



# RAPHIA

Spring 2010, Volume 19, Issue 2

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

**2010**

**INTERNATIONAL YEAR  
OF  
BIODIVERSITY**

See Page 6



CANADIAN ORGANIZATION FOR TROPICAL  
EDUCATION AND RAINFOREST CONSERVATION

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

# EUCHRE TOURNAMENT

SATURDAY APRIL 24, 2010



fundraiser for  
Canadian Organization for Tropical  
Education and Rainforest Conservation  
(COTERC)

Dinner & Registration @ 5:30 pm  
First Hand @ 7:00 pm

*the night also includes  
dinner (with vegetarian options)  
Cash Bar, Awards, Prizes  
and a Bake Sale*

**\$25**

*The Atrium*  
**TORONTO ZOO**

361A Old Finch Ave  
Scarborough



for more information on COTERC go to [www.coterc.org](http://www.coterc.org)

## SOME RECENT PUBLICATIONS FROM CANO PALMA AND REGION

We have recently been made aware of the following publications emanating from people doing research at Cano Palma Biological Station:

Lewis, Todd R, *Rana Cascadae* (Cascades Frog) ALBINISM. in Herpetological Review 39(1), 2008, p. 79

Lewis, Todd R, *Sibon Longifrenis* (Drab Snail-eater) REPRODUCTION. in Herpetological Review 40(1), 2009, p. 103

Grant, Paul B.C., Todd R. Lewis, Thomas C. Laduke, and Colin Ryall, *Caiman Crocodilus* (Spectacled Caiman) OPPORTUNISTIC FORAGING. in Herpetological Review 39(3), 2008

Lewis, T.R. & Grant, P.B.C. (2009). Communal behaviour by *Basiliscus plumifrons* (Cope 1876) in a *Manicaria* swamp forest, northeast Costa Rica. *Boletín de la Asociación Herpetológica Española* 20: 35-37.

Lewis, T.R., Nash, D.J. & Grant, P.B.C. (2009). Predation by *Corallus annulatus* (Boidae) on *Rhynchonycteris naso* (Emballonuridae) in a lowland tropical wet forest, Costa Rica. *Cuadernos de Herpetología* 23 (2): 93-96.

And under the auspices of Tortuguero Integrated Bird Monitoring Project (TIBMP)

Ryder, Thomas B. and Jared D. Wolfe *The Current State of Knowledge on Molt and Plumage Sequences in Selected Neotropical Bird Families: A Review*. In *Ornitología Neotropical* 20(1) 2009, p. 1

Wolfe, Jared D., and C. John Ralph, *Correlations Between El Nino-Southern Oscillation and Changes in Nearctic-Neotropical Migrant Condition in Central America* in *The Auk* Vol. 126, Number 4, pages 809-814

Wolfe, Jared D., Peter Pyle and C. John Ralph, *Breeding Seasons, Molt Patterns and Gender and Age Criteria for Selected Northeastern Costa Rican Resident Landbirds* in *The Wilson Journal of Ornithology* 121(3) 2009, pp 556-567

## Congratulations to Todd Lewis who has just finished and passed his PhD examination!

### Venemous Fer de Lance found at Cano Palma Biological Station



## COTERC BOARD OF DIRECTORS VACANCIES

We have recently had two resignations from the Board of Directors of COTERC.

When Caroline Greenland decided to retire from her position at the Toronto Zoo, she also decided to move to the East Coast. As a result, Caroline has resigned her position as Director of Membership & Volunteer Development. And recently Colette McKee, Director at Large (and formerly secretary) has decided to step down after several years' service on the Board of Directors. Both Caroline and Colette have made a significant contribution to the success of COTERC and they will be missed. Thanks to you both for your loyal service! And we still haven't filled the position of Director of Support Services which Blue Enright ably held for many years.

As a result, there are three vacancies to fill. If you would like to be personally active in the decision-making process of COTERC, please contact June Enright, [info@coterc.org](mailto:info@coterc.org). Our Annual General Meeting is coming up on May 8 and we will be electing new Board members at that time. Please see the notice in this issue.



