



# STRINNEWS

NOVEMBER 8, 2013



## BIRD BASELINE

About 50 percent of tropical forests are secondary forests—forests growing back on land that was once used for agriculture or cattle ranching. To better understand how land use affects bird populations, Sunshine Van Bael, STRI and Tulane University, and Ruby Zambrano, STRI, surveyed bird communities in mature forest, abandoned pastureland, active cattle pastures and areas reforested with native tree species. Their work provides a baseline for the Agua Salud project, now in its 5th year. In the 700-hectare project, researchers compare water/runoff, carbon storage and biodiversity

for different land uses in the Panama Canal Watershed.

According to the survey, birds were most abundant in mature forest. But there were slightly more species in forests regrowing on abandoned pasturelands, in part, because migratory birds were more common in this habitat. The team counted more birds in reforested areas near the mature forest in Panama's Soberania National Park than in areas distant from mature forest.

"Because the Agua Salud Project was set up to monitor different land-use types for 25-40 years, it offers a unique opportunity for monitoring changes in bird communities among different landscape types in Central Panama," said Van Bael.

Van Bael, S.A., Zambrano, R., Hall, J.S. 2013. Bird communities in forested and human-modified landscapes of Central Panama: a baseline survey for a native species reforestation treatment. *International Journal of Biodiversity Science, Ecosystem Services and Management*. online

◀ STRI's 700-hectare secondary forest study site in the Panama Canal Watershed examines a wide range of ecosystem services. The long-term project also allows scientists to study animal diversity changes as a forest ages.

El sitio de estudio de STRI que abarca 700 hectáreas de bosque secundario en la cuenca del Canal de Panamá examina una amplia gama de servicios ecosistémicos. El proyecto a largo plazo también permite a los científicos estudiar una cambios en la diversidad de especies de animales a medida que el bosque envejece.



### BEHAVIOR DISCUSSION GROUP MEETING

Tues., Nov. 12, 2pm  
Ernesto Gómez

Tupper Large Meeting Room  
*Dynamic Disease Management in Trachymyrmex Fungus-Growing Ants and the genetic diversity of the fungus symbiont.*

### TUPPER SEMINAR

Tues., Nov. 12, 4pm  
Jonathan Shik

STRI  
Tupper Auditorium  
*Metabolism, nutrition, and the rise of farming ants*

### PALEOTALK

Wed. Nov. 13, 4pm  
Gustavo Ballen

STRI  
CTPA  
*Neogene Drainage Evolution in Northern South America: Insights from the fish fossil record*



▲ STRI scientist Sunshine Van Bael works in her lab in Gamboa, Panama. The versatile ecologist's interests range from plant microbes to community ecology of secondary forests.

La científica de STRI Sunshine Van Bael trabaja en su laboratorio en Gamboa, Panamá. Los versátiles intereses de la ecologista abarcan temas desde microbios de plantas a ecología de comunidades en bosques secundarios.

## PUNTO DE REFERENCIA DE AVES

Alrededor del 50 por ciento de los bosques tropicales son bosques secundarios -bosques que han crecido en tierra que fue utilizada

para la agricultura o la ganadería. Para comprender mejor cómo el uso del suelo afecta a las poblaciones de aves, Sunshine Van Bael, del Smithsonian en Panamá y la Universidad de Tulane junto con Ruby Zambrano, también del Smithsonian en Panamá, hicieron un sondeo de las comunidades de aves en bosques maduros, pastizales abandonados, áreas de pastoreo activo y áreas reforestadas con especies de árboles nativos. Su trabajo proporciona una base para el proyecto de Agua Salud, ahora en su quinto año. En el proyecto de 700 hectáreas, los investigadores comparan el agua/la escorrentía, el almacenamiento de carbono y la biodiversidad para los distintos usos del suelo en la cuenca del Canal de Panamá.

De acuerdo al sondeo, las aves fueron más abundantes en los bosques maduros. Sin embargo, había unas cuantas especies más en los bosques que están volviendo a crecer en pastizales abandonados en parte debido a que las aves migratorias eran más frecuentes en este hábitat. El equipo contó más aves en las zonas reforestadas cerca del bosque maduro en el Parque Nacional Soberanía de Panamá que en zonas alejadas de bosque maduro.

