Volume 21, Issue 3 **Fall Edition** 



CANADIAN ORGANIZATION FOR TROPICAL EDUCATION AND RAINFOREST CONSERVATION

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## NEWS FROM THE CHAIR

Greetings to all of COTERC's Members. As I write this I am sitting on a wooden bench worn smooth by countless volunteers and researchers bent over a matching long table. I am sitting in the library of Cano Palma Biological Station, Costa Rica. It is my first visit to our beautiful station and I am overwhelmed by all that is around me. I have been here for six davs and have taken part in so many unique experiences that could only be done here. As I look

the tropical rainforest ecosystem and I can now state from my own firsthand experience that it is absolutely worth all of our combined efforts a hundred fold over. My compassion and drive to meet our lofty mission has been invigorated and refreshed beyond even my own expectations. Leaving this natural wonder will be a sad day for me.

I am very appreciative for this opportunity and extend my highest gratitude to Charlotte, our Station them all friends. Indeed, if the chance ever arises again, I will be back in a heartbeat.

At times here I have the time to quietly think and being here has inspired me in regards to what it means to be a Member of COTERC. I believe that by becoming a Member of this Organization, you have either an interest in learning about the rainforest and its creatures or you know enough about them to want to help conserve them or a combination of the two. I want to make both of these easier for you. I am excited to be able to introduce the COTERC Member's Incentive Plan. This is a proposal that will be refined over the next couple of months and then offered to you, our loyal Members. Details will come to you very soon, stay tuned.

I must now say good night to the forest with the hope that I will return one day.



out of the screened window I see lush tropical vegetation, I can smell the sweet and humid air, and I can hear the howlers as they call out their territory to each other. This place is simply amazing. I am now of the full realization of what it is that we do to help to preserve and study

Manager and Aidan, our Research Coordinator for their warm welcome and comforting acceptance into their "home". I had the opportunity to meet many new people from volunteers and researchers to members of the local community and am happy to call



Photo by Ilse Leeman

## FIESTA VERDE IS BACK!

SAVE THE DATE - FEBRUARY 16, 2013 COTERC IS ONCE AGAIN HOSTING OUR POPULAR FUNDRAISING DINNER IN THE ATRIUM AT THE TORONTO ZOO

SILENT AUCTION \* \$10 TABLE \* LIVE AUCTION

COCKTAILS 5:00 DINNER 7:00

MEMBERS-\$65 PP NON-MEMBERS-\$75 PP
TICKETS AVAILABLE FROM
VICE-CHAIR@COTERC.ORG
OR ANY BOARD MEMBER
OR (905) 831-8809

DON'T MISS OUT--LIMITED # OF TICKETS

EDITORIAL by Marilyn Cole

It is my pleasure once again to be part of the Board of Directors, as well as the editor of Raphia, our organization's newsletter. It has been quite a journey since the start of COTERC and Cano Palma Biological Station back in 1991, and I am truly excited about our future. My vision had been to attract scientists and



students to carry out important research, and to make a difference in the conservation of Costa Rica's biodiversity. Thanks to the efforts of our staff and volunteers I believe this is happening. The hard work during the two annual turtle seasons is paying off in making it difficult for poachers. Local villagers are slowly beginning to appreciate the wildlife and environment surrounding them. The ongoing birdbanding and other studies are contributing to an international body of knowledge. And here in Canada our newly appointed Director of Education is carrying on the work started by others. What more could we ask for?

Page 2 RAPHIA

Time has flown and another turtle season is drawing to a close, but that doesn't mean we're any less busy. With up to 28 excavations a day, it's all hands on deck and 7 hour "morning" census with follow-up from our afternoon excavation teams.

Fortunately, we still have volunteers coming through at a steady pace, with many of them staying a month or more. This level of commitment gives them the opportunity to really get to grips with the fieldwork and achieve a level of mastery with the different aspects of the projects. We are making sure that everyone who comes here is able to rotate through a variety of projects that appeal to them, which means that we've been able to maintain consistent efforts with the bird-banding, plant phenology, mammals and caiman, as well as starting work on a shore-bird monitoring project.

With the end of the larger group visits, Manuel has been able to focus on some maintenance issues, including a complete overhaul of the library and maintenance of the boardwalk. Our beloved boat the Peregrina has also received a facelift and some major structural repairs.

