

ANNUAL REPORT: June 1, 2012 – May 31, 2013
(i.e., Summer 2012, AY 2012-2013)
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>
SUMMER:	EFB 496	Wildlife Techniques	3	11	Field course
SPRING:	EFB 491	Applied Wildlife Science	3	43	2
	EFB 796*	Applied Wildlife Science	3	8	1
	EFB 650	Landscape Ecology	3	14	1

** Course offered for second time as graduate offering associated with undergraduate course*

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 496 (Wildlife Techniques) has a service-learning component where students engage with both the NYS Department of Environmental Conservation and the general public on a long-term wildlife population survey at the Wilson Hill Wildlife Management Area. This annual “goose round-up” involves herding flightless (molting) geese into pens to affix or read existing leg bands. The goals are to collect biological data on the Canada geese populations and also to bring together as many people and organizations as possible at a conservation event to improve communication and understanding. Each year over 140 people participate in the drive, and this wildlife techniques class has been involved for the past 4 summers through my class. Students receive training on how to handle large numbers of birds, proper techniques of aging and sexing geese, as well as techniques for involving the public in conservation activities. In some years we participate in additional goose drives, such as one at Saranac Lake two years ago that gave a much more personal involvement of students with the public and even led to interviews with the press.
- EFB 496 (Hunter and Trapper Education for Wildlife Professionals) is fundamentally a service-learning oriented course. Students actively engage with the hunting and trapping public both through the training they receive for the different certification components and also in spending weekends at hunter check stations recording the demographic composition of harvested waterfowl and deer.

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>
EFB 496	Hunter and Trapper Education for Wildlife Professionals (<i>co-taught with Ron Giegerich and Joe Folta</i>)	3	36
EFB 495	Undergraduate Teaching Exp.	3	3
EFB 796	Graduate Teaching Experience	3	1
EFB 420	Internship in EFB	1-3	8
ESF 499	Honors Thesis / Project	3	1

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 28 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

- Christa LeGrande, M.P.S., Aug '11 (start)
- Silvia Saldivar Bellassai, M.S. (Fulbright), Aug '11 (start)
- Allison Devlin, Ph.D., Aug '10 (start), candidacy exam passed May '13
- Sara Hansen, M.S., Aug '09 (start) May '13 (completion)
"Estimating density of coyotes from call-response surveys using distance sampling and soundshed models"
- Andrew MacDuff, M.S., Aug '09 (start)
- Robin Holevinski, Ph.D., Aug '07 (start)

CO-MAJOR PROFESSOR

- Ana Patricia Calderón Quinonez (co-advised with James Gibbs), M.S. (Fulbright), Aug '11 (start) May '13 (completion) "Assessment of movement corridors for jaguars in eastern Guatemala"

MEMBER, STEERING COMMITTEE (other than those listed above)

- Elaina Burns (Underwood), M.S.
- Maureen Durkin (Cohen), M.S.
- Joe Folta (Underwood), Ph.D.
- Natasha Karniski (Lomolino), M.S.
- Brigham Whitman (Porter), M.S. – defended 25 October 2012
- 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, 2% AY)
- Honors thesis mentor to David Keiter (1% AY)

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)

- National Science Foundation, “How environment, physiology and life history interact to determine pattern in animal migration”, \$600,000 total (none for current year), Mar 2012 – Dec 2015. PIs: J. Gibbs, S. Blake, S. Deem, J. Frair. Will support a post-doctoral researcher.
- US Forest Service, “Identifying wolf movement corridors in the Great Lakes region using a landscape genetics approach”, \$119,264 total (\$82K current year), Sep 2012 – Sep 2015. PI: J. Frair. Supported post-doctoral researcher C. Hennessey.
- USDA Northern States Research Cooperative, “Quantifying beaver impacts on Adirondack forest communities at a landscape scale”, \$106,866 total (\$58K current year), Sep 2012 – Sep 2014. PIs: J. Stella, E. Bevilacqua, J. Frair. Will support Ph.D. student Shawn Cleveland.
- Liz Claiborne-Art Ortenberg Foundation (Panthera, Inc.) “Validation of the critical jaguar corridor in eastern Guatemala”, \$12,000, Jun 2012-July 2013. PI: J. Frair. Provided field support for A.-P. Calderón Quinonez.
- Heritage Preservation, “Roosevelt Wildlife Collection Conservation Assessment”, \$3,590 total, Nov 2012 – Mar 2013. PI: J. Frair. Provided a strategic conservation assessment of the vertebrate collection.
- ESF/ INECOL, “Phylogeography and recent genetic structure changes of the Neotropical Otter, *Lontra longicaudis*”, \$5,250 total (\$3,500 current year), Dec 11 – Dec 12 (*extended through 2013*). PIs: Carolina Valdespino (INECOL) and J. Frair. Field support for M.S. student at INECOL, Pablo César Hernández Romero.
- ESF / INECOL, “Biosphere reserves for multi-nuclei conservation: workshop and location assessment to write NSF Dynamics of Coupled Natural and Human Systems grant”, \$5,000, Dec 11 – Dec 12. PIs: S. Diemont, J. Frair, and s. Guevara Sada.

