

ANNUAL REPORT: June 1, 2011 – May 31, 2012
(i.e., Summer 2011, AY 2011-2012)
DEPARTMENT OF ENVIRONMENTAL AND FOREST BIOLOGY
SUNY-ESF

NAME: Kevin Kapuscinski

I. INSTRUCTIONAL ACTIVITIES

1. Regular Course Offerings

<u>Course No.</u>	<u>Title</u>	<u>Credit Hrs.</u>	<u>No. Students</u>	<u>No. of Lab. Sections</u>
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SUMMER: EFB 202, Ecological Monitoring and Biodiversity Assessment, Session A, 3 credit hrs, 78 total students, I taught 2 aquatics sections (all students) and 1 statistics session (half of students), assisted with projects week (all students), judged project presentations (all students)

EFB 202, Ecological Monitoring and Biodiversity Assessment, Session C, 3 credit hrs, 67 total students, I taught 2 aquatics sections (all students) and 1 statistics section (half of students)

4. Guest Lecture Activities

Kevin L. Kapuscinski. Non-native species of the Buffalo Harbor: implications for habitat restoration. Guest lecture, EFB 414, Senior Synthesis in Conservation Biology SUNY-ESF (February 2012)

Kevin L. Kapuscinski. Estimating age and growth of fishes. Teaching seminar, BIOL 4545, Fisheries Management, Bemidji State University (January 2012)

II. STUDENT ADVISING

MEMBER, STEERING COMMITTEE (other than those listed above)

Christina Killourhy, M.S.

III. RESEARCH COMPLETED OR UNDERWAY

- B. 1. Grant-supported Research (source, subject, amount - total award and current year, award period starting and ending dates; list graduate research assistants supported by each grant)

Source: Niagara River Ecological Standing Committee, Fish and Wildlife Habitat Enhancement and Restoration Fund

Subject: Evaluation of Nearshore Fish Assemblages, Habitat, and the Effects of Herbivorous Rudd (*Scardinius erythrophthalmus*): Facilitating Successful Fish Habitat Restoration Efforts in the Buffalo Harbor and Niagara River

Total amount: \$519,246

2012 amount: \$254,944

Award start date: 1 January 2012

Award end date: 31 December 2013

Co-PI: John Farrell

Supported graduate research assistants: Derek Crane (advised by J. Farrell), Matthew Gunderson (graduate school application under review)

Source: Niagara River Greenway Ecological Fund

Subject: Evaluation of Nearshore Fish Assemblages, Habitat, and the Effects of Herbivorous Rudd (*Scardinius erythrophthalmus*): Determining the Efficacy of Fish Habitat Restoration Efforts in the Buffalo Harbor and Niagara River

Total amount: \$188,881

Award start date: 1 March 2011

Award end date: 31 December 2012

Co-PI: John Farrell

Supported graduate research assistants: Derek Crane (advised by J. Farrell)

2. Research Proposals pending (include information as in B.1., above).

Source: Great Lakes Fishery Commission

Subject: Delineation of Natural Boundaries of Muskellunge in the Great Lakes and the Effects of Supplementation on Genetic Integrity of Remnant Stocks

Total amount: \$42,721

Award start date: 1 January 2013

Award end date: 31 December 2014

Co-PI: John Farrell, Brian Sloss (US Geological Survey/University of Wisconsin-Stevens Point), Patrick Hanchin (Michigan Department of Natural Resources), Kim Schribner (Michigan State University), Chris Wilson (Ontario Ministry of Natural Resources/Trent University), and Loren Miller (University of Minnesota/Minnesota Department of Natural Resources)

Supported graduate research assistants: none

Source: Niagara River Ecological Standing Committee, Fish and Wildlife Habitat Enhancement and Restoration Fund

Subject: Ecology of Young-of-the-Year and Juvenile Muskellunge in Buffalo Harbor and the Upper Niagara River

Total amount: \$856,148

Award start date: 1 June 2013

Award end date: 31 December 2015

Co-PI: John Farrell

Supported graduate research assistants: one (TBD) and one post-doctoral research associate

IV. PUBLICATIONS (Full bibliographic citation, i.e., do not use "with Jones," or "Jones, et al."; please list only publications published, in press, or actually submitted during this reporting period --- **do not list manuscripts in preparation**).

