Biodiversity and Landscape Structure within the Chiquibul Forest Reserve

A Summary Report of Research Activities in 2005

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Overview

Broadly, our research focuses on examining the demographic characteristics of common tropical species of plants and animals in the Chiquibul Forest Reserve.

Research is conducted in conjunction with a two-week field course offered yearly through Acadia University. Students are introduced to particular aspects of tropical biodiversity and landscape ecology research, by designing and implementing long-term modular studies that focus on the following:

1) Long-term monitoring and demography of tropical forest passerines
2) Distance sampling of select bird species
3) Long-term demography of fishtail palm

MODULAR PROJECT # 1: BIRD MONITORING & DEMOGRAPHY

Project: Investigate the migratory and demographic patterns of birds within the Maya Mountains, Chiquibul Forest Reserve.

Overview: We selected two study locations within the Chiquibul Forest, near Las Cuevas, to monitor populations of resident and migratory birds. To assess species occurrence and habitat associations, we used mist-nets (fine filamentous nets designed to capture birds) to sample two different habitat types. We established an array of nine nets (Figure 1) in successional/scrub habitat surrounding the compound (hereafter, the "Edge Nets"), and an array of thirteen nets (Figure 2) in the understory of mature broadleaved forest habitat (hereafter, the "Jungle Nets").

At each of these sites, nets were placed in natural openings to limit habitat disturbance. Nets were operated daily, for 6 hours, starting 15 minutes before sunrise. Nets were monitored every 30 minutes. All neotropical migrants were banded with a uniquely numbered U.S. Fish and Wildlife Service (USFWS) aluminium band. Resident birds were instead banded with a unique 4-number non-USFWS band. We assessed the amount of visible subcutaneous fat each bird had

and assigned a score from 0 (no fat) to 4 (copious fat). Details on capture date, time, and net were also collected. These data allow inter-year comparisons of migration timing, physiology, and habitat associations. If a bird could not be identified, it was not banded. These banding activities complemented the visual surveys described in modular project #2.

Summary: Sampling sessions were conducted on nine days (28 April – 6 May 2005). In that period, at total of 135 birds were banded, comprising 46 species (summarized in Table 1; raw data presented in Appendix 1). Swainson's Thrush and White-collared Seedeater (*Sporophila torqueola*) were the two species most commonly banded, which account for 24.4% and 6.7% of the total number of birds banded.

The edge nets produced 23 species, while the jungle nets produced 30 species (Table 1). The two study areas captured very different bird species and functional groups. The edge nets captured birds typical of second-growth habitats, which tend to be small birds with granivorous diets, such as the White-collared Seedeater, Yellow-faced Grassquit (*Tiaris olivacea*), and the Blue-black Grassquit (*Volatinia jacarina*). The jungle nets captured birds typical of mature forest habitats, which tend to be larger birds with more omnivorous diets, such as the Sulphur-rumped Flycatcher (*Myiobius sulphureipygius*), Golden-crowned Warbler (*Basileuterus culicivorus*), and the Red-throated Ant-Tanager (*Habia fuscicauda*).

In general, migrant birds had much higher fat scores (average = 1.23) compared to resident birds (average = 0.28). This is not surprising because migrants need to have fuel reserves for extended flight to the breeding grounds – residents do not have these additional energy requirements.

Table 1. All species and individuals captured in mist-nets at Las Cuevas in 2005. Total number of birds per species captured is also presented between the two habitat types sampled (*jungle* = nets in the understory of mature broadleaved rainforest; *edge* = nets in the successional / scrub habitat surrounding the research station).

