



FULL MOON

Barro Colorado Nature Monument
Visitor's Program Newsletter

comes out every full moon...

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“Who Treads Our Trails?” Almost 70 years later

Shortly after his arrival on Barro Colorado, Frank Chapman began to hunt at night--with his camera. Two cups of magnesium powder on posts set into the ground on each side of the camera exploded with the roar of “a cannon”; the flash illuminated the unsuspecting animal that snagged the trip line. “The first

flashlight [photo] I secured on Barro Colorado was of a puma coming head-on to the camera. It was made on January 2, 1927 on the Snyder-Molino Trail just beyond its junction with the Shannon Trail.” In the first months of 1927 Chapman photographed four pumas within half a mile of the tower at the summit of the island. Enders (1935) put the island puma population in the early 1930’s at 8-16 individuals. Beginning in 1932, poachers became a problem and pumas gradually disappeared from BCI. Pumas were sighted in the 1940’s and the 1950’s, but before the photos taken early this year, the last official sighting was in 1968. Several recent reports emphasize that pumas are not Island residents.

In this issue of *Full Moon*, a puma once again looks us in the eye, photographed on BCI early in 2000, 72 years after one of its kind was last photographed here. In *Who Treads Our Trails?*, the chapter from *My Tropical Air Castle* (1931), Chapman tells us that to lure cats into his camera traps “the trails were dragged with meat and also with essence of catnip.” Ricardo Moreno, camera trapper in the year 2000 with Jackie Giacalone and Greg Willis’ ESP mammal monitoring project, uses perfume to bring cats in to a flash camera triggered by an infrared sensor (see Story, p.3). Christian Ziegler’s camera trap captured the last days of another endangered species, Smith House, one of only two of the wooden houses remaining on Barro Colorado (see Story, p.2) now due for demolition.

Pumas, named *Puma concolor* meaning ‘one-colored puma’, once roamed from northern Argentina to southern Canada. A recent genetic survey reduced the number of subspecies from 32, based on geographical distribution and appearance, to six: one from North America, one from Central America and four from South America, where pumas probably originated. Pumas eat mostly white-tailed deer, although they will take smaller animals. Most active at sunrise and sunset (“crepuscular”), pumas may move 10 miles in a day (this would mean crossing Barro Colorado three times).

We humans are their only predator in this part of the world, although bears and wolves may attack pumas in other areas. Pumas are categorized as endangered species on both national and international lists.

For some reason, pumas receive much less attention in tropical forest lore than does the jaguar (*Panther onca*). Richard Cooke, STRI archaeologist, tells us that he finds more puma than jaguar canines associated with the burials at Cerro Juan Diaz, although turtle and crocodile imagery seems to predominate at this Pre-Colombian coastal site on Panama’s Azuero Peninsula. Pumas wander into modern human settlements as urban areas encroach upon their territories. Is the puma in these photos just passing through; or is it an Island resident or a refugee, as hunting pressure increases in nearby areas? Work by Ricardo, Jackie, Greg, the Monitoreo team and other researchers will tell. Meanwhile, we will walk the Island trails accompanied by animals that Barro Colorado Nature Monument, so close to both Panama City and Colon urban areas, continues to protect.

Beth King

Just in: Last week, Polo Valdez, resident of Las Pavas and trail manager, saw a puma on BCI.

Recent photos by Jackie Giacalone and Greg Willis.



My first puma. F. Chapman, 1927



March 10, 2000

Adiós, “Smith House”

A few days ago Barro Colorado residents participated in a farewell ceremony. “Smith House”, one of the last wooden buildings that remain in the old laboratory clearing, is being demolished. It was built in 1964 by a contractor from Colon, as housing for Neal and Gloria Smith (thence its name). Neal designed the building himself. Smith House has a balcony with railing, a pitched roof like all the old houses on the Island, a spacious living room, a bedroom, a bathroom and shower, kitchen and dry room. Copper sheeting was buried around the house to keep termites out. But, in time, the building was attacked by termites that found other ways in. As the house is raised on pillars, the area underneath was used as both storeroom and laboratory.

“It wasn’t perfect”-Neal tells us-“I remember that the paneling was warped because only part of the house was air conditioned.”

Martin Moynihan, the station’s director at the time, wanted the houses on the islands to have “Caribbean flair”. His house, says Neal, was painted in some “romantic” color, that might have been yellow, but he’s not sure. Stan Rand remembers that at one time it was painted a rosy color, and was called “Pink House”. At some point, as a joke, it was painted “Desert Rose”. For the last few years, it has worn more traditional Island colors: bone white and dark green.