**ANNUAL GENERAL MEETING  
OF  
CANADIAN ORGANIZATION FOR TROPICAL EDUCATION  
AND RAINFOREST CONSERVATION (COTERC)**

**WILL TAKE PLACE ON**

**SATURDAY, MAY 8, 2010**

**5:00 P.M.**

**TORONTO ZOO ATRIUM  
361A OLD FINCH AVENUE  
SCARBOROUGH, ONTARIO  
CANADA**

**ALL ARE WELCOME!  
PLEASE CHECK OUR WEBSITE FOR THE AGENDA**



**CANADIAN ORGANIZATION FOR TROPICAL  
EDUCATION AND RAINFOREST CONSERVATION**

## **COTERC WISH LIST**

- \* Binoculars and Spotting Scope
- \* Biology and Ecology Technical books
- \* Butterfly nets and mist nets
- \* Night vision binoculars and scope
- \* Portable Gasoline Generator
- \* Power Tools
- \* Digital Movie Camera
- \* Dissecting microscopes
- \* HP Ink cartridges #'s 27, 28, 56, 57
- \* Motion Sensitive Cameras



*Flame of the Forest Bromeliad*

*photo by Tom Mason*

by *Tom Mason***NOTES FROM THE CHAIR**

Well I've just returned from Costa Rica and Caño Palma. Eight people stayed with me at the station and six of them continued on to a second wonderful site in the Guayacan forest. In all cases where I kept records of sightings, the station again proved to be the most diverse place of all. These were birds, mammals, reptiles and amphibians and freshwater fish. The herpetofauna was close (34 species at station compared to 33 in the forest) but it proves that the station is still one of the best areas in Costa Rica and the world for observing and saving biodiversity. Thanks to all those people that joined me this time and made it such a memorable trip.

Over my stay I had the chance to see many positive things and many things where we need to improve. The paths between the buildings are now much safer to walk. Between the dorm, the boathouse and the office/meeting room there are elevated concrete paths. This allows people to walk during wet periods without creating muddy trails and at night with much less risk of stepping on the more dangerous residents of

the forest. And the Colibri trail is indeed a joy to walk. No more are we damaging forest trails or disturbing vernal pools that may become the nursery for local amphibians. The trail also keeps the visitor to the forest up and on a confined trail so they aren't given the chance to create their own trail. The elevated walk also allows people to look further into the forest to possibly see more. The staff, volunteers and hired help that built this trail should be extremely proud of themselves.

On the other end, the Raphia trail was in much rougher shape. The trail was muddy and there were places where the trail was lost due to fallen trees, (something that is relatively common in this forest). On a couple of occasions I had to make detours to allow us to find the trail and continue. The trail was in need of upgrading and would be greatly improved if the low lying areas could be elevated like the Colibri trail.

While we were there we made several small but significant improvements. The area had just been through three weeks of flooding even though it was

the "dry season". The prolonged humidity had turned the Canadian flag green and the COTERC and Station signs had begun to flake, making the signs illegible. With help from the crew, including my daughter Debra and her best friend Lindsey, the signs were taken down, cleaned and painted. The flag was replaced with a second cleaner one and the older one scrubbed, dried and placed in a dark area to hopefully bleach. The place looked much better when we left. People can now read who we are again. Over the week the group I was with joined the six volunteers there to improve the site.

The yard was swept, the manager's cabin cleaned up and three strangler figs were removed from one of the flowering trees. Screen was replaced and the entire site had a general cleanup. People were very helpful and I believe it made them happier that they had made a small difference. On the other side, there were things we could not do. The boat needed repair and there was a severe shortage of tools.

**NEWS FROM CANO PALMA**By *Mike Dunn*

The first turtle of the season was spotted in March. She was a first year green turtle found nesting near the high tide line of the beach. Unfortunately, these eggs are likely to be drowned by the rising waters of the ocean. This is a common mistake for a first year turtle who shows her inexperience by nesting where it is safer for her but more dangerous for her eggs. I attempted to tag this girl for the first time but she took a good swipe at my arm and quickly moved to the ocean. Let me tell you that although these animals look majestic and peaceful they pack quite a punch!

The main excitement for this month was Tom Mason's visit to the station. He brought around a dozen volunteers with him to the station. For the first time in months Cano Palma was buzzing with activity. We had several bird enthusiasts out checking for new species for their life list, herpers (reptile enthusiasts) checking all of the bushes for new snakes and boatloads of volunteers searching for caiman in Cano Palma's waters. Tom always seemed to be the centre point of the activity (usually because he had found another snake or rare fish) and the group hummed along of its own accord.

I was delighted to have such interesting company at our camp and I enjoyed the talks and walks with many of our guests. However, these were usually cut short due to my job's requirements. Just keeping enough food for 16 people was a challenge in itself. I was lucky enough to see a Tamandua on a kayak with some of our guests. This creature is similar to an anteater with powerful claws and a great climbing ability. We found it about 7 meters up a tree.

