



Notes from the Field

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SAVE THE DATE...

New student orientation: August 19th, 2009
Fall semester welcome picnic: August 24th, 2009

Camera Traps in the Amazon

--Joe Bishop



This image of a jaguar was obtained using camera traps.

This year's "Environmental Issues Across the Americas" (GEOG 497c) course left camera traps behind when they returned from Amazonian Peru at the beginning of Spring Semester. The course, taught by Joe Bishop and Denice Wardrop, combined 15 Penn State students with 4 Peruvian students to explore environmental issues impacting the rainforests of southeastern Peru. One group's project explored the impacts that the newly constructed Trans-Oceanic Highway is having on the biodiversity and social structures in the region. The road connects western Brazil across the Andes Mountains to the Pacific coast of Peru. Using camera traps researchers are able to census the habitats bisected by the new road to see which animals are being affected and locate possible corridors connecting the rainforest.

Students in the course identified three forest types at the Los Amigos Biological Station and placed cameras to test for different habitat use. Researchers at the station continue to monitor the cameras and have been sending back photos to the class.

The traps have captured images of:

MAMMALS

Nine-banded long-nosed armadillo (*Dasypus novemcinctus*)
 Yellow armadillo (*Euphractus sexcinctus*)
 Short-eared dog (*Atelocynus microtis*)
 Tayra (*Eira barbara*)
 Ocelot (*Leopardus pardalis*)
 Jaguar (*Panthera onca*)
 Puma (*Puma concolor*)
 Brazilian tapir (*Tapirus terrestris*)
 Collared peccary (*Pecari tajacu*)
 White-tailed deer (*Odocoileus virginianus*)
 Brazilian porcupine (*Coendou prehensilis*)
 Paca (*Agouti paca*)
 Agouti (*Dasyprocta kalinowskii*)
 Brazilian rabbit (*Sylvilagus brasiliensis*)

BIRDS

Spix's guan (*Penelope jacquacu*)
 Razor-billed curassow (*Mitu tuberosum*)
 Pale-winged trumpeter (*Psophia leucoptera*)
 Gray-necked wood-rail (*Aramides cajanea*)

Spring 2009 Evolutionary Ecology Seminar Series a success

--Laura Russo

The Ecology program's spring seminar series in 2009 focused on topics of evolution to honor Darwin's 150th birthday. It was a big

success this year, featuring speakers from around the country (including Dr. Steve Hubbell, Craig Benkman, Norm Ellstrand, and David Winkler, among others) and even a visitor (Dr. Bill Hansson) from the Max Planck Institute in Germany. Seminar topics were as diverse as the extinction of North America's megafauna, nodding goldenrods, and flowers that smell like cheap wine.

In addition to enjoying the myriad of research topics presented, Ecology graduate students (and one undergraduate in Earth and Mineral Sciences) taking the Seminar Discussion Class had the unique opportunity to meet the seminar speakers personally. The class met once a week, just prior to the seminar, and lively discussion surrounded hand-picked papers that the speaker had sent out. The papers were generally on topics pertinent to, but separate from, the seminar. On several occasions, they featured cutting edge research that had not yet been published.

Students were able to ask questions, present ideas, and explore avenues for future research. In addition to the invaluable presence of the speaker, the class often attracted as many faculty as students.

Although the class was officially led by Dr. James Marden, other regular contributors to discussion included Dr. Andy Stephenson, Dr. Andrew Read, Dr. Tracy Langkilde, and Dr. Iliana Baums. Overall, it was a rich environment for learning about research and is highly recommended to students in future years to accompany future seminar series.

Many Ecology graduate students also took advantage of the opportunity to take a visiting speaker out to a meal. There were often several opportunities to participate, including breakfasts, lunches, and dinners. At these occasions, discussion could be as informal as favorite places to live. Graduate students also used these opportunities to gain valuable insight into research careers and a successful doctoral degree. Of course, the

lure of free food had nothing to do with the students' motivation to pursue these meals with these eminent scientists.

Thanks to PSIEE, ENRI, the Huck Institutes, the department of Biology and the IGDPs in Plant Biology and Ecology for providing the financial support that made the seminar series possible!

Community gardens open

--Glenna Malcolm

The campus was abuzz on Saturday, the 18th of April. Various versions (good and bad) of the National Anthem blared from Spike's stadium. Children and their parents were sprawled around the Bryce Jordan Center for Science Exploration Day. And down at the Center for Sustainability – a community was brewing. And I was excited to be a part of it.



Ninety-eight plots ready for planting.

Nelson DeBarros and Franklin Egan, along with the PSU Sustainable Ag and Community Garden clubs, have worked hard for the past year to implement an organic community garden. Last summer, members of the Community Garden Club tested out the fields where the future site would be and found that vegetables grew readily there. Last fall, they sewed a cover crop mix of winter peas, tillage radish, and rye on top to help with weed suppression the following spring. Before the fields were ready this spring for planting, 98 (10 x 15 ft) garden plots were disked, two large water tanks were installed, and a groundhog-detering fence was installed.

