The Canadian Reptile Breeders Expo is Canada’s largest reptile and amphibian specialty event held annually for two days in Toronto. This year the show was held on Sept. 14 and 15 at the International Centre, and many vendors were there from all over. Their wares included original art (including Lori Dunn, a supporter of COTERC), beautiful snakes with unusual markings, a radio station dedicated to conservation and wildlife (urbanjunglesradio.webs.com), caging, crickets and other specialty food items, and organizations such as COTERC promoting wildlife conservation and/or rescue. The CRBE promotes captive propagation of reptiles and amphibians, as opposed to purchasing wild-caught animals and specifically did not allow any large pythons or other animals.

As an added attraction, there were seminars given by different presenters including Creature Quest, Little Ray’s Reptile Zoo, Reptilia, Hands on Exotics and Sciensational Sssnakes. Special guests included Greg & Michael of the Python Hunters, Bill Love (a pioneer of the reptile hobby) and Ton Jones (Auction Hunters). Shawn Blackburn, Jim Taylor, Susan Kunanec and Marilyn Cole took turns manning the COTERC booth over the weekend and there was considerable interest in our display, particularly our new interactive quiz.

As many of our members and volunteers at Cano Palma Biological Station are herpetologists, this show was very useful in introducing COTERC to many more interested herp people.

In future we would like to do similar displays at shows that promote wildlife and conservation.

If you have any suggestions, or would like to volunteer at such an event, please contact vice-chair@coterc.org.
COTERC’s New Educational Quiz

Thanks to the efforts of Jim Taylor and Tom Mason, COTERC has a new tool to promote wildlife information and conservation at events and shows.

An interactive computer quiz was introduced at the Canadian Reptile Breeders Expo. Basically the quiz asks the reader to pick the correct answer from a group of four statements or photos. If the reader chooses the wrong answer, the correct answer is highlighted, thus encouraging the participant to learn something new.

The quiz has various levels of knowledge, so that it challenges novices right up to experts. We had many children in particular who took the quiz, while their parents watched and it turned out to be very popular. In fact, one young girl was determined to get all the answers correct and spent quite a lot of time, going over the answers that she had initially got wrong!

We were pleased at this initial testing of the quiz at the CRBE show and look forward to utilizing it as part of our education initiative.

At present the quiz is only finished for reptiles and amphibians and we want to expand the quiz to include all other taxa (mammals, fish, invertebrates, plants, birds) that are found in Costa Rica.

If you would like to help out with this project, please contact Jim Taylor at membership@coterc.org

Finance Report

From the finance standpoint, there is nothing new to report as we as a board are currently in the process of brainstorming ideas for fundraising activities in order to sustain operations and promote the COTERC brand. On a complete side note, I was reading an article recently about the concept that "there is no economy without ecology." In applying this statement to COTERC, I realize that the charity is very important to our economic growth now and in the future. As COTERC does research in the field of migratory birds, marine life and tropical rainforest conservation, a lack of proper research in these areas may have negative impacts on the short and long term economy. Therefore, COTERC’s operations are not only important from a scientific point of view but also from a business/finance point of view as well.
Another busy summer has passed at Cano Palma Biological Station. Under the strong leadership of Charlotte Foale and Manuel Arias, the station has been extremely busy and continues to provide research and learning opportunities to the global, national, and local community.

Research has been an important component at the station. Our founder, Marilyn Cole, in the early 1990s, recognized the importance of understanding this extremely rich ecosystem. Each station manager, scientific manager, and research coordinator, bring to the table their own research interests while continuing to develop and maintain the ongoing monitoring research at the station.

