

Tupper 4pm seminar

Tue, Jun 12, seminar speaker will be Andrés Mora, ICP-ECOPETROL

Late Cenozoic climatic forcing of geologic processes in the eastern Cordillera of Colombia

Paleo-Talk

Wed, Jun 13, Paleo-Talk speaker will be Alexander Correa, at 4pm, Center for Tropical Paleocology & Archaeology (CTPA), **Humidity changes inferred from a Holocene record from Peru**

BDG

The Behavior Discussion Group will meet with Adam Smith on Tue, Jun 12, 2pm, at the LMR, Tupper Center **Ecology and neurobiology of the facultatively social bee *Megalopta*: work in progress**

Bambi seminars

Wed, Jun 13, Bambi seminar speaker will be Daniela Reetz, University of Potsdam **Fractions of organic and inorganic phosphates in soils of BCI**

Thu, Jun 14, Bambi seminar speaker will be Michael Kaspari, University of Oklahoma **Toward a biogeography of brown food webs**

Arriving next week

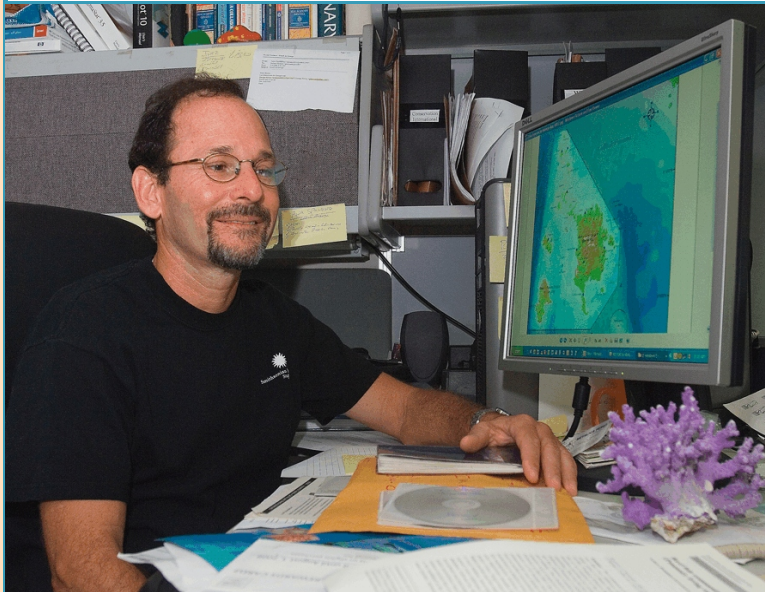
Martin Facundo and Martín Ramírez, to apply DNA barcode technique to the rapid estimation of megadiverse groups in biodiversity hot spots: the arthropods of the Isthmus of Panama, in Fortuna.



Smithsonian Tropical Research Institute, Panamá

www.stri.org

June 8, 2007



Panama designates Las Perlas Archipelago special management zone

—Darwin Project achieves its initial aim

Panama's *Gaceta Oficial* published Law No. 18 of May 31, 2007, designating the Las Perlas Archipelago a special coastal-marine management zone. The special zone is located in the district of Balboa and will be incorporated into the *Programa de Manejo Costero Integral* [Integral coastal management program] to protect its marine and coastal resources, increase its productivity and maintain the biodiversity of its ecosystems, and to improve the quality of life in the communities that depend upon these resources.

Several studies were conducted in Las Perlas under the leadership of STRI's Héctor Guzmán and James Mair from Heriot-Watt University, both working on a grant funded for five years by the Darwin Initiative, to provide support to the legal process that

culminated with the designation of special management zoning throughout this important Panamanian marine ecosystem, an essential part of the Marine Biological Corridor of the Tropical Eastern Pacific.

The law was possible thanks to the unconditional support from the Archipelago's community, the Major's Office, the Municipal Council of the District of Balboa; the British Government, Panama's National Assembly's Commission for Population, Environment and Development; officials from *Autoridad de Recursos Acuáticos de Panamá* [Panama's Authority for Aquatic Resources, or ARAP]; the civil society and all the organizations that helped in the various phases of the project.

