

ANNUAL REPORT: June 1, 2012 – May 31, 2013
(i.e., Summer 2012, AY 2012-2013)
DEPARTMENT OF ENVIRONMENTAL AND FOREST BIOLOGY
SUNY-ESF

NAME: James P. Gibbs

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:

FALL:

EFB420 Prof Internship/Envrn Biology 3 students

SPRING: [on sabbatical leave]

Introducción a la Investigación Científica (Introduction to Scientific Investigation), 40 hours, 21 students, 1 lab section, Universidad Central del Ecuador / Galapagos Campus. Service learning component: the laboratory for this course spans a six-month period during which time students are implementing course concepts in experimental design to assess a problem identified by the Galapagos National Park Service, that is, whether the impacts of feral chickens on native plants warrants Park implementation of control measures.

EFB298 Rsrch Internship/Envrn Biology	1 student
EFB420 Prof Internship/Envrn Biology	6 students
EFB498 Independent Research/Envrn Bio	1 student

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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Freshman seminar fall semester Introduction to Conservation Biology 2 classes
 Environmental Thought and Ethics 1 class
 Urban Ecology 1 class and 1 lab
 The Global Environment and the Evolution of Human Society 1 class
 Introduction to Conservation Biology 1 class

II. STUDENT ADVISING

A. Number of undergraduates for whom you are the student's official advisor: **40** [on sabbatical spring semester, all advisees handled by supporting faculty] and unofficial advisor: NA

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

Arrigoni Jr., James E, PhD EFB/CON BIO, Start: Sept 2009
Fishman, Michael S, M.S EFB/CON BIO, Start: Sept 2010
Ganzia, Anna, MPS EFB/APPL ECOL, Start: Jan 2013
Igorova, Ielizaveta, MPS, EFB/APPL ECOL, Start: Jan 2013
Johnson, Brent MS EFB/CON BIO Thesis "Management and Status of an Endangered Massasauga Rattlesnake Population in New York State" Start: Sept 2011, Completed April 2013
Karpenko, Darya MPS EFB/APPL ECOL, Start: Jan 2013
Kudalkar, Sahila MS EFB/CON BIO, Start: Sept 2012
LaPan, Stewart MS EFB/F&W MGT, Start: Sept 2012
Paltsyn, Mikhail PhD EFB/CON BIO, Start: Sept 2012
Shevtsova, Olga MPS EFB/APPL ECOL, Start: Jan 2013
Shynkarenko, Nataliia MPS EFB/APPL ECOL, Start: Jan 2013

CO-MAJOR PROFESSOR

Calderon Quinonez, Ana Patricia MS EFB/CON BIO "Assessment of Movement Corridors for Jaguars in Eastern Guatemala" Completed May 2013

MEMBER, STEERING COMMITTEE (other than those listed above)

Alvarez Yepiz, Juan Carlos, Doctor of Philosophy, EFB Ecology, Steering Committee, DOVCIK
Avis, Michelle L, Master of Science, EFB Fish & Wildlife Biology & Mgt, Steering Committee, COHEN
Bondi, Cheryl A, Doctor of Philosophy, ESC Water & Wetland Resource Studies, Steering Committee, BEIER
Buff, Matthew F, Doctor of Philosophy, EFB Ecology, Steering Committee, LEOPOLD
Chaudhary, Anand, Master of Science, EFB Conservation Biology, Steering Committee, COHEN
Devlin, Allison L, Doctor of Philosophy, EFB Ecology, Steering Committee, FRAIR
Gurdak, Daniel J, Doctor of Philosophy, EFB Ecology, Candidacy Examination Committee, STEWART
Hansen, Sara J, Master of Science, EFB Fish & Wildlife Biology & Mgt, Steering Committee, FRAIR
Helenbrook, William D, Doctor of Philosophy, EFB Conservation Biology, Steering Committee, SHIELDS
Holevinski, Robin A, Doctor of Philosophy, EFB Fish & Wildlife Biology & Mgt, Steering Committee, FRAIR
Jones, Jaime B, Master of Science, EFB Conservation Biology, Steering Committee, LEOPOLD
Kocak, Alison R, Master of Science, EFB Fish & Wildlife Biology & Mgt, Steering Committee, COHEN
LaPan, Stewart, Master of Science, EFB Fish & Wildlife Biology & Mgt, Major Professor, GIBBS
MacDuff, Andrew J, Master of Science, EFB Fish & Wildlife Biology & Mgt, Steering Committee, FRAIR
O'Connor, Megan E, Master of Science, ESC Water & Wetland Resource Studies, Steering Committee SELFA

CHAIRMAN OR READER ON THESIS EXAMS, ETC.

