

ANNUAL REPORT: June 1, 2010 – May 31, 2011
(i.e., Summer 2010, AY 2010-2011)
DEPARTMENT OF ENVIRONMENTAL AND FOREST BIOLOGY
SUNY-ESF

NAME: Karin Limburg

I. INSTRUCTIONAL ACTIVITIES

1. Regular Course Offerings

Course No.	Title	Credit Hrs.	No. Students	No. of Lab. Sections
SUMMER:				
FALL:				
EFB487	1 Fisheries Science & Mgt	3	19	
EFB488	1 Fisheries Science Practicum	1	8	
EFB687	1 Fisheries Science & Mgt	3	4	
EFB798	1 Fisheries Science Practicum (grads)	1	5	

SPRING:

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. EFB courses currently listed with service-learning components include: 416/6/1, 486, 518, 521, 532, 446/646.

We had some service learning in EFB488/798 (Fisheries Science Practicum) in that students performed a fisheries survey of a local stream (Meadowbrook) and provided the results to the community, via John Stella.

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

Course No.	Title	Credit Hrs.	No. Students
EFB498	39 Resrch Prob/Env&For Bio	5	3
EFB899	39 Masters Thesis Research	7	2
EFB999	39 Doctoral Thesis Research	6	2
EFB420	12 Internship/EFB	10	2
EFB496	2 Wine Appreciation from Grapes to Glass	1	34
EFB498	39 Resrch Prob/Env&For Bio	5	2
EFB795	1 EFB Core Course	1	18
EFB796	3 Wine Appreciation from Grapes to Glass	1	15
EFB899	39 Masters Thesis Research	8	3
EFB999	39 Doctoral Thesis Research	10	2

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 16 and unofficial advisor 2

B. Graduate Students: (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

Monteiro, Rita; PhD, began 9-2004 (passed qualifier exams, November 2007)

Nack, Christopher; MSc, began 9-2009

Turner, Sara; PhD, began 9-2009

CO-MAJOR PROFESSOR

Boslett, Andrew; MSc, began 9-2009 (with Colin Beier)

Gehl, Kacie; MSc, began 9-2007, **defended May 2010 and turned in thesis, fall 2010. Thesis title: Multi-scale analysis of synoptic streamwater chemistry and seasonal nutrient limitation in a mixed use catchment. Master's thesis, State University of New York, College of Environmental Science and Forestry, Syracuse, New York.** (with John Stella)

Jackman, George; PhD, began 9-2008 (CUNY Queens College, with John Waldman); passed qualifier exams, June 2010.

Mandel, Jill; MSc, began 9-2010 (with Bill Shields)

Smith, Alexander J.; PhD, began 9-2010 (with Neil Ringler)

MEMBER, STEERING COMMITTEE (other than those listed above)

Chen, Xiaoxia; PhD (Syr. U.)

Gurdak, Daniel

Hazell, C.J.; PhD (passed qualifier exams 2006?)

Hermann, Ted

Hyde, Karla (defended thesis, January 2011)

Kirby, Lucas (passed qualifier exams, spring 2011)

Kroll, Stefanie; PhD (passed qualifier exams, fall 2010)

Watson, Cynthia; PhD (passed qualifier exams, fall 2007)

Whritenour, Cheryl; PhD

CHAIRMAN OR READER ON THESIS EXAMS, ETC.

David Graefe, PhD, FNRM

III. RESEARCH COMPLETED OR UNDERWAY

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

I continue to have a non-funded collaboration with Swedes, studying Baltic Sea cod and other species. To date this has resulted in 4 publications, a dissertation (in Sweden), and several presentations. With the latest publication (in PNAS), I hope to be able to leverage some funding.

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)