SPECIES	TOTAL	JUNGLE	EDGE
Residents			
White-collared Seedeater	9		9
Yellow-faced Grassquit	7		7
White-breasted Wood-Wren	6	3	3
Golden-crowned Warbler	5	4	1
Ochre-bellied Flycatcher	5	3	2
Sulphur-rumped Flycatcher	5	5	
Red-throated Ant-Tanager	4	4	
Stub-tailed Spadebill	3	3	
Blue-black Grassquit	2		2
Brown-crested Flycatcher	2		2
Buff-throated Foliage-gleaner	2	2	
Ivory-Billed Woodcreeper	2	2	
Lesser Greenlet	2	1	1
Plain Xenops	2	1	1
Red-capped Manakin	2	2	
Red-crowned Ant-Tanager	2	2	
Ruddy Woodcreeper	2	2	
Tawny-winged Woodcreeper	2	2	
Clay-coloured Robin	1		1
Crimson-collared Tanager	1		1
Eye-ringed Flatbill	1	1	
Green-backed Sparrow	1		1
Greenish Elaenia	1	1	
Long-billed Gnatwren	1		1
Orange-billed Sparrow	1	1	
Plain Antvireo	1	1	
Scaly-throated Leaftosser	1	1	
Scarlet-rumped Tanager	1		1
Sepia-capped Flycatcher	1	1	
Tawny-crowned Greenlet	1	1	
Thrush-like Mourner	1	1	
Variable Seedeater	1		1
Wedge-billed Woodcreeper	1	1	
White-bellied Wren	1		1
Yellow-olive Flycatcher	1		1
Migrants			
Swainson's Thrush	33	27	6
Ovenbird	5	5	
Common Yellowthroat	3		3
Dickcissel	2		2
Gray-cheeked Thrush	2	2	
Kentucky Warbler	2	2	
Mourning Warbler	2		2
Northern Waterthrush	2	1	1
American Redstart	1		1
Black-and-White Warbler	1	1	
Veery	1	1	

Our banding efforts show great promise to monitor migration adequately and begin a rigorous inventory of the local avifauna and their habitats; a multi-year monitoring of migration at Las Cuevas is suitable and will provide valuable results. In addition, it has led to observations of several interesting patterns that, if we are to better understand birds in the Belizean interior, warrant further investigation. We present the following examples.

i. The Yellow-faced Grassquit is currently expanding its historic range north and eastward. Prior to the 1980's, the species did not occur in Belize (Jones 2003). A large population in Guatemala (Land 1962, 1963) has only recently expanded its range into Belize. The Yellow-faced Grassquit has now been detected throughout southern Belize (Miller and Miller 1992), with the notable exception that it has not been reported from the Maya Mountains and southernmost parts of Cayo District. Our capture of several individuals represents the first evidence of this species from that region, and serves as a valuable record in documenting the range expansion of Yellow-faced Grassquits.

ii. We detected an unexpected number of Swainson's Thrush migrating through the area. The number of these migrants we detected at Las Cuevas has not been documented from that region of Central America. This region of Belize is an important site to study because migration patterns in this area are poorly known (Mills and Rogers 1990, Miller and Miller 1998). If the Swainson's Thrush provides any indication, the Belizean interior (along the Maya Mountains) may be a very important, and previously unknown, migration route. This possibility needs examination, and could prove to be a very important milestone in improving the conservation of migratory birds in Belize.

iii. Although habitat relationships for some of the species we detected have been well studied, many descriptions may be imperfect and deserve to be refined. For instance, our nets are placed at the ground level, yet we captured two species that are considered specialists of mature forest canopy (Howell 1957, Loiselle 1988): Lesser Greenlet (*Hylophilus decurtatus*) and Yellow-olive Flycatcher (*Tolmomyias sulphurescens*). Moreover, we captured individuals of both these species in the edge nets, placed in successional/scrub habitat. These species may not be as strongly specialised on tree canopies as the literature indicates, and if we are to understand them better, these relationships warrant further investigation.

Literature Cited.

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Figure 1. Map of Las Cuevas Research Station and the location of mist nets (Edge Net array) used in 2005 denoted by bold h-bars. Nine mist nets were scattered along the edges of the compound in successional/scrub habitat. Path to the Jungle Net array (Figure 2) extends off the Monkeytail Trail (lower left-hand corner). Net numbers are shown (*note*: Net 3 was two tandem nets).