“Debido a que el proyecto Agua Salud se creó para monitorear diferentes tipos de uso de suelos durante 25 a 40 años, ofrece una oportunidad única para el seguimiento de los cambios en las comunidades de aves entre los diferentes tipos de paisaje en el centro de Panamá”, comentó Van Bael.

Van Bael, S.A., Zambrano, R., Hall, J.S. 2013. Bird communities in forested and human-modified landscapes of Central Panama: a baseline survey for a native species reforestation treatment. *International Journal of Biodiversity Science, Ecosystem Services and Management*. online

### Most abundant bird species in each land-use type at the Agua Salud Ecosystem Services project in Central Panama

#### Mature forest – Bosque maduro (n = 571 individuals)

- 1 Western Slaty-antshrike *Thamnophilus atrinucha*
- 2 Southern Bentbill *Oncostoma olivaceum*
- 3 White-flanked Antwren *Myrmotherula axillaris*

#### Natural succession – Sucesión natural (n = 658 individuals)

- 1 Red-throated Ant-tanager *Habia fuscicauda*
- 2 Red-legged Honeycreeper *Cyanerpes cyaneus*
- 3 Black-bellied Wren *Thryothorus fasciatoventris*

#### Pasture – Pastizales (n = 423 individuals)

- 1 Lesser Elaenia *Elaenia chiriquensis*
- 2 Yellow-faced Grassquit *Tiaris olivaceus*
- 3 Blue-headed Parrot *Pionus menstruus*

#### Reforestation native species – Reforestación con especies nativas (n = 77 individuals)

- 1 Blue-black Grassquit *Volatinia jacarina*
- 2 Lesser Elaenia *Elaenia chiriquensis*
- 3 Yellow-faced Grassquit *Tiaris olivaceus*

▲ Especies de aves más abundantes en cada tipo de suelo en los Servicios Ecosistémicos del proyecto Agua Salud en Panamá Central



A reminder for the STRI community attending the BCI Family Day this Sunday November 10th:

- Bring long pants (jeans or linen), long sleeve shirt or T-shirts
- Bring insect repellent
- Wear sneakers or boots with high socks
- Bring additional clothes, just in case of rain

Enjoy your day at BCI!

Le recordamos a los miembros de la comunidad de STRI quienes participarán del Día Familiar de BCI este domingo 10 de noviembre:

- Traer pantalones largos jeans o de tela y camisas manga larga o t-shirt media manga
- Traer repelente contra mosquitos
- Usar zapatillas o botas con medias altas
- Traer ropa extra para cambiarse en caso de lluvia

¡Disfruten su día en BCI!

## HOW MANY MANATEES REMAIN?

The humpback whales Héctor Guzmán tagged at close range near Panama's Pearl Islands and the Magellan Strait are up to four times the length of his Avon inflatable boat. The pink-and-orange coral species he recently discovered grow 60 meters below the surface of the Pacific. By comparison, the docile manatees he tracks in an idyllic Caribbean estuary should be an easy subject for the veteran Smithsonian marine biologist to study. It's just the opposite.

"This is the most challenging project I've had in my career," says Guzmán, sitting in his tiny research vessel shaded by massive mangrove trees. "The reason is very simple: This is the first time I'm working with an animal I can't see."

The waters of San San Pond Sak river are only slightly more transparent than mud. A one-ton manatee could be swimming a meter from Guzmán and chances are he wouldn't see it. Yet, nearing the end of a one-year project, Guzmán has a pretty good idea of how many manatees are in the protected wetland.

Using novel and traditional sonar and acoustic monitoring techniques, Guzmán and acoustics specialist Mario Rivera have found about 20 *Trichechus manatus*. The information on this emblematic species will contribute to conservation strategies in the protected wetland, which face pressure from human activity around the reserve due to a gradual increase in the agricultural frontier and population.



