



## OBSERVATIONS ON THE NATURAL HISTORY OF BELIZE

by David Bingham

## INTRODUCTION

These observations on the natural history of Belize were made during the 1992 RAFOS expedition. Without specialist knowledge or experience of the wildlife of Belize, other than of the avifauna, team members' general notes therefore covered only the most obvious flora and fauna encountered.

## VEGETATION COVER

Belize is situated in the tropical realm. However, the image conjured up of high-canopy rain forest bears little resemblance to much of the country, which can be divided into distinct vegetational zones based on the type of forest cover.

**Coastal Mangrove Forests.** Mangroves are defined as any group of woody plants growing on sub-tidal or intertidal soils. The mangroves of Belize occupy the coastal fringe and are composed mainly of red mangrove, *Rhizophora mangle*, buttonwood, *Conocarpus erecta*, white mangrove, *Laguncularia racemosa*, and black mangrove, *Avicennia germinans*. These plants have different tolerances to waterlogging and grow in zones which differ in their degree of wetness. Mangrove is known to be important to many forms of marine life. The expedition visited two areas of mangrove; firstly, on the mainland close to Belize City, where a small boat was used to explore the channels and lagoons, and secondly, on the coastal fringe of Caye Caulker, where voracious black-fly proved a considerable distraction to serious observation. The mangrove forests were not a particularly productive area for watching birds. This was possibly because of the lack of understorey vegetation, the low botanical diversity, or because of the difficulty in seeing through the dense foliage.

**Pine Forest – Pine Ridge.** Pine ridge refers to the pine-oak-palmetto forest and savanna in Belize, the term ridge having no topographical connotations. Pine ridge forests occur in dry, sandy, nutrient-poor areas. The dominant tree species is Caribbean Pine, *Pinus caribea*, which grows in association with Calabash, *Crescentia cujete*, tropical oaks, *Quercus spp*, Yaha, *Curatella americana*, Craboo, *Byrsonima crassifolia*, and the Palmetto Palm, *Acoelorrhaphe wrightii*. Pine ridge forests have open canopies, and in some areas are deliberately burnt to improve grazing. The ground cover consists of grasses, sedges, and wild flowers. The balance between tree cover and grassland is often affected by the frequency of burning. The expedition visited areas of pine ridge along the coastal plain. Here, areas of sandy soil supported a savanna of low growing shrubs and grasses. This was a good place for soaring raptors, possibly because the light-coloured land surface gave good thermal conditions. A more typical pine ridge forest was found near the camp at Crooked Tree. Here the Trogon Trail passed through open-canopy Caribbean Pine woodland, grassland, and oak woodland. An interesting feature of the oak woodland was the extensive use the villagers of Crooked Tree were making of this resource for the production of charcoal. This area was well-studied because of its proximity to camp. It produced some a wide variety of birds, including hummingbirds, trogons, parrots, woodcreepers, and woodpeckers, and the sole record of Yucatan Jay, *Cyanocorax yucatanicus*.

**Swamp Forest – Bajo.** Swamp forests can be found around the inland lagoons of Belize, and they are characterized by permanently wet soils and a relatively low canopy. Some of the common tree species are Pokenoboy, *Bactris major*, Give and Take, *Chrysophila argentea*, and Cabbage Palm, *Euterpe macrospodix*. Crooked Tree village is situated next to an inland lagoon which is surrounded by swamp forest. The expedition explored the lagoon by boat to observe the bird-life. The lagoon was much richer in bird-life than the saline coastal lagoons. It had abundant waterfowl, herons, and cormorants. The surrounding swamp forest was difficult to assess as a site for birds. However, a colony of Boat-billed Heron, *Cochlearius cochlearius*, was found to be using this habitat to breed. A large-scale

biological experiment has been inadvertently set up by the construction of the causeway across Northern Lagoon to Crooked Tree village, because the nutrient supply between the two halves of the lagoon has been cut off, resulting in the large-scale die-back of marginal vegetation in the northern, isolated section which was noted as holding a much lower diversity and abundance of birds.

**Broken Canopy Broadleaved Forest – Broken Ridge.** Broken ridges are open canopy hardwood forests on soils of intermediate fertility. They are composed of various species, and often contain light-demanding plants capable of rapid growth. The expedition visited broken ridge forest which surrounded the Mayan ruins at Altun Ha. The ruins afforded good viewpoints over the canopy, a factor which may have biased an assessment of this habitat for birds.

