



POST-DOCTORAL SCIENTIST POSITION IN AQUATIC CONSERVATION ECOLOGY



The Ohio State University – Aquatic Ecology Laboratory

Description: Dr. Stuart A. Ludsin (<http://ael.osu.edu/people/ludsin>) has two (2) years of funding for a Post-doctoral Scientist to use GIS and statistical modeling approaches to understand land-use and climate-change impacts on stream biodiversity in western Lake Erie's watershed and also help identify appropriate agricultural conservation strategies for the region.

The incumbent will lead a component of an integrative, interdisciplinary biophysical modeling effort in support of a funded USDA-Natural Resources Conservation Service project. This project is seeking to develop mechanistic statistical models among biological endpoints, water quality and flow attributes, and agricultural conservation practices in the Maumee River watershed, a large, predominantly agricultural watershed that drains into western Lake Erie (USA-Canada). These models, in turn, would be used to forecast the cumulative benefits of agricultural conservation practices at multiple spatial scales and help resource managers establish realistic performance goals to inform conservation investments and planning in the Lake Erie basin. The Post-doc's primary responsibilities will be: **1)** to use GIS and statistical modeling approaches to develop predictive relationships between existing riverine fish and invertebrate community sampling data and various habitat attributes, including natural physiographic variables (e.g., soils, drainage area), watershed disturbance variables (e.g., percent impervious surface), and predicted in-stream water quality and flow data derived from a fine-resolution watershed-hydrology (SWAT) model; **2)** to identify thresholds and ceilings for these relationships; **3)** to use SWAT simulations to predict likely changes to the relevant subset of in-stream water quality and flow metrics and then work with the larger project team to develop future conservation scenarios for selected sub-watersheds; and **4)** to assess the ecological benefits of these conservation scenarios relative to their cost.

The Post-doc will be supervised by Dr. Ludsin and work closely with a team of researchers and support staff from the USDA-Agricultural Research Service (role: develop the fine-resolution SWAT model; provide SWAT predictor variables; run future conservation scenario simulations), The Nature Conservancy (role: provide biotic response and predictor variable datasets; coordinate the overall project), and Ohio Sea Grant (role: provide web support and outreach). A full-time technician, supervised by the Post-doc, also will be available for assistance.

The Post-doc is expected to write manuscripts, present scientific papers, and help mentor students that are conducting related field, laboratory, and modeling research. Opportunities, if interested, would exist to gain university teaching experience, attend training and informational workshops, and possibly write grants. Ample computer support would be provided, as would funds to attend relevant scientific meetings.

Location: The incumbent would join a dynamic, interactive group of faculty, post-docs, and students at Ohio State's Aquatic Ecology Laboratory (www.ael.osu.edu/), which is housed within the Department of Evolution, Ecology, and Organismal Biology (www.eeob.osu.edu/). The post-doc would work on campus in Columbus.

Qualifications: The successful applicant must be creative, motivated, and capable of working well both independently and cooperatively within an interdisciplinary group. Minimum qualifications include a PhD in ecology, aquatic sciences, biostatistics, ecological engineering, or a related field. Strong quantitative and communication skills are required. While not absolutely required, ideal candidates will have expertise in GIS modeling. Expertise in or familiarity with computer programming, spatial statistics, and stream and/or landscape ecology also would prove beneficial.

How to apply: Electronically submit a cover letter, CV, and names/contact information of three (3) references to Stuart Ludsin at ludsin.1@osu.edu (please put "Post-Doc" somewhere in the subject line). Application review will begin on April 12 and will continue until a suitable candidate is found. An ideal start date would be spring or summer 2013. Feel free to direct questions to Dr. Ludsin.

The Ohio State University is an equal opportunity/affirmative action employer. Women, minorities, Vietnam-era veterans, disabled veterans and individuals with disabilities are encouraged to apply.