

RAPHIA

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RAPHIA IS THE QUARTERLY NEWSLETTER FOR THE
CANADIAN ORGANIZATION FOR TROPICAL EDUCATION
AND RAINFOREST CONSERVATION (COTERC)



Caño Palma Biological Station
Barra del Colorado Wildlife Refuge
Tortuguero, Costa Rica

FIESTA VERDE—2010—INTERNATIONAL YEAR OF BIODIVERSITY

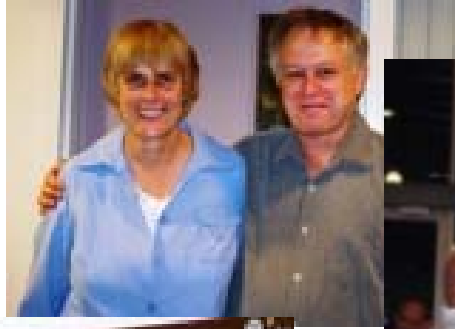
The 14th annual fundraising dinner and auction (previously Tropical Treat and now called Fiesta Verde) was held on October 16 in the Toronto Zoo Atrium. This is COTERC's major event to generate funds to cover operating expenses and for our various programs. It is an opportunity for members and interested people to mingle, have a wonderful dinner and to learn more about the projects being undertaken at Cano Palma Biological Station in Costa Rica.

Our new chair, Josh Feltham was the MC for the evening and as a special treat he had arranged for Dr. Todd Lewis, our Station Manager, to join us via Skype. We were able to hear and see Todd live at Cano Palma Biological Station through this wonderful cyber medium and to ask him questions. This was indeed a great experience, and a wonderful advance in our ability to communicate almost instantaneously — a far cry from the early days of the station when the manager had to take our boat into Tortuguero to the public phone to attempt to contact the COTERC office in Canada!

An event such as Fiesta Verde cannot be successful without the assistance of many volunteers, and we would like to take this opportunity to thank everyone involved, especially Natasha Whalen-Vernhout who organized the event. Randy and Donna Potter again did an entertaining job as our auctioneers. Mitch Harrow, our special guest speaker, spoke on the topic of this year's profile of biodiversity. Many thanks to our lengthy list of donors for both the silent and live auctions. Thank also to Bud's House of Music, 296 Aylmer St., Peterborough, Ontario, who provided the sound system & Jamie Bridgeman for arranging this donation.

We are greatly indebted to the Toronto Zoo for their ongoing support and we would like to express our appreciation and thanks.





ANOTHER PhD STUDENT AT CANO PALMA

Alex Figueroa is a PhD student at the University of New Orleans in the lab of Dr. Simon Lailvaux. For his dissertation Alex is researching the evolution and behavioral ecology of arboreal snakes. Currently Alex is investigating the number of times arboreality evolved in snakes, quantifying morphological variation associated with arboreality, and measuring the level of convergence among distantly related species using preserved museum specimens. Alex will soon be visiting Cano Palma where he will be studying the differences in habitat use by different color morphs of eyelash pitvipers, *Bothriechis schlegelii*. The eyelash pitviper is an arboreal snake which can have a variety of different color and pattern forms within a single population, known as color pattern polymorphism. Several theories exist as to why species evolved color pattern polymorphism but most are associated with providing animals with camouflage. As ambush predators, many pitvipers exhibit color patterns that enhance crypsis to camouflage them with their surroundings and increase encounters with their prey. Pitvipers achieve this camouflage through background matching, where their appearance match features of their environment, or disruptive coloration, where markings on their body function to disrupt their body outline. Therefore, Alex will use different techniques including radiotelemetry to see if different color pattern morphs of eyelash pitvipers show differences in their habitat use in order to enhance crypsis and decrease their chances of being detected by their prey or predators.



We would like to take this opportunity to thank MXI for its donation of computer equipment to Caño Palma Biological Station. Their support of COTERC has gone a long way towards assisting in the protection and preservation of the rainforest and all of its inhabitants. We have utilized the equipment as a main computer source at the station. As all electronics can quickly erode or denigrate due to high moisture levels despite using drying boxes (small wooden box with constant light bulb for heat to dry out equipment), we find that we do need to replace equipment every few years. With the powerful unit MXI donated, we can now backup and input data, and utilize communications in a much more effective manner, allowing for ease of work by all staff, researchers, and volunteers. Thanks to Russell Pearson of MXI, who helped to arrange for this donation.



