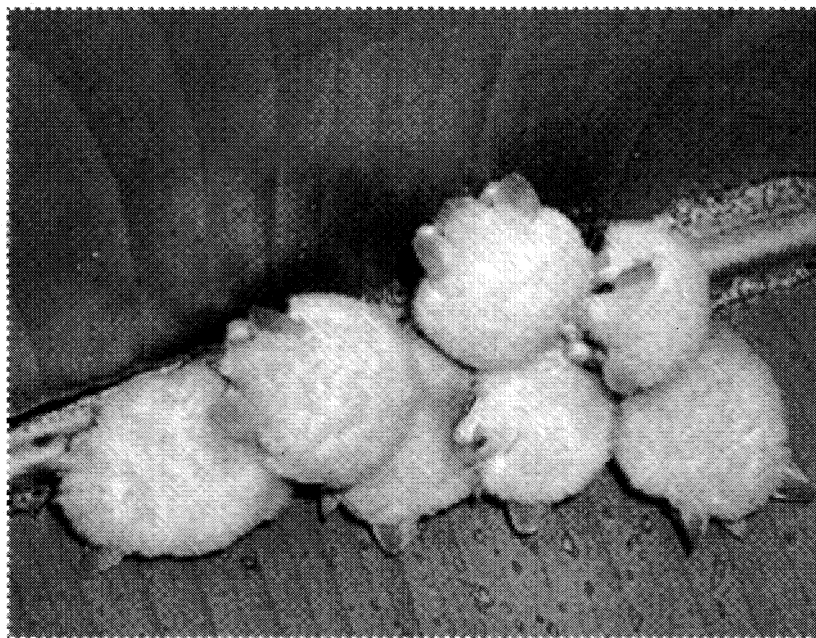


**RAPHIA IS THE QUARTERLY NEWSLETTER FOR THE
CANADIAN ORGANIZATION FOR TROPICAL EDUCATION
AND RAINFOREST CONSERVATION**



Honduran White Bats



CANADIAN ORGANIZATION FOR TROPICAL
EDUCATION AND RAINFOREST CONSERVATION

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

NOTES FROM THE CHAIR

Tom Mason

It is the last month of the year and I have been looking back to what we have done over the year. It is a long list that we have accomplished. None of this could have happened without the dedication of many volunteers and the active members of the board of directors. Thank you for giving COTERC another year.

We began with the knowledge that we had lost our most steady source of income. Bingo was gone. We had only 90 days to utilize the remaining cash and we had to think of ways to replace this resource. We also knew how much we needed to find to cover our annual budget.

Fund raising events included our first art show at Reptilia; we attended four reptile swaps and we had a raffle for a herping trip to Costa Rica. (Thanks for buying and selling so many tickets and thanks Grant Crossman for making it possible). We also upgraded and improved our website. We developed a teachers' guideline to the rainforest for the grade eleven curriculum. With our partners in Costa Rica, we developed and printed a sea turtle education brochure for tourists visiting the beach. Through some solid effort from the board we also managed to secure a \$30,000 grant for our sea turtle conservation program. This will enable us to broaden our work beyond the intern program with York University. York also had an MES student, Sami Abdelmalik, travel to the station to work on an environmental program for the school in the local community of San Francisco. We also contin-

ued our large mammal survey and our two bird surveys. The region now boasts records of close to 200 bird species nesting in the area. And we also finished with a very successful Fiesta Verde. We can now look forward to next year.

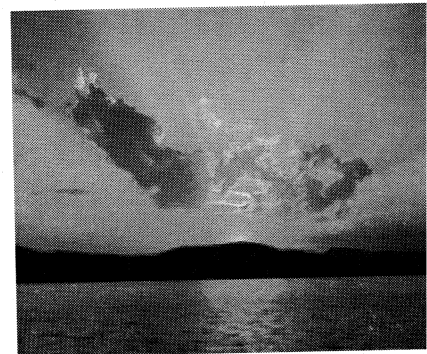
So what is planned for next year?

The grant has allowed us to develop a relationship with McMaster University Biology department. A PhD student, April Stevens will be at the station for 7 months studying the sea turtles. A work party headed by board members Greg Mayne and Kym Snarr has headed down to rebuild the showers and laundry room and work on expanding the mammal survey program. In March we will be running a silent auction for the Canadian Museum Association. We welcome any quality items that could be used. We also plan on running a second art show in April, another Fiesta Verde in the fall and we will continue to visit the Reptile Expo's and other information events across Ontario. If any one has ideas for fundraising, we would love to hear about it.

