

PRESCOTT COLLEGE

Research and Volunteer
Opportunities at
Amigos de los Monos,
Burica Peninsula,
Costa Rica

SENIOR PROJECT
Prescott College
Renee Brechter
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Modified for use by *Amigos de los Monos* by Katie Mann

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Introduction

During June 2007, I was fortunate to travel to the southwestern peninsula of Costa Rica as a volunteer for *Amigos de los Monos*. *Amigos de los Monos* (Friends of the Monkeys) is a conservation project working toward uniting the multicultural community of the Burica Peninsula to aid in primate conservation work. I was living within the Rio Coco community of the Conte Burica Ngäbe (locally known as Guaymí) Indigenous Territory working with the local Guaymí people. While there I was exposed to the local culture, the physical hardship of working in the jungle, and the incredible exposure to four different types of monkeys.

I worked during the day with a Guaymí guide who walked me through the jungle looking for spider monkeys. My job was to record the number, sex, and location of the monkeys. I focused on spider monkeys because they are the most locally threatened species out of the four inhabiting the forest.

While there, I spent my time with the organization director, Kathryn Mann, and brainstormed about the current state of *Amigos de los Monos* and its future. She offered me the opportunity to make the organization more publicly known and accessible for further volunteer work, research and possible classes. I am using my experience there and applying it toward a plan to develop *Amigos de los Monos* through financial and voluntary support. In this report, I give a brief ecological and cultural background of the area, introduce the project and its current status, and discuss the opportunities for further work in addition to related logistics.

Section 1. Background of Area

The Burica Peninsula is the southwestern-most region of Costa Rica. It borders Panama and the Pacific Ocean with the nearest village, Punta Banco, situated 6 km to the north. Punta Banco is a small town thriving mainly on eco-tourism. Pavones, a world-class surfing town 6 km north of Punta Banco, is home to an international array of land and business owners. However, the majority of the peninsula is occupied by the Amerindian Guaymí, indigenous to Panama. In 1978 the Costa Rican government established the Conte Burica Indigenous Territory, comprising 12,000 ha on the Costa Rican side of the Burica Peninsula.

The Peninsula is characterized by tropical wet forests comprised of primary, secondary and riparian zones. There is a high level of tropical biodiversity with the jungle supporting large fauna such as peccaries, jaguarundis, sloths, and four different primate species. Due to the villages and indigenous settlements, the forest has been fragmented and hunted which has directly affected the primate populations.

The rainy season lasts for approximately eight months beginning in May and ending in December. The wettest months are in September and October with an annual rainfall between 3,500-4,000 mm. The geological landforms on the peninsula are Tertiary sedimentary rocks with mainly marine sedimentation. The soil composition has a reddish hue, and is low in nutrients. This is due to the steep and mountainous relief with slopes of 40-80% and excessive drainage.

Section 2. Indigenous Culture. Communities of the Conte Burica Ngäbe Indigenous Territory

The Guaymí Amerindians, inhabiting the majority of the peninsula, are indigenous to Panama. Although the exact date is unknown, the Guaymí started migrating from Panama around the 1930s. They rely on agriculture, hunting and sporadic labor work for survival. Their main crops are rice, corn and beans, while they graze cattle for meat as well as raise chickens and pigs. They rotate their crops and use slash-and-burn techniques to cultivate the land. The Guaymí hunt monkeys and other large mammals, such as peccaries, and birds like the *gallina de la montaña*, (the chicken of the mountain). They are especially fond of leatherback turtle eggs, which has been of concern for conservationists. The Rio Coco runs through the territory and opens into the Pacific Ocean allowing for exceptional on-shore fishing opportunities and prong harvesting in the river. They also utilize fruit trees including, but not limited to, the following: avocados, mangos, star fruit, lemongrass, coconuts, *guanabana* (soursop), and bananas.

The Guaymí women are especially easy to identify by the traditional dress they wear in public. They are known for bright colored dresses with symmetrical, triangular patterns on them. They are skilled weavers and seamstresses. In the town of Pavones the Guaymí women can be seen selling dolls, beaded jewelry, traditional Guaymí clothing and hand-woven hats and bags to tourists.

Section 3. 2005 Pilot Study: Assessment for Primate Conservation

In 2005 Kathryn Mann, the founder and current Director of *Amigos de los Monos* (ADLM), went to Costa Rica for her masters thesis. She did an assessment near Punta Banco in order to determine the need for primate conservation efforts. She researched two questions: the relative abundance of each species inhabiting the area, and what conflicts surrounded the needs between the primate and human populations on a botanical level.

