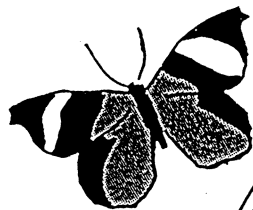


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ISSN 1188-2425

RAPHIA

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

VOLUME 3, NUMBER 3, SUMMER, 1994

SUSTAINABLE DEVELOPMENT & THE CHAMBER OF INDUSTRIES

The Costa Rican Chamber of Industries "decidedly supports the principle of sustainable development" reported Jack Liberman, the coordinator for environmental policies. At the 100th Annual National Congress of Industries in early July, industry leaders debated policies related to labor, economy, trade and the environment.

The industrial sector of Costa Rica does not rely on much of Costa Rica's indigenous resources as raw materials. For example, the textile and garment

industry relies largely on imports.

In September, 1993, businesses became legally obliged to register all toxic chemicals with the Health Ministry and a system of inspection is only just being set up.

The Chamber of Industries has outlined 12 steps that would make sustainable development a 'reality' including tax breaks on environmental equipment, educational programs and better coordination between ministries. The

Chamber feels that the government should enforce the environmental laws and businesses should be encouraged to use productive methods that will not be damaging to the environment.

The following is the 12 step proposal for sustainable development. For anyone familiar with Canada's Green Plan or environmental statements made by other industrial associations, these 12 points are very much more focused, yet there is a familiar ring to the cry for intergovernmental cooperation,

clarification and simplification of regulations and procedures and concern about environmental protection and national competitiveness.

1. Government should pull the 45 bills involving the environment that are currently before the Legislative Assembly and submit them to joint analysis by the government and the productive sector.

2. Create the National Environmental Council (CONAMA) as the mechanism and coordinator for government actions regarding the environment. The Chamber of Industries and other productive sectors want a seat on this council to unify criteria and avoid duplications, confrontations and contradictory requirements.

3. To clearly define which state entities are responsible for enforcing which laws, modify the Ministry of Natural Resources, Energy and Mines and reform the Constitution to give the Ministry the power to regulate environmental matters.

4. Any rules should be applied gradually and take into consideration the reality of the nation.

5. Permit the productive sector to participate in the elaboration of rules and to help establish rules that are clear, stable and realistic.

6. Clarify guidelines for environmental impact statements that companies must complete for all new projects. Permit producers to fill in these statements and be responsible for their completion.

7. Establish a system of incentives for industries to incorporate the new technologies needed to comply with sustainable development. These benefits could include: accelerated depreciation; re-investments of profits; no tariffs on imported technologies to improve the environment' and deduction from income

taxes for funds invested in training on the environment.

8. See reciprocity in trade treaties so that Costa Rica businesses are not at a disadvantage because of environmental laws.

9. Increase scientific research and technology to develop industrial projects that significantly reduce pollution and permit a better use of resources. Fines should be paid into government funds that support this area.

10. For industries to make the necessary

changes, formulate strategies for large and long-term financing in colones and foreign currencies.

11. Intensify environmental education to make citizens aware of the importance of sustainable development.

12. Support the capacity of the universities and the National Learning Institute (INA) to train technicians capable of carrying out these policies and implementing the new technologies.

SECURE SAFE MAILING FOR CANO PALMA

We have arranged for an independent service which promises secure mailing for COTERC in Costa Rica.

To mail letters to anyone in Costa Rica, please use the following address:

Cano Palma Biological Station,
SJO 1882,
P.O. Box 025216
Miami, Florida 33102-5216

To mail parcels, use the following address:

Cano Palma Biological Station,
SJO 1882,
1601 N.W. 97th Ave.,
Unit C-101,
Miami, Florida 33172

If you are sending a parcel, remember that Customs charges can be heavy, although magazines and suchlike are duty free.

BOAT-BILLED HERON

Family - Ardeidae
Spanish names Pico-Cuchara, Chocuaco or Cuaca
Weight = about 600 g
Length = about 51 cm

Many fascinating birds live in and around Cano Palm Biological Station. It is difficult to pick a favourite. However, one of the more unusual is the boat-billed heron. We are fortunate to have one of these birds living very close to the station on Cano Palma.

The boat-billed heron is a member of the family *Ardeidae* which includes the herons, egrets and bitterns. The boat-billed heron's large, broad bill is one of its distinctive features. Its legs are yellow green, its forehead white and its back body is greyish. It is a nocturnal bird.

