

ANSTF Member update for USGS  
May 2015

The USGS Ecosystems Mission Area is reorganizing internally and adding biosecurity issues and fish and wildlife disease research and monitoring to the Invasive Species Program. We have a recent hire, Camille Harris, to assist with the broadening of the Program. Camille, a wildlife veterinarian and disease ecologist, will be coordinating aquatic and terrestrial wildlife disease research across USGS. Her background includes research on a variety in infectious wildlife diseases as well as dermal sarcoma in walleye. Camille will be focusing primarily on wildlife disease issues, but we will look for opportunities for her to become involved with the ANSTF as applicable. The USGS Invasive Species Program had increases totaling \$3.7M in FY2015, including \$2M for Asian carp, \$1M for invasives in the Everglades (the majority of new funding being put toward projects focusing in Early Detection, Rapid Assessment, and Rapid Response), \$0.5M for New and Emerging Invasive Species (much of which was directed toward ANS projects), and \$0.25M for brown treesnakes on Guam. There are adds for an additional \$2.25M in the President's Budget for FY2016 (\$2M for New and Emerging Invasive Species and \$0.25M for brown treesnakes).

As was already announced, USGS is pleased to announce the reinstating of aquatic plants to the Nonindigenous Aquatic Species Information System (NAS). We have been trying to make this happen for a couple of years and funded this change through re-programming of current funds in combination with new funds received in FY2015. Communication from ANSTF on this issue confirmed the importance of the NAS to bureau leadership.

A few research updates:

Asian carp: Field trials of microparticles (small particles designed to encapsulate a registered fish toxin, antimycin, to selectively control Asian carp) are planned for this summer. A portable system to complete eDNA analysis (using pPCR) for Asian carp will soon be released. USGS and FWS are participating in a Binational Risk Assessment for Grass Carp in the Great Lakes, an effort being lead by the Great Lakes Fishery Commission and Department of Fisheries and Oceans Canada. A peer review panel of the risk assessment will be conducted on June 1-3. Numerous products on Asian carps continue to be published.

Several examples follow:

Anderson, K.R., D.C. Chapman, T.T. Wynne, K. Masagounder, C.P. Paukert. 2015. Suitability of Lake Erie for bigheaded carps based on bioenergetic models and remote sensing. Journal of Great Lakes Research. <http://www.sciencedirect.com/science/article/pii/S0380133015000787>

Garcia, T., E.A. Murphy, P.R. Jackson, and M.H. Garcia. 2015. Application of the FluEgg model to predict transport of Asian carp eggs in the Saint Joseph River (Great Lakes tributary). *Journal of Great Lakes Research*  
<http://pubs.er.usgs.gov/publication/70146633>

Hunter, M.E. and L.G. Nico. 2015. Genetic analysis of invasive Asian Black Carp (*Mylopharyngodon piceus*) in the Mississippi River Basin: evidence for multiple introductions. *Biological Invasions* *Biological Invasions* 17:99-114.  
<http://link.springer.com/article/10.1007/s10530-014-0708-z>

Amberg, J.J., S.G. McCalla, E. Monroe, R. Lance, K. Baerwaldt, and M.P. Gaikowski. 2015 Improving efficiency and reliability of environmental DNA analysis for silver carp. *Journal of Great Lakes Research*  
Research <http://www.sciencedirect.com/science/article/pii/S038013301500057X>

Dreissenid mussels: USGS and the Great Lakes Commission recently established an Invasive Mussel Collaborative to advance scientifically sound technology for invasive mussel control to produce measurable ecological and economic benefits. The Collaborative will provide a framework for communication and coordination, identify the needs and objectives of resource managers, prioritize the supporting science, recommend communication strategies, and align science and management goals into a common agenda for invasive mussel control. USGS has also invested more into detection, control and management of dreissenids and other mussels.

Recent publications:

Zanatta, D.T. and 14 others. 2015. Distribution of Native Mussel (Unionidae) Assemblages in Coastal Areas of Lake Erie, Lake St. Clair, and Connecting Channels, Twenty-Five Years After a Dreissenid Invasion. *Northeastern Naturalist* 22(1):223-235  
(<http://www.bioone.org/doi/10.1656/045.022.0115>)

Luoma, J.A., Severson, T.J., Weber, K.L., and Mayer, D.A., 2015, Efficacy of *Pseudomonas fluorescens* (PfCL145A) spray dried powder for controlling zebra mussels adhering to test substrates: U.S. Geological Survey  
Open-File Report 2015–1050, 519 p., <http://dx.doi.org/10.3133/ofr20151050>.

Luoma, J.A., Weber, K.L., Severson, T.J., and Mayer, D.A., 2015, Efficacy of *Pseudomonas fluorescens* strain CL145A spray dried powder for controlling zebra mussels adhering to native unionid mussels within field enclosures: U.S. Geological Survey Open-File Report 2015–1051, 301 p., <http://dx.doi.org/10.3133/ofr20151051>.

Luoma, J.A., Weber, K.L., Waller, D.L., Wise, J.K., Mayer, D.A., and Aloisi, D.B., 2015, Safety of spray-dried

powder formulated *Pseudomonas fluorescens* strain CL145A exposure to subadult/adult unionid mussels during simulated open-water treatments: U.S. Geological Survey Open-File Report 2015–1064, 248 p., <http://dx.doi.org/10.3133/ofr20151064>.

Weber, K.L., Luoma, J.A., Mayer, D.A., Aloisi, D.B., and Eckert, N.L. 2015, Exposure-related effects of *Pseudomonas fluorescens* (Pf-CL145A) on juvenile unionid mussels: U.S. Geological Survey Open-File Report 2015–1066, 663 p., <http://dx.doi.org/10.3133/ofr20151066>.

Larson, J.H., M.R. Bartsch, S. Gutreuter, B.C. Knights, L.A. Bartsch, W.B., Richardson, J.M. Vallazza, and M.T. Arts. 2015. Differences between main-channel and off-channel food webs in the upper Mississippi River revealed by fatty acid profiles of consumers. *Inland Waters*, Vol 5, No 2 (<https://www.fba.org.uk/journals/index.php/IW/article/view/781>)

Thanks!  
Cindy

Cindy Kolar

US Geological Survey, Ecosystems Mission Area  
Science Advisor, Invasive Species Program  
12201 Sunrise Valley Drive, MS-301  
Reston, VA 20192  
[ckolar@usgs.gov](mailto:ckolar@usgs.gov)  
703-648-4023