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Environmental Science and Ecology

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Fall 2008

## Newsletter Fall 2008

James M. Haynes

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Fall 2008

585-395-5975



THE COLLEGE AT BROCKPORT

# Environmental Science and Biology

## Welcome back from Dr. James Haynes, Professor and Chairman

Welcome back for what we hope will be an exciting and productive academic year for students, faculty and staff.

As you will read below, much happened during the summer. Renovation of South Lennon (especially the new basement labs) is done and we moved into our state-of-the-art greenhouse. Dr. Douglas Wilcox joined our faculty (see article). He is a nationally-recognized expert in wetland ecology and is teaching Wetland Ecology this semester and Restoration Ecology in the spring. In less than four years since pro-

gram reviews of the ENV major and our proposed MS degree, our major goals have been achieved. An enhanced undergraduate major is in place for freshmen and transfer students entering this semester, including a new combined track in aquatic and terrestrial ecology. (see our website for requirements [www.brockport.edu/envsci](http://www.brockport.edu/envsci)). Beginning this semester, we have six full time and three adjunct faculty, three staff members and 15 MS students teaching and researching in the department, and we are able to begin offering

the full set of courses envisioned for a two-year cycle.

Welcome back to a great academic program, and have a rigorous and fun-filled academic year.

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## ENV Students Participate EPA Research Vessel—*Lake Guardian*

ChristiAnn Severson (MS in progress, right) and Stephanie Figary (BS 08) performed research for the Lake Ontario Near Shore Nutrient Study (Dr. Makarewicz is a Principal Investigator on the project) aboard the U.S. Environmental Protection Agency's Lake Guardian. They were joined by students from Clarkson, Cornell and ESF to sample nutrients and plankton from Lake Ontario. The Lake Guardian has a crew of seven and is equipped with cabins and labs for the crew and students. Other accom-



modations include recreation, exercise, and meal facilities.

The Lake Guardian is the EPA's largest research and monitoring vessel at 230 feet, and is operated by EPA's Chicago-based Great Lakes National Program Office. The Lake Guardian is in its twelfth season on the Great Lakes, and has been used extensively to support monitoring and research activities ranging from investigations of toxic contaminants in animals and plants to the health of the biological communities in the lakes to chemical concentrations in air, water and sediments.



# Dr. Douglas A. Wilcox, Empire Innovation Professor of Wetland Science

Dr. Wilcox received his BS and MS in biochemistry from SUNY-ESF in Syracuse and PhD from Purdue University in aquatic ecology. Dr. Wilcox is a native of western New York and returns to the region following a federal career in which he conducted research in wetlands along the shores of all of the Great Lakes.

Dr. Wilcox brings to Brockport research that ranges from road-salt contamination of a bog to the interactions of wetland plant communities and water-level fluctuations in the Great Lakes. His research has demonstrated that lake levels drive wetland processes and that regulations of lake levels disrupts natural wetland function. Research conducted as part of large U.S./Canadian International Joint Commission studies focused on regulated

lakes Superior and Ontario. Results from Lake Ontario work showed that regulation of lake levels following construction of the St. Lawrence Seaway allowed cattails to expand across broad areas of most wetlands, reducing overall habitat diversity.

Dr. Wilcox has published more than 70 journal articles and book chapters. He has served as Editor-in-Chief of the scientific journal *Wetlands* for 20 years and has also served on the Board of Directors of the Society of Wetland Scientists for 22 years. He was named one of the first three SWS Fellows when that honor program began. He is a certified Professional Wetland Scientist.

Future research at Brockport will concentrate on changes in Lake Ontario

wetlands resulting from implementation of a new water-level-regulation plan and development of restoration methodologies that can reduce cattail dominance and allow sedge/grass wetland communities to recover. Please see our website ([www.brockport.edu/envsci](http://www.brockport.edu/envsci)) for more information on Dr. Wilcox.



## Great Job Market for ENV Alumni

Alumni of ENV have been very successful in finding both regular employment and internships in the environmental field. We like to attribute this to the thorough teaching and training that our faculty give to each and every student! Here are just a few of the opportunities ESB students have found.

**Jessica Weyandt (BS 08)** - Internship with the National Park Service. Collecting Delaware River water samples plus working with the DEC, USGS and the Academy of Natural Sciences.

**Sabrina Isaacs (BS 08)** - Wards Natural Science—Live Specimen Specialist.

**Lisa Foster (BS 07)** - Internship with NYC Department of Environmental Protection. Lisa works on the Delaware Aqueduct project.

**Megan Hills (BS 06)** - Megan works as an Environmental Analyst for LaBella Associates PC, insuring that the purchaser or seller of a property doesn't buy a toxic waste dump or a site with underlying issues. Because this is a consulting job, Megan works with many different people at sites all over New York State.