A. Refereed Publications

Kapuscinski, K. L., Farrell, J. M., and B. A. Murry. In Press. Feeding strategies and diets of young-of-the-year muskellunge in two large river ecosystems. North American Journal of Fisheries Management

Kapuscinski, K. L., Farrell, J. M., and M. A. Wilkinson. 2012. Feeding patterns and population structure of an invasive cyprinid, the rudd *Scardinius erythrophthalmus* (Cypriniformes, Cyprinidae), in Buffalo Harbor (Lake Erie) and the upper Niagara River. Hydrobiologia. DOI: 10.1007/s10750-012-1106-0. Online First™

Kapuscinski, K. L., Farrell, J. M., and M. A. Wilkinson. 2012. First report of abundant rudd populations in North America. North American Journal of Fisheries Management 32:82-86

Kapuscinski, K. L., Sloss, B. L., and J. M. Farrell. Under review. Genetic population structure of muskellunge in the Great Lakes. Transactions of the American Fisheries Society

Kapuscinski, K. L., and J. M. Farrell. Under review. Habitat factors influencing fish assemblages at muskellunge nursery sites. Journal of Great Lakes Research

Kapuscinski, K. L., Farrell, J. M., and M. A. Wilkinson. Under review. Trends in the muskellunge populations and fisheries of Buffalo Harbor (Lake Erie) and the Niagara River

B. Non-refereed Publications

Kapuscinski, K. L., Crane, D. P., Farrell, J. M., and M. A. Wilkinson. 2012. Surveys of muskellunge spawning habitat, young-of-the-year, and associated fish assemblages at nearshore sties of the Buffalo Harbor and upper Niagara River. Section O in D. Einhouse, editor. NYSDEC Lake Erie 2012 annual report. New York State Department of Environmental Conservation, Albany

C. Papers Presented at Science Meetings (give title, date, occasion, and location)

Kevin L. Kapuscinski and John M. Farrell. 16 May 2012. Selective feeding among species of submersed aquatic vegetation by a non-native Cyprinid, the rudd. 55th Annual Conference on Great Lakes Research

Kevin L. Kapuscinski, John M. Farrell, and Brian L. Sloss. 3 February 2012. Genetic population structure of muskellunge in the Great Lakes. New York Chapter of the American Fisheries Society Annual Meeting

Kevin L. Kapuscinski, John M. Farrell, and Michael A. Wilkinson. 2 June 2011. Trends in the muskellunge (*Esox masquinongy*) population and fishery of the Buffalo Harbor (Lake Erie) and upper Niagara River. 54th Annual Conference on Great Lakes Research

Kevin L. Kapuscinski, John M. Farrell, and Michael A. Wilkinson. 31 May 2011. Feeding ecology and population structure of a non-native cyprinid, the rudd, in the Buffalo Harbor (Lake Erie) and upper Niagara River. 54th Annual Conference on Great Lakes Research

D. Public Service Presentations (lectures, seminars, etc. to and for the public; give group or occasion, date(s), and attendance)

Kevin L. Kapuscinski, John M. Farrell, and Brian L. Sloss. 1 November 2011. Genetic population structure of muskellunge in the Great Lakes. Niagara Musky Association, ~ 30 in attendance

Kevin Kapuscinski, John Farrell, and Derek Crane. 5 October 2011. Great Lakes muskellunge research. NYSDEC Great Lakes Section Meeting, ~ 30 in attendance

V. PUBLIC SERVICE

B. Unfunded Service to Governmental Agencies, Public Interest Groups, etc.

Co-chair of the Aquatic Habitat Restoration and Management in the Great Lakes session, International Association of Great Lakes Research 55th Annual Conference on Great Lakes Research. 16 May 2012.

Judge of student poster presentations at the International Association of Great Lakes Research 55th Annual Conference on Great Lakes Research. 14 May 2012.

Panelist for a discussion on career paths in aquatic sciences and fisheries, New York American Fisheries Society, 2nd Annual Student Colloquium. 21 April 2012.

Judge of conservation/restoration plan presentations, EFB 414, Senior Synthesis in Conservation Biology, SUNY-ESF. 25 April and 9 May 2012.

Reviewer of papers submitted to the IS.Rivers Integrative Sciences and Sustainable Development of Rivers 1st International Conference. December 2011.

Member of the Niagara Habitat Conservation Strategy Technical Advisory Committee (2011-present)

VI. PROFESSIONAL DEVELOPMENT

2. Professional Society Membership

The Nature Conservancy (2011-present)

Save the River, Upper St. Lawrence RIVERKEEPER (2011-present)

International Association of Great Lakes Research (2010-present)

New York Chapter of the American Fisheries Society (2009-present)

American Fisheries Society (1999-present)

3. Other Professional Activities

b. Reviewer

<u>Journal(s)</u>	<u>No. of manuscripts</u>
Journal of Great Lakes Research	4
North American Journal of Fisheries Management	2

c. Participation (workshops, symposia, etc.)

<u>Name of workshop, etc.</u>	<u>Date</u>	<u>Place</u>
Leadership workshop, New York Chapter of the American Fisheries Society, Dr. Ernie Stretton,	1 February 2012,	Lake Placid, NY

VII. ADMINISTRATIVE AND SERVICE RESPONSIBILITIES (include committee participation)

A. Department-level

Steering committee member for Christina Killourhy, M.S. candidate

B. College-level

C. University-wide, including Research Foundation

Hired and supervised two Research Aides (Trevor Oakley and Michael Guinan, both SUNY-ESF students) and two Research Analysts (Andrew Panczykowski [SUNY-Buffalo State College] and Matthew Gunderson [SUNY-ESF]). Gunderson will transition to a M.S. candidate under my supervision upon his acceptance into the graduate school. Derek Crane (Ph.D. candidate advised by J. Farrell) is also supported on this grant.

