

Tupper 4pm seminar

Tuesday, January 16, 4pm seminar speaker will be Bernat Hereu, Moss Landing Marine Laboratories

Trophic interactions and algal community structure in the Northwestern Mediterranean

Bambi seminar

Thursday, January 18, Bambi seminar speaker will be Armand Kuris, University of California, Santa Barbara

You are how you eat: Intimate interspecific interactions

Arrivals next week

Eugene Moton, SI, to study the evolution of Courtship Song in Tropical Passerines, in Gamboa.

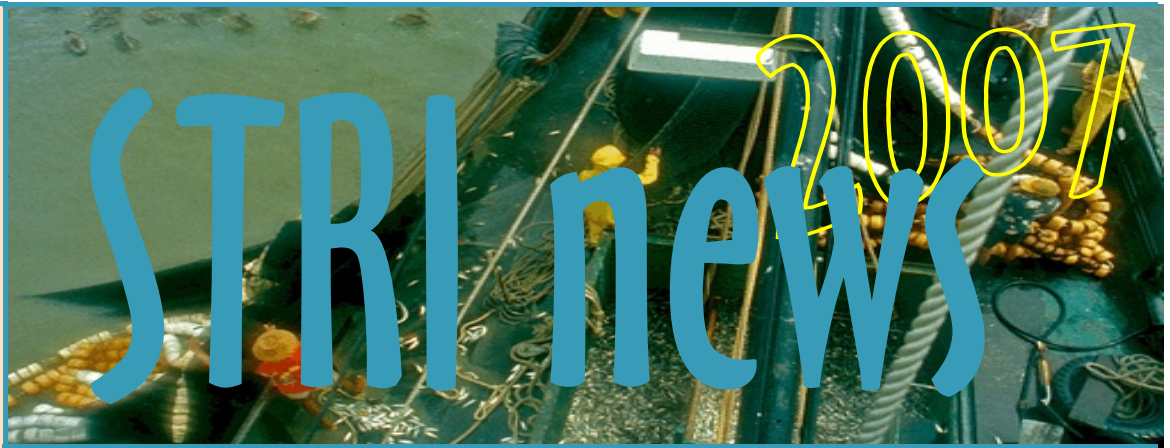
Erin Kurten to carry out the project "Do herbivores and seedling predators maintain tropical diversity, testing the Jansen Connell at the community level at La Selva and BCI"

Laurel and Shayne Hoachlander, to study mating systems of tropical birds, on BCI and Gamboa

Susana Barab and Yureim Lezcano, Universidad de La Habana, to work with Biff Bermingham and Oris Sanjur, at Naos and Ancon.

Stan Reden, for a radio frequency foliage penetration propagation study, at Tupper.

Stephanie Bohlman, for an aerial photo mapping of species distributions and tree mortality on BCI.



Smithsonian Tropical Research Institute, Panamá

www.stri.org

January 12, 2007

Jackson wins BBVA Foundation Prize

STRI's Jeremy B.C. Jackson was awarded the BBVA Foundation Award for Scientific Research in Ecology and Conservation Ecology, "as a recognition of outstanding contributions to the understanding of the impact of human activity on marine ecosystems around the world, including the loss of coral reefs, the collapse of fisheries and the consequences of marine biodiversity loss to mankind."

The BBVA Foundation Prize to Biodiversity Conservation is the highest in the international scale, consisting of €500,000 cash prize, a diploma and commemorative artwork.

Jackson is recognized as one of the world leaders in the study of the ecology and evolution of marine organisms. Following the discovery of the importance of human activities as a crucial element to understand the evolution of marine ecosystems, Jackson began to use historical and ecological sources to create what is known as the historical ecology of marine ecosystems.

His research has been published in the most prestigious scientific journals and is author of eight books and 28 chapters in collective publications.