Migration is in full swing and we've been hosting some bird-banders from the Costa Rican Bird Observatories (CRBO). They've been staying on base and working with our volunteers to cover a range of the local sites – with up to 60 birds a day, and a good mix of residents and migrants, they've been coming home happy, but tired.

Things have been moving on base as well - at least the wildlife has. We had not one but two sloths CHARGING through the station garden, defying their name and reputation!



Photo by Ilse Leeman

One was apparently in pursuit of the other as when they made contact, the leader appeared to be hurled to the ground. Stunned, the sloth remained frozen for long enough for everyone to get their cameras, take some novel shots, and have a coffee.

Eventually, the wounded party made its way to the closest sapling, unfortunately not up to the task. After breaking two saplings and falling from a bromeliad post, it started to climb onto the office balcony. At this point we stepped in, gloved, and assisted it to a sturdy tree at the edge of the jungle. Meanwhile its pursuer hung out in the breadfruit tree, with a grin that made it appear to be quite enjoying the show!

Ironically, <u>Aidan Hulatt</u> and Manuel were off-base on a

mammal survey, where they saw some rather interesting tracks...

As entertaining as this was to see, we're looking forward to a little less excitement in November and December, with less time on the beach, and more time on the canal and jungle trails.

### **BOOK REVIEW:**

TROPICAL RAINFOREST RESPONSES TO CLIMATE CHANGES, SECOND EDITION

Mark B. Bush, John R. Elenley, William D. Gosling, Editors Springer Praxis Books

The second edition of this book is an expanded version exploring the impact of climate change on tropical rainforests, investigating the past, present and future climatic influences on ecosystems with the highest density of biodiversity on earth. The authors also look at how ecology is altered by climate change rather than simply seeing how plant communities are altered. shifting the emphasis to ecological processes. They primarily look at the interaction between humans. climate and forest ecology in the various chapters.

The authors, all well respected in their field, discuss conservation from a climatic point of view, rather than the usual argument to stop logging. This second edition looks at Central America and the effect of fire on wet forest systems.

### INTRODUCING NEW BOARD MEMBERS

We have had the good fortune to have several new members join the Board of Directors over the past few months including Director of Education Nia Gibson, Director at Large Susan Kunanec, Director at Large Beverley Carter and Director of Special Events Annette Simms. Welcome to all of you!



Nia Gibson is the new Director of Education. She works at the Toronto Zoo as the Coordinator of Education for Sustainable Development

#### Programs.

She is a high school biology teacher, trained at the University of Wales; she has gained experience teaching in the UK, Kenya and now teaches grade 11 biology at the Zoo.

Nia is an avid environmentalist and her passion for conservations has earned her a post graduate certificate in Primate Conservation from Oxford Brookes University.

After visiting Cano Palma this past September, she is motivated to get to work on creating educational resources for students in Costa Rica and here in Canada, inspiring students to want to learn more about biodiversity and how they can help to protect

#### Annette Simms

I have known Marilyn Cole for a long, long time, back to BC times, this merely means Before COTERC. Our paths first crossed some 30 odd years ago when Marilyn was a Toronto Zoo keeper and I was (still am) a volunteer guide. Marilyn looked after gorillas and orang-utans as well as many other species. I looked after teachers and school children visiting the zoo.

After my stint at the zoo was over for the day I would frequently visit my individual favourite animal Puppe the orang-utan. She is still around at the ripe old age of (approx.) forty five. Marilyn and I are both somewhat older and here we are with our paths crossing



Back in those early days we were acquaintances rather than friends but I am sure this will change now that I have joined the Board of Directors. .I have been a member of the organization for several years and have attended (and contributed) to many past events.

I first visited the station three or four years ago and again recently in 2012

I have a business background. I owned and operated a small business in the field of consumer research for over thirty years. I have, over the years, been involved in the general field of education in a variety of roles, including teaching.

I look forward to becoming far more involved with CO-TERC than I was before. If you do attend any of the social events we are planning for 2013 please introduce yourself. I'll be the tall, white-haired lady with the Scottish accent who is talking too loudly, and hopefully laughing a lot. As Director of Special Events I hope to be happy and laughing at the success of the evening. Try and be there.

