



ISSN 1188-2425

RAPHIA

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

VOLUME 2, NUMBER 3, FALL, 1993

COSTA RICA'S PARKS AND PRESERVES: A VISITOR'S GUIDE

In this new book just published by The Mountaineers and distributed in Canada by Douglas and McIntyre, Joseph Franke devotes a chapter to the Caribbean Region in which COTERC's Cano Palma is located. His introduction to the region is valuable and worth reproducing as it provides a snapshot of the Cano Palma environment.

"The Caribbean Region is one of the country's most diverse, in terms of both natural history and human culture. The parks and reserves of the area provide the visitor with ample opportunity for the exploration of both. Sea turtle nesting beaches, canals and quiet rainforest backwaters, coral reefs and extensive mangrove estuaries are all here, and examples of each are contained in the region's

protected areas.

The region's cultural variety comes from the melding of three major influences: English-speaking Caribbean blacks, several indigenous tribal groups and, most recently on the scene, Spanish-speakers from other regions of Costa Rica and Nicaragua.

The region is experiencing what is probably the most rapid rate of change in the country, particularly in its southern portion. Tourism, expansion of the banana industry, the demise of chocolate (from a fungal disease), and logging and mining interests are all pressing change upon the land and its people. The populace's response to these changes and the need to prioritize values makes this a fascinating area for visitors interested in development issues." Within the description of Barra del Colorado Wildlife Refuge, Franke refers to COTERC's

Cano Palma station. Besides providing information on reservations and directions, Franke states, "The land owned by COTERC includes some lovely primary forest, and has trails to an interesting upland tract on Cerro Tortuguero that field station personnel are happy to guide people on. Nearby are some important turtle nesting beaches that have yet to be discovered by the ecotourism industry."

COTERC is not immune, and we are looking at alternative means to obtain funding. If you, the membership, have any ideas, we would be glad to hear from you.

It is with a great deal of regret that I announce the departure of our station manager, Greg Mayne from Cano Palma Biological Station in Costa Rica. Greg was hired as the first manager and arrived in Tortuguero in late August, 1991. He has demonstrated all the best qualities that one could hope for and has acted as a true ambassador, both for conservation and for Canada. Many visitors to the station have remarked upon his friendliness and willingness to share information. Under his guidance, the station has grown and expanded its facilities; Greg's final effort is the installation of a septic tank toilet system. Those of you who have visited the station will truly appreciate the importance of this! We all want to wish Greg the very best in his future, as he returns to Canada.

It wasn't easy to find a replacement for Greg, but we feel we have found the right individual. Pat O'pay grew up in Wisconsin surrounded by his father's reptile collection. He graduated from the University of Wisconsin in 1990 with a Masters in Business Administration with an emphasis on international business. After a brief sojourn into the business world, Pat returned to the University of Wisconsin to obtain a Master's degree in Conservation Biology and Sustainable Development for Environmental Studies in 1992. He is bilingual (Spanish/ English) and has done field work in Alaska and Mexico.

After spending a few days in Toronto meeting the directors of COTERC, Pat left for Costa Rica on September 4th. Greg Mayne remained with him until the end of October to show him the ropes.

EXECUTIVE DIRECTOR'S REPORT

Over the past summer, the Canadian Organization for Tropical Education and Rainforest Conservation has held successful fundraising events, albeit on a local scale. Volunteers assisted at three garage sales and barbecues sponsored by Loeb and Super Centre. Thank you very much to all those who helped out, and in particular I would like to acknowledge the contribution of time and resources by Lynn James and Suzanne MacDonald. As a non-profit organization, we count heavily on volunteers, and we greatly appreciate all of you who assist us.

Just recently we have launched a fundraising campaign amongst the corporate sector, so that we can continue our conservation efforts. We are anticipating an expansion of our environmental education program in the school system here in Ontario and are seeking funding to reproduce slides, etc.

In these times of economic pressure, all charitable organizations are finding it harder and harder to meet their goals.

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|------------------------------|------------------|
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Pat's address is Pat Opay c/o Estacion Biologica Cano Palma, Tortuguero, Limon Province, Costa Rica.

ENVIRONMENTAL NEWS FROM COSTA RICA

(extracted from *Tico Times*)

CAPUCHIN MONKEY IN DANGER

During the annual conference of Earthwatch, Indiana University professor Constance D. Becker reported that the white-faced capuchin monkey is threatened. At Curu Wildlife Refuge on Nicoya Peninsula, there are 50 capuchin monkeys per square kilometer, the highest density in the world. Only 84 of the 1500 hectares in the Curu Wildlife Refuge is protected by the government and this is because of the sea turtle nesting. Increased tourism and large banana plantations are wiping out the habitat of these monkeys.