**Cohune Palm Forest – Cohune Ridge.** The Cohune Palm, *Orbigyna cohune*, is one of the commonest tree species in Belize, and often forms dense monotypic stands on fertile organic soils. Isolated cohunes are sometimes left after forest clearance, not only because being a very hard wood, they are difficult to fell with hand axes, but also because they provide shade for cattle. The expedition saw many cohunes, but did not visit the interior of a monotypic cohune forest.

**Broadleaved Hardwood Forest – High Ridge.** High ridge forests are the closed canopy broadleaved forests of Belize. This forest type occurs along rivers and on the upland limestone. The expedition did not get the opportunity to visit the latter, but mature riverine forest was explored at Bermudian Landing and Guacanaste National Park. These sites were rich in bird-life, although observation was sometimes difficult. Common riverine tree species include Bri-bri, *Inga edulis*, Bullet Tree, *Bucida buceras*, Wild Grape, *Coccoloba belizensis*, Swamp Dogwood, *Lonchocarpus hondurensis*, Provision Tree, *Pachira aquatica*, Cabbage Palm, *Euterpe macrospadix*, and many fig species, *Ficus spp.*

**Cultivated Land.** As often happens, the playing fields, gardens, sewage works, drains and ditches, orchards, and pastures proved to be very productive birding localities, particularly for flycatchers, kiskadees, hummingbirds, orioles, and the larger kingfishers. However, the large sugar cane fields north of Orange Walk held as few birds as the more familiar cereal monocultures of Northern Europe.

**Milpa – Slash and Burn.** Traditional agricultural methods in Belize include clearing one or two acres of land with machetes, and burning the resultant slash to enrich the soil. These "milpas" are then cultivated for 1–4 years before allowing the land to lie fallow. Research has shown that providing the milpa is allowed to lie fallow for 15–30 years, the soil will fully recover its fertility, and mature forest can re-establish itself. Areas of milpa were visited near Bermudian Landing.

**Epiphytes, Vines and Lianas.** The hardwood trees in Belizean forests support a wide range of epiphytes, including ferns, bryophytes, lichens, bromeliads, and orchids, together with numerous vines and lianas. Although individual epiphytes do not damage the host tree, the accumulated weight of plants can cause harm through a build-up of epiphytic load. Added to this burden, strangler figs may eventually kill the host tree by constriction. In order to reduce their epiphytic load and attack by strangler figs, rainforest trees have evolved smooth bark. The expedition saw numerous examples of trees heavily infested with epiphytes. An example of the ultimate defence against epiphytes was seen in the Gumbolimbo, *Bursera simaruba*. This species sheds its bark in order to rid itself of the seeds of epiphytes. The specimen examined was fully grown and completely free of epiphytes.

## INVERTEBRATES

Team members with experience in the rainforests of Brunei noticed that butterflies were less numerous and diverse in Belize. Some spectacular butterflies were seen, but unfortunately they could not be identified because a field guide was not available. Other notable invertebrates included fireflies, cicadas, spiders, and a large scorpion found under a team member's bed.

## REPTILES

**Scaly-tailed Iguana**, *Ctenosaura similis*. Local name, Wish-Willy.

**Green Iguana**, *Iguana iguana*. Local name, Bamboo chicken. Iguanas were the most obvious reptiles seen in Belize. Arboreal, and up to 1.5m long, they were seen in all forest habitats. On several occasions, large iguanas were seen at the very tops of tall trees, amongst the very thin branches.

**Striped Basilisk**, *Basiliscus vittatus*. Local name, Jesus Christ Lizard. This small, agile lizard was common at Crooked Tree. It ran away on its hind legs when approached.

## MAMMALS

**Squirrels**, *Sciurus spp.* Squirrels of many kinds were abundant in all forests.

**Tamandua**, *Tamandua mexicana*. Local name, Antbear. The Tamandua is an anteater about the size of a very large cat, but with the build of a bear. It has a long snout and powerful forelegs armed with long claws. According to local information, it is stubborn, and of uncertain temper. Dogs killed a Tamandua in Crooked Tree village one night, but it had despatched several dogs and had injured others. Another was found feeding on termites at the base of a lone Cohune Palm on a nearby ranch. It climbed reluctantly into the palm when approached, and moved between trees by adjoining palm fronds.

**Otter**, *Lutra longicaudis*. Local name, Waterdog. A lone otter was seen daily feeding in the cut-off section of the lagoon near Crooked Tree village.

