

Volume 25, Issue 1

WINTER, 2016

FIESTA VERDE 2016



Jim Taylor



Dr. Nathan Lovejoy



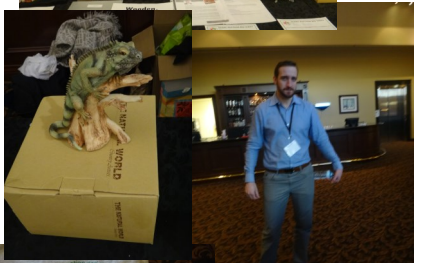
Art by Lauren Crawshaw



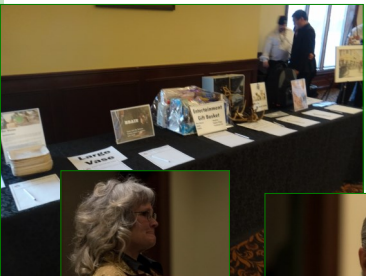
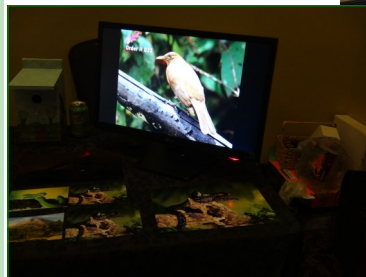
Carl McCleary



Fran Mason



John Gormaly



Shelley Hutchinson



Blue Enright



Jack Tynan, Marilyn Cole, Michael Panzera



Station Manager Charlotte Foale via Skype



Art by Lori Dunn



Tom Mason



Photos by Nyk Kerrutt & Marilyn Cole

CANADIAN ORGANIZATION FOR TROPICAL EDUCATION & RAINFOREST CONSERVATION

RAPHIA

FIESTA VERDE 2016

We decided to change up Fiesta Verde this year, and it was a smashing success! The event was hosted at the Deer Creek Banquet Hall in northern Ajax, Ontario on January 23. All the attendees agreed that they enjoyed the new venue, with promises of bringing more guests next time.

We ran a live auction, a silent auction, a photo purchasing booth, and a storefront selling Cano Palma cookbooks, COTERC t-shirts and other memorabilia. Congratulations to the following who won the live auction items:

Names

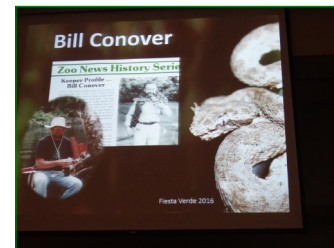
Items

Grant Crossman	Behind the scenes tour at the Toronto Zoo
Grant Crossman	Raised Paper Loon Art Piece
Joanne Pink	Golf Package at the Deer Creek golf course
Amanda Carroll	Great Wolf Lodge Package
Susan Kunanec	Lemur Painting by Lori Dunn
Cal White	Costa Rica Package

Jim Taylor, in full Highland regalia, (it was Robbie Burns Day) acted as emcee and auctioneer, peppering his talk with witty comments.

As part of our 25th anniversary celebrations, we remembered the following people with Marilyn Cole & Tom Mason reminiscing about the wonderful moments they shared:

Bill Conover, a keeper from John Ball Zoo in Lansing Michigan who accompanied Marilyn to the property now known as Cano Palma Biological Station when she was considering purchasing it. Bill was very enthusiastic about the concept and his widow later donated money to the project.



Sir Charles MacKerras, honorary patron of COTERC. Knighted for his outstanding contribution to music, Sir Charles was a memorable conductor of classical music throughout his career.

Dr. Jon Barlow, a renowned ornithologist and former COTERC board member. Jon was instrumental in transforming the ornithological department at the Royal Ontario Museum.

John Mitchell had a passion for preserving wildlife via photography. He had a great knowledge of nature and emphasized conservation in his photography classes. John visited Cano Palma Biological Station and often provided photographs for our auctions.

Jim Brown was a former COTERC board member and, along with his wife Linda, visited Cano Palma Biological Station where he pursued his interest in fish.

Bill Jamieson was a very colourful individual who was one of the world's foremost collectors of tribal art and ancient artefacts. Known fondly as "Billy" he generously opened his spectacular home to hold a fundraising event for COTERC, featuring many bizarre exhibits such as shrunken heads and mummies. This special event generated \$20,000 for COTERC.

Mike Rankin was a leading and well respected Canadian herpetologist and supporter of COTERC.

Ross Ballard was a most unusual man; a former station manager of Cano Palma Biological Station, he had a lengthy knowledge of Costa Rica flora and fauna and was happy to impart his knowledge to any interested person.

