Smithsonian

100 years of science in Panama

Smithsonian Tropical Research Institute, Panamá STRI news www.stri.org December 10, 2010

ARTS symposium

The ARTS Animal Tracking Science Symposium will be held on Tuesday, December 14 at the Tupper Center Auditorium. Join us to hear about how the ARTS system has improved our understanding of the behavior and ecology of tropical vertebrates and learn about the exciting new directions we are taking with our animal tracking research. Online schedule at: **http://agoutienterprise.wordpress.com/2010/12/06/arts-animal-tracking-science-symposium/**

Tupper seminar

Wednesday, December 15, Tupper 4pm seminar speaker will be Kevin McCracken, University of Alaska, Fairbanks

Signatures of high-altitude adaptation in Andean ducks

Paleo-Talk

Wednesday, December 15, Paleo-talk speaker will be Maximiliano Viale, Instituto Argentino de Nivología, Glaciología y Ciencias Ambientales

Precipitaciones orográficas de Invierno en los Andes Subtropicales Centrales (30º-37ºS)

BCI, Gamboa and Galeta hit by excessive rains: Panama Canal stops operations for several hours

After several days of intermittent rain and 28 hours of non-stop rainfall in Central Panama, the Panama Canal was forced to stop operations for several hours the night of Wednesday, December 8, when Gatun Lake raised to the maximum level ever reported of 88.5 feet.

Severe floods were reported in the province of Colon where STRI maintains the Galeta Marine Laboratory and in Central Panama, where the Barro Colorado Island and Gamboa are located.

Debris from the Chagres river, vegetation patches like those shown in the photo above and even larger chunks of soil with small standing trees, including an islet, traveled through the Canal increasing the water levels in the Gatun Lake (see video posted in Youtube "All hell breaking lose" at: http://www.youtube.com/watch?v=qnFB6yMOKy4&feature=youtu.be

Barro Colorado Island (BCI), the most recognized research site of the Smithsonian in Panama, reported damages in its central tower (see photo on the next page) as well as

Bambi seminar

Thursday, December 16, Bambi seminar speaker will be Eelke Jongejans
Integral projection models for trees
Authors: Eelke Jongejans & Pieter Zuidema, Radboud University Nijmegen

Arrivals

Ben Hirsch, STRI postdoctoral fellow from the Smithsonian National Zoological Park, to study rodents as conditional mutualists of trees: When are agoutis effective seed dispersers? on Barro Colorado Island.

Astrid Ferrer, University of Illinois Urbana-Champaign, to study the association between the caesalpinoid legume Tachigali and the polypore fungal genus *Amauroderma*, on Barro Colorado Island.

Danielle Brown, University of California, Davis, to study the individual behavioral variation in Northern Tamandua anteaters, on Barro Colorado Island.

Departures

Rachel Collin to Montreal and Washington DC, on official business.

Oris Sanjur to Washington DC, to participate in Biorepositories Conference and meet with SI collegues.

Ronald Heriz to Washington DC, to attend a meeting with SI undersecretary for Science, Eva Pell.

Haris Lessios to Salt Lake City, to present a seminar, at the invitation of the Society for Integrity and Comparative Biology.

equipment from Movistar. There were also transportation limitations between the Gamboa dock and BCI. Navigation during the night was not allowed by the Canal authorities due lack of visibility and other safety reasons.

The Galeta Marine Laboratory also experienced problems due to river floods over its access road and leaks affecting their library.

Today, December 10, BCI reports further damage on two main towers, and that everything else seems to be normalizing . Necessary measures were taken in case they become isolated again, in which case personnel will stay on the Island until conditions allow their departure during the week-end.

Oris Acevedo, scientific coordinator on BCI, stated that they are ready for double shifts and that there is enough food and water for this purpose.

Movistar facilities

Steve Paton, director of STRI´s Office of BioInformatics, traveled to Barro Colorado today to document the conditions on the Island and surrounding areas.

Luego de varios días de lluvias intermitentes y 28 horas de lluvias ininterrumpidas en Panamá Centro, el Canal de Panamá se vio forzado a interrumpir operaciones durante varias horas del miércoles 8 de diciembre, cuando el Lago Gatún experimentó el más alto nivel en su historia, con 88.5 pies.

Equipo de Movistar

Se reportaron inundaciones severas en la provincia de Colón donde STRI mantiene al Laboratorio Marino de Galeta y en Panamá Central donde se encuentran Barro Colorado y Gamboa.

Troncos procedentes del Río Chagres, parches de vegetación como los que se muestran en la foto en la primera página y aún mayores extensiones de vegetación con árboles pequeños enteros aún de pié y un islote viajaban a través del Canal aumentando así el nivel del Lago Gatún (vea el video "All hell breaking loose" [Cuando se escapan todos los demonios] en: http://www.youtube.com/watch?v=qnFB6yMOKy4&feature=youtu.be

La Isla Barro Colorado (BCI), el lugar de estudio más reconocido del Smithsonian en Panamá, reportó daños en su torre principal (ver foto de arriba), y limitaciones de transporte entre el puerto de Gamboa y BCI. Las autoridades del Canal no permitieron navegación nocturna debido a la falta de visibilidad por la lluvia, y otras razones de seguridad.

