

Tupper 4pm seminar

Tuesday, May 12, Tupper seminar speaker will be Oscar Puebla, STRI

Ecology, geography, and the evolution of reproductive isolation in *Hypoplectrus* coral reef fishes

Paleo-Talk

Wednesday, May 13 at 4pm, Paleo-talk speaker will be Javier Luque, STRI intern CTPA, Ancon

New Neotropical fossil crustaceans and the origin of some primitive crabs

Bambi seminar

Please check your Outlook e-mails for information on the next Bambi seminar on BCI.

BDG meeting

The BDG will meet on Tuesday, May 12 with Sabrina Amador, Universidad de Costa Rica at 2pm, Large Meeting Room

Hints to predict acacia-ant behavior: ask them for an ID

Arrivals

Brian Wyso, Elizabeth Sargent and Valerie Charbonneau, Roger Williams University, to study the marine algal diversity of southern Central America, at Galeta.

D. Wilson Freshwater, Nadya Mamoozadeh and Samantha Schmitt, University of North Carolina, Wilmington, to study the marine algal diversity of southern Central America, at Galeta.

Lainy Day and Steven Wilkening, University of Mississippi, to study brain and behavior relationships in birds, in Gamboa.



Smithsonian Tropical Research Institute, Panamá

www.stri.org

May 8, 2009

First jaguar photo taken on BCI



Photo: J. & G. Willis

Barro Colorado Island has been described as the best-studied piece of tropical real estate in the western hemisphere. Although the Island has been a mecca for biologists for nearly 90 years, no one has ever photographed an elusive island visitor, the jaguar—until now.

STRI visiting scientists Jacalyn Giacalone-Willis and Gregory Willis from Montclair State University mount cameras with infrared sensors on trees to photograph passing animals as part of their annual mammal census on BCI, which they have been conducting since 1982. What the cameras captured April 20 was not only a surprise, but a first—an adult jaguar tripped the camera's sensor at 3:07 a.m., thus creating a self-portrait photograph.

“Our photo of a jaguar on BCI is a sign of hope,” said Giacalone-Willis. “It proves jaguars are still in this area.” Greg Willis spotted a jaguar on the Island in 1983, but there have been very few sightings on BCI since.

The jaguar, a solitary carnivore, is the largest cat in the Americas. Adult males can weigh more than 300 pounds. Strong swimmers, jaguars tend to live near water and often prefer rainforests and seasonally flooded swamp areas.

Historically, jaguars ranged from the southern US to northern Argentina. Habitat loss due to agriculture and urban sprawl has been a major threat to the species; and regardless of legal protection, people often shoot jaguars on sight, especially in areas with cattle ranches.

Researchers believe that this jaguar is a visitor from the mainland, 200 yards from the Island at the closest point. BCI is only 25 miles from Panama City on the Pacific end of the canal and the city of Colon on the Atlantic end. Two of the world's great biological hotspots meet in this area, which continues to act as a vital biological corridor between North and South America, despite pressure as urban areas expand.

“Jaguars need remarkably large expanses of habitat to survive and Barro Colorado is too small to support even one animal. But the presence of even the odd individual that swims out there means that jaguars are still moving through the Canal area between patches of fragmented forest,” said STRI staff scientist William Laurance.

More arrivals

Thibault Lengronne, University of Lausanne, to study nest drifting behavior in paper wasps, in Gamboa.

Michael Kaspari, University of Oklahoma, to conduct four experiments on the regulation of local decomposition, at BCNM

Jean-Michel Weber, University of Ottawa, to study the cellular basis of flight metabolic rate variation in Euglossine bees, on BCI.

Raul Suarez, University of California, Santa Barbara, to study the cellular basis of flight metabolic rate variation in Euglossine bees, on BCI.

Brook Swanson, Gonzaga University, to study the behavior, ecology and evolution of fiddler crabs genus *Uca*, at Naos Island Laboratories.

Marlene Stürup, University of Copenhagen, Denmark, to study the evolutionary ecology of fungus growing ants, in Gamboa.

Dylan Craven, Yale University, to work on the Agua Salud Project-Hydrologic Studies project, and the functional diversity of secondary succession plant communities within a tropical agricultural landscape in the Republic of Panama.

Caleb Fischer, Butler University, to study the evolution of the nocturnal sweat bee genus *Megalopta* (Halictidae): integrating molecular and behavioral evolution, in Gamboa.

Mirco Plath and Judith Riedel, ETH Zurich, Switzerland, to study the sustainable agroforestry for carbon sequestration to improve small farmers' livelihood in the tropics, at Tupper.