One unexpected visitor to the station was a small dog with a serious machete wound to the back of its head. She was brought to Cano Palma by a distraught owner from San Francisco. Luckily some of our guests were trained as vet assistants and were able to help the dog out with our limited tools available. Even so we did not think that the dog had much of a chance of survival. To our great relief and surprise, the dog has made a full recovery and now has very little scarring at the site of the wound. Although COTERC doesn't want to be thought of as a vet clinic it was nice to be able to give something back to our neighbouring community.

## INTERNATIONAL YEAR OF BIODIVERSITY (IYB)

The United Nations declared 2010 to be the International Year of Biodiversity (IYB). The variety of life on Earth is essential to sustaining the living networks and systems that provide us all with health, wealth, food, fuel and the vital services our lives depend on. In 2010 we are celebrating life on Earth and the value of biodiversity to our lives.

Human activity is causing the diversity of life on Earth to be lost at a greatly accelerated rate. These losses are irreversible, impoverishing us all and damaging the life support systems that we rely on everyday. But we can prevent them.

In 2010, the International Year of Biodiversity invites the world to take action to safeguard the variety of life on Earth. Now is the time to reflect on our achievements in the protection of biodiversity and focus on the urgency of our challenge for the future.

*Excerpt from Royal Botanical Gardens website* [www.kew.org/science-conservation/kew-biodiversity](http://www.kew.org/science-conservation/kew-biodiversity)

## EDUCATION MANUAL- RESOURCE MATERIAL FOR TEACHERS

Tropical forests are beautiful, diverse and provide many global environmental services such as the sequestration of carbon dioxide, habitat for organisms, climate regulation and soil conservation. These fragile ecosystems are facing unprecedented stresses arising from habitat destruction, climate change, pollution and many other variables. The Canadian Organization for Tropical Education and Rainforest Conservation (COTERC) is devoted to the protection and conservation of tropical forests through research and educational initiatives. The aim of COTERC is to stimulate interest and to promote the conservation of tropical forests through the educational activities presented in this resource manual.

All lesson plans, activities and demonstrations presented in this educational manual are designed to facilitate understanding of the complex issues facing tropical ecosystems and we are currently updating it. All activities were prepared in accordance with the current Ontario Curriculum Expectations. Where applicable, evaluation rubrics and student handout sheets are included with the lesson or activity plan. These may be photocopied or placed on overhead transparencies to reduce the amount of paper consumed during your lesson delivery. Some lesson plans may be modified for multiple courses by reviewing the current Ontario Curriculum Expectations or through the use of the Curriculum Cross-Reference Tool (please note that in some cases specific curriculum expectations have not been listed with cross-referenced lesson plans). Enjoy implementing the activities.

## SPECIES FACT SHEETS AVAILABLE

These fact sheets feature species that are found in and around the Caño Palma Research Station in Costa Rica. The sheets are produced by COTERC volunteers and verified by members of the COTERC Board of Directors and are available, free of charge, on our website

<http://www.coterc.org/education.html>

There is a new online resource, a booklet entitled *Rainforests: The Burning Issue*. This explores the issues behind rainforest destruction in accessible language and is backed by some amazing photos and video clips. It's a great resource and we hope and you can look at the booklet online at: [www.rainforestsos.org/book](http://www.rainforestsos.org/book). This is an interactive resource and well worth a look

## CALLING ALL PAST STATION MANAGERS

Station Managers are our front line in delivering our mandate of leadership in education, research, conservation and the educated use of natural resources in the tropics. At Caño Palma Biological Station, they dedicate most of their time carrying out a multitude of jobs, such as station maintenance, working with community

members, collecting data, organizing volunteers and researchers. Many of these tasks and challenges are handled with minimal assistance.

COTERC is currently in the process of collecting and archiving historical information and documents. If you were a previous Station Manager or

Assistant Manager, we would appreciate any recollections you might have, such as your accomplishments while working at the station, fond memories and old photos. Please contact us at [info@cotercc.org](mailto:info@cotercc.org) <http://www.cotercc.org/history.html>

## LIVECHAT FROM CANO PALMA

As part of our participation in the International Year of Biodiversity and in collaboration with the Royal Botanical Gardens in Hamilton, Ontario, Canada, Station Manager Mike Dunn took part in an online livechat with Canadian students. Here is Mike's description of the experience.