The methodology used for the primate surveying was a reconnaissance survey method, which is a modification of line transects. This methodology was adopted because of the steep terrain and dense forest that dominated the sites. She recorded data by observing groups of monkeys per kilometer walked. When an animal was detected the following was recorded:

- Species
- Time sighted
- Distance walked on trail
- Weather conditions
- Method of detection (audio or visual)
- Number of individuals
- Age class (infant, juvenile, or adult)
- Sex class
- Habitat type
- Trail type
- Activity of animal prior to detection
- Behavior of animal upon detection
- Distance of group from trail
- Angle of observation
- Height above ground of animal

The botanical survey that was done used quadrat methodology in primary forests. The dimensions of the quadrats were 10 m x 50 m. An extra emphasis was placed on the

vegetation that was important for primates. Mann, in conversing with the guides, was able to understand what trees the monkeys have been seen sleeping in and foraging in.

The data collected during the 2005 pilot study showed that the Panamanian red spider monkey (*Ateles geoffroyi panamensis*), a subspecies of the Central American spider monkey, was the primate of most concern. Comparing its natural habitat to the botanical habitat of the Punta Banco and Rio Coco regions, it was deemed in danger of extirpation. Thus, the study became the catalyst for ADLM, using the spider monkey as the flagship species for the organization.

Section 4. *Amigos de los Monos:* Past, Present, Future

"The mission of Amigos de los Monos is to ensure the longevity and health of the monkey populations of the Burica Peninsula of Costa Rica. By using the endangered spider monkeys as flagship species and community conservation strategies, we seek to unite the multicultural community of the Burica Peninsula to achieve this goal in a socially sustainable manner." –Kathryn Mann

ADLM is a product of the 2005 pilot study done by Kathryn Mann, the current director and head of the organization. Kathryn Mann returned to Costa Rica in January of 2007 and, along with the support of numerous people, began to catalyze community-based conservation strategies towards the ADLM efforts. Initially, there were interviews done to gauge the interest in supporting the conservation movement. Mann is working closely with the director of Community Conservation, Inc., Dr. Robert Horwich, and was able to receive funding from Primate Conservation, Inc. and the Margot Marsh Biodiversity Foundation. The money has gone toward paying the Guaymí people for their guide services, purchase equipment (e.g., GPS units), developing educational materials, and living costs.

In February 2007, Mann held the inaugural ADLM meeting in the Conte Burica Guaymí territory. There she connected with volunteers willing to work for COVIRENA (Vigilance Committees of Natural Resources), a branch of MINAE (Ministry of Environment and Energy). These volunteers from local communities patrol the forests and denunciate illegal activity against the environmental laws. A group of twelve people, 8 men to patrol the forest and 4 women to make food for the guards, are currently volunteering in the Rio Coco region to prevent illegal resource extraction in their lands. The name they have chosen for themselves is “ngäbe münchi ngubuaga,” which is their native language for “the indigenous protect the spider monkey.”

Currently, Mann is working to create educational materials with a focus on primate conservation. She is collaborating with the local high schools to obtain folklore and oral history of the area. She hopes to help teach the future generations about the importance of monkeys in the jungle. ADLM is in need of volunteers and financial support to publish the book.

Mann hopes that her enthusiasm will encourage the local community to take hold of the project themselves. This is a lofty idea, as there are dramatic, cultural differences between her and the local population, in addition to complicated social dynamics between the *Ticos* and Guaymíes. In order to receive the capital to realize project potential, there needs to be more grant-writing, volunteer work and publicity.

Section 5. Opportunities with ADLM

ADLM is currently willing to host researchers, students, and educators who are seeking a unique, fully hands-on experience and want to play a pivotal role in helping better establish the organization. Currently there are no paid positions through ADLM, but the experience is worth paying for. A crucial component of the mission statement is to apply community-based conservation strategies. By supporting the local community and contributing to the organization, there is hope for saving a species that is close to extirpation. ADLM is looking for the following:

1. Volunteers:
 - Volunteers are sought to assist the project director in all facets of the project. Current areas of investigation include:
 - mapping of Guaymí properties and land practices
 - Guaymí socioeconomic interviews
 - Surveys of primate populations
 - Development and implementation of educational materials
 - Assist in grant writing, newsletter writing, and acting as a scribe for community meetings
2. Education Coordinators:
 - This position is specifically being sought for someone to fill for an extended period of time. The information gathered by this individual will be used to develop an educational booklet. This person will help in researching the following:
 - Collecting comprehensive data about the local natural history
 - Collect local knowledge about the monkeys
 - Create educational posters for the local school
 - Create interpretation materials for tourists
3. Researchers:
 - Researchers are sought in all areas of conservation, including:
 - Primatology, biology, botany, tropical agriculture, restoration, social sciences, cultural anthropology, etc.
 - Undergraduate, graduate and doctoral work all apply

Why work here?

- A volunteer/researcher presence provides an economic incentive for conservation

efforts. Your investment into the site will fully benefit the local people, creating jobs and hopefully a positive association with conservation efforts.