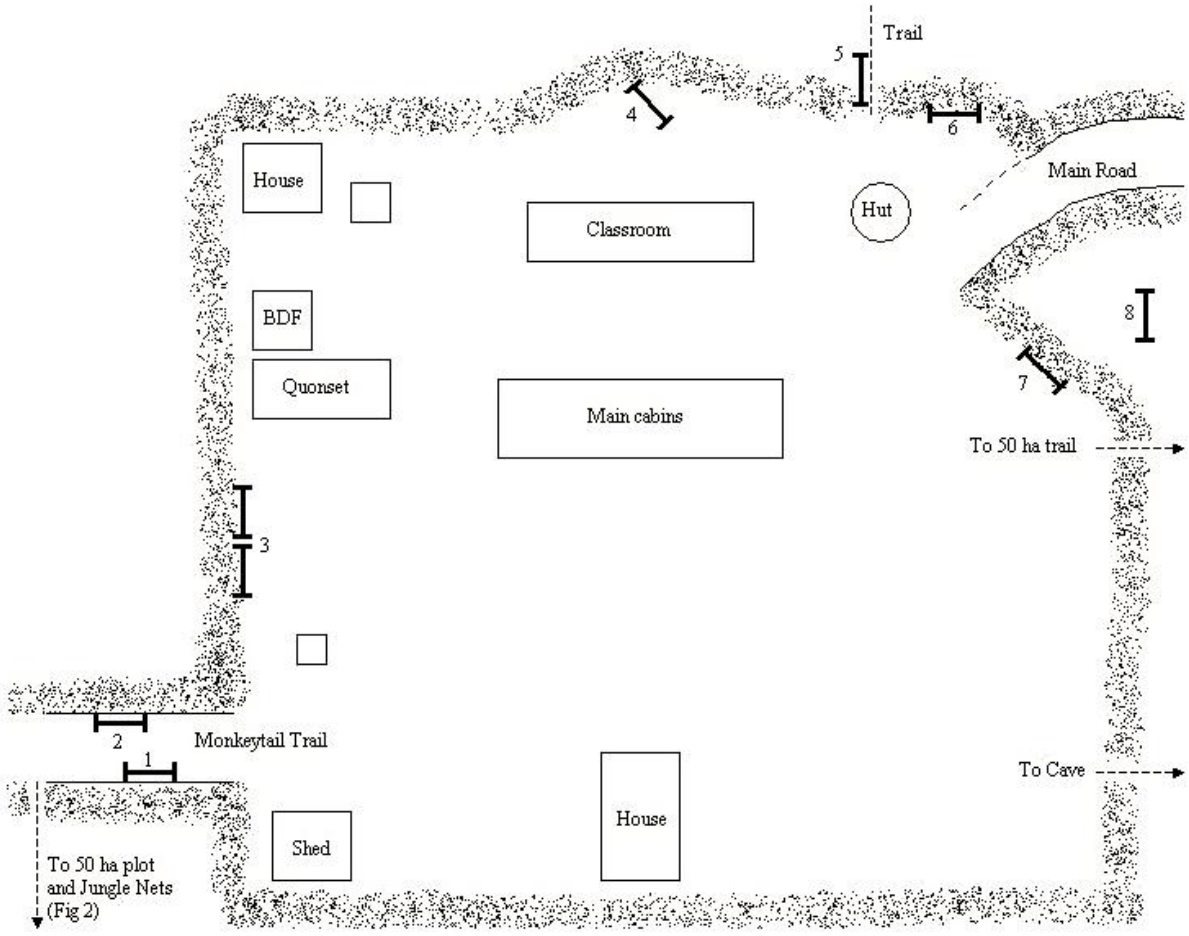
