

COTERC 25/

LEATHERBACK EDITION



Found in all the oceans except the Arctic, the leatherback turtle has the widest worldwide distribution of any reptile – and possibly any vertebrate except *homo sapiens*. But maybe we humans don't like the competition for that title since we're doing our best to wipe the leatherback out.

Currently, the leatherback is considered endangered everywhere except for the Northwest Atlantic (including the Caribbean) subpopulation, which is considered stable. In some areas such as Thailand and Malaysia, poaching has wiped out the leatherback. Perhaps it has reached this endangered status because nesting occurs mostly in impoverished tropical locales. Both the eggs and meat can bring in much-needed cash and protein to a poor family. In the Caribbean, some consider the eggs an aphrodisiac.

There are other reasons for the leatherback's decline. As we continue to quench our huge appetite for beachfront property, we continue to destroy nesting sites. As well, since leatherbacks can't hold their breath for long when struggling to escape a driftnet, they'll die quickly. They can also become snagged on one of the hundreds of hooks baited for longline fishing. Dogs raiding nests for eggs are quite a problem. And leatherbacks are particularly vulnerable to ingesting plastic bags floating around the oceans since the bags resemble jellyfish, a favorite food of leatherbacks. The bags can obstruct their digestive tracts, inhibiting the passage of nutrients into their stomachs. If it doesn't kill them, it can inhibit growth and the onset of sexual maturity – not good for the future of any species. [\(Cont'd on Page 3\)](#)





NOTES FROM THE CHAIR

Marilyn Cole

I know that many of our members go off to do various exciting fieldwork during the summer months, so first of all I'd like to welcome you back, and hope your studies were successful.

Fall is suddenly here, and with it is our next event – COTERC 25 celebrating twenty-five years of operations here in Canada and in Costa Rica. It hardly seems possible that so much time has flown by. From our humble beginnings - a plot of rainforest with only a thatched hut - we now have a flourishing field station with accommodation for over thirty people in various buildings, along with a small "flotilla" of watercraft. I am proud to say that we have initiated a number of projects at Cano Palma Biological Station including sea turtle monitoring/shorebird census/snake census/caiman census/mammal tracking/plant phenology/migratory bird monitoring/weather statistics/and marine debris. And we have hosted scientists from around the world who take on their own study projects. In Canada we have provided workbooks for teachers according to the curriculum set out by the Ontario school system, and we have hosted seminars on topics relating to the rainforest. We have welcomed researchers, students and naturalists from over 35 countries to Cano Palma Biological Station, Canada's only independently operated science station in the Costa Rican rainforest!!

In Canada, we are all volunteers, so administration costs are very minimal. The fees collected at the station cover the majority of the day-to-day operational costs. However, the rainforest is hard on buildings and equipment so that we are constantly having to replace or rebuild. All of this takes money, of course, and the station depends on its Canadian parent charity to help out. Hence, we do our part to raise monies for ongoing repairs, etc. with fundraising events.

COTERC 25 will be a wonderful opportunity to celebrate our accomplishments and we would love to see you there. The date is Saturday Nov 5th. The location is Deer Creek Golf Club, 2700 Audley Road North, Ajax, Ontario.

Tickets for the event include a wonderful dinner, live and silent auctions, door prizes, live music, and a wonderful trip down memory lane. The price is only \$75 in advance, or \$80 at the door, and you can buy your tickets online at <http://www.coterc.com/coterc25.html>.

I know that many of you don't live in the area, or in Canada for that matter, so I would like to invite you to make a special donation in celebration of our 25 years of conservation work. You can contribute through Paypal or Canada Helps at <https://www.canadahelps.org/en/> (type in Canadian Organization for Tropical Education and Rainforest Conservation) or send a cheque to COTERC, Box 335, Pickering, Ontario L1V 2R6, Canada. Any amount will be gratefully accepted and you can receive a tax receipt in exchange.

Thank you all for your support. It is greatly appreciated.



FOR THE PAST 25 YEARS,

WE'VE REPEATEDLY SAID THE SAME THING,

“WELCOME TO THE JUNGLE”

See next page to see how you can celebrate

(Cont'd from Page 1)

Was leatherback nesting at Caño Palma successful this year, you're asking. During the March to May nesting season, only 15 leatherbacks nested in 2016. This is down from 34 nests in 2015. A similar decline took place at the Sea Turtle Conservancy, 8 km away in Tortuguero. However these declines are not typical as the population trend for Northwest Atlantic leatherbacks has been increasing. In fact, just 38 km south of Caño Palma at Parasmina (Save the Turtles), this season's nesting activity was in line with expectations. This suggests that whatever is causing the decline in the Tortuguero area is due to extremely localized factors. Molly McCargar, our Research Coordinator, has initiated genetic sampling of embryonic tissue in order to get an idea of whether leatherbacks that once nested in our area have shifted to using other nesting areas.

