

**ANNUAL REPORT: June 1, 2015 – May 31, 2016**  
**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:	EFB 202	Ecological Monitoring and Biodiversity Assessment (2 days; statistics & project planning)			
FALL 2015:	EFB 390	Wildlife Ecology & Management	4	82	5
	EFB 797	Adaptive Peaks Grad Seminar	1	11	N/A
	EFB 797	EFB Core course (team taught with Fierke)	1	14	N/A
	EFB 797	ClassRdgs/Pop Bio (team taught with Cohen)	1	11	N/A
SPRING 2016	EFB 482	Ornithology	4	58	3
	EFB 796	Ornithology (graduate student level)	4	1	NA
	EFB 797	Adaptive Peaks Grad Seminar	1	9	N/A

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>
FALL 2015				
EFB 298		Rsrch Internship/Envrn Biology	3	1
EFB 496		Bat Ecology & Research	3	1
EFB 498		Independent Research Wildlife Ecology & Management	3	1
SPRING 2016				
EFB 495		Undergrad Exper. in College Teaching	3	4
EFB 498		Independent Research Wildlife Ecology & Management	3	5

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

4. Guest Lecture Activities

EFB 210 Diversity of Life (Spring 2016) 2 lectures

<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 22 and unofficial advisor 3

B. Graduate Students: (list name, degree sought, starting date, month & year; if a degree was completed, please give date and full citation for the thesis or dissertation).

MAJOR PROFESSOR

R. Bronson Curry, M. S. EFB Ecology. Start Date January 2015.

Jessica Fletcher, M. S., EFB Wildlife Ecology & Management. Start Date Aug 2015

CO-MAJOR PROFESSOR

Michael R. Whalen, PhD EFB Conservation Biology, Start date May 2015. Co-Advisor M. Dovciak.

MEMBER, STEERING COMMITTEE (other than those listed above)

Current students:

Melissa A. Althouse, MS EFB Wildlife Ecology and Management  
Maureen Durkin, PhD EFB Wildlife Ecology & Management  
Alison Kocek, PhD EFB Wildlife Ecology & Management  
Michele Stantial, PhD EFB Wildlife Ecology & Management  
Amanda L. Pachomski, MS EFB Fish & Wildlife Biology & Management  
Patrick Oelschlager, MS EFB Wildlife Ecology & Management  
Chellby Rae Kilheffer, PhD EFB Wildlife Ecology & Management

CHAIRMAN OR READER ON THESIS EXAMS, ETC.

Thesis defense examiner: Katrina Alger Dec 2015

**III. RESEARCH COMPLETED OR UNDERWAY**

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

- Pilot research on American robin population status, trends, distributions, and potential role as reservoir and vector of Lyme disease and ticks. 3%
- Assessing potential causes and identifying geographic locations of woodland loss for conservation planning of the endangered Golden-cheeked Warbler. <1%
- Modelling species co-occurrence for 2 endangered songbirds in Texas. <1%
- Investigating/quantifying impacts of noise disturbance on endangered golden-cheeked warbler. <1%
- Investigating/quantifying impacts of woodland understory disturbance or removal on endangered golden-cheeked warbler. <1%

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)

U.S. National Park Service Coastal Plain Bat Monitoring. Comprehensive bat presence-absence surveys and bat habitat use assessment at Cape Cod and Fire Island National Seashore.

Dates: Sept 2014-Dec 2015. Fund: \$82,293. Currently partial support for Bronson Curry; will support incoming M.S. student Jessica Fletcher.

U.S. National Park Service Continuing Assessment of populations and white-nosed syndrome at Cape Cod National Seashore.

Dates: Jan 2016- Dec 2016. Funds: \$76,200. Currently partial support for Bronson Curry & Jessica Fletcher.

U.S. National Park Service. White Nose Syndrome Funding 2016. Fall Migration, Swarming, and Hibernation Ecology of Northern Long-eared Bats at Cape Cod National Seashore, and Implication for Ameliorating Impacts of White-nose Syndrome. *Awarded: \$199,600*. Dates: 1/1/2017-12/31/2018

NSRC Theme Four: Biodiversity and protected area management 2016. Imperiled Bats in Northeastern Forests: balancing bat conservation with forest management. *Awarded: \$121,029*. Dates: 9/1/2017-12/31/2018

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

Eppley Foundation. American Robin population dynamics and distributions: relationships with Lyme disease and tick transmission. Requested: \$25,000

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

McIntire-Stennis Research Program. 2014-15. Imperiled Bats in Northeastern Forests: enhancing bat conservation with forest management. Co-PI: René H. Germain. Requested: \$60,351.

