

**ANNUAL REPORT: June 1, 2012 – May 31, 2013**  
**(i.e., Summer 2012, AY 2012-2013)**  
**DEPARTMENT OF ENVIRONMENTAL AND FOREST BIOLOGY**  
**SUNY-ESF**

**NAME:** Neil H. Ringler

**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:					
FALL:	EFB 554	Aquatic Entomology	3	13	1
SPRING:	EFB 385	Comparative Vertebrate Anatomy	4	42	2

**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.

Neither of the courses this year had a direct service learning component.

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>
<u>Fall</u>	420	Independent Research	2	1
	495	Internship	3	1
	498	Independent Research	3	1
	898	Independent Research	1	1
	899	Master's Thesis	19	4
	999	Doctoral Dissertation	7	5
<u>Spring</u>	495	Internship	13	5
	798	Independent Research	3	1
	899	Master's Thesis	14	3
	999	Doctoral Dissertation	4	4

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>
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## II. STUDENT ADVISING

A. Number of undergraduates for whom you are the student's official advisor \_\_\_ and unofficial advisor 3

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

**Stephanie Johnson, Ph.D. Degree Completed May 2013**

THE EFFECTS OF LAND USE AND HABITAT QUALITY ON FISH AND MACROINVERTEBRATE CONCORDANCE, ECOLOGICAL COMMUNITY THRESHOLDS, AND TROPHIC STRUCTURE: A CASE STUDY OF A PERTURBED WATERSHED (ONONDAGA LAKE WATERSHED, NY). Doctoral Dissertation, SUNY ESF. 197 p.

**Andrew Miller, MS. Degree Completed December 2012**

PREDATION ON JUVENILE CHINOOK SALMON DURING OUT-MIGRATION IN A LAKE ONTARIO TRIBUTARY. Master's Thesis, SUNY ESF. 89 p.

**Christopher Legard, M.S. Degree Completed May 2013.**

EMBRYONIC SURVIVAL OF BROWN TROUT (SALMO TRUTTA) IN THE SALMON RIVER, NY. Master's Thesis, SUNY ESF. 37 p.

Lucas Kirby, Ph.D. August 2009

Curtis Karboski, M.S. December 2010

Daniele Hurley, M.S. August 2012

Zachary Smith, M.S. January 2013

Michael Connerton, Ph.D. December 1996 (NYS-DEC Biologist)

Daniel Gefell, Ph.D. December 2003; restarted December 2011

### CO-MAJOR PROFESSOR

Alexander J. Smith, Ph.D. December 2010 with Karin Limburg

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

Eric Bauer, M.S.

Kyle Hodgeson, M.S.

CHAIRMAN OR READER ON THESIS EXAMS, ETC.

Derick Crane, Reader/Examiner Ph.D. defense

Christina Killhourhy, Reader/Examiner M.S. defense

Errol Scheid, Reader/Examiner M.S. defense

Tanushree Chowdhury, Ph.D. Candidacy Examination Chair

Yuh-Chin Hwang, Ph.D. Candidacy Examination Chair

Leticia C. Izquierdo M.S. Defense Chair

**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)

PI/Co-PI	Sponsor	Amount	Date	Title
PI	Honeywell, Inc.	\$878,656	1/15/08 – 12/31/13	Onondaga Lake Biological Assessment and Monitoring
Co-PI	NSF	\$275,335	1/1/10 – 12/31/14	Collaborative Research: Impacts of In-Stream Restoration on Hydrological, Chemical and Biological Heterogeneity in the Hyporheic Zone
PI	NSF	\$1,470,000	10/1/10 – 9/30/13	Renovation of Wet Labs and Cyber-Infrastructure to Enhance Integrated Research and Teaching in Aquatic Science at SUNY ESF
PI	USDA-FS	\$27,000	9/22/11 – 12/31/13	Enhanced Effectiveness of Planning and Managing Urban Forest Ecosystems
PI	USDA-McIntire-Stennis Program	\$544,532	10/1/11 – 9/30/13	McIntire-Stennis FY 12-13
Co-PI	NSF	\$599,822	9/1/12 – 8/31/14	Technology Enhancement of Hot Water Extraction
PI	Honeywell, Inc.	\$155,000	7/1/13 – 6/30/14	Onondaga Lake Biological Assessment and Monitoring

