Extinction Debate

"Debating the Tropical Extinction" will be held by STRI at the Tupper Center from Thursday, August 21 through Saturday, August 23. The first day will be open to the public from 8:30am -6pm and coffee will served for everyone.

Colon monthly talk

Thursday, August 21, Colon talk speaker will be Argelis Campos, at Hotel Meliá, Panama Canal
El cultivo de las algas en el Caribe panameño.

Bambi seminar

No Bambi seminar is scheduled for Thursday, August 21 due to the Tropical Extinction Debate.

Bocas' Talk

Friday, August 22, Bocas' Talk speakers will be Molly Cummings, Sara Holloway, Ashley Lamb, Ricardo Cossio, and Laura Cruthers, University of Texas at Austin. English and Español
Poison or passion. Warning and atraction in a color polymorphic frog
Sala de Conferencias del Cefati (IPAT), 7pm

Arrivals

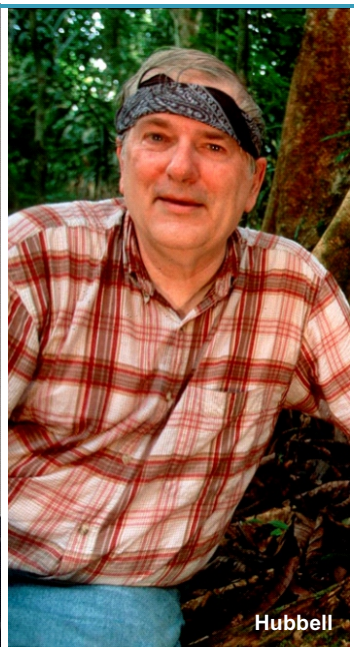
Zeehan Jaafar and Tse-Lynn Loo, University of North Carolina Wilmington, to study the sponge associations and interactions at Bocas del Toro, Panama.

Johanna Tomorsky, University of Wisconsin - Milwaukee, to conduct the project "Do lianas cause chronic disturbance and alter successional trajectories in tropical forests? on BCI.

Smithsonian Tropical Research Institute, Panamá **www.stri.org** August 15, 2008


Condit


Jackson


Hubbell

Academy colloquium— In the light of evolution II: Biodiversity and Extinction

"In 1973, Theodosius Dobzhansky penned a short commentary titled "Nothing in biology makes sense except in the light of evolution". Most scientists agree that evolution provides the unifying framework for interpreting biological phenomena that otherwise can often seem unrelated and perhaps unintelligible."

John C. Avise, from the University of California, Irvine, STRI´s Steve Hubbell and Francisco J. Ayala from UCLA published "In the light of evolution II: Biodiversity and extinction" in the August 12 issue of the *Proceedings of the National Academy of Sciences* as an introduction to the Arthur M Sackler Colloquium of the National Academy of Science held from December 6-8 2007, at the Arnold and Mabel Beckman Center of the National Academies of Sciences and Engineering in Irvine, California. It can be seen at http://www.pnas.org/

Hubbell, in collaboration with Fangliang He from the University of Alberta, Rick Condit, STRI, Luis Borda-da-Agua from UCLA, James Kellner from the University of Georgia and Hans ter Steege from Utrecht University also contributed the article "How many tree species are there in the Amazon and how many of them will go extinct?" in the colloquium. Also published by *PNAS* in the same issue of Aug 12 (vol. 105, supplement 1.

Jeremy B.C. Jackson, from STRI and Center for Marine Biodiversity and Conservation, Scripps Institution of Oceanography, University of California at San Diego, also contributed to the colloquium with "Ecological extinction and evolution in the brave new ocean".

All articles were distributed by Neal G. Smith. They can also be downloaded from any STRI computer. They are receiving special attention from the media. Google them!

More arrivals

Katja Simone Karg, Julius-Maximilians-Universität Würzburg, to study the echolocation and foraging behavior of neotropical bats, on BCI

Eric Lewallen and Devin Bloom, University of Toronto, to study the phylogenetics and evolution of anchovies, at Galeta, Naos and Bocas del Toro.

New publications

Avise, John C., Hubbell, Stephen P., & Ayala, Francisco. 2008. "In the light of evolution II: Biodiversity and extinction." *Proceedings of the National Academy of Sciences* Online.