A YOUNG RESEARCHER & A NEW METHOD FOR MEASURING BIODIVERSITY

In 2011, Caño Palma Biological Station welcomes Caspar Ström from Umeå University, Sweden, who will be carrying out data collection in a variety of habit areas in Barra del Colorado Wildlife Refuge for his master's thesis. The aim of the project is to estimate the biodiversity in different areas of the park. This would normally take many years of work, collecting and identifying different species. This young researcher will be testing a new method set out by Sueur et al (2008) which makes it possible to take a short cut, by placing sound recorders in the forest and using these recordings to make estimates about the biodiversity. Having a low cost and effective method to estimate biodiversity is a priceless tool for making sound conservation management decisions. If one assumes that more species create a "noisier" sound environment, the noisiness of sound recordings can then be used to identify areas of high versus low biodiversity. Indeed, this information should be useful in future conservation work. The method could also be used for continuous monitoring of the environment over time, and Ström's hope is that the project continues after he leaves. While working with COTERC and Cano Palma to ensure the viability of his work, he has received generous funding from Dr. Steven Furino and the Furino family, and other sources to allow his work to be carried out. We are excited to be supporting this important and vital work.



REPORT FROM THE CHAIR

by Josh Feltham

I have to begin this letter by saying thank you. Thank you to everyone who continues to support our efforts and thank you to a few people (and pets), whom over the past year, have contributed in a big way to our cause.

In August, Tom Mason and I visited Pet Valu at Hopedale Mall in Oakville and set up our information booth outside the store during a community barbeque. We met many supporters (both bipedal hominids and quadrupedal canids) who dropped by to learn more about COTERC and enjoy some of the fantastic food expertly prepared by Rob Helgason from Good to Go Catering. All the proceeds from the barbeque as well as the proceeds from the sale of autographed sporting memorabilia were donated to COTERC. I wish to personally thank Pennie Mason and everyone at Pet Valu in Hopedale Mall for their support and efforts. The money raised (\$6,100) will go a long way to help us achieve our goals in 2011. We will be focusing some of our efforts in 2011 on organizing more community barbeques. If you or someone you know has a business that would be open to hosting a barbeque in the spring or summer to support COTERC, please contact us directly to organize the event.



Fiesta Verde, our annual fall fundraiser, was held on October 19th at the Toronto Zoo. As usual, everyone enjoyed a silent auction, live auction and some great food. This year we moved into the technological age and spoke directly to our current station manager Dr. Todd Lewis and three volunteers at the station. They answered questions, updated us on conditions at the station and introduced everyone to a cloudy-snail eating snake and a katydid. Our guest speaker, Mitch Harrow, provided everyone with an entertaining and informative talk about his recent experience at Cano Palma.

I would like to thank the Toronto Zoo for providing us with the facility. We also owe a big thanks to Bud's World of Music in Peterborough and Jamie Bridgeman for providing us with a sound system for the evening. Thank you to all who attended and supported COTERC's objectives by purchasing tickets to the event and bidding on the items up for auction. Last but not least, thanks to everyone on the board and our volunteers for their assistance prior to and during the event. Your efforts are greatly appreciated.

What's Next: Looking Ahead to 2011

The year 2011 promises to be another busy year for us. We have three primary points to focus on in 2011; 1) research projects at Cano Palma, 2) our 20th anniversary, and 3) developing new partnerships for further research and education.

Currently, preparations for the permit renewals for our marine turtle, mammal monitoring, reptile and amphibian projects are all underway. We also hope to continue with a botanical inventory of the station property that was started several years ago by Mario Garcia when he was our station manager. If you have a particular interest in any of these projects or know someone who would like to assist with the research, please contact us to learn more about volunteer opportunities at Cano Palma Biological Station.

In 2011, we will celebrate our 20th anniversary with several events leading up to a culminating special event in the fall. We will celebrate our resilience and adaptability. We will continue to focus on providing *leadership in education, research and conservation and the educated use of natural resources in the tropics*. New partnerships and projects will help us to break new ground for the organization. They will provide us with the depth of contacts, knowledge and resources we need to move into COTERC's third decade of work at Cano Palma Biological Station. A station and a concept inspired by the resilient Atlantic lowland wet rainforest of Costa Rica. Our partnerships with academic institutions continue to expand in 2011. Sir Sandford Fleming College's School of Environmental and Natural Resource Sciences will be sending three groups of students to Cano Palma. York University students are also expected to continue with their annual internship placements at Cano Palma and we will be starting our community intern program. To learn more about each of these new developments read the related articles in this edition of *Raphia*. Keep yourself up to date with COTERC events and activities in 2011 – join us on Facebook, Twitter and visit our website regularly.