The Willis' began using camera traps in 1994 as a tool to record elusive and nocturnal species. This proved exceptionally helpful in gathering data about species that were poorly represented in their past censuses of the Island. A jaguar monitoring program involving Panama's environment authority (ANAM) and zoological society (SOMASPA) as well as the international group, Panthera, is using camera traps to monitor jaguars on the mainland.

"These cats are incredibly elusive and sightings on the mainland, let alone Barro Colorado Island, are extremely rare," said Jackie Willis. "This is what makes this photo so exciting—it offers proof positive that despite all the obstacles it faces this species is still making its way in Panama. We will be on the lookout for jaguar scat and tracks, and we will hope this individual passes by another camera trap before it leaves the island."

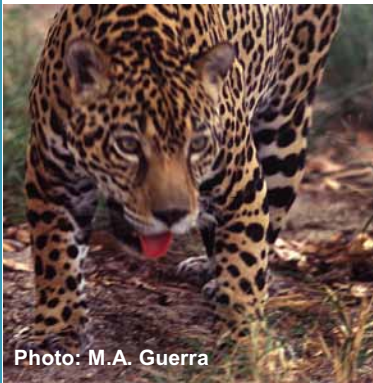


Photo: M.A. Guerra

La Isla de Barro Colorado ha sido descrita como la parcela de tierra tropical mejor estudiada del hemisferio occidental. Pero a pesar de que la Isla ha sido una meca para los biólogos por cerca de 90 años, nadie había podido fotografiar al jaguar, un escurridizo visitante, hasta ahora.

En un sendero BCI, la zoóloga visitante de STRI Jacalyn Giacalone-Willis y su esposo Greg Willis de Montclair State

University montaron cámaras con sensores infrarrojos en árboles para fotografiar los animales que pasaban por el sitio, como parte del censo anual que llevan a cabo estos investigadores desde 1982. Lo que sus cámaras capturaron el 20 de abril pasado, no solo fue una sorpresa, sino también el primer autorretrato de un jaguar adulto que hizo disparar el sensor de la cámara a las 3:07am.

"Nuestra foto de un jaguar en Barro Colorado es una señal de esperanza" comentó Giacalone-Willis "Esto comprueba que los jaguares sí se encuentran en la región." Greg Willis avistó un jaguar en la Isla en 1983, pero desde entonces solamente se habían visto unas pocas veces en Barro Colorado.

El jaguar, un carnívoro solitario, es el felino más grande que se encuentra en las Américas. Los machos adultos pueden llegar a pesar más de 300 libras. Nadadores poderosos, los jaguares tienden a vivir cerca del agua y por lo general prefieren los bosques tropicales lluviosos y las áreas que se inundan.

Históricamente, su rango alcanza desde el sur de los EU hasta el norte de Argentina. La pérdida del hábitat debido a la agricultura y la expansión urbana ha sido la mayor amenaza para esta especie. A pesar de la protección legal, la gente usualmente le dispara a los jaguares en áreas donde se mantiene el ganado.

Los investigadores asumen que el jaguar fotografiado es un visitante que proviene de tierra firme, de un punto a 200 yardas de la Isla. BCI se encuentra a solo 25 millas de la ciudad de Panamá en el lado pacífico del Canal y de la ciudad de Colón en el lado atlántico. Dos de los "hotspots" de mayor biodiversidad del mundo se entrecruzan en esta área, que sigue siendo un corredor

biológico vital entre Norte y Suramérica, a pesar de la presión de la expansión de las áreas urbanas.

"Los jaguares se mueven a través de grandes extensiones de hábitat, y Barro Colorado puede resultar demasiado pequeña para mantener uno solo de estos felinos. Pero la presencia de por lo menos un individuo que llega nadando significa que los jaguares todavía se mueven a través del área del Canal entre los parches de bosques fragmentados," afirma William Laurance, de STRI.

Los Willis empezaron a usar cámaras en 1994 como una herramienta para registrar las especies escurridizas y nocturnas. Esto ha resultado ser excepcionalmente beneficioso para ayudar a recoger datos sobre especies que estaban pobremente representadas en los censos anteriores realizados en la Isla.

Un programa de monitoreo de jaguares que incluye a la Autoridad Nacional del Ambiente (ANAM) y la Sociedad Zoológica (SOMASPA) de Panamá, así como a Panthera, un grupo internacional, está usando cámaras con sensores para monitorear jaguares en tierra firme.

"Estos felinos son increíblemente escurridizos y sus avistamientos en tierra firme, y aún más en Barro Colorado, son extremadamente fuera de lo común," afirma Giacalone-Willis. "Esta característica es la que convierte a esta foto en algo tan excitante." Ofrece una prueba positiva de que a pesar de todos los obstáculos que enfrenta esta especie, aún sobrevive en Panamá. Estaremos en la búsqueda de excremento y huellas de jaguares, y esperamos que otro individuo pase por otra cámara con sensor antes de que abandone la Isla."

