

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

NAME: Stacy McNulty

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:	None				
FALL:	None				
SPRING:	EFB484	Winter Mammalian Ecology	3	12	0
	EFB684	Winter Mammalian Ecology	3	3	0

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.

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>
EFB899	Master's Thesis Research	1-8	5
EFB498	Research Prob/EFB	2	1

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

None

4. Guest Lecture Activities

<u>Course No.</u>	<u>Title</u>	<u>No. of Lectures</u>
FTC105	Ranger School Summer Camp	1
EFB496	CLBS Wildlife Techniques	1
EFB497	UMEB Colloquium 2011 & 2012	2
FTC 232	Wildlife Techniques	1
FTC 234	Wildlife Conservation	1
FOR232	Natural Resources Ecology	1
EFB418	Interpretive Field Biology	1
FW885	Leadership in Natural Resource, Mich. State U.	1

II. STUDENT ADVISING

A. Number of undergraduates for whom you are the student's official advisor ___0___ and unofficial advisor ___0___

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

- Caitlin Snyder, MS, January 2009, Terrestrial Salamanders In The Adirondack Mountains: Feeding Ecology And Implications Of Calcium, December 2011
- Kevin Jablonski, MS, August 2007, Habitat Associations Of Adirondack Lowland Boreal Birds At Spring Pond Bog, New York, May 2012
- Courtney LaMere, MS, August 2009, Influence Of Variable Mast Production On American Black Bear Reproduction And Human-Black Bear Conflicts In The Adirondack Mountains Of New York State, May 2012
- Shannon Buckley, MS, January 2011
- Tim McCoy, MS, August 2011

CO-MAJOR PROFESSOR

- Sarah Wilkinson, MS, January 2010 (with Underwood)

MEMBER, STEERING COMMITTEE (other than those listed above)

- Frank DeSantis, MS Porter
- Ashley Simpson, MS Nyland
- Natasha Karniski, MS Lomolino

CHAIRMAN OR READER ON THESIS EXAMS, ETC.

- Brigham Whitman, MS Porter

III. RESEARCH COMPLETED OR UNDERWAY

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

1. Adirondack Long-Term Environmental Monitoring Program (ALTEMP) – a variety of ecological projects occurring at Huntington Wildlife Forest (ESF Newcomb Campus); 20% time
2. Adirondack Biodiversity Project (ATBI, All-taxa Biodiversity Inventory); 2% time
3. Climate change and phenology in the Adirondacks – lake ice and other signals of changing climate
2% time
4. Amphibian population trends and habitat associations in a) vernal pools and b) forested uplands/seeps;
5% time

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)

Germain, R., C. Nowak, S. McNulty and E. Bevilacqua. Sustaining White Pine on High Quality Sites. McIntire-Stennis program. \$66,220, 2/1/12-9/30/14.

Spada, D., S. McNulty, C. Beier, P. Hai, D. Patrick, and T. Howard. Building a Monitoring Framework for Detecting Climate Change Effects on Wetlands in the Adirondack Park. EPA Wetland Program Development Grant. Year 1: \$865,848, \$227,000 (ESF portion \$81,000). January 1, 2012 – December 31, 2015.

Hodgman, T. and S. McNulty. A Multi-Scale Study of Rusty Blackbirds, Nest Predation, and Timber Management in the Moosehead Lake Region, Maine. Maine Outdoor Heritage Fund (with match from Maine Dept. Inland Fisheries and Wildlife/USFWS Federal Aid). \$15,480, \$15,480. 1/1/12-12/31/12. Shannon Buckley.

McNulty, S. Comparison of Nesting Rusty Blackbirds in the Adirondacks and New England. Northern New York Audubon Chapter Cullman Grant, \$1,500, \$1,500. May 1, 2012 – August 31, 2013. Shannon Buckley.

Kimmerer, R. and S. McNulty. National Science Foundation Undergraduate Mentoring in Environmental Biology Program. *Integrating Science and Stewardship in the Adirondacks*. \$591,925, \$150,830. 6/1/06 - 5/31/12. Madeline Turnquist, Meredith Kane, Caitlin Snyder, Tim McCoy.