**Coatimundi**, *Nasua narica*. Local name, Quash. A single Coatimundi was seen feeding unconcernedly in the lower branches of a tree near the newly-discovered Mayan ruins on Northern Lagoon.

**Agouti**, *Dasprocta punctata*. Local name, Rabbit. Tasted but not seen uncooked!

**Black Howler-monkey**, *Aloutta pigra*. Local name, Baboon. A colony of Black Howler-monkeys was observed at the Community Baboon Sanctuary. This innovative project, established by Dr Robert Horwich, involves the rural population in the conservation of the monkeys by the through a voluntary management plan agreed between private landowners. The plan aims to ensure the sustainable use of the land to the benefit of both local residents and the environment.

**Jaguarundi**, *Felis yagouarundi*. Local name, Tiger cat. Three of these low-slung, long-backed medium-sized cats were seen near Airport Camp.

**Cat Sp**, *Felis sp.* A cat came into camp in the early hours. The dogs rushed furiously at it, and it responded with a powerful scream, a low-pitched howl, and vigorous spitting noises. **Abruptly**, all dog noises ceased. Strangely, the spirit of scientific enquiry was absent. It was **unanimously** agreed that the cat was not small! The dogs appeared in the morning, **unscathed**, but subdued.

**Reference:** A Belizean Rain Forest, (Horwich and Lyon), Orang utan press.



## ORNITHOLOGICAL OBSERVATIONS

### Plumage

Most of the migrants were in, or entering, full breeding plumage, the warblers being ahead of the finches. Many of the resident birds were either breeding, in vigorous courtship, or claiming territory by song. Many birds, even those which are shy or skulking by nature, therefore could be found more easily, and once found, their chances of being identified positively were greater. Conversely, quite a number of individuals of resident species exhibited heavy feather wear, and even in February, there were quite a number of juveniles. The drab or intermediate plumages of these groups was a source of confusion. Such difficulties were compounded amongst the hummingbirds, whose speed and restlessness led to low identification success rates at times.

### Unusual Raptor Behaviour

During a boat trip at the southern end of Northern Lagoon, we observed a Peregrine Falcon, *Falco peregrinus*, soaring. After a few unsuccessful stoops on swimming ducks, American Coot, *Fulica americana*, and on Northern Jacana, *Jacana spinosa*, feeding on offshore weed patches, it took to soaring behind the boat. As the boat changed course to follow the twisting, weed-free channels, so the bird maintained its relative position to the stern, augmenting its soaring with wingbeats when following the boat against the light wind. It waited for waterbirds to be put up by the boat; after two inconclusive stoops and chases, where on both occasions the pursued duck simply closed its wings and struck the water in a dive, it stooped upon a small flock of six American Coot which the boat had disturbed into flight. The stoop was up-sun, and shallow, the Peregrine reaching level flight 40 metres behind the flock. It maintained the chase, catching not the hindmost birds on the outside of the flock, but one which was close to the leading bird. The Peregrine used its overtaking speed to drag its prey up from close to the surface to about 15 metres, where it struggled to maintain speed and altitude. It headed towards the nearest tree, which was about 80 metres away, standing amidst dense undergrowth, but with a convenient bare branch just above the undergrowth. As it approached the branch from slightly below it, it stretched out a talon to land, but this unbalanced its control of the load, and the coot dropped into the undergrowth, its state of health unknown. On the return boat trip, the Peregrine once again shadowed the boat, but at a much higher altitude, and did not stoop, possibly because it had been successful in the interim. The behaviour of the Peregrine could be described as an example of indirect tool-use by a bird, in that it uses the presence of a boat to aid its hunting.

### Cormorant abundance

When initial sightings of Double-crested Cormorant, *Phalacrocorax auritus* were well in excess of 100 birds at Belize Harbour (BH), the Recorder requested great care be taken to identify the species correctly. Five members of the party had considerable experience of the species, but all took great care in identification, and we confirm the numbers as being mid-Order 3 at BH and Cay Caulker (CC). The Belize 1986 checklist lists the bird as uncommon along the coast and in the cays. Subsequent checks are called for at this time of year to determine whether past under-reporting, an atypical influx, or a genuine increase reflects the true status of the species.