Our former station manager, Paul Grant, has recently published an academic article in the journal, Environmental Toxicology, along with colleagues, Millon Woudheh and Peter Ross. The article is titled: Pesticides in Blood of Spectacled Caiman (Caiman crocodilus) Downstream of Banana Plantations in Costa Rica (Vol 32, No 11, 2013). Paul’s interest in this subject area was stimulated during his time at the station in 2001-2002, which culminated in a number of articles and posters related to caiman (pesticide contamination (2007), opportunistic foraging (2008), etc). His recent publication has caught the interest of the science world who reported his findings on National Geographic, NPR, the Guardian, Wiley, and others through the reporting of findings indicating that pesticide use in banana plantations is impacting a high trophic level species inhabiting one of the most important wilderness areas in Costa Rica (Tortuguero National Report) as indicated by blood samples from caiman. The links below can be followed for this news release.


http://www.theguardian.com/environment/world-on-a-plate/2013/sep/19/bananas-pesticides-spectacled-caiman-costa-rica


We applaud this work and all research which comes from the station. Other station managers, such as Dr. Todd Lewis, continue to publish on findings from the station. We will feature the recent publications of Lewis and others in the next Raphia. All publications and report which are received by COTERC and CPBS are uploaded and/or details made available on the station’s website. This allows public access to all historical and recent publications so that current and incoming researchers can build on which aspects of the ecosystem have been examined.

Our research coordinator, Aidan Hulatt, completed his contract last winter and is now back in England. During the vacancy period, we have had Shea Gibbs covering as an interim assistant. He has been developing his reporting skills and has gained experience in this role. We have found a replacement for Aidan this summer. Elias Bader will step into the role of research coordinator in January 2014. Hailing from Switzerland, he brings a great depth of experience to the position with a strong diverse background. With a Masters of Science in hand, he has worked in research projects involving a wide variety of taxon including bats, birds, freshwater fish, amphibians, and invertebrates. This broad background will help him manage the ongoing monitoring projects in place at CPBS and in developing his own personal research which we strongly encourage.

Continued on Page 4
Book Review — A Must Read for Conservationists

Nature Crime: How We’re Getting Conservation Wrong by Rosaleen Duffy
Yale University Press (Aug. 31 2010)

Selected as a Choice Outstanding Academic Title for 2011 in the Biology category

Dr. Duffy is Professor at the Centre for International Politics, Manchester University, UK. Her book investigates the world of nature conservation, arguing that the West’s attitude to endangered wildlife is shallow, self-contradictory, and ultimately very damaging. Duffy pulls no punches in this extensively researched book, pointing out that the illegal black market in the wildlife industry is often the direct result of Western consumer desires, from coltan for cellular phones to exotic meats sold in some restaurants in Europe and the UK. She looks at the role of ecotourism, showing how Western travelers contribute—often unwittingly—to the destruction of natural environments. Most disturbing is her argument, that the mindset of Western-style conservation often result in serious injustice to local people, who are branded as “problems” and subject to severe restrictions on their way of life and even extrajudicial killings. This is a book that really makes you think twice about the term “conservation” as we define it.

Report of Conservation & Research  (continued from Page 3)

With the coming end to the Turtle Monitoring Project, Raul Garcia and Nadja Christen, our head turtle interns, are working up the year-end reports. This project has brought in a large number of volunteers and interns to the station over the years, and this year was no exception. Most nights, three patrols were on the beach, working the turtles and collecting data. Their hard work and community involvement has furthered the project towards carrying out its original mandate.

While the wet season is arriving and the number of people at the station becomes smaller, Vanier college interns, volunteers, and researchers are expected to continue the monitoring work and carry out their work research interests this winter.
A Volunteer’s Point of View

Anouk points her binoculars high up in the rainforest canopy. Joanne and I struggle to hold the pose. Our necks are stiff and tired. We swipe at the bugs. Anouk remains focused. The howler monkeys are not cooperating. We lose them in the foliage. We start the count again. And again. Half an hour later, Anouk still has her gaze on them. Once she’s determined the troop’s size and composition, she strains through another half hour detailing the activities of individual monkeys. Then we set off to find another troop. We go through the ache producing process again. If we’re ‘lucky’, we’ll find a third troop. But the sun’s going down. We’d better head back. Joanne misses a bend in the path and we end up in quicksand over our knees. 15 minutes of struggle and we’re back on a trail. The wrong one. We’re lost. Light is fading. Anouk remains calm though she has to be beat. She trusts her GPS. I’m getting nervous. The jungle’s thick. She leads us on and on. Until we find the path. As we paddle back to the Cano Palma compound, I reckon that Anouk has what it takes to be a researcher.