The polygon that defines the special management zone is

located in the Gulf of Panama. It includes 168,771 hectares (ha) divided into 33,153 ha of insular area including all islands and islets of the Archipelago, and 135,618 ha of surrounding waters, part of the Continental Shelf. The new law, including the coordinates of the special management zone, can be downloaded from:

<http://129.171.91.238/gacetadisa/gaceta.pdf>

La *Gaceta Oficial* de Panamá publicó la Ley No. 18 del 31 de mayo de 2007, que declara Zona Especial de Manejo Marino-Costero al Archipiélago de Las Perlas. Esta zona especial está localizada en el Distrito de Balboa y será incorporada al Programa de Manejo Costero Integral para proteger sus recursos marinos y costeros, aumentar su productividad, y mantener la

More arrivals

Dana Bardolph, to study the genetics of the BCI howler monkey, on BCI.

Grece Chen, to study the effects of biotic interactions and abiotic stress on plant adaptation in the tropics, in Gamboa.

Janeene Marie Touchton, to study physiological trait patterns and their role in governing mobile animal competitive hierarchies, on BCI.

Peter Muller, to study adaptive specialization in ornithophilic pollination syndromes, in Gamboa.

Karen Warkentin, to study how embryos assess danger: the role of vibrational cues, in Gamboa.

Michael Caldwell, to study multimodal signaling in the red-eyed treefrog, in Gamboa.

Departures

Fernando Pascal to Washington DC to attend meetings at SI.

José R. Perurena to SI Washington DC, on training.

Laura Geyer to Christchurch, NZL, to attend meetings.

Oris Sanjur to Washington DC to participate in the Barcode of Life Initiative meeting and Toronto to lead activities.

Eldredge Bermingham to Sao Paulo, Brazil, to participate in the Barcode of Life initiative meeting and to Toronto for a field trip of Society for Wildlife Research & Environmental Education.

Javier Mateo Vega to Sao Paulo, Brazil, to attend the conference and meet with Gamawater.

biodiversidad de sus ecosistemas, para mejorar la calidad de vida de las comunidades que dependen de dichos recursos.

Varios estudios se llevaron a cabo en Las Perlas bajo el liderazgo de Héctor Guzmán, de STRI y James Mair, de Heriot Watt University, ambos con fondos de la Iniciativa Darwin para ofrecer apoyo al proceso legal que culminó con la designación de Zona Especial de Manejo. Esta zona especial es un importante ecosistema marino de Panamá, que forma

CTFS' latest activities

As part of the new initiative to expand STRI's Center for Tropical Forest Science (CTFS) forest dynamics plots into Global Earth Observatories, the Center plans to broaden the scientific research conducted at the plots.

One research focus is studying plant-animal interactions by censusing animal populations in the plots and studying biotic and abiotic interactions between plants and animals.

A workshop to discuss what taxa to monitor, possible research strategies, and sampling methodologies, took place at STRI on May 25 through 27, with a field trip to BCI on May 28.

Como parte de la nueva iniciativa de expandir las



STRI's Office of BioInformatics (OBIO) reports that the rainfall for May on BCI set a new record of 696mm beating the previous record of 622mm set in 1971.

parte del Corredor Biológico Marino de Pacífico Oriental Tropical.

La ley fue posible gracias al apoyo incondicional de la comunidad del Archipiélago, la Alcaldía, el Consejo Municipal del Distrito Balboa, el Gobierno Británico, la Comisión de Población, Ambiente y Desarrollo de la Asamblea Nacional, funcionarios de la Autoridad de Recursos Acuáticos de Panamá (ARAP), la sociedad civil y las organizaciones que ayudaron en diversas fases del trabajo.

El polígono que define la zona especial de manejo está localizada en el Golfo de Panamá. Este incluye 168,771 hectáreas (ha) divididas en 33,153 ha de área insular abarcando todas las islas e islotes del Archipiélago y 135,618 ha de agua circundante, parte de la Plataforma Continental.

La nueva ley, incluyendo las coordenadas de la zona especial de manejo, se encuentra en: <http://129.171.91.238/gacetadi/gaceta.pdf>



parcelas de dinámica de bosques del Centro de Ciencias Forestales del Trópico (CTFS) de STRI a Observatorios Globales de la Tierra, el Centro planea ampliar las investigaciones científicas que se llevan a cabo en las parcelas.

Uno de los enfoques de investigación será el estudio de las interacciones entre plantas y animales, mediante censos de la

población animal en las parcelas y el estudio de las interacciones bióticas y abióticas entre plantas y animales.

