

**ANNUAL REPORT: June 1, 2014 – May 31, 2015**  
**(i.e., Summer 2014, AY 2014-2015)**  
**DEPARTMENT OF ENVIRONMENTAL AND FOREST BIOLOGY**  
**SUNY-ESF**

**NAME:** John M. Farrell

**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>
SUMMER:	EFB 388	Adirondack Fish Ecology	3	10	
FALL:	EFB 681	Aquatic Restoration Ecology	2	13	
	EFB 488	Fisheries Practicum (with T. Evans)	1	11	
SPRING:	EFB 496	Senior Synthesis AFS	2	16	

**NOTE: PLEASE INDICATE WHICH COURSE(S) HAD A SERVICE-LEARNING COMPONENT AND BRIEFLY EXPLAIN THE NATURE OF THIS COMPONENT.** For examples of service-learning in courses, see: <http://www.esf.edu/students/service/courses.htm>. Service-learning is a form of structured experiential education in which students engage with the community to be active learners, to enrich their sense of civic responsibility, and to explore practical application for course content. Faculty oversight, reflective thinking, and reciprocity are key components of service-learning.

2. Non-Scheduled Course Offerings (e.g., 496, 899, 999)

	<u>Course No.</u>	<u>Title</u>	<u>Credit Hrs.</u>	<u>No. Students</u>
SUMMER:				
FALL:	EFB 298	Research Internship	2	1
	EFB 420	Professional Internship	3	1
	EFB 498	Independent Research	1	1
	EFB 899	Master's Research	6	14
	EFB 999	Doctoral Research	1	4
	ENS 498	Research Problems	1	1
SPRING:	EFB 298	Research Internship	1	1
	EFB 420	Internship EFB	1	1
	EFB 498	Research Problems	1	1
	EFB 899	Master's Research	3	10
	EFB 999	Doctoral Research	1	7

3. Continuing Education and Extension (short courses, workshops, etc.)

#### 4. Guest Lecture Activities

<u>Course No.</u>	<u>Title</u>	<u>No. of Lectures</u>
EFB 796	Graduate Core Course	1
EFB 496	Wildlife Field Techniques	1 day field tour, sampling experience, presentation

## II. STUDENT ADVISING

- A. Number of undergraduates for whom you are the student's official advisor   19   and unofficial advisor
- B. Graduate Students: (list name, degree sought, starting date, month & year; if a degree was completed, please give date and full citation for the thesis or dissertation).

### MAJOR PROFESSOR

1. Geof Eckerlin, PhD (began Jan 2009), *Viral haemorrhagic Septicaemia Virus Type: Evaluation of fish hosts as a viral reservoir, a community perspective.*
2. Mark Leopold, MPS (Graduated December 2014) *Possible causes of skewed sex ratios of Northern Pike (Esox lucius L.) on the St. Lawrence River*
3. Ben Amos, MPS (Graduated May 2015) *Spatial scale and natal influence on spawning site fidelity in Northern Pike (Esox lucius L.)*
4. Scott Schlueter, MPS (Graduated December 2014) *Restoration of Lake Sturgeon in the Oswegatchie River.*
5. Andrew Miano (began May 2013) *Influence of invasive round goby egg predation on broadcast spawning fish species in the Great Lakes.*
6. John Bateman PhD (started August 2014) *Restoration of Great Lakes Wetlands.*

### CO-MAJOR PROFESSOR

1. Alison Halpern, PhD (EBT, Co-advised with Dr. Donald Leopold) 5/00, *Aquatic nuisance species: ecology and control of the invasive plant Hydrocharis Morsus-ranae in Eastern Lake Ontario and St. Lawrence River wetlands.*
2. Stewart LaPan, MS (Co-advised with Dr. James Gibbs; Graduated May 2015), *Avifauna and Herpetofauna Response to Coastal Wetland Enhancement in the Upper St. Lawrence River.*
3. Kelly Huffman, MS (Co-advised with Dr. Chris Whipps) started fall 2013, *Environmental determinants of gender ratio in Northern Pike (Esox lucius L.)*
4. Matt Gunderson, MS (Co-advised with Dr. Kevin Kapuscinski; Graduated May 2015, *Habitat-Assemblage Relations of Aquatic Macrophytes in the Upper Niagara River.*

### MEMBER, STEERING COMMITTEE (other than those listed above)

1. Kapil Mandraker, EFB, PhD (Stewart)
2. Errol Sheid, EFB, MS (McGrath)
3. Ceili Bachman, EFB, MS (Mitchell and Schulz)
4. Matt Regan, EFB, MS (Leopold)

5. Alex Looi, EFB, MS (Schulz)
6. Alison Kocek, EFB, PhD (Cohen)
7. Chris Nack, EFB, PhD (Limburg)

CHAIRMAN OR READER ON THESIS EXAMS, ETC.

