

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

**NAME: James P. Gibbs**

**I. INSTRUCTIONAL ACTIVITIES**

1. Regular Course Offerings

Course No.	Title	Credit Hrs.	No. Students	No. of Lab. Sections
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SUMMER: **EFB 384 Field herpetology** 3 cr, 16 students

FALL: **EFB 485 Herpetology**, 3 cr., 78 students (*this course had a significant service learning component...students interacted with professional biologists to prepare a variety materials to help promote the Year of the Turtle (YOT) events via the Partners in Amphibian and Reptile (PARC) YOT monthly newsletter. About 30 students participated*)

SPRING: **EFB 413 Introduction to Conservation Biology** 3 cr, 96 students

**EFB 419 Problem solving in conservation biology** 3 cr. 45 students

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

Course No.	Title	Credit Hrs.	No. Students
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3. Continuing Education and Extension (short courses, workshops, etc.)

Advances in Monitoring and Quantitative Ecology in Conservation Science, Led by: Benjamin Zuckerberg, Cornell University Lab of Ornithology, James P. Gibbs, College of Environmental Science and Forestry, State University of New York, Syracuse, Wesley Hochachka, Cornell University Lab of Ornithology, Student Conference on Conservation Science (SCCS-NY) 2010, American Museum of Natural History, New York City, 3 hour workshop, 5 November 2010 (about 60 in attendance)

Effects of New York State roadways on amphibians and reptiles: Results from a research and adaptive mitigation program, Webinar to New York State Dept. Transportation employees led by David Patrick and James Gibbs, 1/31 (audience size unknown)

4. Guest Lecture Activities

Course No.	Title	No. of Lectures
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Global Environment, "Biodiversity and conservation biology" 11/15

Global Environment, "Biodiversity and conservation biology" 4/11

Freshman Seminar, "Conservation biology" 10/5 and 10/6

Urban Ecology, "Evolution in urban environments," 11/17

**II. STUDENT ADVISING**

A. Number of undergraduates for whom you are the student's official advisor: 51 and unofficial advisor: unknown

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).

1. Kevin T. Shoemaker (1/08, PhD, “*Demography and population genetics of the bog turtle (Glyptemys muhlenbergii): implications for regional conservation planning,*” completed May 2011)
2. Kristin Winchell (1/09, MS, Columbia U., “*Population Response of Two Freshwater Turtle Species (Chelydra serpentina and Chrysemys picta) to an Urbanization Gradient in Syracuse, New York,*” completed March 2011).
3. Angela Sirois (9/07, MS, “*Effects of habitat alterations on bog turtles (Glyptemys muhlenbergii): a contrast of responses by two populations in Massachusetts, USA,*” completed May 2011)
4. Meredith Atwood (9/09, MS, “*Effects of basal resources on the food web of temporary freshwater pools: implications for amphibians and restoration efforts,*” completed May 2011).
5. Jason Townsend (9/06, PhD, “*Mercury accumulation in soils and biota along a forested elevational gradient in the Catskill Mountains, New York, and the utility of Catharus thrushes as local- and global-scale bioindicators*” completed May 2011)
6. Andrew Myers (1/09, MS)
7. James Arrigoni (9/09, PhD)
8. Mike Fishman (9/05, MS)
9. Elizabeth Hunter (9/09 MS)

#### CO-MAJOR PROFESSOR

#### MEMBER, STEERING COMMITTEE (other than those listed above)

1. Viorel Popescu PhD (Maine)
2. Oscar Pinedo (Columbia)
3. Andrew McDuff, MS
4. Cynthia Watson, PhD
5. William Hellenbrook, PhD
6. Juan Carlos Alvarez-Yepiz, PhD
7. Katherina Bendz Searing, PhD
8. Hara Woltz PhD (Columbia)
9. Jessica Bohn, MS
10. Portia Osborn, MS
11. Sara Hansen, MS
12. Wendy Baltzersen, PhD

#### CHAIRMAN OR READER ON THESIS EXAMS, ETC.

Chair of comprehensive exam, Whitney Lash, PhD candidate, Env. Studies

#### POST-DOCS, VISITING SCHOLARS AND OTHERS FOR WHOM I HAD RESPONSIBILITY VIA PAYROLL, ADVISING, MENTORING, ETC.

Dr. Geri Tierney (since 9/04 to present) – NPS ecological monitoring project (throughout year)

Drs. Han Overman and Jeffrey Luzar – supported under Project Fauna Guyana (throughout year)

### **III. RESEARCH COMPLETED OR UNDERWAY**

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

I have spent a considerable amount of time scoping out the conceptual basis for a “Galapagos information management system” with various collaborators.