During the day, this bird roosts in trees over the canals of Tortuguero (it is written that in some places where it lives it roosts in groups of up to 50). The boat-billed heron likes wooded riverbanks, swamp and pond margins, estuaries and mangroves. Stiles and Skutch note that the boat-billed heron fishes alone at night, and does so from the water's edge or low snag.

As mentioned earlier, this bird has a broad, relatively large bill. D.W. Mock writes about the bill in Costa Rican Natural History. He explains that the extra wide bill may be for bill-snap displays performed during courtship, thus used to produce sound. Another theory is that because they feed at night, it may help during feeding. The bill's extra width may help in touch/tactile feeling and could help them compensate for not being accurate when grabbing fish.

Nesting They nest in small colonies, and their nests consist of a small frail platform of sticks overhanging water about 3-16 ft up. They usually have 2 eggs and nest between June and October.

Range This bird is a resident locally in the lowlands of both sides of Costa Rica and Toruquero is one area where they are most numerous. They range from Mexico to Ecuador, Bolivia and N.Argentina.

The boat-billed heron is a popular bird for visitors. We hope that tourism along the canals will not negatively affect it.

by Pat Opay, Scientific Officer

ENVIRONMENTAL RIGHTS IN COSTA RICA

Costa Rica's Constitution was amended in June with a change to Article 50. Costa Ricans, residents and visitors have the right to a healthy and ecologically balanced environment. The Assembly will ratify the change in 1995.

There has been much discussion around the legal weight of this amendment. How will the scales

tip when the environment and development, as it is commonly understood, are brought in opposition? There will be a need for greater environmental training for judges and prosecutors and clearer legal definitions of what constitutes a "healthy and ecologically balanced environment".

Until the legislative arm provides a clear definition, it will be left to the courts to decide what is healthy and balanced and what is not.

CANO PALMA REGISTRY

The following is a list of researchers who have been working at Cano Palma:-

Robert Wolff, Southern Nazarene University.

Biology students from 6 universities studied conservation and sustainability models, compiled a bird list and noted plant relationships.

James Rising, Mark Engstrom, Jim Eckenwalder
University of Toronto.

Students mistnetted bats and birds and studied the area's vegetation.

Michael Blanford, Beth Burke,
Southern Illinois University
Studied herpetofauna in Cano Palma area. Included census of fish in river by Station dock.

Jenna Dunlop, York University
Mistnetted certain bat species.

Ryan Csada, York University
Studied the foraging behaviour of phyllostomine bats

Michael Dixon, Loren Ammerman Dixon, Texas Wesleyan University.

Students and researchers conducted diet analysis of frugivorous bats and a general vertebrate survey of the area, in order to instruct students in techniques used for studying vertebrate diversity.

John Colbourne, Melissa Weingartner, University of Guelph

WOMEN AND THE ENVIRONMENT

A group of women, Feminine Association of La Palma have opened a center in southernmost Costa Rica in the Osa Peninsula town of Puerto Jimenez. This group of 14 women plan to offer tourism information, arts and crafts for sale, a cafeteria and a library on the environment.

The women see tourism as a way of financially helping their families. They have been receiving classes in accounting, English, organization and self-esteem from several organizations including the Peace Corps, The National Learning Institute and the Neotropica Environmental Foundation.

Groups providing financial support have included the Alex.C.Walter Educational and Charitable Foundation, the International Tree Fund and the Nature Conservancy.

Began a genetic analysis of pond and bromeliad microcrustaceans, to compare the genetic and mating system variation between Jamaican Ostracods and those of Costa Rica.

RESEARCHERS VISIT LOCAL SCHOOL CHILDREN

There are many aspects to the conservation of tropical rain forests. A review of some of these would include politics, economics, social factors and an understanding of the ecological systems of the tropics. Thus, we must ask questions such as - are government policies helping or inhibiting conservation efforts? Are multinational businesses conducting business in a responsible manner? Are international lending institutions encouraging ecologically poor development alternatives? What role does local poverty play in the actions of the local inhabitants of these areas? Are we as consumers careful that the companies we support have given proper consideration to the effects of their products and actions on the environment? Do we understand enough about the ecological complexities of the endangered system themselves?

While all the above are important, often interrelated considerations, there is a suggestion by some that one of the most fundamentally important areas to the future of endangered ecosystems like tropical rainforests is education. Indeed, some would argue that education is important to building both a greater respect for the environment and more appropriate interaction with the environment. Education is of fundamental importance to COTERC.