**III. RESEARCH COMPLETED OR UNDERWAY**

A. Departmental Research (unsupported, boot-legged; title - % time spent)

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)

Farrell, J.M., C. Whipps, and K.L. Kapuscinski. 4/1/2013-3/31/2016. St. Lawrence River Fisheries Research and Management. Federal Aid in Sportfish Restoration, NYS Department of Environmental Conservation, \$715,001.

GA's supported – Kelly Huffman; Ben Amos (summer)

Farrell, J. M., D. J. Leopold, M. Mitchell, J. Gibbs, K. Schulz. 9/2011-9/30/2014, Recovery Act – Coastal Fisheries Habitat Restoration in the St. Lawrence River. NOAA Coastal and Marine Habitat Restoration Project Grants Great Lakes Restoration Initiative, \$397,722.

GA's supported – Stewart LaPan; Ceili Bachman; Matt Regan; Alex Looi

Farrell, J. M. 8/1/12-9/30/15. The St. Lawrence River Fish Habitat Conservation Strategy: Evaluation of Habitat Enhancements and Development of Novel Restoration Approaches. National Fish and Wildlife Foundation, \$610,073.

GA's supported – Andrew Miano

Getchell R., and J. M. Farrell. 2/1/14-1/31/16. The Impact of VHSV on the Population Dynamics of St. Lawrence Muskellunge. Cornell University/NY Sea Grant (\$5,000 to ESF).

Hanchin, P., B.L. Sloss, L. Miller, C. Wilson, K. L. Kapuscinski, K. Schribner, and J. M. Farrell. Delineation of natural boundaries of muskellunge in the Great Lakes and the effects of supplementation on genetic integrity of native stocks. Great Lakes Fisheries Commission (\$42,721; ESF share \$4,705)

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

The St. Lawrence River Fish Habitat Conservation Strategy: Evaluation of Habitat Enhancements and Development of Novel Restoration Approaches. US Fish and Wildlife Service, National Fish and Wildlife Foundation Special Project. J. M. Farrell and S. Cooke (Carleton University). \$583,967 (\$299,407 to ESF).

Influences of predatory fish on upstream migrating American Eel (*Anguilla rostrata*) and passage at the Moses-Saunders Dam US Fish and Wildlife Service, National Fish and Wildlife Foundation Special Project. \$292,468.

3. Research Proposals submitted, but rejected (include information as in B.1., above)

Fate and effects of neonicotinoid pesticides in Lake Ontario and St. Lawrence River wetlands (with Dr. Gordon Paterson). NY SeaGrant.