Page 4 RAPHIA

I joined the Toronto Zoo in early 1974 after working at McGill University's Department of Meteorology and University of Toronto's Innis College. I have a B.Sc. (Hons) from U of Toronto.

Started off in the Health Unit working with a large variety of animals either in quarantine or in holding while waiting for their permanent quarters to be constructed on site. I moved out on site a year later to the Americas area featuring animals from North, Central and South America and while there, started up the Meet the Keeper programme featuring snakes of the region. This programme has evolved to include talks focussing on animals all over the zoo site, allowing the public to talk to keepers, meet animals and have questions answered. Also in the mid 1970's, using a wooden brooder box, heated with a 60 wt. lightbulb, we successfully incubated various North American turtle and tortoise eggs laid in the Americas Pavilion in less than optimal conditions. Today, the zoo has very sophisticated equipment and a very successful hatch rate for all eggs incubated from birds, lizards, snakes, turtles, etc.

After 9 years as an animal keeper, working with many different species, I was moved to the position of Supervisor of Animal Care and over the next 28 years, supervised the staff and their quality of care for animals in Americas, Africa Paddocks, Health Unit, Australasia, Eurasia, Africa Pavilion and IndoMalaya Pavilion and Paddocks. I also developed the keeper rotation section of the zoo's in-house education programme and ran the Co op education programme at the zoo, which placed deserving high school and college/university students in various areas to work as keeper trainees, learning about animal care, behaviour and conservation issues. In the last few years, the participants were not just Canadians but also came from overseas and south of the border.

Retirement in 2011 has given me somewhat more time to get involved in worthwhile endeavours which dovetail with my lifelong interests of ecology and conservation in the hopes that I can contribute towards their continued success. COTERC's aims and objectives, not to mention on-the-ground research, fit those interests.



VOLUME 21, ISSUE 3

As Research Coordinator at Caño Palma I have spent the past four months working on our existing programs and developing new relationships with outside researchers. As a destination to carry out tropical field ecology the Station sits in the heart of one of the most biologically diverse regions in Central America. There is a wealth of understudied species and the opportunity to carry out valuable research, collecting baseline data for almost every taxonomic group.

All of the Station's projects have been running on a continuous basis throughout the summer and into the fall. Some modifications have been made along the way, to tighten up protocols and data collection, to ensure our volunteers are collecting quality data which can ultimately be published. Volunteer numbers have been up throughout the year due to our concerted efforts to publicise the field work opportunities available at Caño Palma

on international job boards and listings. This has enabled us to successfully run all of our advertised projects and even add some more like the new Shore Bird Survey.

We have had people with strong biology backgrounds seeking to gain further field work experience to help them land that elusive job, as well as people who simply want to feel they are contributing towards helping conserve threatened species like the sea turtles.

Alongside these volunteers, who have stayed anywhere from two to eight weeks, we have three long term interns from the Netherlands, They are carrying out their own undergraduate research projects as well as helping out with the Marine Turtle Project. While Ilse Leemans' research focuses on the this particular project, Mark Groen has been studying the distribution of reptiles and amphibians in different habitat types at Cano Palma

and Jasper Buijis has been working on the foraging preferences of leaf-cutter ants. With three more Dutch students arriving in the new year from the HAS den Bosch University it looks like this partnership with COTERC will continue to be a productive one.

We have had a number of outside researchers working at the Station in recent months from universities in Canada, the States and the UK. Petra Kransfelder will return in January to continue to sample the local estuaries for Chironamids, a nonbiting midge, as part of her PhD thesis on the effects of urbanisation on water quality. We will also be hosting an ichthyology field course run by Dr. Nathan Lovejoy from University of Toronto in the New Year. I am currently following up on a number of other potential researchers so hope to bring news of their work in the next issue of Raphia.

## DON'T FORGET EUCHRE TOURNAMENT

**Saturday November 17 2012** 

Atrium, Toronto Zoo, 361A Old Finch Avenue, Scarborough, Ontario

Please mark your dance cards and join us for a fun night. It's an inexpensive fun night out with lots of prizes, food and a few giggles. Your admission will help the Canadian Organization for Tropical Education and Rainforest Conservation continue its work!