Marshall, Whitney G, Doctor of Philosophy, FRM Economics, Policy, and Human Dimensions, Candidacy Examination Chair, LUZADIS

III. RESEARCH COMPLETED OR UNDERWAY

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

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)

United States Fish and Wildlife Service Great Lakes Restoration Initiative, "Restoring critical habitat, mitigating multiple threats, and evaluating population status for bog turtle, eastern massasauga rattlesnake, and Houghton's goldenrod co-occurring in a single, exceptional, marl fen ecosystem, Bergen Swamp, Genesee County, NY" D. J. Leopold, K. T. Shoemaker, and J. P. Gibbs. 8/2012- 5/2015, \$128,064.00.

National Science Foundation/Population and Community Ecology: "How Environment, Physiology and Life History Interact to Determine Pattern in Animal Migration Proposal 1258062," J. P. Gibbs, S. Blake, S. Deem, J. Frair. 3/13-2/15. \$600,000. Doctoral student now yet identified to be supported.

United States Agency for International Development (USAID), "Engaging Climber-Scientists and Indigenous Herders on Grazing and Climate Change Issues in the Altai Mountain Region of Mongolia," \$99,655 James P. Gibbs, Giorgos Mountrakis, Jennifer Castner. 2/13-2/14. Mikhail Y. Paltsyn supported.

Weeden Foundation, "Installation of poacher detection sensors and analysis of poacher behavior to control illegal killing of endangered wildlife in Shavlinksy Zakaznik, Argut Nature Park and Katunksy Zapovednik, Altai Republic, Russia." J. P. Gibbs, S. Burnett, G. Carney. \$20,000, 5/12-4/13. (via ESF Foundation) M. Paltsyn supported.

U.S. National Park Service, "Assessment of Natural Resource Condition for Marsh-Billings-Rockefeller National Historical Park", Geri Tierney and James P. Gibbs, 1 September 2012 – 30 March 2014, \$40,000 Geri Tierney supported

National Geographic Society, "Long distance migration of Galapagos tortoises: The importance of nesting and nest sites," S. Blake, W. Tapia, J. P. Gibbs, and M. Wikelski. \$20,000. 08/01/2012-07/31/2013.

Liz Claiborne Art Ortenberg Jaguar Research Grant Program, "Validation of the critical jaguar corridor in eastern Guatemala", Frair, J., J. P. Gibbs, A.-P. Calderon. \$12,035. 1/12-1/13. A.-P. Calderon supported

U.S. Geological Survey, "Development of protocol and standard operating procedures for acoustic, camera and organismal monitoring of phenology." G. Tierney and J. P. Gibbs. \$18,477.00 09/01/2011 - 08/31/2013 G. Tierney supported

National Council on Science and Technology (CONACYT, Mexico), "Seed grant program to stimulate collaboration of research, outreach and instruction", J. P. Gibbs and D. J. Leopold. \$50,000. 12/15/11-12/14/12.

Galapagos Conservancy, Inc. "Human detection sensors to contradict illegal poaching of giant Galápagos tortoises," J.P. Gibbs, S. Burnett, and G. Carney, \$20,000. 6/15/11-6/14/12.

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. E. Hunter, P. Raney supported

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," J. P. Gibbs, \$21,500, 6/1/10-5/31/12 (*Extended to 12/1/14*)

National Science Foundation, "BE/CNH: 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, J. Read, K. Silvius. \$1,192,518. 9/05-9/12. Seven post-docs supported.

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 Publication (publications listed as published between June 2012 and May 2013 by Web of Science – I have many papers in press but these are actual publications)

Marquez, Cruz; Gibbs, James P.; Carrion, Victor; Naranjo, Sixto; Llerena, Alizon 2013. Population Response of Giant Galapagos Tortoises to Feral Goat Removal. RESTORATION ECOLOGY 21: 181-185

Blake, Stephen; Yackulic, Charles B.; Cabrera, Fredy; Tapia, Washington; Gibbs, James P.; Kuemmeth, Franz; Wikelski, Martin 2013. Vegetation dynamics drive segregation by body size in Galapagos tortoises migrating across altitudinal gradients. JOURNAL OF ANIMAL ECOLOGY 82: 310-321

Milinkovitch, Michel C.; Kanitz, Ricardo; Tiedemann, Ralph; Tapia, Washington; Llerena, Fausto; Caccone, Adalgisa; Gibbs, James P.; Powell, Jeffrey R. 2013. Recovery of a nearly extinct Galapagos tortoise despite minimal genetic variation. EVOLUTIONARY APPLICATIONS 6:377-383

Edwards, Danielle L.; Benavides, Edgar; Garrick, Ryan C.; Gibbs, James P.; Russello, Michael A.; Dion, Kirstin B.; Hyseni, Chaz; Flanagan, Joseph P.; Tapia, Washington; Caccone, Adalgisa 2013. The genetic legacy of Lonesome George survives: Giant tortoises with Pinta Island ancestry identified in Galapagos BIOLOGICAL CONSERVATION 157: 225-228

Patrick, David A.; Gibbs, James P.; Popescu, Viorel D.; Nelson, Debra A. 2012. MULTI-SCALE HABITAT-RESISTANCE MODELS FOR PREDICTING ROAD MORTALITY "HOTSPOTS" FOR TURTLES AND AMPHIBIANS. HERPETOLOGICAL CONSERVATION AND BIOLOGY. 7: 407- 426.