**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

- Crane, D P., and J. M. Farrell. 2015. Muskellunge egg incubation habitat in the upper Niagara River. *Journal of Great Lakes Research* (<http://www.sciencedirect.com/science/article/pii/S0380133015000672#>)
- Kapuscinski, K. L., J. M. Farrell, M. A. Wilkinson. 2015. Abundance, biomass, and macrophyte consumption by rudd in Buffalo Harbor and the Niagara River, and potential herbivory by grass carp. *Journal of Great Lakes Research*. (<http://www.sciencedirect.com/science/article/pii/S0380133015000441>)
- Crane, D P., L. M. Miller, J. S. Diana, J. M. Casselman, J. M. Farrell, K. L. Kapuscinski, J. K. Nohner. (In press) Muskellunge and Northern Pike Ecology and Management: Important Issues and Research Needs. *Fisheries*.
- Crane, D. C., J. M. Farrell, D. Einhouse, and J. Lantry. 2015. Trends in body conditions of native piscivores following round goby invasion in Lakes Erie and Ontario. *Freshwater Biology* 60:111-124.
- Kapuscinski, K. L., J. M. Farrell, M. A. Wilkinson, L. C. Skinner, W. Richter, A. J. Gudlewski, and G. Paterson. 2014. Low Concentrations of Contaminants in an Invasive, Omnivorous Cyprinid, the Rudd, in a Great Lakes Area of Concern. *Bulletin of Environmental Contamination & Toxicology* 93:567-573.
- Kapuscinski, K.L., J. M. Farrell, S. Stehman, T. Tschaplinski, D. D. Fernando, and M. A. Teece. 2014. Selective herbivory by an invasive cyprinid, the Rudd (*Scardinius erythrophthalmus*). *Freshwater Biology* 59:2315-2327.
- Roseman, E.F., P. Thompson, J. M. Farrell, N. Mandrak, and C. A. Stepien. 2014. Conservation and management of fisheries and aquatic communities in Great Lakes connecting channels. *Journal of Great Lakes Research* 40, Supplement 2:1-6. <http://www.sciencedirect.com/science/article/pii/S0380133014000598>
- Henning, B. F., K.L. Kapuscinski, and J. M. Farrell. 2014. Nearshore fish assemblage structure and habitat relationships in protected and open habitats in the upper St. Lawrence River. *Journal of Great Lakes Research* 40, Supplement 2:154-163. <http://dx.doi.org/10.1016/j.jglr.2013.11.003>
- Farrell, J. M., H. Brian Underwood, and K.L. Kapuscinski. 2014. Fine scale habitat use by age-1 stocked muskellunge and wild northern pike in an upper St. Lawrence River bay. *Journal of Great Lakes Research* 40, Supplement 2:148-153. <http://www.sciencedirect.com/science/article/pii/S0380133013001706>
- Kapuscinski, K. L, J. M. Farrell, and M. A. Wilkinson. 2014. Trends in the muskellunge (*Esox masquinongy*) population and fishery of the Buffalo Harbor (Lake Erie) and upper Niagara River. *Great Lakes Research* 40, Supplement 2:125-134. <http://dx.doi.org/10.1016/j.jglr.2012.11.006>
- Kapuscinski, K. L, and J. M. Farrell. 2014. Habitat factors influencing fish assemblages at muskellunge nursery sites. *Great Lakes Research* 40, Supplement 2:135-147. <http://dx.doi.org/10.1016/j.jglr.2012.11.007>.

B. Non-refereed Publications

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

- Brown, B.L., Farrell, J.M., Runner, J.R. Northern pike restoration efforts in the Thousand Islands section of the St. Lawrence River. American Fisheries Society New York Chapter Annual Meeting. Lake Placid, NY. February 5, 2015. (Plenary Speaker).
- Claussen, J., J. Ludden, J. Svec, J. M. Farrell, G. E. Eckerlin, and D. Phillip. 2014. Impacts of invasive species on smallmouth bass reproduction in the St Lawrence River. American Fisheries Society 144<sup>th</sup> Annual Meeting, Quebec City, Quebec, Canada.
- Crane, D. P., and J. M. Farrell. 2015. Muskellunge egg incubation habitat in the upper Niagara River. Minnesota Chapter of the American Fisheries Society Annual Meeting, Baxter, MN.
- Crane, D. P. and J. M. Farrell. 2014. Future directions for muskellunge conservation and restoration. Muskies Canada Symposium, Carleton University, Ottawa, Canada.