U.S. Fish and Wildlife Service Ecological Services White-Nose Syndrome Research. Understanding spatial dynamics of habitat use and migration at the edge of range: implications for Pd transmission, vulnerability and conservation. Dates: Jan 2016- Dec 2018. Requested \$286,280

**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

Marshall, M., A. M. Long, M. L. Morrison, K. B. Hays, and **S. L. Farrell**. 2016. Responses of a federally endangered songbird to understory thinning in oak-juniper woodlands Environmental Management: *in press*.

Campomizzi, A. J., **S. L. Farrell**, K. Smith, and J. E. Groce. Assessing Potential Causes and Identifying Geographic Locations of Woodland Loss for Conservation Planning of the Endangered Golden-cheeked Animal Conservation: *In review Feb 2015*.

**Farrell, S. L.**, B. A. Collier, A. J. Campomizzi, M. L. Morrison, and R. Neal Wilkins. Co-occurrence of two endangered songbirds: implications for management choices. Diversity and Distributions: *In review Dec 2015*.

**S. L. Farrell**, M. Marshall, A. M. Long, M. L. Morrison, R. Neal Wilkins. Assessing impacts of military training activity on nest success and singing behavior of an endangered songbirds. Journal of Wildlife Management: *Resubmitted, in review Feb 2015*.

Thomen, A. P., S. J. Ryan, J. B. Cohen, **S. L. Farrell**, S. C. Latta. Social-Ecological Implications for Bird-friendly Management in Dominican Cacao Landscapes. Human Ecology: *In review*

B. Non-refereed Publications

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

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

- Public birding walk [sponsored/organized by Cazenovia Preservation Foundation 5/28/2016 (≈12 attendees)
- Presentation to Cicero Girl Scouts about Endangered Species and Habitat Loss 5/2/2016 (≈ 12 attendees)
- Television interview for local news on white pelican on Lake Onondaga Fall 2015
- Interviewed and quoted for Syracuse.com article on White Pelicans fall 2015
- Birding workshops during Fall Field Days on campus, Fall 2015
- Public talk on endangered species research and management at Huntington 30 July

**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. Multiple stakeholders including USFWS, Environmental Defense Fund, and Oil and Gas Industry partners.

Greater Sage Grouse conservation planning. Requested reviewer for Colorado Conservation Plan by USFWS and EDF.

Greater Sage Grouse conservation planning. Requested to meet with Deputy Secretary of the Interior (Land and Minerals) to provide guidance for Greater Sage Grouse Conservation Planning.

2. Industrial and Commercial Groups, etc.

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

- Working with TNC Tug Hill personnel to assist with development of grant proposal, to develop collaborative forest management plan and wildlife monitoring (working also with Greg McGee and Ralph Nyland).
- CNY Ruffed Grouse Society. Habitat management project planning, Jan 2015- present.
- Society of American Foresters (working with national Allegheny, New York, and New England units). Continued consultation following species listing decision after previous assistance listed below.
  - Summer 2014: Analysis of effects of proposed listing of the northern long-eared bat (NLEB) as federally Endangered on forestry, and drafting of comment letter to USFWS.
  - March 2015: Analysis of effects of threatened listing of northern long-eared bat (NLEB) and proposed 4-d rule implementation for forestry, and drafting of comment letter to USFWS.

**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
- Member of Early Career Professionals working group, The Wildlife Society National Chapter
  - Planned symposium for early career professionals for Fall 2015 Annual Meeting.
- Service on Shale Development Technical 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

<u>Journal(s)</u>	<u>No. of manuscripts</u>
Oikos	1
Integrative Zoology	2

<u>Agency</u>	<u>No. of proposals</u>
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Other

c. Participation (workshops, symposia, etc.)

<u>Name of workshop, etc.</u>	<u>Date</u>	<u>Place</u>
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C. Further Education/Re-training Undertaken, Leaves, Workshops, etc.

Attending upcoming Helmsley Institute Teaching Academy June 12-16 2016 at UCONN.

D. Foreign Travel (Where, When, Purpose)

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

### A. Department-level

- CLBS committee
- GPAC committee
- Undergrad honors thesis advising: Brendan Popp, Kim Savides, Allison Smith, Cody Nichols. Independent project (EFB 498) advising: Makayla McCormick, Daniel Ganley, Macie Edwards, Kyle Smith.
- Dept awards:
  - Baldassarre Award, coordinator 2014-present
  - Chamberlain Award, coordinator 2014-present
  - Roy Glahn Award, coordinator 2014-present
  - Dence award, coordinator Fall 2015- present
- Open House/ Accepted Student Reception: one in Fall 2015 and 1 in Spring 2016