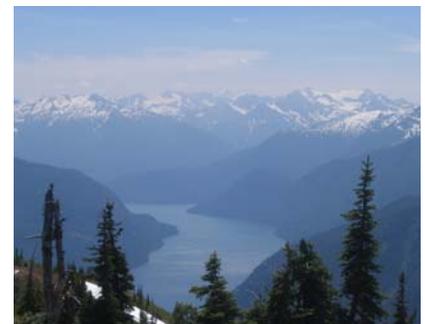
**Renee Pszyk (BS 08)** - Renee works as a seasonal technician at the Gulkana Hatchery which is a salmon hatchery operated by the Prince William Sound Aquaculture Corporation. Renee assists the culturists with daily tasks at the hatchery as well as smolt counts to determine the survival rate of the fry and predict the number of adults that will return in the future.



## ENV Undergraduate Hits Jackpot for Internship/Job Hollee Schwingel

Hollee Schwingel graduated in 2007 with a BS in Environmental Science and a concentration in Terrestrial Ecology (plus a second major in Recreation and Leisure). Now, Hollee has her "dream job" thanks to her advisor Dr. Christopher Norment and her ENV degree. Hollee spent the fall 2007 semester as an Environmental Education Park Ranger for Expedition: Yellowstone! at Yellowstone National Park. Aside from working with the education program, Hollee also worked and stayed at the Lamar Buffalo

Ranch where the U.S. population of bison was saved and the wolf was first reintroduced into Yellowstone. While working at Yellowstone, Hollee met a ranger from North Cascades National Park in Washington where she was hired to teach Mountain School. Hollee's life got even better due to the opportunities she took advantage of. This September, she started working for a professor at Montana State University in Bozeman where she will be starting graduate school in the future. Another ESB success story! (Photo: North Cascades NP by Hollee S.)



## ENV Graduate Research—Guided Independent Learning

**Rhonda Hudgins** (MS in progress) - Rhonda is conducting research on the Cobblestone Tiger Beetle, a "critically imperiled" species in NY and several other states. Her objectives are to identify environmental variables associated with suitable habitat; to understand the dispersal dynamics of the adults; and to model patch occupancy by Cobblestone Tiger Beetles. Her research includes visits to the Genesee River at Wellsville, Letchworth State Park and Castile, NY. "This summer's field work created a good foundation for next summer's work and a better understanding of the Cobblestone Tiger Beetle".

**Levi Atwater** (MS in progress) - During the past summer, Levi began his research on the efficiency of the NY Landowner Incentive Program (LIP) to provide productive grassland habitat. In order to do this, he visited 20 sites ranging over roughly 2/3 of New York State, including sites enrolled in and not enrolled in the LIP. At each site he conducted bird and vegetation surveys. These surveys were done during the height of the grassland bird breeding season, which lasts from late May to early July. His research is being funded by the NYS Audubon Society and done in cooperation with the NYSDEC.

**Christopher Titus** (MS in progress) - Chris has been conducting research on the Northern Coal Skink (a threatened lizard in NY) as part of a State Wildlife Grant through the Nature Conservancy, the Natural Heritage program and the NYS DEC. The primary focus of this study is to examine habitat use and population dynamics of the species in western NY.

**ChristiAnn Severson** (MS in progress) - Christi is determining the quality of food available to planktivorous fish (alewives) in Lake Ontario by looking at the fatty acid composition of *Cercopagis pengoi* and *Bythotrephes cederstroemi*, both invasive predatory zooplankton. Her work will improve understanding of Lake Ontario food web dynamics.

**Bradley Mudrzynski** (MS in progress) - Brad is performing research on the habitat use of fall migrant songbirds at the Iroquois National Wildlife Refuge. The stopover habitats these birds use are a vital part of their migration because they give the birds highly energetic foods such as honeysuckle and dogwood fruits that allow them to complete their journey south. Brad's goal is to carefully examine the shrublands and early successional forests used by these birds.

**Eric Somers** (MS in progress; photo on front page)- During the summer and fall semester, Eric is working with the federally listed Desert Tortoise (*Gopherus agassizii*) as part of the Fort Irwin Translocation Project in the Mojave Desert, CA. "This awesome creature has become the focus of my thesis research on the reproductive biology of translocated and resident tortoises. The Fort Irwin Translocation Project is well funded by the U.S. Army but is controversial due to the scope of the project—a large-scale relocation of the tortoises. Eric is tracking approximately 500 SEA tortoises twice a week and will be performing clearance surveys in translocation areas beginning in mid-September. Eric says the reason the project is controversial is that it deals with an endangered species and a large number of stakeholders with different values. Currently, there is a lawsuit in place to prevent translocations. It is the ultimate hope of the researchers involved in this project to better understand the biology of the tortoises and to be able to say with certainty whether or not translocation is a viable option for the Desert Tortoise.