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)

- Trust for Mutual Understanding, “Effective Protection of Endangered Snow Leopard and Argali Sheep in Altai,” J. Castner, J. P. Gibbs, M. Paltsyn, and S. Spitsyn. \$15,000.00. 5/15/11-5/14/11.
- Galapagos Conservancy, “Human Detection Sensors to Contradict Illegal Poaching of Giant Galápagos Tortoises,” J.P. Gibbs, S. Burnett, and G. Carney, 12/12-12/13.
- Weeden Foundation, “Networked human detection sensors to contradict illegal poaching of endangered Altai wildlife.” J. P. Gibbs, J. Castner, M. Paltsyn. \$15,000, 5/11-4/12.
- U.S. NSF, “ULTRA-Ex: Positioning Rust-Belt Cities for a Sustainable Future: A Systems Approach to Enhancing Urban Quality of Life” Collaborator on: D. Nowak, R. Smardon, C. Hall, M. Hall, E. Carter, B. Nordenstam (PI’s). \$300,000 (J. P. Gibbs portion: \$14,000). 8/09/3/12.
- Northeastern States Research Cooperative. “Impacts of Acidic Deposition and Soil Calcium Depletion on Terrestrial Biodiversity and Food Webs in Northern Hardwood Forest Ecosystems,” C. Beier, J. P. Gibbs, M. Mitchell, M. Fierke, M. Dovčiak. \$149,839. 5/10-4/13.
- Upper Susquehanna River Coalition (USC), “Integrating watershed-based wetland protection into the Upper Susquehanna Coalition Wetland Program,” Subcontract of \$66,000 on US EPA Region 2 Wetland Development Grant EPA-R2-09WPDG (\$402,120 to USC). J. P. Gibbs and D. J. Leopold, 5/10-4/13 (Elizabeth Hunter, Patrick Raney supported).
- New York State Energy Research and Development Authority (NYSERDA), “Assessing the Viability of Radar and Acoustic Data as a Predictor of Collision Risk to Night Migrating Birds and Bats: A Test Using Data from the Maple Ridge Wind Power Project, Lewis County, New York.” \$49,000. J. P. Gibbs, 9/1/10-12/31/11 (Kevin Shoemaker supported)
- National Environment Management Council, United Republic of Tanzania. “Evaluation of toxicity of endosulfan for Kihansi spray toads: Direct exposure effects and interactions with nutritional status and infection by pathogenic Chytrid fungus.” J. P. Gibbs. \$30,000. 11/10-6/11. (Brooke Reeve supported)
- Panthera, “Community-based Snow Leopard Conservation and Monitoring in the Argut River Basin, Altai Republic, Russia,” J. P. Gibbs, 6/1/10-5/30/1.
- Galapagos Conservancy, Inc. “Restoration of Pinta Island through the Re-introduction of Giant Tortoises: Phase I Post-release Tortoise and Plant Community Monitoring,” J. P. Gibbs. \$77,082.00. 5/1/10-4/30/11. (Elizabeth Hunter supported)
- Galapagos Conservancy, Inc. “Population Assessment of Giant Tortoise, Tree Cactus and Waved Albatross on Española Island, Galapagos,” J. P. Gibbs, \$32,136, 5/1/10-4/30/11.
- National Geographic Society, “Understanding interactions among three globally endangered species -- the waved albatross, giant tortoise, and giant tree cactus -- to inform conservation management of Española Island, Galápagos.” James P. Gibbs, Eleanor Sterling, Kate Huyvaert, Washington Tapia, and Felipe Cruz, \$21,500, 1/1/10-12/31/11.
- National Geographic Society, “Seed dispersal effectiveness in an island megaherbivore: The Giant Galapagos tortoise,” Steve Blake, Martin Wikelski, Mark Gardner, James P. Gibbs, \$21,500, 1/1/10-12/31/11.
- New York State Department of Conservation: “Population status and foraging ecology of eastern coyotes in New York State.” Jacqueline L. Frair, James P. Gibbs, Gordon R. Batcheller, \$678,704, 1/06-9/11.
- New York State Department of Conservation: “Bog Turtle Dispersal and Population Monitoring,” J. P. Gibbs and L. B. Smart. \$155,000. 4/06 – 3/09 *extended to March 2011*. (Kevin Shoemaker supported)
- National Science Foundation, “Biodiversity dynamics and land-use changes in the Amazon: Multi-scale interactions between ecological systems and resource-use decisions by indigenous peoples,” J. M. V. Fragoso, J. P. Gibbs, K. Silvius, L. Martins, J. Read. \$1,650,001. 9/05-8-09. *Extended to Sept 2011*. (4 post-docs supported)
- SUNY-ESF McIntire-Stennis Research Program Proposal, “Restoring Small, Ephemeral Wetlands in Forested

