

Volume 23, Issue 1

Winter, 2014

CANADIAN ORGANIZATION FOR TROPICAL EDUCATION & RAINFOREST
CONSERVATION

RAPHEIA

The Importance of Education in Costa Rica

by Charlotte Foale, Station Manager

2014 promises to be a year of big changes. We have more staff on base than ever before, and a new Principal at the local school, all of which leaves us poised to ramp up our involvement in the community of San Francisco.

One of the goals of our new principal is for the school to earn a “Bandera Azul” or “Blue Flag” which is an award or badge that is given annually, rewarding effort and volunteer work in the pursuit of conservation and development. It focusses on the protection of natural resources, the implementation of actions to address climate change, the search for better sanitary conditions and the improvement of public health of the citizens of Costa Rica. It also has a big focus on increased environmental awareness in children in pre-school, school and college.

The Bandera Azul program fits perfectly with our goal of facilitating conservation through education, and gives us the opportunity to work along-side other community members towards a common goal. The principal knows she has an uphill battle and is glad to know she’ll have some active support, with regularly run environmental education classes and a weekend Conservation Club. With our Education Intern with a strong background in horticulture, she will also have support in her desire to teach the local kids how to establish and maintain their own gardens.

Without the support of the community, an awareness and ownership of the role each of us play in our environments, conservation initiatives are at best talk. Without the support of our local community of San Francisco, we can’t hope to have a significant impact on local issues, so to me, providing Environmental Education and opportunities for the local kids to develop a positive relationship with the environment are essential.

This is of course, just a step in the right direction.

To say that people will make better environmental choices because of a conservation club, would be naïve. Having lived here now for 7 years, I’ve watched families struggle with extremely difficult moral decisions. I’ve watched hard-working families give in to the threats and temptation of local drug dealers present, and I’ve watched too many strong families leave the area, so that their children can get a decent basic education, and be removed from the negative influences that sometimes seem to dominate the area.

Am I crazy enough to believe that a small Canadian organization can change the world?

I do believe that, with the right effort and resources, we can change the course of some of the local lives we touch. By presenting alternatives, supporting both general education and environmental education, and standing firmly alongside those who want to move the community forward, we can be part of a bigger change.

Fiesta Verde 2014

The Annual Fundraiser Dinner for COTERC

The Canadian Organization for Tropical Education and Rainforest Conservation

“Sharing the Beauty, The Migratory Birds of Canada and Costa Rica”

Saturday May 10th

6:00pm to 11:00pm

Toronto Zoo Atrium

Menu by Chef Vito Clemente

•••

Included

Dinner and cash bar

Silent Auction

Live Auction

Gifts for Sale

And much more



*Special Guest Speaker, Mr. Ian Shanahan
“Monitoring birds at Caño Palma Biological Station”

Tickets on sale now

Web: www.coterc.com

Email: tickets@coterc.org

Phone: 905-831-8809

- Proceeds will go towards supporting bird monitoring programs in Costa Rica and educational programs in Canada •

Be sure to order your tickets before April 1st for Early Bird Discount.

Members \$65 Non-members \$75. After April 1st prices go up by \$5.

So Hurry! Only a limited number of tickets available. Don't miss out on this fun event!

After an absence of two years, I had the pleasure of returning to Cano Palma Biological Station in late January/early February. Although it is generally thought to be part of the rainy season, like so many other places on earth, the weather pattern has shifted and it rained only during the night, making the daytime very pleasant indeed. Although the new rancho was not quite completed, I was able to “christen” one of the six new rooms that will be available for long-term researchers. The view from my window is at treetop level, and I was able to watch birds, iguana and monkey pass by. When finished, the lower level will have one section in which students can relax and the other side will be used to hold equipment.

Charlotte Foale has been the Station Manager, along with her husband Manuel for about two years now and between them they have the Station running very well. Manuel handles the maintenance aspect while Charlotte does all the many administrative jobs — from keeping our Facebook page up to date, to interviewing potential staff, to ensuring that everyone at the station pulls his or her weight in keeping the station clean and ensuring that the projects are running smoothly.