Bev Carter was known to many of our members as a keeper and eventually supervisor at the Toronto Zoo. After her retirement she joined the COTERC board and put together the summary of the station reports for our members.

FIESTA VERDE—Continued

A Share the Wealth raffle was held, with Holly McGill claiming the winning ticket, but she chose to donate the proceeds to COTERC! We thank her for her generosity.

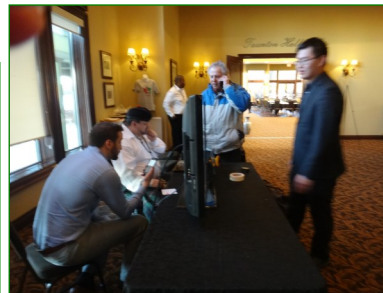
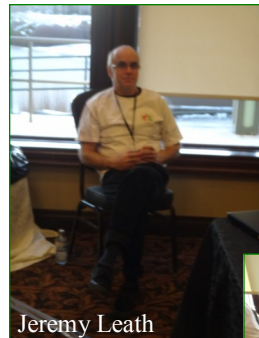
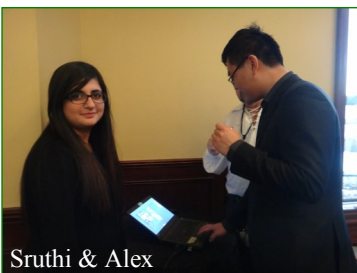
The storefronts looked beautiful with a collection of artwork, jewellery and pictures including artwork by Joan Watson as well as hand-made butterflies & suncatchers by the late Bev Carter. And we'd like to thank Bill Holsten for his beautiful photo contributions.

In addition to the fundraising events, we had our very own station manager Charlotte Foale call in from the station via Skype and over dinner Dr. Nathan Lovejoy shared his personal experiences with Spider Monkeys and his fish research. The theme for the evening was spider monkeys and centrepieces focused on origami monkeys (created by Deb Martin) while guests were provided with favours of monkey shaped cookies and chocolates.

The meal choices included not only entrees of either strip loin or chicken but also vegetarian and gluten-free meals were available. We'd like to thank Deer Creek staff for their attentive and helpful service.

Last but not least, a huge thank you to Sruthi Surampudi (Director of Special Events) and Alex Lee (Marketing Director) for their hard work in organizing the event, as well as all the directors, volunteers, donors and members who made it possible, including:

- Nykalaus Kerrutt – Photographer
- Fowzia Aditi – Coats
- Jace Lu – AV Assistant
- Hilary Lee – Registration/Coats
- Dawn Todd – Store Front Table
- Jeremy Leath – Silent/Live Auction Table
- Daphne Paszterko – Silent/Live Auction Table
- Elaine Christens – Store Front Table
- Sandi Burden – Registration/Coats
- George Banagas—Share the Wealth
- Fran Mason—Silent/Live Auction Table



We hope to see you next year!!



MEET MOLLY

by Doug Durno

Many of you will know Molly McCargar as she's not new to Caño Palma, having had two long stints there. In 2013, Molly was a turtle intern, and she has just finished a year as Co-Turtle Coordinator and Assistant Research Coordinator. In between, she squeezed in work on an MA in Conservation Biology at Columbia. Previously Molly earned a BSc in Marine Science from Boston University. She is originally from the San Francisco area (the California one, not the one neighbouring Caño Palma). Now Molly is returning to be both Assistant Research Coordinator and Turtle Project Coordinator.



Q: What is your main field of interest?

Molly: Since I was a kid, I've always had a passion for marine biology. But, after doing field work in Greece before university, I've focused more on sea turtles as well as reef fish.

Q: Have you done fieldwork anywhere else?

Molly: Quite a few places actually. I've worked in Japan, Belize, Fiji and the Ostional NP on the Pacific side of Costa Rica. Then I came to Caño Palma.

Q: Why Caño Palma?

Molly: Well, Tortuguero is an iconic area for sea turtle conservation, so naturally I was interested in doing fieldwork in the area, and Caño Palma seemed like the best fit for me.

Q: What do you like about life at Caño Palma?

Molly: Besides the isolation, I like the fact that you're always busy. Time passes so quickly even though the work is hard. And amazingly I enjoy the heat.

Q: You must really like the heat because, when we were doing excavations together, the heat knocked me out after the third dig while you were ready for more. We were digging up the nests of green turtles to collect the eggshells left behind by the hatchlings. What do you do with the eggshells?