- There has been limited research at this site and it provides a great opportunity to pioneer a study.
- This project presents a clearly unique opportunity to live and work with indigenous families while also working to conserve biodiversity and wildlife.

Who would work well here?

- Someone that is committed to research that is beneficial to conservation of the local biodiversity.
- Someone that is independent and self motivated.
- Someone that is capable of living without modern conveniences.
- Someone that is willing to share a household with people of a different culture that may not share the same language or customs.
- Someone that is willing to be mobile during his or her stay as a volunteer/researcher.

Research Ethics

Complete a research ethics form provided by your educational institution. Even if you do not plan on conducting an investigation in the social sciences, complete the ethics forms for interviewing local people. You never know what local knowledge will be pertinent to your study.

Permits and permissions for research

“Everyone who captures, handles, or transports plants, animals, or microorganisms in Costa Rica for scientific study must register their project, obtain government wildlife service (MINAE) research permits, and submit biannual reports to the government on their work. Anyone collecting plant samples or capturing wild animals for teaching purposes or scientific research (pollinia or scat samples, re-capture, etc.) must pay an additional fee for a collecting carnet or license, even if specimens are later released.

Collecting permits must be obtained even for purely observational research if it is to be carried out in a national park. Research and the related collecting permits (if needed) are

valid for up to 6 months, and can be renewed. The export of wildlife from Costa Rica for scientific purposes also requires one or more government export permits.”

From: <http://www.ots.duke.edu/en/research/permits.shtml>
See website for further details.

It is recommended that each researcher register their investigation with the *Asociación Desarrollo Integral de Conte Burica* (Conte Burica Association for Sustainable Development) if the study term is longer than three months and/or PhD. This can be done during the pilot visit to the site.

For more in-depth information about how to apply to ADLM, visit

<http://www.amigosdelosmonos.org>

Section 6. Risk Management

Risk is a factor to consider for the program. Traveling in a foreign country will always have risk that goes with it. The ADLM research area is very remote, difficult to access, and does not have the insurance to cover volunteers. The following outlines possible risks, and management.

ADLM has a liability waiver (example is attached in back of document) that all volunteers must sign. This includes passport and health insurance information. The nearest health care center is located in Golfito, which is three hours by bus on primitive road conditions. Emergency care can be found in the center of town at *Hospital del Golfito*.

Risk Management:

- Signing a waiver with pertinent information through ADLM, which will be kept on record with the director.
- A 2-day acclimation in Punta Banco with the director prior to entering the reserve. This will include an introduction to poisonous flora and fauna, a class

on how to use a snake bite kit, a day hike into the forest on preexisting trails, and 3 “typical” Costa Rican meals prepared for you by the host.

- A guide or the director will be with you at all times in the forest.
- You will carry a snakebite kit with you during field days.

(You will be responsible for your actions. The research site can only be accessed via the beach during low tide. In the case of an emergency, a horse can be supplied by the nearest family (approximately 1 hour walk from core research area). A horse can travel through the forest and reach Punta Banco. However, this method of traveling is longer and more dangerous than traveling out via the beach).

Insurance websites:

Travel guard: <http://www.travelguard.com/>

Medex: <http://www.medexassist.com/>

Travel Insured International: <http://www.travelinsured.com/>

World Medical: <http://www.worldwidemedical.com/>

Travel and health warnings:

- U.K. travel warnings:
<http://www.fco.gov.uk/servlet/Front?pagename=OpenMarket/Xcelerate/ShowPage&c=Page&cid=1007029390572>
 - o Costa Rica:
<http://www.fco.gov.uk/servlet/Front?pagename=OpenMarket%2FXcelerate%2FShowPage&c=Page&cid=1007029390590&a=KCountryAdvice&aid=1013618385821>
- U.S. travel warnings:
<http://travel.state.gov/>
 - o Costa Rica:
http://travel.state.gov/travel/cis_pa_tw/cis/cis_1093.html

Section 7. Accommodations

Site accommodations require that individuals who work here are extremely flexible and adventurous. Work here demands that individuals be mobile, since work areas are dispersed within a minimum of a 12 km distance (with internet and phone in the village of Pavones, electricity in the village of Punta Banco (6 km south), and the spider monkey study site in Rio Coco an additional 6 km south. Housing logistics are very dynamic and are continually being negotiated to try and provide the most logistically ideal accommodations. Near Punta Banco volunteers and select researchers will be sponsored by the Yoga Farm, which is very secure and comfortable and provides three meals a day. Here there are cold showers, composting toilets and solar electricity. Options in Punta Banco include rooms in locally owned *cabinas* (see website for photos). Field work requires that one camp near to the monkeys. There are also options to stay with Guaymí families. Your housing will depend on the actual work/studies that you carry out. Stay posted on the website for advances in housing.