McNulty, S., M. Patinelli-Dubay, and R. Kimmerer. National Science Foundation Undergraduate Mentoring in Environmental Biology Program. *The Ethics of Land Use, Land Stewardship and the Culture of Research: an Interdisciplinary Approach* – an NSF UMEB Ethics Supplemental Grant Proposal. \$3,600, \$3,600; 6/1/06 – 5/31/12.

Kimmerer, R. and S. McNulty. National Science Foundation Undergraduate Mentoring in Environmental Biology Program. *Research Assistanceship for High School Students* – an NSF UMEB Supplemental Grant Proposal. \$3,600, \$3,600; 6/1/06 – 5/31/12.

McNulty, S. and C. Beier. New York State Department of Environmental Conservation, *Application of GIS to Resource Inventory for Unit Management Planning*, \$891,922, \$135,922 6/1/03 – 8/5/13. Steve Signell, Senior Research Support Specialist, Abigail Larkin.

McNulty, S. Federal Aid via New York Department of Environmental Conservation. Effect of Variable Mast Production on American Black Bear Reproduction and Bear-Human Conflict in the Central Adirondack Mountains. \$60,607, \$60,607. 8/20/10-3/31/12. Courtney LaMere. (completed)

McNulty, S., J. Castello, and S. Teale. Northeastern States Research Cooperative. The influence of American beech thickets on biodiversity in the northern hardwood forest. \$34,785, \$34,785. 10/1/09 – 9/30/11. Jon Cale. (completed)

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

None

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

McNulty, S. What Goes Up Must Come Down? Linking Winter Microclimate to Predator-Prey Cycles and Biodiversity of Mammals. Northeastern States Research Cooperative Theme 4: Biodiversity and Protected Area Management. \$42,436; \$42,436. October 1, 2012 - September 30, 2013.

McNulty, S, T. Hodgman, J. Scarl, C. Foss and H. Stabins. How Does Harvesting Forested Wetlands Create an Ecological Trap? The Rusty Blackbird as Sentinel for Northern Forest Avian Biodiversity. Northeastern States Research Cooperative Theme 4: Biodiversity and Protected Area Management. \$57,898, \$57,898. October 1, 2012 - September 30, 2013.

McNulty, S. and R. Nyland. Evaluation of forest health and change: Can small mammals act as bio-indicators? McIntire-Stennis Research Program pre-proposal. August 31, 2012 – September 1, 2013.

McNulty, S. and T. Hodgman. Evaluation of Remote Cameras to Study an Ecological Trap in Rusty Blackbirds. ESF Seed Grant. \$4,447.76, \$4,447.76. May 1, 2012 – September 1, 2012.

Nyland, R.D. and S. A. McNulty, R. S. Davis, E. Bevilacqua and Paul B. Hai. American Beech Management to Enhance Northeastern Forest Health and Use. USFS Northeastern Area State and Private Forestry. \$ 177,926; \$41,000; submitted through NYS DEC, July 1, 2011 - June 30, 2014.

McNulty, S. The role of snow depth in small mammal population fluctuations in the central Adirondacks. SUNY Potsdam Walker Fellowship. \$3,002, \$3,002. 1/1/12-12/31/12.

Patrick, D., J. Kretser, and S. McNulty. Adirondack Park Community BioBlitz in Saranac Lake, New York. Disney Worldwide Conservation Fund. \$25,000. September 1, 2011 – September 1, 2012.

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

Beier, C.M., J.A. Stella, M. Dovciak and S.A. McNulty. 2012. Local climatic drivers of changes in phenology at a boreal-temperate ecotone in eastern North America. *Climatic Change*. Published online 22 April 2012.

Jensen, P.G., C.L. Demers, S.A. McNulty, W. Jakubas, and M.M. Humphries. 2012. Responses of marten and fisher to fluctuations in prey populations and mast crops in northern hardwood forest. *Journal of Wildlife Management* 76:489-502.

Cale, J., S. McNulty, S. Teale and J. Castello. In review. The impact of beech thickets on northern hardwood forest biodiversity. *Biological Invasions*.

LaMere, C. R., S. A. McNulty and J. E. Hurst. In press. Human-black bear conflicts are related to mast production in the Adirondack Mountains of New York State. *Proceedings of the Eastern Black Bear Workshop 2011*.

B. Non-refereed Publications

None

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

Monitoring nests of the declining Rusty Blackbird with motion-triggered cameras. Buckley, S., S. McNulty and T. Hodgman. Northeast Natural History Conference 2012, Syracuse, NY. 18 April 2012.