At Caño Palma we are again heading into a busy year. Global Vision International is still working through the station. They are busy with the turtle walks and their jaguar predation study. The bird studies will continue and we plan on increasing the mammal study by increasing the number of transects. We are also working on increasing our nursery of native plants for reforestation programs. Former COTERC direc-

tor, Josh Feltham has moved to the Tortuguero region for a year and has a huge list of jobs to accomplish including: producing brochures, virtual tours of the site for our website, info panels, multimedia programs for education, a guide to the herpetofauna, workshops and other activities to help us in our mandate to conserve. Josh has already been down there for two months and our manager Jonathan praises the work he has already accomplished. (Thanks Josh). Josh and hopefully I will be going down in March to run a reptile survey. The trip will cater to botanists and herpetologists, but birds and fish will also be identified. The trip is scheduled from March 24 to March 31. Feel free to call if you are interested in joining us.

I look forward to seeing what we can do and hopefully how we can bring positive changes to this fabulous corner of our natural world. I invite you all to join us in making these programs work.



IN SEARCH OF THE HERPS OF COSTA RICA

COTERC is organizing a trip to Costa Rica specifically to search for reptiles and amphibians – A camera safari. It is a trip for both beginners and experts. Unless you're a constant visitor to the Costa Rican bush I guarantee you'll see new species. After sixteen years I still find something new every time. The following is the tentative itinerary.

DAY ONE: Depart Toronto for San Jose, Costa Rica. You will be met at the airport and then we will head up the Central Valley to make a stop or two in the Braulio Carillo National Park. The first evening will be spent in Siquirres. After a meal and settling in, there will be an option to go for a night cruise or prepare for the next morning.

DAY TWO & DAY THREE: Two days of exploring the Guayacan de Siquirres. This is the forest that is famous for the bushmaster, one of the most elusive and sought after herps in the Americas. The area is also good habitat for species that are known from the Limon region. At the optimum times of day you will travel into areas of this unique forest to hunt the elusive herps. Meals will be taken at local restaurants.

DAY FOUR: You are up early and on the way to Tortuguero and Caño Palma. You will drive through Guapiles to Caño Blanco. On the way you pass through banana plantations and cattle ranches. You will get the chance to see a population of Ctenonotus, an introduced anoline lizard from Puerto Rico and associated islands. At Caño Blanco you will take a boat ride through Tortuguero Park and onwards to Caño Palma at the southern end of the Barro del Colorado Wildlife Refuge. On the way, one can see many shore birds but with a quick eye the possibilities abound to see caiman, crocodiles, iguana, plumed basilisk and a couple of species of basking turtles. After a mid afternoon arrival, you will be given an orientation session about staying in the rainforest. It then is time to see some of the diversity of Caño Palma Biological Station.

DAY FIVE & SIX: Your time will be spent exploring the trails and canals of Caño Palma Biological Station and the surrounding area. The property alone has produced over 100 species of reptiles and amphibians. In the evening, night walks will be conducted into the forest or you can join the nightly search for the leatherback sea turtle. Ranking as one of the world's largest reptiles makes it a true thrill to see one. If you are tired, you can spend the evening checking out the compound. By just investigating the local vegetation there is the possibility to see up to three boa species, over 20 species of lizards, many snake species, 5 freshwater turtles and a myriad of frog species.

DAY 7: We say goodbye to Caño Palma Biological Station and hop on the boat back to Caño Blanco and San Jose. There we return to the Cacts Hotel and you have a free afternoon in the city. Taxis will take you to souvenir shops or to the zoo or museum. There is a good book shop downtown or if you want, there are travel buses that would take you up to the local volcano..

DAY 8: It's back to the airport and back to Toronto.

This trip is designed to look for herps but I guarantee that there will be many more things to see. Orchids, bromeliads, palms and ferns are everywhere. Flowers never stop blooming and of course birds, butterflies and oddball bugs are everywhere. Birders will even recognize species from their own backyard. Often you get a chance to see sloth, peccary, tamandua or opossums. Otter swim by the dock and five species of wild cats have been recognized living on the property.

At this time, the approximate cost of the trip is \$2,800 - \$3,000 per person. If one wishes only to go to the Cano Palma, please contact us.

