



Photo: Maarten Hofman

Report on a rapid bird census in the eastern half of the upper Bladen watershed

11-13 April 2013

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Table of Contents

ABSTRACT 3

INTRODUCTION 3

AIM..... 4

RESULTS OF RAPID BIRD CENSUS 4

COMPARISON OF RESULTS OF RAPID BIRD CENSUS WITH THE 1987
EXPEDITION 6

CONCLUSIONS 7

RECOMMENDATIONS..... 8

ABSTRACT

A 3-day rapid bird census was carried out between 11 and 13 April 2013, as a follow up to the 1987 Manomet Bird Observatory and Missouri Botanical Garden expedition to the Upper Bladen Branch Nature Reserve in Toledo District in the south of Belize. A total of 233 bird species were positively identified by the 2013 team. This report gives data for all confirmed observations, makes comparisons with the 1987 data and gives some further recommendations.

INTRODUCTION

Between February 28 – 29 March 1987, 11 personnel from the Manomet Bird Observatory and Missouri Botanical Garden, plus 2 Belizeans from Mango Creek, made a biological survey of the Upper Bladen Branch watershed in the Mayan Mountains of Belize. The 44 page expedition report¹ included an initial management plan for this remote, undeveloped and biologically rich part of southern Belize. The main recommendation of the report was that the whole area be established as an inviolate nature preserve, within a wider conservation region.

In 1990, the Belizean Government declared the 99,796 acres (40,386 ha) of the Upper Bladen watershed a Strict Nature Reserve², the highest status of IUCN protection; one of only three such highly protected areas in Belize³. As such, access has since been strictly limited by permit, with a permanent ranger presence within the reserve and regular ranger patrols to guard against human encroachment and exploitation of the natural resources. In 2005, the Belize Foundation for Research and Environmental Education (BFREE⁴) was set up, and this has enabled much scientific research to be carried out, under strict access controls, within the reserve. Since December 2008, the Bladen Nature Reserve (BNR) has been managed the Ya'axché Conservation Trust (Ya'axché) in partnership with the Belize Government.

The authors of this report first met in Belize, during the period that one of them was assigned to the British Armed Forces between 1986 and 1988, and since meeting, it has always been their aspiration to visit the Bladen, being as it was clearly excellent for avifauna. An opportunity arose for this to take place in early 2013, and so planning started on carrying out a rapid bird census of the eastern half of the Upper Bladen Reserve. The team was to include a Ya'axché Ranger, who lived just outside the reserve's boundary, a trainee ringer/bander, and a professional bird guide: all three were very experienced field observers and very familiar with the identification of the bird species which are to be found in this part of southern Belize. The total of 7 members of the expedition is listed at **Appendix A**.

¹ The Bladen Branch Wilderness. A Special Report. The Manomet Bird Observatory, PO Box 936, Manomet, Massachusetts, 02345, USA. October 1987.

² IUCN Category Ia Strict nature reserve – An area which is protected from all but light human use in order to preserve the geological and geomorphological features of the region and its biodiversity.

³ All protected areas within Belize are detailed at: <http://www.protectedplanet.net/countries/22>

⁴ Belize Foundation for Research and Environmental Education: <http://www.bfreebz.org>

Although records of birds encountered on ranger patrols and visits by avian specialists are recorded by Ya'axché, and at least 352 species of birds have so far been recorded for the reserve, as planning started for the 2013 survey, no published material could be found about the birds of BNR. However, just before the expedition took place, a book⁵ became available, which is invaluable for all those interested in the Upper Bladen ecosystem. It stated that more than 352 species of birds had been recorded within the BNR, and listed 345 of these.

It was decided that the expedition would hike in via the only official entrance to the reserve, off the Southern Highway, via the Ranger Station, and spend 2 nights camping in the eastern part of the reserve, reaching as far as Calera Camp and the Quebrada de Oro River. The detailed itinerary for the 3 days is at **Appendix B**. All bird species that were positively identified, either heard or seen, would be recorded in each sector that was hiked. In entering the Upper Bladen Branch basin from its eastern end, via Forest Hill⁶, and walking some 10km west⁷ along the southern side of the Bladen Branch, the team were able to census four of the six areas that the 1987 expedition had visited⁸. Although no mist netting was carried out by the 2013 expedition, as had been the case by qualified banders in the 1987 team, this was offset by the considerable local knowledge of those in the 2013 team

AIM

To carry out a rapid bird census over a 3 day period in the eastern part of the Upper Bladen Reserve, as far as the Upper Quebrada de Oro River, record all positively identified bird species, and compare the bird species recorded in the same areas by the expedition mounted in 1987 by Manomet Bird Observatory and Missouri Botanical Garden.

RESULTS OF RAPID BIRD CENSUS

The numbers of each bird species identified are at **Appendix C**. The taxonomic order and abundance and seasonality status codes are as per Jones and Valley, 2001⁹.

Numbers recorded in the tables are based on birds seen or positively identified by their call, or a minimum estimate when an exact number could not be ascertained.

There was a possibility of double counting, as the team hiked in along the same trail as it left the valley. Some species which can be heard and identified from a distance, e.g. parrots,

⁵ Biodiversity of the Maya Mountains, a focus on the Bladen Nature Reserve, by Daniel C Dourson. 2012. Goatslug Publications, Bakersville, NC, USA. ISBN: 978-0-615-72795-0.

⁶ Forest Hill is assumed to be the point on the vehicle track to BFREE Field Station from which the trail enters the Upper Bladen Reserve to follow the southern bank of the Upper Bladen River.

⁷ This distance is only the east to west measurement; the hike itself was considerably further due to the meandering of the Bladen Branch.

