

EXERCISE KING VULTURE

BELIZE

23 FEBRUARY – 16 MARCH 1982

INTRODUCTION

The expedition to Belize was the second overseas by the Army Bird Watching Society (ABWS). The main reason for choosing to go to Belize in 1982 was the possibility that, owing to changes in the political situation and the subsequent reduction or withdrawal of British troops, this might be the last year in which a military – sponsored expedition would be permitted. In the event, on our return to the UK we learned that, had we planned to go only a month later than we did, we would not have been allowed to go.

Authority for concessionary travel was granted by the Ministry of Defence and permission for the expedition to take place was kindly given by the Commander British Forces Belize.

Authority to net and ring birds was given by the Head of the Belize Forestry Service, Belmopan. The rings (or bands) were provided by the United States Fish and Wildlife Service Bird Banding Laboratory, Laurel, Maryland, for the ringing of migrant (but not resident) species.

The following members of the ABWS took part:

Major T T Hallchurch, MBE, R SIGNALS **Leader**

Lt Col A M Macfarlane, RA

Lt Col (Retd) D W Sherrard-Smith

Major D J R Counsell, RA

Major M C Hann, ACC

Major I F B P Hodgson, RTR

Major P J Hubert, MBE, QUEENS

Major G D Sargent, RAEC

Capt R Marsh, RAEC

LCpl P J Toms, R IRISH

LCpl R Walters, RAOC

In addition, Mr Chris Mead, of the British Trust for Ornithology, was invited to join the expedition particularly to guide and instruct the ringing members.

Major Hallchurch had taken part in the RAF Ornithological Society's expedition to Belize in 1981 and was thus able to reconnoitre for the 1982 expedition at the same time. Major Counsell had also been with the RAF expedition in 1981 and Major Hubert had visited Belize on six previous occasions. Major Hodgson was actually stationed in Belize at the time of our expedition. There was, therefore, considerable local knowledge already available to us.

An administrative team was provided by 30 Signal Regiment of a sergeant, a radio operator, a REME mechanic and an ACC cook. These volunteers thus enabled the expedition members to be free of most of the administrative chores. Radio contact was maintained on a scheduled basis with Airport Camp throughout the expedition.

Belize



Map 1. With acknowledgements to the Central Office of Information.

BACKGROUND NOTES

Belize, known until 1973 as British Honduras, achieved its independence on 21 September 1981. Faced by continuing external threats to its territorial integrity, the Belizean Government came to an agreement with the Government of the United Kingdom for the retention of a British military presence. The fact of this presence enabled the expedition to go ahead and prosper as it did.

Belize lies on the east coast of Central America, bounded on the north and north-west by Mexico, on the west and south by Guatemala and on the east by the Caribbean Sea, with a coast line of some 320 kms including numerous small islands. It is a little larger than Wales, having an area of 22,963 sq kms. (Map 1).

Physical Features. Belize is a country of limestone mountains, swamps and tropical jungle. The northern part consists of lowlands under 60 metres high, much of which is swamp crossed by sluggish, meandering rivers, including the Belize and Sibun. The southern part is dominated by the Maya Mountains, a plateau which has been worn by erosion into hills and valleys which stretch across the frontier from Guatemala on a south-west to north-east line. A spur of the Maya range, the Cockscomb Mountains, runs towards the sea and ends at Victoria Peak (1122 metres).

About 25 kms off the coastal plain lies the second largest barrier reef in the world, fringed by many small islands known as cays (pronounced 'keys').

Climate and Vegetation. Belize enjoys a subtropical climate, with a dry season from late February to May and a wet season from June to November. The average annual rainfall varies from 135 cm at Corozal in the north to 455 cm at Punta Gorda in the south. The average temperature at Belize City varies from 28°C in July to 23°C in December, but for most of the year the heat and humidity are tempered by onshore trade winds. Occasionally, the area is struck by hurricanes, which can cause heavy loss to life and property.

The country is heavily wooded. Oak and pine grow on some of the ridges, and the coastal plain is open savannah, except in the south where it is mostly swamp jungle. Mangrove is found all along the coast. Forestry was formerly the most important industry but agriculture, particularly citrus fruits and sugar cane, has expanded greatly. Maize and rice are also widely grown.

Weather Summary. The weather throughout the expedition was warm and generally dry except for one day, 1 March, when there was heavy and almost continuous rain throughout our move from Guacamallo Bridge to Big Falls Ranch. Maximum temperatures at Airport Camp ranged from 27–31°C and minimum temperatures there ranged from 17–24°C.

LOCALITY DESCRIPTIONS

Guacamallo Bridge. Guacamallo Bridge is situated on the Macal River which borders the Mountain Pine Ridge area of central Belize, in Cayo District, at about 400 m. The river itself is fast-flowing, with rapids and placid stretches of water. Mountain Pine Ridge is perhaps one of the most beautiful areas of Belize and the Macal River, flowing northwards at this point, separates secondary jungle to the west from pine forest to the east. Although the weather was hot by day, it was distinctly cool at night.

Big Falls Ranch. Big Falls Ranch lies at about 40m on the flat south bank of the slow-moving Belize River, some 33 kms north-east of Belmopan, also in Cayo District. It is principally a rice farm, but there are considerable numbers of cattle in the drier areas. The whole ranch is about 14,000 ha (35,000 acres) but only about one-third is now devoted to the growing of rice. These extensive flooded areas provide an ideal habitat for herons, ducks and waders. The Belize River, being wooded along its margins and having dense jungle to the north, is another excellent habitat and the rice processing plant near the river has heaps of waste grain which is most attractive to seed-eaters and their attendant predators.

Blue Creek. The Blue Creek is a tributary of the Moho River in the southernmost Belizean District of Toledo. The stretch we studied flows out from a cavern at the base of a high cliff on the southern face of a line of jungle-covered limestone hills and passes a large wooden hut where visitors can stay. This lies at about 200 m. The verandah of the hut overlooks a wide pool which is ideal for swimming, large enough for a canoe and which holds large shoals of small fish which nibble bathers. The jungle is quite tall and traversable but open areas for watching birds are few. Below the pool, the river flows through a Mayan village of some 20 attap houses and is crossed by a rough road which leads to Punta Gorda. Around this village and along the road, the land is flat and more open and is used for grazing and cultivation of maize, bananas and sorghum, while rice is being increasingly developed as a crop. Some lowland jungle remains also and much of the ground is marshy.

ITINERARY 1982

Date	Activity	Grid Reference
23 Feb	Arrive Airport Camp (APC)	CQ 611400
24 Feb	APC	
25 Feb	APC and Visit to Altun Ha via Mile Stone (MS) 23 Ponds	CQ 5764 CQ 575574
26 Feb	Move to Guacamallo Bridge	BP 826658
27-28 Feb	Guacamallo Bridge	
1 Mar	Move via Holdfast Camp to Big Falls Ranch	BQ 8802 CQ 3134
2-4 Mar	Big Falls	
5 Mar	Return to APC	
6 Mar	APC and Visit to Cay Chapel	CQ 8957
7 Mar	APC and Belize City Oil Terminal	CQ 731339
8 Mar	Move via Cabbage Haul Creek to Blue Creek	CP 342273 BN 815921

9 Mar	Blue Creek and Punta Gorda	CN 0780
10 Mar	Blue Creek and San Jose	BN 7609
11 Mar	Blue Creek	
12 Mar	Return to APC via The Dump and Dangriga (Stann Creek)	BN 927950 CP 7076
13 Mar	APC and Visit to Northern Lagoon	CQ 6018
14 Mar	APC and Visit to Altun Ha via MS 23 Ponds	
15 Mar	APC and Belize City Oil Terminal	
16 Mar	Depart APC for UK.	

SYSTEMATIC LIST

LEAST GREBE *Podiceps dominicus*

MS 23 Ponds: three on 25 Feb and four on 14 Mar. APC: one on 12 and 14 Mar.

PIED-BILLED GREBE *Podilymbus podiceps*

Big Falls: one on 4 and 5 Mar.

BROWN PELICAN *Pelecanus occidentalis*

Common at all coastal sites, with 42 seen at Dangriga on 12 Mar.

DOUBLE-CRESTED CORMORANT *Phalacrocorax auritus*

Off-shore near Cay Chapel: party of 200 on 6 Mar.

NEOTROPIC CORMORANT *Phalacrocorax olivaceus*

APC: up to three daily. Big Falls: up to six daily. Northern Lagoon: 50 on 13 Mar, with a further 30 en route to the Lagoon. Nest with chicks seen at Northern Lagoon.

ANHINGA *Anhinga anhinga*

APC: up to four daily. Big Falls: up to six daily. Northern Lagoon: 50 on 13 Mar.

MAGNIFICENT FRIGATEBIRD *Fregata magnificens*

Common at all coastal sites, with 50 at Cay Chapel on 6 Mar and 45 at Dangriga on 12 Mar.

GREAT BLUE HERON *Ardea herodias*

APC: one on most days. Big Falls: up to three daily. Northern Lagoon: ten on the approach canal. Singles at several other coastal sites.

GREAT EGRET *Egretta alba*

APC: up to six daily. Big Falls: up to 20 daily. Northern Lagoon: 120 on two cays on 13 Mar and several nests with young.

SNOWY EGRET *Egretta thula*

APC: one on most days. Big Falls: up to ten daily. Northern Lagoon: c.60 on approach canal from Belize City on 13 Mar. Belize City Oil Terminal: c.60 on 15 Mar.

LITTLE BLUE HERON *Florida caerulea*

APC: up to three daily. Guacamallo Bridge: two on 28 Feb and 1 Mar. Big Falls: up to 300 daily. Cay Chapel: 25 on 6 Mar. Common at all lowland sites.

REDDISH EGRET *Dichromanassa rufescens*

Cay Chapel: two on 6 Mar.

TRICOLORED HERON *Hydranassa tricolor*

APC: one on 25 Feb. Big Falls: up to three daily. Cay Chapel: six on 6 Mar. Belize City Oil Terminal: c.44 going to roost on 7 Mar and c.40 leaving roost on 15 Mar.

CATTLE EGRET *Bubulcus ibis*

Common throughout areas of pasture, with up to 1000 at Big Falls.

GREEN HERON *Butorides virescens*

Common throughout lowlands, with up to 50 at Big Falls.

BLACK-CROWNED NIGHT-HERON *Nycticorax nycticorax*

Big Falls: two on 1 Mar. Northern Lagoon: 30 on 13 Mar.

YELLOW-CROWNED NIGHT-HERON *Nyctanassa violacea*

Big Falls: up to 40. Cay Chapel: 20 on 6 Mar. Blue Creek: one on 11 Mar.
Bird Island, Northern Lagoon: two on 13 Mar. MS 23 Ponds: two on 14 Mar.

BARE-THROATED TIGER-HERON *Tigrisoma mexicanum*

Big Falls: one heard near the junction of the approach track with the Western Highway on 1 Mar.

LEAST BITTERN *Ixobrychus exilis*

APC: one at the DOE pond and one at the Tx site on 25 Feb; one at the DOE pond on 14 Mar and two at the Tx site on 16 Mar.

AMERICAN BITTERN *Botaurus lentiginosus*

Big Falls: one was heard on 2 Mar and single birds were seen on 3 and 4 Mar.
The Dump: one seen on 12 Mar.

PINNATED BITTERN *Botaurus pinnatus*

Big Falls: at least five on 2 Mar; three on 3 Mar and ten on 4 Mar. Direct comparison in flight between this species and *B. lentiginosus* showed clearly the difference in size

BOAT-BILLED HERON *Cochlearius cochlearius*

Bird Cay, Northern Lagoon: six adults and six immatures on 13 Mar.

WOOD STORK *Mycteria americana*

Big Falls: four on 1 Mar, one on 2 and 3 Mar. Cabbage Haul Creek: one on 8 Mar.
Blue Creek: five on 10 Mar.