- In-kind grant awards, Cornell High Energy Synchrotron Source (CHESS): Beam time at the synchrotron for X-ray fluorescence analyses: June 2010, October 2010, and May 2011. Note that these are NSF sponsored awards. During these runs, the work of 4 grad students and 1 post-doc were supported.
- Grant award, National Science Foundation: "MRI: Acquisition of a Laser-Ablation System for High Resolution, Micro-Scale Analysis of Environmental Materials," \$202,929, 7/01/07 – 6/30/10. This is an equipment grant, and can't support anyone.
- Grant award, NOAA: "Effects of Land Use on Alewife Growth Rates and Recruitment Using Biogeochemical Tracers in New England," \$60,000, 3/3/07 - 5/31/10. This is supporting one grad student (R. Monteiro, who wrote the grant).
- Grant award, NOAA: "Habitat Use by American Shad Larvae in the Hudson River Estuary, New York," \$40,000, 5/01/10 – 5/31/12. Supports one grad student (C. Nack, who co-wrote the grant).
- Grant award, Hudson River Foundation: "Geochemical Markers in Otoliths to Aid in Stock Identification and Conservation of River Herring," \$184,660, 6/1/09 – 5/31/11. Supporting 2 grad students (S. Turner and R. Monteiro) and one summer intern (M. Payne)
- Grant award, National Science Foundation: "Positioning Rust Belt Cities for a Sustainable Future: A Systems Approach to Enhancing Urban Quality of Life," (D. Nowak and M. Hall, PIs), \$300,000, 1/1/10 – 12/31/11. Supports one of my students (A. Boslett).
- Grant award, USGS (via U. Florida): "Near Shore Fish Ecology in the Grand Canyon," 4 years, \$1,178,711 total, \$272,976 to ESF. Role: co-PI, but PI at ESF. Supports one post-doc (T. Hayden). I was able to send two students out to raft the Grand Canyon and collect fish data during summer 2010.
- Grant award, USGS Grand Canyon Monitoring and Research Center: "Validating of $\delta^{13}\text{C}$ and $\delta^{18}\text{O}$ otolith chemistry signatures of resident Little Colorado River fish using secondary ion mass spectrometry." 1.25 years, \$64,000. Supports post-doc and student technician.
- Grant award, National Fish and Wildlife Foundation (via Duke University), "Determining Origins of River Herring Bycatch," total \$428,401 to a group, of which ESF receives \$187,137. Supports a doctoral student and summer student field assistants. 3 years.
- Grant award (combined), NYS DEC and New England Interstate Water Pollution Control Commission: "Analysis of samples collected in the Hudson River Estuary for various *Alosa* projects." \$40,000, 2 years, supports 1 grad student and 1 undergrad summer assistant.
- Grant award, Riverkeeper Inc.: "Filling in the gaps: building the knowledge base on ecosystem function, utilizing partnerships to move forward." \$115,000, 3 years, supports 1 grad student and 1 summer assistant.

- Fellowship award to Master's student Jill Mandel: "Wastewater Pollution and Predatory Birds in the Hudson River Estuary." T.T. Polgar Fellowship, \$4,000, summer 2011. (KL is advisor)
 2. Research Proposals pending (include information as in B.1., above).
 - Pre-proposal invited forward to full proposal, Northeastern Regional Sea Grant Consortium: "Ecosystem Services Generated by Diadromous Fishes, with Emphasis on Alosine Herrings." K. Limburg (PI), with John Wagner (ESF) and John Waldman (CUNY). \$135,318, 2 years.
 3. Research Proposals submitted, but rejected (include information as in B.1., above)
 - a. Proposal to National Science Foundation: "IGERT: 'Helping Forests Walk': Engaging Scientific and Traditional Ecological Knowledge to Build Resilience in Cultural Landscapes Facing Environmental Change" (Robin Kimmerer, PI), \$4M, 60 months.
 - b. Proposal to National Science Foundation (Ecosystems), "Collaborative research: Bioenergy and resilience in the northern hardwood forest," (Peter Groffman, Cary Inst of Ecosystem Studies, PI), \$300K to ESF (of a total \$1.5M), 5 years. We plan to re-submit.
 - c. Proposal to Sea Grant, Long Island Sound Research Call: "A Novel Monitor of Bioavailability of Heavy Metals in Long Island Sound: Elemental Composition of Juvenile Winter Flounder Otoliths." \$196,000, 2 years. John Waldman (CUNY), PI.
 - d. Pre-proposal to New York Sea Grant: "Genetic Investigation of Alewife Stock Structure in New York." \$235,000, 2 years. Isaac Wirgin (NYU), PI; John Waldman (CUNY) and K.Limburg, co-PIs.