## Faculty Research—What we do and the benefits to students

Teaching and learning are much more than giving and listening to lectures and doing cookbook laboratories. In the ESB Department, laboratory and field courses are devoted to giving students hands-on practice with skills and methods that will prepare them well for employment or graduate work. However, students and faculty working together on real environmental research and management problems is the ultimate preparation for an environmental career or post graduate study. The ESB faculty has a 30+

year record of involving students in real projects. For example, dozens of Dr. Makarewicz's undergraduate and graduate students have worked on Great Lakes limnological studies and on watershed studies throughout central and western New York state. Dr. Norment's and Dr. Norris' students study grassland birds, amphibians, forest ecology, wetlands, and soil ecology. Dr. Haynes' students have researched fish and aquatic invertebrate ecology in Lake Ontario and regional streams and the eco-

logical health and contaminant levels of vertebrate populations near Lake Ontario. Dr. Rinchar has students doing aquaculture and animal physiology projects, and Dr. Wilcox will have students working on wetland projects soon.

If doing real science and solving environmental problems appeal to you, please contact one of our faculty members to see what research opportunities may be available.

## Scholarly Work and Articles by ES&B Faculty

**Dr. Douglas Wilcox**—"[Education and Training of Future Wetland Scientists and Managers](#)" *Wetlands* 28 (3): 578-584.

**Dr. Markus Hoffmann**, Environmental Chemistry

"[Studies on the solvent-free waste-free Knoevenagel condensation](#)" *Journal - Royal Society of Chemistry* 2008

"[The Knoevenagel condensation at room temperature](#)" *Green Chem.* 10: 873-878.

**Dr. Jacques Rinchar** "[Effects of a-lipoic and ascorbic acid on brain fatty acids and antioxidant profile of the South American pacu \*Piaractus mesopotamicus\*](#)". *Aquaculture* 273: 158-164.

[Uptake, elimination, and relative distribution of perchlorate in various tissues of channel catfish](#). *Environmental Science and Technology* 41: 7581-7586.

*Visit our Website for scholarly works that our faculty have written. For more, please visit our website at [w.brockport.edu/envsci](http://w.brockport.edu/envsci)*

### Great Lakes Research Consortium Seminar

*Conservation biology of Blanding's turtles in northern New York*

Dr. Glenn Johnson, SUNY Potsdam

Thursday, November 6, 11.30 to 12.30

Room: TBA

## Scholarship Opportunities for Freshmen and Transfer Students at The College at Brockport

The College at Brockport awards more than \$3 million in scholarships and awards each year to outstanding students entering the College, thanks to generous support from individuals, corporations and foundations. Scholarships and awards vary in monetary value. Some are renewable for up to four years of undergraduate study. Some require the submission of **additional information**, such as an essay, a portfolio, high school or college transcript, or letters of recommendation. Scholarships and awards are open to both entering freshmen and transfers, while others are limited to students who plan to major in specific fields of study at the College. In addition, numerous scholarships with thousands of dollars in funding are available to returning students. At Brockport, a scholarship or award is a direct grant given by the College itself. It is not related to aid programs, such as TAP, Pell grants, loans, or Work-Study (which are applied for through the [Free Application for Federal Student Aid — FAFSA](#)). Financial need is not a requirement in most cases. However, financial aid received may need to be adjusted due to the receipt of a scholarship or award. Financial need is determined by an analysis of the Free Application for Federal Student Aid (FAFSA).

### Entering Freshmen

Entering freshmen may apply for scholarships and awards based on high school average and standardized test scores. Usually, those freshmen with high school averages of 88 or higher and with SAT scores (mathematics and critical reading) of at least 1100 or an ACT composite score of at least 24 qualify to be considered for awards.

### Entering Transfers

Entering transfer students with a grade point average of 3.25 or higher will be considered for entering student scholarships and awards.

### Scholarships in the Department of Environmental Science and Biology

THE O'REILLY SCHOLARSHIP IN ENVIRONMENTAL SCIENCE was established by Mrs. Ann M. O'Reilly Donavin '42 to support students studying science issues related to the environment. Available for entering freshman or transfer students.

THE KENNETH E. DAMANN RESEARCH AWARD recognizes an undergraduate who has demonstrated an interest in, and dedication to, the study of aquatic ecology. The award was founded by Dr. and Mrs. Damann to stimulate and encourage undergraduate independent study and research in aquatic ecology. Dr. Damann, professor emeritus of biological sciences, taught at the College from 1966 to 1978.

"By awarding me this scholarship, you have given me the financial ability and the great opportunity to study at your university, which was my first choice."

~Natalie Pilakouta, Extraordinary Scholarship Recipient, **Environmental Science and Biology Major**

## Environmental Science and Biology Faculty and Staff

Below are the names, titles, areas of expertise and email addresses of the faculty and staff of the Department of Environmental Science and Biology during the fall semester of 2008.

We invite visitors to tour our state-of-the-art facilities in Lennon hall to see our teaching labs, to speak with our professors, and to view our bulletin boards which feature undergraduates, graduate students and alumni of the Department.

If you would like additional information about our programs (major in Environmental Science; minors in Environmental Science and Environmental Studies), please send an email to Deborah Dilker at [ddilker@brockport.edu](mailto:ddilker@brockport.edu).



Amanda Alexander (MS in progress), Nate Grosse (BS 08) seine netting one of ESB's eight aquaculture ponds.

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Photo: Mike Koch (right) banding falcons along the Niagara River gorge.

