

## Tupper 4pm seminar

Tuesday, August 5, 4pm seminar speaker will be Marcy Balunas, STRI Ecologically directed tropical disease drug discovery from marine cyanobacteria in Panama

## BDG

The next Behavior Discussion Group (BDG) will meet on Tuesday, August 5, at 2pm, in the Large Meeting Room, Tupper Center, with Karen M. Warkentin, Boston University  
**Vibrational cues in predator-induced hatching of red-eyed treefrogs**

## NEO Symposium

The STRI/NEO program invite the STRI community to their Annual Symposium on Tuesday August 5 at 8:15am See the program at [striweb.si.edu/images/announcement/annual\\_neo\\_symposium\\_program](http://striweb.si.edu/images/announcement/annual_neo_symposium_program)

## Bambi seminar

Thursday, August 7, Bambi seminar speaker will be Lou Santiago, University of California, Riverside  
**Plant nutrition in tropical forests: food for thought**

## Arrivals

Benjamin Feit, University of Wuerzburg, to study the echolocation and foraging behavior of Neotropical bats, on BCI.

**Safety number:**  
**212-8211**



Smithsonian Tropical Research Institute, Panamá

[www.stri.org](http://www.stri.org)

August 1, 2008

## HCP global coordinator visits STRI sites and projects

Sue Alexander (at right) HSBC Climate Partnership (HCP) global coordinator, toured the Agua Salud project in the Panama Canal watershed and planted trees with Jeff Hall (to her right in the photo below), director of Applied Science, CTFS/SIGEO. She also visited the 50-ha plot on BCI, the first established Forest Dynamic Plot that paved the path to the CTFS/SIGEO, and the nursery in Gamboa. All these projects are supported by the HSBC Climate partnership

The group included Stuart Davies, CTFS director (first from right to left) Mónica Alvarado, director of STRI's Public Information Office and HSBC Climate Partnership

liaison in Panama, STRI director emeritus Ira Rubinoff and Lisa Barnett, director of STRI's Development Office in Washington DC. The group also included other members of the STRI staff and Agua Salud Project. Alexander also visited the Punta Culebra Nature Center.

Sue Alexander (a la derecha en la foto de arriba) coordinadora global del HSBC Climate Partnership (HPC), visitó el proyecto de Agua Salud en la Cuenca del Canal de Panamá y plantó árboles con Jeff Hall (a su derecha en la foto de abajo), director de biología aplicada del CTFS/SIGEO.

El grupo también incluyó (desde la derecha) al director



de CTFS Stuart Davies, Mónica Alvarado, directora de Divulgación y enlace con el HCP en STRI, el director emérito Ira Rubinoff, Lisa Barnett, directora de la Oficina de Desarrollo Institucional de STRI en Washington DC, y otros miembros del personal de STRI y el Proyecto de Agua Salud. Alexander también visitó el Centro Natural de Punta Culebra.



## More arrivals

Participants of the field course - CFNS 500: Curriculum Development in Conservation Education, from Montclair State University.

Harry Lagerman, Montclair State University, to collaborate with the Barro Colorado Island Mammal Census.

Anthony Cognato, Sarah Smith and Aaron Smith, Michigan State University, to study the scolytines of Panama, in Fortuna.

Ellen Reid, Louisiana State University, to study the maintenance of tree species diversity through pest-mediated mortality on seedlings of *Tetragastris panamensis*, on BCI.

## New publications

Clark, Mertice M., Bailey-Jourdain, Catherine, Ferree, P.M., England, S.J., Sullivan, W., Windsor, Donald M., & Werren, John H. 2008. "Wolbachia modification of sperm does not always require residence within developing sperm." *Heredity* Online.

Davis, Donald R., Quintero A., Diomedes, Cambra T., Roberto A., & Aiello, Annette. 2008. "Biology of a new Panamanian Bagworm Moth (Lepidoptera: Psychidae) with predatory larvae, and eggs individually wrapped in setal cases." *Annals of the Entomological Society of America* 101(4): 689-702.

## Science: Spotlight on marine biodiversity hotspots... 50 million years old

Certain regions of the globe harbor particularly high numbers of species of organisms. These biologically important regions have become known as biodiversity hotspots. The deep-time history of hotspots is however not well charted.

"Hotspots of high species diversity are a prominent feature of modern global biodiversity patterns. Fossil and molecular evidence is starting to reveal the history of these hotspots. There have been at least three marine biodiversity hotspots during the past 50 million years. They have moved across almost half the globe, with their timing and locations coinciding with major tectonic events. The birth and death of successive hotspots highlights the link between environmental change and biodiversity patterns. The antiquity of the taxa in the modern Indo-Australian Archipelago hotspot emphasizes the role of pre-Pleistocene events in

shaping modern diversity patterns."

A group of scientists led by W. Renema, from the Nationaal Natuurhistorisch Museum, in Leiden Netherlands, that includes STRI's Aaron O'Dea, from the Center for Tropical Paleocology and Archaeology and John M. Pandolfi, frequent collaborator of STRI researchers from the University of Queensland, just published the article "Hopping hotspots: global shifts in marine biodiversity" in *Science* (August 1st).

