ANNUAL REPORT: June 1, 2013 – May 31, 2014
(i.e., Summer 2013, AY 2013-2014)
DEPARTMENT OF ENVIRONMENTAL AND FOREST BIOLOGY
SUNY-ESF

NAME: ____Neil H. Ringler_____

I. INSTRUCTIONAL ACTIVITIES

1. Regular Course Offerings

	Course No.	Title	Credit Hrs.	No. Students	No. of Lab. Sections
SUMMER:					
FALL:	EFB 554	Aquatic Entomology	3	17	1
SPRING:	EFB 385	Comparative Vertebrate Anatomy	4	37	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 these courses had a formal service learning component this year

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

	Course No.	Title	Hrs.	Students
Fall				
	495	Exp/Coll Teaching	3	1
	498	Independent Research	3	1
	899	Master's Thesis	8	5
	999	Doctoral Dissertation	1	1
Spring	495	Exp/College Teaching	8	4
	498	Independent Research	3	1
	899	Master's Thesis	13	5
	999	Doctoral Dissertation	2	2

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

4. Guest Lecture Activities

Course No.	Title	No. of Lectures
Mitchell Biogeochemistry Seminar:	Historical Ecology of a Perturbed Lake	1

II. STUDENT ADVISING

A. Number of undergraduates for whom you are the student's official advisor _____ 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

Lucas Kirby, Ph.D. Competed August, 2013. Recolonization of macroinvertebrates in a recovering urban lake (Onondaga Lake, Syracuse, NY): Analysis within distinct communities of aquatic macrophytes.

Curtis Karboski, M.S. Completed December, 2013. Seasonal utilization by Brown Trout (*Salmo trutta L.)* of a recovering urban system.

Danielle Hurley, M.S. August 2012

Zachary Smith, M.S. January 2013

Ann Burnham, M.S. August 2013

Justin Di Rado, M.S. January 2014

Christopher Powers, M.S. January 2014

Harold Nugent, M.S. May 2014

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

CO-MAJOR PROFESSOR

Alexander Smith, Ph.D. Completed May, 2014 (With Karin Limburg) Establishing thresholds in nutrient concentrations related to biological community response: Implications for nutrient criteria development.

MEMBER, STEERING COMMITTEE (other than those listed above)

CHAIRMAN OR READER ON THESIS EXAMS, ETC.

Tori Smith

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)

Sponsor	PI/Co-Pi	Title	Amount	Start Date	End Date
Honeywell International Incorporated	PI	Onondaga Lake Biological Assessment and Moniroing	$878,656	2008-01-15	2013-12-31
National Science Foundation	Co-I	Collaborative Research: Impacts of In-Stream Restoration on Hydrological, Chemical, and Biological Heterogeneity in the Hyporheic Zone	$275,335	2010-01-01	2014-12-31
USDA Forest Service	PI	Enhanced Effectiveness of Planning and Managing Urban Forest Ecosystems	$40,500	2011-09-22	2016-09-21
USDA Cooperative State Research Service	PI	McIntire Stennis FY 12-13	$544,532	2012-10-01	2013-09-30
National Science Foundation	Co-I	Technology Enhancement of Hot Water Extraction	$599,822	2012-09-01	2014-08-31
Honeywell International Incorporated	PI	Onondaga Lake Biological Assessment and Monitoring (renewal 46665)	$265,000	2013-07-01	2015-06-30
USDA Cooperative State Research Service	PI	McIntire Stennis FY 13-14	$23,652	2013-10-01	2015-09-30
NYS Department of Environmental Conservation	PI	Fish and Macroinvertebrate Concordance: Validation of a NYS Fish Index of Biotic Integrity and its Relationship to Macroinvertebrate Metrics	$75,000	2013-09-01	2015-10-31
New York Sea Grant Institute	PI	Atlantic Salmon Restoration in Great Lakes Tributaries: An Ecological and Bioenergetics Approach	$250,000	2014-02-01	2016-01-31