The Ministry of Environment and Energy (MINAET) has been enforcing newer, restricted rules to those who wish to visit the Station. Now a potential visitor must apply for a “passport” outlining the potential research project that he or she will be working on. This can be one of the projects already being carried out (such as turtle monitoring, snake survey, large mammal survey, etc. or a new project). The argument is that Cano Palma Biological Station does not have a tourist designation, such as the local lodges, and must restrict its visitors to those who will be participating in a project. Anyone who wishes more information should contact station@coterc.org.

While at the Station, I began work on my own project — a Cano Palma Cookbook! So many people have raved about the food that our cooks are able to put together under less than ideal conditions, that I wanted to tap into this. I took the opportunity (with the assistance of Luis Fernandez to translate) to interview Norma and Mildred for their input, as well as Charlotte, and adding my own twist on one or two recipes. If all goes well, I anticipate that this Cookbook will be available for sale at the upcoming Fiesta Verde.

While all is running smoothly at the Station, I was deeply disturbed to learn that there is more construction occurring at the base of the cerro in a forbidden area, as well as north of Vista Al Mar. The local Forestry Dept. head Victor Hugo and his group have made several arrests in this matter, but unfortunately the people involved are released from jail and return to continue to build. If they manage to continue, eventually they will earn squatters’ rights, and more of the precious lowland tropical rainforest will be destroyed.



The New Rancho



View from my room

Elias Bader, our R.C., Mario Garcia and students off to the ACER plot

We are introducing a new column in this issue of Raphia, suggested by volunteer Doug Durno, in which he will pose various questions to former and current researchers at Caño Palma

Do you ever wonder who implements global projects like 2012's Year of the Bat? Hanah Al-Samaraie is one of those people who work so hard to improve our planet. And, after all that toil, she came to Caño Palma in April and May of 2013 to relax by conducting her Master's research in the comfort of the rainforest. She was recently granted her MSc in Wildlife Biology and Conservation. Hanah is from southwest Germany and currently resides in Cologne.

Q. *I understand you were doing research on bats at Caño Palma. What was the nature of this research?*

A. Initially I came to Caño Palma to investigate how tent-making bats are affected by anthropological changes. One of the biggest threats to most animals is the disturbance of us humans. We invade their peace, we fragment or destroy vital habitats, etc., and thus we drastically change their living conditions. My initial plan was to compare two sites: one close to human dwellings, the other one more remote to see how tent-making bats adapt to new conditions. But I could not undertake this study as there were too many other factors that would have clouded the results. Hence I soon realised that I could not carry out the study the way I had planned and changed my topic to how these bats are affected by climate change. I wanted to find out if bats were suitable bioindicators, that is, early warning systems, for this global threat. And guess what? They are indeed, at least for Costa Rica. Here are some fun facts: Bats are the most common group of mammal species in this country. They make up more than 110 species out of the 200 mammal species found here. They are very valuable for the tropical environment as they are important "reforesters", effective pest controls, pollinators, and even useful for science and medicine. Many bats are well studied and they can easily be monitored. This is very important for potential bioindicators. There have been studies that show how these fascinating creatures are affected by environmental changes. All in all, there is so much to gain from studying bats, and protecting them means protecting many other plant and animal species dependent on them. As you can see, I am a true bat believer.

Q. *Why did you choose Caño Palma in particular?*

A. An intern with whom I worked told me about Caño Palma. I was very impressed with the range of research they perform at such a small station. It offers a wealth of topics and species to study, and the combination of research opportunities really appealed to me. And, as well as my own research, I could participate in other projects like the caiman census; the snake morphology, turtle and mammal surveys; and all the other big and small projects that take place at the station. There is also the comfort the station offers in the sense that everything is completely taken care of so that the only thing researchers have to focus on are their projects. On top of that, Caño Palma is in a great location since it's a hotspot of biodiversity. And a bonus was that I could improve my Spanish there. Finally, I was impressed by the commitment from the station staff who have a very friendly and supportive approach. So, all in all, it was very easy for me to select Caño Palma.

Q. *Have you done field research elsewhere?*

A. To be honest, I was not very experienced in terms of field work since my Bachelor's degree was lab-based and my Master's was undertaken as a distant learner. However, I had the great opportunity to take part in a field course in Trinidad and Tobago where I studied marine reef fauna and flora, tropical birds of the islands, tropical plants, and smaller projects like studying giant whip-spider behavior or observing leatherback-turtle nesting.