Campbell, Steven P.; Frair, Jacqueline L.; Gibbs, James P.; Volk, Timothy A. 2012; Use of short-rotation coppice willow crops by birds and small mammals in central New York. BIOMASS & BIOENERGY 47: 342-353.

Hunter, Elizabeth A.; Raney, Patrick A.; Gibbs, James P.; Leopold, Donald J. 2012. Improving Wetland Mitigation Site Identification through Community Distribution Modeling and a Patch-Based Ranking Scheme. WETLANDS 32: 841-850

Gibbs, James P.; Smart, Lawrence B.; Newhouse, Andrew E.; Leopold, Donald J. 2012. A Molecular and Fitness Evaluation of Commercially Available versus Locally Collected Blue Lupine *Lupinus perennis* L. Seeds for Use in Ecosystem Restoration Effort RESTORATION ECOLOGY 20: 456-461

Steen, D. A.; Gibbs, J. P.; Buhlmann, K. A.; Carr, J. L.; Compton, B. W.; Congdon, J. D.; Doody, J. S.; Godwin, J. C.; Holcomb, K. L.; Jackson, D. R.; Janzen, F. J.; Johnson, G.; Jones, M. T.; Lamer, J. T.; Langen, T. A.; Plummer, M. V.; Rowe, J. W.; Saumure, R. A.; Tucker, J. K.; Wilson, D. S. 2012. Terrestrial habitat requirements of nesting freshwater turtles. BIOLOGICAL CONSERVATION 150:121-128.

Beier, Colin M.; Woods, Anne M.; Hotopp, Kenneth P.; Gibbs, James P.; Mitchell, Myron J.; Dovciak, Martin; Leopold, Donald J.; Lawrence, Gregory B.; Page, Blair D. 2012. Changes in faunal and vegetation communities along a soil calcium gradient in northern hardwood forests. CANADIAN JOURNAL OF FOREST RESEARCH-REVUE CANADIENNE DE RECHERCHE FORESTIERE 42: 1141-1152.

B. Non-refereed Publications

Guzman, J. C., L. J. Cayot, J. Barry, and J. P. Gibbs. 2013. Un plan para el manejo del conocimiento para Galapagos: Una necesidad inminente. Pp 17-22. En: *Informe Galapagos 2011-2012*. DPNG, CGREG, FCD y GC. Puerto

Ayora, Galapagos, Ecuador.

Tapia, W., A. A. Crall, L. J. Cayot, E. Sterling, and J. P. Gibbs. Ciencia ciudadana: Una nueva herramienta de conservacion para Galapagos. Pp 23-30. En: *Informe Galapagos 2011-2012*. DPNG, CGREG, FCD y GC. Puerto Ayora, Galapagos, Ecuador.

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)

“Ecology, evolution and conservation of giant Galapagos tortoises,” Hobart College, Biology Dept. Lecture Series Jan 25 2013 ~40 attendees

“On the Brink: Saving Russia’s Last Snow Leopards,” Dale L. Travis Public Lecture Series, SUNY-ESF, March 20, 2013 ~400 attendees

V. PUBLIC SERVICE

A. Funded Service (include consulting activities)

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

National Science Foundation / Population and Community Ecology Pre-proposal review panel 27-29 March 2013.

US Agency for International Development / Higher Education Development Programs “South America: The Initiative for Conservation in the Andean Amazon II (ICAA II)” Higher Education Partnership Program Grant Proposal Review Panel, July 30-1 Aug 2012.

“Viejo Sabio / Wise Sage”, Prometeo Program, National Secretariat of Higher Education, Science, Technology and Innovation of Ecuador (SENESCYT), Ecuador, appointed 2012-2013.

2. Industrial and Commercial Groups, etc.

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

Promotion and tenure dossier reviewer Colorado State University

Co-organizer and co-leader (with L. J. Cayot and W. Tapia) of two consecutive, week-long workshops funded by Galapagos Conservancy and convened by the Galapagos National Park entitled “Galapagos Citizen Science Workshop” and the “Galapagos Giant Tortoise Conservation Program Workshop” (June and July 2012) each involving 10 invited foreign scientists and 10 local scientists and managers.