Section 8. Expenses

The expenses will vary depending on the length of your commitment to ADLM, and can be discussed on an individual basis with the program director. Travel expenses to and from the research center will have to be calculated on an individual basis. Consider costs for traveling, hotels, food and incidentals. Also, Pavones and Punta Banco have family-run eateries. There are also opportunities to purchase hand-made crafts from the Guaymí people. This is strongly suggested as it helps ADLM's mission statement to utilize community-based conservation tactics.

You should convert US\$ into colones (Costa Rican \$) as soon as possible. There is NOT a bank south of Golfito! All money should be converted and carried with you so that you can personally pay ADLM director upon arrival. Program costs are \$400 a month, this will cover your housing and grocery costs. (Eating out will be at your own additional cost). This money will go towards paying cabinas, campsite attendants/cooks, and groceries. Researchers should plan to pay guides \$1.50 and hour.

Section 9. Travel

Visas

Depending on your country of origin, you will be allowed to enter Costa Rica on a tourist visa. You must leave the country every three months to renew your visa. The easiest way to do this is to take a couple day break from your research and cross the border to Panama and have a little vacation. Plan this trip into your budget if you intend to stay more than 3 months (\$50 minimum). Please check with your home country. For more details visit this website:

http://www.costarica.com/Home/Travel/Passport_%7Damp;_Visa/Visa_Resource_Center

Travel throughout Costa Rica is relatively easy as the locals are willing to help; speaking Spanish is not necessary, but it definitely helps. "Costa Rican Spanish" published by Lonely Planet is very helpful. In-country travel can be made by flights, buses, taxis and paid tourist vans.

All flights enter Costa Rica in Alajuela, just outside of San Jose, the country's capital and largest city. There are hotels and hostels available throughout the city.

Reservations are recommended. From the airport you can take a taxi (\$15-25) directly to your hotel. Being an obvious foreigner you will most likely be charged \$25. If you exit the airport and go to the main road you can find a taxi for closer to \$15. Another option is to take the public bus (\$0.75) to downtown San Jose. The bus station (*parada de bus*) is located on the highway adjacent to the airport. Turn right when you get to the highway and walk about 50 m. The bus will take you to the T.U.A.S.A bus station in downtown San Jose, where you can get a cab to your hostel. The bus is only recommended for flights that arrive in the daytime and for those people that are savvy international travelers.

Recommendations for hostels

- This is a recommended hostel for a more mellow and mature crowd:

Kabata Hostel: kabatahostel.com

- For a younger and more party crowd:

Costa Rica Backpackers

Print of directions to your hostel to give to the taxi driver.

BY AIR From San Jose Airport, fly to Golfito: a domestic airline called Sansa has flights from 6AM - noon - cost is about \$90 one way. You can book with them in advance from your home country. Take the earliest flight that is available to you. <http://www.flysansa.com/> **From Golfito,** the easiest way to get to Punta Banco is by taking a taxi, which should cost about \$65 one way. **Ask for a taxi with 4 wheel drive** (*cuatro par cuatro*), which is not absolutely necessary but makes for a smoother ride. Most of the taxi drivers are helpful, honest and reliable. We often refer people to a man called Alex his local phone number is 826-0800, if he is busy he can hook you up

with one of his drivers. If Alex and his drivers are busy anyone else can help.

BY BUS

****Be sure to watch your luggage as bus stations are known for crime and theft in Costa Rica****

**** First part** When you get to San Jose go to the Tracopa bus station and take the first bus to Golfito leaving at 6:45 am every morning. This is the direct bus (*directo*). The indirect bus, which makes more stops and takes more time leaves at 7am. Despite taking more time, you will still arrive in Golfito in time to take the bus to Punta Banco. It is advised to purchase your tickets a day in advance to ensure a spot on the bus. Be sure to check your ticket for the right time and date. Fare: 5,000 colones.

**** Second part** Take the 3 pm bus (the bus can be picked up right in front of Hotel Golfito) from Golfito to **Punta Banco**, do not get off in Pavones, it's the next town after Pavones. Fare: 1,200 colones. About half way through the bus from Golfito you will get to a river that must be crossed by ferry. You will have to take all of your things off the bus to take the ferry and board another bus. You will have to pay 50 colones on the ferry.

Return travel: You will have to pay a \$26 exit fee when you leave Costa Rica.

U.S. Embassy / U.S. State Department

It is important to remember that you are a visitor, and representing the U.S. In case of emergency regarding travel, the U.S. Embassy can be of service. It is located in Pavas, just outside of San Jose.

