

ANNUAL REPORT: June 1, 2010 – May 31, 2011
(i.e., Summer 2010, AY 2010-2011)
DEPARTMENT OF ENVIRONMENTAL AND FOREST BIOLOGY
SUNY-ESF

NAME: Dylan Parry

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 -CLBS (Entomology Section)	3	~80	
FALL:	On Sabbatical Leave – No classes taught				
SPRING:	EFB-502	Ecol. And Mgmt. of Invasive Species	3	48	

NOTE: PLEASE INDICATE WHICH COURSE(S) HAD A SERVICE-LEARNING COMPONENT AND BRIEFLY EXPLAIN THE NATURE OF THIS COMPONENT. For examples of service-learning in courses, see: <http://www.esf.edu/students/service/courses.htm>. Service-learning is a form of structured experiential education in which students engage with the community to be active learners, to enrich their sense of civic responsibility, and to explore practical application for course content. Faculty oversight, reflective thinking, and reciprocity are key components of service-learning. EFB courses currently listed with service-learning components include: 416/6/1, 486, 518, 521, 532, 446/646.

2. Non-Scheduled Course Offerings (e.g., 496, 899, 999)

	<u>Course No.</u>	<u>Title</u>	<u>Credit Hrs.</u>	<u>No. Students</u>
EFB-899	Master's Research		5	2
EFB-999	PhD Research		5	1

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

-Invasive Species workshop for New York State Employees. Melissa Fierke and I co-taught a morning long overview of invasive species in forested ecosystems.

- Syracuse University Project Advance – Forensic Science for High School Teachers – I taught a two-day class and field course on forensic entomology.

4. Guest Lecture Activities

<u>Course No.</u>	<u>Title</u>	<u>No. of Lectures</u>
None		

II. STUDENT ADVISING

- A. Number of undergraduates for whom you are the student's official advisor 22 and unofficial advisor _____
- B. Graduate Students: (Name, degree sought, starting date, month & year; if a degree was completed, please give date and full citation for the thesis or dissertation).

MAJOR PROFESSOR

Phillip M. Barber (MS) Thesis Title: Comparison of Epiphytic Macroinvertebrate communities associated with an invasive aquatic plant (*Trapa natans* L.) and its native competitor (*Nymphaea odorata* Aiton). Completed 05/11.

Robert Smith (PhD) Started 01/09

CO-MAJOR PROFESSOR

Christopher R. Standley (MS) Started 01/10

MEMBER, STEERING COMMITTEE (other than those listed above)

Peter Rockerman (MS) Finished 05/11
Warren Hellman (MS) Finished 05/11
Yazmin Rivera (PhD) (EFB)

CHAIRMAN OR READER ON THESIS EXAMS, ETC.

Natalya Lavrykova (MS) Pulp and Paper Science (defended 04/11)

III. RESEARCH COMPLETED OR UNDERWAY

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

Forest tent caterpillar population dynamics. This research has been partially supported in some years, and bootlegged in other years. I have developed a long-term monitoring grid so as to better understand the temporal changes in abundance of this insect. Since its population cycles are approximately decadal, this represents a very long time commitment, far longer than any grant will support, and thus will continue to be bootlegged, perhaps for the duration of my career. I spend approximately 10% of my annual research time on this project.

Adaptive evolution in gypsy moth. I am extending some of the gypsy moth research that was originally funded by Macintire-Stennis while developing proposals to further support this research. Partial support will come from some of the USDA gypsy moth project I am now part of (see below). In the mean time, I will spend about 15% of my research time on this project.

- 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)

2011-2012. **Parry, D.**, USDA- Forest Service. Climate Controlled Reproductive Asynchrony and Mating Success in Gypsy Moth Populations. \$10,000.

2009-2012. Fierke, M., **D. Parry** and D. Allen. Evaluating Impacts of Native Parasitoids on *Sirex noctilio* in New York (provides support for Chris Standley) \$75,000

2008-2011. W. Powell, C. Maynard, D. Leopold, T. Horton, **D. Parry**. USDA Biotechnology Risk Assessment Grants (BRAG) program. Evaluating Environmental Impacts Of Transgenic American Chestnut Trees To Chestnut Trees Produced By Conventional Breeding. \$399,985.

