
One forest, three nations: the biological and cultural diversity of Belize

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Summary: The Maya Forest straddles the countries of Belize, Guatemala and Mexico. Once home to the ancient Mayan civilization, annual archaeological expeditions continue to make new discoveries in the area. The Maya Forest is a rich source of wildlife and home to the endangered Northern Central American Scarlet Macaw. In the the Maya villages of Red Bank and San Pablo, villagers, with assistance from foreign-funds and local NGOs, have created a community tourism industry. Unfortunately, a hydroelectric project, the Macal River Cahillo Project [MRCP] involving the construction of the Chalillo Dam threatens the only known nesting areas for the Belizean population of scarlet macaws.

Key Words

BELIZE CONSERVATION SCARLET MACAW

Introduction

Even though over 70 percent of Central America has been deforested within the past 40 years (Primack *et al.*, 1998), there still exists in northern Central America over 25,000km² of tropical forest, representing the largest block of tropical forest north of the Amazon Basin. Stretching into the countries of Belize, Guatemala and Mexico, this forest is often referred to as the Selva Maya, or Maya Forest (Primack *et al.*, 1998).

This rich land is home to a diverse legacy of natural and cultural resources, unique to the region. For more than 1,000 years, the forest was home to one of the most developed civilizations of its time, that of the ancient Maya. Today, the remains of this rich legacy are found throughout the forest, reflecting a culture that practised mathematics, astronomy and a sophisticated writing system, as well as a calendar system measuring time more accurately than the modern Gregorian calendar (Nations & Bray, 1998). The natural resources within this forest are another expression of its unique profile. Standing at the foot of an ancient Maya temple, one may catch a glimpse of a rare Ocellated Turkey (*Agriocharis ocellata*) passing by, or see the tracks of the endangered Central American Tapir (*Tapirus bairdii*). The roar of the Black Howler Monkey (*Alouatta pigra*) is often the vocal rainforest backdrop. Other animals that share this tri-national forest include the largest cat of the American tropics, the Jaguar (*Panthera onca*), as well as one of the

world's most endangered parrots, the Northern Central American Scarlet Macaw (*Ara macao cyanoptera*).

Belize has over 40 percent of its land under some category of official protection (Central American Commission on Environment & Development, 1999) and thus provides a vigorous stronghold for this important natural and cultural diversity. Moreover, tucked away within the Maya Forest of Belize is some of the most undisturbed tropical habitat remaining in the region. The Central Maya Mountains are difficult to access and shelter undocumented Maya ruins, and thus provide sanctuary to a wealth of species of flora and fauna, some newly discovered. This area is an important ecosystem not only for the nation, but also for northern Central America as well.

Illustrating this rich natural heritage is the highest forested elevation in Belize, known as Doyle's Delight. Reaching 1,124m within the Chiquibul Forest Reserve, and lying along the main divide of the Maya Mountains, an expedition was undertaken here in the mid-1990s which resulted in the collection of 130 species of plants that had never before been recorded in Belize. One species of bamboo found on this same field investigation was completely new to science (Matola, 1995). That so many new species could be found and recorded in just a single expedition hints at the potential number of species still unrecorded and awaiting documentation.

Important Maya archaeological sites, undisturbed for over 1,000 years, also have been recently discovered and documented. For example, lying within the orbit of the huge Maya complex of Caracol in the Chiquibul National Park, these ruins promise to reveal ever more about the lives of the ancient Maya. Knowledge of these ancient cities has been gleaned from writings left behind by their former occupants. It appears that the two great Maya kingdoms, Tikal (in present day Guatemala), and Belize's Caracol, did not co-exist peacefully. Further investigations of sites nestled in the Central Maya Mountains (not yet fully studied by archaeologists) can only add to the data that tell the story of this ancient civilization. Archaeological research is ongoing – yearly, local archaeologists team up with researchers from overseas universities and diligently search for further clues of ancient Maya civilization. House mounds and temples appear throughout Belize, settled among the Maya Forest. At its peak of population, around the year AD700, the Maya Forest was likely home to as many as five million people (Primack *et al.*, 1998). Consequently, the artifacts of their past are discovered during annual archaeological forays.