Cohen, Alan A., McGraw, Kevin J., Wiersma, Popko, Williams, Joseph B., Robinson, W. Douglas, Robinson, Tara R., Brawn, Jeffrey D., & Ricklefs, Robert E. 2008. "Interspecific associations between circulating antioxidant levels and life-history variation in birds." *The American Naturalist* 172(2): 178-193.

Franklin, Samuel P., Kays, Roland W., Moreno, Ricardo, TerWee, Julie A., Troyer, Jennifer L., & VandeWoude, Sue. 2008. "Ocelots on Barro Colorado Island are infected with feline immunodeficiency virus but not other common feline and canine viruses." *Journal of Wildlife Diseases* 44(3): 760-765.

Grimm, R., Behrens, T., Marker, M., & Elsenbeer, H. 2008. "Soil organic carbon concentrations and stocks on Barro Colorado Island—Digital soil mapping using random forests analysis." *Geoderma* 146(1-2): 102-113.

Paperless Field Biology Course 2008

A Field Biology Course was organized and carried out by STRI, SENACYT, Universidad Simón Bolívar, Venezuela (USB) and the University of Panama for biology students was held from Sunday, July 27 through Monday, August 11 in Gamboa, Soberania National Park and BCI. The 16 participants included students from Colombia, Costa Rica, El Salvador, Guatemala and different provinces in Panana.

The course, designed by Roberto Cipriani, Nélida Gómez and Angie Estrada was paperless using the technology available, used books, and articles and reports in electronic formats to avoid waste and pollution.

The sessions included experimental design, basic statistics, soil ecology, aquatic environments, plants, birds, amphibians and mammals.

Forty-two instructors from ANAM, STRI, UNACHI, UP and USB participated in the course, namely (in alphabetical order): Karin Akre, Chelina Batista, Ryan Bixenmann, Venetia Briggs, Aida Bustamante, Roberto Cipriani, José Deago, Samuel Díaz, Angie Estrada, Nelly Florez, Carol Garzón, Nélida Gómez, Jorge Herrera, Myra Hughey, Laura Jara, Yulang Kam, Beth King, Amanda Lea, Iván Luna, Carmen Medina, Eduardo Medina, Basilio Mela, Ricardo Moreno, Delia Negru, Angie Nicolás, Daniel Obando, Isis Ochoa, Elizabeth Osorio, Ingrid Parker, Meike Piepenbring, Andrés Ramos, Christy Riehl, Carmen Schloeder, Laura Schreeg, Annie Smith, Adam Smith, Milton Solano, Eva Toth, Justin Touchon, María Fernanda Vinasco, Ruby Zambrano and Lucia Ziegler.

Un curso de Biología de Campo fue organizado y llevado a cabo STRI, SENACYT, la Universidad Simón Bolívar de Venezuela (USB) y la Universidad de Panamá, del domingo 27 de julio al lunes 11 de agosto en Gamboa, el Parque Nacional Soberanía y BCI. Los 16 participantes incluyeron estudiantes de Colombia, Costa Rica, El Salvador, Guatemala y diferentes provincias de Panamá.

El curso, diseñado por Roberto Cipriani, Nélida Gómez y Angie Estrada no usó papel, utilizando la tecnología a mano, libros usados y artículos e informes en formatos electrónicos para evitar producir desechos innecesarios y contaminación.

Las sesiones incluyeron diseño experimental, ecología de suelos, ambientes acuáticos, plantas, aves, anfibios y mamíferos.

Cuarenta y dos instructores de ANAM, STRI, UNACHI, UP y USB participaron en el curso (en orden alfababético): Karin Akre, Chelina Batista, Ryan Bixenmann, Venetia Briggs, Aida Bustamante, Roberto Cipriani, José Deago, Samuel Díaz, Angie Estrada, Nelly Florez, Carol Garzón, Nélida Gómez, Jorge Herrera, Myra Hughey, Laura Jara, Yulang Kam, Beth King, Amanda Lea, Iván Luna, Carmen Medina, Eduardo Medina, Basilio Mela, Ricardo Moreno, Delia Negru, Angie Nicolás, Daniel Obando, Isis Ochoa, Elizabeth Osorio, Ingrid Parker, Meike Piepenbring, Andrés Ramos, Christy Riehl, Carmen Schloeder, Laura Schreeg, Annie Smith, Adam Smith, Milton Solano, Eva Toth, Justin Touchon, María Fernanda Vinasco, Ruby Zambrano y Lucia Ziegler.