Landscapes of New York State: Initiating a Large-scale, Long-term Collaborative Research Program Based at the Heiberg Forest,” James P. Gibbs, John C. Stella, Kimberly L. Schulz, Donald J. Leopold, 1/09-12/12, \$89,850. (James Arrigoni supported)

National Fish and Wildlife Foundation, “Golf Course Wetlands as Refuges for Turtles,” J. P. Gibbs, \$60,000, 12/08-12/11 (Kristin Winchell supported)

U.S. National Park Service: “Vital Signs Monitoring of the Northeast Temperate Parks,” J. P. Gibbs and G. Tierney (since 2001); current projects as follows:

“Phase III: Development of Terrestrial and Related monitoring Protocols for High Priority NETN Vital Signs,” 7/1/03-12/3/107, \$83,729 (augmented \$28,931 1/09, *Extended to Sept 2011*).

“Monitoring Ecological Integrity of Forest Ecosystems: Evaluation and Implementation of the NETN Forest Condition Protocol” 7/1/2009-6/30/2010. *Extended to Sept 2011*. \$49,493

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

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

**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

F. Rodrigues da Silva, J. P. Gibbs, and D. de Cerqueira Rossa-Feres. In press. Breeding habitat and landscape correlates of frog diversity and abundance in tropical agricultural landscapes of southeastern Brazil. *Wetlands*.

W. G. Shriver, M. Pepper, H. Woltz, and J. P. Gibbs. In press. Galápagos rail population change on Santa Cruz Island, Galápagos, Ecuador. *Bird Conservation International*.

J. P. Gibbs, L. B. Smart, A. E. Newhouse, D. J. Leopold. In press. A molecular and fitness evaluation of commercially available versus locally collected blue lupine *Lupinus perennis* L. seeds for use ecosystem restoration efforts. *Restoration Ecology*.

C. J. Conway and J. P. Gibbs. In press. Summary of Intrinsic and Extrinsic Factors Affecting Detection Probability of Marsh Birds. *Wetlands*.

N. E. Karraker and J. P. Gibbs. In press. Road deicing salt irreversibly disrupts osmoregulation of salamander egg clutches. *Environmental Pollution*.

N. E. Karraker and J. P. Gibbs. 2011. Contrasting road effect signals in reproduction of long- versus short-lived amphibians. *Hydrobiologia* 664:213–218

B. Non-refereed Publications

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

“Biodiversity dynamics and land-use changes in the Amazon: Multi-scale interactions between ecological systems and resource-use decisions by indigenous peoples,” Invited special presentation, annual AAAS meeting, J. M. V. Fragoso, J. Luzar, K. Silvius, J. P. Gibbs, and J. Read. 2/19. Washington, D.C.

“Climate change impacts on species and ecosystem distributions in the Altai Mountain region of Russia”, IUCN-sponsored workshop on Transboundary Issues, Climate Change & Conservation in the Altai Mountain Region, Ust Koxa, Altai, Siberia, Russia. 7/24/10.

“Staying relevant as a conservation biologist,” Invited plenary speaker, Student Conservation Conference – New York, American Museum of Natural History, New York City, 10/3/10.

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

“Ecology, evolution and conservation of Galapagos tortoises,” Invited lecture, Department of Evolution, Ecology, and Organismal Biology, Ohio State University, 10/21/10 (70 attendees)

“Wildlife conservation in the Russian Altai: Starting from scratch,” Invited lecture, Department of Evolution, Ecology, and Organismal Biology, Ohio State University, 10/21/10 (40 attendees)

“Citizen science for monitoring wildlife populations,” presentation to NYSDEC wildlife section annual meeting, White Eagle, Clinton, NY, 2/2/11 (30 attendees).

“Can amphibians and reptiles be harvested sustainably?” annual meeting of the New York Chapter of The Wildlife Society, 3/5/11, Rome, NY (40 attendees).