If you are interested, call Tom Mason at (905) 839-6764 or contact the COTERC office at (905) 831-8809. For photos of the region please check out the COTERC website at: www.COTERC.org . it features checklists of species found at the station.

It would be great to show you the animals you love in their natural setting. Come and see why so many people continue to go back..

Personal items, alcoholic beverages and the cost of a passport not included

FIESTA VERDE 2008



Rachel Atkins, Director of Special Events

Volunteer Sandy Burden



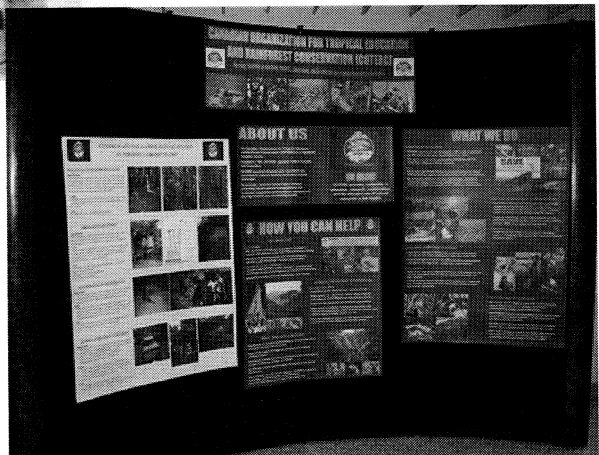
Some Silent Auction Items



Cal White, General Manager Toronto Zoo



Carol and Jim Taylor, Director of Archives



UPDATE FROM CAÑO PALMA

Jonathan Willans, Manager, Caño Palma Biological Station

Greetings from Caño Palma Biological Station!

Well it has been a very busy last few months here at Caño Palma and many exciting things have been happening. With help from former COTERC board member Josh Feltham and his family, who arrived in September, the boardwalk on the Colibrí trail has been completed and we now have an elevated, sturdy boardwalk covering the entire 200m of the trail. This will enable us to conduct research in the wettest times of year while allowing the forest to regenerate by reducing the trampling effect on vegetation and wildlife around the trail, helping to lessen our footprint on the forest. It will also allow the tourists that come to visit the station a chance to walk through the forest and learn more about the area. This project could not have been possible without a generous donation from Dr Steve Furino of the University of Waterloo. Thanks again for your support.

The boardwalk has been used almost daily since its completion. Josh has been bringing tourists, CCC bird banders and both GVI and COTERC volunteers out on night walks looking for anything and everything they can find. They have had quite a bit of luck and have found such things as tarantu-

las, small opossums, many species of frogs and such snakes as the Northern Cat-eyed Snake (*Leptodeira septentrionalis*), Common



Snaileater (*Sibon nebulatus*) and the always popular Blunt-headed Vine Snake (*Imantodes cenchoa*). It has also been used by visiting researcher Liam Fahley. Liam has been continuing the study that was started a few years ago by Todd Lewis and is searching the trail and station grounds nightly looking for Annulated Tree Boas (*Corallus annulatus*) and Ringed Snaileaters (*Sibon annulatus*). The heavy rains and flood waters came and went, but due to the boardwalk (and a canoe needed to get to it!), the research continued.

We also had visiting researchers come to the station that were part of a project involving 3 international universities. Dr Juan Monros and his research team from the University of Valencia in

Spain, along with researchers from the University of Leon in Nicaragua and the University of Costa Rica came to the station to study the *Manacari* forest of the area. They were here identifying the bird, plant and reptile life that live in this forest and they are looking to compare these findings with other *Manacari* forests in Costa Rica.

So as you can see, there have been some exciting things going on at Caño Palma. Add to this the sighting of a Boa constrictor (*Boa constrictor*), Bromeliad boa (*Ungaliophis panamensis*) an Eyelash viper (*Bothriechis schlegelii*) and the release of 97 Hawksbill (*Eretmochelys imbricate*) hatchlings into the sea from an excavated nest and you can see why this place is so special.

March will be here soon enough and with it will bring COTERC Chair Tom Mason and his group's annual visit to the station. It is a great way to come and experience the station, see some amazing wildlife and help out with the sea turtle and mammal monitoring programs. I invite you all to come down to Costa Rica and visit the station and find out for yourself why people fall in love with the area.