Why should you be interested in Cano Palma? It’s just a lonely research station in an isolated piece of Costa Rica (in the Barra del Colorado Wildlife Refuge, up near Nicaragua). First of all, it’s an adventure. Just to get there is a 40-minute boat ride. You’ll be living in the jungle. You’ll be walking the Caribbean beach searching for the turtles that come here to lay their eggs. The call of the howlers will greet you every morning. And you too will find the quicksand.

Or you might know a young person who would benefit from working at a research station. For that’s the mission of Cano Palma: to provide leadership in education, research and conservation in the tropics. Fledgling scientists work with people like Nadja, a young Swiss marine biologist, who is a head turtle intern. She guides Anouk and all the other interns on a daily basis in their development as researchers. This fits perfectly with her own goals: improving her leadership skills, contributing to the station’s conservation work with sea turtles, and gaining valuable work experience.

Your fledgling will be learning. On our second day, Joanne and I attend our first Turtle 101 class along with 4 other newcomers. If we pass this course, we’re on our way to becoming turtle-patrol leaders. Tomorrow we’ll hear presentations from the interns on the progress of their research. Everyone attends. And it’s not just a learning experience for the audience. Kas is a student at the HAS University of Applied Sciences in the Netherlands (as are Anouk and Esmee). Already a formidable ornithologist, Kas outlines an ambitious study he’ll be doing on the migration of the eastern kingbird. He’s closely questioned on the heavy workload he’s set himself. Also having that problem is Alexandra, a Romanian with a Ph.D. in neuroscience (now unwinding by doing a Masters in conservation biology!) She’s studying the effects of beach erosion on turtle nests, but she has so much shoreline to measure. The group spends a lot of time assisting her with solutions.

Your student will work hard. At 5 my first morning, I’m sent out with Peter, a Barrie native taking a year off from his biology studies at Trent University, on the regular morning turtle patrol. We double-check the measurements made in the dark last night that mark where the huge leatherbacks laid their eggs. To show I’m ready for this place, I walk in the softest sand. Three miles up the beach, under a blazing sun, I’m begging for the end. But the end is 3 miles back. We return in time to catch Zac’s daily show.

This tropical ecology graduate of Sir Sanford Fleming jumps off the station’s dock and always comes up with one - sometimes two - of the river turtles he’s studying.

They’ll meet people with a mindset similar to theirs. Molly, a San Franciscan, is here to do a long-term project before she enters the graduate program in marine biology at Columbia. Braden, a farm lad from southern Saskatchewan, wants to back up his degree in environmental biology with some experience in a tropical ecosystem. Stuart, a Brit who works in IT, is expanding his knowledge and experience in conservation. Two more IT guys from the Calgary oil industry, Juan and Matt, are here to upgrade the station’s database and map out Cano Palma’s boundaries - which turned into a 5-hour slog through waist-deep muck. And then there's Aidan, the camp’s science director, who climbs to the rainforest canopy to gather lichen for his own research.
Did you know.......  

Toucans are opportunistic eaters and will eat canopy fruit, insects, small mammals and reptiles, and occasionally the eggs of other birds.

The birds' large beaks are useless as defensive weapons although they might deter some smaller predators.

Predators of toucans include wildcats such as jaguars and pumas, and birds of prey such as eagles. Snakes and climbing rodents are more dangerous to toucan chicks and eggs that are still in the nest.