⁸ The 2013 expedition covered Forest Hill, Richardson Creek, and both the lower and upper reaches of the Quebrada de Oro rivers. It did not penetrate far enough west to cover the Ridge or Ramos Creek which the 1987 expedition included in it's expedition. Neither expedition covered the terrain to the west of these latter two areas, i.e. the majority of the western half of the Upper Bladen Reserve was not covered by either expedition.

⁹ Annotated Checklist of the Birds of Belize, by H Lee Jones and A C Valley, Lynx Editions 2001. ISBN: 84-87334-35-0.

woodpeckers, motmots etc may have been recorded in more than one transect, but it is impossible to be sure.

The original data spreadsheet gives a detailed breakdown of where each bird species was recorded, with an indication of the potential for double counts, and is available on request.

The team identified 233 species in 3 days between 11 and 13 April 2013 (a similar time of year as the 1987 expedition).

The records include 50 species categorized as either summer (7) or winter (37) visitors or transients (6), as opposed to residents in the Toledo District, as per the Annotated Checklist of the Birds of Belize⁹.

Of the 233 species, 73% were in the very common, common, or fairly common categories, whilst the team recorded 52 species were are categorized as less common, including the rare Harpy Eagle, a species at the extreme northern limit of its range in the Americas, Ornate Hawk Eagle and Black-and-white Hawk-Eagle. Also, singles of Green Heron and Black-throated Bobwhite, which are currently assessed as occurring marginally in the Toledo District, were seen. A beautiful male Painted Bunting was seen in riverside grass on the Lower Quebrada de Oro; this is currently categorised as occasional in Toledo District.¹ The total in the marginal category includes the sighting of 3 White-fronted Parrots; this species does not have an abundance status for Toledo District in the Annotated Checklist of the Birds of Belize.

Table 1: Number of species censused in 2013- by abundance category for Toledo district (categories as per Jones and Vallely, 2001).

Abundance category for the Toledo District	Very Common	Common	Fairly Common	Un-common	Rare	Oc-casional	Scarce in most of Toledo District	Marginally occurs in Toledo District
	V	C	F	U	R	O	I	M
Number of species recorded by the 2013 census team	25	104	52	32	3	1	13	3

The 5 most abundant species as recorded by the 2013 census were, in descending order: Chestnut-headed Oropendola, Brown-hooded Parrot, White-collared Manakin, Red-throated Ant Tanager and Keel-billed Toucan. All of these species are very vocal and readily identifiable at a distance, and so their relative abundance, when compared with quieter less obvious species, are likely to be over stated.

COMPARISON OF RESULTS OF RAPID BIRD CENSUS WITH THE 1987 EXPEDITION

The 1987 expedition recorded 194 species of birds¹⁰, but of these, 184 were recorded in the same areas that the 2013 census visited⁸. However, members of the 2013 team believe that 2 of the species recorded by the 1987 team are dubious¹¹; these are Magnificent Hummingbird and Audubon's (Black-headed) Oriole.

The 1987 expedition caught and ringed 345 birds of 71 species; of these, 80% were permanent residents. **Table 2** shows percentages based on all records of the 1987 expedition, not just based on those species that were caught and ringed. 26 years apart, the percentage results of the 2 teams, for the seasonality status of the avifauna in the eastern part of the Upper Bladen at this time of year, are very similar.

Table 2: Comparison of species between the two expeditions by season status

		Permanent	Wintering	Transient	Summer migrants	Visitor
2013 Census (233 species)	Number of species	182	37	6	7	1
	Percentage	78%	16%	2.5%	3%	0.5%
1987 Expedition (182 species)	Number of species	142	29	2	7	2
	Percentage	78%	16%	1%	4%	1%

The 2013 census recorded 79 species that were not recorded by the 1987 expedition, in the areas those both team's visited. Conversely, the 1987 expedition recorded 28 species that were not recorded by the 2013 census in the same areas. Collectively, the 2 expeditions recorded 265 (plus 2 disputed) species in the eastern part of the Upper Bladen Basin which they both visited.

Three White-tipped Doves were recorded in the 2013 census, a species which is categorized in Jones and Vallely, 2001, as marginally occurring in the Toledo District. This species was also recorded by the 1987 expedition.

Three White-fronted Parrots were recorded in the 2013 census, a species that is not recorded by Jones and Vallely, 2001, as occurring in the Toledo District. This species was also recorded by the 1987 expedition.

Interestingly, the abundance of game birds recorded on the 2013 expedition is the opposite to the abundance order listed in Jones and Vallely, 2001. It is suggested that this is because

¹⁰ The 1987 expedition actually recorded 189 species, plus an additional 5 species on a previous visit to the area in May 1985; hence the total of 194 in the report (Appendix C).

¹¹ Disputed 1987 species records are: Magnificent Hummingbird (*Eugenes fulgens*) which was recorded in the Upper Quebrada by the 1987 expedition. This is a highland species, normally encountered at 1000-3000 meters ASL (as per Howell and Webb, 1995), but the Upper Quebrada is less than 600 metres ASL. The nearest population of the resident Audubon's Oriole (*Icterus graduacauda*) is Oaxaca and Veracruz states in Mexico (Howell and Webb, 1995), and so it is more likely that the bird seen on Richardson's Creek by the 1987 team was a female Black-cowled Oriole (*Icterus prothemelus*).

the abundance statuses in Jones and Vallely, 2001, are skewed towards habitats that are more disturbed than the pristine BNR.