Habitat Characteristics and Amphibian Reproduction in Adirondack Vernal Pools: Is Wet Enough? McKissick, K.* and S. McNulty. Adirondack Research Consortium, Lake Placid, NY 15 May, 2012. * *Undergraduate lead presenter*

Effect of Variable Mast Production on Human-Black Bear Conflicts in the Adirondack Park of New York. LaMere, C. and S. McNulty. Northeast Natural History Conference 2012, Syracuse, NY April 16-18, 2012.

Monitoring nests of the declining Rusty Blackbird with motion-triggered cameras. Buckley, S., S. McNulty and T. Hodgman. Spotlight on Student Research. SUNY College of Environmental Science and Forestry, Syracuse, NY. 12 April 2012.

An Analysis of the Effects of Upland Habitat on Wood Frog (*Lithobates sylvatica*) and Spotted Salamander (*Ambystoma maculatum*) Reproduction in Vernal Pools. Katie McKissick*, Discovery: An Undergraduate Showcase of SUNY, Albany, NY 29 February 2012. * *Undergraduate lead presenter*

Field Programs and Stations: Where and How to Extend the Classroom. McNulty, S. Environmental Consortium of Hudson River Colleges and Universities, Albany, NY, 12 November 2011.

Understanding the Hudson with Technology. Signell, S., S. McNulty and C. Beier. Environmental Consortium of Hudson River Colleges and Universities, Albany, NY, 12 November 2011.

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

- Teddy Roosevelt Days Sept. 11, HWF - 14
- Sportsmen: Got Game? Deer and Bear, Oct. 2, AIC - 15
- BioBlitz, Oct. 8, AIC - 20
- Northern NY Audubon bird walk, Dec. 3, Newcomb - 8

V. PUBLIC SERVICE

A. Funded Service (include consulting activities)

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

- Reviewer, National Science Foundation Field Stations and Marine Labs programmatic planning and site review
 - Hartwick College's Robert R. Smith Field Station, NY (2011)
 - Texas Tech University's Llano River Field Station, TX (2012)

2. Industrial and Commercial Groups, etc.

None

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

Adirondack Biodiversity Project (All-Taxa Biodiversity Project) – an expert-driven, citizen science-based project to inventory all life in the Adirondack region and excite residents of and visitors to Adirondack Park

Northeastern Partners in Amphibian and Reptile Conservation – co-lead vernal pool working group

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)

Chair, Human Diversity Committee, Organization of Biological Field Stations

Board Member-at-Large, Organization of Biological Field Stations

Board Member, Adirondack Research Consortium

2. Professional Society Membership

Adirondack GIS User's Group
Ecological Society of America
Society of Conservation Biology
The Wildlife Society

3. Other Professional Activities

a. Editorial activity

Journal (s)

Responsibility

Other (books, symposia, etc.)

b. Reviewer

Journal(s)

No. of manuscripts

Agency

No. of proposals

Other

c. Participation (workshops, symposia, etc.)

Name of workshop, etc.

Date

Place

- NSF FSML Emerging Initiatives Workshop, November 17-18, 2011, Colorado Springs, CO
- NSF UMEB/URM workshop, June 2-3, 2011, Arlington, VA

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

Associate Director, Adirondack Ecological Center
Organizer, Huntington Lecture Series
Editor, Spruce Moose newsletter

B. College-level

Council for Geospatial Modeling and Analysis (CGMA)
Promotion and Tenure Committee (Callan), spring 2012

C. University-wide, including Research Foundation

None

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: Mentoring Master's students in EFB continues to be rewarding; having three complete degree programs was a wonderful accomplishment for my "lab" this year. I encouraged each of my students to present at professional meetings; my UMEB advisee was one of three ESF students selected for the SUNY Discovery: Undergraduate Showcase. I spearheaded a weekly summer research seminar for students and scientists at AEC, and was gratified that ESF's fifth and final cohort of NSF UMEB scholars shared their experience with underserved K-12 students, won accolades at conferences (e.g., CSTEP) and commencement, and are entering graduate school or beginning careers. NSF funded our RAHSS supplement to connect Junior Naturalists with AEC/AIC staff and UMEB scholars. The three high-school students were exposed to ESF's college research program and careers in science/environment (a model I hope to institutionalize). Finally, I agreed to a second term on the Adirondack Research Consortium board, having successfully advocated greater student participation in the organization via a seat on the ARC board.