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 (Note – a * indicates a student or post-doc author)

- Hasselmann, D.J., and K.E. **Limburg**. Alosine management in the 21st century: challenging the status quo. Marine and Coastal Fisheries (in revision).
- Hong, B*, K.E. **Limburg**, M.H.Hall, G. Mountrakis, P. Groffman, K. Hyde*, L. Luo*, V.R. Kelly, and S.J. Myers*. 2011. An integrated monitoring/modeling framework for assessing human-nature interactions in urbanizing watersheds: Wappinger and Onondaga Creek watersheds, New York, USA. Environmental Modelling and Software (in review following revision).
- Daniels, R.A., R.E. Schmidt, and K.E. **Limburg**. 2011. Hudson River fisheries: vast to dwindling in 400 years. In R.E. Henshaw, editor. *Environmental History: Human Uses that Changed Ecology; Ecology that Changed Human Uses*. SUNY Press. (in press)
- Limburg**, K.E., H. Høie, and D.S. Dale. 2010. Bromine patterns in Norwegian coastal cod otoliths – a possible marker for distinguishing stocks? *Environmental Biology of Fishes* 89(3-4): 427-432. DOI: 10.1007/s10641-010-9660-7
- Limburg**, K.E., R.M. Hughes, D.C. Jackson, and B. Czech. 2011. Human population increase, economic growth, and fish conservation: collision course or savvy stewardship? *Fisheries* 36(1): 27-34.
- Limburg**, K.E., A. Locket*, D. Driscoll, D.S. Dale, and R. Huang. 2010. Selenium detected in fish otoliths: a novel tracer for a polluted lake? *Environmental Biology of Fishes* 89(3-4): 433-440. DOI: 10.1007/s10641-010-9671-4.
- Limburg**, K.E., C. Olson*, Y. Walther, D. Dale, C. Slomp, and H. Høie. 2011. Tracking Baltic hypoxia and cod migration over millennia with natural tags. *Proceedings of the National Academy of Sciences of the U.S..* doi:10.1073/pnas.1100684108.
- Locket*, A., K.E. **Limburg**, L. Rudstam, M. Montesdeoca. 2010. Selenium in fish otoliths: effects of
- Limburg annual report 2010-2011

- selenium and mercury from the water. *Canadian Journal of Fisheries and Aquatic Sciences* 67: 1388-1397.
- Nack, C.C., K.E. **Limburg**, and D. Miller. 2011. Quality of four inshore habitats used by post-yolk-sac larval American shad in the Hudson River as indicated by growth and condition. *Marine and Coastal Fisheries* (in review).
- Pace, M.L., S.E. Hampton, K.E. **Limburg**, E.M. Bennett, E.M. Cook, J.M. Grove, K.Y. Kaneshiro, S.L. LaDeau, G.E. Likens, D.McKnight, D.C. Richardson, D.L. Strayer. 2010. Individual ecologists: opportunities and rewards for engaging with environmental issues. *Frontiers in Ecology and the Environment* 8(6): 292-298.
- Sopacua, J.A*, C.N. Kroll, and K.E. **Limburg**. Spatial analysis of saltwater intrusion and groundwater vulnerability in coastal Krueng Aceh Watershed, Banda Aceh, Indonesia. *International Journal of Water Resources Management* (in revision)
- Svedäng, H., C. André, P. Jonsson, M. Elfman, and K.E. **Limburg**. Homing behaviour and otolith chemistry suggest fine-scale sub-population structure within a genetically homogenous Atlantic cod population. *Environmental Biology of Fishes* 89:383–397. DOI: 10.1007/s10641-010-9669-y.
- Turner, S.M., and K.E. **Limburg**. 2011. Comparison of juvenile alewife growth and movement in large and small watersheds. *Marine and Coastal Fisheries* (in review).

B. Non-refereed Publications

- Gren, I.-M., and K.E. **Limburg**. 2011 (in press). Nutrient recycling and waste treatment from estuarine and coastal systems. To appear in *Ecological Economics of Estuaries and Coasts* (M. van den Belt and R. Costanza, editors).