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

2012-2015. Powell, W.A., C. Maynard, D. Leopold, D. Parry, D. Fernando, C. Nowak, & R. Briggs. USDA Biotechnology Risk Assessment Grants (BRAG) program. Evaluating environmental impacts of maturing transgenic American chestnut trees RELATIVE to chestnut trees produced by conventional breeding. \$500,000

2012-2015. Parry, D. and M.K. Fierke. USDA AFRI. Phenology and Performance of the Invasive European Woodwasp, *Sirex noctilio*, its Parasitoids, and Native Siricid Competitors on Two Species of Pine. \$286, 000

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

D. Parry and M. Fierke. Quantifying Phenology and Performance of *Sirex noctilio* and its Parasitoid Complex on Different Pine Hosts. USDA- Forest Service. \$90,000

D. Parry and R. Yanai. Northern States Research Cooperative (NSRC). Predicting Forest Tent Caterpillar Defoliation: Mechanisms Behind the Effect of Forest Fragmentation on Length of Outbreaks in Northern Hardwoods. \$80,466

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

Post, K.H. and **D. Parry**. 2011. Non-Target Effects of Transgenic Blight-Resistant American Chestnut (Fagales: Fagaceae) on Insect Herbivores. Environmental Entomology. *In Press (August Issue)*

Wood, D.M., **D. Parry**, R.D. Yanai, and N.E. Pitel. 2010. Forest fragmentation and duration of forest tent caterpillar outbreaks in northern hardwood forests. Forest Ecology and Management. 260: 1193-1197.

Submitted (currently in review)

Parry, D. 201x Forest tent caterpillar hatch is independent of bud break phenology despite large fitness costs. *Oecologia*. *Submitted MS*

Parry, D., D. A. Herms and K.R. Kosola. 201x. Large increases in tree defenses to insect outbreak have only modest direct effects on a lepidopteran defoliator and its competitors. *Ecological Monographs*. *Submitted MS*.

Standley, C., R. Hoebeck, **D. Parry**, D. Allen, M. Fierke. 201x Recognition, emergence phenology, and association of the cleptoparasitoid *Pseudorhyssa maculicoxis* (Kreichbaumer) (Hymenoptera: Ichneumonidae) with *Sirex noctilio* F. (Hymenoptera: Siricidae) and its parasitoid complex in New York. Proc. Entomol. Soc. Washington. *Submitted MS*.

B. Non-refereed Publications

Parry, D., and S.A. Teale. 2011. Alien Invasions: The Effects of Introduced Species on Forest Structure and Function. Pp 115-162 in *Forest Health: An Integrated Perspective*, ed. J. D. Castello and S. A. Teale. Cambridge University Press.

Parry, D. 2010. Got the Tent Caterpillar Blues? New York Forest Owners Association Newsletter (Fall 2010)

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

Parry, D. Invited talk (Conserving Biodiversity in Managed Forests Symposium) Direct and Indirect Effects of Pine barrens restoration on Threatened Lepidoptera. 24th International Congress for Conservation Biology, Edmonton, Alberta, Canada. July 3-7, 2010.

Parry, D. New Insights on the Population Dynamics of an Old Defoliator. Eastern Branch of the Entomological Society of America, Annual Meeting. Harrisburg, PA. March 19-21st.

Parry, D. Northeast Natural History Conference. Invited talk (Pine Barrens Symposium) Why call Pine Barrens Home? The enigmatic ecology of the barrens buckmoth. Albany, NY April 6-9, 2011.

Parry, D. Forest tent caterpillar hatch is independent of bud break phenology despite large fitness costs. North American Forest Insect Work Conference. Portland, OR. May 9-13, 2011

Elkinton, J.S. G.A. Boettner, and **D. Parry**. Benefits and harm from use of a generalist parasitoid: effects of *Compsilura concinnata* on browntail moth and native giant silkmoths. 2010 Biological Control for Nature Conference, Northampton, Massachusetts. Oct. 3-7, 2010

Fierke, M.K., P. Eager, C. Standley, **D. Parry**, D. Allen. Splitting and rearing to know: New insights into the siricid-parasitoid complex. Presented at multiple venues:

5/2011, *Sirex noctilio* Research Updates Meeting, Riverdale, MD.