Information:

- American Citizen Services and US Consul General +011 (506) 519-2000
- 24 hour Emergency +011 (506) 220-3127
- http://travel.state.gov/travel/cis_pa_tw/cis/cis_1093.html
- http://travel.state.gov/travel/living/benefits/benefits_1242.html
- <http://usembassy.or.cr/crinfo.html>

Section 10. Equipment

Travel to and from the research spot is not an easy task. You should be able to carry everything on your back, or in one large, easy to store bag. Once you reach the station you will be able to unpack and use a day pack for field work and possible over-nights.

Equipment Check List

- Backpack/ large duffle (large enough to carry all your belongings)
- Daypack (for water/headlamp/rain jacket/snack/notebook while in the field)
- Sleeping bag (lightweight)
- Sleeping pad
- Water bottle
- Plastic Tupper-wear bowl
- Personal utensil
- Headlamp
- Rain jacket
- Rain pants (optional)
- Lightweight pants for base
- Quick-dry shorts (2 pr.)
- Quick-dry shirt (2 pr.)
- Tee-shirt/ tank-top
- Synthetic underwear (3-4 pr.)
- Warm layers (fleece/sweatshirt)
- Light-weight button down shirt
- Flip-flops/crocks/chaco's (to wear when at base)
- Closed-toed shoes (sneakers/hiking boots fine)
- Hat w/ brim
- Bathing suit
- Knee-high socks (lightweight- soccer socks are perfect!)
- Towel/ sarong

- Bug spray
- Sunscreen
- Bug net (large one for sleeping in)
- Toiletries (there are rustic showering facilities- all products drain into Rio Coco- biodegradable products preferred)
- A biodegradable detergent/ Dr. Brauner's for doing laundry
- Personal medication (e.g., epi-pen!! There are creepy crawlies)
- Pocket notebook with pen/pencil
- Binoculars (small and easily packable)
- Rechargeable batteries (electricity available in Punta Banco)
- Backup normal batteries (buy in the US)
- Snake bite kit

Optional Equipment:

- Camera
- Hand lens
- One set of nice clothes for travel
- Playing cards/ personal reading material
- Write-in-the-rain pocket notepad
- Coloring supplies (good to use for field journal)
- Pocket knife (must be packed in checked luggage)
- Lighter/matches (must be packed in checked luggage/purchased in Costa Rica)
- Alarm clock (if you own a watch, make sure it is water-proof)
- Hammock

Equipment to Purchase in Costa Rica:

- Large rubber boots (waders can be purchased as far south as Punta Banco for US \$12; sizes vary)
- Trash compactor bags/ zip-lock baggies (you will be in the RAINFOREST and most things will get wet)

Section 11. What to Expect?

What will a typical day look like for a volunteer? There are numerous opportunities; this is an example of what former volunteers have done:

*5:00 am- coffee and breakfast

*6:00 am- meet your guide, either at the center or at the mouth of the Rio Coco

*7:00 am- 2:00 pm- depending on what the objective is for the day, the following events could take place:

- Primate observations: hike with a guide through the surrounding forests, recording the following:
 - o Species: spider, howler, squirrel, capuchin
 - o Numbers total, # female. # male
 - o Age/gender: baby, juvenile, adult
 - o Activity prior to detection: walking, eating, resting, vocalizing, etc.
 - o Behavior upon detection: flight, avoidance, curiosity, display, ignorance
- Mapping property: walk a property line with the owner plotting the corners with a GPS unit supplied by ADLM.

*3:00 pm- Return to the center, record findings, do journal entries. During the wet season it begins to rain in the afternoon. This is a good time to do personal research and language exchanges.

*5:00 pm- Eat dinner as the darkness sets in quickly-along with the insects.

** Sea turtles nest on the beach along the reserve. Depending on the time of year, night-time turtle walks are an option **

**The last section is an attached copy of a field journal entry. It is done in a standard Grinnell format.

There is not typical day here. Your volunteer assignment and personal research will depend on your talents and interests, therefore, there are no concrete details regarding a typical work day.

References

Community Conservation, Inc.

<http://www.communityconservation.org>

DeVore, I., (ed.). 1965. Primate Behavior: Field Studies of Monkeys and Apes: Holt, Rinehart and Winston, Inc.: New York.

Janzen, D.H., (ed.) 1983. Costa Rican Natural History. The University of Chicago Press: Chicago. 1983.

Kricher, J. 1997. A Neotropical Companion. 2nd edition. Princeton University Press: Princeton.

La Suerte Biological Field Station

<http://www.lasuerte.org>

Lonely Planet Guide: Costa Rica 2001

Mann, K.E., 2006. Pilot study to assess the need for primate conservation in northern Punto Burica, Costa Rica. Documenta Naturae 156. (Masters Thesis. Oxford Brookes University)

Organization for Tropical Studies

<http://www.ots.org>

**Oxford Brookes University Primate Conservation MSc Newsletter, 2007 . 5(2):9.

Reid, F.A. 1997. A Field Guide to the Mammals of Central America and Southeast Mexico. Oxford University Press: New York.