FLEMING X THREE

By Josh Feltham

Three student groups from Sir Sandford Fleming College's School of Environmental and Natural Resource Sciences in Lindsay, Ontario are set to visit Cano Palma Biological Station in 2011. Namely, the Ecosystem Management Program, the Environmental Technologist Program and the School of Continuing Education will be making use of the station this coming year.

Six students and two professors from Sir Sandford Fleming College's Ecosystem Management Program spent two weeks at Cano Palma in 2009. The experience fulfilled a long-term goal for Michael Fraser, the Ecosystem Management (EM) Program Coordinator. His vision was to provide international field placement experiences for students in the EM program that would some day lead to a full semester of study abroad. We are pleased to say that COTERC will play a key role in making this happen. In 2011, the EM program is set to return to Cano Palma with nine students and two professors to build on what was a very successful experience in 2009. The group will assist with marine turtle research as well as reptile and amphibian inventory surveys during their nine-day stay at the station.

Students from the Environmental Technologist (ET) Program at Fleming will join the EM students to bring a new dimension to the table: water treatment. The plan is for eight students and two professors to visit Cano Palma at the same time as the EM students. The focus of the ET group will be to build an experimental constructed wetland to clean the water from the showers and laundry facility. They also hope to install a demonstration water purification system at the school in San Francisco. Our long-term vision for these projects is to eventually provide the knowledge and training to assist locals in implementation of simple, low cost, green technologies that will improve water quality in the area.

Finally, the School of Continuing Education is offering a seven week Tropical Field Ecology Course for students who will be graduating from either a two year diploma program or third year technologist program at the college. The purpose of the course is to provide extensive research and data management experience in the tropics to help students make themselves more competitive in the growing global environmental job market. Work with turtles, snakes, amphibians, plants and the community will be the major components of the course which will run from the end of June through to late August.

A secondary purpose for the Tropical Field Ecology course is to develop curriculum and establish a model for extended stays at the station with an academic focus. The seven-week Tropical Field Ecology course is an intermediate step between the two-week field placement currently offered by the EM and ET programs and a full semester of studies in the tropics. Faculty must demonstrate that the learning outcomes outlined in the program calendar at the college can be achieved through experiential learning at Cano Palma Biological Station.

Academic institutions such as Fleming College are instrumental in helping COTERC achieve its mandate. COTERC relies on students and faculty to assist with educational, research and conservation projects. They provide an income for the station to ensure that the infrastructure can be maintained and improved for future visits. Students visit and learn but they also provide new insight and expertise to help improve what the station has to offer. The benefits flow in both directions and this particular relationship with Fleming will help COTERC move forward with research and community development objectives.

COTERC COMMUNITY INTERNSHIPS

By Josh Feltham

Interested in spending three months in Costa Rica? Do you have a background in environmental science, environmental studies or biology? Do you have experience teaching children and/or adults? Can you speak Spanish?

If you answered yes to these questions and you can commit to spending three months at Cano Palma Biological Station in 2011, please contact us. If you don't fit the description but know someone who does, send them our way. We are looking for people to fill two new internship positions at the station.

The internships were developed because the community of San Francisco has expressed a keen interest in environmental education and they have specifically asked COTERC to assist them in this endeavor. Our community interns will develop and implement a community environmental education program for the village of San Francisco. They will provide programming at the school and at Cano Palma Biological Station for locals and tourists alike. Unlike our volunteers, our community interns will be subsidized fully by COTERC during their stay at the station. All lodging and food will be provided. Roundtrip airfare to Costa Rica and the cost of transport to and from the station will be the responsibility of the interns.

If you are qualified and interested, please send your cover letter and resume via email to the attention of Josh Feltham, Chair, Canadian Organization for Tropical Education and Tropical Education (email:

A TRIP TO REMEMBER

Annette Simms is a long-time supporter of COTERC who has in the past has promoted members and others to join her on adventurous trips. In 2009 a group visited the Galapagos Islands and this year another group visited Ecuador. Annette has graciously arranged for COTERC to receive a \$25 membership fee for each person travelling with her, and we thank her for this initiative. She is planning another trip in 2011, so keep an eye out for more news about the next exciting destination.