C. Papers Presented at Science Meetings (* indicates a student or post-doc; I = invited)

- Brown, J.J., and K.E. Limburg. Beating a dead shad: failure and futility of shad restoration programs on dammed rivers. American Fisheries Society Annual Meeting, September 13-16, 2010, Pittsburgh, PA.
- Hayden*, T.A., K.E. Limburg, and W. Pine. Tracking the provenance of an endangered fish species, the humpback chub, in the Grand Canyon (Colorado River). CHESS Annual Users' Meeting, June 6, 2010, Ithaca, NY.
- Hayden*, T.A., K.E. Limburg, and W.E. Pine, III. Testing the utility of natural otolith tags to identify natal origins and habitat use by the humpback chub in the Grand Canyon. American Fisheries Society Annual Meeting, September 13-16, 2010, Pittsburgh, PA.
- Hayden, T. A., K.E. Limburg, and W.E. Pine, III. Combining natural tags and growth to assess the impacts of steady flows on humpback chub. Glen Canyon Dam Adaptive Management Program - Technical Work Group, February 2011, Phoenix, AZ.
- Jackman*, G., K. Limburg, M. Wuenschel, and J. Waldman. Using winter flounder otoliths in an attempt to reconstruct life history and develop a stock discrimination technique with LA-ICPMS and Synchrotron X-ray Fluorescence Microscopy. 12th Flatfish Biology Conference, December 1-2, 2010, Westbrook, CT.
- Limburg, K.E., D. Dale, Y. Walther, and C. Olson*. Do patterns of Mn:Ca in Baltic cod otoliths reflect large-scale hypoxia? CHESS Annual Users' Meeting, June 6, 2010, Ithaca, NY.
- (I) Limburg, K.E. Ecosystem services: is it a good paradigm for aquatic scientists to adopt? Keynote presentation for Gravel-Bed Rivers 7, September 8, 2010 (Tadoussac, Quebec, Canada).
- Limburg, K.E. Why should we care about shad and river herring enough to restore them? American Fisheries Society Annual Meeting, September 13-16, 2010, Pittsburgh, PA.

- (I) Limburg, K.E. Is it exemplary, or merely peripatetic? From economics to earstones and back again. Exemplary Researcher Lecture, SUNY ESF, December 9, 2010.
- (I) Limburg, K.E., Y. Walther, C. Olson*, B. Hong*, D. Dale, J. Storå, and C. Slomp. Neolithic vs. modern Baltic Sea fisheries: shifting baselines and environmental change. Marine Science Institute, University of Texas, March 15, 2011. Also presented at the University of Maine, Orono, April 11, 2011.
- (I) Limburg, K.E. Fisheries: shifting baselines and forensic approaches. Princeton University, April 26, 2011.
- (I) Limburg, K.E., C. Olson*, Y. Walther, C. Slomp, D. Dale, and H. Høie. Detecting hypoxia through otolith chemistry in modern and prehistoric Baltic Sea cod. European Geosciences Union Annual Meeting, April 4-8, 2011, Vienna, Austria.
- (I) Limburg, K.E. Modeling and Measuring the Processes and Consequences of Urbanization on Stream Ecosystem Health: Case Studies in New York, USA. Institut für Hydrobiologie und Gewässermanagement, Department für Wasser - Atmosphäre - Umwelt, Universität für Bodenkultur, Vienna, Austria, April 4, 2011.
- Nack*, C. and K. Limburg. Condition and Diet of Larval American Shad in Four Different Shallow-Water Nursery Habitats in the Hudson River, NY. Northeastern Natural History Conference, April 6-9, 2011.
- Nack*, C.C., K.E. Limburg, and Daniel E. Miller. Habitat Use by American Shad Larvae in the Hudson River Estuary, New York State. American Fisheries Society Annual Meeting, September 13-16, 2010, Pittsburgh, PA.
- Turner*, S.M., K.E. Limburg, S.R. Thorrold, and J.R. Waldman. Determination of river herring natal origin by otolith microchemical markers. American Fisheries Society Annual Meeting, September 13-16, 2010, Pittsburgh, PA.

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

- Limburg, K.E. Ear-Bones and Dead Zones: What Can Fish Otoliths Tell Us about Hypoxia? Marine Science Institute, University of Texas, March 17, 2011. Lecture to the general public; ca 40 attendees.

V. PUBLIC SERVICE

A. Funded Service (include consulting activities)

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

- Expert reviewer for Lectureship/Professorship in Resilience Science, Stockholm University, June-August 2010

2. Industrial and Commercial Groups, etc.

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

- Panelist, NSF Coupled Natural-Human Systems (CNH), March 1-2, 2011
- Participated in NSF review of Cornell High Energy Synchrotron Source, November 2011
- Member, Fisheries Subcommittee, Hudson River Estuary Management Advisory Committee.
- Marine Stewardship Council: Certification of Maryland striped bass fishery (2006-). One of these days, I am supposed to be paid...
- External reviewer for tenure/promotion decision, SUNY Downstate Medical University, June 2010

- External reviewer for professor promotion decision, Cornell University, Fall 2010
- IMBER-LOICZ Continental Task Team (IMBER = Integrated Marine Biogeochemistry and Ecosystem Research; LOICZ = Land-Ocean Interactions in the Coastal Zone) – member, 2011-2014
- Reviewer for Monterey Aquarium’s Sea Food Watch program (reviewed American shad)

VI. PROFESSIONAL DEVELOPMENT

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

- Laura Randall Schweppe Lecturer in Marine Science, University of Texas Marine Science Institute, March 14-18, 2011.