Redema *et al* used fossils and molecules to propose a mechanism explaining how hotspots are formed and how they move. Their data shed light on the dynamic nature of biodiversity in deep-time while placing the present-day global threats to areas of high biodiversity into perspective.

The article was distributed by Neal G. Smith. You may also obtain it from: [calderom@si.edu](mailto:calderom@si.edu)

Figure taken from *Science* 321 (5889): 655.



## More publications

Desalvo, M.K., Voolstra, C.R., Sunagawa, S., Schwartz, J.A., Stillman, J.H., Coffroth, Mary Alice, Szmant, A.M., and Medina, Monica. 2008.

"Differential gene expression during thermal stress and bleaching in the Caribbean coral *Montastraea faveolata*." *Molecular Ecology* Online.

Doria, Gabriela, Jaramillo, Carlos A., and Herrera, Fabiany. 2008.

"Menispermaceae from the Cerrejon Formation, middle to late Paleocene, Colombia." *American Journal of Botany* 95(8): 954-973.

Kaspari, Michael, and Yanoviak, Stephen P. 2008. "Biogeography of litter depth in tropical forests: evaluating the phosphorus growth rate hypothesis." *Functional Ecology* Online.

Kirby, Michael Xavier, Jones, Douglas S., and MacFadden, Bruce J. 2008. "Lower Miocene stratigraphy along the Panama Canal and its bearing on the Central American Peninsula." *PLoS ONE* 3(7): e2791.

Manzello, Derek P., Kleypas, Joan A., Budd, David A., Eakin, C. Mark, Glynn, Peter W., and Langdon, Chris. 2008. "Poorly cemented coral reefs of the eastern tropical Pacific: Possible insights into reef development in a high-CO2 world." *Proceedings of the National Academy of Sciences* 105(30): 10450-10455.

## More publications

Renema, W., Bellwood, D.R., Braga, J.C., Bromfield, K., Hall, Raymond, Johnson, Kenneth G., Lunt, P., Meyer, C.P., McMonagle, L.B., Morley, Robert J., O'Dea, Aaron, Todd, Jonathan A., Wesselingh, F.P., Wilson, M.E.J., & Pandolfi, John M. 2008. "Hopping hotspots: global shifts in marine biodiversity." *Science* 321(5889): 654-657.

Tarwater, Corey W., & Brawn, Jeffrey D. 2008. "Patterns of brood division and an absence of behavioral plasticity in a Neotropical passerine." *Behavioral Ecology and Sociobiology* 62(9): 62:1441-1452.

## STRI in the news

"Rubinoff recibe medalla de oro por su servicio en el STRI" por Magaly Rocío Montilla. 2008. *El Siglo*: 31 de julio.

"STRI premió a Ira Rubinoff." 2008. *Hora Cero: Diario Digital de Panamá*: 31 de julio: Frontpage.

"Brazil Cerrado being destroyed." by Addy. 2008. *Free Articles Endless Free*: July 31.

"Fly determines if a bee is worker or queen" 2008. UPI.com: July 30.

"Isthmus of Panama formed as result of plate tectonic" 2008. *Thaindian.com* - Bangkok, Bangkok, Thailand: July 30.

## STRI joined Mangroves' week and International Day

STRI joined Mangroves' week (July 20-26) and the International Day in Defense of Mangrove Ecosystems (July 26). STRI's Bocas del Toro Research Station (BRS), organized education and information activities with school children, visitors to the Station and visitors to the Tourism offices in town (photo above).

Punta Culebra Nature Center organized a vote center to choose the only possible candidate for the Day, the Mangrove. Five hundred and eighty seven people participated in the election and were briefed on the celebration of the International Mangroves' Day and the importance of these fragile tropical ecosystems.

The Galeta Marine Laboratory held a variety of activities that involved university students, school children, government representatives, the community and non-government institutions. A series of conferences and radio messages had great success and wide audience (photo below).

## From OBIO: [www.stri.org/dfm](http://www.stri.org/dfm)

The Office of Bioinformatics (OBIO) would like to announce the availability of sound recordings provided to us by Diane Hope. The recordings include a diverse array of organisms recordings, interviews and sounds capes. These recordings are available for

STRI se unió a las celebraciones de la Semana de los Manglares (20-26 de julio) y al Día Internacional en Defensa de los Ecosistemas de Manglar (26 de julio). La Estación de Investigaciones de STRI en Bocas del Toro (BRS) organizó actividades de información y educación con estudiantes escolares, visitantes a la Estación y visitantes a las Oficinas de Turismo en la comunidad (foto de arriba)

El Centro Natural de Punta Culebra organizó un centro de votación para escoger el único candidato posible para el día, el Manglar. Quinientas ochenta y siete personas participaron



use in any STRI presentation. The recordings can be found at [stri.org/dfm](http://stri.org/dfm) (select the audio tab and enter your search).

La Oficina de BioInformática (OBIO) se complace en anunciar la disponibilidad de grabaciones de sonidos suministrados por Diane Hope.

en la votación, quienes fueron informados sobre el significado de la celebración de Día Internacional del Manglar y la importancia de estos frágiles ecosistemas tropicales.