"The trip was just great, it equaled the Galapagos experience. We were on the Manatee Amazon Explorer owned by Nuevo Mundo Expeditions. Once back in Quito our agent Ingrid had arranged a final dinner for us. We assumed it would be Jose who had been our guide for the white water rafting portion (grade 4, very exciting). Jose informed us the owner of the agency (Oswaldo Munoz) would be taking us to dinner, he didn't know why, this to him was a little unusual.

Well unusual it was. Oswaldo picked us up at our hotel, drove us to his home in a very affluent, residential area of Quito. The house was ornately furnished, walls covered with original paintings, marvelous parquet flooring, pre-Columbian pottery on display etc. Mouths were dropping open. It was like a museum. We were introduced to his charming wife and daughter. The cook was busy in the kitchen and another couple of employees, including the driver, were in the background.

Oswaldo, prior to sitting down to dinner, gave us a few lengthy discourses on a variety of topics but mainly centered around politics, the oil industry, land use and sustainability, indigenous peoples, his involvement with government as an advisor on eco-tourism and about the minister of tourism.

The dinner table was set with fine china, silverware including silver salvers and a beautiful centerpiece, all very opulent. His wife served us dinner assisted by the cook. Oswaldo continued to regale us but this time directed his topics more towards eco-tourism, when he suddenly launched into a conversation about COTERC.

It turns out he has been a major force in founding the Ecuadorian Ecotourism Association, founded in 1991. He is very much involved with, and acts as an advisor at the government level. He is a caring, compassionate man especially on environmental issues and indigenous peoples. He is also very affluent with political clout. I asked him if he was aware of COTERC'S work. He was, having visited the website."

It was wonderful of Oswaldo to be such a gracious host and to know that there are other like-minded people who share our vision.

COTERC BOARD OF DIRECTORS

At the Annual General Meeting in May, 2010, we saw a number of new faces join the Board of Directors.



From left to right: Matt Vernhout, Dr. Kym Snarr, Josh Feltham, Dr. William Rapley, Christina Phillips, Jim Taylor, Bryan Bridgeman, & our new recording secretary Anabela Bonada. By phone Dr. Gail Fraser; Absent: Tash Vernhout, Joanna Romani, Betsy Melendez, April Stevens. Photo by June Enright

PENNIE MASON—FUNDRAISER EXTRAORDINAIRE

For many years Pennie Mason has provided some wonderful items for our annual dinner's silent auction. This year she held her annual barbecue fundraising event at the Pet Valu in the Hopedale Mall in Oakeville, Ontario, and managed to raise \$6,100. Way to go, Pennie!!

As if this wasn't enough, she has also created 59 key chains to sell. If you are interested in purchasing one, please contact the COTERC office at info@coterc.org or phone (905) 831-8809.



PHOTOS FROM CANO PALMA & SAN FRANCISCO



REPORT ON 2010 TURTLE SEASON

by April Stevens, Director at Large

After an amazing six months at Caño Palma, it's hard to believe that I've been back in Canada for six weeks already, although the flurries we're now experiencing are a good reminder! The 2010 season seemed to pass in the blink of an eye and looking back at the sea turtle numbers and remembering some very busy patrols on the beach, I can understand why!

First and foremost a GIGANTIC, (really I can't stress this enough!) thank-you to all of the absolutely amazing volunteers and students who helped with the Sea Turtle Monitoring Project for the 2010 season. We literally could not have done it without you! I was blown away by the dedication, hard work and unstoppable spirit of the people we were fortunate enough to have participate. The calibre of people we have who volunteer at the station year after year never ceases to amaze me.



Enjoying a nice thank-you dinner at Buddha Cafe



Leatherback hatchlings



McMaster Sea Turtle Biology & Conservation Field Course students and volunteer Stephen Hardwick.

Even though the 2010 season just ended, prepping for the 2011 season has begun and for this Project Coordinator's wish-list for Santa is to have such great volunteers again for 2011!

Continued on Page 10

And of course the turtles! A natural wonder of the living world, they did not let us down either. Although things were a bit of a slow start with the Leatherbacks showing up late to the party and few and far between, their Sumo size and peaceful Zen attitude captured the hearts of all.

A small number of keen Greens showed up extra early, mixing it up with the Leatherbacks in March, with a few nests being laid right off the bat. However, it was not until the true Green season launched that everyone began to really understand what we were in for! Let me just say three little words: ***Chelonia mydas* everywhere!** Since sea turtle monitoring began in 2006 there has not been such a record year as 2010 was for the Green sea turtle, *Chelonia mydas* on Playa Norte.