Foto: Nélida Gómez

New publications

Hubbell, Stephen P. , He, Fangliang , Condit, Richard, Borda-de-Agua, Luis, Kellner, James, & ter Steege, Hans. 2008. "How many tree species are there in the Amazon and how many of them will go extinct?" *Proceedings of the National Academy of Sciences*:105 (Supplement 1): 11498-11504.

Jackson, Jeremy B.C. 2008. "Ecological extinction and evolution in the brave new ocean." *Proceedings of the National Academy of Sciences* 105 (Supplement 1): 11458-11465.

Savage, Jay M., Lips, Karen R., & Ibanez D., Roberto. 2008. "A new species of *Celestus* from west-central Panama, with consideration of the status of the genera of the Anguidae: Diploglossinae (Squamata)." *Revista de Biologia Tropical* 56(2): 845-859.

STRI in the news

"Parasitic flies force bees into drudgery" by Matt Walker. 2008. *New Scientist* (2668): August 10.

Newsmakers: "Smart and Lean: After 34 years, the Smithsonian Tropical Research Institute (STRI) in Panama is getting a new director." 2008. *Science* 321(5890): 753.

"Las semillas de una pasión: Mireya Correa. The seeds of a passion" by Sofia Kalomakis de Kosmas. 2008. *Panorama*, Copa Airlines Official Magazine. August: 172-180.

"The real cost of gold" by William F. Laurance. 2008. *New Scientist* (August 13): issue 2669.

Short article, huge implications: great media attention

Changing drivers of deforestation: small-scale cultivators vs industrial road construction in Gabon, central Africa (photos by WFL). Cambian las causas de la deforestación: agricultores a pequeña escala vs. Construcciones de carreteras industriales en Gabón, Africa central (fotos de W.F.L.)

Does clearing forests lead to conservation opportunities? That's the argument made in an article authored by Rhett Butler of Mongabay.com, and STRI's William F. Laurance entitled "New strategies for conserving tropical forests" that will be featured in September by *Trends in Ecology & Evolution*. The four-page article has received wide international coverage from the media.

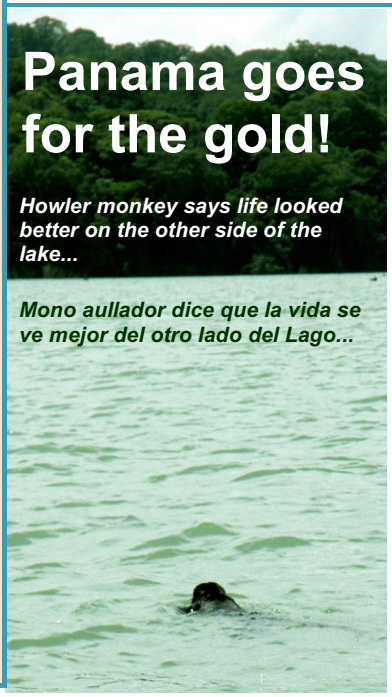
The authors argue that the sharp increase in deforestation by big corporations provides environmental lobby groups with clear, identifiable targets that can be pressured to be more responsive to environmental concerns. This in comparison to previous deforestation that was poverty-driven.

The United Nations estimates that some 13 million hectares of tropical forest are destroyed each year; but these numbers mask a transition from mostly subsistence-driven to mostly corporate-driven forest destruction, say Butler and Laurance.

¿Lleva el deforestar bosques a oportunidades de conservación? Este es el argumento que aparece en un artículo cuyos autores son Rhett Butler de Mongabay.com y William F. Laurance, de STRI titulado Nuevas estrategias para conservar bosques tropicales a publicarse en septiembre en *Trends in Ecology & Evolution*. El artículo, de cuatro páginas ha recibido una amplia cobertura internacional de parte de los medios de comunicación.

Los autores aseguran que el gran aumento en la deforestación causada por grandes corporaciones ofrece a los grupos de conservación ambiental identificar claramente a los responsables que pueden ser presionados para que presten atención a las preocupaciones ambientales. Esto, en comparación con la deforestación previa que era causada por la pobreza.