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

- Awards Committee, Kenneth Boulding Award for Ecological Economics, International Society for Ecological Economics
- Co-convenor, symposium on American shad and river herring restoration, 2010 Annual Meeting of the American Fisheries Society, Pittsburgh, September 14-16
- Co-organizer, workshop on nutrients, hypoxia, and fisheries, Smithsonian Research Center, June 28-30, 2010

2. Professional Society Membership

- American Fisheries Society
- American Institute of Biological Sciences
- American Society of Limnology and Oceanography
- Coastal and Estuarine Research Federation
- Ecological Economics (both the International and U.S. chapters)
- Ecological Society of America
- Hudson River Environmental Society

3. Other Professional Activities

a. Editorial activity

<u>Journal (s)</u>	<u>Responsibility</u>
• Ecology and Society	Subject editor
• Ecological Economics Reviews	Founding editor (with Robert Costanza)
• Reviews in Ecological Economics	(same as EER, but moving)
• Estuaries and Coasts	Subject Editor
• Frontiers in Ecology & the Environment	Subject Editor
• Marine & Coastal Fisheries	Guest Editor

Other (books, symposia, etc.)

b. Reviewer

<u>Journal(s)</u>	<u>No. of manuscripts</u>
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- Bulletin of Science, Technology, & Society 1
- Canadian J. Fisheries & Aquatic Sci. 1 (or 2?)
- Ecological Economics 1
- Estuaries and Coasts 2, plus shepherded 1
- Frontiers in Ecol & Environment 1 (shepherded)
- PLOS One 1

<u>Agency</u>	<u>No. of proposals</u>
Hudson River Foundation	3
National Science Foundation	16
NOAA	1

Other

- I am currently mentoring a post-doctoral researcher (Dr. Todd Hayden), and am hosting a visiting scholar (Associate Professor Jiangyi Liu, Chinese University of Geosciences).

c. Participation (workshops, symposia, etc.)

- | <u>Name of workshop, etc.</u> | <u>Date</u> | <u>Place</u> |
|--|-------------|--------------|
| • “Source to Sink – Hudson River Basin Education and Research Collaboration,” SUNY Conversations in the Discipline, October 1-2, 2010, Adirondack Ecological Center. | | |

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

- Working group on “Nitrogen, Hypoxia and Fishes: Moving Beyond Fisheries Data to Understand Effects on Upper Trophic Levels in Estuaries and Semi-Enclosed Seas” – 2nd workshop, June 27-30, 2010

D. Foreign Travel (Where, When, Purpose)

- Vienna, Austria, April 4-8, 2011. Purpose: to present a paper at the European GeoSciences Union Meeting; I also presented a seminar at the Hydrobiology Department of the Universität für Bodenkultur Wien.

VII. ADMINISTRATIVE AND SERVICE RESPONSIBILITIES (include committee participation)

A. Department-level

- Chair, Graduate Program Advisory Committee
- Member, Building and Space Committee
- Member, Wildlife Biologist Search Committee

B. College-level

- Member, Environmental Studies Faculty Search Committee (2 positions, spring 2011)
- Member, Peer Review Committee, Environmental and Resource Engineering

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 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.

What I have done in 2010-2011 for...

- **ESF's students:** I feel as though I could have done more, but at least I co-taught (with Melissa Fierke) an important introductory seminar ("graduate core course") for new EFB graduate students. This is the seminar developed initially by Kim Schulz and John Farrell; it has been difficult to get faculty to volunteer to teach it. Melissa took the lead this spring, and picked some highlights from the Schulz/Farrell syllabus.

Within the EFB Graduate Program Advisory Committee (GPAC), we also accomplished some work, including: re-doing TA evaluation forms and putting them online; drafting additional criteria for ranking accepted students; evaluating the effectiveness of offering a "bonus" to highly ranked accepted students (not effective); and selecting a recipient for the EFB Outstanding Doctoral Award.

A long-term goal of the GPAC has been to develop an online handbook for the EFB grad students. I eventually realized that the only way this was going to be accomplished was to build it into something else I was doing. Thus, I decided that the students in the graduate core course would create this using a wiki. After climbing a shallow learning curve, the students made a great start at this handbook. I anticipate that we can get other cohorts to continue to update it.

Together with Dennis Swaney, I offered a wine appreciation course once again. A popular course, I can see the financial advantage to the college in terms of cost savings from not "leaking" students to the analogous course at SU, and in terms of gaining some course revenue, as well as the fact that Dennis has contributed his time and expertise *gratis*. Now, we will have to consider whether to make this an official course or not.