Jeremy B.C. Jackson recibió el Premio Internacional a la Investigación en Ecología y Biología de la Conservación "en reconocimiento por destacadas contribuciones al conocimiento del impacto de la actividad humana en los ecosistemas marinos de todo el mundo, incluyendo la desaparición de los arrecifes de coral, el colapso de las pesquerías y las consecuencias de la pérdida de la biodiversidad marina para la humanidad."

El Premio de la Fundación BBVA de la Conservación de la Biodiversidad es el más alto en la escala internacional y consiste en €500,000, un diploma y una obra de arte conmemorativa.

Jackson es reconocido como uno de los líderes mundiales en el estudio de la ecología y la evolución de los organismos



marinos. Tras el descubrimiento de la importancia de las actividades humanas como un elemento crucial en la comprensión de la evolución de los ecosistemas marinos, Jackson empezó a utilizar fuentes históricas y ecológicas para crear lo que se conoce como la "Ecología histórica de los ecosistemas marinos". Sus estudios se han publicado en las revistas científicas más prestigiosas, y es autor de ocho libros y 28 capítulos en publicaciones colectivas.

Ashton receives 2007 Japan Prize

In recent times, the destruction of tropical forests has been progressing at an alarming rate. Tropical forests are a veritable treasury of a diverse array of many forms of life, and it is widely believed that the loss of this environment would have a

major impact on the ecosystem of the entire planet. Peter Show Ashton, member of STRI's Center for Tropical Forest Science from Harvard University, was awarded the 2007 Japan Prize in the category of "Science and Technology of

Harmonious Co-Existence" for his extensive research into the phylogenetic systemization of flora and ecological studies in the tropical forests of Southeast Asia, and the contribution his findings have made to tropical conservation efforts.

Arriving next week

Julie Helson, to study the relationship of instream and landscape-level indicators with changes in macro-invertebrate community structure and diversity seasonal, low-land tropical streams across a pristine rural-urban landscape gradient, at Naos.

Tiffany Troxler Gann, STRI postdoctoral fellow, to study quantifying relationships between resource heterogeneity and plant community structure in a coastal freshwater swamp of Panama, at Bocas.

Douglas Woodhams, to study the interaction of biodiversity and emerging disease in Neotropical amphibians, in Fortuna.

Kathryn Kirby, Agrobiodiversity in Central American Homegardens: an investigation at multiple scales, at Tupper.

Kecia Kerr, McGill University, to study realized connectivity of porcelain crab species on the Pacific Coast of Panama: Larval dispersal and recruitment success, at Naos.

J. Craig Venter, J. Craig Venter Foundation, to study environmental genome shotgun sequencing of microbial populations in the world's oceans, with Biff Bermingham.

Congratulations!

To Arabelle de Obaldía and Gustavo Echeona for the birth of their son Noah Fernando Echeona, on December 22. He weighed 7.1 lbs and measured 50 cm.

Ashton promoted a project to formulate a network of forest dynamics plots in the tropics to elucidate the biological diversity and productivity of tropical forests, and their roles in stabilizing global climate. The presentation ceremony, that includes 50 million yen is scheduled for April 19, 2007, at Tokyo's National Theater.

Actualmente, la destrucción de bosques tropicales ha progresado de manera alarmante. Los bosques tropicales son depositarios de una diversa gama de formas de vida, y se cree que la pérdida de estos ambientes pueden tener un impacto mayor en el ecosistema global. Peter Show

Ashton, miembro del Centro de Ciencias Forestales del Trópico de STRI, de la Universidad de Harvard fue galardonado con el Premio Japón 2007 en la categoría "Ciencia y Tecnología en Armónica Co-Existencia" por sus extensas investigaciones en sistemática filogenética de flora y estudios ecológicos de los bosques tropicales del sureste de Asia, y por las contribuciones que sus hallazgos han producido en los esfuerzos de conservación de los trópicos.

Ashton promovió un proyecto para formular una red de parcelas de dinámica de bosques en los trópicos para elucidar la diversidad y



productividad biológica de los bosques tropicales, y sus roles en la estabilización del clima global. La ceremonia para la entrega del premio, que incluye 50 millones de yen será el 19 de abril de 2007 en el Teatro Nacional de Tokyo.