3/2011, Eastern Branch Meeting of the Entomol. Soc. of America. Harrisburg, PA.

1/2011, USDA Annual Interagency Research Forum on Invasive Species, Annapolis, MD.

Standley, C.R., **D. Parry**, D. Allen, M. Fierke. Evaluating emergence phenology of the exotic *Sirex noctilio* F. and the native siricid-parasitoid complex in New York. 3/2011, Eastern Branch Meeting of the Entomol. Soc. of America. Harrisburg, PA.

Standley, C.R., **D. Parry**, D. Allen, M. Fierke. Evaluating emergence phenology of the exotic *Sirex noctilio* F. and the native siricid-parasitoid complex in New York. Poster. Presented at multiple venues:

5/2011, North American Forest Insect Work Conference. Portland, OR.

4/2011, SUNY-ESF Spotlight on Student Research. Syracuse, NY.

1/2011, USDA Annual Interagency Research Forum on Invasive Species, Annapolis, MD.

1/2011, New York Society of American Foresters Annual Meeting, Syracuse NY.

12/2010, Annual Meeting of the Entomological Society of America. San Diego, CA

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.

Member, New York State Invasive Species Advisory Council

Albany Pine Bush Preserve. I have continued a long-standing relationship with the Albany Pine Bush preserve. The director, Neil Gifford, and I have collaborated on numerous projects, and I provide consultation on the effects of management on insect species that are of conservation concern. Although there is no direct compensation, we benefit

through free labor from preserve staff and occasional housing for graduate students. Brian Hoven, in particular, was availed a significant amount of Pine Bush resources during the implementation of his project. My new MS student, Georgia Keene, will likely work in the Preserve as well.

NY DEC. I share ecological information on insect defoliators and exotic forest pests with Jerry Carlson, head of Forest Protection for NY-DEC. In addition, I have been running a pilot study on the use of forest tent caterpillar pheromone as a monitoring tool and coordinating sites with the DEC so that we can compare their traditional sampling methods with this new tool. The DEC will fund trapping costs (fuel, pheromone, traps, etc.). Jerry has been providing a state vehicle and gas, which given the thousands of miles of driving this project entails, is a real important contribution.

Project Advance – Syracuse University, Forensics for High School teachers. I continue to run a two-day workshop each summer for the best and brightest high school science teachers in the state. I run a forensic entomology lab for them and teach them how to introduce this material into their own teaching programs. As forensic science is a great way to gain and keep student interest in biology, this program is in high demand. Although I get a token honorarium, the time investment is significant and thus is functionally un-compensated.

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, New York State Invasive Species Advisory Council (Not sure whether this should be listed here or as unfunded governmental service (or in both). It does have a designated legislative charter and is composed of professionals.

2. Professional Society Membership

Ecological Society of America
Society for Conservation Biology
Entomological Society of America

3. Other Professional Activities

a. Editorial activity

Journal (s)

Responsibility

Other (books, symposia, etc.)

b. Reviewer

Journal(s)

No. of manuscripts

Canadian Journal of Forest Research

(2)

Physiological Entomology	(1)
Oecologia	(2)
Biological Control	(1)

<u>Agency</u>	<u>No. of proposals</u>
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<u>Other</u>	
Insect outbreaks	(1 book chapter)
Edna Bailey Sussman Fellowship	36 proposals

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.

Sabbatical Leave

D. Foreign Travel (Where, When, Purpose)

Canada – Society for Conservation Biology, Edmonton, Alberta. Presented invited paper in symposium on conserving biodiversity in managed forests

VII. ADMINISTRATIVE AND SERVICE RESPONSIBILITIES (include committee participation)

A. Department-level

Administrate the LeRoy C. Stegeman Award in Invertebrate Ecology (as I have done since 2003)

B. College-level

Member, Sussman Fellowship Committee (3 year term). Evaluate and rank 36 research proposals.

