

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

NAME: Jacqueline L. Frair

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>
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SUMMER: none

FALL: none (had doubled up course load previous spring to have fall free)

SPRING: none (facilitated the teaching of EFB 491 by my Ph.D. student Allison Devlin)

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>
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II. STUDENT ADVISING

A. Number of undergraduates for whom you are the student's official advisor 3 and unofficial advisor 0
Note that my advisees were reassigned to other faculty during my sabbatical leave.

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

- Michelle Peach, Ph.D., Aug '09, Apr '11 passed prelim, withdrew in 2012 but reinstated in 2014.

- Terra Rentz, M.S., Jan '14 (start)
- Christa LeGrande, M.P.S., Aug '11 (start), Dec '13 (degree conferred). Project title: "Importance of GIS and spatial analysis tools in wildlife programs, disciplines, and field positions for wildlife professionals"
- Silvia Saldivar Bellassai, M.S. (Fulbright), Aug '11 (start), completion expected June 2014
- Allison Devlin, Ph.D., Aug '10 (start), May '13 passed prelim
- Andrew MacDuff, M.S., Aug '09 (start)
- Robin Holevinski, Ph.D., Aug '07 (start)

CO-MAJOR PROFESSOR

MEMBER, STEERING COMMITTEE (other than those listed above)

- Rebecca Fuda (Ryan), Ph.D.
- Shawn Cleveland (Stella), Ph.D.
- Joe Folta (Underwood), Ph.D. – candidacy exam April 2014
- Paltsyn, Mikhail (Gibbs), Ph.D.
- Elaina Burns (Underwood), M.S.
- Maureen Durkin (Cohen), M.S.
- Joe Folta (Underwood), Ph.D.
- Natasha Karniski (Lomolino), M.S. – defended 24 April 2014
- Mike Fishman (Gibbs), M.S.
- C.J. Hazell (Shields), Ph.D.

CHAIRMAN OR READER ON THESIS EXAMS, ETC.

III. RESEARCH COMPLETED OR UNDERWAY

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

- Central East Slopes Elk and Wolf Study (ongoing collaboration, unsupported, 15% AY) – spent one month of my sabbatical leave at the University of Alberta focusing on this research and working on several papers from this collaboration at present.

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)

- NY State Department of Environmental Conservation, "Wildlife research and management support", \$3,359,864 total 2013-2018 (\$494,340 for FY13-14). PI: J. Frair. Provides support to various research projects. Grants directly supporting J. Frair listed below:
 - *Starting this fall:* "Monitoring and modeling moose populations in NY", PI: J. Frair. \$622,489 2014-2018 (starting in next academic year). Will support post-doctoral researcher.
 - "Statistical support for wildlife management and research", PI: J. Frair. \$273,747 2014-2017 (\$39,538 FY13-14). Will support professional or post-doctoral researcher.
 - "Indices to track ecological impact of white-tailed deer", PI(s): M. Dovciak, J. Frair. \$235,583 2013-2015 (\$90,837 FY13-14). Supports Dr. Mark Lesser, post-doctoral researcher.

- “Other program support for wildlife management and research”, PI: J. Frair. \$40,440 2013-2015 (\$19,973, FY13-14).
- US Army Corps of Engineers, “Research for carnivore management on Fort Drum”, \$59,000 total 2013-2015 (\$37,138 FY13-14). PI: J. Frair.
- National Science Foundation, “How environment, physiology and life history interact to determine pattern in animal migration”, \$600,000 total 2012-2015 (none for current year). PIs: J. Gibbs, S. Blake, S. Deem, J. Frair. Will support a post-doctoral researcher to start Fall 2014.
- US Forest Service(Joint Venture Research Agreement), “Identifying wolf movement corridors in the Great Lakes region using a landscape genetics approach”, \$168,876 initial 2012-2015 (\$82K current year). PI: J. Frair. Supports Dr. Leah Berkman, post-doctoral researcher.
- *Starting this fall*: USDA Northern States Research Cooperative, “Resistance to white-nosed syndrome in bat populations of the Northern Forest: exploring the critical disease-genotype-microbiome link”, \$103,746 2014-2016. PI(s): P. Marquardt, L. Berkman, J. Frair, D. Donner, and D. Linder. Will support Leah Berkman, post-doctoral researcher.
- USDA Northern States Research Cooperative, “Quantifying beaver impacts on Adirondack forest communities at a landscape scale”, \$106,866 total 2012-2014 (\$58K current year). PIs: J. Stella, E. Bevilaqua, J. Frair. Supports Shawn Cleveland, Ph.D. student.