Our educational activities are varied.

MANY THANKS TO AYR PUBLIC SCHOOL

COTERC would like to thank the students of Alison McLeod's Grade 4 class for their generous contribution to COTERC. They held a garage sale and donated the proceeds for COTERC's work. Well done !!!

We work with university students, tourists who visit the stations with hotels or guides and school children in Canada and Costa Rica. Permit me to tell you of our recent efforts with the school children in Tortuguero.

In June, we were able to strengthen our relationship with the school of Tortuguero. Our goal is to offer the services of the station, station staff and visiting researchers to the school program. Our desire is to work with the teachers. While we have offered ideas, it is important to us that we work within their established system/ We are attempting to avoid a "top down" approach. The school director has an educational outline and we are trying to contribute to the success of their program. One of the ways is to use the expertise of visiting researchers.

In May and June we had two groups of students/researchers at the station. One group was studying bats, the other reptiles and amphibians. We are fortunate and grateful that both groups were very willing to participate in our efforts. We arranged for them to visit the school children with station staff. We went to town with pictures and live specimens. The director of the school is very friendly, encouraging and seems quite excited to have us visit. He

helped us start our discussion and we then continued discussing topics about the animals the researchers were studying. Why is a mammal a mammal? What is the difference between a reptile and an amphibian? We discussed a number of things about the species the researchers were studying and we hope that the opportunity to talk about the animals was fun for the kids.

In addition to the above work with the kids, we are also working with the teachers for a "school day at the station". Finally, we are pursuing several suggestions given to us to pursue "pen pals" with Canadian grade-school kids, as well as assisting with English classes for children and adults in Tortuguero.

Many people believe that education is an important tool in efforts towards more wise use of natural resources and conservation of areas like the ecosystem of Tortuguero. COTERC Education activities happen because of member support. THANKS !

Pat Opay, Scientific Officer

EXECUTIVE DIRECTOR'S REPORT

Marilyn Cole has presented a report of her recent trip to the Station. It was obviously a very busy trip and the following are some of the highlights of her report:-

ELECTRICITY has now been installed at the Station. Lights are operating in all areas. This enables us to purchase a refrigerator and the building of a light box to dry up the moisture from camera equipment, as funds allow.

Pat Opay is to make contact with INBIO and invite them to use our facilities.

Meetings were held with the dean of the Biology dept at Universidad Nacional. COTERC will offer a scholarship for one of their students to travel and stay at Cano Palma.

I met with Yolanda Matamoros, director of the Simon Bolivar Zoo and COTERC advisor, to follow up on the ongoing discussion to bring two of their keepers to Metro Toronto Zoo for training. This should happen in the fall of 94.

I met with the manager of ECOLE Travel in San Jose, part of a Dutch group. Ecolé Travel has agreed to donate a percentage of each trip that they sell to the Tortuguero region towards our Save an Acre fund. Ecolé Travel is also interested in providing us with Dutch volunteers, to work at the station.

I am very disturbed by the ongoing destruction in the region of Tortuguero. There are several lodges now: upriver from the Cano Palma property has been purchased to set up a fishing camp. This is illegal and hopefully will be stopped.

Thanks to donations by the Metro Toronto Zoo chapter of the American



SPIDER MONKEY

Joan Watson

Association of ZooKeepers, the station now has a canoe built by a Tortuguero tradesman.

CASUAL OBSERVATIONS AT CANO PALMA

The following is a compilation of bird sitings that Diane Bell, Jorie Moran and Stephanie Rhodes of Chicago, Illinois made at Cano Palma in March 1993.

- Magnificent Frigatebird (*Fregata magnificens*)
- Black Noddy (*Anous minutus*)
- Brown Pelican (*Pelicanus occidentalis*)
- Tricolored Heron (*Egretta rufescens*)
- Northern Jacana (*Jacana spinosa*)
- Muscovy Duck (*Cairna moschata*)
- Black Vulture (*Coragyps atratus*)
- Red-lored Parrot (*Amazona autumnalis*)
- Orange-fronted parakeet (*Aratinga canicularis*)
- Squirrel Cuckoo (*Piaya cayana*)
- Mangrove Swallow (*Tachycineta albilinea*)
- Rufous-tailed Hummingbird (*Amazilia tzacatl*)
- Slaty-tailed Trogon (*Trogon massena*)
- Ringed Kingfisher (*Ceryle torquata*)
- Belted Kingfisher (*Ceryle alcyon*)
- Lineated Woodpecker (*Dryocopus lineatus*)
- Collared Aracari (*Pterolossus torquatus*)