Desde el Laboratorio Marino de Galeta informan que han experimentado problemas debido a tres desboradmientos que cubrieron el camino de acceso hacia sus instalaciones y que se reportan goteras y otros daños en su biblioteca debido al exceso de lluvia.

Hoy, 10 de diciembre, Barro Colorado informa que se registraron daños adicionales en dos de sus torres, pero que por lo demás, todo parece normalizarse. Se han tomado las precausiones necesarias en caso de quedar nuevamente aislados, cuando el personal se quedaría en la Isla hasta que las condiciones permitieran su salida durante el fin de semana.

Oris Acevedo, coordinadora científica en BCI asegura que están preparados para doblar los turnos y que el inventario de comida y agua es suficiente para esa eventualidad.

Steve Paton, director de la Oficina de BioInformática de STRI, viajó a Barro Colorado el día de hoy para documentar las condiciones de la Isla y áreas aledañas.

New publications

Cheng, T., Rivard, B., and Sánchez-Azofeifa, A. 2010. "Spectroscopic determination of leaf water content using continuous wavelet analysis." *Remote Sensing of Environment* Online. doi:10.1016/j.rse.2010.11.001

Coppard, Simon E., Kroh, Andreas, and Smith, Andrew B. 2010. "The evolution of Pedicellariae in echinoids: An arms race against pests and parasites." *Acta Zoologica*. doi:10.1111/j.1463-6395.2010.00487.x

Christy, John H., and Rittschof, Dan. 2010. "Deception in visual and chemical communication in crustaceans." In Breithaupt, T., and Thiel, M. (Eds.), *Chemical communication in crustaceans*: 313-333. New York: Springer Science + Business Media.

Dominguez, Edwin, and Godoy, Carolina. 2010. "Taxonomic review of the genus *Osbornellus* Ball (Hemiptera: Cicadellidae) in Central America." *Zootaxa* 2702(2010): 1-106.

Guan, Yongtao. 2010. "Bias-corrected variance estimation and hypothesis testing for spatial point and marked point processes using subsampling." *Biometrics* Online. doi: 10.1111/j.1541-0420.2010.01517.x

Guan, Yongtao, and Shen, Ye. 2010. "A weighted estimating equation approach for inhomogeneous spatial point processes." *Biometrika* 97(4): 867-880. doi:10.1093/biomet/asq043

Ecology and Coastal Management Course at Galeta

A group of students from the University of Panama, the University of Costa Rica, Earth University, Universidad Latina de Costa Rica Instituto Tecnológico de Costa Rica and Universidad Estatal a Distancia de Costa Rica participated in a course on ecology and coastal management, held from November 22 to 27 at STRI´s Marine Laboratory at Galeta, located at the Caribbean entrance to the Panama Canal.

The course aimed at offering the participating students general information on the Caribbean coasts of Panama, its main ecosystems and currents threats. Instructors Maya D´Vries from Costa Rica, Alfredo Lanuza, Aaron O´Dea, Félix Rodríguez and Carlos De Gracia advocated for designing a better relationship between economy, society and the environment. The course was facilitated by Carlos Trejos from Costa Rica, and Jorge Morales, Javier Hurtado and D´Vries. William T. Wcislo and Annette Aiello also collaborated with the effort.

Un grupo de estudiantes de la Universidad de Panamá, la Universidad de Costa Rica, Earth University, la Universidad Latina de Costa Rica, el Instituto Tecnológico de Costa Rica y la Universidad Estatal a Distancia de Costa Rica participaron en un curso en ecología y manejo costero, que se llevó a cabo del 22 al 27 de noviembre en el Laboratorio Marino de STRI en Galeta, localizado en la entrada del Caribe del Canal de Panamá.

El curso tuvo como objetivo ofrecer a los estudiantes participantes información sobre las costas caribeñas de Panamá, sus ecosistemas marinos, así como los peligros que enfrentan.

Los instructores Maya D´Vries de Costa Rica, Alfredo Lanuza, Aaron O´Dea, Félix Rodríguez y Carlos De Gracia abogaron por el diseño de una mejor relación entre la economía, la sociedad y el ambiente. El curso fue facilitado por Carlos Trejos de Costa Rica, and Jorge Morales, Javier Hurtado y D´Vries. William T. Wcislo y Annette Aiello también colaboraron con este esfuerzo.

New publications

Jones, Patricia, Page, Rachel, Hartbauer, Manfred, and Siemers, Björn. 2010. "Behavioral evidence for eavesdropping on prey song in two Palearctic sibling bat species." *Behavioral Ecology and Sociobiology*, doi: 10.1007/s00265-010-1050-9

Leponce, Maurice, and Basset, Yves. 2010. "Mégadiversité des arthropodes des canopées." *Biofutur* 315: 30-33.