"The presentation was on rainforest relationships. I started talking about plant/plant, plant/animal and animal/animal relationships. I then talked about fungi and algae's role in the jungle. I talked about carnivores and mentioned that humans are a major consumer in the jungle. I finished with a conservation message about what people can do from Canada to help the rainforest."



*Pair of Mating Moths*

*Photos by Tom Mason*



*Deb and Lindsey*

## Notes from the Chair

Things had gone missing over the past several months and needed replacement. More screen was needed to finish all the work and kitchen utensils and the plates and dishes definitely were in need of replacing. The composting toilets also need cleaning and rejuvenating. Lots needed to be done.

On the other hand, termites appeared to be under control and the station appeared to have a very solid wireless e-mail system. The showers also worked well and looked great.

*Continued from Page 5*



## FIRST EVIDENCE FOR A SECOND BREEDING SEASON AMONG MIGRATORY SONGBIRDS

ScienceDaily (Oct. 28, 2009) - Biologists for the first time have documented a second breeding season during the annual cycle of five songbird species that spend summers in temperate North America and winters in tropical Central and South America.

It was known that these species, which migrate at night when there are fewer predators and the stars can guide their journey, breed during their stay in temperate regions of the United States and Canada. But it turns out that they squeeze in a second breeding season during a stopover in western Mexico on their southward migration, said Sievert Rohwer a University of Washington professor emeritus of biology and curator emeritus of birds at the Burke Museum of Natural History and Culture at the UW. "It's pretty much unheard of to have a nocturnal migrant with a second breeding season. It's a pretty special observation," Rohwer said. "We saw these birds breeding and we were completely surprised."

Migratory double-breeding has been observed in two Old World bird species on their northward migration, but this is the first documented observation of "migratory double breeders" in the New World, and the first anywhere for the southward migration, Rohwer said. The scientists traveled to the lowland thorn forests of coastal western Mexico to survey and collect songbirds that had raised their young in the United States and Canada and then immediately migrated to Mexico to molt, or shed and replace their feathers. But during July and August in three consecutive summers, 2005-2007, the researchers found individuals from five species -- yellow-billed cuckoos, orchard orioles, hooded orioles, yellow-breasted chats and Cassin's vireos -- that were breeding rather than molting.

They found evidence that the birds had, in fact, bred earlier that year. Females of all five species examined in July had dry and featherless brood patches, indicating they had bred earlier that summer. (To more efficiently transfer heat to eggs, the abdominal brood patch becomes featherless and thickened with fluid when females are incubating, but as the young mature it dries out and remains featherless.). In the Mexican breeding ground, there was a complete absence of young birds, indicating the females had not bred in the area of the thorn forests. Active nests were found for two species and males of all five species were singing and defending territories or guarding females, behaviors associated with breeding. In addition, isotopic analysis of the birds' tissues showed that many had recently arrived in west Mexico from temperate areas farther north.

Rohwer is lead author of a paper describing the findings, published the week of Oct. 26 in the online edition of the *Proceedings of the National Academy of Sciences*. Coauthors are Keith Hobson of Environment Canada, a national agency charged with preserving environmental quality, and Vanya Rohwer, a graduate student at Queen's University in Kingston, Ontario. He is Sievert Rohwer's son and took part in the work while a UW undergraduate. The research was funded by the Burke Museum Endowment for Ornithology, the Hugh and Jane Ferguson Foundation, the Nuttall Ornithological Club and Environment Canada.

The observation is much more than an oddity in bird behavior, Sievert Rohwer said. He noted that orchard orioles might raise a first brood in the Midwestern and south-central U.S. and a second on Mexico's western coast, yet both sets of offspring find the same wintering area in Central America. The question is how both groups find the right place, since they must travel in different directions. Then there is the yellow-billed cuckoo, once commonly seen throughout the western United States and as far north as the Seattle area but now seldom seen along the West Coast. Disappearing habitat in the U.S. is usually cited as the reason. But Rohwer believes the real problem could be the transformation of thorn forests of southern Sonora and Sinaloa, states in northwestern Mexico, into irrigated industrial farms. That loss of habitat, he said, could mean not enough young are produced in the second breeding season to sustain the populations previously seen on the U.S. West Coast.

"It turns out that many of those migrants, both molt migrants and the newly discovered migratory double breeders, are dependent on the low-altitude thorn forests that become very productive during the monsoon," Rohwer said. The thorn forests lie in an arid and forbidding scrubland that springs to life with the monsoon lasting from June through August. The monsoon brings virtually all of the area's annual rainfall. The small trees leaf out and insects become abundant, making an ideal stopover for migrating songbirds. However, with plenty of biting insects, temperatures often at 100 degrees Fahrenheit and humidity hovering near 100 percent, it is a difficult place for researchers to work, so there has been little previous documentation of life in the thorn forest. The new findings could spur more work there.