COTERC On The Radio

COTERC Director Tom Mason was recently the guest speaker on the Under the Sea Radio Program. This edition, entitled “Wild Night (COTERC), Costa Rica” is part of Under the Sea Radio Program co-hosted by Brian Perkins, of “Wild Peru” and Paleontologist and Researcher Ken McKeighen from New Mexico Museum of Natural History and Science.

Tom spoke to them a couple of years ago and was invited back to appear on the Monday, October 28th edition. The web page features a video taken by Matt Graham when he visited Cano Palma. See http://underthesearadioprogram.yolasite.com/wild-night-coterc-costa-rica.php

According to their website, “This series takes a look at some of the natural habitats where we can truly look at species of fauna and flora in their natural habitats and think about the issues of conservation of these ecosystems and species from the aspect of both the pet keeping hobby and the issues of public aquariums and zoos.” To find it check out http://www.blogetalkradio.com/wm-aquaculture/2013/10/29/wild-night-coterc-costa-rica

Tom kept Dr. McKeighen captivated with his tales of what can be found at Cano Palma, who was so enthusiastic, that it wouldn’t be a surprise to see him visit the station in the future!

A Volunteer’s Point of View  

(Continued from Page 6)

All this is provided by a Toronto group, the Canadian Organization for Tropical Research and Rainforest Conservation (COTERC). Founded in 1991, COTERC doesn’t have a direct connection with the Toronto Zoo though several of its directors do. At www.coterc.org, you’ll find loads of information on volunteering and internships. And you can find out how to contact Charlotte (station@coterc.org), the energetic station manager, Charlotte Foale, a leader who has a scary ability to cultivate the best in people. Her co-manager and husband, Manuel, has incredible savvy about the jungle. Cano Palma is an inspiring place.
This month we were contacted by Isabel Peterson, the coordinator of the Pacuare Nature Reserve research station in Costa Rica. For the first time in the history of the reserve, they encountered nesting leatherbacks with CP tags on their beach. They inquired when these six individuals were originally tagged, and in return offered us information on their nesting activity on Pacuare beach. Data exchanges like this one are a very interesting and important addition to our own data collection and good relationships among research stations are highly important and desirable.

Survey Effort
From 1–30 September 2013, Morning and Night Patrols were carried out every day between mile 0 (mouth of river Tortuguero) and 3 1/8 (Laguna Cuatro).

Night Patrol (PM)
Throughout September a minimum of one and a maximum of four PMs were on patrol each night. Due to a substantial reduction in personnel on base, the number of available patrol teams decreased rapidly towards the end of the month. Each PM team patrols for a minimum of 4-5h (5h if two teams or less) and covers a distance of 6.5 - 10 miles (if no turtles are encountered). We were constantly present on the beach for an average of 6.6 hours every night, spanning the hours between 19:00-06:00.

NESTING ACTIVITY
From 1 – 30 September 2013 a total of 80 nests were found on Playa Norte (76 Green Turtles (Chelonia midas [Cm]) and four Hawksbills (Eretmochelys imbricata [Ei]). For 60 of those nests the turtles were worked, 20 were recorded without the presence of the turtle. Out of those 60, 18 Green Turtles (Cm) and one Hawksbill (Ei) were RECs. 34 of the Green Turtles (Cm) and two Hawksbills (Ei) were REMs or RENs. In addition, during Morning and Night Patrols, a total of 294 half moons were recorded: 286 Greens (Cm), 8 Hawksbills (Ei).

The Environmental Commission of Costa Rica’s Legislative Assembly on Thursday approved the drafting of a bill aimed at punishing those who mistreat animals.

The initiative would amend various articles of both the country’s Penal Code and the Animal Welfare Law, establishing penalties of up to three years in prison for anyone who mistreats or causes the death of animals with or without a justified cause. The bill also would punish those promoting or conducting fights of any species, or those who subject animals to excessive work.

It calls for prison sentences for people who fail to provide proper care for animals, and prohibits breeding, hybridization and training aimed at making animals more aggressive.