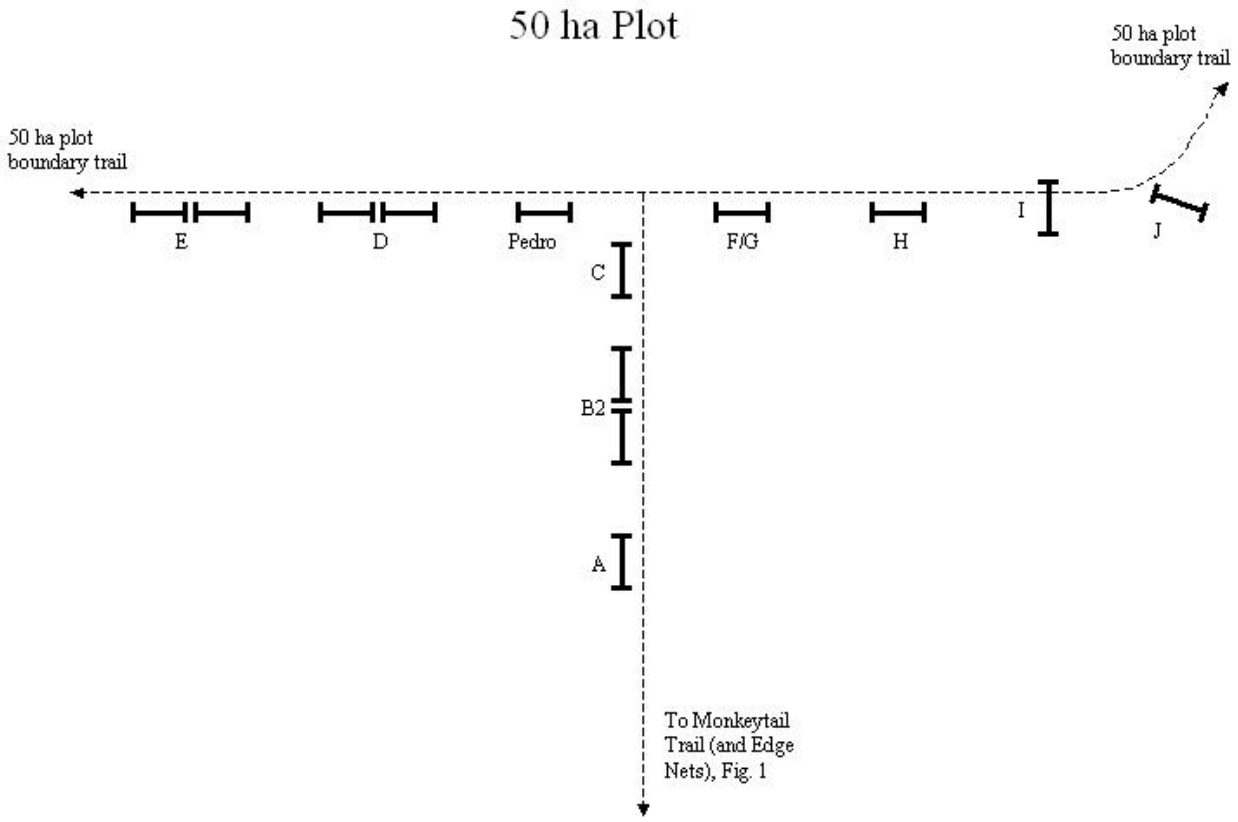