Table 3: Comparison of status of main game species between 1987 and 2013 (abundance categories as per Jones and Vallely, 2001)

2013 Census				Species abundance as per 1987 Expedition			
	Abundance	Status	Number	Forest Hill	Richardson's Creek and upstream to Calera Caves	Lower Quebrada de Oro and Bladen from Calera to Hellgate	Upper reaches of Quebrada de Oro
Great Curassow	U	P	29	-	U	-	C
Crested Guan	U	P	13	-	R	R	U
Great Tinamou	F	P	11	-	C	C	C
Little Tinamou	F	P	8	-	C	C	C
Slate-breasted Tinamou	F	P	6	-	C	C	C
Plain Chachalaca	C	P	2	C	U	-	-

CONCLUSIONS

Recruiting highly experienced field observers to the team enabled a very effective rapid bird census to be carried out over a 3 day period in an extensive area of rain forest.

The technique of censusing the area by observers remaining on the tracks, or hiking along river beds, is an effective and non intrusive way of carrying out a repeatable sample of the avifauna of the area, given the difficulty and disturbance to wildlife if observers were to attempt to move across the terrain away from trails.

The composition of species, as categorised by their seasonality status, was very similar between the 2 expeditions, which were separated by 26 years (Table 2).

The populations of bird game species seemed to be healthy, with notable numbers of Great Curassow seen and heard; this would indicate the absence or very little hunting in the eastern end of the BNR.

Certain species are restricted to particular habitat types, others were encountered in a variety of habitats, and others, by nature of their wide roaming, could be seen or heard overhead anywhere, e.g. vultures, parrots and swifts.

Few mammals or their tracks¹² were seen and the one Peccary that was seen was extremely wary; this may indicate illegal hunting activity.

A few shoals, each comprising up to 100 Mountain Mullet (*Agonostomus monticola*), with the larger fish approximately 2 feet in length, were seen slowly swimming downstream; this may indicate low levels of fishing of the Bladen Branch River.

It is understood from the Ya'axché rangers that regular illegal incursions from Guatemala result in illegal exploitation of the BNR. This includes extraction of the ornamental xaté (pronounced: shatay). These are the leaves from 3 *Chamaedorea* species of palm tree (*Chamaedorea ernesti-augustii*, *Chamaedorea elegans* and *Chamaedorea oblongata*).

RECOMMENDATIONS

1. To carry out a follow-on rapid bird census, perhaps at approximately the same time in 2014, to cover the whole of the Upper Bladen basin area, i.e. to the west of the area covered by the 2013 census, including two sites covered by the 1987 expedition, Ridge and Ramos; and if time and manpower permits, also some of the higher slopes within the watershed.
2. Ya'axché, in collaboration with BFREE, to publish the updated list of at least 352 bird species which have so far been recorded in the BNR.
3. The Belizean Government, in partnership with Ya'axché, to investigate how illegal encroachment by Guatemalans across the border into the western end of the Upper Bladen Nature Reserve can be halted and to put measures in place to eliminate exploitation of plants and animals in this part of the Nature Reserve.
4. To maintain the IUCN Category Ia (Strict nature reserve) status of the Upper Bladen Basin.

¹² Tracks were seen of Puma, Tapir and Brocket Deer. The only mammal seen was a Peccary species (either White-lipped (*Tayassu pecari*) or Collared Peccary (*Tayassu tajacu*) and Black Howler Monkeys (*Alouatta pigra*) were heard.

APPENDIX A

11 – 13 APRIL 2013 RAPID BIRD CENSUS OF THE UPPER BLADEN BRANCH, TOLEDO DISTRICT, BELIZE

EXPEDITION MEMBERS

Name	Function	Role
Philip Balderamos	President of the Belize Audubon Society 1991–1992	Team Leader
Nick Smith, BSc(Hons) Environmental Science	Royal Air Force Logistics Officer	Co-leader
Victor Bonilla	Ya'axché Ranger since 2004 and specialist in the birds of BNR	Member
Maarten Hofman, MSc Ecology, BSc Wildlife Management	Ya'axché Research Coordinator	Member
Israel Manzanero ('Junior')	Professional Bird Guide, Blue Hole NP	Member
Tom Pienkowski, BSc Environmental Conservation	Ya'axché Development Officer	Member
Liberato Pop ('Gato')	Trainee Bird Ringer and Avian Technician	Member

APPENDIX B

11 – 13 APRIL 2013 RAPID BIRD CENSUS OF THE UPPER BLADEN BRANCH, TOLEDO DISTRICT, BELIZE

ITINERARY

10 APRIL

pm. PB, NS and IM and LP drive from Belmopan to home of VB at Medina Bank. Overnight.

11 APRIL

0500–0510hrs. PB, NS and IM and LP drive to BNR Ranger Station and leave vehicle with Rangers.

0530–0630hrs. Hike along BFREE vehicle track through savannah habitat.

0650–0710hrs. Hike along BFREE vehicle track through transition habitat, to Forest Hill.

0720–0820 hrs. Hike along trail through broad leaved deciduous forest to Blue Pool.

0830–0920 hrs. Hike along trail from Blue Pool to Fishbone Crossing.

0940–1030 hrs. Hike along trail from Fishbone Crossing to Richardson Camp.

1030–1040hrs. Hike along trail from Richardson Camp to Solomon Camp. TP and MH join.

1040–1225hrs. Team hikes along trail from Solomon Camp to Richardson Creek/Bland Branch confluence.

1240–1525hrs. Team hikes along trail from Richardson Creek/Bland Branch confluence to Calera.

1240–1525hrs. Team hikes along trail from Richardson Creek/Bland Branch confluence to Calera.

Overnight at Calera Camp

12 APRIL

0600–0700hrs and 1000–1230hrs. PB, VB, MH and IM survey area around Calera Camp.

0600–0730hrs. LP, NS and TP hike to Lower Quebrada de Oro.

0750–0830hrs. LP, NS and TP hike up Lower Quebrada de Oro.

0840–1000hrs. LP, NS and TP hike up Upper Quebrada de Oro.