On the Pacific side of Central America, the situation appears to be improving. However, the East Pacific leatherback has a long ways to recovery as the IUCN rates it as Critically Endangered. Still, Costa Rica and Mexico have put in place reasonably effective long-term monitoring and conservation programs. Nicaragua has been slowly improving with similar measures.



LEATHERBACK HATCHLING
ENTERING SEA

Why Do We Fundraise?

As Marilyn observed in her "Notes", maintaining facilities in a tropical climate is challenging. High temperatures and high humidity provide the perfect scenario for bacteria, molds, etc. to do their dirty work, breaking down whatever they can. Termites are always ready to go into action. And then there's the flooding during the rainy season, which inundates some buildings.

Keeping Caño Palma's infrastructure in workable shape is a problem that Manuel has to address every day. But sometimes major projects like the restoration of the Mason dock require outside contractors. Materials are expensive. So, when we do fundraising events like COTERC25 and Fiesta Verde, you'll know that your dollars are keeping our facilities in shape for the many volunteers and researchers who come to Caño Palma.

To give you an idea of the types of maintenance required, here's a list of some of the issues that our Director of Site Services, Dr. Kym Snarr, identified on her recent trip to Caño Palma.

- **Dock** - Urgently in need of repair as the base has deteriorated to the point where Manuel's interim measures to stabilize it can't be carried out much longer.
- **Main building** (dining/kitchen, office) - Due to flooding, it needs to be raised. Termites are damaging the walls.
- **Library** - Entry steps need to be replaced. To enhance the desirability of the station as a research facility, it's been proposed that a second storey be added as lab space.
- **Dorm washrooms** - Stairs are collapsing on dorm side.
- **Jungle washrooms** - In rough shape as the concrete floor has deteriorated down to the rebar. Termites are also an issue.
- **Shower area** - Convert to using rainwater rather than the iron-laden groundwater, which stains the tiles and has a strong sulphur smell.
- **Antenna** - A tree fell on the antenna, preventing radio communication. Proper materials to re-erect it have been difficult to find.
- **Storage room on dock** - Often flooded. It needs to be raised when new dock is built.



Poaching Update

You can see from the disturbing image to the right that sea turtles continue to be poached despite the noble efforts of our volunteers who are out on the beach all night long. It seems that local young men are now being joined by outsiders from further up the coast. They have discovered that poaching is not too difficult and a relatively easy method of making money. To quote from our Facebook page:

"After two of the lowest nesting seasons on record, we were relieved when the green turtles started flooding onto the beach in September. Our joy fast turned into dismay however, as night after night these girls are being dragged off the beach to be slaughtered. Some they're taking alive, tying and flipping over to ship out later. Others are cut up right on the beach edge, with meat and eggs taken house to house for sale."

We know exactly who's doing it, and we call in everything we see and hear to the authorities, but this new generation of poachers, all in their teens and early 20s, are getting away with murder.

There's no incentive for them to stop. This is the "easy money, work your own schedule from home" that many aspire to. We can only keep going, save the girls we can, and hope that resources are allocated that will make this area a wildlife refuge in more than just name."

Local authorities are having a hard time dealing with the problem as their area of responsibility is vast. We can only do so much to combat this problem, but educating the young children in conservation methods is one of our primary goals, and it is in this regard that our interns work closely with the schoolchildren to help them appreciate the wonderful wildlife that surrounds them.



LEATHERBACK

What Is a Leatherback

- It's the largest of all turtles at up to 2.2m (7') long and 700 kg (1500 pounds). In fact, it's the 4th largest reptile after 3 crocodilians.
- Leatherbacks can speed through the water, challenging the slowpoke image of turtles. Their swiftness is generated by large paddle-shaped front flippers that average about 2.7m (12') from flipper tip to flipper tip that combine with the hydrodynamic shape of their carapace with its 7 longitudinal ridges.
- Leatherbacks remain in motion almost 24 hours a day. When combined with a thick layer of insulating fat, a circulatory system that minimizes heat loss in the flippers, and a large body mass, this heat-generating activity maintains their core temperature at up to 18°C (32F) above the surrounding water. These adaptations enable some leatherbacks to feed as far north as Newfoundland and Norway in cold waters that are highly productive for jellyfish.
- Maybe the leatherback is active 24 hours a day because it has to eat so much to get enough nutrition from the jellyfish it mainly feeds on. Jellyfish are mostly water and provide little nutrition.
- It's the only sea turtle that doesn't have a hard shell. Instead, its carapace is a layer of thin, tough, leathery (hence leatherback) skin with the texture of hardish rubber.
- The leatherback can dive to depths of up to 1280m (4200'), making it one of the deepest diving marine animals. To handle the pressure at such depths, its skin is reinforced by thousands of bone plates that have the ribs and vertebrae fused to them. This gives the skin some strength yet allows flexibility. A more rigid structure such as other turtles have would be crushed by such pressure.
- To feed, leatherbacks typically dive from 3 to 8 minutes though they have been recorded below the surface for up to an hour.
- Leatherback throats have backward-facing spines to prevent prey from escaping and to help swallow food.