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

Sponsor	PI/ Co-Pi	Title	Amount	Start Date	End Date
Syracuse University	PI	Monitoring to Evaluate Temporal Trends and Spatial Patterns in Mercury Concentration in Fish of New York State	$611,638	2013-08-16	2018-08-15
NYS Department of Environmental	PI	Mohawk River Macroinvertebrate-Fish Interactions: Gradients in Faunal	$81,072	2013-08-15	2014-08-14

Conservation		Assessment and Magagement			
NYS Department of Environmental Conservation	PI	Development of Macroinvertebrate Index of Biotic Integrity for Water Quality Assessment of Slow Gradient Alluvial Streams in NYS	$125,000	2014-09-01	2016-08-31
Honeywell International Incorporated	PI	Onondaga Lake Biological Assessment and Monitoring (renewal 64423)	$174,085	2014-07-01	2015-06-30
USDA Forest Service	PI	Lease of Moon Library Space by USDA-FS Enhanced Effectiveness of Planning and Managing Urban Forest Ecosystems	$13,500	2014-10-01	2015-09-30
US Geological Survey	PI	Restoration of Lake Ontario Native Fish Species	$117,410	2014-07-30	2015-08-31
CenterState Corporation for Economic Opportunity	PI	BAC Seminar Series	$12,000	2014-05-14	2015-05-31

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

Johnson, S.L. and N. H. Ringler. 2014. The response of fish and macroinvertebrate assemblages to multiple stressors: A comparative analysis of aquatic communities in a perturbed watershed (Onondaga Lake, NY). Ecological Indicators 41C (2014): 198-208.

B. Non-refereed Publications

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

Johnson, S. L. and N. H. Ringler. 2014. The response of fish and macroinvertebrate assemblages to multiple stressors: A comparative analysis of aquatic communities in a perturbed watershed (Onondaga Lake, NY). 15th Annual Onondaga Lake Scientific Forum. Upstate Freshwater Institute and SUNY ESF, Syracuse, NY. March 28, 2014.

Kirby, L N. H. Ringler and S.L. Johnson. 2014, Macroinvertebrate colonization of an experimental stubstrate prior to sediment remediation of a lentic superfund site. 15th Annual Onondaga Lake Scientific Forum. Upstate Freshwater Institute and SUNY ESF, Syracuse, NY. March 28, 2014.

Burnham, Anne L., Zachary M. Smith, Neil H. Ringler, Alexander J. Smith, Brian Duffy, and Stephanie L. Johnson. "The Development and Application of a New York State Fish Based Index of Biotic Integrity (IBI)." 3/28/14. New England Association of Environmental Biologists (NEAEB).

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

Angler's New York Entomology. Trout Unlimited, Syracuse NY. 40 participants. November 6, 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.

Board member Upstate Freshwater Institute; Onondaga Lake Habitat Committees

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)	Responsibility
Ecology of Freshwater Fish	Associate Editor

Other (books, symposia, etc.)

b. Reviewer

Journal(s)	No. of manuscripts
Ecology of Freshwater Fish	1
J. Great Lakes Research	1

Agency	No. of proposals

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 Vice Presidents for Research/Officers
SUNY/RF 4E Network of Excellence co-leader with SUNY Stony Brook, Albany, Binghamton
Co-Director Hill Collaboration in Environmental Medicine with UMU, SU, ESF, VA
Advisory Council, Biotechnology Accelerator
Planning Team, Center of Excellence Biofuels Laboratory
Planning Team, Institute for Environmental Health and Environmental Medicince (2020 Challenge Grant)

