

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

NAME: Shannon L. 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:					
FALL:	EFB 797	Adaptive Peaks Grad Seminar	1	15	N/A
SPRING:	EFB 482	Ornithology	4	45	2
	EFB 796	Ornithology (graduate student level)	4	2	(2)
	EFB 495	Undergrad Exper. in College Teaching	3	2	N/A
	EFB 797	Adaptive Peaks Grad Seminar	1	10	N/A

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>
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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>
EFB210 Spring	Diversity of Life	2

II. STUDENT ADVISING

A. Number of undergraduates for whom you are the student's official advisor 16 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

CO-MAJOR PROFESSOR

Andrea P. Thomen, MS EFB Conservation Biology Start date August 2012

* Pending paperwork completion, Maureen Durkin, PhD EFB Fish & Wildlife Biology & Management

MEMBER, STEERING COMMITTEE (other than those listed above)

Melissa A. Althouse, MS EFB Wildlife Ecology and Management

Samouel J Beguin, MS EFB Conservation Biology

John J. Hartigan, MS EFB Ecology

Amanda L. Pachomski, MS EFB Fish & Wildlife Biology & Management

CHAIRMAN OR READER ON THESIS EXAMS, ETC.

Carissa Alza, MS EFB Conservation Biology, Defense Examination Committee

Nargis Artyushevskaya, MS Environmental Studies (G), Defense Chair

Anand Chaudhary, MS EFB Conservation Biology, Defense Examination Committee

Silvia S Saldivar Bellassai, MS EFB Fish & Wildlife Biology & Management, Defense Examination Committee

Timothy Callahan, Undergraduate Honors Thesis, second reader

III. RESEARCH COMPLETED OR UNDERWAY

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

- Assessing potential causes and identifying geographic locations of woodland loss for conservation planning of the endangered Golden-cheeked Warbler. 2%
- Modelling species co-occurrence for 2 endangered songbirds in Texas. 2%
- Investigating/quantifying impacts of noise disturbance on endangered golden-cheeked warbler. 2%
- Investigating/quantifying impacts of woodland understory disturbance or removal on endangered golden-cheeked warbler. 2%

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)

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

U.S. Fish and Wildlife Service and LCC. 2014. Least tern populations on the Florida panhandle: risk of road mortality. Co-PI Jonathan Cohen. Anticipated support for 1 PhD student. Funds requested: \$411,244.

National Science Foundation Pre-proposal. Survival and fecundity by individual- and group-related patterns of resource selection. Dates: TBD. Co-PI: Joseph M. Szewczak, Humboldt State University; Michael L. Morrison, Texas A&M University.

U.S. National Park Service Coastal Plain Bat Monitoring. 2014. Comprehensive bat presence-absence surveys and bat habitat use assessment at Cape Cod and Fire Island National Seashore. Dates: TBD. Intended to support graduate student Michael Fishman for summer & fall 2014 and tentatively summer and fall 2015; details currently being adjusted, but expected for funds to be committed August 2014. Funds requested: \$82,000.

Chesapeake Energy Corporation. Habitat use and movements of Northern long-eared and Eastern small-footed bats in the Marcellus Shale Region. In ongoing negotiation for timeline & budget.

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

McIntire-Stennis Research Program. 2013-14. Assessing habitat quality for songbirds on nonindustrial private forestland [NIPF] in a parcelized landscape. Co-PI: René H. Germain. Funds requested: \$53,814

NSRC Theme Four: Biodiversity and protected area management Pre-Proposal. 2014. Assessing habitat quality for songbirds in response to size and scale of nonindustrial private forestland [NIPF] in a parcelized landscape. Co-PI: René H. Germain. Funds requested: \$132,357

Strategic Environmental Research and Development Program (SERDP) Department of Defense (DoD), Core BAA Pre-Proposal 2013-14. Testing the Surrogate Species Concept to Identify Multi-species Conservation Opportunities. Co-PIs Andrew J. Campomizzi, Bret A. Collier, Michael L. Morrison. Funds requested: \$206,060

Neotropical Migratory Bird Conservation Act Grant- submitted to pilot program. 2014. Least Tern Monitoring In Florida: Risk Of Road Mortality. Co-PI Jonathan Cohen. Funds requested: \$143,268

Great Lakes Fish and Wildlife Restoration Act Pre-proposal. 2014. Investigating conditions associated with presence and performance of 2 focal species in a parcelized forest landscape. GLFWRA Funds Requested: \$148,345.