In the summer of 1966, the Smiths moved to Panama City and never returned to live on Barro Colorado. Olga Linares tells us that Martin Moynihan never lived there. Neither did the Rands. George Angher remembers that Alan Smith lived in Smith house when he arrived on Barro Colorado in 1977 to study



hummingbirds. According to Neal Smith, Alan Smith only lived there for a short time.

“The decision to demolish the house was made nearly 15 years ago”—explains Fernando Pascal, director of the Office of Design and Construction at STRI—“when we decided to eliminate all the wooden structures.” At this site, and in the area where ZMA house is, at the moment, two “efficiencies” will be built, each with two bedrooms, kitchen and dining room. If all goes according to plans, the new houses will be finished by January, 2001.

There’s housing for 40 researchers on the Island, but, when I asked Daniel

Millan, BCI administrator, which house the residents prefer, he responded seriously: “Smith House. Sometimes they reserve it more than a year in advance.” Memories of this beautiful little wooden house reminds us that the best way to live is often the most natural.

Jorge Ventocilla



First row from the left Egbert Leigh, Jr., and Christian Ziegler. Second row: Sonia Tejada and Juergen Berger. Third row: Sabine Mueller, Katja Uebeschaer, Patricia Correa, and Elisabeth Kalko. Last row: Florian Schmitt, Ireneusz Ruczynski, Bob Stallard, Stefan Kose, Janeene Touchton, Petra Kunz, Tim Pearson, María del Carmen Ruiz, David Gálvez, and Rachael Goeriz. (Photo: Christian Ziegler)

Following cat signs...

For many moons, Ricardo Moreno has walked extensively in the forest. He worked censusing mammals on Barro Colorado; and even before the impressive photo taken in March, 1999 announced the presence of a Puma on the Island, Ricardo knew that it was there. There are always cats around Ricardo.

As a kid, he was fascinated by cats. When he was 14, his family got a house cat. He was completely taken by it. By day and by night, Ricardo kept track of every move of his cat, "Tao", studying its behavior. He read all there was to read about domestic cats. Now, he is just about to finish his undergraduate degree in biology, with a thesis about dietary habits of ocelots and pumas on Barro Colorado and in Soberania National Park.

The mammal census, a project initiated by Jackie Giacalone and Greg Willis, Montclair State University, and Joe Wright, at STRI, employs, among other methods, automatic cameras that photograph animals that trip an infrared sensor. They prefer to install the cameras on the same trails used by researchers. "From experience, we know that medium-sized and large mammals use the same trails that people use, or trails made by large game animals like tapir and peccaries," Ricardo tells us.

The first photo of a Puma on Barro Colorado was taken in 1927. For many years, mammal census techniques did not include photography. It took 72 years, until March, 1999, to capture another Puma in a photo. Several months before the photo was taken, Ricardo and Pedro Mendez, also at the University of Panama, had carefully studied a plaster cast of a track from the Island, classified as an ocelot track. Ricardo and Pedro were sure that this was no ocelot track. It had to be made by a puma. Soon the photo from the new camera trap confirmed what they had thought. By now, there are a number of photos, although we are still not sure whether they represent more than one individual. An interesting detail is that in

order to attract the puma to the camera, Ricardo uses a new and apparently successful technique, baiting with a well known brand of perfume.

Have there always been pumas on the Island, undetected? We really know very little about pumas and jaguars. Most puma research has been conducted in the northern temperate zone, very little has been done in the tropics. "In Central America there are only two other resident biologists, Federico Chincilla in Costa Rica and Marcelo Aranda in Mexico, who have been studying pumas. In 1935, Enders studied the diet of ocelots on the Island,...later, until the recent work done by the Canal Watershed Monitoring Project, the information that we have from the Island has been basically anecdotal." It appears that pumas and jaguars live in separate areas and Ricardo believes that it is unlikely that there will be both pumas and jaguars on the Island at the same time. In 1993 jaguar tracks appeared on several different Island trails, but only Jim Dalling, a British biologist who studies pioneer trees, saw it. He tells us about his experience: "As I recall, I saw the animal on Sunday, 2 January, 1994 at about 3pm about 50m south of Armour trail. ... I was kneeling on the ground (digging up soil) when it passed about 20-30m in front of me (the understory is very open in that part of the forest). It was a large animal and it seemed that the coat was quite dark, but the rosettes of spots were quite visible. When the cat saw me, it ran off down Armour trail."

