

YONG CAO (PHD)

1. CONTACT

Illinois Natural History Survey
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2. EDUCATION

1995–Ph.D. in Ecology at King’s College London, England (1990-1995)
1986–M.S. in Limnology at Chinese Academy of Science (1983-1986)
1982–B.S. in Biology at Shandong Normal University, China (1978-1982)

3. PROFESSIONAL EXPERIENCE

2017–date Principal Research Scientist (Stream Ecologist) at Illinois Natural History Survey
Adjunct associate professor at Department of NRES and PEEC, University of Illinois;
2017–2018 Quantitative ecologist with USGS-NWQA (50% appointment)
2013–2017 Associate Research Scientist (Stream Ecologist) at Illinois Natural History Survey
Adjunct assistant professor at Department of NRES and PEEC, University of Illinois;
2007–2013 Assistant (stream Ecologist) at Illinois Natural History Survey
Adjunct assistant professor at Department of NRES and PEEC, University of Illinois;
2001–2007 Senior Ecologist at Western Center of Monitoring and Assessment for Freshwater Ecosystems at
Utah State University, Logan, UT.
1999–2001 National Research Council Research Associate at US-EPA, Western Ecology Division, Corvallis, Oregon

4. RESEARCH INTERESTS

- Aquatic bioassessment, Water-quality management
- Aquatic restoration ecology
- Biostatistics, Species distribution models and climate changes
- Freshwater community ecology, biodiversity conservation
- Sampling design, data quality control in ecological assemblage surveys

5. FIVE RELEVANT PUBLICATIONS

- 1) Bailey, R.C., G. Scrimgeour, D. Coté, D. Kehler, S. Linke, & 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* 68:784-796.
- 2) Cao, Y., & C.P. Hawkins. 2011. Effects of data comparability on ecological assessments: a review of conceptual and methodological issues. *Journal of the North American Benthological Society* 30:680-701.
- 3) Hawkins, C.P., Y. Cao, B. Roper. 2010. Method of predicting reference condition biota affects the performance and interpretation of ecological indices. *Freshwater Biology* 55:1066-1085.
- 4) Cao, Y., C.P. Hawkins, J. Olsen, & M. Nelson. 2007. Modeling natural environmental gradients improves the accuracy and precision of diatom-based indicators for Idaho streams *Journal of the North American Benthological Society* 26:566-585.
- 5) Cao, Y., & C.P. Hawkins. 2005. Simulating biological impairment for evaluating ecological indicators. *Journal of Applied Ecology* 42: 954-965.

6. FIVE OTHER PUBLICATIONS

- 1) Cao, Y., and C.P. Hawkins. 2018. Weighting effective number of species (Hill Number) measures by abundance can weaken detection of diversity responses to stress and environmental gradients. *Journal of Applied Ecology* (in press).
- 2) Cao, Y., & J. Epifanio. 2010. Quantifying the responses of macroinvertebrate assemblage to simulated

stress: are more accurate similarity indices less useful? *Methods in Ecology and Evolution* 1:380-388.

- 3) Cao, Y., C.P. Hawkins, D.P. Larsen, & J. Van Sickle. 2007. Effects of sample standardization on mean species detectabilities and estimates of relative differences in species richness among assemblages. *American Naturalist* 170: 381-395.
- 4) Cao, Y., D. D. Williams & D. P. Larsen. 2002. Comparison of ecological communities: the problem of sample representativeness. *Ecological Monographs* 72:41-56.
- 5) Cao, Y., D. D. Williams, & N.E. Williams. 1998. How important are rare species in community ecology and bioassessment. *Limnology & Oceanography* 43: 1403-1409.

6. EDITORSHIP: Associate editor for *Journal of Applied Ecology* (2014 –2018), one of the major journals published by British Society of Ecology (impact factor 5.7)

7. MANUSCRIPT REVIEW (26)

Diversity and Distribution, Ecology, Ecological Applications, Ecography, Ecoscience, Environmental Management, Environmental Science and Technology, Environmental Toxicology and Chemistry, Freshwater Science, Freshwater Biology, Journal of American Water Resources Association, Journal of Applied Ecology, Journal of Great Lakes Research, Journal of Environmental Management, Journal of Biogeography, Marine Ecology, Methods in Ecology and Evolution, Freshwater Mussel Biology and Conservation, North American Journal of Fisheries Management, Oikos, PLOS One, Science of Total Environment, Transactions of American Fisheries Society, Water Resources Research, Water Research, Northwestern Science, Fisheries.

8. MAIN COLLABORATORS

- Epifanio, J. (University of Illinois)
- Hawkins, C.P. (Utah State University)
- Robert M. Hughes (Oregon State University)
- Phil Larsen (USEPA)
- Brenden, T. (Michigan State University)
- Cummings, K.S. (University of Illinois)
- De Walt, E.R. (University of Illinois)
- Hinz, L. (IL Department of Natural Resources)
- Holtrop, A.M. (IL Department of Natural Resources)
- Roper, B. (USDA Forest Service)
- Seelbach, P. (USGS Great Lakes Science Center)
- Wang, L.Z. (Michigan Department of Natural Resources)

9. ACADEMIC SOCIETY

- Society of Freshwater Science
- American Fisheries Society