All the best for a happy 2009,

Unexpected Visitors

Recently our team at the Caño Palma Biological Station had some unexpected visitors. A tour group visiting the area from the Netherlands ran into some boat troubles near by and received a tour of the site while their boat was being repaired.

Here is what they had to say after their visit, they even sent us some pictures.

"On December 3, 2008 our boat stranded close to the Caño Palma station. We disembarked there and got treated to a visit to the museum and a dry place to stay until the boat was repaired.

We did leave donations, of course, but I wanted to say thank you for the kind reception and for the tour of the place.

Pictures can be found here: <http://picasaweb.google.com/nuijten.jos/20081203CostaRica#>

Thanks again very much for the hospitality!
Jos Nuijten, Delft, The Netherlands"

COTERC

HERP TOUR TO COSTA RICA



SEE THEM
SUPPORT
THEM
CONSERVE
THEM

**Take a guided tour through one of the most diverse
reptile and amphibian regions of Central America**

**Travel with a recognized expert to regions in Limon
Province visited by some of the most famous herpetolo-
gists in the world**

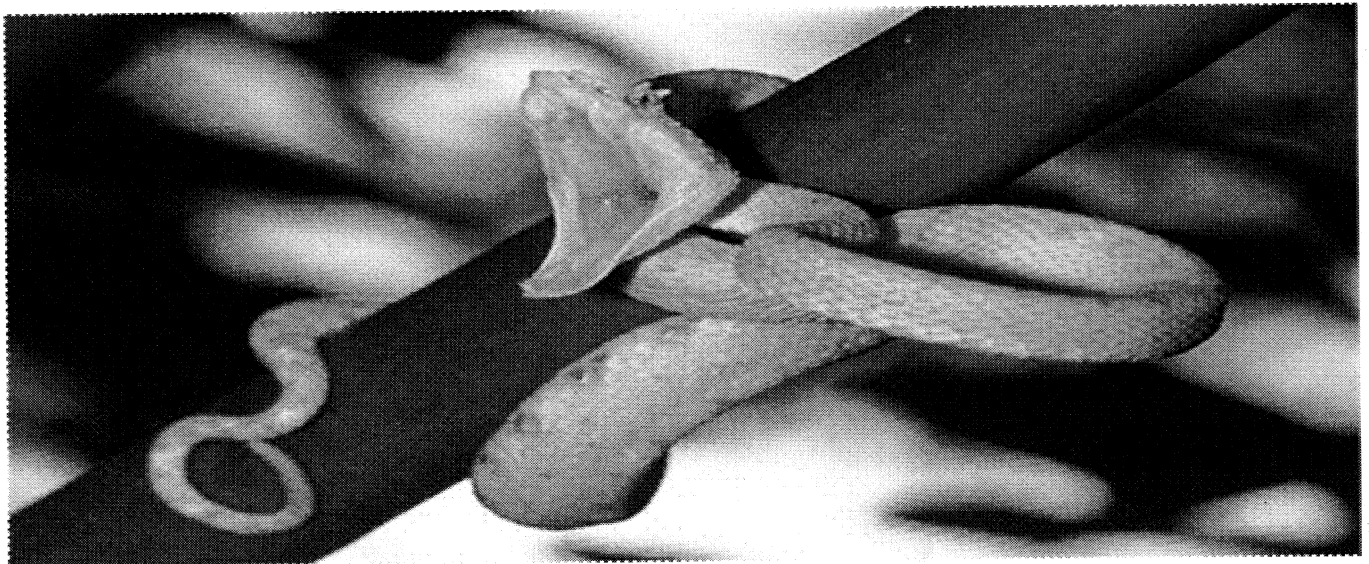
**Come face to face with species you thought you'd only
see in cages**

WHEN: End of March, 2009

**COST: \$2,800—\$3,000 all inclusive
(alcohol & souvenirs excluded)**

**SEE ITINERARY
ON
PAGE 3**

**CONTACT:
COTERC OFFICE (905) 831-8809
TOM OR FRAN MASON (905) 839-6764**



Euchre Tournament

Saturday, February 7, 2009

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



Cash Bar, Nibbles,
Awards, Prizes,
and a Draw!!

Registration @ 7:00 pm

First Game @ 7:30 pm

\$20

For more information about COTERC go to www.coterc.org

ZACH & CALVIN'S LETTER

Dear COTERC,

We are currently two students attending Lester B. Pearson High School in Burlington Ontario. Our names are Zach and Calvin and we wrote this letter to show our appreciation for the good that you are doing for our world. The protection of rainforests is a very significant job and we are proud in your organization for helping protect Canada.

