

Hungarian National Museum in Budapest and was co-organiser of the Plecoptera session at the European Congress of Entomology in 2010. More recently he spent several months working on stoneflies at Brigham Young University, Provo, USA, with Drs. **R. Baumann** and **C. R. Nelson**. Dr. **DeWalt** is employed by the Illinois Natural History Survey, USA. As well as conducting extensive research on North American Plecoptera and other aquatic insects, he has taken the lead in developing and updating the database, *Plecoptera species file* (<http://Plecoptera.SpeciesFile.org>), an extremely useful website for Plecopterologists worldwide.

John E. Brittain, Chair, Standing Committee of the International Society of Plecopterologists

ARTICLES

Predicting Pre-European Settlement Ranges of Stoneflies in the Midwest USA

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Natural history collections hold tens of thousands of Plecoptera specimens, many of them collected before the worst degradation occurred. These are some of the most important specimen data for reconstructing past stonefly assemblages. Our objectives are to model the distribution of stonefly species within the region in order to produce pre-European settlement distributions for each species and species richness estimations across the region.

Our team has amassed ca. 24,000 Midwest stonefly specimen records from 24 museums and private collections and from new sampling within Illinois, Indiana, Michigan, Ohio, and Wisconsin. To date we have specimens from 4,486 unique locations (Fig. 1).

Using Maximum Entropy models, and over 100 environmental variables associated with USGS HUC12 scale watersheds (mean 70 km²), we have modeled 102 species to date. The cumulative output of the models was used to create an index of species richness at the HUC12 scale (Fig. 3). The species distribution models and index of species richness closely correspond to current known distributions and species richness hot and cold spots in the region.

Future work includes assessment of change of species traits distribution across the region, how well-sampled locations have changed with time, and how climate change might alter the original range of species and species richness over the next century.

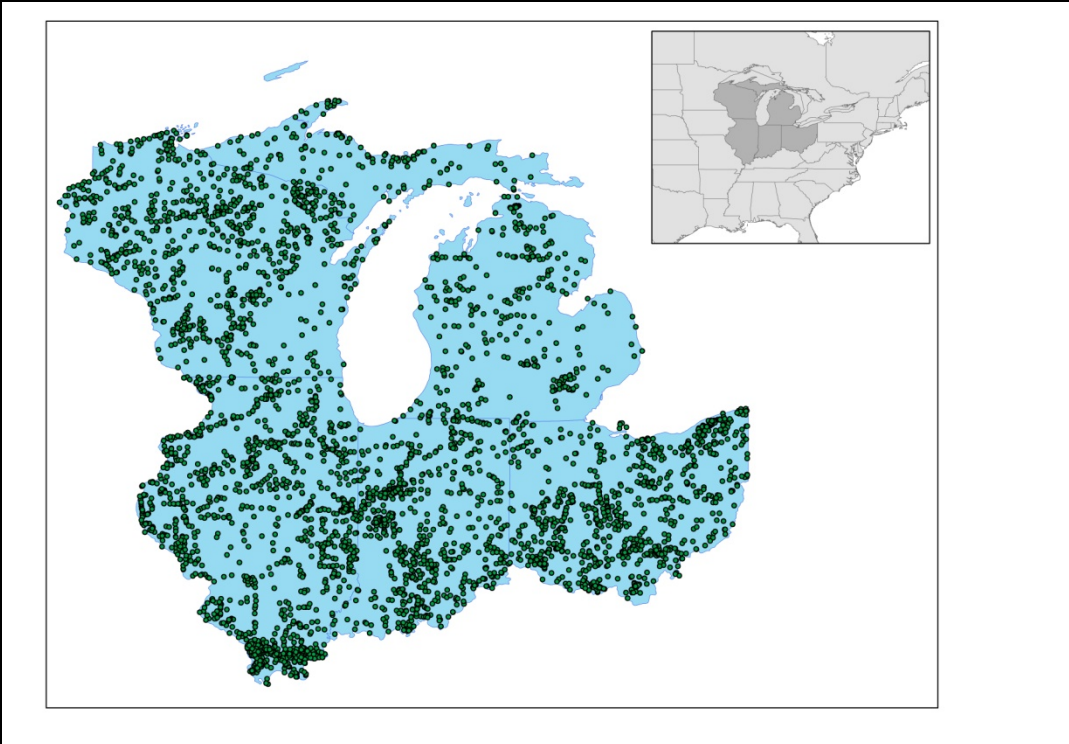


Fig. 1. Point locations for stoneflies within Midwest, USA.

