fisheries Management* (29):914–927.

**Jones, M.L.**, B.J. Irwin, G.J.A. Hansen, H.A. Dawson, A.J. Treble, W. Liu, W. Dai, and **J.R. Bence**. 2009. An operating model for the integrated pest management of Great Lakes sea lampreys. *The Open Fish Science Journal* 2:59–73.

### Wildlife

G.L. Hamer, U.D. Kitron, T.L. Goldberg, J.D. Brawn, S.R. Loss, M.O. Ruiz, **D.B. Hayes** and E.D. Walker. 2009. Host selection by *Culex pipiens* mosquitoes and West Nile Virus amplification. *American Journal of Tropical Medicine & Hygiene* 80(2): 268–278.

Muter, B.A., M.L. Gore, and **S. J. Riley**. 2009. From Victim to Perpetrator: Evolution of Risk Frames About Double-Crested Cormorants in the Great Lakes Basin. *Human Dimensions of Wildlife* 14:366–379.

Sudharsan, K., **S.J. Riley**, and H. Campa III. Relative risks of deer-vehicle collisions along roads in southern Michigan. *Human Dimensions of Wildlife*: 14:341–352.

**Riley, S.J.**, and S.A. Lischka. 2009. Acceptance capacity for white-tailed deer (*Odocoileus virginianus*) in Michigan: a comparison of hunters and non-hunters from Upper Peninsula, Northern Lower and Southern Lower Peninsula of Michigan, 2009. Report to the Michigan Department of Natural Resources' Wildlife Division. Michigan State University, East Lansing, MI, USA. 34pp+Appendices.

Dreher, B.P., G. Rosa, P.M. Lukas, **K.T. Scribner**, and S.R. Winterstein. 2009. Effects of genotyping error and subsampling hair samples on black bear abundance estimates. *Journal of Wildlife Management* 73: 1184–1188.

Sonsthagen, S.A., S. L. Talbot, R. B. Lanctot, **K. T. Scribner**, and K. G. McCracken. 2009. Hierarchical Spatial Genetic Structure of Common Eiders (*Somateria mollissima*) Breeding along a Migratory Corridor. *Auk* 126: 744–754.



## Presentations – PERM faculty presented their research to state, national, & international audiences.

### Fisheries

**Wagner, C.M.** Sea Lamprey, Pheromones, and the Fate of All Mankind! (except for that last part). SeaGrant COSEE Great Lakes Teacher's Workshop, 28 July 2009, Alpena, MI.

**Wagner, C.M.** Sea lamprey pheromones and the ecology of choice: what does the nose really know? GSO Seminar Series, Department of Fisheries & Wildlife, Michigan State University, 16 October 2009.

**Bremigan M.T.** Bass Management in Michigan: Spiraling into Focus, at the 'annual' PERM program review meeting. East Lansing, MI. October 2009.

**Bremigan, M.T.,** H. Ziegenmeyer, J.M. Hessenauer, and **K. Scribner**. Assessing the effects of Michigan's spring fishing regulations on black bass nesting success and population demographics in Michigan lakes. Fisheries Division Research Review and Biologists Joint Conference, Grayling, MI, October 2009.

**Hayes, D.B.** 2009. Human Impacts on Freshwater Habitat: Shaking the Foundations of Fisheries. AFS Nashville.

Taylor, W., A. J. Lynch, E.F. Roseman, **D.B. Hayes**. 2009. An overview of the effects of climate change on the management of Great Lakes fisheries resources. AFS Nashville.

Simoës, J., **F. Lupi, D.B. Hayes**. 2009. Cost effective strategies for statewide recreational angler surveys: a Michigan study. AFS Nashville.

Schueller, A. and **D.B. Hayes**. 2009. Minimum viable population size for lake sturgeon using an individual based model of demographics and genetics. AFS Nashville.