1100–1130hrs. LP, NS and TP hike down Upper Quebrada de Oro.

1135–1245hrs. LP, NS and TP hike from Upper Quebrada de Oro to Calera Camp.

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0700–1000hrs. PB, VB, MH and IM hike from Calera Camp to Calera and return to Calera Camp.

1430–1550hrs. Team hikes from Calera Camp to Richardson Camp.

Overnight at Richardson Camp

13 APRIL

0530–0730hrs. Team surveys area around Richardson Camp.

0700–1000hrs. VB, MH, IM hike from Richardson Camp up Richardson Creek, then catch rest of team up.

0900–1105hrs. PB, NS, TP and LP hike from Richardson Camp to Solomon Camp.

1020–1100hrs. PB, NS, TP and LP hike from Solomon Camp to Fishbone Crossing.

1145–1100hrs. Team hikes from Fishbone Crossing to Blue Pool.

1255–1330hrs. Team hikes from Blue Pool to BFREE track (Forest Hill).

pm. Team disperses

Appendix C

11 – 13 APRIL 2013 RAPID BIRD CENSUS OF THE UPPER BLADEN BRANCH, TOLEDO DISTRICT, BELIZE

SPECIES LIST

	Common Name	Scientific Name	2013			1987			
			Abundance [†]	Seasonality [†]	Totals for Rapid Bird Census	Forest Hill	Lower QdO* and Bladen from Calera to Helligate	Upper reaches of QdO*	Total for 1987
1	Great Tinamou**	<i>Tinamus major</i>	F	P	11		C	C	✓
2	Little Tinamou**	<i>Crypturellus soui</i>	F	P	8		C	C	✓
3	Slate-breasted Tinamou**	<i>Crypturellus boucardi</i>	F	P	6		C	C	✓
4	Bare-throated Tiger Heron	<i>Tigrisoma mexicanum</i>	U	P	0	X		X	✓
5	Great Blue Heron	<i>Ardea herodias</i>	C	V	0				✓
6	Great Egret	<i>Ardea alba</i>	V	P	1				
7	Little Blue Heron	<i>Egretta caerulea</i>	V	W	2				✓
8	Green Heron	<i>Butorides virescens</i>	C	V	1		C	C	✓
9	Chestnut-bellied Heron	<i>Agamia agami</i>	R	P	0		X		✓
10	Yellow-crowned Night-Heron	<i>Nyctanassa violacea</i>	C	P	0				✓
11	Boat-billed Heron	<i>Cochlearius cochlearius</i>	I	P	1				
12	Black Vulture	<i>Coragyps atratus</i>	V	P	0				
13	Turkey Vulture	<i>Cathartes aura</i>	V	P	3		C	U	✓
14	King Vulture	<i>Sarcorampus papa</i>	U	P	3			U	✓
15	Muscovy Duck	<i>Cairina moschata</i>	U	P	0		X		✓
16	Blue-winged Teal	<i>Anas discors</i>	C	W	12				
17	Osprey	<i>Pandion haliaetus</i>	F	P	2				✓
18	Swallow-tailed Kite	<i>Elanoides forficatus</i>	F	S	3		U		✓
19	White-tailed Kite	<i>Elanus leucurus</i>	F	P	1				
20	Double-toothed Kite	<i>Harpagus bidentatus</i>	U	P	0				✓
21	Plumbeous Kite	<i>Ictinia plumbea</i>	U	S	0		U		✓

	Common Name	Scientific Name	2013			1987			
			Abundance [†]	Seasonality [†]	Totals for Rapid Bird Census	Forest Hill	Lower QdO* and Bladen from Calera to Hellgate	Upper reaches of QdO*	Total for 1987
22	White Hawk	<i>Pseudastur albicollis</i>	U	P	0		U		√
23	Gray Hawk	<i>Asturina nitida</i>	F	P	1				√
24	Common Black-Hawk	<i>Buteogallus anthracinus</i>	F	P	1				
25	Great Black-Hawk	<i>Buteogallus urubitinga</i>	U	P	1		C		√
26	Roadside Hawk	<i>Buteo magnirostris</i>	C	P	1				√
27	Harpy Eagle	<i>Harpia harpyja</i>	R	P	1				
28	Black and White Hawk Eagle	<i>Spizaetus melanoleucus</i>	R	P	1				
29	Black Hawk-Eagle	<i>Spizaetus tyrannus</i>	U	P	3				√
30	Ornate Hawk Eagle	<i>Spizaetus ornatus</i>	R	P	1				
31	Barred Forest-Falcon	<i>Micrastur ruficollis</i>	U	P	6			R	√
32	Collared Forest-Falcon	<i>Micrastur semitorquatus</i>	F	P	0			C	√
33	Laughing Falcon	<i>Herpotheres cachinnans</i>	F	P	3		X		√
34	Aplomado Falcon	<i>Falco ferreus</i>	I	P	1				
35	Bat Falcon	<i>Falco rufigularis</i>	F	P	3				√
36	Plain Chachalaca**	<i>Ortalis vetula</i>	C	P	2		C		√
37	Crested Guan**	<i>Pelope purpurascens</i>	U	P	13			R	√
38	Great Curassow**	<i>Crax rubra</i>	U	P	29				√
39	Black-throated Bobwhite	<i>Colinus nigrogularis</i>	M	P	1				
40	Spotted Wood Quail	<i>Odonophorus guttatus</i>	U	P	2			U	√
41	Gray-necked Wood Rail	<i>Aramides cajanea</i>	F	P	2				
42	Limpkin	<i>Aranus guarauna</i>	C	P	5				
43	American Golden-Plover	<i>Pluvialis dominica</i>	I	T	0				
44	Solitary Sandpiper	<i>Tringa solitaria</i>	F	W	0			X	√
45	Spotted Sandpiper	<i>Actitis macularia</i>	C	W	7			C	√
46	Pale-vented Pigeon	<i>Columba cayennensis</i>	V	P	2				
47	Scaled Pigeon	<i>Columba speciosa</i>	U	P	3				
48	Short-billed Pigeon	<i>Patagioenas nigrirostris</i>	C	P	29			C	√
49	Pale-breasted Ground Dove	<i>Columbina minuta</i>	C	P	3				
50	Ruddy Ground-Dove	<i>Columbina talpacoti</i>	V	P	0		X		√
51	Blue Ground-Dove	<i>Claravis pretiosa</i>	C	P	14		C	C	√
52	White-tipped Dove	<i>Leptotila verreauxi</i>	M	P	3		X		√
53	Gray-fronted Dove	<i>Leptotila rufaxilla</i>	C	P	3			U	√