These monkeys invade crops so they are hunted. They are also being used for research and thousands are sent out of Costa Rica to European countries and the United States.

Costa Rica has four species of primates; the most endangered is the squirrel monkey. The only protected population of the squirrel monkey is in Manuel Antonio and Corcovado National parks.

Dr. Becker has worked with the School for Field Studies, an undergraduate research and experiential program based in Massachusetts and with Earthwatch volunteers. She has worked with the Costa Rican Primatological Society which is affiliated with the World Wildlife Federation and the University of Costa Rica.

ECO-TEACHERS JOIN THE 'PASEO PANTERA'

The Educators' Rainforest Workshop is a U.S. based program that takes educators from all levels and provides training in tropical horticulture and toured various biospheres to observe plant and animal life, with a focus on classroom application. The workshop included an eight day programme in Tortuguero and Monteverde. In Tortuguero, near COTERC's Cano Palma station, the group planned to examine the rare green turtle nests and the explore the lowland rainforest around the Atlantic coast town canal system.

In addition to the training, each participant contributed toward the preservation of land in the biological corridor that links Tortuguero National Park with the Barra del Colorado National Wildlife Refuge. This is part of the "Paseo Pantera" project which plans to link the Americas through an uninterrupted chain of protected areas. The money was donated to the Fundacion Neotropica.

The organizers hope to bring three more workshops to Costa Rica, each one donating money to protect more land.

TORTUGUERO TURTLE CONTROLS

Restrictions began four years ago to limit the access to the green turtle nesting area. Conservationists and park officials recognized that poaching and unregulated tourism were a threat to the nesting area. There have been rules developed by the National Parks Service that restrict the time people could be on the area's beaches and prohibiting them from carrying cameras.

Before the traditional "Turtle Season" boats from Limon and San Jose would come ashore between the mouths of the Tortuguero and Parismina rivers and

steal the eggs. A temporary manned station has been set up by the Caribbean Conservation Corporation's Green Turtle Research Station (CCC) in Tortuguero.

Tortuguero is the last protected nesting area in the world for the green sea turtle. Thousands of turtles arrive annually between late June and early September to mate offshore and then nest along the 22 mile long beach between the mouths of the rivers. The CCC has been monitoring the nesting and migratory habits for 38 years.

LAWYERS PLAN CONSERVATION STRATEGY

Lawyers from Mesoamerica and the United States met in San Jose in June to improve the status of conservation in Central America. The president of the Costa Rican Environmental and Natural Resources Law Center stated that the one year project's goals include a review of environmental laws in every Central American country and Mexico, the drafting of model conservation legislation and the creation of a network of environmental law centres throughout Central America. The lawyers of each country will examine their existing conservation laws and try to determine why so much current conservation legislation is ineffective and how it might be improved.

THE SONGBIRDS OF NORTH AMERICA ARE DISAPPEARING

Many environmentalists fear that the migratory songbirds with which we in North America so readily identify such as the oriole and the warbler and the thrush are disappearing as the rainforests to which they migrate are disappearing. Satellite photographs show how clouds of millions of migratory birds have diminished alarmingly over the past few

years. There is debate as to how much of the population drop is natural and how much is man made but the destruction of the habitat is definitely a contributing factor.

CANO PALMA TRIBUTE

by Carol Croke

On the 21st of August, we left Toronto to begin what would become two of the most unforgettable weeks of our lives. After two long days in San Jose, we were extremely anxious and more than ready to experience the rainforests we had read so much about. To get to Cano Palma, we had to take a short plane ride from San Jose to Tortuguero, and then travel by boat for another half hour.

Shortly after our arrival at the Station, we outfitted ourselves in bug shirts and rubber boots and after liberally applying mosquito repellent, set off on our first jaunt into the tropical rainforests of Costa Rica. Although we did not encounter any primates that first day, we did see a wide array of flora and fauna. As we walked along the trails we encountered brilliant red poison arrow frogs, numerous lizards, never ending trails of leaf-cutting ants and many colourful species of butterflies and spiders. The loud calls of the oropendola, toucan and gaudy leaf frogs were a constant reminder of the species we had yet to see.

It was not until the evening of the second day that we actually encountered the monkeys we had travelled so far to see. It is difficult to express the feeling of elation that overcame us when we finally saw that first howler. To read about howler monkeys is one thing, but to actually see them in their natural habitat is quite another. That feeling of awe was further intensified when we realized that our

one howler monkey was actually part of a group of 10 howlers that was travelling in very close proximity to a group of 6 spider monkeys. To see two different primate species pass by overhead in the space of 5 minutes was quite an unbelievable experience for 4 individuals who have only experienced primates in the zoo.