STRI and SENACYT sign agreement

Ira Rubinoff, STRI, and Julio Escobar (left), *Secretaría Nacional de Ciencias, Tecnología e Innovación* (SENACYT) signed a five-year renewable agreement of collaboration for the establishment and development of science and technology projects in Panama, on Wed, Jan 11, at the headquarters of SENACYT in Clayton.

This agreement aims to share scientific information and technical assistance; organize related activities with third countries; join efforts for the creation, equipment and maintenance of experimental and research stations; collaborate in the organization of seminars, workshops and conferences; and other initiatives agreed by the parties.

Both institutions agreed to develop consortia between the public, private and academic sectors to create networks to encourage the advancement of knowledge, and will establish the necessary mechanisms to support research projects. A working team will be created with representatives from both parts to conduct the study and definition of an action calendar to implement the aims of this agreement.



Ira Rubinoff, STRI, y Julio Escobar, Secretaría Nacional de Ciencias, Tecnología e Innovación (SENACYT) firmaron un convenio de colaboración por cinco años renovables, para la creación y desarrollo de proyectos de ciencia y tecnología en Panamá, el miércoles 11 de enero, en las oficinas centrales de SENACYT, en Clayton.

Este convenio tiene como objetivo compartir información científica y asistencia técnica; organizar actividades relacionadas en conjunto con terceros países; unir esfuerzos para la creación, equipamiento y mantenimiento de estaciones experimentales y de

investigación; colaborar en la organización de seminarios, y conferencias; y cualquier otra iniciativa acordada por ambas partes.

Ambas instituciones se comprometen a desarrollar consorcios entre el público y los sectores privado y académico creando redes de cooperación para incentivar el avance del conocimiento, y establecerá los mecanismos necesarios para financiar proyectos de investigación. Se creará un equipo de trabajo con representantes de ambas partes para el estudio y definición de un calendario de acciones para cumplir con los objetivos de este convenio.

New publications

Andresen, Ellen, and Laurance, Susan G. W. 2007. "Possible indirect effects of mammal hunting on dung beetle assemblages in Panama." *Biotropica* 39(1): 141-146.

Craven, Dylan, Braden, D., Ashton, Mark S., Berlyn, G.P., Wishnie, Mark H., and Dent, D. 2007. "Between and within-site comparisons of structural and physiological characteristics and foliar nutrient content of 14 tree species at a wet, fertile site and a dry, infertile site in Panama." *Forest Ecology and Management* 238 (1-3): 335-346.

Hoke, Kim L., Ryan, Michael J., and Wilczynski, Walter. 2006. "Integration of sensory and motor processing underlying social behaviour in túngara frogs." *Proceedings of the Royal Society (London) B Online*.

Farquhar, Graham D., Cernusak, Lucas A., and Barnes, Belinda. 2007. "Heavy water fractionation during transpiration." *Plant Physiology* 143(1): 11-18.

Laurance, William F. 2007. "A new initiative to use carbon trading for tropical forest conservation." *Biotropica* 39(1): 20-24.

Page, Rachel A., and Bernal, Ximena E. 2006. "Túngara frogs." *Current Biology* 16(23): 979-980.

Ryan, Michael J. 2006. "Michael J. Ryan." *Current Biology* 16(24): R1012.

Shono, Kenichi Shono, Davies, Stuart James, and Kheng, Chua Yen. 2006. "Regeneration of native plant species in restored forests on degraded lands in Singapore." *Forest Ecology and Management* 237(1-3): 574-582.

(Photo: Susan Laurance)



Size crucial for Amazon forest reserves

An international research team has discovered that the size of Amazon forest reserves is yet more important than previously thought.

Their findings, published in today's issue of *Science* (vol., underscore the importance of protecting the Amazon in large stretches of primary forest. The article summarizes bird survey results from the world's largest and longest running experimental study of forest fragmentation—the Biological Dynamics of Forest Fragments Project (BDFFP)—sponsored by STRI's Center for Tropical Forest Science (CTFS) and the National Institute for Amazon Research, in Brazil.