Molly: I'm studying the population genetics of Playa Norte, the beach near Caño Palma. Over the winter when I'm in New York, I'll take the eggshells into the lab. I'll extract the DNA from these eggshells, and sequence it. After it's sequenced, I'll be able to compare the diversity on our beach to already published reports on the diversity of the primary Tortuguero nesting beach, south of the river mouth.

Q: So how do sea turtles manage to locate that one particular beach when their feeding grounds may be hundreds or even thousands of miles away?

Molly: There's evidence that they imprint on the geomagnetic signatures of their natal beach as hatchlings. When returning to nest, it's thought that they use geomagnetic navigation to get within the general area of the natal beach, and that they then use chemical cues to more precisely locate it.

Continued on Page 5

We would like to thank the following for their donations to the Fiesta Verde Live and Silent Auctions:

Lauren Crawshaw

Lori Dunn

Pennie Mason

Daryl Loth

Turtle Beach Lodge

Cacts Hotel

Jungle Cat World

Deer Creek Golf & Banquet Facility

Cakesterpiece

Tu Despensa

Bird Kingdom

Casa Loma

Montgomery's Inn

Toronto Zoo

Deb Martin

Marilyn Cole

Jim Taylor

Susan Kunanec

Anders Holder

Casa Marbella

Ontario Science Centre

Paul Harpley

INTERVIEW WITH MOLLY (continued from Page 3)

Q: Where do the eggshells fit into this?

Molly: It's been suggested that freshwater outflows, such as the river mouth that separates Playa Norte from the main Tortuguero beach, can disturb these chemical cues that allow more precise natal homing in sea turtles. Tortuguero is noted for having strong population structure induced by incredibly specific natal homing, a trend that increases in strength as you move north up to the southern bank of the river mouth. By using these eggshells to look at the genetic diversity and population structure on Playa Norte, we can determine if this trend of increasingly strong population structure continues as you move north of the river mouth, or if the trend breaks down, indicating the outflow from the river mouth may indeed be altering these chemical cues. Additionally, Tortuguero is noted for having very high levels of multiple paternity. Multiple paternity occurs when a female mates with multiple males, stores their sperm for later, and then deposits a clutch composed of eggs fertilized by more than one of her mates. While this has been observed for all species of sea turtle, we are still just beginning to realize how much the frequency of this phenomenon can vary even within just one population of a species. By taking 10-20 eggshells from each nest, we will be able to compare the frequency of multiple paternity on Playa Norte to previously published work done in Tortuguero, and other green-turtle rookeries across the Caribbean.

As you may know, the Board of Directors recently made a decision to eliminate the fee for membership in COTERC. We took this action in order to be able to reach out to a much broader audience worldwide. Since the announcement was sent out, we have received some very positive feedback. We hope that you will continue to support COTERC, and that you will enjoy receiving our newsletter.

MUSINGS ABOUT SEA TURTLE WORK

Anne-Sophie Delbanco, MSc in biology from University of Copenhagen, Denmark was a volunteer at Cano Palma in August 2015 and had this to say about her experience.

Turtles and poaching

"That is the nest I found the other day. Or: It WAS that nest..."

I am on a night patrol, working as a volunteer at the biological field station Caño Palma in Tortuguero National Park, Costa Rica. The month is July, and it is the season for the green turtle (*Chelonia mydas*), and the hawksbill turtle (*Eretmochelys imbricata*) to lay eggs. At night, they come to the beach and – if they find an appropriate place – start digging a nest to lay their eggs before covering the nest and returning to the sea.

Four out of five species of breeding turtle species in Costa Rica, the green, the hawksbill, the loggerhead (*Caretta caretta*) and the leatherback (*Dermochelys coriacea*), breed in Tortuguero, but all are threatened to a greater or lesser extent. The reasons are not fully known, but one thing is certain: Local poaching has a severe impact, because eggs are considered a delicacy and because turtle flesh is a good source of protein in a poor area of Costa Rica, where there is a lack of jobs and income opportunities. Therefore, one of the main focus areas of the field station is patrolling the beach every night during the breeding season.

Every night four teams of 3-4 persons, patrol the beach. Each team has different starting times. Each team walks for at least 6 hours in a transect of 11.2 km, that the field station is allowed to patrol and do research in. However, if teams encounter turtles, they might be out for a longer time, until the work with the turtles has been finished.

Everybody needs to wear all black clothing to appear as invisible to turtles as well as to poachers. If the patrol leader – the most experienced of the team – or someone else at night patrol observes a turtle, we have to, very silently, move to the back of the turtle. Depending on the stage in nest and egg laying process that the turtle is in, we have different procedures to follow to collect scientific data and to protect the turtle from poachers.