"For western North America, the conservation implications are pretty serious," Rohwer said. "Biologists know theoretically that they should pay attention to these migration stopover sites, but they've been largely ignored for their conservation implications."



## **Implications of Potential Climate Change Impacts and Educational Programs for Sea Turtle Conservation on Playa Norte, Costa Rica**

Principal Investigator: April Stevens, BSc H, Marine Biologist, Sea Turtle Specialist, PhD candidate, McMaster University

The aims of this research are to determine potential climate change impacts in order to help mitigate both future quantitative and qualitative losses of nesting habitat as well as determine the effectiveness of educational programs for sea turtle conservation. Preservation of all remaining nesting habitats is of critical importance to restoring population numbers for continued sea turtle survival. Realization of the objectives for this study will provide a comprehensive and multi-faceted approach that will effectively aid in current and future conservation efforts for this nesting beach. This research will provide policy makers and developers with data to implement responsible construction regulations. Furthermore, as protecting the habitat is solely not enough to ensure survival, this research will also identify whether or not current educational programs are effective tools in reducing harmful human-turtle interactions. Special thanks to COTERC and The Donner Canadian Foundation for funding this research.

### **COTERC PARTNERS WITH MCMASTER UNIVERSITY**

The Department of Biology at McMaster University in Hamilton (ON, Canada) has partnered with COTERC to offer undergraduate students an opportunity to gain experience in field biology. Currently, their partnering includes the development and delivery of a two week course which is designed to give students the opportunity to participate in ongoing field research in a tropical setting and to explore habitats of high biodiversity. The focus of the course will be on long-term monitoring of sea turtle nesting activities through the COTERC Sea Turtle Monitoring Project; however, the station's location within the Barra Colorado Wildlife Refuge provides daily exposure to a wide variety of mammals, birds, reptiles, amphibians and insects. As well, one of their PhD candidates, April Stevens, is carrying out data collection on her doctoral work to determine potential climate change impacts in order to help mitigate both future quantitative and qualitative losses of marine turtle nesting habitat as well as determine effectiveness of educational programs for sea turtle conservation

### **COTERC'S COLLABORATION WITH SAIT**

COTERC continues its working relationship with The Southern Alberta Institute of Technology (SAIT). SAIT is Canada's premier polytechnic. At SAIT education and training are enhanced through applied research, technology, and innovation activities, including applied research based on identified industry need. The Bachelor of Applied Technology - Geographic Information Systems Program at SAIT is again collaborating with COTERC to use spatial information tools in support of conservation-focused research activities. This year's group of students includes Miguel Garcia, Carla Solano, and Wayne Howse. This group along with their professor Colin Lynch, are working on a baseline coverage analysis and spatial analysis of large mammals in the Barra del Colorado Wildlife Refuge. This expands upon last year's project which examined this for the area around the biological station itself. The students will use information provided by COTERC and the Costa Rican Government in completing this major project. COTERC is pleased to continue this relationship with SAIT, and we look forward to some fascinating findings from this year's group of students.

## REPORT FROM A VOLUNTEER

By Katherine Bottoms

I had the privilege of spending three weeks at Caño Palma this past November. I arrived in Tortuguero early in the morning, and the boat ride to the base was surreal – trying to take in all the sights and sounds of the jungle was quite the experience! During my first afternoon there, we went for a quick hike up the Cerro. Seeing poison dart frogs, bullet ants, spider monkeys and even a juvenile pit viper first-hand was amazing. And waking up to the sound of howler monkeys at 4:30 the next morning was unforgettable.

I'm from Southwestern Ontario and recently completed my undergraduate degree in Biology at the University of Guelph. My next goal is to pursue a Masters degree in Epidemiology. I volunteered with COTERC in order to gain some research and conservation experience, as well as to expand my curriculum vitae. I was able to work with two on-going projects at the base: the Large Mammal Monitoring and Marine Turtle Monitoring programs.