Un taller para discutir los grupos taxonómicos a monitorear, estrategias de investigación y metodología de muestreo se llevó a cabo en STRI del 25 al 27 de mayo, incluyendo un viaje al campo a Barro Colorado, el 28 de mayo.

From OBIO

Furthermore, the total rainfall for the year, to date, 1039mm, is the second greatest amount ever recorded. In the record year, 1981, the total from January to May was 1300mm. For more information, please contact Steve Paton at: patons@si.edu

La Oficina de BioInformática de STRI informa que la precipitación pluvial de mayo

en la Isla de Barro Colorado estableció un nuevo récord de 696mm superando el récord de 622mm establecido en 1971.

Más aún, la precipitación pluvial en lo que va del año, de 1039mm, le sigue a la mayor cantidad registrada en el año récord, 1981. El total de enero a mayo en el 81 fue de 1300mm. Para mayor información escribir a Steve Paton a: patons@si.edu

New publications

Baillie, I., Elsenbeer, H., Barthold, F., Grimm, R., and Stallard, Robert. 2007.

"Semi-detailed soil survey of Barro Colorado Island, Panama" The survey report is available as an interactive web site, and downloadable in its original format, at:

http://biogeodb.stri.si.edu/bioinformatics/bci_soil_map

Dechmann, Dina K.N., Kalko, Elisabeth K.V., and Kerth, Gerald. 2007. "All-offspring dispersal in a tropical mammal with resource defense polygyny." *Behavioral Ecology and Sociobiology* 61: 1219-1228.

Feeley, Kenneth J., Wright, S. Joseph, Nur Supardi, M.N., Kassim, Abd Rahman, and Davies, Stuart James. 2007. "Decelerating growth in tropical forest trees." *Ecology Letters* 10(1): 1-9.

Greiner, Birgit, Cronin, Thomas M., Ribi, Willi A., Wcislo, William T., and Warrant, Eric J. 2007. "Anatomical and physiological evidence for polarisation vision in the nocturnal bee *Megalopta genalis*." *Journal of Comparative Physiology* 193: 591-600.

Murawski, Steven, Methot, Richard, Tromble, Galen, Hilborn, Ray W., Briggs, John C., Worm, Boris, Barbier, Edward B., Beaumont, Nicola, Duffy, J. Emmett, Folke, Carl, Halpern, Benjamin S., Jackson, Jeremy B.C., Lotze, Heike K., Micheli, Fiorenza, Palumbi, Stephen R., Sala, Enric, Selkoe, Kimberley A., Stachowicz, John J., and Watson, Reg. 2007.

"Biodiversity loss in the ocean: How bad is it?" *Science* 316(5829): 1281b-1284.

PNAS: "Early maize from Mexico's dry forests"

"Studies of the origins of agriculture are revealing how human culture and civilizations developed in the past 10,000 years.

Dolores Piperno *et al.* report that maize and its sister plant, squash, were probably cultivated at the edges of tropical lakes in southwestern Mexico, their postulated homeland, by at least 8,000 years ago."

The results [published online in the *Proceedings of the National Academy of Sciences*] corroborate previous work showing that, in tropical America, drier kinds of tropical forest, not rainforest, supported early agriculture, and give further insight into how agriculture originated and spread throughout Mexico.

The authors analyzed three lakes and a swamp in the Iguala Valley, located between Mexico City and Acapulco, for pollen, phytoliths, and charcoal in sediments up to 17,000 years old. They found that, when the ice age ended, rainfall increased, the climate warmed, and the

Correction // Corrección

The piece "CTFS facilities to be built in Gamboa", published last week on Friday, June 1st, should read:

STRI and SI's OFEO officials met this week for the pre-design phase of a building in Gamboa that will house offices of the Center for Tropical Forest Science, as well as other research projects related to tropical forest science carried out in Gamboa.

La noticia "CTFS facilities to be built in Gamboa" [Se



Dolores Piperno, 2006

lakes filled and became loci for plant cultivation.

Signs of significant clearing for agriculture in the forests surrounding the lakes are apparent by 7,200 years ago.

The authors also found more evidence of extensive drying 1,800 to 900 years ago, which coincides with the decline of the Classic Mayan civilization and shows that this major drying event and its possible consequences for prehistoric societies were not limited to the Maya region. — P.D."