On a big workday in early April that included high winds and chilly temperatures, some stalwart community garden members wheelbarrowed mulch around plots to create pathways (see picture 1). I had no idea how sore I would be the next day from wielding a rake all day! Being out there together with mulch dust flying in our mouths and eyes was a really bonding experience. I can attest that everyone left that day with a smile nonetheless – for a community was stirring.

Two weeks later, on the 18th of April, 60+ community garden members came together for the opening day. The associate dean of undergraduate education, Marcos Fernandez and the associate dean of graduate education and research, Bruce McPheron, were there to share warm greetings with everyone. Both of them were big supporters of the community garden and also signed up for their own shared-garden plot. Marcos, in particular, spoke to the crowd about just how important it was for State College residents and students, faculty, and staff at Penn State to have a place where everyone could come together as a community. For the rest of the afternoon, community garden members were rotated around to a few stations, where they could learn the rules of the garden and learn some organic gardening tips (see picture 2). I, for one, look forward to watching everyone's vegetables grow and to meeting other folks with shared gardening interests. Come down and check it out for yourself sometime!



Dave Sandy, a research tech in Dave Mortensen's lab, gives community gardeners useful tips for keeping weeds suppressed with organically approved methods.

Congratulations to:

Trish Miller, who was awarded a grant from the Charles A. and Anne Morrow Lindbergh Foundation for \$10,580 to support her dissertation research on Golden Eagles. She will be attending their annual banquet at the EAA Museum in Oshkosh, WI on May 15th and presenting a short summary of her research to the board the following day. This is the same award her advisor, Dr. Rob Brooks, was awarded in the 1980's.



Penn State Ecology doctoral candidate Trish Miller near Scherr, WV in March 22nd, 2007. This bird was caught in a leg-hold trap just below where the photo was taken. For more information on her research and this bird, see http://www.aviary.org/cons/story_eagle41.php

Genevieve Romanello, who is graduating this spring. Her Master's thesis is titled, "Microstegium vimineum Invasion in Central Pennsylvanian Slope, Seep Wetlands: Site Comparisons, Seed Bank Investigation and Water as a Vector for Dispersal".

Andy Wilson, who is graduating this year with his Ph.D. His dissertation is titled, "Bird population responses to conservation grasslands in Pennsylvania".

Jim Julian, who defended his dissertation, titled, "Evaluating amphibian occupancy models and the importance of small, isolated wetlands in the Delaware Water Gap Recreational Area on April 24th, 2009.

Cara Hotchkin, who is a recipient of the NDSEG (National Defense Science and Engineering Graduate Fellowships). This award is a very prestigious award to receive in Oceanography, and will cover her tuition and stipend for the next three years. The National Defense Science and Engineering Graduate (NDSEG) Fellowship is, highly competitive and confers high honors upon its recipients. The DoD has awarded approximately 3,000 NDSEG fellowships since the program's inception 20 years ago. Cara's research investigates the effects of noise on beluga whale vocal behavior, by playing back noise stimuli to captive animals. She is interested in whether the type and level of noise presented affect the types of changes observed (such as frequency shifts, increased call amplitude, and call duration), and what order they occur in. She is also interested in whether the same modifications and patterns are observed in wild beluga whales, and hopes to test this in the future.

Eric Nord, who had a paper accepted in the Journal of Experimental Botany: Nord, E.A. and J.P. Lynch. 2009. Plant Phenology: A Critical Controller of Soil Resource Acquisition". Journal of Experimental Botany. *Advance Access published online on March 13, 2009*

Kat Shea and Ottar Bjornsted, who welcomed Michael Kai Shea and Esme Elizabeth Shea into their lives on April 15th! Michael was born at 6:46 am and was 6lb6oz (2.9kg), and 21.5" (54.5cm). Esme was born at 7:19 am and was 6lb1oz (2.75kg) and 20" (51cm). The twins and parents are tired but healthy and happy.



For next year: Spring 2010 Ecology Seminar Series: Conservation Biology

-- Ruscena Wiederholt and Stephanie Lessard-Pilon

Environmental systems are undergoing unprecedented rapid change due to alterations in land-use, climate change, and human population growth. Anthropogenic influences, such as direct effects from habitat destruction or overexploitation and indirect effects through pollution or climate change, threaten many natural systems and are causing species extinctions worldwide. These changes seem likely to continue or increase in the future. The maintenance, loss, and restoration of biodiversity are issues relevant for Ecologists and can be discussed across multiple scales from evolutionary processes on organismal levels, to population level changes in response to varying habitats, and finally, to community and ecosystem level shifts.

The modern field of conservation biology emerged in the 1980s as a response of the scientific community to the biodiversity crisis and has been rapidly evolving ever since. It is a multidisciplinary subject encompassing a broad range of fields including natural and social sciences. Ecologists have contributed much to this field and have also gained from conservation-based studies. For instance, studies of anthropogenic impacts on particular species have elucidated their abilities to respond to environmental stress and variation or investigations of ecosystems with extirpated species have suggested the ecosystem services and functions these species provided. Thus, a seminar series on the modern field of conservation biology will cover a broad array of disciplines and natural systems, and would be an informative theme for the Ecology program.