LEATHERBACK MOUTH
SHOWING SPINES

- Leatherbacks have no other gear but forward. Not being able to back up presents deadly difficulties when they become entangled in a net. And their constant impulse to move forward makes them impossible to raise in captivity as they persistently bump into walls, eventually injuring themselves. This has prevented scientists from studying leatherbacks. It also prevents "head-start" programs, which would raise leatherbacks in captivity to a size that would give them a better chance of survival when released back into the ocean.
- Leatherbacks migrate further than any other reptile. Western Pacific leatherbacks undertake a 3500-mile migration across the Pacific Ocean, perhaps the longest migration of any air-breathing, aquatic marine vertebrate.



Donations - On a recent trip to Costa Rica, CO-TERC members filled up their remaining baggage-weight allowance with items to replenish Cano Palma's kitchen, office and dormitories. After unpacking and laying it all out for the above photo, it was surprising to see how much we managed to transport.

Tea towels, storage containers, mugs and utensils were a big hit as was the large jar of hardware and hooks for general maintenance use. Other things to make day-to-day life a bit easier were pens, elastic bands, sheets, pillowcases, clothespins, safety pins and a good quality flashlight. Kid books in Spanish and crayons go to the library in San Francisco.

The biggest smiles were for the 8 pounds of chocolate chips to make the cookies to fuel up the turtle volunteers on their patrols!

Many thanks to the thoughtful donors:

- Joan and Mike Kunanec
- Rosie Brachman
- Peter Hoyle
- Lina Seow
- Susan Kunanec
- Joanne Smith

Station Wish List

Listed below are items the station always on the lookout for. If able to donate any items, you can give them to a Director and they'll ensure they're transported to Caño Palma at the earliest opportunity. You could even bring them to CO-TERC25 if you're attending. Please ensure items are in good shape and working order.

- Laptops
- Head lamps
- Field guides inc bat guides
- Waterproof paper
- Rite in the Rain notebooks
- Sharpies
- Pencils
- Backpacks
- Rechargeable batteries (AA or AAA)
- Battery rechargers
- Cameras inc waterproof
- Photo tank
- Binoculars
- 2m or 50m measuring tapes
- Dry bags
- GPS
- GPS dry bags
- Radio dry bags
- Kit dry bags
- Ziploc bags - various sizes
- Latex gloves
- Radios
- Refractometer
- Dissolved oxygen meter
- Snake bags
- Snake hooks
- Tubes
- Aluminum tubing
- Scales
- Scope
- Egg counters
- Tagging pliers
- Tag removers
- Aluminum tags
- Metal tags
- Tag reader
- Flagging tape
- Pit tags
- Fishing line
- Fishing wire
- Rope
- Netting
- First aid kits - inc restocking items: bandages, scissors, gauze, disposable gloves, alcohol wipes, antiseptic (Polysporin), peroxide.



Website - www.coterc.org

Facebook - Canadian Organization for Tropical Education and Rainforest Conservation

Instagram - [canopalmabiostation](https://www.instagram.com/canopalmabiostation)

Twitter - [@coterc](https://twitter.com/coterc)

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

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<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.

Canadian Organization for Tropical Education and Rainforest Conservation

Free Membership Application Form

Surname: _____ First Name: _____ Initial: _____

Email _____

As a member of COTERC, a copy of our quarterly newsletter "*Raphia*" will be sent to your primary email address unless you check one of the following options.

- Do not email the newsletter to me. Please send a hard copy to my Mailing Address
- I do not wish to receive the "*Raphia*" newsletter

MAILING ADDRESS:

Address _____ Apt: _____

City: _____ Province/State: _____

Country: _____ Postal / ZIP Code: _____

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

Or order online at www.coterc.com/store/c5/memberships.html

RECIPES FROM CAÑO PALMA BIOLOGICAL STATION - ORDER FORM

If you have ever visited Caño Palma, you will want this souvenir, whether you can cook or not!! The divider pages feature colour photos of people, wildlife and station buildings, while the delicious recipes speak for themselves! Marilyn Cole gathered recipes from the cooks, staff and volunteers and compiled the best into this unique cookbook. The Hints and Definitions section feature suggestions that all volunteers need to know! You can order online at http://www.coterc.com/store/c1/Featured_Products.html or contact info@coterc.org (PayPal or cheque)

ORDER FORM

COTERC
Box 335
Pickering, ON L1V 2R6

Please send _____ copies of this cookbook at \$20 each plus \$ _____ postage and handling for each copy ordered.

Name _____

Address _____

City _____

State/Prov _____ Zip/Postal Code _____

Telephone _____

Email _____

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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@cotercc.org

Contact us at

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