- Farrell, J. M., B. Brown, C. Bachman, A. Looi, M. Regan, S. LaPan, M. J. Mitchell, K. L. Schulz, D. J. Leopold, J. P. Gibbs, and S. Fleming. 2015. From Biogeochemistry to Fauna: Holistic Evaluation of Habitat Enhancements in Cattail (*Typha*) Dominated Coastal Wetlands. St. Lawrence River Conference. Cornwall, Ontario, Canada.
- Farrell, J. M. 2014. Getting fisheries off to a good start: Why there is a need to address early life processes in applied fisheries management. 38<sup>th</sup> Annual Larval Fish Conference (Plenary Presentation), American Fisheries Society 144<sup>th</sup> Annual Meeting, Quebec City, Quebec, Canada.
- Farrell, J. M. 2014. Survival of St. Lawrence River Muskellunge Revisited: Can Today's Nursery Habitat Support Adequate Recruitment to Fuel Population Recovery? Muskies Canada Symposium (Plenary Presentation) Carleton University, Ottawa, Canada.
- Fleming, K. S., and J. Farrell. 2015. Coastal Wetland Habitat Restoration in the St. Lawrence River and Lake Ontario Basin: Delivery methods, Partnerships, and Lessons Learned. River Institute Symposium, Cornwall, ON.
- Fleming, K. S., and J. Farrell. 2015. Coastal Wetland Habitat Restoration in the St. Lawrence River and Lake Ontario Basin: Delivery methods, Partnerships, and Lessons Learned. Ducks Unlimited Canada, Webinar, Barrie, ON.
- Foubert, A., M. Mingelbier, J. M. Farrell, and F. Lecomte. 2014. Estimating Connectivity Between Spawning and Nursery Habitats of Northern Pike to Identify the Most Rewarding Habitat to Protect (St. Lawrence River, Canada), American Fisheries Society 144<sup>th</sup> Annual Meeting, Quebec City, Quebec, Canada.
- Huffman, K. A., Farrell, J. M., Whipps, C.M., 2015. SUNY-ESF Spotlight on Student Research, Syracuse, NY. Sex Determination and Gonadal Development in St. Lawrence River Northern Pike. [Poster] RUNNER UP BEST POSTER AWARD.
- Huffman, K. A., Farrell, J. M., and Whipps, C. M., 2015. American Fisheries Society New York Chapter Annual Meeting, Lake Placid, NY. Sex Determination and Gonadal Development in St. Lawrence River Northern Pike [Poster].
- Huffman, K. A., Farrell, J. M., and Whipps, C. M., 2014. American Fisheries Society National Meeting, Quebec City, Quebec, Canada. Environmental Determinants of Sex Ratio in St. Lawrence River Northern Pike (*Esox Lucius*): Development of a Molecular Sex Identification Tool and Experimentation with Physical and Chemical Variables. [Poster]
- Looi, A., Schulz, K.L., Farrell, J. M., Kroll, C., Bachmann, C. 2015. Linking the Moses Saunders Dam to Wetland Tributaries in the St. Lawrence River. 2015 River Symposium. Change is the New Normal: Identifying Environmental Challenges and Strategies for a Changing St. Lawrence River Great Lakes Ecosystem.
- Miano, A., and J. M. Farrell. 2015. The Influence of Spawning Habitat on Round Goby Egg Predation for Broadcast Spawning Species. New York Chapter Meeting of the American Fisheries Society. BEST STUDENT PRESENTATION AWARD, Lake Placid NY.
- Miano, A., and J. M. Farrell. 2015. The Influence of Spawning Habitat on Round Goby Egg Predation for Broadcast Spawning Species. American Fisheries Society 144<sup>th</sup> Annual Meeting, Quebec City, Quebec, Canada.
- Miano, A., and J. M. Farrell. 2015. Invasive Round Goby Diet Patterns and Egg Predation on Broadcast Spawning Fishes in Coastal Habitats. International Association of Great Lakes Research Annual Meeting, Burlington, VT.

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

Farrell, J. M. 2014. Long-term Research and Management at the Thousand Islands Biological Station. New York Northeast Underwater Explorers (NEUE) (12 participants)

Fleming, K. S., and J. Farrell. 2015. New York Conservation Update. Ducks Unlimited State Convention, Clayton, NY.

Thousand Islands Land Trust, Ichthyologist for a Day – led children ages 5-12 and adults through a series of modules on fish and river ecology on the St. Lawrence River (40 participants)

Crane, D. P., L. M. Miller, J. S. Diana, J. M. Casselman, J. M. Farrell, K. L. Kapuscinski, and J. K. Nohner. 2014. Future directions for muskellunge conservation and restoration. Monthly meeting of the North Metro Chapter of Muskies Inc., Coon Rapids, MN.

EFB River Day – Interpretive tour and presentation to the EFB faculty and staff on the Thousand Islands Biological Station research program and facilities

Clayton Yacht Club – visit and tour on Thousand Islands Biological Station programs and St. Lawrence River research for club members (15 participants)

Region 5 Federal Conservation Partnership Meeting - Poster Session and Thousand Islands Biological Station Tour (40 participants)

## **V. PUBLIC SERVICE**

### A. Funded Service (include consulting activities)

#### 1. Government Agencies (Federal, State, Local):

Led poster session and informational session for Region 5 Federal Agencies as part of their annual meeting.

#### 2. Industrial and Commercial Groups, etc.

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

Thousand Islands Land Trust Zenda Farms Picnic, Provided live fish and poster displays as part of community event (June 2014; ~250 attendees)

Thousand Islands National Park | Parc national des Mille-Îles, Information and onsite meetings and field visits regarding wetlands restoration.