Providing sound stewardship for these resources and preserving the integrity of the landscape in which these important resources are found empowers the countries sharing the forest. More than ever before, the nature-based tourism industry is vital to the economies of Belize, Guatemala and Mexico. While tourism still stands as the world's largest civil industry, the nature-based segment of this industry is its fastest growing component. In Belize, it is currently one of the largest contributors to the country's gross national product (Belize Tourist Board, 2001). The signature resources of the Maya Forest, those which attract visitors and income into the region, are both its cultural and natural amenities.

The Maya Forest is an important habitat for the jaguar (*Panthera onca*). This great cat, the largest predator of the neotropical forest, ranges over great distances. For instance, male jaguars are known to travel over 70km daily in search of food (Rabinowitz, 2000). In Belize, the Cockscomb Basin Wildlife Sanctuary, covering a territory over 200,000ha, has been given protected status specifically to target the preservation of the jaguar. However, jaguars found there undoubtedly travel into neighbouring forests, both for search of food and breeding partners (Wildlife Conservation Society, 2001; Rabinowitz, 1986). The jaguar is discrete by nature and it is a compelling moment when the tracks of these animals are seen.

To appreciate the significant role a species can play in the economic base of Belize, Guatemala and Mexico, it is instructive to focus on the Northern Central American Scarlet Macaw (*Ara macau cyanoptera*). Recognized as a subspecies of the scarlet macaws found in South America and even in southern Central America (Weidenfeld, 1994), it has been determined by field investigations that fewer than 1,000 of these birds exist within the Maya Forest. The importance of this subspecies of scarlet macaw to the region is signalled by the formation of a tri-national coalition whose primary objective is to ensure its preservation. This coalition, Guacamayas Sin Fronteras (Scarlet Macaws Without Borders), has annual meetings where research is shared and efforts are made to strengthen the protection of this rare parrot.

One conservation measure initiated on behalf of the remaining scarlet macaws in the Maya Forest involved its official status of protection. Guacamayas Sin Fronteras, realizing the vital role this species plays in the economic profile of three nations, voiced concern that the protected status assigned by BirdLife International to the Scarlet Macaw, was 'Least Threatened'. It was felt that this designation did not reflect the bird's CITES Appendix 1 status (which is the strongest category assigned to any endangered species), nor did it reflect its scant remaining populations in Northern Central America. BirdLife International has the mandate to assign levels of protection status to 9,000 species of birds worldwide, but due to the enormous magnitude of this task, they address protection status at the species level only. However, because the scarlet macaws found in the Maya Forest are so rare, BirdLife International addressed their conservation specifically. In a letter, officials noted that this subspecies should be considered 'Endangered', and if its reproductive grounds were fragmented further, their status should be elevated to 'Critically Endangered' (BirdLife International, 2001).

In Belize, the scarlet macaw is a dynamic force within the country's nature based tourism industry. During certain times of the year, flocks of these colourful birds arrive to the Maya villages of Red Bank and San Pablo, where they feed on certain seeds of trees growing on nearby hillsides. These particular trees only fruit during the early months of the year and appear to be geographically concentrated in this area, providing an arboreal 'smorgasboard' for scarlet macaws searching for food. The Maya villagers, with assistance from foreign-funds and local NGOs, have created here an exciting community tourism industry. Many residents have become capable tour guides, leading local and foreign visitors on trails to view the scarlet macaws. Maya women make handicrafts to sell to visitors. There is a guesthouse where people can stay, and which makes early

morning observations of scarlet macaws easy. All of this empowers these communities, making them stronger both economically and culturally, and hence the scarlet macaws play a significant role in regional level socio-economic livelihoods and development. While they feed in the Maya villages in southern Belize during certain times of the year, the Macaws' reproductive grounds in the country are known to exist only in the Upper Macal river valley (Mallory & Matola, 2001).

This area has been noted as the only region within the Maya Forest where these birds exist in an undisturbed habitat (Inigo-Elias & Carreón, 1998). Unfortunately, an hydroelectric project, the Macal River Cahillo Project [MRCP] was proposed, involving the construction of the Chalillo Dam in the area. Parrot biologists within the region and noted international conservationists have advised against its construction since it would destroy the only known nesting areas for the Belizean population of scarlet macaws. However, the Government of Belize, teaming with the Canadian company, Fortis Inc., went forward with the project. Opposition to this development project resulted in legal action and the case went as far as the Privy Council, in December 2003. The Privy Council voted 3-2 in favour of the Belizean Government, so the future outlook for the scarlet macaw in northern Central America does not look favourable.