Appendix 1

Contact Information

Kathryn Mann, Director ADLM
katiemann@wildmail.com

Amigos de los Monos website
<http://www.amigosdelosmonos.org>

Community Conservation, Inc.
<http://www.communityconservation.org>

The Yoga Farm
<http://www.theyogafarmcostarica.org>

MSc Primate Conservation Oxford Brookes University
<http://www.ssl.brookes.ac.uk/primate/home.html>

Appendix 2

Amigos de los Monos Liability Release form

I, _____, understand that *Amigos de los Monos* (ADLM) is not responsible for my actions. Nor do I hold Kathryn Mann, director of ADLM, or any other parties involved responsible. I understand the remoteness of the research area and the difficulties involved getting to and from the area.

Signature

Emergency Contact Information:

Name: _____

Relationship: _____

Contact Info (phone, email, address): _____

Passport #: _____

Insurance Info (carrier, policy #): _____

Appendix 3

List of Recommended Literature

**ADLM is working to build a library. Mann has personal books that can be used for research purposes, but it is helpful to travel with a personal library, and have read prior to your trip.

1. Costa Rican Natural History ed. by Daniel H. Janzen, University of Chicago Press 1983.
2. A Neotropical Companion by John Kricher, Princeton University Press 1997.
3. A Field Guide to the Mammals of Central America and Southeast Mexico by Fiona Reid, Oxford University Press 1997.
4. A Guide to the Birds of Costa Rica by F. Gary Stiles and Alexander F. Skutch, Cornell University Press, 1989.
5. Primate Societies ed. by Barbara B. Smuts, Dorothy L. Cheney, Robert M. Seyfarth, Richard W. Wrangham and Thomas T. Struhsaker, University of Chicago Press 1987.
6. Pocket Spanish/English Dictionary

In San Jose there is an excellent book store that sells all of the modern and relevant conservation publications. It is worth visiting before heading to the site.

7th Street Books

Calle 7 entre Avenida 1 y Avenida Central

Email: marroca@racsa.co.cr

Tel: 506.256.8251

Hours: 9 am – 6 pm Monday-Saturday; 10 am – 5 pm Sunday

If you are carrying out research, it is worthwhile to visit the university libraries.

BIODOC Library

Universidad Nacional

Heredia, Costa Rica

Email: biodoc@una.ac.cr

Tel: 506.277.3472

*This is an excellent library focused on natural history and conservation. There are many unpublished thesis' and reports that you will not be able to find elsewhere.

*Bring your passport.

Appendix 4

List of Four Primate Species recorded

****These are all courtesy of K. Mann** (retrieved via the internet Oct. 2007)**

**1. Panamanian Red Spider Monkey (*Ateles geoffroyi panamensis*)
ENDANGERED**

Spanish: mono araña, mono colorado

Ngäbere: münchi

Distinguishing characteristics:

- In addition to their long limbs, spider monkeys have prehensile tails that serve as a fifth limb when eating and traveling.
- The hands of spider monkeys form a hook when relaxed and are also lacking thumbs. These are adaptations for brachiating, the swinging motion they use to travel from tree to tree.
- Females have an elongated clitoris, which easily distinguish them from the males, whose genitals are hidden from view.

Distribution: Panama through central western Costa Rica

Diet: Frugivores, eating primarily ripe fruit, in addition to seeds, flowers, leaves, bark and honey

Habitat: Upper canopy in primary rainforests

Home range: 25-98 ha

Social Structure:

- Fission-fusion structure where groups as large as 40 break into smaller subgroups of 2-8 individuals. It is thought that this social structure has evolved to reduce feeding competition.
- Males are territorially aggressive and maintain vocal contact to avoid aggressive interactions.
- Vocalizations include growls, barks, screams, and a repeated yap in alarm.

Ecology:

- Spider monkeys are very important to the health and natural structure of the rainforest for they are seed dispersers, aiding in the distribution of seeds of the fruit trees that they eat. A seed can pass through the digestive system of a

monkey, unharmed, in 3 hours, allowing the monkey to carry the seed far from the parent tree. Dung beetles also aid in this process by burying the excrement of the monkeys, protecting the seeds from seed predators, like rodents, which eat and destroy the seeds.

Threats: Hunting and habitat loss

**2. Black-crowned Central American Squirrel Monkey (*Saimiri oerstedii oerstedii*)
ENDANGERED**

Spanish: mono titi

Ngäbere: droaba

Distinguishing characteristics:

- Very small
- Black crown on head forms a pointed arch over their eyes. The muzzle is also black and the remainder of the face is white.