	Common Name	Scientific Name	2013			1987			
			Abundance [†]	Seasonality [†]	Totals for Rapid Bird Census	Forest Hill	Lower QdO* and Bladen from Calera to Hellgate	Upper reaches of QdO*	Total for 1987
54	Gray-chested Dove	<i>Leptotila cassini</i>	C	P	10		U	U	√
55	Ruddy Quail-Dove	<i>Geotrygon montana</i>	F	P	10				
56	Olive-throated Parakeet	<i>Aratinga nana</i>	V	P	31		C	C	√
57	Brown-hooded Parrot	<i>Pionopsitta haematotis</i>	C	P	50				
58	White-crowned Parrot	<i>Pionus senilis</i>	C	P	9		U		√
59	White-fronted Parrot	<i>Amazona albifrons</i>			3		U		√
60	Red-lore Parrot	<i>Amazona autumnalis</i>	V	P	6	U	U		√
61	Mealy Parrot	<i>Amazona farinosa</i>	C	P	15		U		√
62	Yellow-headed Parrot	<i>Amazona oratrix</i>	F	P	4				
63	Squirrel Cuckoo	<i>Piaya cayana</i>	C	P	16	C	C	C	√
64	Vermiculated Screech Owl	<i>Otus guatemalae</i>	U	P	0		R	R	√
65	Spectacled Owl	<i>Pulsatrix perspicillata</i>	U	P	2		X	X	√
66	Central American Pygmy Owl	<i>Glaucidium griseiceps</i>	U	P	1		C	C	√
67	Ferruginous Pygmy-Owl	<i>Glaucidium brasilianum</i>	I	P	0				
68	Mottled Owl	<i>Ciccaba virgata</i>	C	P	4		C		√
69	Black-and-white Owl	<i>Ciccaba nigrolineata</i>	R	P	0		X		√
70	Common Nighthawk	<i>Chordeiles minor</i>	I	S	0		X		√
71	Common Pauraque	<i>Nyctidromus albigollis</i>	C	P	4		C	U	√
72	White-collared Swift	<i>Sreptoprocne zonaris</i>	F	P	1			U	√
73	Vaux's Swift	<i>Chaetura vauxi</i>	C	P	8			U	√
74	Lesser Swallow-tailed Swift	<i>Panyptila cayennensis</i>	F	P	2				
75	Long-tailed Hermit	<i>Phaethornis superciliosus</i>	C	P	8			C	√
76	Stripe-throated Hermit	<i>Phaethornis strigularis</i>	C	P	9			U	√
77	Scaly-breasted Hummingbird	<i>Phaechroa cuvierii</i>	U	P	1			C	√
78	Wedge-tailed Sabrewing	<i>Campylopterus curvipennis</i>	I	P	1			C	√
79	Violet Sabrewing	<i>Campylopterus hemileucurus</i>	F	P	1			U	√
80	White-necked Jacobin	<i>Florisuga mellivora</i>	F	P	5			R	√
81	Green-breasted Mango	<i>Anthracothorax prevostii</i>	F	P	1				
82	White-bellied Emerald	<i>Chlorostilbon</i>	C	P	11			R	√
83	Azure-crowned Hummingbird	<i>Amazilia cyanocephala</i>	I	P	0				√
84	Rufous-tailed Hummingbird	<i>Amazilia tzacatl</i>	V	P	6			C	√
85	Purple-crowned Fairy	<i>Heliothryx barroti</i>	U	P	1				