Taken from "This Week In PNAS Early Edition" Selected articles appearing the week of June 4.

construirán las instalaciones del CTFS en Gamboa] publicada la semana pasada, el viernes 1ro de junio debió ser:

Los funcionarios de OFEO de SI y STRI se reunieron esta semana para la fase de pre-diseño de un edificio en Gamboa que albergará oficinas del Centro de Ciencias Forestales del Trópico, así como otros proyectos relacionados con ciencias de bosques tropicales que se llevan a cabo en Gamboa.

More publications

Piperno, Dolores R. Moreno, J. Enrique, Iriarte, José, Holst, Irene, Lachniet, M., J. G. Jones, J.G., Ranere, Ranere, Anthony J. and Castanzo, R. 2007. "Late Pleistocene and Holocene environmental history of the Iguala Valley, Central Balsas Watershed of Mexico." *Proceedings of the National Academy of Sciences Online.*

Ricklefs, Robert E., and Bermingham, Eldredge. 2007. "The West Indies as a laboratory of biogeography and evolution." *Philosophical Transactions of the Royal Society of London Online.*

Taerum, Stephen J., Cafaro, Matias J., Little, Ainslie E. F., Schultz, Ted R., and Currie, Cameron R. 2007. "Low host-pathogen specificity in the leaf-cutting ant-microbe symbiosis." *Proceedings of the Royal Society (London) B Online.*

Worm, Boris, Barbier, Edward B., Beaumont, Nicola, Duffy, J. Emmett, Folke, Carl, Halpern, Benjamin S., Jackson, Jeremy B.C., Lotze, Heike K., Micheli, Fiorenza, Palumbi, Stephen R., Sala, Enric, Selkoe, Kimberley A., Stachowicz, John J., and Watson, Reg. 2007. "Response to Comments on "Impacts of Biodiversity loss on ocean ecosystem services"." *Science* 316(5829): 1285.

Zippel, Kevin C., Ibanez D., Roberto, Lindquist, Erik D., Richards, Corinne L., Jaramillo A., Cesar A., and Griffith, Edgardo J. 2007 (dated 2006). "Implicaciones en la conservación de las ranas doradas de Panamá, asociadas con su revisión taxonómica." *Herpetologicos* 3(1): 29-39.

The chemistry of change

Story: Marc Seid
Edited by M Alvarado,
ML Calderon
& Beth King
Photo: MA Guerra

dominantes sobre este planeta. En los trópicos, son especialmente diversas.

Ants are one of the most dominant groups on this planet and are especially diverse in the tropics.

La dominancia y diversidad de las hormigas se atribuye a su estilo de vida social, caracterizado por la división de labores en donde un individuo se especializa en llevar a cabo tareas específicas.

Ant dominance and diversity are attributed to their social lifestyle, marked by a system of division of labor in which an individual specializes in the performance of specific tasks.

La organización de las hormigas les ha permitido explotar casi todos los ambientes terrestres y tener una distribución cosmopolita.

The social organization in ants has allowed them to exploit almost all terrestrial environments and to have a cosmopolitan distribution.

Aunque la ciencia está empezando a comprender cómo es la organización de la división del trabajo de las hormigas, poco se sabe sobre la fisiología de las hormigas individualmente y cómo los cambios fisiológicos y/o la especialización de los individuos controlan su comportamiento.

Although science is beginning to understand how ant division of labor is organized, little is known about the physiology of individual ants and how physiological changes and/or specialization of individuals control their behavior.

Marc Seid, investigador de STRI que trabaja en el Laboratorio de Neurobiología liderado por William T. Wcislo, enfoca sus estudios en conocer cómo el repertorio del comportamiento individual de las hormigas cambia de acuerdo a la edad y las necesidades de la colonia. Seid correlaciona las diferencias en la extensión y composición del repertorio con la química y anatomía neurológica de las hormigas, individualmente.

Marc Seid, STRI researcher working in the Neurobiology Laboratory led by William T. Wcislo, focuses his research on how the behavioral repertoire of individual ants changes according to age and colony needs. Seid correlates differences in repertoire size and composition to the neurochemistry and neuroanatomy of individual ants.

Las hormigas son uno de los grupos de organismos más