El Laboratorio Marino de Punta Galeta llevó a cabo una variedad de actividades junto con estudiantes universitarios y escolares, representantes del gobierno e instituciones no gubernamentales y una serie de conferencias y mensajes radiales que tuvieron mucho éxito y una gran audiencia (foto inferior.)

Las grabaciones incluyen una diversa gama de sonidos de organismos, entrevistas y otros. Estas grabaciones están disponibles para el uso de cualquier presentación de STRI. Las grabaciones pueden encontrarse en [stri.org/dfm](http://stri.org/dfm) (seleccione el "tab" de audio y entre su palabra de búsqueda).



Cheme, Thailand —  
“For much of his life,  
Viroj Dedsongprak  
paid little attention to  
the mangrove forests  
that surrounded his  
Thai village. He  
thought nothing of it  
when neighbors  
chopped down trees  
for firewood or  
plowed them under  
for shrimp ponds.

Then came the 2004  
tsunami.”

Environmental  
News Network

Information:  
Lidia de Valencia  
Edited by M Alvarado &  
ML Calderón

Photo: MA Guerra

STRI's Galeta Marine  
Laboratory is  
surrounded by  
*Laguncularia racemosa*  
(white mangrove),  
*Avicenia germinans*  
(black mangrove) and  
*Rhizophora mangle*  
(red mangrove), shown  
in this aerial photo  
taken in 2004.

This forest has been  
the subject of long-  
term study by Wayne  
Sousa and students  
from the University of  
California at Berkeley.  
Among other aspects  
of mangrove forests,  
Sousa focuses on  
forest regeneration in  
light gaps created by  
lightning strikes, the  
most common natural  
agent of canopy  
disturbance in the  
region, creating  
clearings exceeding  
1000m<sup>2</sup>.

But what happens  
when mangroves are  
cut down extensively?  
Have reforestation  
efforts with mangrove  
species ever  
succeeded at great  
scale?

Apparently not many,  
since these  
ecosystems are highly  
complex and fragile.

Experts advise to the  
other end: to protect,  
conserve and allow  
mangroves to spread.

Mangroves are natural  
filters. They keep  
sediment and pollutants  
from neighboring areas  
trapping them in their  
webs of roots. They  
help control floods  
during the rainy season  
and are natural barriers  
to extreme weather  
events like tsunamis  
and hurricanes. Are  
home and breeding  
area to a great number  
of organisms vital to  
the daily subsistence of  
coastal communities.  
Provide nutrients to the  
marine food chain.  
Contribute to avoid  
erosion caused by  
wind, high tides and  
water currents. They  
capture CO<sub>2</sub> and avoid  
the intrusion of salty  
waters into populated  
coasts and crops.

## Mangrove forests: white, black or red alert?

El Laboratorio Marino  
de STRI en Punta  
Galeta está rodeado de  
*Laguncularia racemosa*  
(mangle blanco),  
*Avicenia germinans*  
(mangle negro) y  
*Rhizophora mangle*  
(mangle rojo), como se  
aprecia en esta  
fotografía aérea  
tomada en 2004.

Estos bosques son  
sujeto de estudios a  
largo plazo por Wayne  
Sousa y sus estu-  
diates de la Universidad de  
California en Berkeley.  
Entre otros aspectos  
de los bosques de  
manglares, Sousa  
estudia la regeneración  
del bosque en claros  
causados por  
descargas eléctricas  
durante las tormentas.  
Estos claros llegan a  
exceder los 1000m<sup>2</sup>.

Pero, ¿qué ocurre  
cuando se talan  
extensivamente los  
manglares? ¿Alguna  
vez han tenido éxito  
los esfuerzos de  
reforestación con

especies de manglar a  
gran escala?

Aparentemente no  
muchos, ya que estos  
ecosistemas son  
sumamente complejos  
y frágiles.

Los expertos  
aconsejan hacia la otra  
dirección: proteger,  
conservar y permitir  
que los manglares se  
extiendan.

Los bosques de  
manglar son filtros  
naturales que retienen  
sedimentos y  
contaminantes en las  
redes que forman sus  
raíces. Ayudan a  
controlar inundaciones  
y marejadas al servir  
como barreras  
naturales en eventos  
climáticos extremos  
como tsunamis y  
huracanes. Son hogar  
y criadero de una gran  
diversidad de  
organismos vitales  
para la subsistencia  
diaria de comunidades

costeras y proveen  
nutrientes para la  
cadena alimenticia  
marina. También evitan  
la erosión producida  
por el viento, los ríos y  
las marejadas.  
Almacenan CO<sub>2</sub> y  
previenen la intrusión  
de agua salada en  
cultivos costeros en  
zonas pobladas.

Cheme, Tailandia—  
“Durante gran parte de  
su vida, Viroj  
Dedsongprak le prestó  
muy poca atención a  
los bosques de  
manglares que  
rodeaban su pueblo  
tailandés. Pensó muy  
poco de ello cuando  
sus vecinos talaban sus  
árboles como leña o  
excavaban debajo de  
ellos en busca de  
camarones.

Entonces llegó el  
tsunami de 2004

Environmental  
News Network