- Keel-billed Toucan (*Ramphastos sulfuratus*)
- Black-cheeked Woodpecker (*Melanerpes pucherani*)
- Great Kiskadee (*Pitangus sulphuratus*)
- Gray-capped Flycatcher (*Myiozetes granandensis*)
- Tennessee Warbler (*Vermivore peregrina*)
- Prothonotary Warbler (*Protonotaria citrea*)
- Yellow Warbler (*Dendroica petechia*)
- Chestnut-sided Warbler (*Dentroica pensylvanica*)
- Magnolia Warbler (*Dendroica magnolia*)
- Black-cowled Oriole (*Icterus dominicensis*)
- Montezuma Oropendola (*Psarocolius montezuma*)
- Scarlet-rumped Tanager (*Ramphocelus passerinii*)

GARAGE SALE CALL !!

COTERC is planning a fundraising Garage Sale in the early fall and we need items to sell. We are looking for anything in good condition such as furniture, small appliances, tools, children's clothing and toys, paperback books, etc. We have found that adult clothing and hardcover books do not sell. If you have something to donate, please contact Marilyn Cole, 905-683-2116 to arrange pick up or delivery.

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

MEMBERSHIP

*YES, I want to join COTERC
and support its efforts in the
tropics. I'm enclosing my
membership fee of :*

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- Individual* \$ 25.00
- School Class* \$ 25.00
- Family* \$ 35.00
- International* \$ 50.00
- Corporate* \$100.00
- Donation** _____

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FIRST IMPRESSIONS

by Daryl Loth

Flying into the sun as it pierced the mist in the dawn sky, I could see the quilt of farmers' fields in the lowlands, stretching toward the horizon to the Caribbean.

The line between forest and farmland was clearly visible; the scars of progress and population had taken their toll. Vast banana plantations seemed to spread like cancer over the landscape, their huge leaves reaching up and out like thousands of colossal fans pointing skyward.

I was mesmerized by the aerobatics of the tiny crop dusters far below spreading their silvery potion like fairy dust over the countless rows. Turning my glance again eastward, I could see the coastline and Tortuguero Mountain, in silhouette against the shimmering sea.

Between the cultivated fields and the ocean lies the lowland rainforest - home to the Cano Palma Biological Station and where I would be spending my next year. I was aware of the ongoing loss of rainforest to farmland, but I was amazed to see that it had been reduced to a narrow strip along the coast. It was obvious that education and protection are necessary to prevent its total destruction.

We were soon over the Tortuguero canals and on our final circuit for the airport. The tarmac runway appeared as a flat black ribbon against the thick green tropical forest. We landed on the ground; the air was heavy and warm. My head was filled with a sweet concoction of smells from the sea, the rainsoaked runway and a profusion of tropical flowers. I was greeted by the warm smiles of Pat and Marilyn, and together we embarked on a voyage up the river highways of Tortuguero.

The river to the south of the airport leads up to the village. A number of small engined boats were already buzzing between various homes, tourist lodges and the village itself. It was plain to see that this was not an undiscovered wilderness. The popularity of turtle-watching had created a substantial tourism industry in the area.

Into Tortuguero for supplies, I was introduced to several people whose names I immediately forgot, and I took a humble part in a few rapid conversations I little understood. It didn't take me long to realize that I was going to be hard challenged by this coastal dialect not taught at the language school in San Jose.

Leaving the village via the largest tributary, we quickly left civilization behind. Along this stretch the smaller habitations seemed to blend more harmoniously with the surroundings. The forest rose from the river's edge like an escarpment. Tangles of trees and vines fought for space along the forest margin. Several birds could be seen, both on shore and passing

overhead. Herons, noisy parrots and a toucan with an impossibly large bill were my first exposure to the region's aerial wildlife. Curious, long pendulous sacks hung from a particularly large tree. These, I was told, were nests made by the appropriately named Montezuma Oropendola.

Further up river we passed El Cerro Tortuguero. This was the same Tortuguero Mountain that could be seen from the airplane. It had a sheer west face that would be barren virtually anywhere else, but here in the rainforest tenacious climbers not only survived but seemed to thrive on the perilous slopes. The misty morning clouds still clung to the lee side giving the impression of a much taller mountain in the cloud forest.