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

- Collier, B. A., S. L. Farrell, A M. Long, A J. Campomizzi, K. B. Hays, J. L. Laake, M. L. Morrison, and R. N. Wilkins. 2013. Modeling spatially explicit densities of endangered avian species in a heterogeneous landscape. *Auk*: 130:666-676.
- Campomizzi, A. J. , H. A. Mathewson, M. L. Morrison, C. M. Lituma, T. J. Conkling, M. C. Cocimano, S. L. Farrell, R. N. Wilkins, and J. A. Butcher. 2013. Understanding nest success and brood parasitism in the endangered Black-capped Vireo: comparisons with two sympatric songbirds. *Wilson Journal of Ornithology* 125:709–719.
- Campomizzi, A. J., B. A. Collier, T. M. Mcfarland, S. L. Farrell1, M. L. Morrison, and R. Neal Wilkins. Monitoring songbird occupancy-habitat relationships in a stable vegetation assemblage. *Diversity and Distributions*: *submitted*.

B. Non-refereed Publications

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

“Developing high-resolution, fine-scale, occupancy models for endangered species using LiDAR.” The Wildlife Society, Annual Conference, Milwaukee, WI, October 2013.

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

V. PUBLIC SERVICE

A. Funded Service (include consulting activities)

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

Lesser Prairie Chicken conservation planning: Lead on science committee drafting of CCAA/HCP and Habitat Exchange. Partially funded; funding from multiple entities including USFWS, Environmental Defense Fund, and Oil and Gas Industry partners.

2. Industrial and Commercial Groups, etc.

Lesser Prairie Chicken conservation planning: Lead on science committee drafting of CCAA/HCP and Habitat Exchange. Partially funded, funding from multiple entities including USFWS, Environmental Defense Fund, and Oil and Gas Industry partners

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

USFWS Lesser Prairie Chicken [LEPC] conservation planning: Lead on science committee drafting of CCAA/HCP and Habitat Exchange, and drafting LEPC habitat and population conservation targets anticipated for use in LEPC Recovery Plan. Partially unfunded.

USFWS: review of draft Greater Sage Grouse Colorado Conservation Plan and Habitat Exchange Framework.

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)

Member of Special Recognition and Honorary Membership Committee, The Wildlife Society National Chapter

2. Professional Society Membership

The Wildlife Society: National Chapter

TWS Northeast Region Chapter

TWS NY State Chapter

TWS Southwest Region Chapter

TWS Texas Chapter

American Ornithologists' Union and Cooper Ornithological Society 2005 – present.

3. Other Professional Activities

a. Editorial activity

Journal (s)

Responsibility

Other (books, symposia, etc.)

b. Reviewer

Journal(s)

No. of manuscripts

Ecology

1

Ornithological Monographs

1

Wildlife Society Bulletin

1

Animal Conservation

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

- Chamberlain Award, coordinator Spring 2014
- Roy Glahn Award, committee member Spring 2014
- Dence Fellowship, committee member Spring 2014
- Burgess Award, committee member Spring 2014

- Open House/ Accepted Student Reception April 12 2014, representative for Wildlife Major
- Transfer Student Orientation January 2014, course registration session

B. College-level

C. University-wide, including Research Foundation

- IQAS Committee Fall 2013- present
- Fink Fellowship Committee Fall 2013-present
- Judge for the Graduate Student session of the Spotlight on Research

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.