	Common Name	Scientific Name	2013			1987			
			Abundance [†]	Seasonality [†]	Totals for Rapid Bird Census	Forest Hill	Lower QdO* and Bladen from Calera to Hellgate	Upper reaches of QdO*	Total for 1987
86	Magnificent Hummingbird***	<i>Eugenes fulgens</i>			0			X	✓
87	Black-headed Trogon (Citreoline)	<i>Trogon melanocephalus</i>	C	P	10				✓
88	Gartered Trogon (Violaceous)	<i>Trogon caligatus</i>	C	P	13		U	U	✓
89	Collared Trogon	<i>Trogon collaris</i>	F	P	1				✓
90	Slaty-tailed Trogon	<i>Trogon massena</i>	C	P	15	U	C	C	✓
91	Tody Motmot	<i>Hylomanes momotula</i>	F	P	3				
92	Whooping Motmot (Blue-crowned)	<i>Momotus subrufescens</i>	C	P	31		C	R	✓
93	Keel-billed Motmot	<i>Electron carinatum</i>	U	P	3		R		✓
94	Ringed Kingfisher	<i>Megasceryle torquata</i>	F	P	0	U			✓
95	Belted Kingfisher	<i>Ceryle alcyon</i>	C	W	1				
96	Amazon Kingfisher	<i>Chloroceryle amazona</i>	U	P	5		U		✓
97	Green Kingfisher	<i>Chloroceryle americana</i>	C	P	15	C	C	C	✓
98	American Pygmy Kingfisher	<i>Chloroceryle aenea</i>	C	P	0				✓
99	White-necked Puffbird	<i>Notharchus hyperrhynchus</i>	R	P	0				✓
100	White-whiskered Puffbird	<i>Malacoptila panamensis</i>	U	P	2			U	✓
101	Rufous-tailed Jacamar	<i>Galbula ruficauda</i>	F	P	17		U	U	✓
102	Blue-throated (Emerald) Toucanet	<i>Aulacorhynchus caeruleogularis</i>	F	P	4		X		✓
103	Collared Aracari	<i>Pteroglossus torquatus</i>	C	P	13		C	C	✓
104	Keel-billed Toucan	<i>Ramphastos sulfuratus</i>	C	P	34		C	C	✓
105	Acorn Woodpecker	<i>Melanerpes formicivorus</i>	C	P	2				
106	Black-cheeked Woodpecker	<i>Melanerpes pucherani</i>	F	P	19		U	U	✓
107	Golden-fronted Woodpecker	<i>Melanerpes aurifrons</i>	C	P	0				✓
108	Smoky-brown Woodpecker	<i>Veniliornis fumigatus</i>	F	P	4				✓
109	Chestnut-colored Woodpecker	<i>Ceuleus castaneus</i>	U	P	0				✓
110	Lineated Woodpecker	<i>Dryocopus lineatus</i>	C	P	2		C	U	✓
111	Pale-billed Woodpecker	<i>Campephilus guatemalensis</i>	C	P	12		U	U	✓
112	Rufous-breasted Spinetail	<i>Synallaxis erthrorhax</i>	F	P	4				✓
113	Buff-throated Foliage-gleaner	<i>Automolus ochrolaemus</i>	F	P	5		C	C	✓
114	Plain Xenops	<i>Xenops minutus</i>	C	P	4		C	C	✓
115	Scaly-throated Leaf-tosser	<i>Scierurus guatemalensis</i>	U	P	2			C	✓
116	Tawny-winged Woodcreeper	<i>Dendrocincla anabatina</i>	F	P	3		U	U	✓
117	Ruddy Woodcreeper	<i>Dendrocincla homochroa</i>	U	P	1		R		✓

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118	Olivaceous Woodcreeper	<i>Sittasomus griseicapillus</i>	F	P	2		R		✓
119	Wedge-billed Woodcreeper	<i>Glyphorhynchus spirurus</i>	F	P	3	C	C	C	✓
120	Northern Barred-Woodcreeper	<i>Dendrocolaptes sanctithomae</i>	F	P	1		U		✓
121	Ivory-billed Woodcreeper	<i>Xiphorhynchus flavigaster</i>	C	P	15		C	C	✓
122	Streak-headed Woodcreeper	<i>Lepidocolaptes souleyetii</i>	U	P	2				
123	Barred Antshrike	<i>Thamnophilus doliatus</i>	C	P	3	X			✓
124	Western Slaty Antshrike	<i>Thamnophilus atrinucha</i>	F	P	3				
125	Russet Antshrike	<i>Thamnistes anabatinus</i>	U	P	2				
126	Dot-winged Antwren	<i>Microrhopias quixensis</i>	C	P	21		U	C	✓
127	Dusky Antbird	<i>Cercomacra tyrannina</i>	C	P	7				✓
128	Black-faced Antthrush	<i>Formicarius analis</i>	C	P	10		C	C	✓
129	Yellow-bellied Tyrannulet	<i>Ornithion semiflavum</i>	F	P	2			U	✓
130	Northern Beardless Tyrannulet	<i>Camplostoma imberbe</i>	I	P	1				
131	Greenish Elaenia	<i>Myiopagis viridicata</i>	F	P	7				
132	Yellow-bellied Elaenia	<i>Elaenia flavogaster</i>	V	P	6				
133	Ochre-bellied Flycatcher	<i>Mionectes oleagineus</i>	C	P	8		C	C	✓
134	Sepia-capped Flycatcher	<i>Leptopogon amaurocephalus</i>	F	P	1		U	U	✓
135	Northern Bentbill	<i>Oncostoma cinereigulare</i>	C	P	7		U	U	✓
136	Slate-headed Tody-Flycatcher	<i>Poecilatriccus sylvia</i>	U	P	1				
137	Common Tody-Flycatcher	<i>Todirostrum cinereum</i>	C	P	3				
138	Eye-ringed Flatbill	<i>Rhynchocyclus brevirostris</i>	U	P	1			X	✓
139	Yellow-olive Flycatcher	<i>Tolmomyias sulphureus</i>	C	P	11				
140	Stub-tailed Spadebill	<i>Platyrinchus cancrinus</i>	C	P	7		U	U	✓
141	Royal Flycatcher	<i>Onychorhynchus coronatus</i>	U	P	2				
142	Ruddy-tailed Flycatcher	<i>Terentriccus erythrurus</i>	R	P	0		R		✓
143	Sulphur-rumped Flycatcher	<i>Myiobius sulphureipygius</i>	C	P	2		U	R	✓
144	Olive-sided Flycatcher	<i>Contopus cooperi</i>	U	T	0				✓
145	Eastern Wood-Pewee	<i>Contopus virens</i>	V	T	5				
146	Tropical Pewee	<i>Contopus cinereus</i>	F	P	7				
147	Yellow-bellied Flycatcher	<i>Empidonax flaviventris</i>	C	W	3		C	C	✓
148	Least Flycatcher	<i>Empidonax minimus</i>	C	W	4		C		✓
149	Black Phoebe	<i>Sayornis nigricans</i>	I	P	3		C		✓