## 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.

“Equipo Asesor en Herpetología/Advisory Team in herpetology” to Galapagos National Park Service, Member, appointed 1 year term, 10/10.

Instituto Ecologia, Xalapa, Mexico, Member of Comité Externo de Evaluación del INECOL, 4 year term, appointed 12/10 (performed first site visit 14-18 Feb. 2011).

Vice Chair, Altai Assistance Project (Wadhams, NY, USA/Gorno-Altai, Altai Republic, Russia), (elected 3/09, 2-year term)

Member, Chittenango Ovate Amber Snail recovery team (2002-present)

Nine Mile Creek Conservation Council, Council Member, Camillus, New York (2001-present).

Board member, The Wetlands Trust (2009-present)

## 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)

2. Professional Society Membership

American Association for the Advancement of Science, Society for Conservation Biology, The Wildlife Society

3. Other Professional Activities

a. Editorial activity

Journal (s)

Responsibility

Other (books, symposia, etc.)

b. Reviewer

Journal(s)

No. of manuscripts

Agency

No. of proposals

Other

I regret that I do a fair amount of proposal and manuscript review work but do a poor job of tracking these activities.

c. Participation (workshops, symposia, etc.)

Name of workshop, etc.

Date

Place

Invited participant, U.S. Fish and Wildlife Service International Wildlife Trade Program workshop on "Conservation and Trade Management of Freshwater and Terrestrial Turtles in the United States," Sept. 14-19, 2010, St. Louis, Missouri.

Invited participant, Altai Alliance Meeting, San Francisco, California, 3/30-3/1/11.

Invited participant, Engaging and Learning for Conservation: Workshop on Public Participation in Scientific Research April 7 – 8, 2011, American Museum of Natural History, New York, New York.

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

D. Foreign Travel (Where, When, Purpose)

Galapagos Islands, Ecuador, May-June 2010. Helped launch Project Pinta Phase I (liberation of 39 tortoises to Pinta Island) and orchestrated Project Espanola (whole island survey for cactus, tortoises, waved albatross and woody vegetation) in collaboration with Galapagos National Park Service.

Altai Republic, Russia, July 20-Aug 10. Attended IUCN organized meeting on climate change in Ust Koxa then traveled to Altaisky Zapovednik to plan upcoming fieldwork in region with collaborators based there.  
Xalapa, Veracruz, Mexico Feb 14-18, 2011. Participated as Member of Comité Externo de Evaluación del INECOL.  
Kiev and Crimea, Ukraine 5/2-5/11. Traveled to plan upcoming engagement with National University Kiev Mohyla to help develop university training programs in conservation biology at undergraduate and graduate levels.  
Galapagos Islands, Ecuador 5/15-6/12. Helped launch Project Pinta Phase II and orchestrated whole island survey of Santa Fe Island for endemic iguanas, *Scalesia spp.* and other rare species by park guards (collaboration with Galapagos National Park Service)

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

### A. Department-level

Coordinator, Conservation Biology Major  
Coordinator, Internships  
Member, Course and Curriculum Assessment Committee  
Member, Promotion and Tenure Committee  
Associate Chair  
Director, Roosevelt Wild Life Station

### B. College-level

### 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.**

For our students, I focus on creating tangible professional opportunities and bringing diverse perspectives from my research and outreach work into the classroom and into advising. Through collaborations I have secured funds to engage EFB students in two remarkable experiences this year...3 will spend 2 months on a remote island in Galapagos studying giant tortoises and 3 others will join on an expedition in Siberia later in the summer counting Marco Polo sheep in the Altai Republic. A program developed with NYSDEC has generated about 16 paid internship opportunities for EFB students this year. Five graduate advisees matriculated this year and all are headed off to excellent, next opportunities...post-docs at SUNY Stony Brook/Applied Mathematics (Shoemaker) and Cornell Lab of Ornithology (Townsend), PhD programs at Boston University (Winchell) and Yale University (Atwood, supported by 3-year NSF doctoral fellowship secured while at ESF), and employment in area of expertise (The Nature Conservancy - Sirois). A productive and fulfilling collaboration with colleagues at the Upper Susquehanna Coalition generated a classroom experience for Senior Synthesis class focused on wetland restoration (taught by P. Raney) that seemed to be a successful cross-walking of professionals and students (with the actual teaching funded by an EPA grant). For example, the students in Herpetology classes were linked to professional biologists associated with Partners in Amphibian and Reptile Conservation group and generated many synopses of turtle research and conservation programs used in the group's monthly newsletter celebrating Year of the Turtle. This same collaboration supports an exciting research program involving 80 recently created vernal pools at Heiberg Forest that PhD candidate Arrigoni is focusing on (with much undergraduate involvement). M.S. candidate Hunter continues her exciting work tracking the fates and ecological impacts of introduced "ecological analog" tortoises in Galapagos in collaboration with the Galapagos

National Park Service and Galapagos Conservancy. We also received support from the Tanzanian government to develop a colony of an amphibian species now extinct in the wild (Kihansi spray toads); experimental work critical to the decision-making process on future steps in the species conservation is being undertaken now at ESF by Reeve (M.S. candidate) and Radell (undergraduate).