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

Ringler, N. H (PI), and M. Murphy (Co-PI). Atlantic Salmon Restoration in Great Lakes Tributaries: An Ecological and Bioenergetics Approach. NOAA/NY Sea Grant. \$247,757

Ringler, N. H. (PI on sub-contract from Syracuse University, with C. Driscoll and M. Murphy). Monitoring to Evaluate Temporal Trends and Spatial Patterns in Mercury Concentration in Fish of New York State. NYSERDA. \$611,638

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

**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

Kroll, S.A., N. H. Ringler, J. de las Heras., J.J. Gómez-Alday, A. Moratalla, and R.D. Briggs. 2012. Analysis of anthropogenic pressures in the Segura Watershed (SE Spain), with a focus on inter-basin transfer. *Ecohydrology*, published online 20 SEP 2012, DOI: 10.1002/eco.1311.

B. Non-refereed Publications

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

Ringler, N. H., D. Hurley and C. Karboski. Fisheries Ecology of Onondaga Lake. AWRA Joint meeting, Welch Allyn, Skaneateles, NY. March 6, 2013.

Ringler, N. H., S.L. Johnson, S. Kroll and C. Karboski. 8-hr Workshop on Aquatic Insects. 43 professionals participating. Annual Meeting, NY American Fisheries Society, Watertown, NY. January 29, 2012.

Kirby, L. and N. H. Ringler. The Associations of Epiphytic Macroinvertebrates Within Four Aquatic Macrophyte Communities in a Recovering Urban Lake, Onondaga Lake, NY. 14<sup>th</sup> Annual Onondaga Lake Scientific Forum, Syracuse, NY. March 22, 2013.

Johnson S. L., L. Kirby, C. Karboski, N. H. Ringler, and M. Murphy. Using Passive Sonic Receivers to Understand Habitat Utilization of Walleye (*Stizostedion vitreum*) and Smallmouth Bass (*Micropterus dolomieu*) in the Tributaries and Outlet of Onondaga Lake, Syracuse, NY. New England Association Environmental Biologists, Lake Placid, NY. March 20-22, 2013.

Johnson, S. L. and N. H. Ringler. Linking Aquatic Communities to Environmental Variables: an Evaluation of Concordance Between Fish and Macroinvertebrate Assemblages. (Poster) New England Association of Environmental Biologists, Lake Placid, NY. March 20-22, 2013.

Legard, C. and N. H. Ringler. Embryonic Survival of Brown Trout in the Salmon River, NY. American Fisheries Society National Meeting, St. Paul, MN. August 21, 2012.

Legard, C. and N. H. Ringler. Influence of Thiamine, Time of Spawning, and Wild Origin on Survival of Chinook and Coho Salmon Embryos. New York State Department of Environmental Conservation, Great Lakes Section Meeting, Canandaigua, NY. January 23, 2013.

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

Ringler, N. H. and S. L. Johnson. Ecology of Onondaga Lake Fisheries. Baldwinsville Rod and Gun Club, Baldwinsville, NY. December 6, 2012

Ringler, N. H. and J. P. Hassett, S. Hewitt and M. Bryant. The Hill Collaboration in Environmental Medicine. Biotechnology Conference, Gateway Center, SUNY ESF. May 23, 2013

## V. PUBLIC SERVICE

A. Funded Service (include consulting activities)

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

2. Industrial and Commercial Groups, etc.

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

Onondaga Lake Habitat Committees: Assistance via graduate mentoring program

## 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)

2. Professional Society Membership

AAAS

Sigma Xi

American Fisheries Society

American Institute of Fishery Research Scientists

3. Other Professional Activities

a. Editorial activity

Journal (s)

Ecology of Freshwater Fish

Other (books, symposia, etc.)

Responsibility

Associate Editor

b. Reviewer

Journal(s)

Ecology Freshwater Fish  
N. A. J. Fisheries Management

No. of manuscripts

1  
1

Agency

Illinois-Indiana NOAA/Sea Grant

No. of proposals

1

Other

c. Participation (workshops, symposia, etc.)

Name of workshop, etc.