The purpose of our English course is to determine new and innovative ways in which we can make our world more utopic. Our criteria for a utopia are: all good and no evil, all needs are met, equal balance between the state and the individual, and everyone is equal. We picked your organization because it is a non-profit charitable organization and we firmly believe in the cause that you stand for. Also, another main reason is that 5% of the worlds biodiversity is located in Costa Rica which is your organization supports and protects. In our opinion, the future relies on maintaining the precious biodiversity throughout our world. The Canadian Organization for Tropical Education and Rainforest Conservation personally affects us because we are concerned so much about the well being of our rainforests in Canada. We believe that major corporations are too concerned for their ambitions for wealth that they are not focusing enough on the environment. Some companies will go to extraordinary limits to gain wealth or public status that they will cut down entire forests if allowed. We truly believe your organization is improving our world because your aim is to increase environmental awareness in the community of children. The one-hour classes given to the school children, we are sure have a very positive effect on them. Your purpose has motivated us to purchase Organically grown bananas so as to prevent the 26% of Costa Rica's Rainforest from being turned into banana plantations.

Thank you so much for your work in protecting Costa Rica's rainforest. Organizations like yours truly make our world a better place.

RAFFLE TICKET WINNER

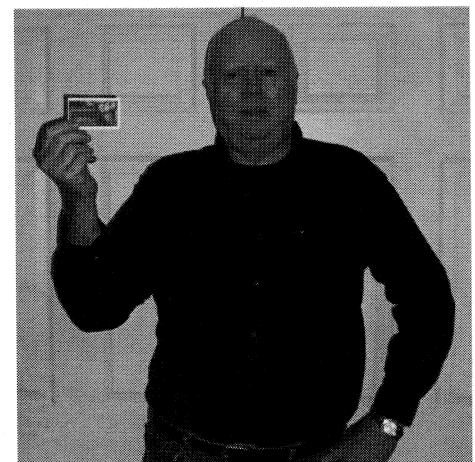
As one of the fundraisers that COTERC held this past year, we sold raffle tickets for a free trip to the Costa Rican Rainforest, to be guided by COTERC chair Tom Mason, who is Curator of Invertebrates and Birds at the Toronto Zoo, as well as being a renowned herpetologist. He has led several groups down to Costa Rica in previous years and has been praised for his extensive knowledge of the flora and fauna.

The winner is David Andrew of Port Hope Ontario. David his shown here

holding his winning ticket. The draw was conducted at 820 Jomar Ave in Pickering Ontario on January 1, 2009 at 8:00p.m. and drawn by Tom Mason. Congratulations. The winning ticket was sold by Joanna Romani.

We would like to take this opportunity to thank Grant Crossman of National Reptile supply for donating this prize.

June Enright



VOLUNTEER & MEMBERSHIP DIRECTOR'S REPORT

Caroline Greenland

COTERC volunteers provided invaluable support to several fund raising events, and other initiatives, in 2009. Annette Simms proactively undertook the task of designing and writing fact sheets for animal and plant species found at, or near, the Cano Palma Research Station in Costa Rica. Forty-four colourful and informative sheets have been produced to date and can be found on the COTERC website under the Education tab. Thanks to Annette Buchkowski who has also contributed fact sheets to the collection.

Volunteer, Sara Yeomans has created an attractive pamphlet to support a new fund raising campaign called HUG (Help Us Grow). This campaign lends itself to "gift giving" for special occasions. Packages range from \$35 and comes with a personalized certificate and the fact sheet of your choice- to a \$250 purchase of a quarter of an acre of Costa Rican rainforest. Other opportunities include "Monitor a Monkey", "Tag a Travelling Turtle" and "Support Research of Migratory Birds". There is definitely something for everyone on your list. (hint – think Valentine's Day)

On June 14 COTERC launched a new fund raiser to support conservation work in Costa Rica. The event was hosted by Reptilia in Vaughan, home to Canada's largest crocodile, venomous snake and rattlesnake! The diversity of intriguing reptiles and amphibians produced the perfect setting for an exhibition of art featuring plants, animals and landscapes.

A big thank you to Susan Kunanec who, for over a year, has done a tremendous job of organizing and updating the membership data base. Susan has visited the research

station in Costa Rica numerous times and is a big supporter of COTERC.