JABIRU *Jabiru mycteria*

Big Falls: two (one immature) on 2 Mar and one on 3 and 4 Mar.

WHITE IBIS *Eudocimus albus*

Big Falls: up to 100 daily. Cay Chapel: eight on 6 Mar. Belize City Oil Terminal: 89 on 7 Mar and 30 on 15 Mar. Northern Lagoon: 100 on 13 Mar.

DARK IBIS *Plegadis sp.*

Northern Lagoon: one en route to the Lagoon on 13 Mar.

GREEN-WINGED TEAL *Anas (crecca) carolinensis*

Big Falls: seven on 2 Mar.

AMERICAN WIGEON *Anas americana*

Belize City Oil Terminal: a pair on 7 and 15 Mar.

BLUE-WINGED TEAL *Anas discors*

MS 23 Ponds: 23 on 24 Feb and seven on 14 Mar. Big Falls: up to 2000 daily.
Cay Chapel: 37 on 6 Mar. Belize City Oil Terminal: 47 on 7 Mar and 44 on 15 Mar.

MUSCOVY *Cairina moschata*

APC: two on 25 Feb. Big Falls: present on most days, with a maximum of 219 on 2 Mar. Blue Creek: 15 on 9 Mar and four on 10 Mar.

TURKEY VULTURE *Cathartes aura*

Common and widespread, with maximum counts as follows: APC: 50; Big Falls: 50; Blue Creek: 10.

BLACK VULTURE *Coragyps atratus*

Common and widespread, with maximum counts as follows: APC: 6; Big Falls: 40; Blue Creek: 8.

KING VULTURE *Sarcoramphus papa*

Altun Ha: one on 25 Feb. Guacamallo Bridge: three on 27 Feb. Blue Hole, Hummingbird Highway: two on 8 Mar. Blue Creek: two on 9 and 11 Mar. Cabbage Haul Creek: one on 12 Mar.

OSPREY *Pandion haliaetus*

Belize City: up to four on 24 Feb, 7 and 15 Mar. APC: one on 24 Feb and 15 Mar. Río On Sawmill, 15 kms NNE of Guacamallo Bridge: one on 1 Mar. Big Falls: one on most days. Cay Chapel: one on 6 Mar, and a nest was seen on the water-tower, south of the hotel.

SWALLOW-TAILED KITE *Elanoides forficatus*

Guacamallo Bridge: four on 27 Feb. Cabbage Haul Creek: eight on 8 Mar. Blue Creek: seen daily, with a maximum of eight on 9 Mar. San Jose: 15 together on 10 Mar.

WHITE-TAILED KITE *Elanus leucurus*

Regularly seen in areas of pasture and open cultivation. APC: one or two on most days. Big Falls: up to 13 daily, including three juveniles. Blue Creek: one on most days.

SNAIL KITE *Rostrhamus sociabilis*

APC: up to eight in late Feb, reducing to only two by 15 Mar. Big Falls: up to 15 daily. Blue Creek: one on most days.

DOUBLE-TOOTHED KITE *Harpagus bidentatus*

San Jose: one on 10 Mar.

PLUMBEOUS KITE *Ictinia plumbea*

Guacamallo Bridge: up to three on most days. Big Falls: one on 2 Mar and two on 3 Mar. Blue Creek: eleven on 10 Mar and one on 11 Mar. San Jose: ten together on 10 Mar.

MARSH HAWK *Circus cyaneus*

APC: one on 23 Feb. Big Falls: one on 2, 3 and 4 Mar.

WHITE HAWK *Leucopternis albicollis*

Guacamallo Bridge: one on 28 Feb. Big Falls: one on 2 Mar. Cabbage Haul Creek: one on 9 Mar. Blue Creek: three on 10 Mar and one on 11 Mar. Southern Highway: one on 12 Mar.

COMMON BLACK HAWK *Buteogallus anthracinus*

Single birds seen as follows: Big Falls: 2 Mar. Dangriga: 8 Mar. Blue Creek: 9 Mar. Cabbage Haul Creek: 12 Mar. Northern Lagoon: 13 Mar.

GREAT BLACK HAWK *Buteogallus urubitinga*

Guacamallo Bridge: one on 28 Feb. Big Falls: one on 2 Mar.

BLACK-COLLARED HAWK *Busarellus nigricollis*

Big Falls: two separately on 4 Mar.

GRAY HAWK *Buteo nitidus*

Guacamallo Bridge: one on 27 Feb. Big Falls: one on 1, 2 and 3 Mar. Blue Creek: three on 9 Mar, six on 10 Mar and one on 11 Mar. Southern Highway: one on 8 Mar.

ROADSIDE HAWK *Buteo magnirostris*

Altun Ha: two on 25 Feb and one on 14 Mar by the Northern Highway. Guacamallo Bridge: two on 26 Feb. Big Falls: seen daily, with 15 on 2 Mar and 16 on 4 Mar. APC: one on 5, 14 and 15 Mar. Blue Creek: up to three daily.

SHORT-TAILED HAWK *Buteo brachyurus*

Big Falls: two on 3 and 4 Mar.

WHITE-TAILED HAWK *Buteo albicaudatus*

Big Falls: one on 2 Mar.

CRESTED CARACARA *Polyborus plancus*

Big Falls: one on 5 Mar.

LAUGHING FALCON *Herpetotheres cachinnans*

Guacamallo Bridge: one on 27 and 28 Feb. Big Falls: up to four daily. Blue Creek: one daily.

COLLARED FOREST-FALCON *Micrastur semitorquatus*

Blue Creek: one on 11 Mar.

AMERICAN KESTREL *Falco sparverius*

APC: one on 7 Mar. San Jose: one on 10 Mar. Hummingbird Highway; one near Sibun on 12 Mar.

BAT FALCON *Falco ruficularis*

Big Falls: one daily, with three (one netted) on 3 Mar. Blue Creek: two on 9 Mar.

APLOMADO FALCON *Falco femoralis*

Guacamallo Bridge: one on 28 Feb. Cabbage Haul Creek: one on 8 Mar.

ORANGE-BREASTED FALCON *Falco deiroleucus*

Big Falls: one on 4 Mar. Blue Creek: one on 9 Mar.

PEREGRINE FALCON *Falco peregrinus*

Big Falls: one on 2 Mar.

PLAIN CHACHALACA *Ortalis vetula*

APC: three by the sewage plant on 25 and 26 Feb and on 14 Mar. Guacamallo Bridge: up to nine on most days. Big Falls: up to 12 daily. Blue Creek: eight on 11 Mar. Altun Ha: one on 14 Mar.

GREAT CURASSOW *Crax rubra*

Guacamallo Bridge: a male on 4 Feb.

BLACK-THROATED BOBWHITE *Colinus nigrogularis*

Big Falls: twelve near the junction of the approach track with the Western Highway on 1 Mar. APC: three by the airfield on 14 Mar.

LIMPKIN *Aramus guarauna*

APC: one or two on most days. MS 23 Ponds: twelve on 25 Feb, one on 14 Mar. Big Falls: common, with 50 on 3 Mar.

CLAPPER RAIL *Rallus longirostris*

APC: one at the Tx pond on 24 Feb. Cay Chapel: two on 6 Mar.

GRAY-NECKED WOOD RAIL *Aramides cajanea*
Big Falls: two on 2 Mar. Blue Creek: two on 11 Mar.

SORA *Porzana carolina*

APC: single birds seen on 5, 14 and 15 Mar. Belize City Oil Terminal: one seen on 7 and 15 Mar. A call, a short, sharp descending trill, which was believed to be that of this species, was heard frequently around APC and Big Falls and, on a few occasions, at Blue Creek.

RUDDY CRAKE *Laterallus ruber*

Blue Creek: three seen on 10 Mar. APC: one seen at the DOE pond on 15 Mar. A Ruddy Crake at Blue Creek was seen and heard to utter a call, a descending trill, longer than that of the Sora, that appeared both to speed up and wander towards the end. This call was heard again at The Dump and at APC.

COMMON GALLINULE *Gallinula chloropus*

MS 23 Ponds: one on 25 Feb and five on 14 Mar. APC: one on 15 Mar. Big Falls: up to eight on three days. Belize City Oil Terminal: eight on 7 Mar and 16 on 15 Mar.

PURPLE GALLINULE *Porphyryla martinica*

APC: one on the DOE pond on 23 and 25 Feb. Big Falls: c.40 on 3 Mar and five on 4 Mar. Altun Ha: one on 14 Mar.

AMERICAN COOT *Fulica americana*

Big Falls: one on 4 Mar. Belize City Oil Terminal: twelve on 7 Mar and eight on 15 Mar. Northern Lagoon: one on 13 Mar.

SUNGREBE *Heliornis fulica*

Guacamallo Bridge: one upstream on 27 Feb. Big Falls: two on the Belize River and one in a dyke on 5 Mar.

NORTHERN JACANA *Jacana spinosa*

APC: seen daily, with a maximum of eight. Big Falls: up to 80 daily. Belize City Oil Terminal: two on 7 and 15 Mar. Small numbers were seen in other lowland marshy areas.

BLACK-BELLIED PLOVER *Pluvialis squatarola*

Cay Chapel: 20 on 6 Mar. Belize City Oil Terminal: three on 7 Mar and two on 15 Mar. Dangriga: one on 12 Mar.

AMERICAN GOLDEN PLOVER *Pluvialis dominica*

Big Falls: one on 5 Mar.

SEMI-PALMATED PLOVER *Charadrius semipalmatus*

Cay Chapel: 40 on 6 Mar. Dangriga: four on 12 Mar.

KILLDEER *Charadrius vociferus*

APC: seen daily, with a maximum of nine on 26 Feb. MS 23 Ponds: two on 25 Feb. Holdfast: two on 1 Mar. Western Highway: nine seen between APC and San Luis (Mountain Pine Ridge) on 26 Feb. Big Falls: two on 1 Mar, twelve on 2 Mar and five on 3, 4 and 5 Mar.

WILSON'S PLOVER *Charadrius wilsonia*

Cay Chapel: 40 on 6 Mar.

GREATER YELLOWLEGS *Tringa melanoleuca*

Big Falls: 60 on 1 Mar and up to 20 on 3, 4 and 5 Mar.

LESSER YELLOWLEGS *Tringa flavipes*

MS 23 Ponds: one on 25 Feb. Big Falls: seen daily, with a maximum of 60 on 3 Feb. Belize City Oil Terminal: two on 7 Mar.

SOLITARY SANDPIPER *Tringa solitaria*

APC: up to three on most days. MS 23 Ponds: two on 25 Feb and six on 14 Mar. Holdfast: four on 1 Mar. Big Falls: up to six from 1 to 5 Mar, with 14 on 2 Mar.

WILLET *Catoptrophorus semipalmatus*

Cay Chapel: six on 6 Mar.

SPOTTED SANDPIPER *Actitis macularia*

APC: up to three on most days. MS 23 Ponds: two on 25 Feb. Guacamallo Bridge: up to four daily. Big Falls: seen daily, with a maximum of 30 on 4 Mar. Cay Chapel: three on 6 Mar. Punta Gorda: one on 9 Mar. Belize City Oil Terminal: three on 15 Mar, including one in summer plumage. Small numbers were seen elsewhere by streams and on the coast.

RUDDY TURNSTONE *Arenaria interpres*

Cay Chapel: 35 on 6 Mar. Dangriga: four on 12 Mar.

LEAST SANDPIPER *Calidris minutilla*

APC: one on 25 Feb, ten on 14 Mar and four on 15 Mar. MS 23 Ponds: one on 25 Feb. Holdfast: one on 1 Mar. Big Falls: nine on 2 Mar, 35 on 3 Mar, 30 on 4 Mar and ten on 5 Mar. Cay Chapel: twelve on 6 Mar.

PECTORAL SANDPIPER *Calidris melanotos*

Big Falls: twelve on 3 Mar.