For our Department I contribute by teaching two of the three core courses for the conservation biology major. Introduction to Conservation Biology has an annual enrollment of 90-100 of which only 1/3 of students are conservation biology majors. I also teach a general upper-division elective course (Herpetology) that is broadly subscribed across majors. Two activities that require a very substantial amount of student interaction and time are coordination of the major in Conservation Biology and overseeing student internships for the Department. I have enjoyed serving on the Curriculum Committee this year and helped make good progress in developing assessment tool for use by each major. We (with Frair, Leopold, and Quinn) expended significant effort to resurrect the Roosevelt Wild Life Station and developed several new contacts that may lead to development opportunities for the Station next year (current efforts focus on developing a website to give the program better visibility). I contribute modestly to operation of the Department as Associate Chair focusing primarily in the past year on issues of developing rubrics for faculty productivity and program assessment. Last, many of us invested significant effort in generation of an NSF IGERT proposal lead by Kimmerer and focused on linking traditional and western views of ecological science – we were disappointed to see this proposal rejected yet a second time but believe in the proposal to such an extent that will likely work on a third submission.

For me personally many research and service opportunities have come to fruition after years of cultivation. I continue a productive advising relationship with the Galapagos National Park to help orchestrate ecological surveys by park guards of poorly known islands to address park information needs for management decision-making (Espanola Island in 2010, Santa Fe in 2011). I also work hard with collaborators The Altai Project (Castner) and the The hAltai Assistance Project (Foley) to generate financial support for Russian colleagues combating wildlife poachers in Siberian Altai. I have assisted the Galapagos Conservancy (an NGO) extensively in the last year to develop a program on information management for use by all management institutions in the Galapagos archipelago. We finally (and quietly) launched the *squirrelmapper.org* website for engaging citizen scientists in mapping gray squirrel morph variants as a vehicle for focusing public attention on evolution in urban environments...we are now seeking further funding to handle the volume of interaction this project will involve once fully launched. I continue to oversee the financial aspects of a large NSF biocomplexity grant operating in Guyana for the last 6 years that is finally terming in September; thereafter I hope to be able to focus on analysis of the data generated by this project. I enjoyed the challenges of serving as an external evaluator for the National Institute of Ecology in Mexico, a position I hope to retain several years hence. And I am looking forward to furthering collaboration in the next two years to develop university education in conservation biology at the National University of Kiev-Mohyla in Ukraine.

All of these experiences I bring back to my classes and for developing materials for teachers (mainly via the well-subscribed conservation biology exercise book and introductory text with M. Hunter) as well as securing ideas for applied research on timely topics and contacts for financial support.

## **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)**

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

#### 1. Summer 2011

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

Field herpetology

b. Proposed research activity

A focus on Galapagos surveys and their synthesis, vernal pool research, analysis of Project Fauna Guyana animal data, pulling together projects various completed last year, and spray toad experiments will occupy 1 month of the summer

c. University, professional society, and public service

Altai work – anti-poaching efforts and wildlife surveys will occupy two months of the summer.

2. Fall Semester 2011

a. Course(s) to be offered

Herpetology is slated but likely to be taught by someone else.

b. Proposed research activity

All funded projects must be moved ahead... additionally I hope to develop with collaborators two significant proposals to NSF on tortoise ecology and squirrel morph evolution.

c. University, Professional society, and public service

I will focus on Departmental committee work, internships and the conservation biology major coordination, as well as make substantial advancement of curriculum development project in Ukraine.

3. Spring Semester 2012

a. Course(s) to be offered

Intro. Cons. Biology and Problem-solving in Conservation Biology.

b. Proposed research activity

All funded projects must be moved ahead

c. University, professional society, and public service

I will focus on Departmental committee work, internships and the conservation biology major coordination, as well as make substantial advancement of curriculum development project in Ukraine.