Q. *Do you have any suggestions that would make Caño Palma a better experience for volunteers?*

A. It is already really great. But here some possible suggestions: Limit computer usage to a minimum to encourage more personal interaction and to maximise the benefits from the rainforest experience. Have more conversation-education sessions with the locals so that we are learning from them as they are learning from us. It is crucial to get local people on board when trying to protect the environment. They are the long-term investments in conservation projects plus they offer very interesting insights about their area. Of course, the primary emphasis is on sea turtles but I would also like the

Continued on Page 8

PIT TAGS EXPECTED TO BRING NEW INSIGHT INTO NEOTROPICAL SNAKE ECOLOGY

by Elias Bader, Research Coordinator

Studying snakes in the wild has always been a challenge. They are often fast, well camouflaged and quite homogeneous in colour within a population, a combination that makes investigating their habits a Herculean task. Being camouflaged and fast means that a specimen often is only spotted the moment it disappears, and even if you get more than just a glimpse at the animal, their lack of intraspecific variation in colouration will leave you in the dark as to whether the animal you saw this time was the same as the one caught in the past.

While one can practice spotting immobile snakes, individual recognition by sight remains mostly impossible. To answer many ecological questions, however, this individual recognition is indispensable. In other taxa that face the same problem, the use of numbered collars, radio transmitters or coloured rings have led to successful outcomes.

As we all know, snakes do not have legs to put bands on, nor does their anatomy and feeding behaviour allow a researcher to put a collar or radio transmitter around their neck. So snake researchers have had to find other ways to mark their animals, which for a long time meant branding or clipping some nicks into a snake's ventral scales. Both methods, though useful in short term studies, have the disadvantage that, after a few of the snake's sheddings, these marks disappear again. So, as you can realize, there are many reasons to leave out field studies on snakes.

However, as new scientists wish to study snakes and as technology advances, there have been new inventions that are very useful to snake researchers.

One of them is the invention of PIT tags. These microchips, only the size of a grain of rice and equipped with a unique numeric code can be injected into a snake's body cavity, making it individually identifiable.

A project using this method has been initiated at Caño Palma Biological Station only a few days ago. Snakes found at and around the station are determined by species, age and sex, body measurements such as length and weight are taken and then a PIT tag is implanted into the snake's body cavity.

From now on, every time we recapture a snake with a PIT tag, we can retrace how much it has grown in length and weight since the last capture. Further, together with the



likewise recorded encounter coordinates, we are able to calculate how far the animal moved in the meantime. And last but not least, the ratio of recaptured to yet unmarked individuals allows us to estimate population size of a certain species at Caño Palma.

Whereas several snake studies using PIT tags have been conducted in Eastern Europe, North America and Chile, no studies using this method in the tropics have been published so far, making us proud to be pioneers in this research field.

Did you know.....

Howler monkeys are the largest of the New World monkeys weighing up to 22 lbs.

They have a prehensile tail which helps them to reach out further on branches to grab nutritious fruits and flowers and is also very useful to balance in the canopy, since they rarely descend to the ground. There are nine different species of howler monkeys. It is the black



howler that is found near Cano Palma. The males are black while the females are brown.

Any visitor to Cano Palma will recognize the cacophonous sound this animal can make, especially when a troop is in the trees outside the dormitory when you are trying to sleep!

Forestry Degree.net has Cano Palma B.S. in its list of 100 Exemplary Sites

I'm delighted to announce the publication of our collection of 100 Exemplary Sites on Forest Conservation, including Caño Palma Biological Station

<http://forestrydegree.net/woodland-conservation/>

This collection is a celebration of the many great individuals and organizations working to protect one of our most valuable resources. Thanks for all of the information you publish to promote the success of global woodland and forest conservation efforts!

We're sharing this article as widely as possible through social media and other channels. We have also created a badge graphic noting your inclusion on this list.

Amy Eckhart
Editor
@ForestryDegree

Like all charities, COTERC has administrative expenses. In Canada we are all volunteers, but we still have to pay for such items as auditor's fees, liability insurance, phone, website etc. Granting agencies generally will not cover these types of costs, and so we have to rely upon donations from members and others, as well as proceeds from our events such as Fiesta Verde.