Farrell, J. M., B. Brown, C. Bachman, A. Looi, M. Regan, S. LaPan, M. J. Mitchell, K. L. Schulz, D. J. Leopold, J. P. Gibbs, and S. Fleming. 2015. From Biogeochemistry to Fauna: Holistic Evaluation of Habitat Enhancements in Cattail (*Typha*) Dominated Coastal Wetlands. Ducks Unlimited, Canada Webinar.

## **VI. PROFESSIONAL DEVELOPMENT**

### A. Professional Honors and Awards (for teaching, research, outreach, etc.)

#### B. 1. Activities in Professional Organizations (offices held, service as chairman, member, participant or consultant)

American Fisheries Society (AFS), NY Chapter AFS, International Association of Great Lakes Researchers

#### 2. Professional Society Membership

American Fisheries Society (AFS), NY Chapter AFS, International Association of Great Lakes Researchers,

Great Lakes Research Consortium,

3. Other Professional Activities

a. Editorial activity

<u>Journal (s)</u>	<u>Responsibility</u>
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b. Reviewer

<u>Journal(s)</u>	<u>No. of manuscripts</u>
CYBIUM – International Journal of Ichthyology	1
Transactions of the American Fisheries Society	1
<u>Agency</u>	<u>No. of proposals</u>

Other

c. Participation (workshops, symposia, etc.)

<u>Name of workshop, etc.</u>	<u>Date</u>	<u>Place</u>
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C. Further Education/Re-training Undertaken, Leaves, Workshops, etc.

D. Foreign Travel (Where, When, Purpose)

Quebec City, QC Canada – gave invited presentation

**II. ADMINISTRATIVE AND SERVICE RESPONSIBILITIES (include committee participation)**

A. Department-level

Served on Promotion and Tenure Committee

Mentored an Assistant Professor in EFB

Hosted EFB River Day retreat event

Advised an undergraduate student for an EFB Honors Thesis Project.

Served as supervisor for 25 employees working at TIBS over the summer including 5 staff, 9 undergraduates, 7 graduate students.

B. College-level

Assisted ESF Development Office with numerous visits for supporters of ESF

Leadership for development at TIBS

Hosted Alumni event at TIBS

C. University-wide, including Research Foundation

**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 (**i.e., three paragraphs total**) 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 (when available), which I'll continue to award based on your contributions to the department and college this reporting period.

**For the students:**

For undergraduates I taught or co-taught three classes, served as an advisor and helped our Aquatic and Fisheries Science seniors prepare for the professional world with many receiving jobs after graduation with help from this process. Several undergrads were employed at TIBS and in my lab during the summer and academic year. I helped Tom Evans offer the Fisheries Practicum to ensure our graduating class had the opportunity to take this class during Dr. Limburg's sabbatical. I finished four graduate students including two MPS and two co-advised MS students. Additionally several graduates received honors for oral and poster presentations at professional conferences.

**For the department/college:**

I hosted the EFB department at TIBS with a program where students gave posters and demonstrations of their research and gave tours to our faculty and staff. I served another year on the promotion and tenure committee performing reviews and helping to evaluate faculty performance. I continued to advance the Thousand Islands Biological Station with completion of several projects while working with the ESF Physical Plant and ESF Development Office including Clean Building interior completion, well water distribution, and laboratory plumbing upgrades.

**For self professionally:**

In May 2015, I received notification of my promotion to professor by the ESF president following review of my dossier and credentials in October. I gave several invited presentations at professional conferences including as a plenary speaker for the International Larval Fish Conference in Quebec City. I co-authored or authored 11 journal publications this period and completed guest editorial work with publication of a special issue in the Journal of Great Lakes Research. I started some new collaborations with researchers at Carleton University in Ottawa, Canada, the University of Laval in Quebec City, and the University of Victoria, BC.

**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 2015

a. Course(s) to be offered

EFB 388



b. Proposed research activity

Numerous projects at TIBS and the Great Lakes

c. University, professional society, and public service

Cean Aquatic Researcher Building will open June 8, 2015. Host ESF Alumni event at TIBS for building dedication.

2. Fall Semester 2015

a. Course(s) to be offered

EFB 681

b. Proposed research activity

Numerous extramurally funded research projects

c. University, Professional society, and public service

TIBS facility enhancements

3. Spring Semester 2016

a. Course(s) to be offered

EFB 492

b. Proposed research activity

Numerous extramurally funded research projects

c. University, professional society, and public service

TIBS, 2016 Muskies Inc. Conference