Schueller, A., and **D.B. Hayes**. 2009. Interactions between demographic stochasticity and genetic integrity of lake sturgeon populations. Invited presentation. Fall Biologist Conference and Joint Research/Biologist Meeting, Michigan DNR Fisheries Division. Roscommon, MI.

**Hayes, D.B.** 2009. Fisheries and Water Quality. Michigan Chapter of North American Lake Management Society. Invited Presentation. Tustin, MI. Oct 16, 2009.

**Infante, D.M.,** P. Esselman, L. Wang, W.W. Taylor, and A. Cooper. Update: National Assessment of Fish Habitats. Climate Change and Fish Habitat Project Meeting, October 19-20, 2009, Denver, Colorado.

Esselman, P., A. Cooper, **D.M. Infante**, L. Wang, and W.W. Taylor. Data and spatial framework of the National Assessment of Fish Habitat. WEBEX presentation for NOAA's Coastal Restoration Center. November 23, 2009.

**Scribner, K.T.** 2009. Metapopulation composition of brook trout in Michigan tributaries: empirical examples and discussion of future state-wide initiatives. Trout/Walleye/Esocid Committee Meeting. Michigan DNR. Feb 24-26, 2009, Roscommon, MI.

Doung, Y., **K.T. Scribner**, J. Crossman, P. Forsythe, E. Baker. Reproductive ecology of lake sturgeon: inferences from genetic determination of parentage. Sept. 1, 2009. Nashville, TN. Annual meeting AFS

Crossman, J., P. Forsythe, **K.T. Scribner**, and E. Baker. Evaluating collection, rearing, and stocking methods for Great Lakes lake sturgeon restoration programs. Sept. 1, 2009. Nashville, TN. Annual Meeting, AFS

**Scribner, K.T.,** C. Huckins, E. Baker, and J. Kanefsky. Genetic assessment of the status and viability of coaster brooktrout within anthropogenically altered Lake Superior tributaries. Sept. 2, 2009, Nashville, TN. AFS Annual Meeting.

Wilberg, M.J., B.J. Irwin, **M.L. Jones**, and **J.R. Bence**. Effects of source-sink dynamics on harvest policy performance for yellow perch in southern Lake Michigan. ICES Annual Science Conference, Berlin. 9-22-2009

**Bence, J.R.** Summary of implementing research efforts toward improvement of lake whitefish models. 1836 Treaty Waters Modeling Subcommittee Meeting, RAM Center, Roscommon, MI, September 22, 2009.

**Bence, J.R.,** J. Nieland, and M. Mata. Estimates of Siscowet Production and Abundance in Michigan Waters of Lake Superior. Michigan Sea Grant Extension Workshop. Baraga, MI. July 28, 2009.

**Bence, J.R.,** J. Nieland, and M. Mata. Siscowet Relative and Absolute Abundance, Fishing Potential, and Biology in Michigan Waters of Lake Superior. Lake Superior Technical Committee. Baraga, MI. July 29, 2009.

Brenden, T.O. and **J.R. Bence**. Influence of *Oncorhynchus* stocking on fish communities in lakes Huron and Ontario. Council of Lake Committees. October 29, 2009.

Brenden, T.O. and **J.R. Bence**. Influence of *Oncorhynchus* stocking on fish communities in lakes Huron and Ontario. Michigan DNR Fisheries Division, Research Section meeting. October 7, 2009.

### Wildlife

Grear, D.A., M.D. Samuel, **K.T. Scribner**, B.V. Weckworth, J.A. Langenberg. Socially facilitated transmission of chronic wasting disease among female white-tailed deer. Wildlife Disease Meetings, August 2009.

Blanchong, J.A., Heisey, D., **K.T. Scribner**, S.V. Libants, C. Johnson, J. Aiken, J. Langenberg, and M. D. Samuel. 2009. Complement component C1q and Prnp gene variation and susceptibility to chronic wasting disease in a free-ranging population of white-tailed deer 3rd International CWD symposium.