It is a sad message that Jeff – our patrol leader – gives us. Some days ago, he had observed a turtle at the exact location where we now see a poached nest – and all the eggs are gone. However, he reminds us, that despite everything at least the turtle returned to the sea, and will have more chances to come back to lay eggs in this season. And yes, that turtle did return to the sea we know for sure: I was so lucky to observe a turtle from start to the end of the nest building and egg laying process the other day, and therefore I know that the most important thing is to ensure that the turtle returns to sea safely.

The green turtle and me

It has been four days since I was patrolling with Jess and Meagan. Suddenly, Jess stopped and disappeared in the dark. After few minutes she came back to tell us that she had seen a green turtle, and that it had started digging a body pit – an indication, that it was preparing to lay eggs.

Meagan and I were permitted to crawl closer. Wauw! Right there! A beautiful, beautiful turtle in trance (which happens when they lay their eggs) right in front of us. She had started digging the egg chamber with her hind limbs. Meagan prepared to do an egg count, so she put on a rubber glove and located the egg counter. White light is not allowed at all, as it disturbs the turtle and attracts attention to poachers up to 100s of meters away. So, we used moon light or – if it was very necessary – red light.

Continued on Page 7

Musings (continued from Page 5)

We were all three lying on our bellies behind the turtle, as the eggs landed in Meagan's hand and from there down in the nest. With the egg counter she counted the total number of eggs, and in her head she counted the number of small, unfertilized eggs.

It was amazing, and so surreal, lying there watching a wild turtle. For obvious reasons, we were so close that we could touch it – but we could not even talk about the great feeling we all had, because we had to avoid talking, to not stress the turtle. While Meagan counted the eggs, Jess and I noted down the precise location of the egg chamber by the help of GPS-coordinates and marks on three close-by trees. We were making what is called a triangulation, where the measured distance from the cloaca to the marks on the trees in central, Northern and Southern direction will give the exact location of the egg chamber. The markings were done as invisibly as possible to poachers, even though they are done with yellow bands.

Everything is about balancing the ability of finding the egg chamber again, so that at the expected time of incubation we can do an excavation, and hiding the location for poachers.

At excavations, we look for turtle babies. In cases of nests with babies, we will wait at the nest until they have all moved to the sea safely – in security from poachers.

After triangulation I did a health check of the turtle. With minimal use of red light, I looked for barnacles, and their sizes and clustering and where on the carapace they were. I also looked for wounds, a special type of turtle herpes etc. Barnacles, and where on the carapace they are is more effective, than using GPSs, to locate where the turtle has been, because barnacles in many cases are turtle species specific and habitat specific

In this case, the turtle we worked had no tags, so Jess first put a tag in the right front limb and then in the left, just as the official procedures say. The tags and health data can be used to obtain data on turtle behaviour, habitat preferences, fertility seasons and fertility durations. Data like

these, together with the direct protection, that we were giving the turtle right there on the beach by staying next to it while it laid eggs, are all helping to protect threatened turtle species in Costa Rica.

After the egg laying and all health data have been noted down, we moved away, but close enough that we could see the turtle all the time.



We allowed it to finish covering up the nest, erase signs of the nest and watch it move back to sea. Another turtle had survived and was back safely where it belongs: in the oceans! I could not help but feeling very emotional and moved about my first experience with having saved a turtle from being poached.

Our job was not yet finished. We now also had to try and cover up all signs of the turtle and the nest, and erase all signs of its body in the sand all the way to and from the water. At the nest we were extremely careful not to alter the amount of sand and objects on top of the egg chamber, as that might affect the temperature inside the nest. After more than 3 hours of working a turtle, we could now finish the transect.

As soon as all night patrols are back in the morning, the morning teams are out. They will be able to double check the work of the night patrols, so that now covering up of nests or erasing signs of turtles will not have been missed. The morning team will also double check the positions of egg chambers, and in most cases remove the top sand layer of a nest (app. 25 cm). Then they will put down a mesh that gives better protection of the nest against predators and poachers. Of course, the sand will be put back on top of the nest.

My experiences in Costa Rica confirmed what I want to do with my life: Try and protect threatened species and habitats – and that is why I have now finished my studies, and now can call myself a biologist!

Thank you, Caño Palma, for an amazing and unforgettable experience. Hopefully, I will back one day and do more conservation work with you.