Students:

I co-taught Adaptive Peaks in Fall 2013, mainly observing and learning from Dr. Cohen, which provided me an opportunity to get to know the graduate students. Through learning from Dr. Cohen, observation, and course evaluations I was able to identify a few ways I could attempt to make this course work better for students. Student in the Fall noted that while course discussion were left entirely to the students to lead, carry on and steer, they actually sought some more active guidance and involvement by the lead faculty member to help the group refocus on key themes, avoid drifting, teasing out complicated concepts, and perhaps helping facilitate opportunities for participation by the less bold students in the group. I implemented some efforts to address these comments in Spring 2013, playing a slightly more active role in helping refocus when needed, engage quieter students, and helping facilitate the student's dissecting of challenging concepts, all of which seemed to have a positive effect on overall participation of discussions and the level of the discussion. After establishing a positive relationship with the students in this course, I have been able to solicit their formal and informal feedback on ways to make the course work better, iron out some aspects that do not work well, and enhance the engagement of the larger ESF community in the speaker series. In the spring I primarily focused on rebuilding and updating the ornithology class, with a focus on the lecture portion. Given much of what we now know about birds, including evolutionary origins, the nervous system and cognition, and even basic ecology and behavior, has changed tremendously in the last decade, and the available multi-media resources have expanded, it was

important to give the course a near complete overhaul. This effort was fairly successful. In creating an updated course, I was able to generate interest and involvement from students, many of whom approached me to help advise them on projects for other courses in which they had chosen to focus on a bird ecology theme, for guidance in finding field experiences and internships in ornithology, or just to talk about birds. Additionally, I connected with ESF's birding club, attending meetings, giving a talk on the twists and turns of avian ecology research, and building relationships with interested students and prospective future graduate students. Additionally, I implemented a new course project in which students identified a contemporary, proposed or recently conducted, anthropogenic action (e.g., a proposed hotel construction at Destiny USA; proposed repair or reconstruction of Hwy 81 in Syracuse); dissected the impact into constituent elements such as noise, human activity, creation of edge; identified potential effects on bird physiology, ecology, and behavior, based on what we had learned; and then searched the literature to analyze if and how these factors may effect birds and to what extent. Students overall did an impressive job on this semester-long assignment and many expressed that they enjoyed and learned from this activity. I implemented ornithology lab following the approach that I had inherited from recent years. I had an interest in making some changes to this format in the future, but wanted to get a baseline idea of how this worked, and specifically solicited substantial feedback from students and input from TAs to help guide a recapitulation of the lab component. I am looking forward to continuing to work on this course overall, as a constant work in progress. I've solicited and gotten a great deal of formal and informal feedback from students, many of whom reported enjoying and learning from the course, and provided me with a great deal of momentum for future improvements. I was thrilled to find several students visit my office at the end of the semester to report that this course was their favorite in their time at ESF so far, but I was equally pleased to be able to get their thoughts on how to make the course better. I also worked closely with several graduate students this year to help provide guidance and feedback on their research projects that had an avian ecology component, and I am now serving on eth committee of several of these students. However, several others simply needed additional guidance on avian sampling techniques, analysis or existing data, or troubleshooting study design challenges. I enjoyed spending time brainstorming with these students and helping them tackle these challenges, and these interactions have provided me with a better sense of the need for a graduate-level ornithology or avian ecology course.

Department/College:

I have participated and joined in various departmental committees and activities, seeing these as an opportunity to get to know the students, faculty, and overall ESF community, to get familiar with the culture of ESF and EFB, and to learn how things work through participating and talking with colleagues, students, staff, and administrators. Serving as a member of several departmental awards committees, helping with the Glahn award process, and leading selection of the Chamberlain award, along with I've served on a variety of examination committees as an examiner, and as a chair for one MS defense, has given me a chance to pitch in but also to get a better idea of the variety and level of work being done by EFB graduate students. I've had several opportunities to meet with and assist new incoming students such as through the transfer student orientation, and prospective and accepted students through open house events, which have been a good opportunity to learn about the department and be able to share that with new and prospective students. Being new faculty member gives me a unique perspective on the interesting and special things that I've noticed about ESF and EFB, which I have been able to convey to these visitors and prospective students. I have been serving on the Fink Fellowship committee since Fall 2013, reviewing a pool of applications and meeting at least once per semester to identify awardees. I have also been serving on the IQAS committee since Fall 2013. During much of the Fall and early spring, this committee had lengthy meetings weekly or several times per month and additional work conducted between meetings, as we had several substantial tasks including rewriting the grading policies, formulating syllabus standards, and investigating new systems for course evaluation. The substantial time and effort involved in participating in IQAS were actually a great asset to me in learning, in much greater detail than many may ever have the opportunity to do, policies and procedures I needed to know as part of my teaching. Although I expected I might have little to contribute to IQAS due to my lack of familiarity with ESF policies and procedures, my unfamiliarity proved to be useful, as I was able to be a sounding board for policies and procedures that were confusing to a relative outsider, and helped facilitate better clarity and precision in the revising process.