SANDERLING *Calidris alba*

Cay Chapel: four on 6 Mar. Dangriga: nine on 12 Mar.

WHIMBREL *Numenius phaeopus*

APC: one heard on 5 Mar. Cay Chapel: six on 6 Mar.

LONG-BILLED DOWITCHER *Limnodromus scolopaceus*

Big Falls: 20 on 3 Mar. Cay Chapel: 18 on 6 Mar.

COMMON SNIPE *Gallinago gallinago*

Big Falls: three on 1, 2 and 3 Mar. APC: one on 16 Mar.

BLACK-NECKED STILT *Himantopus mexicanus*

Big Falls: 30 on 1 Mar, 14 on 2 Mar, eleven on 3 Mar and seven on 4 Mar. Cay Chapel: two on 6 Mar. MS 23 Ponds: two on 14 Mar.

RING-BILLED GULL *Larus delawarensis*

Belize City: five on 24 Feb, one on 6 Mar, three on 7 Mar and one on 15 Mar, all immatures.

HERRING GULL *Larus argentatus*

Belize City: one immature on 24 Feb.

LAUGHING GULL *Larus atricilla*

Belize City: numerous, with 250 on 7 Mar. Punta Gorda: three on 9 Mar.

LEAST TERN *Sterna albifrons*

Belize City Oil Terminal: one on 15 Mar.

ROYAL TERN *Sterna maxima*

Belize City: 100 on 24 Feb, 20 on 7 Mar and 40 on 15 Mar. Punta Gorda: six on 9 Mar. Dangriga: eight on 8 Mar and one on 12 Mar.

SANDWICH TERN *Sterna sandvicensis*

Belize City: 15 on 24 Feb, 50 on 7 Mar but only two on 15 Mar. Dangriga: six on 8 Mar. Punta Gorda: five on 9 Mar.

PALE-VENTED PIGEON *Columba cayennensis*

APC: seen and heard on most days, with a maximum of four. Big Falls: seen daily, with a maximum of 14. Blue Creek: seen daily, with a maximum of five. Small numbers were seen at several other lowland sites.

SCALED PIGEON *Columba speciosa*

Guacamallo Bridge: one on 1 Mar.

SHORT-BILLED PIGEON *Columba nigrirostris*

APC: one seen or heard on most days, with five on 23 Feb. Guacamallo Bridge: one or two seen and heard daily. Big Falls: one heard on 2 Mar. Blue Creek: two or three daily, but 40 on 11 Mar. San Jose: two on 10 Mar.

FERAL PIGEON *Columba livia*

Belize City: four on 7 Mar and one on 14 Mar. Punta Gorda: one on 10 Mar. Dangriga: one on 12 Mar. APC: three on 16 Mar.

WHITE-WINGED DOVE *Zenaida asiatica*

Guacamallo Bridge: one on 27 Feb.

COMMON GROUND-DOVE *Columbina passerina*

Holdfast: two on 1 Mar. Big Falls: three on 1 Mar and two on 2 Mar. Blue Creek: one on 9 Mar and ten on 11 Mar.

PLAIN-BREASTED GROUND-DOVE *Columbina minuta*

Seen daily at open sites with maximum numbers as follows: APC: 16; Guacamallo Bridge: four; Big Falls: 100; Blue Creek: 20.

RUDDY GROUND-DOVE *Columbina talpacoti*

Seen daily at open lowland sites with maximum numbers as follows: APC: 20; Holdfast: six; Big Falls: 200 by the rice mill; Cay Chapel: six; Blue Creek: 20.

BLUE GROUND-DOVE *Claravis pretiosa*

Big Falls: four or five seen on most days, but 14 on 2 Mar. Blue Creek: 30 on 9 and 10 Mar and 70 on 11 Mar. Southern Highway: four on 12 Mar.

WHITE-TIPPED DOVE *Leptotila verreauxi*

APC: two on 23 Feb. Guacamallo Bridge: one on 1 Mar. Blue Creek: one on 11 Mar.

RUDDY QUAIL-DOVE *Geotrygon montana*

Altun Ha: one on 15 Mar.

AZTEC PARAKEET *Aratinga astec*

Present in all wooded areas. APC: up to seven frequently. Guacamallo Bridge: up to 18. Altun Ha: up to eleven. Blue Creek: up to 15.

BROWN-HOODED PARROT *Pionopsitta haematotis*

Guacamallo Bridge: three on 28 Feb and 1 Mar.

WHITE-CROWNED PARROT *Pionus senilis*

Guacamallo Bridge: three on 27 Feb. Big Falls: three on 3 Mar. Blue Creek: eight on 10 Mar and two on 11 Mar.

YELLOW-LORED PARROT *Amazona xantholora*

Guacamallo Bridge: two on 27 Feb and four on 28 Feb. Big Falls: two on 1 Mar and six on 4 Mar. Altun Ha: two on 14 Mar.

WHITE-FRONTED PARROT *Amazona albifrons*

Guacamallo Bridge: eight on 1 Mar. Holdfast: one on 1 Mar. Big Falls: one on 5 Mar. APC: five on 7 Mar.

RED-LORED PARROT *Amazona autumnalis*

APC: three on 24 Feb and two on 25 Feb, 6 Mar and 15 Mar. Guacamallo Bridge: four on 27 Feb and ten on 1 Mar. Big Falls: up to ten daily.

YELLOW-HEADED PARROT *Amazona ochrocephala*

Guacamallo Bridge: two on 27 Feb. Big Falls: two on 4 Mar. Cabbage Haul Creek: one on 8 Mar. This last bird appeared to be intermediate between the northern and the southern form, having a yellow face and a yellow spot on its nape.

MEALY PARROT *Amazona farinosa*

Guacamallo Bridge: two on 27 Feb. Big Falls: two on 2 and 3 Mar. Blue Creek: four on 10 Mar and three on 11 Mar.

SQUIRREL CUCKOO *Piaya cayana*

Guacamallo Bridge: one on 28 Feb and 1 Mar. Big Falls: three on 4 Mar. Cabbage Haul Creek: two on 8 Mar, mating. Blue Creek: one on 9 Mar and four on 10 Mar.

GROOVE-BILLED ANI *Crotophaga sulcirostris*

Common on the edge of wooded areas. APC: up to 50. Guacamallo Bridge: up to 20. Holdfast: 30 on 1 Mar. Big Falls: up to 40. Blue Creek: up to 50.

STRIPED CUCKOO *Tapera naevia*

Big Falls: one on 5 Mar. San Jose: one on 10 Mar. Blue Creek: one on 11 and 12 Mar. The Dump: one on 12 Mar.

BARN OWL *Tyto alba*

Big Falls: one seen roosting regularly at the rice plant and reported to be nesting in a disused pipe. Belize City: one seen near the Swing Bridge on 15 Mar. APC: a dead bird found on 15 Mar.

COMMON NIGHTHAWK *Chordeiles minor*

APC: one on 5 and 13 Mar, two on 14 Mar and one on 15 Mar.

LESSER NIGHTHAWK *Chordeiles acutipennis*

Big Falls: six on 3 and 4 Mar. APC: three on 14 Mar.

PAURAUQUE *Nyctidromus albicollis*

Found at all sites visited overnight. APC: up to five. Guacamallo Bridge: up to eight. Big Falls: up to ten near the rice plant. Blue Creek: two; a nest with one egg was found on 11 Mar. On a 35 mile stretch of road along the Southern Highway to Blue Creek, 90 were counted on 8 Mar.

YUCATAN POORWILL *Otophanes yucatanicus*

Guacamallo Bridge: one on 27 and 28 Feb and two on 1 Mar. All were only heard.

WHIP-POOR-WILL *Caprimulgus vociferus*

Guacamallo Bridge: one on 27 Feb. Big Falls: one on 2 Mar, five on 4 Mar and two on 5 Mar. All were only heard.

BUFF-COLLARED NIGHTJAR *Caprimulgus ridgwayi*

Southern Highway, near Swasey Bridge: two heard on 8 Mar.

WHITE-COLLARED SWIFT *Streptoprocne zonaris*

Big Falls: four on 1 Mar and five on 2 Mar. San Jose: 39 on 10 Mar.

VAUX'S SWIFT *Chaetura vauxi*

Guacamallo Bridge: 200 on 28 Feb. Cabbage Haul Creek: ten on 8 Mar. San Jose: one on 10 Mar. Blue Creek: one on 11 Mar.

WHITE-THROATED SWIFT *Aeronautes saxatalis*

Big Falls: three on 5 Mar. APC: three on 5 Mar.

BAND-TAILED BARBTHROAT *Threnetes ruckeri*

Blue Creek: one on 10 and 11 Mar, both netted.

LONG-TAILED HERMIT *Phaethornis superciliosus*

Guacamallo Bridge: one on 27 Feb. Blue Creek: up to 15 present daily, with at least five males at a lek.

LITTLE HERMIT *Phaethornis longuemareus*

Guacamallo Bridge: up to ten daily. Blue Creek: one on 10 Mar, three on 11 Mar. San Jose: one on 10 Mar. APC: one on 13 and 14 Mar.

SCALY-BREASTED HUMMINGBIRD *Phaeochoera cuvierii*

Blue Creek: one netted on 11 Mar.

WHITE-NECKED JACOBIN *Florisuga mellivora*

Blue Creek: one on 9 Mar.

GREEN-BREASTED MANGO *Anthracothorax prevostii*

APC: Two netted on 15 Mar.

FORK-TAILED EMERALD *Chlorostilbon canivetii*

APC: one on 24 Feb. Guacamallo Bridge: two on 28 Feb.

COMMON WOODNYMPH *Thalurania furcata*

Blue Creek: one on 11 Mar.

WHITE-BELLIED EMERALD *Amazilia candida*

Altun Ha: one on 25 Feb. APC: one on 6 Mar.

RED-BILLED AZURECROWN *Amazilia cyanocephala*

Guacamallo Bridge: two on 27 Feb, three on 28 Feb and five on 1 Mar.

CINNAMON HUMMINGBIRD *Amazilia rutila*

APC: up to four daily. Cay Chapel: two on 6 Mar. Blue Creek: one daily.

Altun Ha: one on 14 Mar.

RUFOUS-TAILED HUMMINGBIRD *Amazilia tzacatl*

APC: up to six daily. Altun Ha: two on 24 Feb and one on 14 Mar.

Guacamallo Bridge: two on 27 and 28 Feb and 1 Mar. Big Falls: two on 2 Mar, one on 3 Mar, three on 4 Mar and four on 5 Mar. Blue Creek: up to five daily.

San Jose: one on 10 Mar.

GREEN-FRONTED HUMMINGBIRD *Amazilia viridifrons*

Blue Creek: one netted on 10 Mar. Description and measurements verified against skins in the British Museum (Natural History).

PURPLE-CROWNED FAIRY *Heliathrix barroti*

Guacamallo Bridge: one netted on 1 Mar.

SLATY-TAILED TROGON *Trogon massena*

Blue Creek: two on 9 Mar, one on 10 Mar and three on 11 Mar.

CITREOLINE TROGON *Trogon citreolus*

Altun Ha: five on 24 Feb and one on 14 Mar. Guacamallo Bridge: two on 1 Mar.

Big Falls: one on 3 Mar and two on 4 and 5 Mar. Blue Creek: six on 9 Mar, three on 10 Mar and seven on 11 Mar. San Jose: one on 10 Mar.

VIOLACEOUS TROGON *Trogon violaceus*

Guacamallo Bridge: three on 27 Feb, six on 28 Feb and one on 1 Mar. Cabbage

Haul Creek: one on 9 Mar. Blue Creek: two on 10 Mar and one on 11 and 12 Mar.

RINGED KINGFISHER *Ceryle torquata*

APC: one on 23 Feb, four on 24 Feb, thereafter one or two daily. Guacamallo

Bridge: one on 28 Feb. Big Falls: four on 4 Feb and two on 5 Feb. Cay Chapel: one on 6 Mar. Hummingbird Highway: one on 8 Mar.