## ¿CUÁNTOS MANATÍES QUEDAN?

Las ballenas jorobadas que Héctor Guzmán marcó cerca de las Islas de Las Perlas y el Estrecho de Magallanes son hasta cuatro veces el largo de su bote inflable Avon. Las especies de corales de tonos rosa y naranja recientemente descubiertas por él crecen 60 metros bajo la superficie del Pacífico. Comparados con estos, los dóciles manatíes a los que sigue en el idílico estuario del Caribe deberían ser un fácil sujeto de estudio para el veterano biólogo marino del Smithsonian. Es justo lo contrario.

"Este es el proyecto más desafiante que he tenido en mi carrera", dice Guzmán sentado en su pequeño bote bajo la sombra de inmensos árboles de mangle. "La razón es muy sencilla: Esta es la primera vez que trabajo con un animal que no puedo ver".

Las aguas del río San San Pond Sak son ligeramente más claras que el lodo. Un manatí de una tonelada puede estar nadando a un metro de distancia de Guzmán y es posible que él no lo vea. Sin embargo, casi al final de un proyecto de un año, Guzmán tiene una idea bastante buena de cuántos manatíes hay en el humedal protegido.

Utilizando técnicas nuevas y tradicionales de sonar y monitoreo acústico, Guzmán y el especialista de acústica Mario Rivera, han encontrado alrededor de 20 *Trichechus manatus*. La información de esta especie emblemática contribuirá a las estrategias de conservación en humedales protegidos, que enfrentan la presión de la actividad humana cerca de la reserva por el incremento gradual de la agricultura y la población.

Photo by Sean Mattson

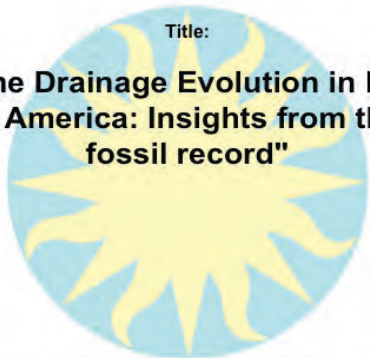
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# PALEO-TALK

**Gustavo Ballen**  
STRI

Title:

**"Neogene Drainage Evolution in Northern  
South America: Insights from the fish  
fossil record"**



Date: Wednesday, November 13<sup>th</sup>, 2013

Time: 4:00 p.m.

Place: Conference Room, CTPA,  
Ancón, bldg. #235

## ARRIVALS

### Yann Gager

University of Konstanz  
Costs and benefits of sociality in bats  
- looking at the example of a tropical  
species with a temperate-like social  
structure  
Gamboa

### Azael Saldaña

Instituto Conmemorativo Gorgas  
de Estudios de la Salud  
Impacto de la deforestación y otros  
cambios ambientales en la ecología de la  
enfermedad de Chagas y leishmaniasis  
en las riberas del Canal de Panamá  
Panamá

### Bas van Schooten

Universidad de Puerto Rico  
The evolution of mimicry in *Heliconius*  
Gamboa

### Orangel Aguilera

Universidade Federal Fluminense  
Tropical Marine Historical Ecology  
Naos Marine Lab

### Brian Gratwicke

Smithsonian Conservation Biology  
Institute

### Della Garelle

Cheyenne Mountain Zoo

### Matthew Evans

Smithsonian National Zoological  
Park  
Panama Amphibian Rescue and  
Conservation Project  
Gamboa

### Annemarie Surlykke and Mads Nedergaard Olsen

University of Southern Denmark  
Predator foraging behavior  
Barro Colorado Island

Questions/comments  
Preguntas/comentarios

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## DEPARTURES

### Héctor Guzmán

To Bocas del Toro, Changuinola  
For a field trip to Changuinola to  
continue monitoring of manatee  
population

### Ross Robertson

To La Paz, Mexico  
To collect deep reef fishes by submarine



Thick mangrove swamps surround the San San  
Pond Sak wetlands where STRI scientist Héctor  
Guzmán conducts research on manatees.

Densos pantanos de manglares rodean los  
humedales del San San Pond Sak donde el científico  
de STRI Héctor Guzmán realiza un estudio sobre  
manatíes.