Secured by my graduate students:

- Panthera, Inc., “Population persistence of jaguar (*Panthera onca*) in the Brazilian Pantanal, \$8,832 in support at ESF, ~\$60,000 in-kind field support. 2013-2014. PI: Allison Devlin
- Sequoia Park Zoo, “Persistence of Tagua in the Paraguayan Dry Chaco”, \$998. 2013-2014. PI: Silvia Saldivar Bellassai

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

- US Forest Service. \$60K addition to the joint venture research agreement indicated above to extend Leah Berkman and hire technical support for field program.

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

- SUNY/RF Research Collaboration Fund, “Wildlife tracking device with multi-source energy harvester”, \$100,000 total. PIs: L. Zuo (SUNY Stonybrook), J. Frair.
- Institute of Museum and Library Sciences, “Increasing access to, while protecting, a highly used vertebrate collection: digitizing the Roosevelt Wildlife Collection”, \$148,349. PIs: J. Frair, M. Perreault (primary author), J. Gibbs, R. Giegerich.

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

Campbell, S.P., Frair, J.L., Gibbs, J.P. and Rundell, R. (in press) Coexistence of the endangered, endemic Chittenango Ovate Amber Snail (*Novisuccinea chittenangoensis*) and a non-native competitor. *Biological Invasions*.

Warsen, S.A., Frair, J.L., and Teece, M.A. (2014) Isotopic investigation of niche partitioning among native carnivores and the non-native coyote (*Canis latrans*). *Isotopes in Environmental and Health Studies*, DOI: 10.1080/10256016.2014.897946

B. Non-refereed Publications

Editor's Choice – Managing for stepping stone habitats to facilitate species range expansion: generalized network models lead the way. Published by The Journal of Applied Ecology online at <http://www.journalofappliedecology.org/view/0/editorChoice.html>. January 2014. Written by J. Frair

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

“Top dog? The ecological role of the non-native coyote in the northeastern US”. Feb 2014. Invited presentation, Biology Seminar Series, University of Alberta, Edmonton, Canada.

“Revealing novel links among bat ecology, genetics, and disease to understand white-nose syndrome”. Jan 2014. SUNY ESF and Upstate Medical Center symposium on “From lab to landscape: integrated infectious disease research”, Syracuse, NY. Presented by co-author Leah Berkman.

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):

2. Industrial and Commercial Groups, etc.

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

NY State Fish and Wildlife Management Advisory Board, SUNY ESF Science Advisor

- Meeting 31 Oct-1 Nov 2013 and 20-21 March 2014
- Organized afternoon of seminars on fish and wildlife research at ESF at the March 2014 meeting. Presentations were made by John Farrell (fisheries and aquatic studies in the St. Lawrence River/Great Lakes), Brian Underwood (deer research), and Jonathan Cohen (ring-necked pheasant and New England cottontail).

Member, Forest Carnivore Working Group, established Mar 2013.

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)

The Wildlife Society

— College and University Wildlife Education Working Group (member, 2011-present)

2. Professional Society Membership

The Wildlife Society (2004 – present)
Ecological Society of America (2006 – present)
Society for Conservation Biology (2006 – present)

3. Other Professional Activities

a. Editorial activity

<u>Journal (s)</u>	<u>Responsibility</u>
Journal of Applied Ecology	Associate Editor
<u>Other (books, symposia, etc.)</u>	

b. Reviewer

<u>Journal(s)</u>	<u>No. of manuscripts</u>
<u>Agency</u>	<u>No. of proposals</u>
<u>Other</u>	

c. Participation (workshops, symposia, etc.)

<u>Name of workshop, etc.</u>	<u>Date</u>	<u>Place</u>
From lab to landscape: integrated infectious disease research (symposium)	24 Jan 2014	SUNY ESF

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

Sabbatical leave, Jan-Jun 2014.

Completed 3-day training in spatial-capture-recapture techniques, taught by the USGS Patuxent Wildlife Research Center at Cornell University, 2-4 April 2014.

D. Foreign Travel (Where, When, Purpose)

Pantanal National Park and surrounding areas, Matto Grosso, Brazil. 6-28 Jun 2013. Participated in field research program on jaguar in the region with graduate student Allison Devlin.

University of Alberta, Edmonton, Alberta, Canada. 1-28 Feb 2014. Worked with colleagues on animal movement and resource selection models – part of ongoing collaborative research during my sabbatical leave.

VII. ADMINISTRATIVE AND SERVICE RESPONSIBILITIES (include committee participation)

A. Department-level

- Associate Director, Roosevelt Wild Life Station
 - Helped form an Honorary Advisory Council that met first in NYC Sep 2013, helped coordinate semi-annual meetings with HAC, and met weekly with the HAC chair.
 - Led effort to secure endowment with the Boone and Crockett Club - attended meetings with club on 5-7 December (Denver, CO) and 11-14 Mar 14 (Denver, CO), worked with admin to draft fundraising contract that is currently under review.
 - Assisted with other fundraising efforts and outreach efforts.
- Roosevelt Wildlife Collection
 - Supervised curator, Ron Giegerich.
- Curriculum Coordinator for Wildlife Science major (Fall '13, shifted to J. Cohen during my sabbatical leave in Spring '14).