BELTED KINGFISHER *Ceryle alcyon*

APC: up to four daily. MS 23 Ponds: one on 25 Feb. Guacamallo Bridge: two on

26 Feb. Big Falls: three on 1 and 2 Mar, four on 3, 4 and 5 Mar. Cay Chapel: one on 6 Mar. Belize City Oil Terminal: one on 7 and 14 Mar. Western Highway: three

on the outskirts of Belize City on 8 Mar. Northern Lagoon: six on the approach canal from Belize City on 13 Mar.

AMAZON KINGFISHER *Chloroceryle amazona*

Guacamallo Bridge: four on 27 and 28 Feb and three on 1 Mar. Holdfast: one on

1 Mar. Big Falls: one on 5 Mar. Blue Creek: two on 9 Mar, one on 10 Mar and three on 11 Mar.

GREEN KINGFISHER *Chloroceryle americana*

APC: one on 23 and 24 Feb. Guacamallo Bridge: four on 27 Feb, two on 28 Feb.

Privassion Creek: one on 1 Mar. Big Falls: four on 4 Mar. Belize City Oil Terminal: one on 7 Mar. Hummingbird/Southern Highway: one on 12 Mar. Blue Creek:

two on 10 Mar and four on 11 Mar. Northern Lagoon: three on the approach canal.

PYGMY KINGFISHER *Chloroceryle aenea*

Guacamallo Bridge: one on 28 Feb. Hummingbird Highway: one near Sibun on 8

Mar. Cabbage Haul Creek: one on 8 Mar. Blue Creek: one on 10 and 11 Mar.

BLUE-CROWNED MOTMOT *Momotus momota*

Guacamallo Bridge: one on 28 Feb. Cabbage Haul Creek: one heard on 8 Mar.
Blue Creek: two on 11 Mar.

BLACK-CHINNED JACAMAR *Galbula ruficauda*

Guacamallo Bridge: three on 28 Feb. Blue Creek: one netted on 11 Mar.

WHITE-NECKED PUFFBIRD *Notharchus macrorhynchos*

Blue Creek: one on 11 Mar.

KEEL-BILLED TOUCAN *Ramphastos sulfuratus*

Guacamallo Bridge: three on 27 and 28 Feb and on 1 Mar. Cabbage Haul Creek:
one on 8 Mar. Blue Creek: one on 10 Mar and three on 11 Mar. San Jose: one on
10 Mar.

EMERALD TOUCANET *Aulacorhynchus prasinus*

Guacamallo Bridge: two on 28 Feb. Blue Creek: one on 10 Mar.

COLLARED ARACARI *Pteroglossus torquatus*

Guacamallo Bridge: four on 28 Feb. Big Falls: five on 4 Mar. Cabbage Haul Creek:
one on 8 Mar. Blue Creek: one on 9 Mar, ten on 10 Mar and four on 11 Mar.

GOLDEN-OLIVE WOODPECKER *Piculus rubiginosus*

Guacamallo Bridge: two on 28 Feb. Blue Creek: one on 10 Mar. Southern
Highway, near Swasey Bridge: one on 12 Mar.

LINEATED WOODPECKER *Dryocopus lineatus*

Guacamallo Bridge: one on 27 and 28 Feb and 1 Mar. Big Falls: one on 1 Mar,
two on 3 Mar and one on 4 and 5 Mar. Blue Creek: three on 10 Mar and four on
11 Mar. San Jose: one on 10 Mar.

ACORN WOODPECKER *Melanerpes formicivorus*

APC: up to seven daily. Guacamallo Bridge: up to four daily. Southern Highway,
near Cabbage Haul Creek and Swasey Bridge: five on 8 Mar.

BLACK-CHEEKED WOODPECKER *Centurus pucherani*

Guacamallo Bridge: a pair on 28 Feb. Holdfast: one on 1 Mar. Blue Creek: one on
10 Mar and two on 11 Mar.

GOLDEN-FRONTED WOODPECKER *Centurus aurifrons*

Holdfast: one on 1 Mar. Big Falls: one on 2, 3 and 4 Mar. APC: one on 7 Mar.

RED-VENTED WOODPECKER *Centurus pygmaeus*

APC: one on 23 Feb and two on 24 Feb. Guacamallo Bridge: one on 26 and 27
Feb. Big Falls: one on 1 Mar. Punta Gorda: two on 9 Mar.

YELLOW-BELLIED SAPSUCKER *Sphyrapicus varius*

APC: one netted on 7 Mar.

SMOKY-BROWN WOODPECKER *Veniliornis fumigatus*

Blue Creek: one on 10 Mar.

PALE-BILLED WOODPECKER *Phlaeocaestes guatemalensis*

Guacamallo Bridge: three on 28 Feb. Big Falls: one on 3 Mar. Blue Creek: one on
10 Mar. San Jose: one on 10 Mar.

TAWNY-WINGED WOODCREEPER *Dendrocincla anabatina*

Blue Creek: one netted on 11 Mar.

RUDDY WOODCREEPER *Dendrocincla homochroa*

Guacamallo Bridge: one on 28 Feb. Big Falls: one on 3 Mar. Blue Creek: one on 9 and 10 Mar. APC: one on 14 Mar.

OLIVACEOUS WOODCREEPER *Sittasomus griseicapillus*

Blue Creek: four on 11 Mar.

WEDGE-BILLED WOODCREEPER *Glyphorhynchus spirurus*

Blue Creek: one on 10 and 11 Mar.

STRONG-BILLED WOODCREEPER *Xiphocolaptes promeropirhynchus*

Blue Creek: one on 11 Mar.

IVORY-BILLED WOODCREEPER *Xiphorhynchus flavigaster*

Guacamallo Bridge: three on 1 Mar. San Jose: one on 10 Mar. Blue Creek: one netted on 10 Mar. Altun Ha: one on 14 Mar.

STREAK-HEADED WOODCREEPER *Lepidocolaptes souleyetti*

Altun Ha: one on 25 Feb and three on 14 Mar. Big Falls: one on 3 Mar. Blue Creek: one on 11 Mar.

GREAT ANTSHRIKE *Taraba major*

Blue Creek: one on 10 and 11 Mar.

BARRED ANTSHRIKE *Thamnophilus doliatus*

Guacamallo Bridge: two on 1 Mar. Big Falls: one on 1 Mar, two on 2 Mar, one on 3 Mar, five on 4 Mar and four on 5 Mar. San Jose: three on 10 Mar. Blue Creek: two on 9 Mar, eight on 10 Mar and 18 on 11 Mar.

SLATY ANTSHRIKE *Thamnophilus punctatus*

Blue Creek: one on 11 Mar.

PLAIN ANTVIREO *Dysithamnus mentalis*

Hummingbird Highway, near Blue Hole: one on 8 Mar. Blue Creek: one on 9 Mar.

DOT-WINGED ANTWREN *Microrhopias quixensis*

Guacamallo Bridge: six on 28 Feb. Blue Creek: six on 11 Mar.

DUSKY ANTBIRD *Cercomacra tyrannina*

Blue Creek: three on 11 Mar, including an adult feeding a juvenile.

BLACK-FACED ANTTHRUSH *Formicarius analis*

Blue Creek: one netted on 11 Mar.

RED-CAPPED MANAKIN *Pipra mentalis*

Blue Creek: two on 10 Mar and one on 11 Mar, all netted.

WHITE-COLLARED MANAKIN *Manacus candei*

Altun Ha: one on 25 Feb. Guacamallo Bridge: five on 1 Mar, one male seen displaying. Blue Creek: two on 9 Mar, nine on 10 Mar and one on 11 Mar. San Jose: one on 10 Mar.

THRUSH-LIKE MANAKIN *Schiffornis turdinus*

Blue Creek: one netted on 10 Mar.

BRIGHT-RUMPED ATTILA *Attila spadiceus*

Big Falls: one singing on 3 Mar. Blue Creek: one netted on 10 Mar and one singing on 11 Mar. San Jose: one singing on 10 Mar. The Dump: one singing on 12 Mar. None was actually seen in the wild.

RUFOUS MOURNER *Rhytipterna holerythra*

Blue Creek: one on 10 Mar.

RUFOUS PIHA *Lipaugus unirufus*

Blue Creek: one on 11 Mar.

CINNAMON BECARD *Pachyramphus cinnamomeus*

Blue Creek: one on 11 Mar.

MASKED TITYRA *Tityra semifasciata*

Guacamallo Bridge: four on 28 Feb. Hummingbird Highway: one on 8 Mar. Blue Creek: six on 9 Mar, two on 10 Mar and three on 11 Mar. Rideau Camp: two on 9 Mar. San Jose: five on 10 Mar. Altun Ha: two on 14 Mar.

BLACK-CROWNED TITYRA *Tityra inquisitor*

Guacamallo Bridge: two on 28 Feb. Blue Creek: one on 10 Mar and two on 11 Mar.

EASTERN PHOEBE *Sayornis phoebe*

Big Falls: two on 2 Mar.

BLACK PHOEBE *Sayornis nigricans*

Guacamallo Bridge: one on 26 Feb, four on 27 and 28 Feb, two on 1 Mar. A nest was under construction under the bridge. Blue Creek: three on 9 Mar and two on 11 Mar.

VERMILION FLYCATCHER *Pyrocephalus rubinas*

APC: up to 11 seen daily; one pair with a nest by the Guard Room. Northern Highway, by the road to Altun Ha: two on 25 Feb and six on 14 Mar, when two were seen to display. Western Highway: 20 by the road to Mountain Pine Ridge on 26 Feb. Big Falls: up to nine seen daily. Punta Gorda: one on 9 Mar. Blue Creek: one on 10 Mar. Single birds were seen by the road side at other lowland sites.

SCISSOR-TAILED FLYCATCHER *Muscivora forficata*

APC: up to six entering a roost by the small arms range each evening or leaving the roost in the morning, daily from 23 to 26 Feb and from 5 to 7 Mar.

FORK-TAILED FLYCATCHER *Muscivora tyrannus*

APC: up to 20 daily. Big Falls: up to 180 daily. Southern Highway: six at Big Fall Estates on 8 Mar and three on 12 Mar.

TROPICAL KINGBIRD *Tyrannus melancholicus*

APC: up to 20 daily. Guacamallo Bridge: up to six daily. Big Falls: up to 40 daily. Blue Creek: up to ten daily. Common at several other sites.

BOAT-BILLED FLYCATCHER *Megarhynchus pitangua*

APC: up to four on most days. Holdfast: four on 1 Mar. Big Falls: up to five on most days. Altun Ha: one on 14 Mar.

SOCIAL FLYCATCHER *Myiozetetes similis*

APC: up to eleven on most days. Altun Ha: one on 25 Feb and two on 14 Mar. Guacamallo Bridge: up to eight daily. Big Falls: up to three daily. Blue Creek: up to four daily. San Jose: one on 10 Mar. Small numbers at other open sites.

GREAT KISKADEE *Pitangus sulphuratus*

APC: up to twelve daily. Altun Ha: ten on 25 Feb and three on 14 Mar.
Guacamallo Bridge: up to six daily. Big Falls: up to 60 daily. Cabbage Haul Creek:
four on 8 Mar. Blue Creek: up to five daily. San Jose: two on 10 Mar. Small
numbers at other open sites.

BROWN-CRESTED FLYCATCHER *Myiarchus tyrannulus*

Cabbage Haul Creek: one on 8 Mar. APC: one netted on 16 Mar.

YUCATAN FLYCATCHER *Myiarchus yucatanensis*

Blue Creek: one on 9 Mar.

DUSKY-CAPPED FLYCATCHER *Myiarchus tuberculifer*

Big Falls: one netted on 4 Mar.