Secured a rental property (to house my staff and me while conducting field research on Buffalo Harbor and the Niagara River) and storage space for boats and equipment.

VIII. SUMMARY OF SIGNIFICANT ACTIVITIES AND ACCOMPLISHMENTS DURING THIS REPORTING PERIOD, ESPECIALLY THOSE MOST NOTEWORTHY AND RELATIVE TO THE COLLEGE'S AND DEPARTMENT'S MISSION. One paragraph on each of the following would be most helpful:

this past year, what have you done for our students, department/college, and self professionally? NOTE: The information in this section (along with the supporting specific information elsewhere in this report) should be your strongest case for being considered for a discretionary raise, which I'll continue to award based on your contributions to the department and college this reporting period.

Students

I taught >140 students enrolled in EFB 202 at Cranberry Lake Biological Station during the summer of 2011. I taught four aquatics sections and two statistics sections, provided guidance during group "projects week", and judged student presentations of these projects. I also provided support to Derek Crane who was teaching EFB 414 (Senior Synthesis in Conservation Biology), and I gave a guest lecture to his class. I am looking forward to teaching EFB 487/687 (Fisheries Science and Management) and EFB 488 (Fisheries Science Practicum) this fall.

Department/College

I served on the steering committee for Christina Killourhy (M.S. candidate, EFB) and invested a significant amount of time providing technical and editorial guidance to current and former graduate students of EFB. I also conducted a search for my first graduate student. I hired Matthew Gunderson as a Research Analyst for the summer of 2012, and he will transition to a M.S. candidate upon acceptance into the graduate program at EFB. I look forward to becoming more formally involved in the development of graduate students by serving on steering committee, etc.

Research

My main focus during the past year has been on publishing results of previous research and expanding my research program on Buffalo Harbor (Lake Erie) and the Niagara River. I published three peer-reviewed articles as lead author, submitted three more, and worked on several others (as lead or supporting author) that will soon be submitted for review. I also gave several presentations at professional conferences, public meetings, and college classes. During the past year I continued to oversee a \$188,881 grant-funded project that is nearing completion, and I secured a new, two-year \$519,246 grant (J. Farrell is co-PI on both grants). I hired and now supervise two Research Aides (Trevor Oakley and Michael Guinan, both SUNY-ESF students) and two Research Analysts (Andrew Panczykowski [SUNY-Buffalo State College] and Matthew Gunderson [SUNY-ESF]). I also secured a rental property (to house my staff and me while conducting field research on Buffalo Harbor and the Niagara River) and storage space for boats and equipment—my research program is slowly taking shape. John Farrell and personnel of the Thousand Islands Biological Station have been and continue to be key collaborators on these research efforts. Other important collaborators include personnel from the New York State Department of Environmental Conservation, SUNY-Buffalo State College Great Lakes Center, Brian Sloss (US Geological Survey/University of Wisconsin Stevens Point), and the Niagara Musky Association.

IX. A. FUTURE PLANS, AMBITIONS, AND POTENTIAL CONTRIBUTIONS FOR YOUR OWN PROFESSIONAL DEVELOPMENT AND THE ENHANCEMENT OF THE PROGRAM IN ENVIRONMENTAL AND FOREST BIOLOGY (brief summary)

B. PROJECTED ACTIVITIES FOR NEXT YEAR

1. Summer 2012

b. Proposed research activity

During the summer of 2012 I am planning to conduct research on Buffalo Harbor and the upper Niagara River to (1) estimate the abundance of the non-native rudd, (2) quantify excretion rates of rudd, and (3) monitor nearshore fish assemblages (with an emphasis on young-of-the-year muskellunge production) at 10 index sites that have been sampled since 2007. In addition, I will (1) assist Matthew Gunderson with developing his assessment of aquatic plant assemblages (M.S. research), (2) collaborate with Derek Crane on a project to quantify the relationship between young-of-the-year muskellunge and nursery habitat features, and (3) collaborate with Derek Crane and muskellunge angler clubs on a project to quantify relationships between muskellunge length, weight, girth, and body density among various waters in North America.

c. University, professional society, and public service

During the summer of 2012 I will invest a significant amount of time mentoring undergraduate employees who are getting their first experiences working in the field of fisheries research. I hope to help Michael Guinan with the development of his undergraduate project.

2. Fall Semester 2012

a. Course(s) to be offered

EFB 487/687 (Fisheries Science and Management) and EFB 488 (Fisheries Science Practicum)

b. Proposed research activity

During the fall of 2012 I plan to continue publishing the results of previous projects, with an emphasis on publishing the results of an experiment conducted during 2011 that quantified selective feeding by rudd among species of aquatic vegetation.

c. University, Professional society, and public service

During the fall of 2012 I will serve as major professor for Matthew Gunderson (M.S. candidate) and hope to become more involved in graduate steering committees.