Over the years we have had one consistent donor to COTERC. Just recently Pennie Mason donated yet again —\$1,600.

We recently received an anonymous donation of \$715 through United Way.

Aysha Hamsi, a former volunteer, has donated a voucher for travel on Nature Air within Costa Rica in the amount of \$466 U.S. This will be very useful for staff to travel to conferences, etc.

Susan Kunanec earned \$115 by selling comic books.

THANK YOU ALL VERY MUCH!

HOW DO YOU GROW BANANAS WITHOUT DESTROYING WILDLIFE & THE ENVIRONMENT ?

by Marilyn Cole

The banana is one of my favourite fruits, and probably most readers will agree. However, the methods used in banana plantations, to provide consumers with blemish-free bananas is devastating to the surrounding environment. According to an article in the Wall Street Journal in 1999, the average person in North America consumes twenty-eight pounds of the fruit annually. Multiply that by the population and that results in the fifth largest agricultural commodity in world trade.

The traditional method used to grow bananas is either to cut down existing rainforest or to use soil already depleted by constant planting. There are no other trees or plants within the area, resulting in what is called monoculture. Once the nutrients are used up, the producers are forced to continually expand their fields in order to keep up with the diminished production per hectare, thus perpetuating the cycle of destruction. The former wildlife in the area cannot survive in this environment.

Added to these problems there are numerous viruses, pests and fungi that attack the bananas and which have spread in epidemic proportions, and as a result producers have resorted to a variety of toxic chemicals to combat this problem. Herbicides kill all existing ground cover. To prevent insects from attacking the bananas, they are sprayed with fungicides and more pesticides, and wrapped in plastic bags. Did you know that these chemicals are applied as many as forty times a year, amounting to a total use of nearly 44 kilograms per hectare?

These chemicals are known carcinogens that can cause cancer and mutations in humans, making the work extremely hazardous, as well as devastating not only to the surrounding area, but also far afield. The run-off sprays seep into the ground water, making their way into the local aquatic systems, contributing to long-term affects in the nearby ecosystems. For example, coral reefs are deteriorating and tortoises and manatees are facing extinction due to the destruction of their food source, the algae in the waterways.

Paul Grant is a wildlife biologist from Stellenbosch University in South Africa, and a former Cano Palma Station Manager, who conducted a study on the blood of caiman s around the Tortuguero region, downstream from banana plantations, and found that these animals had a higher concentration of pesticides in their blood and were in worse health than caimans in more remote, less polluted regions. There was evidence of fishkills as



well.

When you consider the widespread practices of deforestation, monoculture and the consequent soil depletion, as well as the use of toxic chemicals, the production of bananas has a deadly effect on the surrounding region. If solutions are not found, these plantations will continue to contribute to the loss of fertile soil and of biodiversity in the countries that produce bananas, Costa Rica being one of the largest producers.

Of course, the large producers such as Dole and Chiquita are certainly aware of the long-term problems and are seeking alternative solutions, such as reduced pesticide usage and soil conservation. . Smaller corporations have opted to go the “organic” route, and do not use any synthetic agrochemical products. These farmers have found alternative methods, such as crop rotation, growing bananas in drier regions where fungi are not as prevalent, utilizing shade plants and spraying with botanical pesticides such as lemon grass and tobacco.

And then there is E.A.R.T.H. University (Escuela de Agricultura de la Region Tropical Humeda), located 30 miles from Tortuguero. The campus is an 800-acre site that teaches sustainable practices to its students, with hands-on application that can turn a profit. Herbicides are not used. Instead, the 300 employees hand-cut the weeds and leave ground cover, thus encouraging biodiversity, sequestration of carbon and preventing soil erosion, while providing a safer environment for the people. In addition,

the banana plantation is divided into plots surrounded by rainforest which enables biodiversity to thrive. Howler monkeys can be heard making their familiar calls; sloths hang out, birds fly by and nest in the trees; dragonflies, plants and shrimp can be found in and around the drainage canals.

E.A.R.T.H. still uses plastic bags to protect the bananas like other producers, but instead of using pesticides, they soak the bags in a mixture of hot chili pepper and

garlic — apparently just as effective in controlling insects. They do use a modicum of fungicides but also rely on “efficient micro-organisms” (bugs that can control the fungi). And roundworms (nematodes) are controlled by the use of organic compost, stopping these parasites from eating the banana roots.