When we were not out following the monkeys we spent time relaxing around the station. From the dock we were able to see numerous keel-billed and chestnut mandibled toucans, oropendola and even a frigate bird to name just a few of the many bird species common to the area. The dock was also a great place to see an iguana if you have any patience to examine the vegetation closely and chances were also very good that you would see the resident caiman who lived across the river.

During our 10 day stay at the Biological Station, we were able to locate the howlers every day and on a couple of instances, we managed to stay with them for the entire day. As a result of our numerous sightings, we were able to positively identify 12 howlers based on differences in size and colouration patterns. We named a number of these individuals based on their identifying marks and have also begun to generate a "photo" album of these members to aid in future research.

On the day of our departure from Cano Palma we were awakened by the howlers for the last time. We were all very quiet that final morning on the way to the plane, each of us thinking about how incredible the last ten days had been as we looked for the last time (until our next visit) at the beauty around us.

We would like to thank Marilyn Cole for her help planning this trip and Professor Frances Burton for providing

us with the supervision necessary to make this trip successful. Without their support, we would not have accomplished as much as we did. We would also like to give special thanks to Greg Mayne and his worker, Julio Brenes, not only for sharing their knowledge of the region, but also, for making our stay so enjoyable.

EDITOR'S NOTE: Carol and Tracy have returned to Cano Palma on Oct.21 for 8 weeks and we look forward to further reports.

NEW VIDEO SERIES

PROFILES OF NATURE

Profiles of Nature is a series of half hour productions of in-depth studies of wildlife species filmed in their natural habitat. The latest 13 new episodes include "In Search of the * Howler Monkey" featuring Marilyn Cole, Executive Director of COTERC.

Other titles include, "Return of the Trumpeter", "Penguins, Dolphins and Killer Whales" and a "Brush with a Polar Bear". This series is produced by KEG Productions in association with CFCN-Calgary, the Global Television Network and the Family Channel. They are distributed through Worldwide TV Distribution, Ellis Enterprises in Toronto. (924-2186)

THE GREAT GREEN MACAW, FLAGSHIP OF TROPICAL RAINFOREST CONSERVATION

A Report from Cano Palma

One of the more spectacular sights in the Tortuguero vicinity, is the Great Green Macaw with its vibrant colouration, and raucous flight behaviour. Those of us who have been fortunate enough to see this largest member of the parrot family, and splendid array of seven different colours, can attest to its magnificence.

The Green Macaw (*Ara ambigua*) is one of 332 living species belonging to the parrot family, (Psittacidae) and ranges from East Honduras to NW Columbia and west Ecuador.

The Lapa Verde, which is how the Macaws are commonly known in the Atlantic lowlands of Costa Rica, measures 79 cm, and weighs 1.3 kg as an adult. It is one of only two species of Macaws endemic to Costa Rica. The other is the Scarlet Macaw (*Ara macao*), mostly inhabiting the Pacific lowlands, although on occasion can be observed flying with flocks of Green Macaws on the Caribbean slope.

Habitat preference is the canopy of humid lowland forest, often flying long distances in search of fruiting trees. In the Tortuguero region, Macaws are usually observed from October to the end of December, and again from June to the end of July. This time frame is subject to change yearly, depending upon the fruiting seasons of its preferred food source.

During the months from October to December, Macaws can be seen feeding on the wild Almond tree (*Dipteryx panamensis*). Fortunately, there are still remnant Wild Almonds scattered in pastures throughout the lowlands. This species of tree has avoided much of the

deforestation owing to its extremely hard consistency, and to its inaccessibility within the rainforest.

Last November, a visiting animal behaviouralist to the station was able to locate and observe Macaws on several occasions. Early one morning, we climbed the Tortuguero Mountain in the hopes of spotting the birds flying NW over the biological station at Cano Palma. An hour after we reached the peak, we heard their loud, hoarse squawking. They were flying in our direction and it was an explosion of colour as three pairs of Macaws flew from one Wild Almond to the next directly below us.

The afternoons were occupied with observing their feeding behaviour. Macaws happen to be very messy eaters, dropping as many or more seeds as they eat. What interests the Macaws are plant embryos and endosperm, thereby accomplishing seed dispersal. As they feed, they perform an intricate balancing act. They clamber amid branches using their bills and feet, choosing a seed and tentatively extending its four toed foot, plucking it from its cluster. They then lift the seed to their mouth with a foot, rotating it until it can chip away the hard shell. Very few other birds are known to do this. Occasionally, we would see a bird leaving its place amid the branches and inch down to a seemingly popular spot of the tree trunk. We could see the birds sticking their heads into a crevice, and returning with water droplets falling from their beaks. Is this how they attain their essential liquids?