More arrivals

Michele Abbene, Yale University, to study below canopy light environments in young secondary forests.

New publications

Boyle, Sarah A., Lourenco, Waldete C., da Silva, Livia R., and Smith, Andrew T. 2009. "Home range estimates vary with sample size and methods." *Folia Primatologica* 80(1): 33-42.

Bustamante, Ho, Moreno, Ricardo, and Saenz, Joel. 2009. "Depredación de un pizote (*Nasua narica*) por una puma (*Puma concolor*) en el sureste de la Península de Osa, Costa Rica." *Acta Biologica Panamensis* 1(1): 39-45.

Cardona, A., Cordani, U.G., Ruiz, J., Valencia, V.A., Armstrong, R., Chew, D., Nutman, A., and Sanchez, A.W. 2009. "U-Pb Zircon Geochronology and Nd Isotopic Signatures of the Pre-Mesozoic Metamorphic Basement of the Eastern Peruvian Andes: Growth and Provenance of a Late Neoproterozoic to Carboniferous Accretionary Orogen on the Northwest Margin of Gondwana." *Journal of Geology* 117(3): 285-305.

Clark, Christopher James and Dudley, T. Robert K. 2009. "Flight costs of long, sexually selected tails in hummingbirds." *Proceedings of the Royal Society B-Biological Sciences* 276(1664): 2109-2115.

Reduce, reuse & recycle

From OBio

The Office of Bioinformatics would like to announce the creation of two new biodiversity web sites patterned after the Bocas del Toro biodiversity web site. The new sites are for BCI and for all of Panama (see address in box.) As with the Bocas site, these new sites represent our current checklists for each site and they will continually evolve as additions and corrections are made.

Each site offers the ability to add comments specific for species at each location. Sites for Coiba, Fortuna and Galeta will be added later this year. If you would like to contribute to our knowledge base, please contact Steven Paton at patons@si.edu

La Oficina de BioInformática anuncia la creación de dos

Refurbishing STRI's fleet of boats

OFEO— As part of its long-term maintenance program, STRI is refurbishing its fleet of boats since last year. A marine consultant firm was contracted to evaluate the fleet and based on their recommendations all STRI boats and vessels will comply with the norms and standards of the American Boats and Yacht Council (ABYC). By the end of 2008, work on the *Jacana* was completed.

Currently, STRI marine superintendent Pierre Fuentes and his crew are coordinating work on the *Megalops*. Work on the *Morpho* is scheduled to begin at the end of this year.

The photo above shows the *Megalops* at Astilleros Nacionales in Vacamonte, Panama.



nuevos sitios de web sobre biodiversidad siguiendo el patrón del sitio de Biodiversidad de Bocas del Toro. Los nuevos sitios son para la Isla de Barro Colorado y para todo Panamá. Al igual que el sitio de Bocas, estos nuevos sitios representan nuestras listas más actuales y seguirán evolucionando al añadir datos y correcciones.

Cada uno de estos sitios ofrece la posibilidad de añadir

comentarios específicos en cada región. Más adelante durante este año se publicarán sitios para Coiba, Fortuna y Galeta. Si alguno quiere contribuir con nuestra base de conocimientos, favor ponerse en contacto con Steve Paton en patons@si.edu

<http://biogeodb.stri.si.edu/bioinformatics/index.php/biodiversity>



Como parte de su programa de mantenimiento a largo plazo, STRI está renovando su flota de botes desde el año pasado. Se contrató una firma de consultores para evaluar la flota, y en base a sus recomendaciones, todos los botes y otras embarcaciones de STRI cumplirán con las normas y estándares de American Boats and Yacht Council (ABYC).

Para finales de 2008, se completó el trabajo en la *Jacana*.

Actualmente, el superintendente marino de STRI, Pierre Fuentes y su equipo de trabajo están coordinando los arreglos en la *Megalops*. Los trabajos de renovación en la *Morpho* están programadas para empezar a finales de este año.

La foto de arriba muestra a la embarcación *Megalops* en los Astilleros Nacionales de Panamá en Vacamonte.

More publications

Dechmann, Dina K.N., Heucke, Silke L., Giuggioli, Luca, Safi, Kamran, Voigt, Christian C., and Wikelski, Martin C. 2009.

"Experimental evidence for group hunting via eavesdropping in echolocating bats." *Proceedings of the Royal Society B: Biological Sciences* Online.