Currently Whole Foods in the U.S.A. purchase 75% of their crop, and as consumers realize there is an alternative to pesticide-ridden bananas, other commercial operations hopefully will follow the outstanding example initiated by E.A.R.T.H.

CONTINUATION OF INTERVIEW WITH A CAÑO PALMA RESEARCHER FROM PAGE 4

biodiversity of Caño Palma to be exploited more fully. For instance, there is great lack in knowledge of rainforest ecology. Caño Palma has all the facilities to great to see more projects of this volunteers would be to bring plenty that you don't care to be ruined!

Q. Besides your research, were away from CP?

A. Absolutely, there are so many been the same without the station hundreds of volunteers each year, rates her son and husband into sta- all research carried out at the sta- doing my own research, participating go out on the canal or into the jungle to explore the wonders of nature made this experience unique. Within these two months, I felt like I was part of a big conservation family and I gained a myriad of knowledge, which I highly appreciate. Since I have a desk job, it was real bliss to be moving about all the time. It is pure heaven for body and soul! One other thing, I would like to mention is that it was so nice to have a very structured schedule and that everything was taken care of. When you come from a job where you have to constantly think of everything, it is nice to relax in the organization of Caño Palma.



enable research in this field. It would be kind. And my final suggestion to future of calamine lotion and only old clothes

there any other positives that you took

things I could mention. It would not have manager, Charlotte Foale. She juggles adapts to every group or person, incorpo- tion life, and does her utmost to facilitate tion. The mix between completing chores, in other projects, and just being able to

Q. I understand you're now working for the United Nations. What is the nature of your work?

A. I have been working for five years as a consultant in the information and capacity-building unit of the Convention on the Conservation of Migratory Species of Wild Animals (CMS), which is part of the UN Environment Programme. We are currently organising workshops for Africa, Latin America and the Pacific region in order to give them a stronger voice and move their conservation efforts forward. One of the more interesting assignments I've had in the past was to run the global Year of the Bat campaign in 2012.

Q. What were the biggest adjustments you had to make in order to live at Caño Palma in a remote rainforest?

A. Maybe to start the day at 4.30 am, but to be honest, the jet lag really worked a treat for me here. Or to live with so many critters in my dorm room. Or to walk outside fearing that every step would find a snake. I remember I felt very grateful for the protection of my mosquito net. Another thing I needed to adjust to was living with so many young people who have a completely different view on life. It is important to take everyone into consideration when living in such a place. Therefore, communal thinking is essential in my opinion. This was not always practiced, I must say! But other than that, I felt very at ease.

Q. What memories of Caño Palma do you carry with you?

A. Losing my fear of snakes for one! It is really amazing to let them slide through your hands. Having a pet caiman called Juancho and a surrogate nephew named Emanuel. The many walks with Manuel in the jungle and all the information I pulled out of him. The canoe rides with friends. The night sky full of stars and fireflies. The relaxed attitude towards life at the station. Getting stuck in the mud. The interesting characters who passed through. Being covered from head to toe in mosquito bites. The involuntary orange dyeing of your clothes. (*Charlotte's fantastic British sarcasm – you never knew if she was serious or not!*) The delicious food, especially cakes from our cooks. To sum up: Pura vida, as the Ticos call it!

FAREWELL TO TWO BOARD MEMBERS

We have recently had to say goodbye to two valuable members of the board of directors.

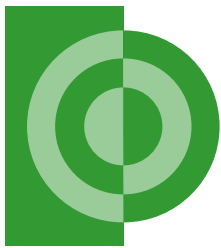
Kim Blackburn has been the Executive Director over the past couple of years, and will now be spending more time with her family. We would like to thank Kim for her efforts on our behalf, and wish her well.

Annette Simms joined the board just over a year ago, and proved to be a dynamo, keeping us all on our toes! She single-handedly prepared many fact sheets and also organized Fiesta Verde in 2013. Due to health issues, she has recently resigned from the board, but we look forward to her continued assistance with fact sheets. Thank you, Annette. We wish you a speedy recovery.

WE WANT TO HEAR FROM YOU!