Ricardo Moreno has only encountered dead Jaguars, killed by hunters near Portobelo and in Chagres National Park. "The death of a big cat is a major genetic loss," Ricardo emphasizes. In addition to



Ricardo Moreno makes a plaster cast of an animal track on Barro Colorado. (Photo: Christian Ziegler)

the fact that population sizes are naturally low, deforestation restricts them to an ever-smaller area and uncontrolled hunting is competition for the food resources that remain. People tend to fear them without understanding the facts "in addition, TV programs give the erroneous impression that Pumas occur only in North America. My research, in part, isn't very mainstream"... continues Ricardo ... "I have received incredulous comments, even from colleagues, when I talk about pumas in Panama, even in forests near the Capital. They are here, very close by! I insist." He greatly appreciates the support of other researchers who have inspired him to persevere. Support from Rafael Samudio, working in association with STRI, has been key to the continuation of his work.

What is the real story of pumas and jaguars in the forests near the Canal? Are they naturally rare animals or have their populations been reduced to near extinction? Are they arriving on Barro Colorado as a last attempt to survive? Are the techniques that we are using to census them improving? Whatever the answers to these questions are, the reality is that pumas and jaguars are still present, and our obligation remains the same: to value and protect them as an extremely important element of the natural heritage of the Nation.

Jorge Ventocilla



Our visitors

Our visitors this month:

- Sept. 16: Centro de Educación Laboral Oficial de San Miguelito
- Sept. 17: Asuntos Estudiantiles, Universidad de Panamá
- Sept. 19: Mixed groups
- Sept. 23: Centro Educativo Sócrático
- Sept. 24: Museo del Canal y Maestría del Canal (UP)
- Sept. 26: Instituto de Marina Mercante
- Sept. 30: Escuela Pedro Pablo Sánchez y Secretaría Nacional de Ciencia y Tecnología
- Oct. 1: Colegio Elena Ch. de Pinate
- Oct. 3: Mixed groups
- Oct. 7: Universidad Interamericana
- Oct. 8: Universidad Latina
- Oct. 10: Mixed groups
- Oct. 13, Friday: Full Moon!**
- Oct. 14: USMA (Ecología)

Trip to Isla Colon, Bocas del Toro



The following is just to share my latest educational and tourism experience with our readers. This took place at Colon Island, Bocas del Toro. The idea of my visit was not just tourism and pleasure but also to

visit STRI station in Bocas. Mr Luis Mou, Scientific Coordinator, showed me around. Future plans for the installation seem great and I hope in the future an environmental education program may be incorporated for children as it is at Culebra.

Sightseeing, wild “Noni” trees attracted my attention. Mr. Vicente Grimmas (at right in photo), the driver in town, told me that, as a kid, his parents told him that the plant was poisonous. Today, we benefit from this fruit which improves people’s health.

Finally, I would like to thank all who made my stay in Bocas an enjoyable one. The local people really help out and cordially offer information about various areas with great potential. Thanks Bocas!

Anayansi Castillo
(Barro Colorado guide)

Recent scientific publications

- Dalling, James W., Lovelock, Catherine E. and Hubbell, Stephen P. 1999. “Growth responses of seedlings of two neotropical pioneer species to simulated forest gap environments.” *Journal of Tropical Ecology* 15(6): 827-839.
- Dyer, Lee A., Letourneau, Deborah K., Williams, Wyatt and Dodson, Craig. 1999. “A commensalism between *Piper marginatum* Jacq. (Piperaceae) and a coccinellid beetle at Barro Colorado Island, Panama.” *Journal of Tropical Ecology* 15(6): 841-846.
- Horvitz, Carol C., Da Silveira Lobo, Leonel and Stenberg, O’Reilly. 1999. “¹⁴C dating of tree falls on Barro Colorado Island (Panama): a new method to study tropical rain forest gap dynamics.” *Journal of Tropical Ecology* 15(6): 723-735.
- Peñafiel A., Marcos A. and Johnson, Aura E. 2000. Diversidad y abundancia de los roedores del área recreativa Lago Gatún, Provincia de Colón. Tesis. Panamá: Universidad de Panamá.
- Pérez, Rolando, Condit, Richard and Loo de Lao, Suzanne. 2000. “Distribution and dynamics of a neotropical ant *Paraponera clavata* within the Barro Colorado Island Forest Dynamics Plot.” *Inside CTFIS* Summer 2000: 3, 10.
- Svenning, Jens C. 2000. “Small canopy gaps influence plant distributions in the rain forest understory.” *Biotropica* 32:252-261.



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