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 a great year for students! One Masters and two doctoral programs were completed; four students continued their M.S. or Ph.D. programs; and four new Master's students joined the fisheries/aquatic insect group, with start dates in January, May or August 2014. Their projects include restoration of Onondaga Lake, new studies of the fisheries and invertebrates of the Mohawk River (funded via NYS DEC), and/or a funded Sea Grant study of Atlantic salmon ecology and bioenergetics. An off-campus intern rejoined our Onondaga Lake program this year, along with an ESF undergraduate. Courses in Aquatic Entomology and Comparative Vertebrate Anatomy went well this year; the undergraduate teaching assistants have provided valuable contributions in synergy with graduate TA's. A Reunion and Celebration with my graduate students was held at the Huntington Forest (AEC, AIC) May 23-25. Thirty participants attended from 7 states (including some spouses) of 55 graduate students guided since 1976. The Reunion included field trips to treasured sites, presentations about memorable graduate days, current positions and aspirations, and even a Mayfly Hop for Entertainment. A highlight was watching dozens of *Didymops* dragonflies leave their nymphal exuviae after "walking" ~20 meters from Arbutus Lake. The staff at the AEC and AIC deserve special recognition for their

exceptional support on behalf of the Reunion and Celebration.

At the Department level a major event was completion of our new CIRTAS laboratory on the second floor of Illick Hall on May 27th, 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 has already facilitated successful research proposals and the TIBS component of this NSF project is in high gear. Our Hill Collaboration in Environmental Medicine initiative (now entering its third year), with newly announced seed funding, has contributed to genuine collaboration among faculty at ESF, SU, UMU and the Syracuse Veterans Administration. Accomplishments of the Hill Collaboration were presented at a Symposium February 14th at Drumlins, and as a component of the Biotechnology Conference in the Gateway Center on May 15th, 2014. 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. Pilot scale equipment including a fermenter and distillation column are on order. A major highlight was moving three ESF teams, including Dr. Lee Newman, into the exceptional facilities of the Biotechnology Accelerator, a shared project with Upstate Medical University. In cooperation with Drs. Leopold and Volk, a tour and presentation outlined to President Wheeler our research and successes in Onondaga Lake, the nearby wetlands and recovered waste beds (May 30th). A major theme was the genuine teamwork among ESF, Honeywell and many partners.

Among the most significant contributions to professional development was participation in a set of planning and strategic meetings for SUNY and the Research Foundation. These entities are striving to really make SUNY more than the sum of its parts. It has been helpful to discuss issues and opportunities with the research leads at Stony Brook, Buffalo, and Albany as colleagues in leading the 4E network of excellence. Approximately one million dollars was awarded this year, with strong ESF participation and success in winning seed funding. 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, 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 is adding to our overall opportunities as well as our expenditure portfolio.

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 invertebrate communities of the littoral zone and tributaries. Comparison of littoral zones in Cazenovia Lake, Otisco Lake and Onondaga Lake will allow assessment of the recovery of benthos in Onondaga Lake. We will 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. The Sea Grant study of Atlantic salmon ecology and bioenergetics, currently funded for two years, should provide a base for expanded work, and promote opportunities for this species in the Onondaga Lake watershed. These projects are envisioned to continue providing experience, training and funding for the graduate students and undergraduate interns in EFB.

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 Vice Presidents for Research/Officers
SUNY/RF 4E Network of Excellence co-leader with SUNY Stony Brook, Albany, Binghamton
Co-Director Hill Collaboration in Environmental Medicine with UMU, SU, ESF, VA
Advisory Council, Biotechnology Accelerator
Planning Team, Center of Excellence Biofuels Laboratory
Planning Team, Institute for Environmental Health and Environmental Medicince (2020 Challenge Grant

3. Spring Semester 2014

a. Course(s) to be offered EFB 385 Comparative Vertebrate Anatomy

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 Vice Presidents for Research/Officers
SUNY/RF 4E Network of Excellence co-leader with SUNY Stony Brook, Albany, Binghamton
Co-Director Hill Collaboration in Environmental Medicine with UMU, SU, ESF, VA
Advisory Council, Biotechnology Accelerator
Planning Team, Center of Excellence Biofuels Laboratory
Planning Team, Institute for Environmental Health and Environmental Medicine (2020 Challenge Grant)