We'd like to thank the following for their financial support:

Pennie Mason

Susan Kunanec (donor through work)

Jim Taylor (donor through work)

Ethan Yolleck

Chadwick Day

Barry Johnston

Giovani Jelsesi di Montreal

Peeranut Visetsuth

F/M BOTH (monthly donor)

Lauren Stewart (monthly donor)

The Costa Rican Electricity Institute ([ICE](#)) reported that in the past two years it has spent ¢250 million (\$460,000) on measures to protect wildlife, particularly to prevent animals from dying while using power lines to cross between trees.

ICE's report, issued Friday, notes that the state-run utilities company has installed 20,425 devices in the past 24 months to prevent birds and arboreal mammals from touching power lines along 248 kilometers of roads in the central, southern and central Pacific regions of Costa Rica.

Workers also installed 10,000 anti-climbing devices on utility poles and stabilizing wires to prevent arboreal mammals from crawling up the poles after they descend from trees.

ICE's environmental manager Miguel Víquez said the measures particularly benefit the four species of monkeys that live in Costa Rica, in addition to sloths, kinkajous, opossums and other species that live in the upper layers of trees.

COTERC receives no government funding and depends on your generosity to continue our work. Please consider making a donation. You can make a one-time donation or arrange for a monthly withdrawal easily through Canada Helps. Just go to their website

<https://www.canadahelps.org/en/donate/>

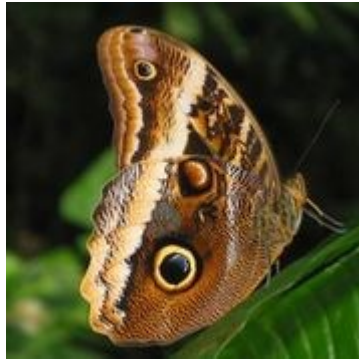
Click on "Find a Charity"

Type in COTERC and then follow the instructions.

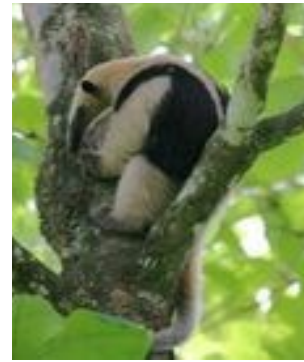
Whether the amount is \$5 or whatever, your donation is greatly appreciated — and Canada Helps issues a tax receipt directly to you.



Geoffrey's Spider Monkey



Owl Butterfly



Tamandua

Canadian Organization for Tropical Education and Rainforest Conservation

Free Membership Application Form

Surname: _____ Given Name: _____ Initial: _____

Email _____

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: _____

Please mail form to Box 335, Pickering, Ontario L1V 2R6, Canada or order online at <http://www.coterc.com/store/c5/Memberships.html> Or info@coterc.org

ADVISORY COMMITTEE

Dr. Robert Murphy

Dr. Fiona Reid

Dr. Peter Silverman, Order of Ontario

Dr. Wm. Rapley

Raphia Editor & COTERC

Co-founder Marilyn Cole

**CONTACT US AT
INFO@COTERC.ORG**

BOARD OF DIRECTORS

Chair Marilyn Cole

**Vice-Chair
Shelley Hutchinson**

Finance Vacant

Marketing Alex Lee

**Membership & Archives
Jim Taylor**

Education Anders Holder

**Site Services
Dr. Kimberley Snarr**

**Conservation & Research
Dr. Nathan Lovejoy**

**Director of Special Events
Sruthi Surampudi**

**Director at Large
John Gormaly**

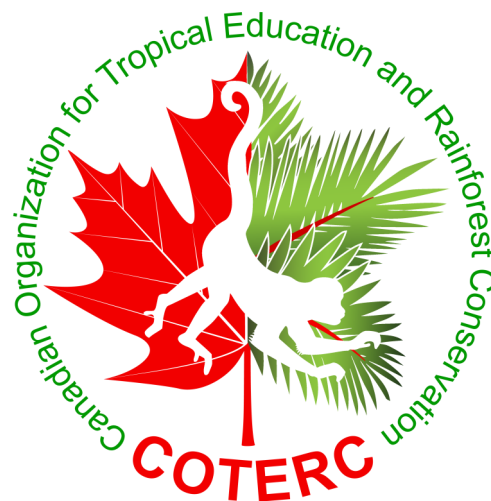
**Director at Large
Tom Mason**

**Director at Large
Dr. Kevin Kerr**

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

**Box 335
Pickering, Ontario L1V 2R6,
Canada**

info@coterc.org



We're on the Web!

www.coterc.com

**Facebook—Canadian
Organization for Tropical
Education and Rainforest
Conservation**

Twitter @Coterc

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 chair@coterc.org

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