Las Naciones Unidas estima que cerca de 13 millones de hectáreas de bosques tropicales se destruyen cada año; pero estos números enmascaran una transición de deforestación mayormente causada por la subsistencia a aquella mayormente causado por la destrucción de bosques por parte de las corporaciones.



Panama goes for the gold!

Howler monkey says life looked better on the other side of the lake...

Mono aullador dice que la vida se ve mejor del otro lado del Lago...

These photos of a howler monkey swimming towards BCI from the direction of the western mainland bank of the canal at one of the widest points between the mainland and the northern part of the island were taken by Ana Cristina Rubinoff on Wed Aug 12 at 10:30am. The monkey was spotted by BCI warden Ricardo Racines. Ira Rubinoff also witnessed the event. The monkey was swimming strongly and was likely to complete the swim of over a kilometer, according to Rubinoff.

Estas fotos de un mono aullador nadando hacia BCI desde el banco de tierra firme occidental del Canal en uno de los puntos más anchos entre tierra firme y el área norte de la Isla fueron tomadas por Ana Cristina Rubinoff el 12 de agosto a las 10:30am. El mono fue localizado por el Ricardo Racines. Ira Rubinoff también fue testigo del evento. El mono nadaba con fuerza y parecía que completaría su trayecto de cerca de un kilómetro, de acuerdo a Rubinoff.

Bocas' paradise poses more than one challenge for scientists and engineers

Story:
Sebastien Tilmans
Edited by M Alvarado
& ML Calderon
Photo: MA Guerra

The communities and ecosystems of the islands of Bocas del Toro Archipelago depend on each other and the water around them. Recent development is an economic boon, but the region's isolation and lack of freshwater threatens public health and the environment. The lack of sewage and power infrastructure make it difficult for traditional wastewater treatment.

Sebastien Tilmans (at right), engineer from the Cooper Union funded by a Fulbright Scholarship, works in harnessing waste as a resource to achieve multiple environmental, economic, and social benefits. He has engineered a low-cost, low-energy anaerobic-aerobic wastewater treatment built and maintained with local resources.

Anaerobic digestion (decomposition of organic matter in the absence of oxygen) doesn't require energy-consuming aerators like many aerobic systems. It generates energy in the form of biogas that can be used for cooking replacing fossil-fuel. Combined with a gravity-fed aerobic post-treatment system, anaerobic digestion is well suited for the climate in Bocas.

In collaboration with the community of Bastimentos and environmental engineer Eric Nyman, Tilmans built prototypes at four houses around a stream. To supplement this "hard" infrastructure, they stabilized and restored the stream with tropical plants to reduce erosion, remove remaining nutrients from the water, and restore biodiversity.

Next step of the project is to monitor for long-term efficiency and expand the concept to other communities.

Las comunidades y los ecosistemas de las islas del Archipiélago de Bocas del Toro dependen de ellas mismas y el agua que las rodea. El reciente desarrollo es un es una bendición económica, pero el aislamiento de la región y la falta de agua dulce amenaza la salud pública y el ambiente. La falta de alcantarillado e infraestructuras de energía hacen difíciles los tratamientos tradicionales de aguas servidas.

Sebastien Tielmans (a la derecha) ingeniero de la Universidad de Cooper Union con fondos de una Beca Fulbright, trabaja para convertir los deshechos en un recurso para lograr beneficios múltiples: social, ambiental y económico. Ha diseñado un tratamiento para aguas servidas anaeróbico-aeróbico de bajo costo, bajo en energía construido y mantenido con recursos locales.

La digestión anaeróbica (descomposición de material orgánico en la ausencia de oxígeno) no requiere aeradores que consumen energía como muchos de los sistemas aeróbicos. Genera energía en forma de biogas que se puede usar para cocinar, reemplazando al combustible fósil. Combinado con un sistema de post-tratamiento aeróbico alimentado por gravedad, la digestión anaeróbica es adecuada para el clima en Bocas.

En colaboración de la comunidad de Bastimentos y el ingeniero ambiental Eric Nyman, Tilmans construyó prototipos en cuatro casas alrededor de un riachuelo. Para suplementar esta infraestructura "dura", estabilizaron y restauraron el riachuelo con plantas tropicales para reducir la erosión, remover los nutrientes remanentes del agua y restaurar la biodiversidad.

El próxima paso en este proyecto es monitorear para medir su eficiencia a largo plazo y expandir el concepto a otras comunidades.