### B. College-level

- IQAS committee Fall 2013-present
- Newly formed College-Wide Gen Ed Assessment committee Fall 2015- present
- Fink Fellowship Committee Fall 2013-present.
- Birding Club faculty advisor
- CSTEP Mentor: providing summer research opportunity for CSTEP fellow
- Working with Frank Moses (while he was employed at ESF), development office, to get small grant from Audubon society for construction of Chimney Swift Tower for placement on campus and further fund raising campaign to fund signage and undergraduate research associated with tower. We were awarded funding to build tower (~\$1500); fundraising campaign and construction and placement have been temporarily delayed but plans to move forward are in progress.
- Coordinated birding for campus Field Days event
- Earth Day birding walks on campus for visiting school groups 4/22/2016 (~ 12 attendees per session)

### 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.**

### **Students:**

Helping students get exposure to wildlife professionals and access opportunities to find and prepare for internships, seasonal jobs, and grad school opportunities has been a major focus this year. EFB 390 this fall included a well-received class project that required students to interview 2 wildlife professionals in different spheres (govt agencies, NGOs, etc) and several students made connections that opened the door to summer work and other. In both courses each year, I provide a forum on blackboard for openings and tips for finding summer technician jobs & internships; this year I added several mini-workshops for finding summer wildlife jobs, working on resumes and cover letters, and prepping for interviews. I continue working to develop a website/ blog-type forum for students to share their field and internship experiences to help other students find paths that fit their interests. With tools and basic skills to record class lectures and produce video, I'm currently working to edit and create new video tools for course websites. Gordon Paterson and I continued to work on lining up a wide variety of high impact speakers, and to improve awareness and attendance for the Adaptive Peaks seminar. We have made adjustments to the course format to better serve graduate students, including more opportunities for student presentations and peer feedback. This Fall, we ran our first live-streamed and archived seminars on ESF's Google and You Tube pages and now have equipment in-house to expand this practice. Teaching the Philosophy of Science portion of the Fall grad Core Course, I got enthusiastic feedback from students who would like a stand-alone Philosophy of Science course; I was glad to hear this topic was well-received and the feedback has reinforced my long-time interest in creating a graduate seminar on this topic. Though I have found it to be challenging to integrate undergrads meaningfully into the type of wildlife work done in my lab, particularly during the academic year when there is little or no field work being done, we added several undergrads to our lab team in both Fall and spring of this year. We provided several with access and funding to technical training on several bat acoustic research techniques that will be valuable skills on their CVs. Several students assisted with data management for bat acoustic data and vegetation data. Several worked on data analysis with 2 students setting the achievable goal of preparing a publishable manuscript as a result of their analysis.

### **Department/College:**

This year I've continued to have the opportunity to do more than just serve on committees but participate in committees that were working on projects to make meaningful contributions the college. I've been working to bring new tools and technology for class video production and ran a mini-workshop to familiarize colleagues with the newly available tools and software; working with the others who have been using these tools to develop additional College-wide workshop opportunities. This work has been synergistic with tasks I'm working on as a member of IQAS, in particular designing the framework, budget, and proposal for establishing a Center for Teaching and Learning, which would provide support for use of such teaching tools and technologies, among other services. As a member of the IQAS committee, I've been able to assist with major efforts to develop college wide general education assessment plans, and to conduct the preliminary Gen Ed assessment. This has resulted in the formation of a new General Education committee, given the scope of this endeavor and I've been asked to serve on this committee. We completed planning, executing, and reporting out on a College-wide Gen-Ed Assessment this Fall building on the framework created by IQAS last year. I have been serving on the Fink Fellowship committee since Fall 2013, but this year updated and overhauled the application, criteria, and priorities for what kinds of applications the committee if focused on funding, to make the application process more clear and straightforward, and allow students to discern whether their proposal fits with the newly-clarified priorities of this particular award.

### **Self:**

I have now completed almost 3 years in this position, working on building the lab, research program, and my niche here. My first graduate student, who began in January 2015 completed our first season of field sampling on Cape Cod and Fire Island National Seashores and we added a second MS student this Fall to work on the coastal bat project as well. Getting this NPS- funded project launched and headed in the right direction enabled me to build additional funding for additional years; we secured an additional grant to support a PhD student to investigate Fall bat habitat use