Fragmentation shrinks the Amazon forest by thousands of square kilometers every year, leaving a trail of small forest fragments isolated by cleared land. Many species that occur in intact forest prior to destruction will not be present in a small fragment, but would they be found in an equally small plot surrounded by untouched forest? The answer to this question has profound management implications because it weights the relative importance of area and isolation in the design of forest reserves.

"It is no surprise that small isolated fragments lack many species" said Gonçalo Ferraz, leader of the study. "Many

birds are so uncommon that they will rarely occur in small plots even in the middle of vast undisturbed forest." The question is, does isolation aggravate this pervasive effect of size. It does for many species, but surprisingly not for many others.

Area is important because the forest is spatially diverse. "What might look like a vast mantle of homogeneous green is actually a multicolored mosaic", said Lovejoy. And species that occur throughout the forest at the large scale actually may have very specific requirements at the fine scale. Amazon reserves must be large, regardless of their isolation, to encompass a wide enough variety of local conditions—and species.

The photo shows a ringed white-plumed antbird, *Pithys albifrons*

The article was distributed by Neal G. Smith on Thursday, January 11. It can also be obtained from: calderom@si.edu

More publications

Warrant, Eric J., Kelber, Almut, Wallen, Rita, and Weislo, William T. 2006. "Ocellar optics in nocturnal and diurnal bees and wasps." *Arthropod Structure & Development* 35(4): 293-305.

Winter, Klaus, and Holtum, Joseph A.M. 2007. "Environment or development? Lifetime net CO₂ exchange and control of the expression of crassulacean acid metabolism in *Mesembryanthemum crystallinum*." *Plant Physiology* 143(1): 98-107.

Zotz, Gerhard. 2007. "Johansson revisited: the spatial structure of epiphyte assemblages." *Journal of Vegetation Science* 18(1): 123-130.

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Butterflies' compass

Edited by M Alvarado
& ML Calderón
Photo: MA Guerra

Many birds migrate to northern North America in spring and summer when food is abundant there, and return to the tropics when food becomes sparse and the weather severe in the North.

Similarly, in many areas of the tropics, butterflies of many species migrate at certain season in search of tender young leaves for their caterpillars to grow on. In central Panama, ten or more species of butterflies migrate from north to south in May and June.

These butterflies migrate by the sun, using their internal 24 hour biological clock to know where the sun is at different times of day. Robert Srygley, research associate at the Smithsonian Tropical Research Institute (STRI) catches butterflies flying over Gatun Lake, and resets their biological clock before releasing them.

Srygley and collaborators found that, after passing them through a chamber where they created a magnetic field opposite to the Earth's these butterflies try to fly in the direction opposite that of their normal migration. These researchers are interested in where these butterflies are going, how they find their way, and why they migrate.



smithsonian
institution

Muchas aves migran al norte de Norteamérica en primavera y verano cuando el alimento es abundante y regresan a los trópicos cuando vuelve a escasear el alimento y el clima se hace más riguroso.

De igual manera, en muchas áreas tropicales, mariposas de diferentes especies migran durante ciertas estaciones en busca de hojas jóvenes y tiernas en las que sus orugas puedan crecer. En Panamá Central, diez o más especies de mariposas migran de norte a sur en mayo y junio.

Estas mariposas migran guiadas por el sol y mediante el uso de su reloj biológico interno de 24 horas para saber dónde está el sol a diferentes

horas del día. Robert Srygley, investigador asociado de STRI captura mariposas que vuelan sobre el Lago Gatún y reprograma su reloj biológico antes de liberarlas.

Srygley y colaboradores encontraron que al hacer pasar las mariposas por una cámara donde crearon un campo magnético opuesto al de la Tierra, estas mariposas tratan de volar en dirección opuesta a la de su migración normal.

Estos investigadores están interesados en saber a dónde van estas mariposas, cómo encuentran su camino, y por qué migran.