**Riley, S.J.** 2009. Considerations for the future of hunting tourism in Nordic countries. North Hunt Symposium on Social Sustainability of Hunting Tourism in Peripheral Areas. September 28-29, Umeå, Sweden (invited).

## Proposals Funded & Proposals Submitted

### Funded Proposals

**Wagner, C.M.**, R.A. Bergstedt, W. Li, M.B. Twohey. A field investigation of the potential to control sea lamprey through pheromone-mediated redistribution of migrants in the Great Lakes. \$359,402, 2010-2013.

Rudolph, B. and **D.B. Kramer**. Assessing social capital and cooperative deer management in southern Michigan. DNR Wildlife Division. Anticipated start date: January 2011.

Welsh, A., M. Walsh, W. Stott, **K.T. Scribner**, M. Connerton, M. Keir, and J. Hoyle. Evaluating genetic relationships between the Lake Ontario deepwater sculpin population and Upper Lakes populations. Great Lakes Fisheries Commission. 2010-2011.

Brenden, T., **J.R. Bence**, and **K.T. Scribner**. 2009. Simultaneous analysis of genetic and age data to estimate stock contribution for mixed-stock and Strain, Open-Water fisheries in the Great lakes. Great Lakes Fishery Trust.

**Scribner, K.T.** Genetics research and support for wildlife and regulatory programs. Wildlife Division, Michigan Department of Natural Resources.

Roloff, G., **J.P. Burroughs**, D. Etter. Developing and implementing effective black bear exclusion devices to protect apiaries. Berryman Institute. \$15,000.

**Bence, J.R.** and T. Brenden. Enhancing fishery stock assessment modeling capacity in the Great Lakes. Great Lakes Fishery Commission. \$20,812.

### Submitted Proposals

**Wagner, C.M.**, E.M. Stroud, J. Miller. Preliminary identification of a putrefaction-derived repellent for the invasive sea lamprey (*Petromyzon marinus*). MSU Center for Water Sciences Venture Grant, \$10,000, submitted Dec. 15, 2009.

Monfils, M., **D.B. Hayes**, B. Potter. Evaluating relationships between multiscale habitat variables and marsh bird use of Great Lakes coastal wetlands. \$36,825 requested. Nov 2009.

PI: Stephen M. Coghlan Jr., Quantifying the effects of dam removal on the structure and function of Penobscot River fish communities. Submitted to the Penobscot River Restoration Trust for biomonitoring associated with the Penobscot River Restoration Project. Department of Wildlife Ecology, University of Maine. **D.B. Hayes** component: travel to Maine to consult. \$172K

**Scribner, K.T.**, D. Etter, and S. Winterstein. Black bear source-sink dynamics in Michigan's lower peninsula. Michigan DNR.

Roth, B., J. Jonas, **K.T. Scribner**, and E. Olsen. Evaluation of a self-sustaining and potential remnant stock of lake trout in Elk Lake. Great Lakes Fishery Trust.

**Infante**, Brenden and **Scribner**. Evaluating effects of environmental features at landscape scales on connectivity of fish populations within and across Michigan streams: implications for management. Michigan DNR.

**Scribner**, Baker, Nuhfer, and Wills. Assessing the success of Michigan's inland fish stocking program: development of predictive measures of survival, growth, and movements of hatchery fish following release. Michigan DNR.

**Scribner, K.T.** and A. Findley. Integrated studies of climate-induced decoupling of covariation of genotype-specific traits and environmental regimes across ontogenetic states of lake sturgeon. NSF.

Stott, W., M. Newman, **K.T. Scribner**, and C. Wilson. The role of molecular genetics in fisheries management in the Great Lakes region. USGS Powell Grant Program.



### Workshops & Short Courses

**Riley, S.J.** Building a managers' model: Workshop III. Three day workshop for the wildlife divisions management team, Florida Wildlife Commission, Tallahassee, Florida, January 2010.