Leponce, Maurice, Meyer, Christoph F.J., Hauser, Christoph, Bouchet, P., Delabie, Jacques H.C., Weight, Lee A., and Basset, Yves. 2010. "Challenges and solutions for planning and implementing large-scale biotic inventories." *ABC Taxa: Manual on field recording techniques and protocols for all taxa biodiversity inventories.* 8(1): 18-48. http://www.abctaxa.be/volumes/volume-8-manual-atbi

Loaiza, Jose R., Scott, Marilyn E., Bermingham, Eldredge, Sanjur, Oris I., Wilkerson, Richard, Rovira, Jose, Gutiérrez, Lina A., Correa, Margarita M., Grijalva, Mario J., Birnberg, Lotty, Bickersmith, Sara, and Conn, Jan E. 2010. "Late Pleistocene environmental changes lead to unstable demography and population divergence of *Anopheles albimanus* in the northern Neotropics." *Molecular Phylogenetics and Evolution* 57(3): 1341-1346. doi:10.1016/j.ympev.2010.09.016

Touchon, Justin C., Urbina, Jenny, and Warkentin, Karen M. 2010. "Habitat-specific constraints on induced hatching in a treefrog with reproductive mode plasticity." *Behavioral Ecology* doi:10.1093/beheco/arq192

Voting is underway!

Heska Corporation selected the 'Panama Amphibian Rescue and Conservation (PARC) Project' as a finalist for the $25,000 prize in the 2010 Inspiration in Action contest and online voting is underway.

If selected, the money will support the efforts of the 'Panama Amphibian Rescue and Conservation (PARC) Project'. Voting is open to the public and the polls are open until 11:59 p.m. MST on Dec. 15, 2010.

1. **All you have to do is visit www.heska.com/action to vote.**
2. **Log in**
3. **Select "Entry 2" - Panama Amphibian and Rescue Project**
4. **Click on VOTE.**

¡Usted puede ayudar a salvar a los anfibios de una inminente extinción con tan solo un voto electrónico!

La organización de HESKA ha escogido 4 proyectos a nivel mundial para beneficiar con $25,000 dólares al proyecto que logre obtener más votos.

¡Vote ahora mismo!

Entre los finalistas para el Premio Inspiración en Acción 2010 se encuentra el Proyecto de Rescate y Conservación de Anfibios en Panamá (PARC).

La votación en línea se está llevando a cabo en estos momentos. Por favor tome un momento de su tiempo para votar. Participen, voten y circulen esta información a la mayor cantidad de personas que puedan.

No tenemos mucho tiempo, sólo hasta el 15 de diciembre. Así lograremos el valioso aporte de $25,000 para el proyecto de rescate y conservación de anfibios.

Un minuto de su tiempo puede contribuir significativamente con este proyecto.

1. **Solo tienen que ir a esta dirección: www.heska.com/action**
2. **Seguir las instrucciones (log in)**
3. **Seleccione "Entry 2" - Panama Amphibian and Rescue Project**
4. **Hacer click en el botón de votar.**

A. R. T. S.

Science Symposium

Smithsonian Institution

Where have we been, Where are we going?

When is an animal born? Where does it go when it leaves home? How does it die? Many of the most important moments in an animal's life are hard to study because they are rare or difficult to observe. Over the past 7 years, the Automated Radio Telemetry System (ARTS) on Barro Colorado Island has helped STRI scientists address many of these important questions by allowing them to "see" cryptic events and track animal movements and activities over large distances and long time-periods. Recent technological advances have now made is possible to collect ARTS-style data using satellite technology, and the ARTS initiative will soon be disassembling the original radio-telemetry based system on BCI and transitioning to GPS based tracking. Please join us December 14th, 2010 in the Smithsonian Tropical Research Institute conference room at Tupper, Panama, to hear about how the ARTS system has improved our understanding of the behavior and ecology of tropical vertebrates and learn about the exciting new directions we are taking with our animal tracking research.

12:30-12:55	Rodent thieves: multi-stage dispersal leads to long distance seed dispersal. Ben Hirsch, Smithsonian Tropical Research Institute & New York State Museum
12:55-13:20	From the pond to the forest: a glimpse into the movements and activity of the veined tree frog on BCI. Robert Horan, University of Georgia
13:20-13:45	How do small groups survive? Intergroup competition and imbalances of power in white-faced capuchins. Meg Crofoot, STRI & MPI-O
13:45-14:10	Better to be breakfast lunch or dinner: effect of feeding time on seed dispersal by toucans determined from GPS tags and accelerometers. Roland Kays, New York State Museum
14:10-14:35	Intrapopulation niche differences: do they exist for northern tamandua anteaters? Danielle Brown, University of California, Davis
14:35-15:00	Surveying forest mammals using camera traps: From BCI to SIGEO. Patrick Jansen, Center for Tropical Forest Science
15:00-15:25	Sleeping on the limb- atypical sleep patterns in wild sloths. Bryson Voirin, Max Planck Institute for Ornithology
15:25-16:00	Break
16:00-17:00	From ARTS to ICARUS: perspectives on global animal tracking. Martin Wikelski, Roland Kays, Meg Crofoot

December 14, 2010 **Large Conference Room - Tupper**