Due to the heavy rainfall and flooding at that time of year, Mike and I weren't able to spend much time collecting data for the mammal project. We did brave the flooded Raphia trail a few times, and found some pecary tracks to measure and record. I think the most valuable lesson learned was that the weather doesn't always cooperate when you're trying to collect field data! The majority of my time, then, was spent helping out with the morning turtle census. It was worth getting up at 4:00am to paddle across the canal and head out to the beach. It felt good to know that our presence on the beach at that early hour helped to deter poachers and increase survival chances for the hatchlings. It was interesting to learn about the nesting behaviours of marine turtles and to see first-hand the kinds of issues that can stand in the way of an egg hatching and the young making it to the ocean. Although some of the excavations were quite sad, there were some happier ones that made up for it.

During my most memorable excavation, we rescued six healthy hatchlings that had been buried beneath siblings that hadn't survived. Watching those six little turtles scurry out to the ocean was amazing.

When my time came to head home, I wasn't ready to go! My stay at Caño Palma was an unforgettable, once-in-a-lifetime experience that went by way too fast. I plan on continuing to explore Central and South America, work on my Spanish and hopefully one day I can return to the Tortuguero area.



One of COTERC's main mandates is to educate and promote conservation messages. One example is a presentation made on March 23rd to the Hatchhouse Montessori School in Whitby, Ontario, Canada by volunteer Nicole Santeramo. The school also took out a class membership to COTERC. Judging from the photo, all the students really enjoyed the presentation.



**COTERC** is a registered Canadian charity whose mission is to provide leadership in education, research, conservation, and the educated use of natural resources in the tropics.

With your support you become a member of an incredible family of:

- Educators who teach environmental awareness to local children in Costa Rica.
- Conservationists who protect rainforest habitats and the species they support.
- Volunteers who collect data and perform general maintenance and support duties at the biological station in Costa Rica.
- Researchers who increase knowledge of rainforest plants and their uses; who study the biodiversity of insects; who monitor sea turtle nesting; and who study and monitor resident bird and mammal species.

**Become a member today!** Welcome to our family.

#### Membership Rates

Student—\$20

Senior—\$25

Individual—\$30

Family—\$40

Classroom—\$50

Current Projects

We invite you to join COTERC and become part of active conservation. As a member, you receive our RAPHIA newsletter four times per year and are entitled to a discounted stay at our Caño Palma Biological Station.

See for yourself what your money is doing!

#### Why Should I Join?

Your support ensures the continuity of research, conservation and education currently in progress in Costa Rica and Canada. Just as the summer tanager travels between Costa Rica and Canada, your financial support will be used to further programs and connections in both countries.

Membership Category and Rate:

Your Name:

Address:

City, Province:

Postal Code:

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Email:

Send RAPHIA Newsletter by:

- Email  
 Postal Service (in Canada only)

If Membership is a gift:

Name of Recipient:

Address:

City, Province:

Postal Code: Phone:

Email:

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Send Membership Package to:

- Donor  
 Recipient

Send Renewal Notice to:

- Donor  
 Recipient

Method of Payment:

- Visa

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- MasterCard

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Credit Card # Exp. date \_\_\_\_\_

- Cheque made payable to COTERC

Signature

***We do not share your information with other organizations.***

## Board of Directors and Committee Members

**Chair:** Tom Mason  
**Vice-chair:** Dr. William Rapley  
**Executive Director:** June Enright  
**Marketing:** Matt Vernhout  
**Membership & Volunteer Development:** Vacant  
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**Advisory Committee:** Dr. Peter Silverman, Order of Ontario

### *Other Volunteers:*

**Webmaster:** Peter Klose  
**Website – Spanish translator:** Carolina Holguin  
**Membership Secretary:** Susan Kunanec  
**Raphia Editor and COTERC co-Founder:** Marilyn Cole

**Honorary Patrons** Sir Charles & Lady Mackerras



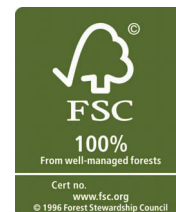
RAPHIA IS THE OFFICIAL NEWSLETTER OF  
 CANADIAN ORGANIZATION FOR TROPICAL  
 EDUCATION & RAINFOREST CONSERVATION



CANADIAN ORGANIZATION FOR TROPICAL  
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### **HELP US TO BE MORE ENVIRONMENTALLY FRIENDLY!**

We are now able to offer an electronic version of Raphia, and we'd like to encourage as many of our readers as possible to receive our newsletter in PDF format.

If you are interested in receiving Raphia electronically, please forward your name and email address to [info@coterc.org](mailto:info@coterc.org) or contact the COTERC office at 905-831-8809.

You will need Adobe Reader to open the document. To download Adobe Reader, go to

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