Macaws are monogamous, and highly social, flying in noisy flocks, within which, pairs are often distinguishable.

On one occasion, we sat and observed between 14 and 20 birds feeding. Every afternoon around 5:00 PM, the Macaws would seemingly become agitated and more vocal. Suddenly, a pair would depart, shortly followed by the remaining flock. Is the decision to leave always made by the same pair, or individual?

Macaws can be seen or heard flying almost any time during the day, but early morning and late afternoon appear to be more common. It also seems that they avoid activity during times with anything more than a drizzle.

During the months of June through July, Macaws follow the fruiting and flowering pattern of a number of tree species. Copano, Yerillo, Cerillo (*Symphonia globulifera*) and even the Caobilla (*Canapa guianensis*) have been eaten by the Macaws.

This year, the arrival of the Great Green Macaw, and its subsequent stay has been later than in 1992. Not every tree species will flower and bear fruit consecutively, year after year, in the rainforest, forcing the birds to look elsewhere.

This year, a biologist has been staying at the station studying the physiology of the Caobilla. He has found that the same trees that had produced thousands of seeds last year (termed mass yield), have developed very few this year in comparison. Consequently, Macaws are forced to travel great distances in search of feeding trees.

Using the Scarlet Macaw as an indication of nesting habits, it may be safe to assume that the Green Macaw nest preparation begins well before actually nesting. Evidently, the dry season (February-May) is the season for nesting. One or possibly two eggs are laid and approximately 35 days later they hatch. Duration of brooding time is 35 days and young remain in the nest for up to 3-4 months.

The most dangerous threat to the Green Macaw is habitat destruction which still persists in Costa Rica, and poaching for the pet trade. Both represent a very serious and real threat to their continued survival. Their status is listed as being widespread but they are becoming increasingly scarce residents of the Caribbean lowlands. Extensive deforestation has isolated and possibly eliminated some seasonally important feeding areas. In the Torteguro region, there is evidence that there is still hunting of Macaws for the pet trade.

by Greg Mayne
Director of Field Operations

A SPECIAL GIFT

Miek Hasslaar, of Vogelenzang, The Netherlands celebrated a 60th birthday by asking friends to contribute to COTERC's Save An Acre project in lieu of gifts and we recently received \$810 as a result. Many thanks to Miek and friends for assisting us in our conservation efforts to protect additional acres of the endangered Atlantic lowland rainforest.

CONSERVATION STRATEGY FOR CANADIAN LANDBIRDS

(adapted from *Nature Alert*, Summer 1993)

As reported in this issue of *Raphia*, there is increasing concern over the rapid disappearance of North American birds. Neotropical migrants- those birds that breed in the northern portions of North America and winter in Central America and South America- have decreased in number by up to 50 percent, and even 80 percent in some cases.

Both in tropical wintering areas and in the Canadian breeding grounds, human activity chips away at the birds' natural habitat. Species suffering from large declines include warblers, vireos, tanagers, orioles and thrushes.

Birdwatchers, through personal observations and participation in volunteer programs like Long Point Observatory's Project Feederwatch, have helped document the Canadian landbirds. Until now, the government agencies have focused conservation efforts almost exclusively on waterfowls.

Through its contract with the Canadian Wildlife Service, the Canadian Nature Federation is working on a national conservation strategy to address the imbalance. While individual efforts to protect the landbirds are important, they are not enough. Wider reaching efforts to improve habitat, support ongoing monitoring of populations, and develop a larger pool of people knowledgeable about birds and bird conservation are still needed. The Conservation Strategy for Canadian Landbirds will help ensure all interested parties make a concerted effort towards that common goal.

RECENT PUBLICATIONS

Opportunities for Implementation of Biological Control in Latin America.

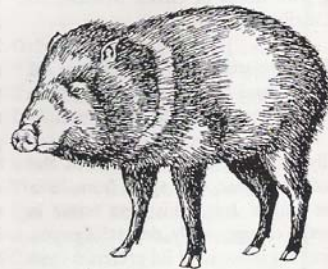
ed. by J.R. Coulson and M.C. Zapater
International Organization for Biological Control, Buenos Aires, 1992

Sustainable Agriculture and the Environment in the Humid Tropics,

by National Research Council, USA, 1993

Global Environment Facility, Sharing Responsibility for the Biosphere, vol.2

ed. David Reed
World Wide Fund for Nature, Washington, 1992



White Lipped Peccary
by Joan Watson