Rounding another bend we found the entrance to Cano La Palma; the Palm Canal.

Here the beauty of the river was actually surpassed upon entering this tiny waterway. The vegetation thrust out from the forest so that the shoreline and sky became virtually invisible. The forest seemed to come alive with birds and howler monkeys that could be heard but not seen. Each bend in this enchanted waterway seemed to reveal a new plant species; vines, bromeliads and huge raphia palms filled every available space.

One last sweeping bend opened into a clearing where the boathouse for the station could be seen. Nestled amongst the trees, it was the first sign of civilization since entering the canal.

So this was my destination, deep in the heart of the rainforest, amidst some of the most beautiful surroundings on earth. What more fitting a place could there be for a volunteer-run station whose very existence was to research and preserve this extraordinary region?

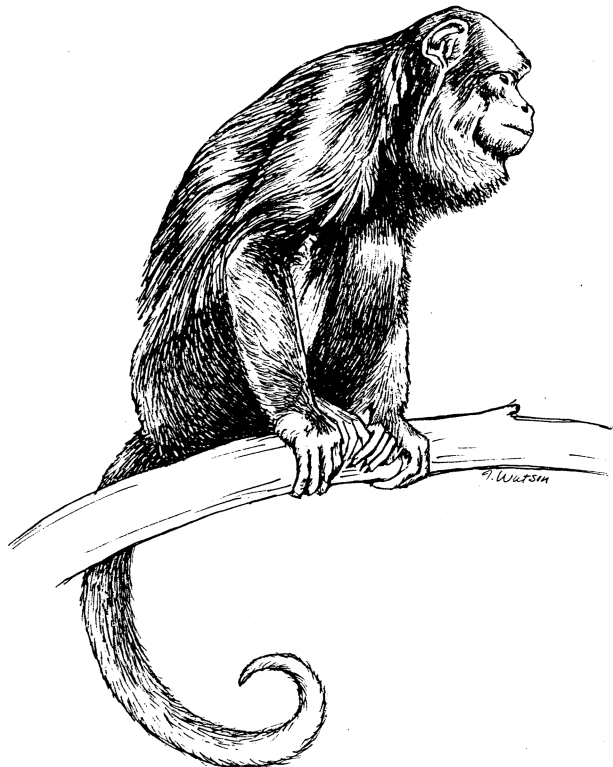
Almost two months have passed since my arrival. During this time the station has been buzzing with researchers, students, volunteers and members from all over North America. The museum and nature trail have revealed the wonders of the rainforest to interested tourists from all over the world.

I must take my hat off to all who have supported the research, conservation and education goals of COTERC. Their voluntary efforts are greatly appreciated and respected down here. I would strongly encourage you to continue! Pat Opay and I will do our best from down here. The rainforest reveals new subtleties to me every day and I think many generations to come should benefit from being able to see its natural beauty before it is lost. I encourage all the members to come and see it for themselves. We'll do our best to show you the beauty and value of what's been discovered. Let us continue to preserve this invaluable natural resource; its beauty and diversity of life cannot but be spared.

Daryl Loth is the new Station Manager for Cano Palma Biological Station, and arrived in Tortuguero in early June, after spending two weeks of intensive training in Spanish in San Jose. We wish him the best of luck in this new venture.

We are looking for articles, artwork, etc. for the Raphia newsletter and invite you to send your submissions to us. We'd also like to hear your comments and suggestions. Is there something that you would like to see added? Do you like the format of the newsletter? What can we do to improve it? We welcome your thoughts. Please address them to Cathy Ward, Editor, Raphia newsletter, c/o COTERC, Box 335, Pickering, Ontario L1V 2R6, Canada.

You have probably admired the artwork that has appeared in the pages of past issues of Raphia. These are all the work of Joan Watson, a talented artist who began her training at the Ontario College of Art in Toronto. After graduating, she worked for twelve years with the Lake Simcoe Conservation Authority, and for the past five years she has worked in the Graphics Department at the Metro Toronto Zoo. Joan has always had a deep interest in wildlife, and it is evident in her work. She is currently designing a special T-shirt for Cano Palma Biological Station. Thank you, Joan, for your wonderful contributions. Another fine example of her work is the howler monkey, which appears below. Both of the monkey species in this issue are found frequently in and around the Cano Palma Biological Station.





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