Over \$2,000 was raised with the support and generosity of the 16 participating artists and the guests who bought admission tickets and kept on giving throughout the evening. Hats off to the small but mighty group of volunteers who helped make such a success of the evening – managing everything from bartending and preparing delicious hors-d'oeuvres to registration and selling art. Thanks to Reptilia's manager, Josh Feltham, who made all the necessary adjustments to the venue and educated and entertained guests with live animal demonstrations. The second annual art show and sale will take place at Reptilia in April 2009 – stay tuned for details.

Volunteers continued to help the Fiesta Verde event run without a glitch in October of this year. This is a much bigger affair than the art sale and so it was a relief to have on hand a small army of volunteers! I feel honoured to work with such a committed (and fun) group of people - thank you - to all of you.

And finally – we need more COTERC members. Members support the organization financially and bring ideas to enrich the programs and broaden our spectrum. Please invite your friends and family to join in the New Year – a lot is going on both in Canada and Costa Rica that is both exciting and worthwhile. If you have suggestions for how we can increase membership, please get in touch with me or any of the COTERC board members.

SAIT AND COTERC COLLABORATION

The Southern Alberta Institute of Technology (SAIT) is Canada's premier polytechnic where education and training are enhanced through applied research, technology transfer and innovation activities. SAIT conducts applied research based on identified industry need aimed at meeting their objectives.

The Bachelor of Applied Technology Geographic Information Systems Program is collaborating with COTERC to use spatial information tools in support of conservation-focused research activities. The initial phase will see this year's group of students providing base digital maps and spatial analysis of large mammals in the Caño Palma Bio

logical Station area. The students will use information provided by COTERC and the Costa Rican Government in completing a major project."

COTERC is very pleased to establish this relationship with SAIT, and we look forward to some fascinating findings from their students.

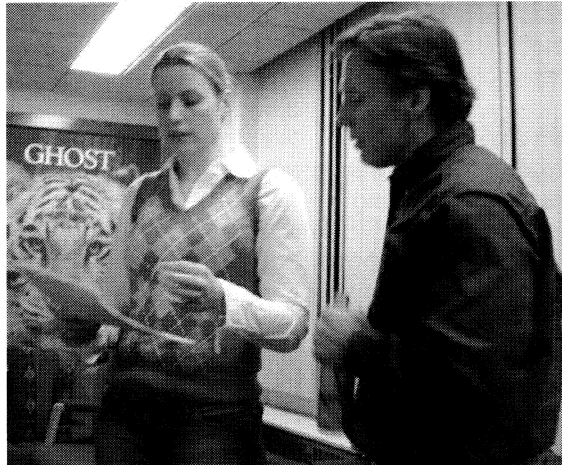


Climate Change and Costa Rican Sea Turtles

April Stevens

Sea turtles face various threats from a vast number of natural predators, however it is the impact of human activities which have threatened their survival the most. By-catch from the industrial fishing fleets, loss of nesting habitat due to beach development and poaching for their products (i.e. tortoiseshell) or direct human consumption, have threatened all sea turtle populations, pushing some to the brink of extinction. Many conservation programs, governments, scientists and concerned citizens alike have been working to help save these animals by developing stewardship programs, new technologies (i.e. Turtle Excluding Devices which prevent trawling by-catch) and protective laws. However a new threat has arisen which could counteract these successful efforts – global warming.

As reptiles, sea turtles are more susceptible to changes in their thermal surroundings since they regulate their body temperature environmentally rather than metabolically. Furthermore, sea turtles exhibit temperature-sex-determination (TSD). That is, the sex of the hatchling is determined from the temperature it experiences as a developing egg in the nest. Warmer temperatures produce females and cooler temperatures produce males with intermediary temperatures producing mixed ratios of both sexes. Incubating sea turtle eggs also have upper lethal limits - if sand temperatures become too hot, embryogenesis will not succeed. Thus, with increasing climatic temperatures beaches face either feminization – all hatchlings produced are female, or ultimately - fatality due to lethal temperatures.



April Stevens and Greg Mayne, COTERC Director of Site Services

Another problem from climate change that sea turtles face is rising sea level from glacial melting due to increasing temperatures. If the beach has nowhere to progress landwards, significant nesting habitat may be lost completely. This is of particular concern in the Caribbean as most beaches are at low-lying elevations and human

development prevents inward progression. As sea turtles nest on the beach they were born on, high nest productivity is the major source of recruitment for a population. In other words, little to no recruitment results from individuals migrating from other populations. Thus, loss of suitable nesting ground in addition to beach feminization, could lead to complete population failure in localized areas.