\$20 per person —- 10% Discount for returning players!!

Please let us know in advance if you can make it so we have enough food and drink on hand. Contact ju.enright@sympatico.ca

Page 6 RAPHIA

## Banana

by Annette Simms

Musa acuminata is one of the earliest plants to be domesticated by humans for agriculture. Along with Musa balbisiana it is the progenitor of modern edible bananas, first cultivated by southeast Asian farmers several thousand years ago. Alexander the Great saw bananas on an expedition to India.

Shortly after the discovery of the Americas, bananas were introduced to the islands and mainland by Portuguese sailors in the 16<sup>th</sup> Century. Today they are cultivated throughout the tropics and are grown in at least 107 countries, primarily for their fruit and to a lesser extent to make fibre and as ornamentals. There are hundreds of varieties of banana plants in cultivation.

Costa Rica was the first country in Central America to develop banana plantations, the first being created in 1872 with banana export to the USA following in 1879 and it still remains one of the leading revenue generating exports as well as a main provider of jobs.



Neighbouring countries quickly followed suit and as a result became known as "banana republics". This term came to signify any country economically dependent on foreign-owned companies.

Cultivated bananas are parthenogenic which makes them sterile and unable to produce viable seeds. Propagation involves removing and transplanting part of the underground stem, done by removing a sucker (a vertical shoot that develops from the base of the pseudostem) with some roots intact. Around 1945 a root fungus which became known as "the Panama Disease" had a devastating effect on a number of plantations in Costa Rica, resulting in many plantations being abandoned. Land was cleared elsewhere to continue banana production. Clearing and converting any tropical lowland forest has a drastic impact on the environment, especially so in Costa Rica, a country with one of the highest biodiversities in the world.

In order to remain competitive in the banana export market ,Costa Rica came to rely heavily on the use of pesticides equivalent to seven times the world's per capita average. Attempts to control or monitor pesticide use have been unsuccessful and as a result, the inland waterways are being heavily impacted by run off from plantations on an ongoing basis. Contaminated sediments have caused massive deaths of fish. All forms of life are at risk, including plantation workers exposed to these pesticides. This extends out into the surrounding oceans making sea turtles and coral reefs at risk from polluted seawater.

Other damaging residues are polyethylene and polypropylene bags and twine used on plantations which enter the waterways feeding into both oceans. Some sea turtles are again at risk because they feed primarily on jellyfish and mistake the bags as food. The bags cannot be digested and as a result turtles die. Floating plastic debris has a serious impact on many other marine species as well.

Continued on Page 8

## **EUCHRE TOURNAMENT AUGUST 25, 2012**

by June Enright

June Enright, a long-time supporter of COTERC has graciously agreed to organize the popular Euchre Tournaments, and gives her report on the one held on August 25, 2012. Be sure to join us for the next one on November 17, 2012.

We had 25 paid participants with quite a few just showing up to support us and spent some time watching and training to be the new competitors at the next tournament.

Some details:

Highest Score Male: Neil Luxton

Highest Score Female: Marlene Luxton That mum and son team is one to watch out for

Most Honest Male: George Banavage \_ Special thanks to George for running our Share the Wealth collection

Most Honest Female: Tracey Gayler

For the first time we had three winners of the big Cahuna prize (Most lone hands): Mat and Mary Taylor and Steve Marks

Two members renewed their membership: Keith Woods and Steve Marks. Keith Woods won the member in good standing door prize.

I think a good time was had by all. Many of the players also took the time to help out with set up, registration, draws, and finally clean up. Special thanks to Marilyn Cole, Malcolm Enright, Dawn, Todd, Chris Law, Hilary Lee, Gary and Fran Murakami and Steve Marks. I'm sure I missed a few more who helped and I apologize for missing you in this dashing lineup. We made \$509. 75 for the night.

## Banana

Continued from Page 7

Large, competitive, transnational companies focus on producing bananas of good colour, uniform size, and without blemishes. As a consequence of this, many bananas are discarded as being not up to international standards. Other discards from banana cultivation include stalks, leaves, the afore-mentioned plastic bags and twine, empty pesticide containers, etc. We are all culpable; when purchasing fruits and vegetables we examine pre-packed items and judge by appearance. As consumers we are the final judges.