Citizen Action Party lawmaker Claudio Monge, one of the bill’s promoters, said he is satisfied with the new piece of legislation, as “it provides appropriate regulation to prevent cruelty and abuse against all animals.”

The bill will go to discussion before an approval by the full Legislative Assembly.

Earlier this week, officials of the Carara National Park denounced the killing of a deer and her fawn on a farm next to the park.

Last August, more than 12,000 Tico animal lovers and their pets marched down the Capital’s Second Avenue to demand approval of this legislation.

Tico Times
Friday, November 1
The proliferation of cell phones, game consoles and other electronic devices in the past decade or so is something that has come to be considered a necessity. Many people are persuaded to upgrade their models to the latest and greatest but are unaware of the affect they are having, not only on deforestation but also on mass killings and child slave labour.

The metal coltan (short for columbite-tantalite) is a valuable metal ore from which the elements niobium (formerly known as “columbium”) and tantalum are extracted. Tantalum from coltan is used to manufacture tantalum capacitors, used in many digital products such as cell phones, gaming systems and virtually all of our electronic toys.

The major source of coltan at the moment is in the Democratic Republic of Congo (DRC), formerly known as Zaire, but smaller amounts are mined in countries such as Australia, Brazil, Costa Rica, even Canada as well as China, Thailand and Malaysia. Approximately 71% of global tantalum supply in 2008 was newly mined product, 20% from recycling, and the remainder from tin slag and inventory.

The extraction of coltan in the DRC has wreaked havoc on this nation, in a number of ways. The method of mining is destroying animal habitat, particularly that of Mountain Gorillas and Chimpanzees there and in neighbouring countries. Illicit mining frequently occurs in national parks and land reserves. The money made from such mining is paying for militias in the area's civil wars. Since 1998, an estimated 5.4 million people have lost their lives in the DRC, as a result of conflict at the hands of many different armed groups, including their own government and security forces. Corruption is rampant and, as the demand for coltan increases, wealthy military and political leaders finance their wars with coltan production.

Documentaries such as Blood in the Mobile have highlighted the impact of coltan in the DRC. Like the African diamond industry before it, the blood of Congolese miners is inherently related to coltan mining. For some Congolese people, mining is an opportunity to earn a living that brings needed money to the family much more quickly than farming. Miners earn a higher wage than most other workers, but pay dearly with backbreaking work under unsafe conditions. Their families go with them to the mining camp, and often children are put to work in the mines. The children drop out of school, thus perpetuating the dependence on mining into the next generations. They work long hours in the mines, virtually as slave labour, and never know the joy of play, often too exhausted to do anything but eat and sleep and return to work the next day, seven days a week.

In contrast, Magma Coltan is a Costa Rican firm that claims to comply with “all local laws protecting the environment and guaranteeing the highest quality standards in both product and production process“.

According to an article on the website Cellular News, coltan mining in the DRC, as opposed to its mining in other countries, is extracted in a much more destructive way. First workers clear the land of all vegetation, making it easier to strip away the underlying mud. Miners then dig through the mud in the bottom of a stream by hand, creating craters. The mud gathered from the forest is then dumped into the stream and then sloshed about, causing the heavier coltan ore to sink to the bottom where it can easily be gathered. Countries other than the DRC often smuggle coltan from the DRC and then sell it to foreign countries. Reportedly, Rwanda has made as much as $250 million from coltan mining over an 18-month period. The military forces of Uganda and Burundi are also implicated in smuggling coltan out of Congo for resale in Belgium.

Unfortunately, this process causes environmental degradation in the streams and surrounding forest. Also, since this mining is often done in remote areas, the miners survive by eating bush meat, some of which is from the endangered Mountain Gorillas, whose numbers have decreased dramatically. Eastern Lowland Gorillas, have been slaughtered, their numbers plummeting by 90 per cent in recent years. The number of chimpanzees and other wildlife has also been devastated, as more and more miners make their
into previously inaccessible forest.