### Relative abundance of *Aythya* ducks

In Northern Lagoon, sharing the west side with rafts of American Coot, *F. americana*, were several hundred *Aythya* ducks. A few Lesser Scaup, *A. affinis* had been seen near Crooked Tree (CRT) village early on, and also in other locations, but the mass of *Aythya* ducks were extremely wary, and kept well distant from the causeway, and from the boat we used. These ducks were assigned the identity of *A. affinis* until a number were seen much closer to the causeway. At least 50 were seen to be ♂ and ♀ Ring-necked duck, *A. collaris*, and we have no reason to believe that several hundred slightly more distant were any different. Four of the party had experience of *A. collaris*, and are confident of the identification. This sighting

raises the 1986 checklist total to 51. We suggest that great care be taken when observing *Aythya* duck on Northern Lagoon to help establish whether our record was a "one-off".

#### Early record of summer resident vultures

There were two sightings of two Lesser Yellow-headed Vulture, *Cathartes burrovianus*, at CRT on 25 Feb and 1 Mar respectively. The 1986 Belize checklist list it as a summer resident. It may be that a few pairs remain all the year round.

#### Early record of summer resident raptor

There was a sighting of one American Swallow-tailed Kite, *Elanoides forficatus*, on 28 Feb along the Northern Highway (NH), and of 20 in an ascending spiral at Altun Ha (AH) on 1 Mar. Although classed as a summer resident in the 1986 Belize checklist, it is possible that these were passage migrants on their way north.

#### Duetting witnessed

Duetting between ♂ and ♀ Plain Chachalaca, *Ortalis vetula*, was observed on several occasions, most noticeably at Airport Camp (APC), close to a busy road. Unless the birds are seen performing, the continuous racket is so seamless that it is difficult to believe that two birds are actually singing alternately.

#### Identification difficulties

Many species were difficult to identify for certain, and many individual birds flew or disappeared into cover too quickly to allow identification, but there were several particular areas of difficulty.

**Dowitcher sp** At the Esso Oil Terminal (EOT), there were many Dowitcher sp which remained unidentified. Relatively few Short-billed Dowitcher, *Limnodromus griseus* were positively identified. The 1986 Belize checklist rates this species as uncommon along the coast, and has no comment on its status in the cays. Long-billed Dowitcher, *L. scolopaceus*, which was not recorded, is rated as rare along the coast, although it may have been present. *L. griseus* was present in small numbers at CC.

**Parrot sp.** Parrot identification proved difficult, because most sightings were of birds in flight, whose speed prevents detail being obtained.

**Ground-dove sp.** Identification of Ground-dove spp. was much more difficult than expected, partly due to the grass hiding detail, and partly because the aspect the birds presented, unless ideal, both obscured detail and rendered the base feather colour differently with the different angles and intensity of light.

**Empidonax sp.** Apart from Least Flycatcher, *Empidonax minimus*, whose small size was the clue, there were several other sightings of normal-sized *Empidonax* flycatchers, but to none could an identity be assigned with confidence.

**Hummingbird sp.** As expected, the small size, rapid acceleration and restless behaviour made hummingbirds difficult to identify, but on many occasions, even when the birds remained cooperative, it was not possible to assign specific identity to ♀♀.

#### Skua (Jaeger) sightings

On three different dates at the seafront at BH, Arctic Skua (Parasitic Jaeger), *Stercorarius parasiticus* were seen, singletons on 21 and 24 Feb, and on 3 Mar, two birds. They harried any gull foolish enough to come close. Assuming only two birds to be involved, these sightings raise the Belize 1986 checklist total to three individuals.

**White-collared Swift gliding and soaring.**



Just above the trees at Guanacaste Nature Reserve, a flock of over 100 White-collared Swift, *Streptoprocne zonaris*, passed in gentle, almost straight flight, with few (for swifts) wingbeats. They appeared to be taking advantage of the lift created by a steady, light headwind over the treetops in their gliding and soaring flight, which lifted them from two to 20m above the canopy. Their passage was slow, but none were seen to hunt insects. There were no stragglers.

#### Colour variation in Red-vented Woodpecker

Ridgely describes Red-vented Woodpecker, *Melanerpes pygmaeus*, as being "a small version of Golden-fronted Woodpecker", *M. aurifrons*, "with...more yellow on the chin". Peterson largely agrees. However, most of the birds seen actually had red on the chin and on the bill upper base-feathers.

#### Occurrence of Brewster's Warbler

The sighting of a Brewster's Warbler, the dominant hybrid of Blue-winged warbler, *Vermivora pinus*, and Golden-fronted Warbler, *V. chrysoptera*, is scarcely unexpected, though always likely to be uncommon, given that these hybrids will migrate with the rest of the local populations of both species, and will return to breed, but it may be a first record for Belize.



*The Royal Air Force*

*Ornithological Society*

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