There are small scale independent operators growing bananas without heavy use of chemicals, some even organically, but most are currently exported to Europe. There will always be a limit to the size of these operations (for a variety of reasons); however increased production is possible with increased demand, especially from the North American markets.

Costa Rica is attempting to control and monitor pesticide use but limited funding makes this a slow process. Research into alternative methods involves the cooperation of large, long established, and powerful, transnational corporations. However definite progress has been made, especially in the recycling of plastic bags and twine.

Bananas continue to be one of the most popular snacks in both the North American and European markets. They are very nutritious: low in calories, carbohydrate-rich, containing a variety of vitamins and minerals. One banana can provide 11% of daily fibre requirement and are an excellent source of potassium.

Page 8 RAPHIA

### PHOTOS AND ARTICLE BY ILSE LEEMAN





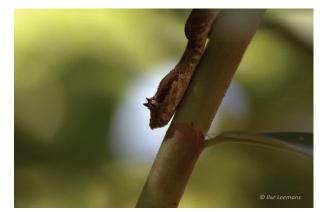
I have already been at the Station for 2 months and it is an amazing experience to live in the rain forest, see the really silly sloths, to hear the noisy howler monkeys, to touch the incredible green turtles and save the cute little hatchlings. It is the perfect way to get to know my camera and develop my photography skills.

I am studying Applied Biology at HAS Den Bosch, the Netherlands and for the course we have to do an internship abroad. This is the reason why I am here, carrying out my research on the nest site selection of the green turtle (*Chelonia mydas*) to see if there is a correlation with beach profile. I have already collected data from 80 nests and I hope the turtles keep coming up so I will get more data. Despite the turtle nesting season coming to an end the excavation of nests are at their peak. This means a lot of digging, opening smelly eggs and releasing little hatchlings.









Page 9 RAPHIA



Canada's First National Reptile Breeder Expo and Conference was held on September 15th and 16th 2012 at the International Centre in Toronto, Ontario. Representatives from Reptile breeders from all over Canada were there, along with various large pet supply stores, educational groups, etc. to put on a very impressive show. There were so many unusual snakes, turtles, lizards, etc.etc. for sale as well as all kinds of merchandise related to reptiles

It was an excellent venue to introduce many new people to our work, as literally thousands lined up to gain entrance during the two day show.

Of course, COTERC had a booth and our volunteers spoke to many people who were interested in Cano Palma Biological Station.

There were several featured speakers throughout the two days, the most famous of whom were the Python Hunters Shawn, Greg and Michael. Attendees, including lots of children, were able to get up close and personal with snakes and other wildlife. For fish enthusiasts, there was a lively auction held on the Sunday.

COTERC were also the beneficiaries of the funds raised at the CRBE Social in the evening of September 15th at the Quality Suites where a live auction was held, and the Python Hunters were the featured speakers, along with our own Dr. Kymberley Snarr who spoke about the work that COTERC does both in Canada and in Costa Rica.

All in all, proceeds to COTERC from this event were in the range of \$4,000, and we'd like to express our appreciation to the CRBE for making this happen.

Many thanks also go to Fran Mason, Tom Mason, Jim Taylor, Keith Woods, Daniel Mason and George Banagas (my apologies if I 've forgotten somebody) who organized and manned the booth and ran the silent auction, and to Kym Snarr for making the trip down to speak at the dinner. I travelled down from Muskoka for the event, and truly enjoyed the experience of meeting up with several herp people.



The Python Hunters with (from left) Tom Mason, Dr. Kym Snarr and Jim Taylor



Page 10 RAPHIA

## Canadian Organization for Tropical Education and Rainforest Conservation

# Membership Application Form

This is a request f	or: NEW	Member:	Membership Rene	wal:	Date:			
Membership Type	: Indiv	idual\$25:	Student/Senior:\$20	Family: \$40	Co	orporate \$100		
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CONTACT INFORMATION: (For membership Renewals, only changes need to be entered in this section)								
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Page 11 RAPHIA

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Box 335
Pickering, Ontario L1V 2R6
Canada

Phone: 905-831-8809 info@coterc.org www.coterc.org

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Photo by Ilse Leeman

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