Scarlet macaws are known to fly long distances in search of food resources (Munn, 1992; Renton, 1994). The scarlet macaws of Belize are undoubtedly flying into the neighbouring forests of Guatemala and Mexico, where their natural history is strengthened by the exchange of genetic and food resources. As in Belize, nature-based tourism is also an important part of the economic strategies for communities in these parts of Guatemala and Mexico. Shared natural resources, such as outlined above, lead to shared common positive goals between nations. The scarlet macaw, a signature species of the Maya Forest, can lead to a stronger liaisons between Belize, Guatemala and Mexico, as it links these three nations on the important level of natural resources. Moreover, preserving this rare parrot species places the entire region in a strategically favourable position in the context of the overall growth of the nature-based tourism industry.

Effective measures necessary to preserve any species involve preserving the habitat upon which they depend. Belizean forests, some standing completely undisturbed, hold the key to maintaining a healthy biodiversity, both on a local and regional perspective. A solid mandate to preserve the Maya Forest goes beyond the philosophy of protecting flora and fauna solely for its aesthetic value. These resources integrate into the socio-economic profile of the countries that harbour them, and directly impact upon the lives of people. Maintaining the integrity of the Maya Forest, a forest shared by the three nations of Belize, Guatemala and Mexico, can only be beneficial to the species dependent upon it for sustenance and to the people who, in turn, depend upon these natural resources to empower their living conditions.

References

Belize Tourist Board (1998) *Five year plan for Belize*, Black Stone Corp, Toronto, and Help for Progress, Belmopan.

- Central American Commission on the Environment and Development (1999) *Environmentla Plan for the Central American Region*.
- Inigo-Elias, E. & G. Carreon (1998) 'Final report from the Trinational Workshop for the Conservation of the Scarlet Macaw, *Ara macao*, in the Maya Forest', Chiapas, Mexico, 28-30 September 1998.
- Mallory, E. & S. Matola (2001) 'Scarlet Macaw distribution and movements in the Maya mountains of Belize: Implications for Conservation', forthcoming.
- Matola, S. (ed.) (1995) *Expedition to Doyle's Delight, southern Maya Mountains, Belize*, Forest Planning and Management Project, Occasional Series no.5.
- Munn, C.A. (1992) 'Macaw biology and ecotourism, or when a bird in the bush is worth two in the hand', in S.R. Beissinger & N.F.R. Snyder (eds) *New world Parrots in Crisis: Solutions from Conservation Biology*, Washington DC: Smithsonian Institution Press, 47-73.
- Nations, J. & D. Bray (1998) 'Introduction: The Maya Forest', in Primack, R., Bray, D. & I. Ponciano (eds) *Timber, Tourists and Temples: Conservation and Development in the Maya forest of Belize, Guatemala and Mexico*, Washington, DC: Island Press, 13-20.
- Primack, R., Bray, D. & I. Ponciano (eds) (1998) *Timber, Tourists and Temples: Conservation and Development in the Maya forest of Belize, Guatemala and Mexico*, Island Press, Washington, DC.
- Rabinowitz, A. (1986) *Jaguar*, New York: Arbor House.
- Rabinowitz, A. (2000) Personal communication to Sharon Matola describing range of jaguars in Belize.
- Renton, K. (1994) 'Seasonal variations in encounter rates and the factors limiting breeding density of macaws, *Ara* species, in the floodplain forest of the Manu Biosphere Reserve, Peru', M.Sc. Thesis, University of Kent at Canterbury.
- Wildlife Conservation Society (2001) Personal communication, from researcher Lindy Silver to Sharon Matola re: camera trapping/jaguars in the Cockscomb Basin Wildlife Sanctuary.
- Wiedenfeld, D.A. (1994) 'A New Subspecies of Scarlet Macaw and its Status and Conservation', *Ornithologia neotropical*, 5, 99-104.