YELLOW-BELLIED FLYCATCHER *Empidonax flaviventris*

Big Falls: one on 4 Mar. Blue Creek: one netted on 10 Mar. San Jose: one on 10
Mar. APC: one on 14 Mar.

LEAST FLYCATCHER *Empidonax minimus*

APC: one on 23 and 24 Feb, two on 25 Feb and 13 Mar, one on 14 Mar and two on
15 Mar. Guacamallo Bridge: one on 27 Feb, two on 28 Feb and three on 1 Mar.
Big Falls: one or two daily. Cabbage Haul Creek: one on 8 Mar. Blue Creek: one
on 9 and 10 Mar. San Jose: three on 10 Mar. Altun Ha: one on 14 Mar.

RUDDY-TAILED FLYCATCHER *Terenotriccus erythrus*

Blue Creek: one on 11 Mar.

SULPHUR-RUMPED FLYCATCHER *Myiobius sulphureipygus*

San Jose: one on 10 Mar. Blue Creek: one netted on 11 Mar.

NORTHERN ROYAL-FLYCATCHER *Onychorhynchus mexicanus*

Blue Creek: one on 9 Mar.

YELLOW-OLIVE FLYCATCHER *Tolmomyias sulphureescens*

Guacamallo Bridge: one netted on 28 Feb.

COMMON TODY-FLYCATCHER *Todirostrum cinereum*

APC: one on 23 Feb, a pair on 24 Feb, 26 Feb, 7 and 15 Mar and one on 16 Mar.
Altun Ha: two on 25 Feb. Blue Creek: one on 11 Mar. The Dump: one on 12 Mar.

NORTHERN BENTBILL *Oncostoma cinereigulare*

Blue Creek: one netted on 10 Mar.

YELLOW-BELLIED ELAENIA *Elaenia flavogaster*

APC: five on 25 Feb, two on 26 Feb, 5 and 14 Mar, three on 15 Mar and four on
16 Mar. Altun Ha: two on 25 Feb and 14 Mar. Big Falls: up to six daily.
Cabbage Haul Creek: two on 8 Mar.

NORTHERN BEARDLESS TYRANNULET *Camptostoma imberbe*

APC: one netted on 13 Mar.

YELLOW-BELLIED TYRANNULET *Ornithion semiflavum*

Blue Creek: one on 10 Mar.

OCHRE-BELLIED FLYCATCHER *Pipromorpha oleaginea*

Blue Creek: one on 10 and 11 Mar, both netted.

TREE SWALLOW *Tachycineta bicolor*

Big Falls: c.2,000 on 1 and 2 Mar, an estimated 50,000 entering an evening roost on 3 Mar and c.200 on 4 Mar. APC: two on 14 Mar.

MANGROVE SWALLOW *Tachycineta albilinea*

APC: up to 200 seen daily 23–26 Feb, ten on 5 and 7 Mar, six on 13 Mar, 20 on 14 Mar and ten on 15 and 16 Mar. One bird was seen entering an air-duct in the armoury on 25 Feb, presumably building. Holdfast: 100 on 1 Mar. Big Falls: 100 on 1 Mar, 200 on 2 and 3 Mar, ten on 4 Mar and two on 5 Mar. Belize City: ten on 7 Mar, 20 on 13 Mar and 36 on 14 Mar. Punta Gorda: 50 on 9 Mar.

PURPLE MARTIN *Progne subis*

Big Falls: ten on 2 Mar and three on 4 Mar.

GRAY-BREASTED MARTIN *Progne chalybea*

APC: up to 60 from 23–26 Feb, ten on 5 Mar, four on 7 Mar, six on 14 Mar and four on 15 and 16 Mar. Guacamallo Bridge: one on 27 Feb. Big Falls: c.1,000 on 2 Mar, 300 on 3 Mar, 40 on 4 Mar, 100 on 5 Mar. Blue Creek: 15 on 10 Mar and five on 11 Mar. Belize City: six on 15 Mar.

ROUGH-WINGED SWALLOW *Stelgidopteryx ruficollis*

APC: up to 100 from 23–26 Feb, four on 5 Mar, 30 on 7 Mar, six on 14 Mar and ten on 15 and 16 Mar. Holdfast: 75 on 1 Mar. Big Falls: 20 on 1 Mar, 200 on 2 and 3 Mar, 20 on 4 Mar and two on 5 Mar. Rideau Camp: 20 on 9 Mar. Blue Creek: 50 on 11 Mar. The Dump: four on 12 Mar.

BANK SWALLOW *Riparia riparia*

APC: two on 24 Feb. Belmopan: three on 26 Feb and two on 3 Mar. Big Falls: two on 4 Mar and one on 5 Mar.

BARN SWALLOW *Hirundo rustica*

APC: two on 23 Feb, 30 on 24 Feb, six on 25 Feb, three on 26 Feb, two on 14 Mar, three on 15 Mar and four on 16 Mar. Big Falls: c.50 on 1, 2 and 3 Mar. Blue Creek: eight on 9 Mar.

BROWN JAY *Psilorhinus morio*

APC: up to five on most days, but 15 on 14 Mar. Guacamallo Bridge: up to 20 daily. Big Falls: up to 30 daily. Blue Creek: up to twelve daily. Seen at several other lowland sites.

GREEN JAY *Cyanocorax yncas*

Guacamallo Bridge: six on 27 Feb, eight on 28 Feb and four on 1 Mar. Western Highway: two on 1 Mar. Big Falls: three on 2 Mar. Hummingbird Highway, near the Blue Hole: one on 8 Mar.

YUCATAN JAY *Cissilopha yucatanica*

APC: two on 14 Mar.

BAND-BACKED WREN *Campylorhynchus zonatus*

Guacamallo Bridge: one netted on 1 Mar. Blue Creek: one on 10 Mar.

SPOT-BREASTED WREN *Thryothorus maculipectus*

APC: one on 25 Feb, three on 26 Feb, one on 13 Mar, two on 14 Mar and one on 15 and 16 Mar. Guacamallo Bridge: four on 27 Feb, six on 28 Feb and two on 1 Mar. Big Falls: one on 3 Mar and two on 4 Mar. Cabbage Haul Creek: one on 8 Mar. Blue Creek: five on 9 Mar and 15 on 11 Mar. Altun Ha: one on 14 Mar.

SOUTHERN HOUSE WREN *Troglodytes musculus*

Big Falls: one on 1 Mar, two on 2 Mar and one on 3, 4 and 5 Mar. MS 23 Ponds: one on 14 Mar.

WHITE-BREASTED WOOD-WREN *Henicorhina leucosticta*

Blue Creek: one netted on 10 Mar and three on 11 Mar, including a controlled bird.

NIGHTINGALE WREN *Microcerculus marginatus*

Blue Creek: one heard on 11 Mar and two on 12 Mar.

BLACK CATBIRD *Melanoptila glabrirostris*

APC: one on 24 Feb. Big Falls: two on 2 Mar.

GRAY CATBIRD *Dumetella carolinensis*

APC: one on 24 Feb, three on 25 Feb, two on 26 Feb, one on 5 Mar, two on 14 Mar and one on 15 and 16 Mar. Altun Ha: two on 25 Feb. Guacamallo Bridge: five on 27 Feb and one on 1 Mar. Holdfast: one on 1 Mar. Cabbage Haul Creek: three on 8 Mar. Blue Creek: one on 9 Mar, two on 10 Mar and ten on 11 Mar. The Dump: two on 12 Mar. Northern Lagoon: one on 13 Mar.

TROPICAL MOCKINGBIRD *Mimus gilvus*

APC: up to 50 daily including at least two pairs nesting. Northern Highway: 30 on route to Altun Ha on 25 Feb. Guacamallo Bridge: two on 27 Feb and one on 28 Feb. Big Falls: up to ten daily. Southern Highway, near Swasey Bridge: two on 8 Mar. Blue Creek: two on 11 Mar. San Jose: three on 11 Mar. Small numbers seen at several other open sites.

CLAY-COLORED ROBIN *Turdus grayi*

APC: up to ten daily. Guacamallo Bridge: two on 27 Feb and one on 28 Feb. Holdfast: one on 1 Mar. Big Falls: up to three on most days. Southern Highway, near Cabbage Haul Creek: one on 8 Mar. Blue Creek: three on 9 Mar and two on 11 Mar. The Dump: one on 12 Mar.

WOOD THRUSH *Hylocichla mustelina*

Blue Creek: one netted on 11 Mar.

BLUE-GRAY GNATCATCHER *Poliophtila caerulea*

APC: two on 23 Feb. Guacamallo Bridge: two on 27 and 28 Feb and one on 1 Mar.

RUFIOUS-BROWED PEPPERSHRIKE *Cyclarhis gujanensis*

APC: four on 13 Mar and one on 14 Mar, all netted.

WHITE-EYED VIREO *Vireo griseus*

APC: two on 25 Feb, four on 26 Feb, three on 13 Mar, five on 14 Mar and one on 16 Mar. Guacamallo Bridge: two on 27 and 28 Feb. Altun Ha: one on 14 Mar.

YELLOW-GREEN VIREO *Vireo flavoviridis*

Southern Highway, near Cabbage Haul Creek: one on 8 Mar.

YUCATAN VIREO *Vireo magister*

Blue Creek: eight on 10 Mar. San Jose: two on 10 Mar.

RED-LEGGED HONEYCREEPER *Cyanerpes cyaneus*

Blue Creek: four on 9 Mar.

BANANAQUIT *Coereba flaveola*

Blue Creek: one on 11 Mar.

BLACK-AND-WHITE WARBLER *Mniotilta varia*

APC: two on 23 and 24 Feb, one on 25 Feb, three on 26 Feb, one on 6, 7 and 8 Mar, twelve on 13 Mar, ten on 14 Mar, seven on 15 Mar and three on 16 Mar. Altun Ha: one on 25 Feb and 14 Mar. Guacamallo Bridge: one on 26 Feb, six on 27 Feb, four on 28 Feb and one on 1 Mar. Big Falls: two on 1 and 3 Mar, and one on 5 Mar. Southern Highway, near Cabbage Haul Creek: two on 8 Mar. Blue Creek: one on 10 Mar, seven on 11 Mar and one on 12 Mar. San Jose: two on 10 Mar.

PROTHONOTARY WARBLER *Protonotaria citrea*

Guacamallo Bridge: one on 1 Mar. Blue Creek: one on 9 and 11 Mar. San Jose: one on 10 Mar. Northern Lagoon: one on 13 Mar.

SWAINSON'S WARBLER *Limnothlypis swainsonii*

Cay Chapel: one on 6 Mar, usually seen inside the public rooms of the hotel.

WORM-EATING WARBLER *Helmitheros vermivorus*

Blue Creek: one on 10 and 11 Mar, both netted.

BLUE-WINGED WARBLER *Vermivora pinus*

Blue Creek: one netted on 10 Mar. APC: one netted on 14 Mar.

TENNESSEE WARBLER *Vermivora peregrina*

Blue Creek: two (one netted) on 11 Mar. APC: one on 14 Mar.

YELLOW WARBLER *Dendroica petechia*

APC: four on 23 Feb, two on 24 Feb, three on 25 and 26 Feb, one on 6 Mar, two on 7 Mar, three on 14 Mar, six on 15 Mar and three on 16 Mar. Altun Ha: one on 25 Feb and 14 Mar. Holdfast: two on 1 Mar. Big Falls: four on 2 Mar and one on 5 Mar. Blue Creek: one on 9 Mar and four on 10 Mar. San Jose: two on 10 Mar. The Dump: three on 12 Mar.

MANGROVE WARBLER *Dendroica erithachorides*

Cay Chapel: one on 6 Mar. Belize City Oil Terminal: two on 7 Mar.