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150	Bright-rumped Attila	<i>Attila spadiceus</i>	C	P	9		U	U	√
151	Rufous Mourner	<i>Rhytipterna holerythra</i>	U	P	5		R	R	√
152	Dusky-capped Flycatcher	<i>Myiarchus tuberculifer</i>	C	P	6				√
153	Great Crested Flycatcher	<i>Myiarchus crinitus</i>	F	W	1			X	√
154	Brown-crested Flycatcher	<i>Myiarchus tyrannulus</i>	C	S	11		U		√
155	Great Kiskadee	<i>Pitangus sulphuratus</i>	V	P	5		U	U	√
156	Boat-billed Flycatcher	<i>Megarynchus pitangua</i>	C	P	7		U	R	√
157	Social Flycatcher	<i>Myiozetetes similis</i>	V	P	12		C	U	√
158	Streaked Flycatcher	<i>Myiodynastes maculatus</i>	I	S	1				
159	Sulphur-bellied Flycatcher	<i>Myiodynastes luteiventris</i>	C	S	11		X		√
160	Piratic Flycatcher	<i>Legatus leucophaeus</i>	F	S	2		R		√
161	Tropical/Couch's Kingbird	<i>Tyrannus melancholicus/couchii</i>	V/C	P	1				
162	Eastern Kingbird	<i>Tyrannus tyrannus</i>	V	T	20				
163	Fork-tailed Flycatcher	<i>Tyrannus savana</i>	I	P	2				
164	Thrush-like Schiffornis	<i>Schiffornis turdina</i>	C	P	8		U	C	√
165	Rufous Piha	<i>Lipaugus unirufus</i>	U	P	11		C	C	√
166	Cinnamon Becard	<i>Pachyrhamphus cinnamomeus</i>	F	P	6		U	U	√
167	White-winged Becard	<i>Pachyrhamphus polychopterus</i>	I	P	1				
168	Rose-throated Becard	<i>Pachyrhamphus</i>	U	P	7		R	X	√
169	Masked Tityra	<i>Tityra semifasciata</i>	C	P	9		C	U	√
170	Black-crowned Tityra	<i>Tityra inquisitor</i>	F	P	0				√
171	White-collared Manakin	<i>Manacus candei</i>	C	P	41		C	C	√
172	Red-capped Manakin	<i>Pipra mentalis</i>	C	P	25		C	C	√
173	White-eyed Vireo	<i>Vireo griseus</i>	C	W	2		U	U	√
174	Yellow-throated Vireo	<i>Vireo flavifrons</i>	F	W	1				
175	Philadelphia Vireo	<i>Vireo philadelphicus</i>	U	W	4				
176	Red-eyed Vireo	<i>Vireo olivaceus</i>	V	T	2				
177	Yellow-green Vireo	<i>Vireo flavoviridis</i>	C	S	19				
178	Tawny-crowned Greenlet	<i>Hylophilus ochraceiceps</i>	C	P	10		C	C	√
179	Lesser Greenlet	<i>Hylophilus decurtatus</i>	V	P	19		C	C	√
180	Green Shrike-Vireo	<i>Vireolanius pulchellus</i>	C	P	6		C	C	√
181	Brown Jay	<i>Cyanocorax morio</i>	V	P	14		C		√

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182	Gray-breasted Martin	<i>Prognechalybea</i>	C	S	20			U	√
183	Mangrove Swallow	<i>Tachycineta albilinea</i>	C	P	0			R	√
184	Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	C	W	23		U		√
185	Ridgways N R-w Swallow	<i>Steigodopteryx ridgwayi</i>	C	P	19				
186	Barn Swallow	<i>Hirundo rustica</i>	V	T	5				
187	Band-backed Wren	<i>Campylorhynchus zonatus</i>	I	P	0		R	X	√
188	Spot-breasted Wren	<i>Thryothorus maculipectus</i>	V	P	27		C	C	√
189	White-breasted Wood-Wren	<i>Henicorhina leucosticta</i>	C	P	12		C	C	√
190	Nightingale Wren	<i>Microcerculus philomela</i>	I	P	4				
191	Long-billed Gnatwren	<i>Ramphocaenus melanurus</i>	C	P	2			R	
192	Blue-gray Gnatwren	<i>Poliptila caerulea</i>	C	P	1				
193	Tropical Gnatcatcher	<i>Poliptila plumbea</i>	F	P	4		U	U	√
194	Swainson's Thrush	<i>Catharus ustulatus</i>	F	T	5				
195	Wood Thrush	<i>Hylocichla mustelina</i>	C	W	7		C	C	√
196	Clay-colored Thrush	<i>Turdus grayi</i>	C	P	14				
197	Gray Catbird	<i>Dumetella carolinensis</i>	C	W	10		C	C	√
198	Tropical Mockingbird	<i>Mimus gilvus</i>	I	P	1				
199	Blue-winged Warbler	<i>Vermivora cyanoptera</i>	F	W	1		X		√
200	Golden-winged Warbler	<i>Vermivora chrysoptera</i>	U	W	1				
201	Tennessee Warbler	<i>Vermivora peregrina</i>	F	W	2				
202	Yellow Warbler	<i>Setophaga petechia</i>	C	W	4				√
203	Chestnut-sided Warbler	<i>Setophaga pensylvanica</i>	C	W	6		U	U	√
204	Magnolia Warbler	<i>Setophaga magnolia</i>	C	W	10	U	C	C	√
205	Black-throated Green Warbler	<i>Setophaga virens</i>	F	W	4		U	C	√
206	Grace's Warbler	<i>Dendroica graciae</i>	C	P	3				
207	Black-and-white Warbler	<i>Mniotilta varia</i>	C	W	5		U	U	√
208	American Redstart	<i>Setophaga ruticilla</i>	C	W	4		C	C	√
209	Prothonotary Warbler	<i>Protonotaria citrea</i>	C	T	0		R	U	√
210	Worm-eating Warbler	<i>Helmitheros vermivorum</i>	F	W	3		R	R	√
211	Ovenbird	<i>Seiurus aurocapilla</i>	C	W	0		R		√
212	Northern Waterthrush	<i>Parkesia noveboracensis</i>	C	W	14		C	C	√
213	Louisiana Waterthrush	<i>Parkesia motacilla</i>	U	W	2		C	C	√