Distribution: southwest Costa Rica and northwest Panama

Diet: Insectivorous omnivores, eating primarily insects and small vertebrates, supplemented with fruit, flowers and seeds.

Habitat: Secondary forests, riverside forests, and areas disturbed by humans.

Home range: 35-110 ha

Social Structure:

- Large multimale-multifemale groups of up to 70 animals aid in predator defense
- A peaceful and egalitarian society with minimal aggression among group members and a lack of a sex linked dominance hierarchy
- Vocalizations are dominated by bird-like chirps

Ecology

- Squirrel monkeys aid in maintaining healthy population levels of insects. This is not only helpful to the ecosystem that they live in, but may be beneficial to farmers as pest control.

Threats: Increase in tourism, electrocution, habitat loss

3. **Mantled Howler Monkey** (*Alouatta palliata palliata*)
LEAST CONCERN

Spanish: mono congo, mono negro

Ngäbere: jüri

Distinguishing characteristics:

- Enlarged throat in order to fit its vocal chords to howl
- A long prehensile tail that serves as a fifth limb when eating and traveling.

Distribution: southern Mexico to northwest coast of South America

Diet:

- Folivore-frugivores, eating both leaves and fruit, depending on the season and food availability. During the wet season the fruit of fig trees can comprise as much as half of their food intake. In the dry season, when fruit is scarcer, the monkeys consume more leaves. Folivory is rare among American monkeys, as leaves are hard to digest, but the howlers have adapted by choosing younger leaves that are easier to digest and by minimizing their energy expenditure by reducing the amount of time that they travel throughout the day.

Habitat:

- Howlers prefer the upper canopy in primary rainforests; however they use all forest levels and even travel on the ground when necessary to reach a food source or another patch of forest.

Home range: 27-91 ha

Social Structure:

- Multi-male-multi-females groups that range in size between 15-19 individuals.
- Groups are dominated by alpha males who remain in charge for 3 years.
- There is an inter-female hierarchy where the dominant female is normally the youngest, although the mid-rank females experience the most reproductive success.
- Vocalizations include howls in response to other groups, potential predators, human observers, and even natural weather patterns like wind and rain. The famous howl has evolved with the diet of the howler monkeys; the howler has developed its call in order to announce its territory from a large distance and avoid physical confrontations, thus conserving energy.

Ecology

- Howler monkeys are very important to the health and natural structure of the rainforest for they are seed dispersers, aiding in the distribution of seeds of the fruit trees that they eat. A seed can pass through the digestive system of a monkey, unharmed, in 3 hours, allowing the monkey to carry the seed far from the parent tree. Dung beetles also aid in this process by burying the excrement of the monkeys, protecting the seeds from seed predators, like rodents, which eat and destroy the seeds. Howler monkeys are especially important seed dispersers in fragmented forests, where the seed dispersing spider monkeys are normally extirpated.
- The gut of the howler monkey is home to an ecosystem of microorganisms that aid in the fermentation of leaf matter, which helps the monkeys extract precious energy from their leafy diet when fruit availability is low.

Threats: Hunting and habitat loss

4. **White-faced capuchin** (*Cebus capucinus capucinus*) LEAST CONCERN

Spanish: mono carablanca

Ngäbere: droa

Estimated Costa Rican population:

- 1995: 95,000
- 2007: 54,000
- Decline: 43%

Distinguishing characteristics:

- The size of a domestic cat
- White coloration on their head, throat and shoulders

Distribution: Honduras to northwest coast of South America

Life History:

- Life span: up to 30 years
- Gestation: 6 months
- Infant dependency: 1 year
- Sexually maturity: 4 years
- Reproduction rate: 1 birth every 2 years

- Dispersion: males leave natal group upon sexual maturity

Diet: Omnivores, eating fruits, nuts, berries, seeds, tree bark, insects, spiders and small vertebrates.

Habitat: Prefer the canopy of primary and secondary forests, however they are very adaptable and are known to occupy most forest types including mangroves and sparsely forested areas.

Home range: 50-100 ha

Social Structure:

- Multi-male-multi-female groups that range in size between 10-15 individuals.
- Females maintain very strong bonds, since they remain within the group that they were born.
- The alpha male is highly territorial and will defend its group threatening outsiders by growling and bearing his teeth.
- Vocalizations include ninnies, barks and screams.

Ecology

- Capuchin monkeys are seed dispersers, aiding in the distribution of seeds of the fruit trees that they eat. They are also pollinators, transferring pollen from one plant to another while feeding. Capuchins also aid in the proliferation of certain trees in the Brazil nut family whose buds they eat. Eating the buds in turn increases the branching of the tree and improves fruit production.