MAGNOLIA WARBLER *Dendroica magnolia*

APC: one on 23 Feb, six on 25 Feb, two on 26 Feb, three on 6 Mar, five on 7 Mar, one on 8 Mar, two on 14 Mar, four on 15 Mar and two on 16 Mar. Altun Ha: three on 25 Feb and 14 Mar. Guacamallo Bridge: three on 27 Feb, two on 28 Feb and four on 1 Mar. Holdfast: one on 1 Mar. Big Falls: five on 2 Mar and one on 4 and 5 Mar.

YELLOW-RUMPED WARBLER *Dendroica coronata*

APC: six on 25 Feb and two on 26 Feb. Altun Ha: one on 25 Feb. Guacamallo Bridge: two on 27 Feb and three on 28 Feb. Big Falls: three on 2 Mar.

BLACK-THROATED GREEN WARBLER *Dendroica virens*

Guacamallo Bridge: three on 27 Feb and six on 28 Feb.

YELLOW-THROATED WARBLER *Dendroica dominica*

APC: one on 26 Feb and 7 and 14 Mar. Guacamallo Bridge: one on 27 Feb. Southern Highway, near Cabbage Haul Creek: two on 8 Mar. Rideau Camp: one on 9 Mar. MS 23 Ponds: one on 14 Mar.

PRAIRIE WARBLER *Dendroica discolor*

APC: two on 24 Feb, one on 26 Feb and 7 Mar.

OVENBIRD *Seiurus aurocapillus*

Guacamallo Bridge: one on 27 Feb, two on 28 Feb and one on 1 Mar. Blue Creek: two on 10 Mar. APC: single birds netted on 14 and 15 Mar.

LOUISIANA WATERTHRUSH *Seiurus motacilla*

Blue Creek: one on 10 and 11 Mar.

NORTHERN WATERTHRUSH *Seiurus noveboracensis*

APC: two on 25 Feb, 5 and 6 Mar, one on 7 Mar, two on 14 Mar and three on 15 and 16 Mar. Guacamallo Bridge: two on 28 Feb. Big Falls: four on 2 Mar, two on 3 and 4 Mar and one on 5 Mar. Blue Creek: one on 10 Mar and three on 11 Mar. The Dump: one on 11 Mar. MS 23 Ponds: two on 14 Mar. Belize City Oil Terminal: one on 15 Mar.

KENTUCKY WARBLER *Oporornis formosus*

Blue Creek: one on 10 and 11 Mar, both netted.

CONNECTICUT WARBLER *Oporornis agilis*

Big Falls: one on 4 Mar. The Dump: one on 12 Mar.

COMMON YELLOWTHROAT *Geothlypis trichas*

APC: up to 20 daily. Guacamallo Bridge: up to four daily. Big Falls: up to 30 daily. Cay Chapel: two on 6 Mar. Southern Highway, near Swasey Bridge: one on 8 Mar. Blue Creek: up to eleven daily. Small numbers seen at other lowland sites.

YELLOW-BREASTED CHAT *Icteria virens*

APC: two on 24 Feb, one on 25 Feb, two on 13 Mar, four on 14 Mar, two on 15 Mar and one on 16 Mar. Guacamallo Bridge: one on 28 Feb. Blue Creek: one on 10 and 11 Mar.

HOODED WARBLER *Wilsonia citrina*

APC: one on 25 and 26 Feb and 7 and 13 Mar, three on 14 Mar and one on 15 Mar. Guacamallo Bridge: one on 1 Mar. San Jose: one on 10 Mar.

WILSON'S WARBLER *Wilsonia pusilla*

APC: one on 25 Feb and 7 Mar. Big Falls: one on 3 Mar. The Dump: one on 12 Mar.

AMERICAN REDSTART *Setophaga ruticilla*

APC: up to six daily. Altun Ha: one on 25 Feb and four on 14 Mar. Guacamallo Bridge: one on 27 Feb and two on 28 Feb. Southern Highway, near Cabbage Haul Creek: one on 8 Mar. Southern Highway, near Swasey Bridge: one on 8 Mar. Blue Creek: one on 9 and 10 Mar. San Jose: two on 10 Mar. The Dump: one on 12 Mar.

RUFIOUS-CAPPED WARBLER *Basileuterus rufifrons*

Guacamallo Bridge: six on 27 Feb, eight on 28 Feb and six on 1 Mar.

(CHESTNUT-HEADED OROPENDOLA *Zarynchus wagleri*

This species was, surprisingly, not seen and a colony near Salamanca Camp, which had been occupied in Feb-Mar 81, was found to be deserted on 10 Mar 82.)

MONTEZUMA OROPENDOLA *Gymnostinops montezuma*

Guacamallo Bridge: ten on 27 and 28 Feb, two on 1 Mar. Hummingbird Highway: 15 on 8 Mar. Southern Highway, near Cabbage Haul Creek: 25 on 8 Mar. San Jose: two on 10 Mar. Blue Creek: two on 11 Mar and six on 12 Mar.

YELLOW-BILLED CACIQUE *Amblycercus holosericeus*

Guacamallo Bridge: one on 27 Feb and two on 1 Mar. Big Falls: one on 5 Mar. Southern Highway, near Cabbage Haul Creek: one on 8 Mar. Blue Creek: one on 9 Mar, ten on 10 Mar and seven on 11 Mar. Rideau Camp: four on 9 Mar. Altun Ha: two on 14 Mar.

GIANT COWBIRD *Scaphidura oryzivora*

Big Falls: 300 on 2 Mar, 400 on 3 Mar, 30 on 4 Mar and 50 on 5 Mar.

GREAT-TAILED GRACKLE *Cassidix mexicanus*

APC: up to 200 daily. Many nests under construction. Holdfast: 100 on 1 Mar. Big Falls: up to 200 daily. Cay Chapel: 30 on 6 Mar. Southern Highway, near Cabbage Haul Creek: ten on 8 Mar. Blue Creek: up to 100 daily. San Jose: 30 on 10 Mar. Other groups seen in many other open sites in the lowlands.

MELODIOUS BLACKBIRD *Dives dives*

APC: up to eight daily. Guacamallo Bridge: up to ten daily. Big Falls: up to 200 daily. Cay Chapel: 30 on 6 Mar. Blue Creek: two on 9 and 10 Mar. Altun Ha: four on 14 Mar.

ORCHARD ORIOLE *Icterus spurius*

APC: two on 24 Feb, one on 25 Feb and 5 and 7 Mar, two on 14 Mar, 50 on 15 Mar and 20 on 16 Mar. Guacamallo Bridge: one on 28 Feb. Big Falls: five on 2 Mar, 20 on 3 Mar and two on 4 and 5 Mar. Blue Creek: two on 9 Mar, five on 10 Mar and eight on 11 Mar.

BLACK-COWLED ORIOLE *Icterus prothemelas*

Altun Ha: two on 25 Feb and four on 14 Mar. Big Falls: one on 2 Mar. APC: one on 7 Mar and two on 13 Mar. Southern Highway, near Swasey Bridge: two on 8 Mar. Blue Creek: two on 10 Mar.

HOODED ORIOLE *Icterus cucullatus*

APC: four on 23 Feb, five on 24 Feb, three on 25 Feb, six on 26 Feb, one on 7 Mar and two on 13 Mar. Altun Ha: one on 25 Feb and four on 14 Mar. Guacamallo Bridge: six on 26 and 27 Feb. Big Falls: one on 2 and 4 Mar. Cay Chapel: one on 6 Mar. Blue Creek: two on 11 Mar. Northern Lagoon: two by the approach canal on 13 Mar.

YELLOW-TAILED ORIOLE *Icterus mesomelas*

Guacamallo Bridge: one on 27 Feb and eight on 28 Feb and 1 Mar. Big Falls: five on 2 Mar and four on 5 Mar.

YELLOW-BACKED ORIOLE *Icterus chrysater*

Guacamallo Bridge: one on 28 Feb.

NORTHERN ORIOLE *Icterus galbula*

Holdfast: three on 1 Mar. Southern Highway, near Cabbage Haul Creek: two on 8 Mar. Blue Creek: four on 9 Mar, two on 10 Mar and four on 11 Mar. San Jose: one on 10 Mar. APC: one on 13, 14 and 15 Mar and four on 16 Mar.

RED-WINGED BLACKBIRD *Agelaius phoeniceus*

APC: 15 on 23 Feb, 45 on 25 Feb, 100 on 26 Feb, 25 on 5 Mar, two on 6 Mar, 30 on 7 Mar, 14 on 14 Mar, ten on 15 Mar and one on 16 Mar. Big Falls: up to 1,000 on most days. Blue Creek: 60 on 9 Mar and 30 on 10 Mar.

EASTERN MEADOWLARK *Sturnella magna*

Big Falls: four on 1 Mar, two on 3 Mar, five on 4 Mar and one on 5 Mar. APC: one on 7 and 14 Mar.

WHITE-VENTED EUPHONIA *Euphonia minuta*

Guacamallo Bridge: two on 27 Feb.

SCRUB EUPHONIA *Euphonia affinis*

APC: two (netted) on 25 Feb, one on 26 Feb. Guacamallo Bridge: twelve on 27 Feb and two on 28 Feb.

YELLOW-THROATED EUPHONIA *Euphonia hirundinacea*

Guacamallo Bridge: one on 27 Feb and one netted on 28 Feb. Blue Creek: 28 on 10 Mar and eight on 11 Mar.

OLIVE-BACKED EUPHONIA *Euphonia gouldi*

Blue Creek: two on 9 Mar and three on 11 Mar.

MASKED TANAGER *Tangara larvata*

Guacamallo Bridge: two on 27 Feb. Blue Creek: seven on 11 Mar.

BLUE-GRAY TANAGER *Thraupis episcopus*

APC: up to six on most days. Guacamallo Bridge: three on 27 Feb and two on 28 Feb. Big Falls: up to three daily. Blue Creek: one or two daily. San Jose: one on 10 Mar.

YELLOW-WINGED TANAGER *Thraupis abbas*

Holdfast: three on 1 Mar. Blue Creek: two on 11 Mar.

SCARLET-RUMPED TANAGER *Ramphocelus passerinii*

APC: two on 7 Mar. Hummingbird Highway, near the Blue Hole: two on 8 Mar. Blue Creek: six on 9 and 10 Mar and twelve on 11 Mar. The Dump: three on 9 Mar. San Jose: three on 10 Mar.

CRIMSON-COLLARED TANAGER *Phlogothraupis sanguinolenta*

Guacamallo Bridge: two on 27 Feb. Blue Creek: one on 10 Mar and three on 11 Mar.

SUMMER TANAGER *Piranga rubra*

APC: one on 24 Feb, two on 26 Feb, one on 7 and 13 Mar, two on 14 and 15 Mar and three on 16 Mar. Big Falls: one on 3 Mar. Southern Highway, near Swasey Bridge: one on 8 Mar. Blue Creek: two on 10 Mar.

HEPATIC TANAGER *Piranga flava*

Guacamallo Bridge: one on 28 Feb and six on 1 Mar. Southern Highway, near Swasey Bridge: two on 8 Mar.

RED-CROWNED ANT-TANAGER *Habia rubica*

Guacamallo Bridge: two on 27 Feb and 1 Mar. Northern Highway, near Altun Ha: one on 14 Mar.

RED-THROATED ANT-TANAGER *Habia fuscicauda*

Blue Creek: one on 9 Mar, two on 10 Mar and three on 11 Mar. San Jose: three on 10 Mar. Altun Ha: four on 14 Mar.

BLACK-THROATED SHRIKE-TANAGER *Lanio aurantius*

Blue Creek: one on 9 Mar.

BLACK-HEADED SALTATOR *Saltator atriceps*

MS 23 Ponds: four on 25 Feb. Altun Ha: six on 25 Feb and two on 14 Mar. Western Highway, near Belmopan: three on 26 Feb. Guacamallo Bridge: up to twelve daily. Big Falls: three or four daily. Southern Highway, near Cabbage Haul Creek: three on 8 Mar. Blue Creek: up to twelve daily. San Jose: six on 10 Mar. The Dump: six on 12 Mar.