Date

Place

c. Further Education/Re-training Undertaken, Leaves, Workshops, etc.

d. Foreign Travel (Where, When, Purpose)

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

A. Department-level

B. College-level

Ex-Officio Committee on Research

C. University-wide, including Research Foundation

SUNY/RF Research Council

SUNY/RF Research, Innovation and Entrepreneurship Committee

SUNY/RF Research Officers/VPR's

Co-Director Hill Collaboration with UMU, SU, ESF, VA

**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.

This was an active year with regard to student activities at graduate and undergraduate levels: Two Masters and one Ph.D. candidate graduated in May, and another Ph.D defense is scheduled in mid-June, and another in August. Three new graduate students were accepted, to arrive between June 2013 and January 2014. They will work on projects that include restoration of Onondaga Lake, potential new studies of the fisheries and invertebrates of the Mohawk River (funded via NYS DEC), and/or a proposed Sea Grant study of Atlantic salmon. A proposed NYSERDA study of mercury in fish populations of NY lakes, jointly with Dr. Charles Driscoll of Syracuse University, provides enormous thesis/dissertation potential. Two off-campus interns joined our Onondaga Lake program this year. I believe that the courses in Aquatic Entomology and Comparative Vertebrate Anatomy went well this year; the undergraduate teaching assistants have provided an increasingly valuable contribution in synergy with graduate teaching assistants.

The most evident contribution to the Department is the virtual completion of our new CIRTAS laboratory on the second floor of Illick Hall, in collaboration with aquatic scientists Kim Schulz, John Farrell, Chris Whipps, and Chair Leopold, and with support from much of the ORP and ESF teams. The facility is already finding its way into new proposed research, and the TIBS component of this NSF project is functioning already. I believe that our Environmental Medicine initiative, now entering its third year, has contributed to genuine collaboration among faculty at ESF, SU, UMU and the Syracuse Veterans Administration. This was presented as a component of the Biotechnology Conference in the Gateway Center on May 23, 2013. In addition, continued work on the Syracuse Center of Excellence Biofuels facility, in conjunction with Art Stipanovic and Tom Amidon is gradually fulfilling its original promise on behalf of ESF.

Among the most significant contributions to professional development was participation in a set of planning and strategic meetings for SUNY and the Research Foundation. Both entities are striving to really make SUNY more than the sum of its parts, and succeeding in various ways. I think that it has helped to be able to discuss issues and opportunities with the research leads at Stony Brook, Buffalo, and Albany. I believe that conferring with the research administrators at SU, UMU, VA (Hill Collaboration) has also helped to broaden my perspectives. With regard to professional scientific development, this year has brought an increase in diversity of projects and aquatic science collaborations to include those from Syracuse University, Upstate Medical University, US Geological Survey, NYS DEC, US Fish and Wildlife Service, and the NY Natural Heritage Program. The latter has recently been brought within the ESF framework, which should add to our overall opportunities

#### **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)**

Continued research includes long-term study of the restoration of Onondaga Lake, both its fish community and the littoral zone and tributary invertebrates. We are most likely to receive funding for new work on the fisheries and invertebrates of the Mohawk River, as well as a new approach to combining Indices of Biotic Integrity for fishes and invertebrates. A potential habitat study on the Grass River, and a proposed work on mercury and fish in NY lakes should provide contributions to graduate students, interns and faculty.

#### **B. PROJECTED ACTIVITIES FOR NEXT YEAR**

##### 1. Summer 2013

- a. Course(s) to be offered
- b. Proposed research activity: as summarized above; graduate programs of 5-7 students
- c. University, professional society, and public service

##### 2. Fall Semester 2013

- a. Course(s) to be offered: EFB 554 Aquatic Entomology
- b. Proposed research activity: as summarized above; graduate programs of 5-7 students
- c. University, Professional society, and public service

SUNY/RF Research Council  
SUNY/RF Research, Innovation and Entrepreneurship Committee  
SUNY/RF Research Officers/VPR's  
Co-Director Hill Collaboration with UMU, SU, ESF, VA

### 3. Spring Semester 2014

- a. Course(s) to be offered: Comparative Vertebrate Anatomy
- b. Proposed research activity: as summarized above; graduate programs of 5-7 students
- c. University, professional society, and public service

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