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. May 13-May 14. PI: Allison Devlin
- Sequoia Park Zoo, “Persistence of Tagua in the Paraguayan Dry Chaco”, \$998. May 13-May 14. PI: Silvia Saldivar Bellassai

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

- NY State Department of Environmental Conservation, “Wildlife research and management support”, \$3,359,864 total (\$494K for FY13-14). PI: J. Frair. Will provide support for various research projects eligible for Federal aid grants. Will also support a full-time biostatistician and part-time genetics lab technician.
- SUNY/RF Research Collaboration Fund, “Wildlife tracking device with multi-source energy harvester”, \$100,000 total. PIs: L. Zuo (SUNY Stonybrook), J. Frair. Will develop new means of powering GPS collars for wildlife, and provide funding to J. Frair to support field trials of the collars in FY14-15.

- 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. Oct 13 – Oct 15.

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

- SUNY ESF (seed grant), “Using allometry to fill critical data gaps and assess viability of the World’s cat populations”, \$7,800, PI: J. Frair (no reviews provided)
- USDA Northern States Research Cooperative, “Monitoring the recovery of a keystone browser, moose (*Alces alces*), in the Adirondack Park. \$141,645, PI: J. Frair (invited to full proposal, received favorable reviews but deemed too expensive for level of uncertainty in success, suggested DEC should invest first in the surveys proposed)
- USDA McIntire-Stennis, “Habitat capacity for a recovering keystone browser, moose (*Alces alces*), in Adirondack forests. \$51,957, PI: J. Frair (invited to full proposal, received favorable reviews averaging 4.15/5 pts, good feedback given for revision)

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., J.L. Frair, and J.P. Gibbs. (Accepted, under revision) Coexistence of the endangered, endemic Chittenango Ovale Amber Snail (*Novisuccinea chittenangoensis*) and a non-native competitor. *Biological invasions*.

Warsen, S.A., J.L. Frair, and M.A. Teece. (submitted) Isotopic investigation of niche partitioning among native carnivores and the non-native coyote. *Isotopes in Environmental and Health Studies*. Submitted for consideration under an accepted proposal for a special issue dedicated to “Stable isotopes in mammals”.

B. Non-refereed Publications

Frair, J., S. Hansen, R. Holevinski, and S. Warsen. 2013. Coyote Research at SUNY ESF. New York Hunting & Trapping, 2013-14 Official Guide to Laws and Regulations. New York State Department of Environmental Conservation.

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

“Influence of bait type on small mammal captures in interior Alaska” (poster presentation), 7 April 2013, Northeast Association of Fish and Wildlife Agencies annual conference, Saratoga Springs, NY. Presented by undergraduate student David Keiter (A. Balternsperger, J. Frair, and F. Huettmann as coauthors.

** *won best student poster award* **

“Eastern coyote predation of white-tailed deer in New York State”, 8 April 2013, Northeast Association of Fish and Wildlife Agencies annual conference, Saratoga Springs, NY. Presented by graduate student Robin Holevinski (J. Frair and G. Batcheller coauthors)

“Monitoring mammalian carnivores with call-response surveys and distance sampling”, 9 Apr 2013, Northeast Association of Fish and Wildlife Agencies annual conference, Saratoga Springs, NY. Presented by graduate student Sara Hansen (J. Frair, B. Underwood, and J. Gibbs coauthors).

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

“Celebrate Wildlife”, Roosevelt Wildlife Station friend-raiser, Lake Placid, NY, May 2013. ~42 attendees.