Self:

I am in the midst of building my lab and research program here at ESF. I have focused on meeting, learning about, and identifying the potential research needs and interests of colleagues and relevant personnel at agencies in the region, including the DEC, regional LCCs, regional Joint Ventures, the state Fish and Wildlife Management Board, the Ruffed

Grouse Society, and other prospective collaborators and funding sources. I initiated efforts early on to work with colleagues in FNRM to seek out collaborative opportunities to conduct avian research associated with forest ecology, forestry practices, and changing forest landscapes in the northeast, which I plan to continue; I have encountered interest from a variety of agencies and potential partners in work investigating how these changing condition and forestry practices may be affecting birds. I have continued to maintain and build my contributions to some partially funded and some unfunded work on lesser prairie chicken, and more recently greater sage grouse, conservation planning, with the intent to leverage these relationships into at least one future funded graduate student project in the coming year. The lesser prairie chicken project has afforded me the opportunity along with the small team of partners to meet and work with Dan Ashe, Director of USFWS, on several occasions, along with other national leaders, and work with Regional Directors for USFWS Southeast regions. Additionally, described by an experienced USFWS species lead as the “biggest, most challenging project” she’d ever worked on, this project will provide a new policy approach to implementation of the Endangered Species Act at a time when historical approaches continue to fail to meet the need efficiently and effectively. My contributions to this effort are among the things I’m most proud of and excited about continuing with these and other species, despite the fact that this work will not likely result in a major peer-reviewed publication in the near future; developing a unique expertise in bridging the science into the development of innovative policy instruments for natural resource policy should lay the groundwork for interesting future opportunities. I have worked closely with Dr. Jonathan Cohen on developing proposals and drafting future collaboration prospects, bringing my interest in habitat use relationships and spatial distributions and dynamics to compliment Dr. Cohen’s strengths in population dynamics and population modelling. While we were rejected on a recent grant proposal, we are awaiting follow up on a proposal in development and I anticipate this will be valuable and productive collaboration. I am currently working with Michael Fishman, graduate student in Dr. James Gibbs’ lab and consultant, on development of a bat research project on the Atlantic Coast, with funding through the National Park Service as a first step to developing a larger research program on bat habitat use, movement dynamic, and anthropogenic impacts. I continue collaboration with colleagues at Texas A&M University and now Bird Ecology and Conservation Ontario, to complete ongoing work, data analysis, and drafting of manuscripts. Continuing work on these ongoing data sets and manuscripts, along with furthering connections with potential collaborators mentioned previously and finding additional funding opportunities is a primary focus for this summer.

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)

Overall, I plan to continue to build my lab and research program as well as teaching repertoire. I plan to:

1. Continue to seek funding opportunities to conduct research and support graduate student research on songbirds in the northeast, including the northern forest regions in particular.
2. Work with colleagues including Jonathan Cohen to continue to develop expansions on coastal bird species research through bringing an additional focus on habitat selection, use and spatial dynamics, and on assessing impacts of anthropogenic activities on habitat use and performance (i.e. on least terns and other species where applicable).
3. Work with associates at regional Landscape Conservation Cooperatives to identify opportunities to fund research to test assumptions of new conservation planning initiatives, particularly focusing on use of surrogate species.
4. Continue to work with multi-stakeholder partnerships in development of lesser prairie chicken conservation planning, with the intent to develop potential graduate student or undergraduate research funding to test effectiveness of management implementation on LEPC. Additionally, expand involvement with associated stakeholder group addressing conservation issues related to Greater Sage Grouse, with the intent to develop funding support for involvement of graduate student in the policy planning aspects of this process to develop novel approaches to species conservation and mitigation.
5. Develop a graduate- level Ornithology course to provide much-needed graduate level ornithology to the small, but not insignificant number of graduate students conducting research on birds with limited training in ornithology and avian ecology and sampling for birds.