Designated courier for the transfer of the giant tortoise “Lonesome George” from Parque Nacional Galapagos headquarters in Puerto Ayora, Santa Cruz Island to American Museum of Natural History in New York City March 10-11 2013 (for specimen preparation and eventual repatriation to Ecuador in 2014).

Co-organizer of giant tortoise webcams project funded by Galapagos Conservancy (GC) based at the Galapagos National Park Service’s (PNG) Giant Tortoise Breeding Center in Puerto Ayora, Santa Cruz Island.

Co-organizer of the “Wild Altai” participatory conservation research program recruiting and supporting paying volunteers participating in snow leopard, argali and grassland monitoring activities in June-July 2013 (to be expanded in 2014).

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

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

c. Participation (workshops, symposia, etc.)

Name of workshop, etc.

Date

Place

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

D. Foreign Travel (Where, When, Purpose)

Puerto Ayora, Galapagos Islands, Ecuador, June-July 2012, to co-lead workshops on citizen science and giant tortoise conservation.

Argut River Gorge trek, Altai Republic, Russia, Oct 2012, install cabin-based anti-poacher devices

Puerto Ayora, Galapagos Islands, Ecuador, Nov 2012, install trail-based anti-poacher devices

Puerto Ayora, Galapagos Islands, Ecuador, Feb-March 2013 sabbatical leave serving as “Viejo Sabio / Wise Sage”,

Prometeo Program, National Secretariat of Higher Education, Science, Technology and Innovation of Ecuador

(SENESCYT)

Puerto Ayora, Galapagos Islands, Ecuador, April-June 2013, continuing sabbatical leave as “Viejo Sabio / Wise Sage.”

VII. ADMINISTRATIVE AND SERVICE RESPONSIBILITIES (include committee participation)

A. Department-level

Coordinator, Conservation Biology Major (transitioned to D. Parry Jan 2013)
Coordinator Internships for NYSDEC Fish, Wildlife and Marine Resources / SUNY-ESF internship program)
Member, Course and Curriculum Assessment Committee
Member, Promotion and Tenure Committee
Director, Roosevelt Wild Life Station
Associate Chair

B. College-level

INECOL/SUNY-ESF seed grant competition coordinator

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.

This year has been partially devoted to sabbatical leave (spring semester). For students, I transitioned coordination of the sizeable Conservation Biology major to Dr. Parry, taught a course in introduction to applied scientific investigation at the Central University of Ecuador Galapagos campus, recruited and established five new graduate students from Kyiv, Ukraine, and completed two graduate students (Johnson and Calderon [with Frair]). The problem-solving exercise book second edition continues to be heavily used by some 5-6,000 students in > 25 countries and the Fundamentals of Conservation Biology text continues to be well-subscribed (new edition is sought by publisher).

For the Department I continue to invest significant effort in collaboration with key colleagues to revitalize the Roosevelt Wild Life Station while also serving on several key Departmental committees that saw significant activity this year.

For myself professionally I am in the process of (1) completing a year-long fellowship as “Viejo Sabio” within the Prometeo Program of the National Secretariat of Higher Education, Science, Technology and Innovation of Ecuador (SENESCYT) building capacity for scientific investigation within the Galapagos National Park Service by collaborating with Park staff to complete 8 different priority applied research projects, (2) launching with collaborators a newly NSF-funded giant tortoise movement ecology research program, and (3) making good progress with collaborators in advancing a community-based endangered wildlife conservation program along the Altai Russia/western Mongolia border with substantial support from USAID.

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)

The year ahead will be devoted to advancing Roosevelt Wild Life Station initiatives, getting our new giant tortoise research project up and running, continuing to advance the Russia/Mongolia work, generating a new edition of the *Fundamentals of Conservation Biology* textbook (with co-author Hunter) and getting re-immersed in EFB-based

teaching and departmental work after enjoying a sabbatical leave.

B. PROJECTED ACTIVITIES FOR NEXT YEAR

1. Summer 2013

a. Course(s) to be offered

b. Proposed research activity

Galapagos research (various) and Mongolia USAID project plus field visits to New York-based projects

c. University, professional society, and public service

Advance Roosevelt Station initiatives

2. Fall Semester 2013

a. Course(s) to be offered

Conclude course at Universidad Central Ecuador in December

b. Proposed research activity

Galapagos research (various) and Mongolia USAID project plus field visits to New York-based projects

c. University, Professional society, and public service

Advance Roosevelt Station initiatives and conclude "Viejo Sabio" contract with SENESCYT / Ecuador as well as course at Universidad Central Ecuador.

3. Spring Semester 2014

a. Course(s) to be offered

Introduction Conservation Biology
Problem-solving in Conservation Biology

b. Proposed research activity

Galapagos research (various) and Mongolia USAID project plus field visits to New York-based projects

c. University, professional society, and public service

Advance Roosevelt Station initiatives