BUFF-THROATED SALTATOR *Saltator maximus*

Blue Creek: one (netted) on 10 Mar and three on 11 Mar.

GRAYISH SALTATOR *Saltator coerulescens*

APC: two on 24 Feb, five on 25 Feb and two on 26 Feb. One seen carrying food. Guacamallo Bridge: five on 1 Mar. Big Falls: five on 5 Mar.

BLACK-FACED GROSBEAK *Caryothraustes poliogaster*

Blue Creek: eight on 11 Mar.

RED CARDINAL *Cardinalis cardinalis*

APC: seven on 24 Feb, one on 25 Feb, three on 26 Feb, two on 7 Mar, four on 14 Mar, five on 15 Mar and two on 16 Mar. Altun Ha: one on 25 Feb and two on 14 Mar. Holdfast: one on 1 Mar. Big Falls: one on 1 Mar. Southern Highway, near Swasey Bridge: one on 8 Mar. Blue Creek: one on 10 Mar.

ROSE-BREASTED GROSBEAK *Pheucticus ludovicianus*

Blue Creek: one on 10 Mar. The Dump: two on 12 Mar. APC: three (netted) on 15 Mar and two on 16 Mar.

BLUE GROSBEAK *Guiraca caerulea*

Guacamallo Bridge: ten on 27 Feb and five on 28 Feb. Big Falls: six on 1 Mar, four on 2 and 3 Mar, 25 on 4 Mar and 20 on 5 Mar. Hummingbird Highway: three on 8 Mar. Blue Creek: two on 9 Mar. The Dump: c.50 on 12 Mar.

BLUE BUNTING *Cyanocompsa parellina*

Guacamallo Bridge: three on 28 Feb. Big Falls: two on 1 Mar.

BLUE-BLACK GROSBEAK *Cyanocompsa cyanooides*

APC: one on 25 Feb. Guacamallo Bridge: four on 28 Feb. Southern Highway, near Cabbage Haul Creek: one on 8 Mar. Blue Creek: one on 9 Mar and ten on 10 Mar. The Dump: five on 12 Mar.

INDIGO BUNTING *Passerina cyanea*

APC: 20 on 23 Feb, four on 24 Feb, five on 25 Feb, six on 26 Feb, five on 13 and 14 Mar and eight on 15 and 16 Mar. Guacamallo Bridge: two on 27 Feb, 24 on 28 Feb and eight on 1 Mar. Holdfast: ten on 1 Mar. Big Falls: up to 5,000 daily near the rice mill. Blue Creek: 200 on 9 Mar, 100 on 10 Mar and c.1,000 on 11 Mar. The Dump: c.3,000 on 12 Mar. Also seen at several other lowland sites.

WHITE-COLLARED SEEDEATER *Sporophila torqueola*

APC: up to 300 daily. Guacamallo Bridge: up to 20 daily. Big Falls: up to 200 daily. Blue Creek: up to 50 daily. The Dump: c.500 on 12 Mar. Also seen at many other sites.

VARIABLE SEEDEATER *Sporophila aurita*

Holdfast: three on 1 Mar. Big Falls: up to 50 daily. APC: one on 7 Mar, 20 on 13 Mar and one on 14 Mar. Blue Creek: up to 80 daily. San Jose: three on 10 Mar.

THICK-BILLED SEED-FINCH *Oryzoborus funereus*

APC: one on 24 Feb, five on 26 Feb, two on 13 Mar and one on 14 Mar. Guacamallo Bridge: three on 27 Feb. Blue Creek: six on 9 Mar and 25 on 11 Mar.

BLUE-BLACK GRASSQUIT *Volatinia jacarina*

Guacamallo Bridge: one on 28 Feb. Big Falls: ten on 1 Mar, twelve on 4 Mar and 40 on 5 Mar. Blue Creek: two on 9 Mar, four on 10 Mar and 20 on 11 Mar. The Dump: one on 12 Mar.

ORANGE-BILLED SPARROW *Arremon aurantirostris*

Blue Creek: one on 11 Mar.

OLIVE SPARROW *Arremonops rufivirgatus*

Guacamallo Bridge: two netted on 27 Feb and two netted on 1 Mar. APC: one on 14 Mar.

RUSTY SPARROW *Aimophila rufescens*

APC: two on 23 and 24 Feb and six on 26 Feb. Guacamallo Bridge: three on 27 Feb, eight on 28 Feb and four on 1 Mar.

BOTTERI'S SPARROW *Aimophila botterii*

Guacamallo Bridge: one netted on 28 Feb.

CHIPPING SPARROW *Spizella passerina*

APC: two on 23 Feb, one on 24 Feb, two on 25 Feb, one on 7 Mar, three on 13 Mar and one on 14 and 15 Mar. Western Highway, at MS 26: three on 2 Mar and six on 4 Mar.

ARRANGEMENT OF SPECIES

The species are arranged according to Peterson & Chalif (1973), whose English and scientific names are also used.

SUMMARY

The Army Bird Watching Society carried out an expedition Exercise KING VULTURE, to Belize from 23 February–16 March 1982.

During this period a total of 306 species was recorded, of which one (Green-fronted Hummingbird) had not previously been reported in Belize. A total of 1151 birds of 114 species was netted, of which 859 birds of 32 species were actually ringed.

ACKNOWLEDGEMENTS

The Society wishes to thank the following most sincerely for making the expedition possible:

Mr Flowers, Head of the Belize Forestry Service for permitting us to ring in Belize and to enter the forestry area.

The United States Department of the Interior, Fish & Wildlife Service Bird Banding Laboratory for providing the rings (bands).

Commander and Staff of HQ British Forces Belize.

The Director of Movements RAF and Army and RAF Movements Staff in the Ministry of Defence.

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Mr W Ford Young of the Belize Audubon Society.

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Colonel K Kirkby, British Defence Staff, Washington DC.

The administrative back-up team of Sgt J A Keeping, LCpl T A Neile, Cfn D W Middlemiss and Sig S G Miers, all from Blandford Camp.

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A good variety of field guides and other works of reference appropriate to Central America were available to the members of the expedition, as follows:

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PHOTOGRAPHS

The photographs were taken by Chris Mead or Capt R. Marsh.

ANNEX A: Ringing Activities in Belize – 1982.

RINGING ACTIVITIES IN BELIZE – 1982

by Chris Mead, BTO

As well as the normal bird watching and recording activities, a major project of Exercise KING VULTURE was to catch and handle birds in Belize and to band (the trans-Atlantic term for ringing) migrants from North America. Major Hallchurch had been able to obtain permission from the United States Fish and Wildlife Service to use their national bands, but only on migrant species. Full details of other birds caught were taken and the feather tip of a tertial on the right wing was snipped off, to allow re-handlings of the same individual to be identified.

Banding (or ringing) activities cannot be lightly undertaken and several members of the expedition were already trained (or in training) as ringers in UK; others were 'initiated' in Belize. All members of the party helped at times and did not complain when the rather limited and precious space on the vehicles was cluttered by the awkward aluminium poles and other gear. My own involvement, at the invitation of Major Hallchurch, was to strengthen the ringing team and provide expert guidance to the Army members; I have worked in the British ringing office for more than 20 years and had experience of some of the species we would encounter, whilst banding in Texas during the autumn 1980. In the event this was most fortuitous when Major Hallchurch, the only other fully qualified ringer in the party, had to return to UK after less than a week in Belize.

In practice, at the major sites, ringing activities took place on all occasions when the general logistics of the expedition allowed. Usually, two or more of the following, Major Counsell, Major Hallchurch, Major Hodgson, Major Sargent, Captain Marsh and Corporal Walters, stayed with me at the ringing site, whilst the rest were able to move a bit further afield. In all the places where we were ringing, Japanese mist-nets were our sole means of catching. The nets used included new ones specially purchased for expedition use (these, as all ringers know, attract the most destructive birds, and also bats, to chew holes in them), good quality nets which had seen some use and a few fine material nets of doubtful origin and great age. Inevitably, it is these latter nets which are inadvertently set in the 'best' sites and through which the most interesting birds are able to fly without so much as a ruffled feather. The majority of the nets were 75 denier and 1¼ inch mesh as used for catching small birds, like warblers and finches, in UK but a few were the heavier 150 denier material made in Japan but rigged on North Ronaldsay, Orkney. To cope with the smaller hummingbirds, two special nets with smaller mesh were packed.

The Orkney nets proved to be most effective where quantities of birds were available to be caught but the standard 75d nets, as might be expected, performed best where there were few birds. Surprisingly, even the small hummingbirds were frequently caught in the 1¼ inch mesh nets, although they often did not pocket and they

escaped unless they were extracted promptly. The special small mesh nets were almost useless for medium-sized birds but stopped (and sometimes caught) fast-moving hummers. Although some single-shelf nets were packed, they were not used and, in most sites, the nets were set as high as possible on three-section aluminium poles. In all sites, nets were furled overnight, to stop birds or bats entering them, and opened again at dawn. At most sites, the mid-day temperatures were too high for safe netting and nets were either furled or taken down from about 1100–1600 hrs. Care had also to be taken that birds in bags, awaiting processing or being transported to the ringing site, were not left in the direct sunlight. Shades were rigged up where ringing would otherwise have to have taken place in the open.

Results

The opportunity to handle unfamiliar birds is always welcome to a ringer but the ringing operation also seems, to the outsider, to depend to a very large extent on that vital person – the one who finds and reports the ring. Obviously a recovery, in North America, of one of the bands that we used would be of great interest but, realistically, there is only a very small chance of that happening. Most of the migrants we handled live in woods or swamps, where they are very unlikely to be found. Our main objectives, which were amply fulfilled, were therefore two-fold, and *both* under our control:

- a. To catch, for identification purposes, particularly the skulking species which prove so difficult to record during the course of normal bird-watching.
- b. To record the wing-length and weight of as many birds as possible. Weight data, in particular, is of interest to ornithologists and ecologists and is generally lacking from museum specimens.

Our catching success enabled the expedition to record quite a number of species which were not otherwise positively identified. It proved particularly valuable for the hummingbirds, for many of the shy species at Blue Creek and, at all sites, for the warblers. The ringers were, of course, watching birds whilst tending the nets and this also helped increase the coverage of observations, since those dedicated to watching tended to become mobile.

The biometrical information that we obtained will be summarized and published elsewhere. It is essential that such data, gathered from areas where relatively little bird-catching and measuring has been done, should be published and made available. A few of the migrant species we caught were beginning to show evidence, in the last days of the expedition, of weight gain prior to migration. Some birds may be expected to add about 50% (by weight) of fat to their normal winter weights for use as fuel on the flight north.

The results of our netting at four different sites are tabulated below (Table 1). The following abbreviations are used for each site:

- APC : AirportCamp, Belize
- GB : Guacamallo Bridge
- BF : Big Falls Ranch
- BC : Blue Creek

EXERCISE KING VULTURE

TABLE I

List of birds handled and banded in Belize – spring 1982.