We welcome any comments or suggestions from our members so that we can be sure that you feel involved. If you have an idea for an article, or better yet, would like to write one yourself –if you have a photo or two that you think we could use — if you have a suggestion for improving Raphia, please do send it along to us at vice-chair@coterc.org

If you have a general comment about COTERC or Cano Palma Biological Station, please email info@coterc.org



VOLUNTEERS NEEDED

COTERC will be participating in some events over the course of 2014 and we are seeking volunteers to help out.

On March 30 we will be at the giant Reptile Expo taking place at Downsview Park, in Toronto

We expect to have a booth at the Halton Ecofest in Oakville on April 5.

On April 13 we will have a booth at the Ajax Reptile Expo, in Ajax, Ontario.

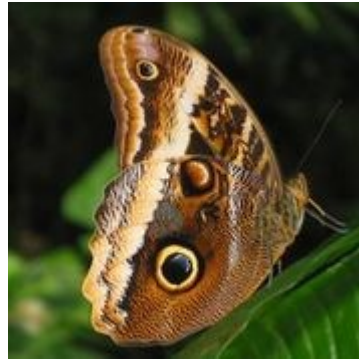
On the weekend of May 16-18 we have a booth at the Canadian Association of Aquarium Clubs at Humber College in Toronto.

Our annual Fiesta Verde event takes place on May 10 at the Toronto Zoo Atrium, as well as the Migratory Bird Day at the zoo area proper.

If you can help at any of these events, or any others currently being negotiated, please contact vice-chair@coterc.org.



Geoffroy's Spider Monkey



Owl Butterfly



Tamandua

Canadian Organization for Tropical Education and Rainforest Conservation

Membership Application Form

This is a request for: NEW Member: _____ Membership Renewal: _____ Date: _____

Membership Type: Individual \$25: _____ Student/Senior: \$20 _____ Family: \$40 _____ Corporate \$100 _____

Surname: _____ Given Name: _____ Initial: _____

As a member of COTERC a copy of our quarterly newsletter “*Raphia*” will be sent to your primary E-Mail address unless you check one of the following options.

- Do not E-Mail the newsletter to me. Please send a hard copy to my Mailing Address
- I do not wish to receive the “*Raphia*” newsletter

MAILING ADDRESS:

Street: _____ Apt: _____

Town/City: _____ Province/State: _____ Postal Code _____

Country: _____ Postal / ZIP Code: _____

Cheque, payable to COTERC	Credit Card	No. Expiry Date	Cash		
---------------------------------	----------------	------------------------	------	--	--

Persons visiting a COTERC station who have not previously arranged membership can pay in cash directly to the Station Manager.

Please mail form to Box 335, Pickering, Ontario L1V 2R6, Canada

ADVISORY COMMITTEE

Dr. Robert Murphy
Dr. Fiona Reid
Dr. Peter Silverman, Order of Ontario
Dr. Wm. Rapley

Raphia Editor & COTERC
Co-founder *Marilyn Cole*

SITE SERVICES COMMITTEE

Tom Mason
Bryan Bridgeman
Malcolm Enright
Dr. Kimberley Snarr
Jim Taylor
Marilyn Cole

Canadian Organization for Tropical
Education and Rainforest Conservation
(COTERC)

Box 335

Pickering, Ontario L1V 2R6
(905) 831-8809

BOARD OF DIRECTORS

Chair
Shawn Blackburn

Vice-Chair
Marilyn Cole

Finance
Brandon Roy

Marketing
Darryl Swain

Membership & Archives
Jim Taylor

Education
Nia Gibson

Site Services
Tom Mason

Conservation & Research
Dr. Kimberley Snarr

Director at Large
Vacant

Director at Large
Susan Kunanec

Director at Large
Beverley Carter

We're on the Web!

www.coterc.org

Facebook—Canadian Organization
for Tropical Education and
Rainforest Conservation



CONTACT US AT
INFO@COTERC.ORG

STATION REUNION

We are looking at the possibility of a reunion for volunteers and researchers who have been to Cano Palma Biological Station over the years and wonder if you would be interested in participating. We haven't determined on a date or place and are not sure if the logistics would work, so we would like to hear from you if you would be interested. Please contact membership@coterc.org with your comments.