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214	Kentucky Warbler	<i>Geothlypis formosus</i>	C	W	3		C	C	√
215	Common Yellowthroat	<i>Geothlypis trichas</i>	C	W	2	U	R		√
216	Gray-crowned Yellowthroat	<i>Geothlypis poliocephala</i>	I	P	1				
217	Hooded Warbler	<i>Setophaga citrina</i>	C	W	3		C	U	√
218	Wilson's Warbler	<i>Cardellina pusilla</i>	U	W	1	X			√
219	Golden-crowned Warbler	<i>Basileuterus culicivorus</i>	C	P	2				
220	Rufous-capped Warbler	<i>Basileuterus rufifrons</i>	I	P	0				
221	Yellow-breasted Chat	<i>Icteria virens</i>	F	W	1		X		√
222	Gray-headed Tanager	<i>Euometis penicillata</i>	F	P	1				
223	Black-throated Shrike Tanager	<i>Lanio aurantius</i>	F	P	14		U	C	√
224	Red-crowned Ant-Tanager	<i>Habia rubica</i>	F	P	12		C	C	√
225	Red-throated Ant-Tanager	<i>Habia fuscicauda</i>	V	P	39		C	C	√
226	Hepatic Tanager	<i>Piranga flava</i>	C	P	4				
227	Summer Tanager	<i>Piranga rubra</i>	C	W	12		U	U	√
228	Scarlet Tanager	<i>Piranga olivacea</i>	C	T	1				
229	Crimson-collared Tanager	<i>Ramphocelus sanguinolentus</i>	F	P	8		R	R	√
230	Passerini's Tanager	<i>Ramphocelus passerinii</i>	C	P	1				
231	Blue-gray Tanager	<i>Thraupis episcopus</i>	V	P	7				
232	Yellow-winged Tanager	<i>Thraupis abbas</i>	C	P	3		U		√
233	Scrub Euphonia	<i>Euphonia affinis</i>	U	P	1				
234	Yellow-throated Euphonia	<i>Euphonia hirundinacea</i>	C	P	4		U	X	√
235	Olive-backed Euphonia	<i>Euphonia gouldi</i>	C	P	15		R		√
236	Golden-hooded Tanager	<i>Tangara larvata</i>	F	P	1		R	R	√
237	Green Honeycreeper	<i>Chlorophanes spiza</i>	F	P	0		X		√
238	Red-legged Honeycreeper	<i>Cyanerpes cyaneus</i>	C	P	14		U	C	√
239	Blue-black Grassquit	<i>Volatinia jacarina</i>	V	P	1				
240	Variable Seedeater	<i>Sporophila americana</i>	V	P	14				
241	White-collared Seedeater	<i>Sporophila torqueola</i>	V	P	5				
242	Thick-billed Seed-Finch	<i>Oryzoborus funereus</i>	C	P	2				
243	Yellow-faced Grassquit	<i>Tiaris olivacea</i>	C	P	1				
244	Orange-billed Sparrow	<i>Arremon aurantiostris</i>	C	P	3			U	√
245	Green-backed Sparrow	<i>Arremonops chloronotus</i>	C	P	3				√

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246	Rusty Sparrow	Aimophila rufescens	C	P	1					
247	Chipping Sparrow	Spizella passerina	C	P	1					
248	Grayish Saltator	Saltator coerulescens	C	P	2					
249	Buff-throated Saltator	Saltator maximus	C	P	5				√	
250	Black-headed Saltator	Saltator atriceps	C	P	15			R	√	
251	Black-faced Grosbeak	Caryothraustes polliogaster	C	P	15		C	C	√	
252	Rose-breasted Grosbeak	Pheucticus ludovicianus	U	W	1					
253	Blue-black Grosbeak	Cyanocompsa cyanooides	C	P	10		C	C	√	
254	Blue Grosbeak	Passerina caerulea	F	W	7				√	
255	Indigo Bunting	Passerina cyanea	C	W	1		R		√	
256	Painted Bunting	Passerina ciris	O	W	1					
257	Melodious Blackbird	Dives dives	V	P	16	U	X		√	
258	Great-tailed Grackle	Quiscalus mexicanus	V	P	2					
259	Bronzed Cowbird	Molothrus aeneus	I	P	12					
260	Giant Cowbird	Molothrus oryzivorus	U	P	4					
261	Black-cowled Oriole	Icterus prothemelas	C	P	11		U		√	
262	Orchard Oriole	Icterus spurius	C	W	3					
263	Baltimore Oriole	Icterus galbula	C	W	5					
264	Audubon's Oriole***	Icterus graduacauda			0				√	
265	Yellow-billed Cacique	Amblycercus holosericeus	C	P	3				√	
266	Chestnut-headed Oropendola	Psarocolius wagleri	I	P	54		C		√	
267	Montezuma Oropendola	Psarocolius montezuma	V	P	1	C	U		√	
					Total ind.	1630			Total spp.	184

[†] based on Jones and Valley, 2001

* Quebrada de Oro valley in Bladen Nature Reserve

** Game species

*** Species ID contested by 2013 expedition team