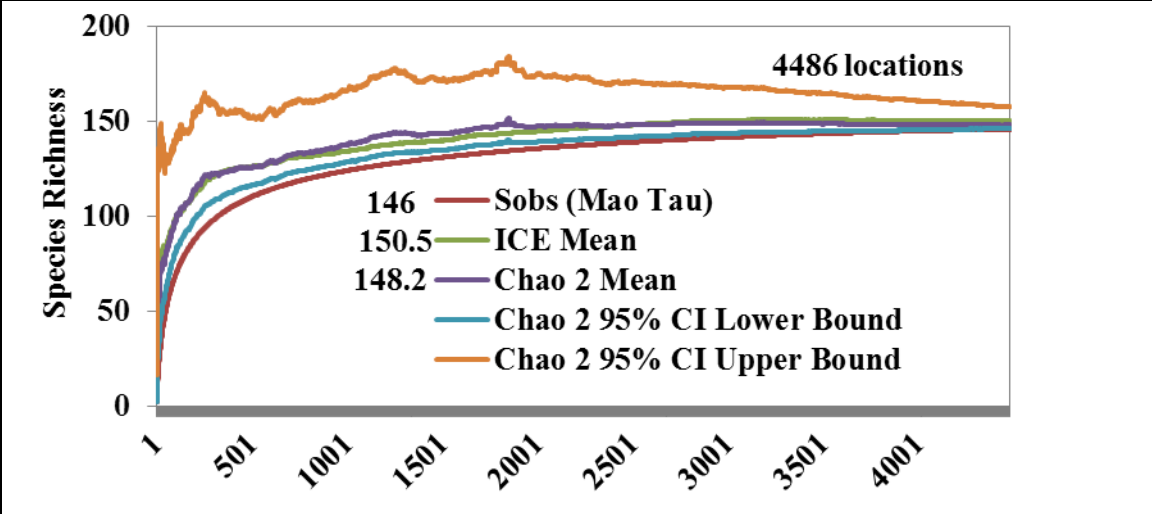


Fig. 2. Stonefly species richness in USA portion of Midwest. Sobs=observed. ICE and Chao 2 indicated predicted measures of species richness as computed in the program EstimateS.

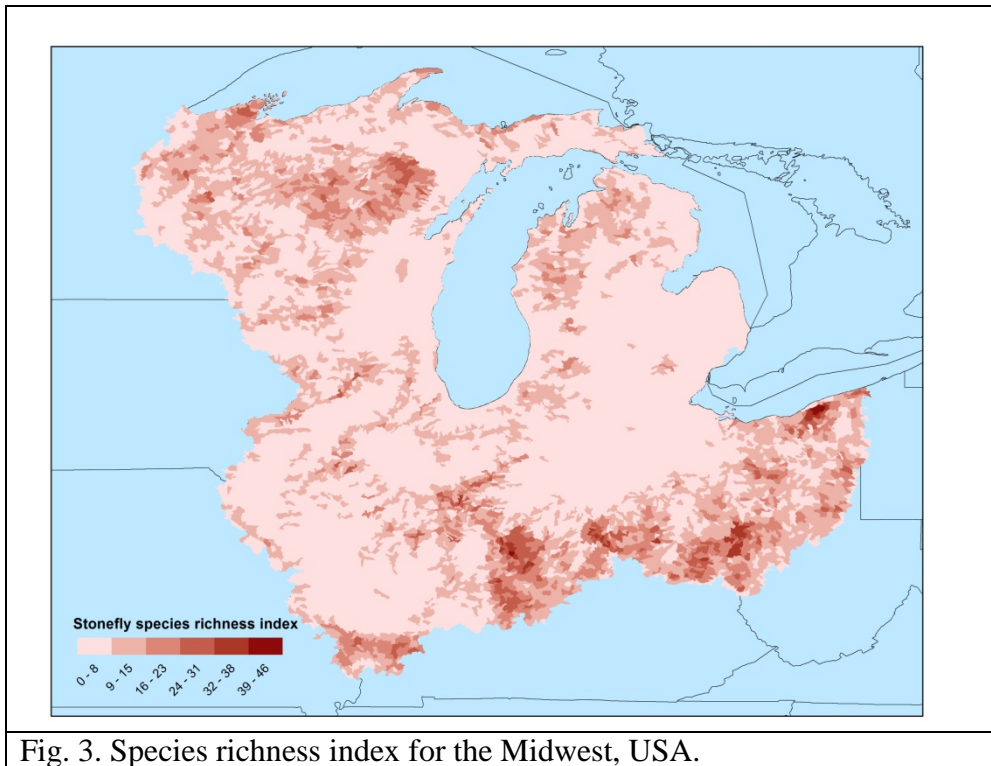


Fig. 3. Species richness index for the Midwest, USA.

RECENT PLECOPTERA LITERATURE (CALENDAR YEAR 2012 AND EARLIER). Papers made available after 1 February 2013 will be included in the next issue. **If papers were missed, please bring these to the attention of the Managing Editor.** Drs. Bill P. Stark, J. M. Tierno de Figueroa, and Peter Zwick are thanked for reviewing and providing additions to this present list.

Amore, V., B. Gaetani, A. M. Puig, and R. Fochetti. 2011. New data on the presence of hemocyanin in Plecoptera: Recomposing a puzzle. *Journal of Insect Science* 11: 1-20.

Arimoro, F. O., F. O. Nwadukwe, and K. I. Mordi. 2011. The influence of habitat and environmental water quality on the structure and composition of the adult aquatic insect fauna of the Ethiope River, Delta State, Nigeria. *Tropical Ecology* 24: 159-171.

Arimoro, F. O., G. E. Obi-lyeke, and P. J. O. Obukeni. 2012. Spatiotemporal variation of macroinvertebrates in relation to canopy cover and other environmental factors in Eriora River, Niger Delta, Nigeria. *Environmental Monitoring and Assessment* 184: 6449-6461.

Bailey, R. C., G. Scrimgeour, D. Cote, D. Kehler, S. Linke, and Y. Cao. 2012. Bioassessment of stream ecosystems enduring a decade of simulated degradation: lessons for the real world. *Canadian Journal of Fisheries and Aquatic Sciences* 69: 784-796.

Baumann, R. W. and R. G. Call. 2012. *Lednia tetonica*, a new species of stonefly from Wyoming (Plecoptera: Nemouridae). *Illiesia* 8: 104-110.

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