Costa Rican beaches are not exempt from these potential problems. So what can we do to help prevent these potential problems from affecting these magnificent animals in Costa Rica? COTERC, in partnership with McMaster University, will

begin a three year research project starting in Feb. 2009 to address these issues. Investigations into the current sex ratios being produced and mapping potential nesting habitat loss using GIS technology will begin. This research will allow for conservation policies and strategies to be developed and implemented before the problems arise, helping us to continue to protect these magnificent animals.

I would like to acknowledge COTERC for providing logistical support and the Donner Canadian Foundation for funding this important project, and my advisor Dr. Patricia Chow-Fraser, Office of Research Services, McMaster University.

FACT SHEETS NOW ON WEBSITE

Peter Klose, Webmaster

We now have a new webpage on our website: Educational Resources:

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

This is where all the species fact sheets can be found, and the newly developed teaching curriculum (not yet posted).

Annette Simms is mostly responsible for putting together these animal fact sheets. Annette, you did an amazing job... thank you for contributing countless volunteer hours compiling the data and putting together the documents. They look great!

COTERC AGAIN ATTENDS STEEL CITY SAFARI

Steel City Safari is an annual event run in November by The Reptile Store in Hamilton, Ontario to raise money for the CHML Children's Fund. The Fund is a major charity for many different organizations in the Hamilton and Burlington areas.

Many conservation and exotic animal groups offer their services to make this a successful event for the visiting public. On hand were The Reptile Store, with various snakes, lizards, etc. to touch; Mountsberg Wildlife Center with birds of prey; Arachnids by Dave and Tamara with tarantulas to hold; Miniature Horse Association of Ontario; The Parrot Association of Canada, featuring many types of psittacine birds; The Canadian Peregrine Foundation; Weep; Frog Watch; Kawartha Turtle Trauma Centre; Seaway Serpentarium; Zooz Niagara; Green Venture; Sciensational Snakes; Royal Botanical Gardens Nature Centre, to name but a few of the exhibitors. Visitors were charged a nominal admission fee to experience and learn about our natural world.

COTERC is pleased to be an annual participant in this major event, which originated four years ago and has raised over \$47,000 to date. This year Greg Mayne, Director of Site Services and Marilyn Cole, COTERC founder and Raphia editor manned the display and spoke to many visitors who stopped by to view the photos and rainforest seeds, and to learn about Caño Palma Biological Station. Marilyn's Jack Russell terrier was the focus of much atten-

"I think the environment should be put in the category of our national security. Defense of our resources is just as important as defense abroad. Otherwise, what is there to defend?"

Robert Redford

YOUTH WRITING CONTEST

Ontario nature is sponsoring a contest for grade 7 and 8 students to write an essay or story illustrating what he or she is doing to make a positive impact on our environment.

A panel of judges will choose three winning entries which will be published in ON Nature magazine and they will win prizes donated by Mountain Equipment Co-op.

Deadline is February 25, 2009

For more information, visit Ontario Nature's website at www.ontarionature.org

Please fill out this form and mail to:

COTERC
PO Box 335
Pickering, ON
L1V 2R6

Please print clearly-

Name: _____

Address: _____

City: _____

Postal Code/Zip Code: _____

Phone: _____

E-Mail: _____

Select the appropriate membership category:

Senior/Student \$25.00

Individual \$35.00

Classroom \$25.00

Family \$50.00

International \$60.00

Corporate \$100.00

Cheque Visa Mastercard
Card # _____ Expiry _____

Will you assist us in our conservation efforts and receive your quarterly newsletter, Raphia, electronically?

Yes

Please let us know if you wish to volunteer:

I would like to help with efforts here in Canada

Yes

I would like to volunteer in Costa Rica at Cano Palma.

Yes

Canadian Organization for Tropical Education and Research Conservation

Charitable Number: 890096183 RR0001

www.coterc.org



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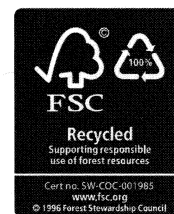
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HELP US TO BE MORE ENVIRONMENTALLY FRIENDLY!

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@cotercc.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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