	Breakdown of species by site.				Totals	Birds banded
	APC	GB	BF	BC		
Roadside Hawk			1		1	
Bat Falcon			1		1	
Northern Jacana	2				2	
Spotted Sandpiper		2			2	2
Plain-breasted Ground-Dove			10	2	12	
Ruddy Ground-Dove	4		5		9	
Blue Ground-Dove			2	1	3	
Groove-billed Ani		2			2	
Pauraque			1		1	
Band-tailed Barbthroat				2	2	
Long-tailed Hermit				8	8	
Little Hermit	2	2			4	
Scaly-breasted Hummingbird				1	1	
Green-breasted Mango	2				2	
Fork-tailed Emerald		1			1	
Red-billed Azurecrown		5			5	
Cinnamon Hummingbird	6				6	
Rufous-tailed Hummingbird	7	4	3	4	18	
Green-fronted Hummingbird				1	1	
Purple-crowned Fairy		1			1	
Amazon Kingfisher		2			2	
Green Kingfisher		2			2	
Pygmy Kingfisher		1			1	
Black-chinned Jacamar				1	1	
Acorn Woodpecker	3				3	
Yellow-bellied Sapsucker	1				1	1
Tawny-winged Woodcreeper				1	1	
Wedge-billed Woodcreeper				1	1	
Ivory-billed Woodcreeper				1	1	
Barred Antshrike				1	1	
Dusky Antbird				1	1	
Black-faced Ant-thrush				1	1	
Red-capped Manakin				3	3	
White-collared Manakin				6	6	
Thrush-like Manakin				1	1	
Bright-rumped Attila				1	1	

	APC	GB	BF	BC	Total	Banded
Bright-rumped Attila				1	1	
Vermilion Flycatcher	3				3	
Tropical Kingbird	3	1			4	
Social Flycatcher	13	2	1		16	
Great Kiskadee	2		2		4	
Brown-crested Flycatcher	1				1	
Dusky-capped Flycatcher			1		1	
Yellow-bellied Flycatcher				1	1	1
Least Flycatcher	3	2	1	1	7	7
Sulphur-rumped Flycatcher				1	1	
Yellow-olive Flycatcher		1			1	
Common Tody-Flycatcher	1				1	
Northern Bentbill				1	1	
Yellow-bellied Elaenia	11				11	
Northern Beardless Tyrannulet	1				1	
Ochre-bellied Flycatcher				2	2	
Mangrove Swallow	1				1	
Gray-breasted Martin	1				1	
Rough-winged Swallow	1				1	1
Brown Jay	2				2	
Green Jay		2			2	
Band-backed Wren		1			1	
Spot-breasted Wren	4			1	5	
Southern House Wren			1		1	
White-breasted Wood-wren				2	2	
Gray Catbird	7		3	5	15	14
Tropical Mockingbird	1				1	
Clay-colored Robin	6			2	8	
Wood Thrush				1	1	1
Rufous-browed Peppershrike	4				4	
White-eyed Vireo	10	1			11	10
Black-and-White Warbler	6	2		1	9	9
Worm-eating Warbler				2	2	2
Blue-winged Warbler	1			1	2	2
Tennessee Warbler				1	1	1
Yellow Warbler	5		1		6	6
Magnolia Warbler	8	1	1	2	12	12
Yellow-rumped Warbler		1			1	1
Black-throated Green Warbler		1			1	1
Yellow-throated Warbler	2				2	2
Ovenbird	2	1		1	4	3



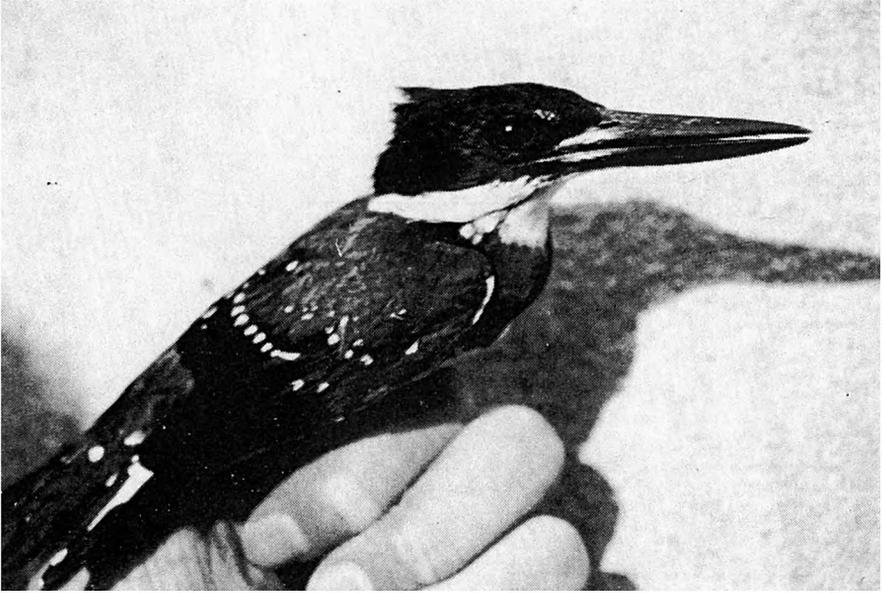
RED CARDINAL *Cardinalis cardinalis*

Belize 1982



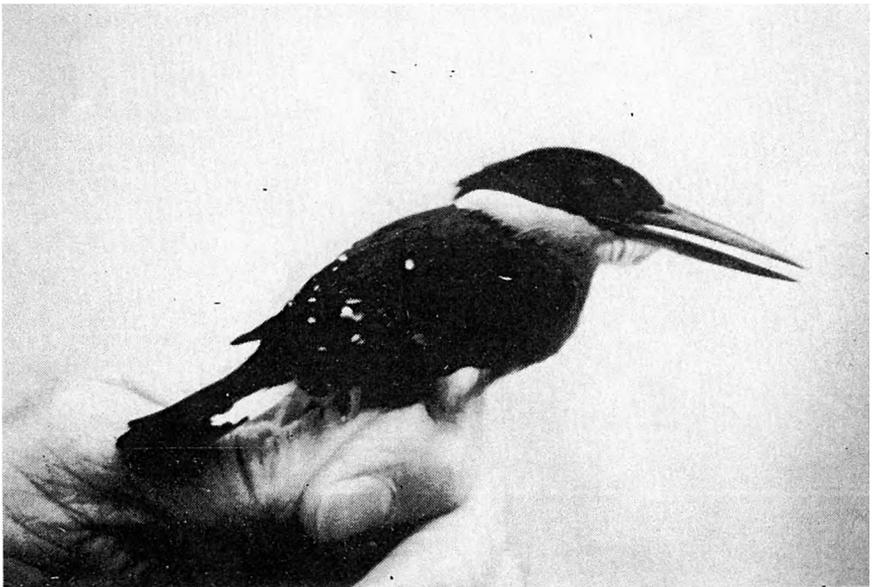
BARRED ANTSHRIKE *Thamnophilus doliatus*

Belize 1982



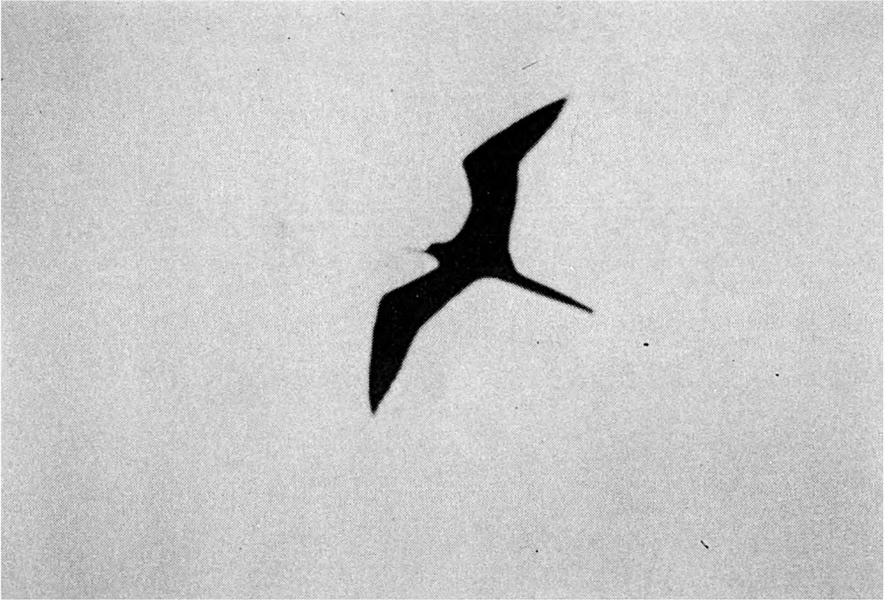
GREEN KINGFISHER *Chloroceryle americana*

Belize 1982



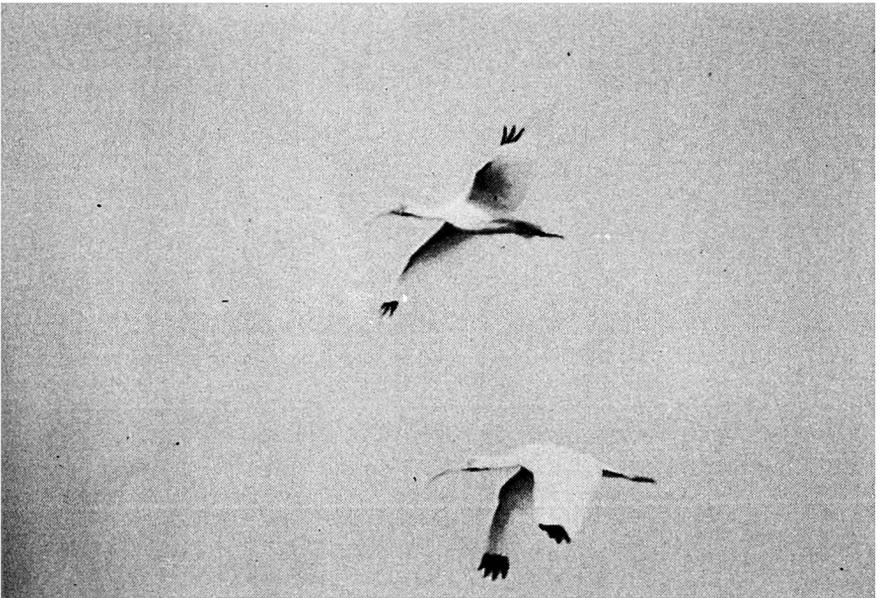
PYGMY KINGFISHER *Chloroceryle aenea*

Belize 1982



MAGNIFICENT FRIGATEBIRD *Fregata magnificens*

Belize 1982



WHITE IBIS *Eudocimus alba*

Belize 1982



YELLOW-BELLIED SAPSUCKER *Sphyrapicus varius*
Belize 1982



GREAT KISKADEE *Pitangus sulphuratus* Belize 1982

	APC	GB	BF	BC	Totals	Banded
Northern Waterthrush	3	1		2	6	6
Kentucky Warbler				2	2	
Common Yellowthroat	18	4	3	2	27	27
Yellow-breasted Chat	10	1		1	12	11
Hooded Warbler	4	1			5	5
Wilson's Warbler			2		2	2
American Redstart	6		1		7	7
Rufous-capped Warbler		3			3	
Yellow-billed Caticue				2	2	
Giant Cowbird			3		3	
Great-tailed Grackle	7				7	
Melodious Blackbird			1		1	
Orchard Oriole	32		4	1	37	37
Hooded Oriole	1				1	
Yellow-tailed Oriole		4			4	
Northern Oriole	1				1	1
Scrub Euphonia	2				2	
Yellow-throated Euphonia		1		6	7	
Blue-gray Tanager	3	2			5	
Summer Tanager	1				1	1
Red-throated Ant-Tanager				2	2	
Black-headed Saltator		2			2	
Buff-throated Saltator				2	2	
Grayish Saltator	3				3	
Red Cardinal	2				2	2
Rose-breasted Grosbeak	4				4	4
Blue Grosbeak		1	12		13	12
Blue Bunting		1			1	
Blue-black Grosbeak		2		3	5	
Indigo Bunting	4	2	576	85	667	667
White-collared Seedeater +	32	3	1		36	
Variable Seedeater	1				1	
Thick-billed Seed-Finch	7			2	9	
Blue-black Grassquit		1		1	2	
Olive Sparrow		3			3	
Rusty Sparrow		2			2	
Botteri's Sparrow		1			1	
Chipping Sparrow	1				1	1

Grand Totals

268

73

637

173

1151

859

+ Many more White-collared Seedeaters were caught but not processed.

NB. Discrepancies in totals handled and totals ringed arise from retraps of birds ringed by other people and a few released (inadvertently) before ringing.