“Eastern coyote predation of white-tailed deer in New York State”, Ulster County Sportsmens Club, New Paltz, NY. June 2012, ~30 attendees.

“Top Dog: Understanding the ecological role of coyotes in NY State”, NY State DEC distributed lunch seminar, Albany, NY (broadcast to all the regions). Nov 2012, ~45 attendees in central office (not sure how many in regional offices).

V. PUBLIC SERVICE

A. Funded Service (include consulting activities)

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

Consulted on wildlife injury assessment (~9 hours), continuation from prior AY.

2. Industrial and Commercial Groups, etc.

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

Student activities team member, Northeast Association of Fish and Wildlife Agencies annual conference.

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

- 2 Oct 2012 (unable to make meeting because I was out of the country, but sent report)
- 4-5 Mar 2013, Madison, NY.

Coordinated Coyote Working Group meeting at ESF, 10 Jan 2013, that involved researchers from ESF, Cornell, Mianus River Gorge Reserve, and Fort Drum (~32 attendees).

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>
Journal of Applied Ecology	14
<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>
Deer-forest impacts assessment, Inter-state coordination meeting	8 April 2013	Saratoga Springs, NY

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

Completed CITI training, June 2013

D. Foreign Travel (Where, When, Purpose)

San Cristobal, Mexico, 26 Oct – 1 Nov 2012, grant proposal workshop led by Stewart Diemont.

VII. ADMINISTRATIVE AND SERVICE RESPONSIBILITIES (include committee participation)

A. Department-level

- Associate Director, Roosevelt Wild Life Station
 - Significant time spent working with Meredith Perreault, James Gibbs, Don Leopold, and Bob Quinn to create an endowment for the Station.
 - Working to build an Advisory board, holding functions to begin fund-raising, producing display and promotional materials, and meeting with prospective donors.
 - Attended meetings and dinners with Boone and Crockett Club related to endowment campaign – 29 Nov-2 Dec 2012 (New York City) and 26-28 Mar 2013 (Washington, DC)
 - Attended Feinstone Dinner and gave presentation at an Adirondack “Friend-raiser” event.
 - Serve as liaison for wildlife program with NYS-DEC, working on omnibus MOU for wildlife research and related activities (see grants pending).
 - Oversee the Roosevelt Wildlife Collection
- Roosevelt Wildlife Collection

- Supervise curator, Ron Giegerich.
- Secured grant for a Conservation Assessment of the collection through Heritage Preservation. On-site assessment completed 8-9 November 2012, written report received Feb 2013.
- Purchased equipment for collection maintenance (HEPA vacuum).
- Instrumental in IMLS grant proposal (pending) to inventory and digitize the collection and make it more accessible.
- Coordinate student assistants working on collection inventory.
- Worked with architects and ESF team on Gateway exhibit spaces.
- Chair, Wildlife Habitat Ecologist Search Committee
- Curriculum Coordinator for Wildlife Science major
- Coordinate Betty Moore Chamberlaine departmental award.
- Routinely represented the wildlife major at ESF Open House and Accepted Student Receptions

B. College-level

- Science Advisor to NY State Fish and Wildlife Management Advisory Board (President's representative)
- Poster judge, Syracuse University student poster session in Biology, 22 Mar 2013 (involved students from ESF)
- Council for Geospatial Modeling and Analysis, member
- Attended winter student banquet and spring commencement

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 our students, significant achievements this past year involved seeing to completion my first honors student (David Keiter, who received a student poster award at a regional conference for his work, and is working with me to publish one of his chapters), two M.S. students of my own (Sara Hansen, with a statewide assessment of coyote populations in NY State, and Ana Patricia-Calderon, with an assessment of jaguar movement corridors in Guatemala), and one M.S. student of Bill Porter's (Brigham Whitman) who remained here after Bill's retirement from ESF. This was also the second year I offered a graduate section to my Applied Wildlife Science course, and this year the graduate section gained traction with students successfully working together as a team to conduct a significant evaluation of a wildlife population using a site occupancy design and write a professional manuscript on their work. This is the first "stacked" class that I have offered, which compliments the two full graduate classes I teach and makes unique contributions to the graduate program. Finally, this year we began publishing "Field Notes" from the Roosevelt Wild Life Station, and used that to highlight student research and achievements. In the January-March issue we announced a Roosevelt Young Explorers award given to Deanna Russell (EFB '11) for her work on cheetah conservation in Kenya (this is an award we intend to give out annually).