Threats: Hunted as crop pests and habitat loss

Appendix 6

Regional Map: (Courtesy of ADLM 2007)



Fig. 1. Central America

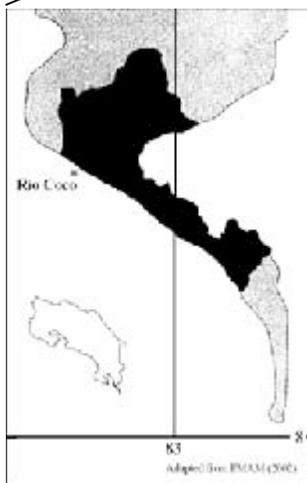


Fig. 2. Burica Peninsula of Costa Rica, with the Conte Burica Guaymí Indigenous Territory highlighted in black.

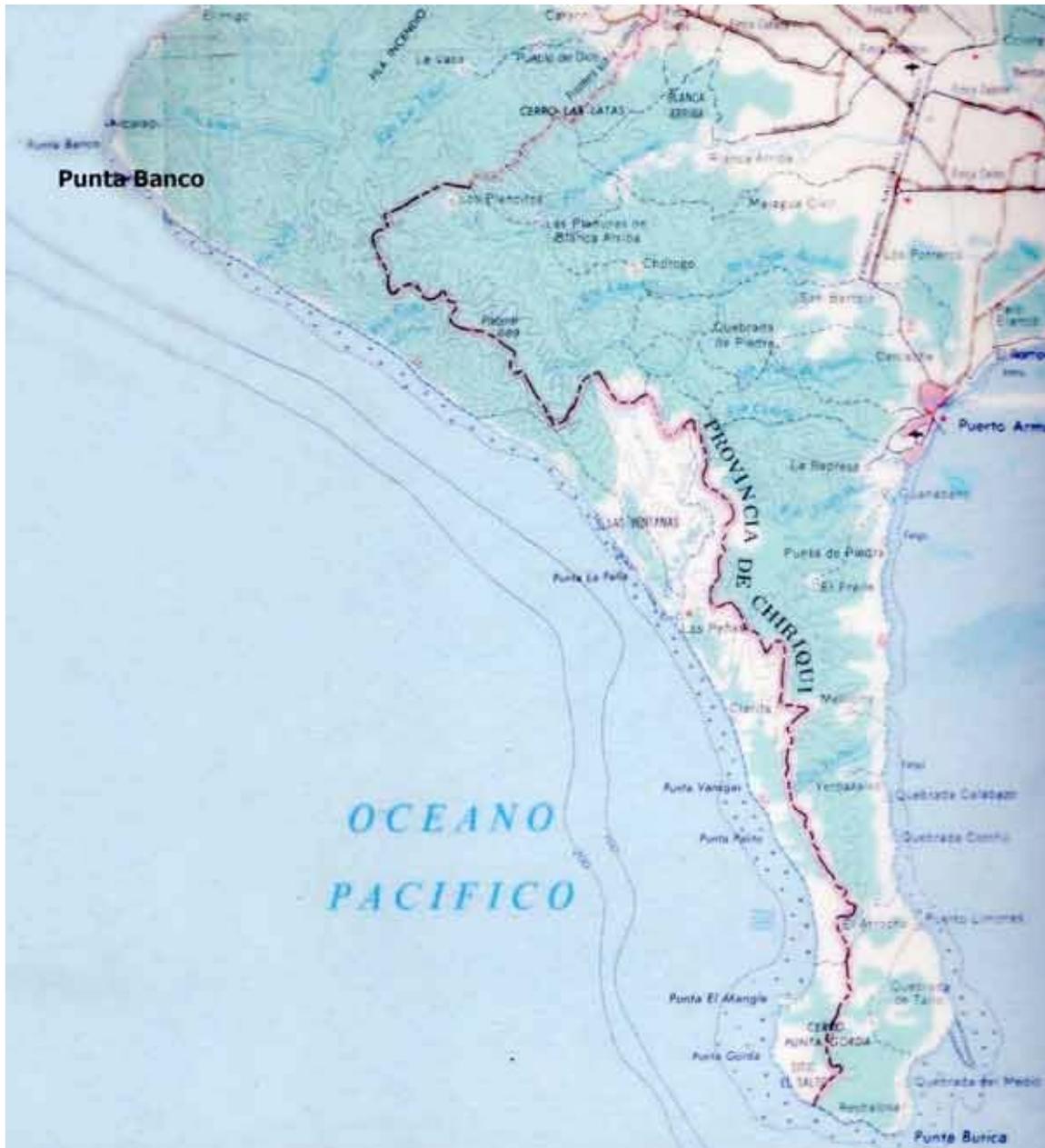


Fig. 3. Close-up of Costa Rica-Panama Border along Burica Peninsula including Punta Banco (last town before entering into the Indigenous Territory to the south)