B. College-level

- Science Advisor to NY State Fish and Wildlife Management Advisory Board (President's representative)

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 (**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.

For students, this past year I completed the first full assessment of the wildlife degree program, for which Jonathan Cohen helped identify revisions to during my sabbatical leave. This assessment, as well as the hiring of Dr. Shannon Farrell, has stimulated multiple discussions of how to better deliver the wildlife program, including looking for opportunities to reinforce and build on content throughout the upper-division course sequence. My first M.P.S. student (Christa LeGrande) completed her program last fall, and we identified a very nice professional product for her – an article to be published in an upcoming issue of *The Wildlife Professional* that focuses on the importance of spatial/GIS skills to wildlife biologists despite a lack of focus on such training in the TWS certification program (which drives college curricula to some degree). This product capitalized on Christa's extensive training in geospatial methods, was directly pertinent to her desire to obtain wildlife specific training for a career in non-profit organizations, and will strategically establish her as an authority on the issue to a wide professional audience.

For the department/college, my main contributions this past year have involved administering the omnibus MOU with the DEC and helping to coordinate Roosevelt Wild Life Station activities. The ~\$3.4 million MOU with the DEC went officially into effect in the fall and has required a substantial administrative effort to get all the project pieces off the ground. This MOU has greatly increased opportunities for wildlife research collaborations with the DEC – currently providing support to studies on the New England cottontail (Cohen, Ryan, Whipps), deer browsing impacts on forest regeneration (Dovciak and Frair), and status of Adirondack moose population (Frair) with future projects including ecological separation of black ducks and mallards (Cohen, Schummer), monitoring ring-necked pheasants (Cohen), assessing disease in wild turkey (Whipps), and evaluating the success of otter reintroductions to western NY (Frair). The DEC also has become a key collaborator of the Roosevelt Wild Life Station, for which we re-established an Honorary Advisory Council this past fall. We formed the HAC in the image of the original council from 1919 and with

the full support of Theodore Roosevelt IV and Simon Roosevelt. With help from the HAC the Roosevelt Wild Life Station is now entering a major fundraising push to try to secure endowments for new faculty lines and student opportunities.

For myself, I used my sabbatical leave to focus on my international research program – including long-standing collaborations for elk research in Canada, recent and developing collaborations for carnivore and large mammal research in central and South America, and emerging research on giant tortoise migration in the Galapagos Islands. Foremost I achieved significant face-time with my foreign collaborators this past year, spending nearly a month with my Panthera collaborators on the jaguar study in Brazil, several days with the NSF-funded Galapagos study team at the St. Lois Zoo, and a month in Alberta this February. These studies have overlapping foci in animal movements, resource selection, and demography which should provide a nice synergy in my lab in the coming years.

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)

In the coming year, with any luck, we'll be hiring a Boone and Crockett Professor of Wildlife Conservation and working with the Honorary Advisory Council of the RWLS to secure endowments for that professorship and others. My research lab also is growing, and will include 4 post-doctoral researchers in addition to a growing cadre of graduate students – I very much look forward to a cohesive and productive research group in the coming years.

B. PROJECTED ACTIVITIES FOR NEXT YEAR

1. Summer 2013

a. Course(s) to be offered

b. Proposed research activity – Will focus on completing one graduate student and getting several manuscripts submitted for publication.

c. University, professional society, and public service – Involved in several fundraising activities for the Roosevelt Wild Life Station.

2. Fall Semester 2013

a. Course(s) to be offered

EFB 796 / FOR 796 Quantitative Methods and Model in R (3 cr) – co-taught with J. Stella

b. Proposed research activity

Moose: Secure IACUC, hire post-doctoral researcher

Deer Impacts: Work with team to assess state-wide impacts and develop indices for monitoring

Jaguar: Work to publish first manuscript from Allison Devlin's research

Bats: Support investigation of disease-genotype-microbiome link for white-nosed syndrome

c. University, Professional society, and public service

Roosevelt Wild Life Station – various activities

Participate (make presentations) in two special sessions at The Wildlife Society annual conference in Pittsburgh – Assessing shale gas impacts on wildlife, and coyotes in the eastern US.

3. Spring Semester 2014

a. Course(s) to be offered

EFB 491 / EFB 796 Applied Wildlife Science (3 cr.)

b. Proposed research activity

Moose: field surveys of moose population

Deer Impacts: Work with team to assess state-wide impacts and develop indices for monitoring

Jaguar: Work towards completion of A. Devlin dissertation, coordinate visiting scholar from Brazil.

Bats: Support investigation of disease-genotype-microbiome link for white-nosed syndrome

c. University, professional society, and public service

Roosevelt Wild Life Station – various activities