**Riley, S.J.** Social and research considerations needed for expansion of Florida Panther population and its geographical distribution. Two-day workshop for the Defenders of Wildlife, Jacksonville, Florida, January 2010.

Two short courses on using AD Model Builder (specialized estimation software widely used in fishery stock assessment) were held at MSU in August, jointly taught by **Jim Bence**, Travis Brenden, and Brian Irwin.

The quantitative fisheries center (QFC) continues to offer an online course in maximum likelihood estimation has an online course in resampling methods approaching release. The QFC envisions a much larger program of online courses including several certificates and a professional masters degree and has undertaken a search for an academic specialist to coordinate the program. **Jim Bence** is chairing this search.

## Conferences and Meetings Attended

Reproduction Reduction Task Force, Great Lakes Fishery Commission (**Wagner**)

Partnership for Ecosystem Research and Management Annual Meeting

Joint meeting of the Fisheries Division, MDNR, Biologists and Research Section (**Bremigan, Hayes, Bence**)

American Fisheries Society, Nashville (**Hayes**)

Michigan Chapter of North American Lake Management Society (**Hayes**)

U.S. Environmental Protection Agency's Office of Research and Development's Causal Analysis Team – Ecological cause and effect database workshop. Washington D.C. (**Infante**)

[Great Lakes Threat Mapping Project workshop, Ann Arbor \(\*\*Infante\*\*\)](#)

North Hunt Symposium on Social Sustainability of Hunting Tourism in Peripheral Areas. Umeå, Sweden (**Riley**)

Swedish Hunters Association and Boone & Crockett Club Meeting. Öster Malma, Sweden (**Riley**)

SVEASKOG Annual Cooperation Meeting on Hunter Tourism. Misterhut, Sweden (**Riley**)

Nobel Awards Ceremony for prizes in Physics, Chemistry, Medicine, Literature, and Economics. Stockholm, Sweden (**Riley**)

[European Union Game Monitoring Conference: Providing a knowledge basis for sustainable hunting and biodiversity conservation. Uppsalla, Sweden \(\*\*Riley\*\*\)](#)

NCEAS Working Group in Landscape Genetics (**Scribner**)

Association of Fish and Wildlife Agencies Conference. Austin, Texas (**Burroughs**)

1836 Treaty Waters Modeling Subcommittee Meeting. Roscommon, MI (**Bence**)

Michigan Sea Grant Extension Workshop. Baraga, MI (**Bence**)

Lake Superior Technical Committee. Baraga, MI (**Bence**)

## Congratulations!

**Kim Scribner** is the new President of the Genetics Section of the American Fisheries Society.

PhD student Yen Doung won the 2009 James E. Wright Graduate Award. The award is made annually to the outstanding graduate student(s) in the Genetics Section of the American Fisheries Society.

Brett Alger (co-advised by **Bremigan**) successfully defended his MS degree. He developed a classification for lakes in a 5 state area to determine the effects of human disturbances on fish species richness. He is now working for the National Marine Fisheries Service in Gloucester, Massachusetts.

Amy Schueller (advised by **Hayes**) recently defended her dissertation entitled "Interactions between demographic stochasticity and genetic integrity of lake sturgeon populations." Soon after defending, Amy started work with the National Marine Fisheries Service in Beaufort, NC, as a stock assessment scientist.

Daniel Wieferich (co-advised by **Hayes**) successfully defended his masters thesis this fall. His research focused on the distribution and dynamics of the invasive beech scale insect. His work is the first to document the full distribution of this pest in Michigan (bad news - it is very widespread, particularly in the UP), and to describe the population dynamics in a quantitative fashion. Dan Weiferich is now working for the Infante lab in support of "Aquatic GAP Analysis Program: A search for new paradigms to guide future research."

Bret Muter (co-advised by **Riley**) successfully defended of his master thesis, "Risk perception, social networks, and media frames associated with human-cormorant interactions in the Great Lakes."