Duda, Jr., Thomas Franklin and Lee, Taehwan. 2009.

"Isolation and population divergence of a widespread Indo-West Pacific marine gastropod at Easter Island." *Marine Biology* 156(6): 1193-1202.

Fernandez-Marin, Hermogenes, Zimmerman, Jess K., Nash, David R., Boomsma, Jacobus J., and Wcislo, William T. 2009.

"Reduced biological control and enhanced chemical pest management in the evolution of fungus farming in ants." *Proceedings of the Royal Society B: Biological Sciences* 276(1665): 2263-2269.

Hesselberg, Thomas. 2009. "Sensors and control systems for micro-air vehicles: lessons from flies." *Sensor Review* 29(2): 120-126.

Jha, Shalene and Dick, Christopher W. 2009.

"Isolation and characterization of nine microsatellite loci for the tropical understory tree *Miconia affinis* Wurdack (Melastomataceae)." *Molecular Ecology Resources* 9(1): 344-345.

Lasso, Eloisa, Engelbrecht, Bettina M.J., and Dalling, James W. 2009. "When sex is not enough: ecological correlates of resprouting capacity in congeneric tropical forest shrubs." *Oecologia* Online.



Photo: G. Montufar

Clean up at Naos to celebrate Earth Day

Staff and volunteers from Fundacion Mar Viva, Panama's Mayor Office and STRI organized and contributed an important beach clean-up at both sides of Naos Island on Wednesday, April 22, Earth Day. Mar Viva coordinated 160 volunteers from local schools Isabel Obaldia, Richard Newmann, and Remón Cantera, and provided a T-shirt to commemorate the activity. STRI provided members of its personnel and a motored boat to collect the floating garbage. Refrescos Nacionales donated bottled water to all participants of the event.

According to the Mayor's Office, 5.8 tons of garbage were collected. We thank all participants for this effort.

Last minute news

Nassau, Bahamas— "The National Coastal Awareness Committee will host an exhibition at the Mall of Marathon... to highlight the need to preserve and protect our coastal environment. It features a traveling exhibit entitled *Our Reefs: Caribbean Connections...* originally produced by the Smithsonian Tropical Research Institute and it focuses on the problems

Miembros y voluntarios de Fundación Mar Viva, la Alcaldía de Panamá y STRI organizaron y contribuyeron con una importante limpieza a ambos lados de Isla Naos, el miércoles, 22 de abril, Día de la Tierra. Mar Viva coordinó 160 voluntarios de colegios locales Isabel Obaldia, Richard Newmann, y donó camisetas conmemorativas de la actividad. STRI proporcionó con personal y un bote a motor para recoger la basura flotante. Refrescos Nacionales donó agua embotellada para todos los participantes del evento.

De acuerdo a la Alcaldía de Panamá, se recogieron 5.8 toneladas de basura. Se agradece a todos los participantes en esta ejemplar celebración.

affecting coral reefs throughout the Caribbean."

Nasau, Bahamas— El Comité Nacional de los EU sobre Conciencia Costera está presentando una exhibición para llamar la atención sobre la necesidad de proteger nuestros ambientes costeros. La exhibición, *Nuestros arrecifes: conectados por el Caribe* fue producida originalmente por STRI y se enfoca en los problemas que afectan los arrecifes coralinos del Caribe.

New publications

Martin, Julien, Nichols, James D., McIntyre, Carol L., Ferraz, Goncalo, and Hines, James E. 2009. "Perturbation analysis for patch occupancy dynamics." *Ecology* 90(1): 10-16.

STRI in the news

"Students test computer program in Panama" by Jessica Lampe. 2009. The Scout: *Bradley Scout.com*: April 17.

"The Impacto Project: My Island, Bocas - Youth Photo Exhibit, May 7" at <http://www.theBocasBreeze.com/current-issue/may-mayo-2009-volume-6-is.shtml>

"Descubrieron un jaguar adulto en Barro Colorado." 2009. *Hora Cero: Diario Digital de Panamá* May 4.

"First jaguar photo taken at Smithsonian Research Station in Panama." 2009. *Genetic, Engineering and Biotechnology News*: May 4.

"Jaguar makes surprise visit to Panama island: Researchers think the cat swam part of the Panama Canal to island's shore." 2009. *MSNBC*: May 6.

"Tropical forest seed banks: a blast from the past." 2009. *NewsRx Health*: May 3.

"Elusive jaguar photographed for first time on Barro Colorado Island" by Elizabeth King. 2009. *The Torch*: May 5.

The Torch

The Torch, the Smithsonian Institution monthly newspaper made its electronic debut on May 5. You can read it at: <http://www.e-torch.org/>