- **The department and the college:** There is naturally some overlap between accomplishments for the students and for the department and college. For example, the GPAC activity is to advise the EFB Chair and to make recommendations to the EFB faculty. I think we have discharged our duties well this year, although there is always room for improvement.

As mentioned in last year's annual report, Stacy McNulty and I applied for and received a SUNY "Conversations in the Disciplines" workshop grant to build bridges among research and education networks in the Hudson River watershed. ESF played a key role in this, hosting the workshop at the Adirondack Ecological Center in early September 2010. It was clearly an "eye-opener" for several of my research colleagues from the Hudson River estuary. Most had no idea, for example, of the important research that Myron Mitchell conducts at Huntington (at the top of the Hudson watershed).

I believe this exercise built some bridges. As a direct follow-on, (1) we (ESF) are now a full member of the Environmental Consortium of Hudson Valley Colleges and Universities, (2) a journal is being started for Hudson watershed related research in the arts, humanities, and sciences, and (3) the next annual conference of the Environmental Consortium will carry on this theme of "source to sink" connectivity in research and education about the Hudson.

I also served on two separate, extra-departmental, ad-hoc committees this year. One was a committee to search for two faculty positions in the Department of Environmental Studies (one in communications and the other in policy). It was a pleasant task: congenial committee, excellent candidates, and I learned quite a bit about Environmental Studies along the way. The other committee was to conduct peer review for promotion and tenure in the Department of Environmental and Resource Engineering. Again, I learned much during the process. The small size of these departments necessitated bringing on someone (me) from outside the department, and I was glad to be of service.

The only other thing I do is try to publicize the college when I attend scientific meetings.

• **For myself:** I have finally published some papers that needed to come out (for my own sanity, at least), rounding out several projects. I was particularly happy to have an article in *Fisheries* magazine and in *PNAS*, as these both have wide readerships. I was also able to shepherd a large project, funded by the Syracuse Center of Excellence, into a manuscript submission to a reputable journal. We received very nice reviews, but with a long list of things to address (as one of the reviewers wrote, “*Please forgive me. I am asking nasty questions. I would not do so if I thought the quality of the team was [not] equal to them. This is a really important topic....*”). We are now awaiting a verdict on the extensive revision.

I have been working quite a bit with my graduate students and with some undergraduates as well. It has been a pleasure to watch them mature intellectually. I also collaborate with a post-doc and a visiting scholar from China. Our lab meetings are interesting, to say the least, as the topics range from fish ear-bone chemistry to payment for ecosystem services in rural China.

I have been asked to take on another editorial responsibility, this one at *Estuaries and Coasts*, where there is a need for a fisheries/ecosystems subject editor. This brings my editorial duties up to four journals (see above), including one as co-editor-in-chief. Additionally, I am serving as a guest editor at *Marine and Coastal Fisheries*, shepherding reviews for a special issue (from a symposium that I co-convened last fall).

I have been asked to join an international committee that deals with the human/nature nexus in coastal marine ecosystems. That committee will be ramping up its activity next year, and for that I will have to travel.

Finally, my application for promotion to Full Professor was approved this spring.

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)

I will participate in the next round of the IGERT application. I will also think about how the college could put together a CNH proposal (the talent is here, the trick is to find a common, driving topic). I will continue to work on my research on diadromous and marine fishes, as well as ecological economics.

B. PROJECTED ACTIVITIES FOR NEXT YEAR

1. Summer 2009

- a. Course(s) to be offered
- b. Proposed research activity

- Work on projects not yet completed (book and encyclopedia chapters)
- Conduct research in the Hudson River on hypoxia and manganese
- Work with my graduate students and post-doc on their projects

- c. University, professional society, and public service
 - Stand for election for the Bio-Engineering Section of the American Fisheries Society
- 2. Fall Semester 2009
 - a. Course(s) to be offered

EFB 487/687 Fisheries Science & Management
 - b. Proposed research activity

Will continue to apply for grants to support my research program, write papers, mentor grad students, etc.
 - c. University, Professional society, and public service

Will serve as called upon
- 3. Spring Semester 2010
 - a. Course(s) to be offered

Probably a modeling class and a grant writing seminar (both graduate level)
 - b. Proposed research activity

Will continue to apply for grants to support my research program, write papers, mentor grad students, etc.
 - c. University, professional society, and public service

Will serve as called upon