For the department/college, I made an important contribution by serving as chair of a successful faculty search for a "Wildlife Habitat Ecologist". Once this new person is in place, I look forward to working with them and Jonathan Cohen to re-envision our three key wildlife courses and the role of habitat-centric management training therein.

Another significant achievement is an omnibus MOU between the NY State DEC and the Roosevelt Wild Life Station (should be completed this summer), which provides an umbrella for all projects eligible for Federal aid funds. This is a 5-year, \$3.36M agreement that will support research projects on the New England Cottontail (Cohen, Ryan, and Whipples), white-tailed deer browsing impacts (Dovciak and Frair), moose in the Adirondacks (Frair), black duck/mallard hybridization (Cohen), and river otter in the southern tier (Frair) over the next few years. In addition this MOU will provide genetics tech support and a biostatistician for the DEC. And one final achievement was assisting with populating the Gateway exhibit spaces with the Roosevelt Wildlife Collection – something that has helped greatly enrich our campus environment (thank you Architerra for that lovely design, and to everyone who put in a lot of time and energy to seeing it to completion!).

For myself professionally, I would say my greatest achievement this past year was growing my international program which included bringing Silvia Saldivar-Bellasai into my lab (a Fulbright student from Paraguay, who is studying the endemic Chacoan peccary), two different collaborations with partners in Mexico through INECOL, and being asked by James Gibbs to serve as co-PI on an ultimately successful NSF proposal studying migration triggers in Galapagos tortoise. This summer I'll also be spending three weeks in Brazil with my Ph.D. student Allison Devlin, working to deploy GPS collars on animals for her dissertation work. Solidifying my international research program is the focus of my upcoming sabbatical leave, and the accomplishments of this past year will help to do so.

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 I hope very much, with the help of Meredith Perreault, James Gibbs, Bob Quinn, and Don Leopold to have achieved a signed contract between the Boone and Crockett Club and the Roosevelt Wild Life Station, and be working seriously on the financial endowment required to hire a new faculty line and provide graduate student fellowships in the wildlife program. In the coming year I also will be on sabbatical leave, and will use that time to wrap up a number of long-term projects as well as initiate a series of new research projects.

B. PROJECTED ACTIVITIES FOR NEXT YEAR

1. Summer 2013

a. Course(s) to be offered

b. Proposed research activity

Will spend 3 weeks in the Brazilian Pantanal working with Allison Devlin and the Panthera team on a study of jaguar population persistence. Will also be working to get several coyote-centric research publications submitted.

c. University, professional society, and public service

Will be working to form an Advisory Council for the Roosevelt Wild Life Station, and will continue to work on the contract language for the Boone and Crockett Club University Program partnership. Will also work with the DEC to complete the omnibus MOU.

2. Fall Semester 2013

a. Course(s) to be offered

Normally, I would offer the Quantitative Methods and Models in R course this fall. However, this course is co-taught with John Stella, who will be on sabbatical, and so we are not offering it this coming fall. I will participate in a first-time seminar offering by Jonathan Cohen (Bayesian estimation methods), to help fill that graduate training gap this fall.

b. Proposed research activity

Mostly, I plan to be doing some modeling work with Sadie Ryan to help put the long-term coyote study into perspective in terms of predation impacts on deer populations.

Will be starting three new research projects this fall – one in partnership with the US Forest Service in Wisconsin (a landscape genetics study), one involving the long-term study of Galapagos tortoise (with James Gibbs), and the third involving assessing deer browsing impacts in NY State (with Martin Dovciak). Each of these projects will involve hiring a post-doctoral research associate, either later this summer or early fall, and each will require close involvement from me to get started.

Additionally, later this summer and into the fall I'll be involved in a lot of meetings with the DEC to plan out next phases to two research projects (moose and river otter), and to scope the genetics and statistical support portion of the MOU (and potentially hiring new people).

c. University, Professional society, and public service

Will continue working on the Roosevelt Wild Life Station endowment campaign. Will also work with wildlife and FNRM faculty to evaluate current three-course wildlife sequence and find mechanisms for building habitat management training into the curriculum.

3. Spring Semester 2014 – I will be on sabbatical leave in the spring semester

a. Course(s) to be offered

b. Proposed research activity

c. University, professional society, and public service