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 would be most helpful: this past year, what have you done for our students, department/college, and self professionally? NOTE: The information in this section (along with the supporting specific information elsewhere in this report) should be your strongest case for being considered for a discretionary raise, which I’ll continue to award based on your contributions to the department and college this reporting period.

Students: My teaching load and interactions with students was diminished this year as I was on sabbatical leave through the fall. To accommodate demand for my Ecology and Management of Invasive Species course (usually offered in fall), I moved it to the spring this year (and for the foreseeable future). My enrollment continues to grow in this class (nearly 50 enrolled). I continued to add new components to this course to keep it fresh and current in this rapidly developing field. Once again, it received high scores on student evaluations.

To minimize disruptions, I took sabbatical while most of my current graduate students were finished or finishing. Phillip Barber defended in December and completed his revisions and graduated in May. Keith Post (grad 2009) and Brian Hoven (2010) have started PhD programs (University of Tennessee and University of Miami, respectively). I was able to recruit a very promising new MS student, Georgia Keene, who officially starts in the Fall but will be working with me this summer.

Department and College: I stepped down as Chair of CCAC after 3 years in preparation for my sabbatical leave. In the spring, I joined the Sussman fellowship Panel (for the next 3 years) and each member evaluated and ranked 36 research proposals. I also will be joining the College Committee on Research this coming year.

Self: Sabbatical leave allowed me to finish up several manuscripts from completed projects as well as start to develop some new research directions. In collaboration with Melissa Fierke, we have been trying to scale up our ongoing Sirex research and have submitted a USDA AFRI grant to fund some of our planned research. We have started a new collaboration with researchers at the Pineville, Louisiana USDA facility to try and understand potential impacts of Sirex when it reaches the economically valuable southern pine plantations. Another new collaboration (with Patrick Tobin at the USDA Forest Service in Morgantown, WV) is taking some of my older gypsy moth material and putting it into a climate change context. I am very enthusiastic about this relationship and we (as well as Brian Aukema at University of Minnesota) are already working on an invited book chapter (Cambridge University Press) on insect outbreak dynamics in a warmer world. Over the summer, I will develop the inaugural ESF version of Forensic Entomology, a very well received course that I have been teaching as part of the core curriculum in Syracuse University's Forensic Science program.

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)

Melissa fierce and I are really trying to develop a comprehensive program in forest entomology and insect ecology and have increased our recruitment efforts. Even though we are at a significant competitive disadvantage relative to regional land grant colleges, we'd like to continue to develop a broader synthetic program within our discipline and bring ESF back to the forefront of forest entomology. Although the time horizon is quite a way off yet, myself, Patrick Tobin (US-FS) and Melissa) have had some early conversations about potentially hosting the 2016 North American Forest Insect Work Conference in the Northeast (it is held every 5 years and has never been held in our region), which would be a major undertaking, but would provide a huge profile boost.

In this economic climate, grants are especially tough to get (AFRI is awarding 9 out of 188 for the Pest and Beneficial Insect panel) but I will continue to revise and submit a number of proposals I have been working on this year.

B. PROJECTED ACTIVITIES FOR NEXT YEAR

1. Summer 2011

a. Course(s) to be offered

EFB-202, Entomology Section July 13-18

b. Proposed research activity

-USDA BRAG – large scale bioassays of the experimental chestnuts with several insect species

- USDA Forest Service – Mating success and climatic asynchrony experiments.
- Ongoing long-term forest tent caterpillar research.

c. University, professional society, and public service

SUPA – Forensic Entomology for Teachers Workshop

2. Fall Semester 2011

a. Course(s) to be offered

EFB 496/796 Forensic Entomology (at ESF)

FSC 340/640 Forensic Entomology (at Syracuse University)

Note: these are NOT the same courses – ESF version will differ considerably in focus.

b. Proposed research activity

- Sirex collaboration

c. University, Professional society, and public service

College Committee on Research

NY Invasive Species Advisory Council

3. Spring Semester 2012

a. Course(s) to be offered

EFB 502 Ecology and Management of Invasive Species

EFB 797 Insect Ecology

b. Proposed research activity

c. University, professional society, and public service

Committee on Research

Sussman Committee

NY Invasive Species Advisory Council