6. Develop graduate-level course in either : 1) Addressing the practical implementation of ecological research in policy & management planning for wildlife conservation and management; or b) Philosophy of Science with an emphasis on epistemology and philosophy of ecology as it pertains to wildlife conservation and management.
7. Reconstruct the lab portion of ornithology from the largely field identification/ field birding focus of recent years to a more balanced approach that includes dissections and in-lab physiology work, taxonomy, and research techniques including an emphasis on geospatial tools and techniques, alongside field identification.

B. PROJECTED ACTIVITIES FOR NEXT YEAR

1. Summer 2014

a. Course(s) to be offered

b. Proposed research activity:

- Continue ongoing work:
 - Data compiling, analysis, and manuscript drafting for several collaborative works in progress:
 - Assessing potential causes and identifying geographic locations of woodland loss for conservation planning of the endangered Golden-cheeked Warbler.
 - Modelling species co-occurrence for 2 endangered songbirds in Texas.
 - Investigating/quantifying impacts of noise disturbance on endangered golden-cheeked warbler.
 - Investigating/quantifying impacts of woodland understory disturbance or removal on endangered golden-cheeked warbler.
 - Design sampling plan and conduct summer field work for bat assemblage and habitat use on Cape Cod and Fire Island National Seashore.
- Work with Delaware-Otsego Audubon Society and DEC to develop prospective plan for funding a graduate student to conduct work on Golden Eagles in the northern Catskills and Otsego County Region.
- Develop plan with LCC contacts and submit proposal to Cooperative Landscape Conservation and Adaptive Science General Funding Opportunity for project to test application of surrogate species concept for Strategic Habitat Conservation.
- Meet with Albany Pine Bush Preserve staff in June to identify potential songbird research opportunities for undergraduates and graduate students.
- Discussions with Fort Drum to identify potential songbird research opportunities for undergraduates and graduates.
- Revised proposal to McIntire-Stennis & NSRC.

c. University, professional society, and public service

- Accepted Student Reception June 6
- Participate in Bioblitz June 20-23
- Identify prospective speakers for Adaptive Peaks Fall 2014 and initiate planning for first several speaker dates.
- Will be teaching Statistics/Analysis portion of 2nd session at CLBS (July 17 & 18)
- Work with USFWS and Environmental Defense Fund to determine path forward on draft Colorado Greater Sage Grouse Conservation Plan
- Fink Fellowship Committee review of applicants (next meeting expected in June)

2. Fall Semester 2014

a. Course(s) to be offered

- EFB 797 Adaptive Peaks Grad Seminar
- EFB 390 Wildlife Ecology and Management
- EFB 495 Undergrad Exper. in College Teaching (for 390)

b. Proposed research activity

- Field research for Fall bat sampling; develop longer-term project for PhD student to explore bat habitat use and spatial movement dynamics along North Atlantic Coast and implications for WNS (tentative Ph D project development for Michael Fishman).
- Identify graduate student and begin design and planning for work with Delaware-Otsego Audubon Society and DEC on Golden Eagles in the northern Catskills and Otsego County Region.
- Compiling BBS data, NatureServe data (and other sources TBD) to begin pilot co-occurrence and/or niche modelling to test application of surrogate species concept for Strategic Habitat Conservation.
- Pre-proposal to NSF based on pilot work on aforementioned analyses of co-occurrence and/or niche modelling to investigate hypotheses related to co-occurrence and niche partitioning among generalists and specialists in different habitat types.

c. University, Professional society, and public service

- IQAS Committee
- Fink Fellowship Committee
- Tentative advisory role for ESF birding club

3. Spring Semester 2015

a. Course(s) to be offered

- EFB 482 Ornithology
- EFB 796 Ornithology (graduate student level)
- EFB 495 Undergrad Exper. in College Teaching
- EFB 797 Adaptive Peaks Grad Seminar

b. Proposed research activity

- Design for summer 2015 bat sampling
- Golden Eagles in the northern Catskills and Otsego County Region.
- Continuation of co-occurrence and/or niche modelling to test application of surrogate species concept for Strategic Habitat Conservation.
- Initiate undergraduate research opportunity (at Albany Pine Bush or elsewhere, contingent on availability)

c. University, professional society, and public service

- IQAS Committee
- Fink Fellowship Committee
- Tentative advisory role for ESF birding club