For more information, read “Rift in Paradise,” written by National Geographic in its November 2011 issue.

Due to the damage caused to the Gorilla population and their natural habitat, companies that use coltan are now starting to demand that their supply only comes from legitimately mined sources and is not a byproduct of the war.

American-based Kemet, the world's largest maker of tantalum capacitors, has asked its suppliers to certify that their coltan ore does not come from the DRC or from neighbouring countries. Such moves could lead to "Gorilla Safe " cellphones being marketed, much in the same way that Tuna meat is now sold as "Dolphin Safe" (Cellular News)

**WHAT CAN WE DO?**

* **Recycle your cell phones and other electronics.** Get together with your colleagues and collect as many as you can and return them to an electronics store that recycles, or else a local recycling centre.

* **Think twice before buying a new electronic gadget.** Do you really need it? Will your old one do?

* **Support groups promoting ethical mining**, such as [http://www.gorillas.org/Project/Detail/Durban_Process_for_Ethical_Mining](http://www.gorillas.org/Project/Detail/Durban_Process_for_Ethical_Mining)

*The extraction of coltan in the DRC has wreaked havoc on this nation... The money made from such mining is paying for militias in the area’s civil wars*

* **WWF Great Heart of Africa Initiative** is looking at various projects, one of which is “credible certification and internationally recognised social and environmental standards in all key extractive industry sectors.” [http://wwf.panda.org/what_we_do/where_we_work/congo_basin_forests/wwf_solutions/](http://wwf.panda.org/what_we_do/where_we_work/congo_basin_forests/wwf_solutions/)

There are no easy answers, but we can help by becoming aware of the problems and spreading the information to our families and friends.

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**Report from New Education Interns**

Juan Carlos Ortega and Paul Kelly have recently been appointed Education Interns and had their first sessions with the schoolchildren in San Francisco. They started with programs on the jaguar aimed at levels from Grades 1 through 6, with varying degrees of success.

They presented the different grades with activities featuring “Guess the Animal”, “True or False”, a Presentation, and a Loop Game. There were different responses, depending upon the grade level, but it seems that the Grade 4’s were the most receptive. They summarized that “The majority of the students showed enthusiasm participating in the presentation. Many of the kids already knew the differences of herbivore, carnivore and omnivore. They enjoy doing the bingo activity which they worked on in pairs. The Primates documentary film from Life series helped the students learn more about other primates and they viewed how intelligent the capuchins are in their ways of opening seeds and communicating.”

In addition to the in-class learning, Juan Carlos and Paul arranged for some of the children, accompanied by one father and one teacher, to see the process of a green turtle nesting in the shore. Raúl, a station patrol leader explained the turtle nesting process and they had the opportunity to get close to the green turtle one at a time. They enjoyed and learned about the process as well as the poaching consequences on their beach.

The library has been re-arranged and children are now allowed to take out one English or Spanish reading book for a week.

Field Day activities have also been planned every Friday, allowing children to learn to work as a team in order to complete a quiz and to win a prize.

*Congratulations Juan Carlos & Paul for your great initiatives!*
Canadian Organization for Tropical Education and Rainforest Conservation

Membership Application Form

This is a request for:  NEW Member: _____  Membership Renewal: _____  Date: ____

Membership Type:   Individual $25: _____  Student/Senior: $20 _____  Family: $40 _____  Corporate $100 _____

Surname: _____________________________  Given Name: ____________________  Initial: _____

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: ______________

Cheque, payable to COTERC  Credit Card  No.  Expiry Date  Cash

Persons visiting a COTERC station who have not previously arranged membership can pay in cash directly to the Station Manager.

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

Sloths make a good habitat for other organisms, and a single sloth may be home to moths, beetles, cockroaches, protozoans, fungi, and algae.

So remember that, the next time you think you’d like to cuddle one of these fascinating animals!