This peak year is one of a 2-3 year cycle of nesting behaviour demonstrated by sexually mature nesting females of all species (7) of sea turtle. Although each individual female lays on average 3 clutches per nesting season, females typically do not lay annually. That is, they will lay three or four clutches in about a two month period; however, they will then migrate back to feeding grounds and stay 2-3 years there before another nesting cycle. The year 2007 had been a very good year in terms of numbers of tracks and nests; therefore it stood to reason that 2010 *should* be a pretty good year again. To say “pretty good” may be the understatement of turtle monitoring history. I have never seen so many tracks on a small stretch of beach the size of Playa Norte before in my career! The area of Tortuguero most definitely lived up to its reputation: the largest Green sea turtle rookery in the Atlantic; second in the world only to a couple beaches “Down Unda” (Australia – and even then I’d like to see the numbers!). Going out on a Morning Census every morning and discovering 50+ new tracks IN ADDITION to the 30+ that the Night patrol(s) saw was mind-blowing (literally – a couple were extra crispy by the end of a patrol in equatorial sun!). Once again – the people involved were super troopers.

So you can imagine what this meant for excavations! Once again ***Chelonia mydas* everywhere!** No matter how many hatchlings I’ve seen, baby sea turtles still bring a giant smile to my face. Thus began what I will from now on call “The Year of Excavation” as I managed to convince some sane people to do insane things in 35 degree heat and 90% humidity. I’m very excited about how many excavations were accomplished this year and the valuable insights we will hopefully be able to make with this amount of data. Year end reports will be posted on www.coterc.org.

Our new station manager Todd Lewis sent along this quick email —

“An orange Jaguarundi just flew through the back of the garden here completely stunning Maggie the dog and me! I was eating cake on the way to the dock - nearly choked! A first for me.”

NEXT EUCHRE TOURNAMENT

Once again June Enright, Executive Director, is organizing our popular evening of euchre, along with goodies to eat and drink.

SAVE THIS DATE

**JANUARY 22, 2011 IN THE
ATRIUM OF THE TORONTO ZOO
5:30 p.m.**

\$25.00 per person



A GENEROUS DONATION FOR OUR RESEARCH PROJECTS

Chadwick Day, a medical technologist at London Health Sciences Centre, has had a long standing interest in biology, nature, and tropical rainforests. He has twice visited Costa Rica in 1993 and 1994, and while ironically he went to Tortuguero in 1994 but stayed at a local lodge, he missed out on coming to know and visit Cano Palma Biological Station. He found out about COTERC by doing a web search using the keywords "Canadian rainforest conservation organizations", and COTERC came up. He has been a member for the past seven years with COTERC and has been attracted to COTERC's philosophy of involving the local people in the conservation efforts, as he understands that they must be involved for it to succeed. He plans on visiting the station in the next year or so where he can take lots of photos of interesting lizards, insects, frogs, crabs and all of the creatures living around the station!



Chad recently attended Fiesta Verde and generously donated two Tasco waterproof motion detector trail cameras, both complete with an SD memory card and batteries. These cameras will be used in conjunction with the expansion of the mammal monitoring program. We want to extend a special thank you to Chad for his thoughtful donation!

TIS THE SEASON TO BE GIVING

Like so many charities, COTERC has been feeling the pinch of the economic downturn. In order for us to continue our conservation work, we ask you to consider a donation at this time of year. There are two ways to donate: online, You can donate through CanadaHelps (details appear below). Or you can choose to donate directly by using the form found on Page 12. COTERC is a registered Canadian charity and you will receive a tax receipt.

We are very grateful and thank you for your ongoing support.

The best gift of all is a donation through CanadaHelps

No matter which occasion or person on your list, the best gift you can give this holiday season is a donation to an important cause. CanadaHelps makes it easy with 2 different options:

- Charity Gift Cards let you Give the Gift of Giving. Simply select the amount and design, and your recipient can select which charity the funds will be sent to. Charity Gift Cards are the perfect gift for everyone you need to buy for: teachers, clients, colleagues, family, children... everyone! Buy your Gift Cards today: <http://www.canadahelps.org/GiftCards/CharityGiftCard.aspx>
- Choose your charity and click to make your donation "in honour of." You can then send an Ecard to let your recipient know about your generous gift. Start your donation today: <http://www.canadahelps.org/>