and movement and potentially locate hibernacula. This year, a focus for me has been learning the ropes of advising graduate students. Our lab has been joining with Jonathan Cohen's lab for joint lab meetings which has helped my graduate student learn from others and have a network to share and develop ideas. I have continued to focus on developing relationships with prospective collaborators and funders, attending a number of meetings with other bat researchers in the Northeast. This year, we really began to get our lab website up and running and this has resulted in a large uptick in the number of inquiries I receive from prospective graduate students. My continued work on lesser prairie chicken conservation planning has allowed me to continue to develop connections with partners including Environmental Defense Fund, Farm Bureau, USFWS, several major energy companies, and state, regional, and leaders for USFWS Southeast region. Our final draft - a Habitat Conservation Plan, along with implementation documents for the science & operations for a brand new habitat crediting system approach- is in the final stages of an EIS process and on its way to the federal register for public comment. The fruits of this work have resulted in inquiries from the Department of Interior for assistance addressing other similar conservation planning challenges including the greater sage grouse. As a result, I've had 2 meetings in Washington DC with deputy assistant secretaries at DOI, to provide expertise and technical guidance for addressing the challenge of greater sage grouse planning. I have continued to work with colleagues at Texas A&M University and now Bird Ecology and Conservation Ontario on finishing up analysis and publication of previously collected data and development of new research ideas. Currently, we are working to develop a pilot project investigating both the ecology and population dynamics of American robins, as well as investigating their prospective role as a reservoir for Lyme disease and potential agent of geographic dispersal of both Lyme disease and infected ticks. I have gotten a great deal of interest and enthusiasm for this understudied topic and am seeking seed funds to begin preliminary data collection 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. Focus on funding opportunities to conduct research and support graduate student research on bats in the Northeast, where summer and fall ecology and habitat use is understudied. Submit proposed research to DEC for upcoming MOU update.
2. Build American Robin & Lyme disease research program.
3. Develop several new manuscripts from existing data & analyses in progress.
4. Complete chapter in Ornithology text book (final revision due July 1, 2016).
5. Continue to work with multi-stakeholder partnerships in development of innovative conservation planning for lesser prairie chicken and other species, with the intent to develop these relationships and associated project opportunities for potential graduate student or undergraduate research funding (e.g., to test effectiveness of management implementation on LEPC).
6. Work with Jonathan Cohen and James Gibbs to finish developing a graduate- level course on endangered species conservation- ecological theory, policy, practice- which is currently in progress.
7. Develop framework for implementing long-term avian monitoring plan for CLBS to pilot in summer 2017. Recruit a grad student to build out long-term monitoring plan and independent research project on CLBS.
8. Develop field course for CLBS summer 2017 on Avian Ecology techniques for undergrads, to link with long-term monitoring data collection to provide much-needed training in field sampling and research techniques in avian ecology.
9. Development of web resources for EFB 482, EFB 390, and undergrad field experiences
10. Make adjustments to implementation of Adaptive Peaks.

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

##### 1. Summer 2016

###### a. Course(s) to be offered

- Teaching statistics for 1 CLBS 202 session.

###### b. Proposed research activity

- Implementation of yr 2 of sampling for summer bat habitat use, mist-netting, radio-tracking, and roost use assessment at Cape Cod.
- Continue ongoing work:
  - Analysis of BBS and Lyme incidence data for manuscript on spatial and temporal patterns. Working with undergraduate student (EFB 498) to conduct literature review and compile existing data for analysis.
    - Additionally, preliminary field sampling for Lyme disease prevalence in robins in Onondaga County in suburban and rural contexts.
- Grant proposals in development:
  - Eppley Foundation Grant
  - USFWS white-nose research
  - CIG grant
  - USFWS Recovery Implementation Fund
  - DEC- for updating MOU

c. University, professional society, and public service

- Ornithology text book chapter completion summer 2016
- Symposium planning for Early Career Professional workshop for annual meeting of TWS in Fall 2016
- Identify prospective speakers for Adaptive Peaks Fall 2016 and initiate planning for first several speaker dates.

## 2. Fall Semester 2016

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)
- EFB 797 EFB Core course (team taught with Fierke)

b. Proposed research activity

- Pilot research for Fall migration bat sampling at Cape Cod
- 1 new MS student for Adirondack bat project (currently recruiting), 1 new PhD student for coastal bat project (accepted), 1 new MS student for American Robin project (accepted).
- Proposals to McIntire-Stennis & NSR to expand critical bat research.

c. University, Professional society, and public service

- IQAS Committee
- Gen Ed committee
- Advisor ESF birding club
- Fink Fellowship Committee review of applicants
- GPAC
- CLBS committee
- Dept Awards for Fall
- Assisting with Early Career profession symposium at Annual meeting of The Wildlife Society

## 3. Spring Semester 2017

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 fall 2017 bat sampling
- Pilot planning for avian monitoring at CLBS

c. University, professional society, and public service

- IQAS Committee
- Gen Ed committee
- Advisor ESF birding club
- Fink Fellowship Committee review of applicants
- GPAC
- CLBS committee
- Dept Awards for Fall