Department/college: I coauthored two refereed publications using long-term data collected at Huntington Wildlife Forest. These in-depth studies are based on decades of ALTEMP data and exemplify the value of field station contributions to science and society. The lake ice paper in *Climatic Change* received national attention (including an Associated Press article). A predator-prey study of temporal patterns in mammals and beech mast was highlighted on the cover of the *Journal of Wildlife Management*. These and other collaborative research efforts have brought positive visibility to ESF. I also helped grow the AEC's social media presence for outreach and supported the Interpretive Center in its first year of operation from programs to planning how ESF can best utilize the AIC. As one of two ESF representatives to the Environmental Consortium of Hudson River Colleges and Universities, I joined the planning team for the 2011 conference, facilitated a session on technology and presented in a session on Hudson watershed field stations.

Self: Leadership emerged as thematic this year. I took on a greater role in the Org. of Biological Field Stations, visiting other field stations to assist in strategic planning and beginning a term on the OBFS board. I assisted the NSF Field Stations and Marine Labs program planning for emerging initiatives at NAML and OBFS institutions. Through these experiences I gained insight into FSML administration, and noted how ESF's array of facilities are plentiful and special yet face many of the same problems. I was invited to participate in a workshop, *Mapping the Future of Adirondack Park*, where a cross-section of the community (e.g., business owners, educators, officials, citizens) explored scenarios to forge a common vision for the region. While there was no predetermined outcome, it was fascinating to see the common ground across hundreds of participants and to hear bank managers and others advocate the Adirondacks as a world-class site for research and education. I developed and delivered a presentation on leadership and the participatory visioning process as a result; the experience has also fed into my doctoral program thinking.

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 am pursuing two lines of research. One is community ecology, both basic research and interactions of species and their environment (e.g., Rusty Blackbird and predation/landscape factors influencing nest success and lack of population recovery). The other is management-oriented (e.g., black bear food ecology, population trends, and human-bear conflicts).

B. PROJECTED ACTIVITIES FOR NEXT YEAR

1. Summer 2012

a. Course(s) to be offered

b. Proposed research activity

- Black Bear Ecology/Beechnuts/Beech Bark Disease – complete modeling/manuscripts
- Boreal bird predation and habitat/land use association – focused on Rusty Blackbird
- Cycles in small mammal, climate, and food study at HWF
- APR-GIS – oversee web-based database, reporting to consortium and data needs assessment
- Support collaborative research including use of LiDAR, CFI forest change on HWF, geospatial and other datasets
- Data collection for ALTEMP projects (various, including: terrestrial salamanders, vernal pool amphibian reproduction and survival, songbird survey, phenology, seed survey)
- Summarize and report on several ongoing research projects, including Beech Bark Disease/beechnut production and Phenological data summary, including Northeast Regional Mast Survey and National Phenology Network coordination
- Human and ecological community sustainability in the Adirondacks – Hudson Watershed meeting coordination and identification of research avenues
- Finalize UMEB program reporting to NSF of best practices for mentoring undergraduate research and submit grant proposal for REU site (with Kimmerer, others)

c. University, professional society, and public service

- Coordinate linkages between research and education via NFI/AIC
- Co-coordinate ATBI and Adirondack Biodiversity Project – 2013 BioBlitz
- Contribute to Org. of Biological Field Stations, National Phenology Network, Northeast Regional Mast Survey, Northeastern Vernal Pool Working Group, Adirondack Research Consortium among others

2. Fall Semester 2012

a. Course(s) to be offered

b. Proposed research activity

- Continue from summer
- ALTEMP projects (various, including phenology, terrestrial salamanders, beaver colony activity, seed survey)

c. University, Professional society, and public service

- Continue from summer
- Represent ESF at Organization of Biological Field Stations meeting
- ALTEMP projects (various, including phenology, terrestrial salamanders, beaver colony activity, seed survey)
- Co-coordinate ATBI and Adirondack Biodiversity Project – plan 2014 BioBlitz

3. Spring Semester 2013

a. Course(s) to be offered

Winter Mammalian Ecology

b. Proposed research activity

Continue from Fall semester

c. University, professional society, and public service

Continue from Fall semester