Figure 2. Map of the location of mist nets (Jungle Net array) used in 2005 denoted by bold h-bars. Thirteen mist nets were distributed along trail margins, in the understory of mature broadleaf forest. Path to Monkeytail Trail and the Edge Net array (Figure 1) extends backwards from the 50 ha plot. Net numbers are shown (*note*: Nets B2, D, and E were sets of two tandem nets).



MODULAR PROJECT # 2: OBSERVATIONAL SAMPLING FROM A DISTANCE

Project: Observational surveys to inventory resident and migratory birds within the Maya Mountains, Chiquibul Forest Reserve.

Overview: To better depict the local avifauna that is not well sampled by mist-netting (see Modular Project #1), we also used observational surveys to sample bird abundance and diversity. Three survey stations were chosen within the Chiquibul Forest, near Las Cuevas. Station centres, and a radius of 20 m from that centre, were marked with flagging tape. An observer was situated outside the 20 m radius mark. For 20 minutes, the observer counted and identified all birds within a 40 m diameter of the station centre. If a bird could not be identified to species, it was not counted. Each station was surveyed 10 times, but not more than twice per day. Surveys were performed during each of three time periods: morning (the first third of daylight hours), afternoon (the middle third) and evening (the last third).

Summary: Thirty sampling sessions were carried out over eleven days (29 April – 9 May 2005). Across all surveys, at total of 141 birds were identified, comprising 25 species (Table 2). The most abundant species was the Mealy Parrot (*Amazona farinosa*). Although it was the most abundant, it was not the most commonly detected; commonness was calculated as the proportion of surveys at which a species was detected (Table 2). Swainson's Thrush (*Catharus ustulatus*) and Brown Jay (*Cyanocorax morio*) were the two most commonly observed species, detected at 53% and 23% of all surveys conducted.

Thirteen species were observed that were not detected in mist-nets (see Modular Project #1). These tended to be larger-bodied species such as the Mealy Parrot, Brown Jay, Montezuma Oropendola (*Psarocolius montezuma*) and Collared Aracari (*Pteroglossus torquatus*). Therefore, although mist-nets detected more species (46 as opposed to 25; see Modular Project #1), the two sampling methods are complementary and depict different aspects of local avifauna. Many species that avoid the net areas (e.g., forest understory), or are unlikely to be caught, are better sampled by observations. Alternatively, there are secretive and elusive species, which are less likely to be observed, that are better sampled by mist-nets.

Table 2. All species and individuals observed in surveys at Las Cuevas in 2005. Total number (abundance) of individuals detected per species is also presented. The proportion of surveys at which a species was detected is used to represent the commonness of each species.

Species	Number of individuals	Proportion of counts detected
Swainson's Thrush	23	0.53
Brown Jay	18	0.23
Red-crowned Ant-Tanager	9	0.17
Golden-crowned Warbler	5	0.17
White-breasted Wood-Wren	5	0.17
Greenish Elaenia	7	0.13
Mealy Parrot	36	0.10
Magnolia Warbler	5	0.10
Red-eyed Vireo	4	0.10
Barred Antshrike	3	0.10
Ruddy Woodcreeper	3	0.10
Bananaquit	4	0.07
Melodious Blackbird	4	0.07
Eastern Wood-Pewee	2	0.07
Plain Xenops	2	0.07
Groove-billed Ani	2	0.03
Black-headed Saltator	1	0.03
Clay-colored Robin	1	0.03
Collared Aracari	1	0.03
Gray Catbird	1	0.03
Gray-cheeked Thrush	1	0.03
Montezuma Oropendola	1	0.03
Northern Waterthrush	1	0.03
Ruby-throated Hummingbird	1	0.03
White-collared Seedeater	1	0.03

MODULAR PROJECT # 3: FISHTAIL PALM

Project: To determine the demography of the fishtail palm (*Chamaedorae ernest augustinii*) by establishing benchmark measurements at the two sites within the Chiquibul Forest Reserve.

Overview: The demographic characteristics and population structure of fishtail palm was studied at two sites, in 2005, within the Chiquibul Forest Reserve. The population that was studied is situated in the 'old' and 'new' forest near the Las Cuevas field station.

Long-term monitoring of this population has occurred since 2002. The main focus for 2005 was to continue monitoring the marked population of *C. ernest augustinii* and document changes that had occurred within the population since 2004. The changes that have been monitored since 2002 will form the core of future estimates of key demographic parameters for the populations under study. To document yearly changes, we gathered morphological data on individual stems (new and previously marked) and re-assessed environmental variables that might be associated with the micro-scale distribution of the plants.

Specifically, the main objectives for 2005 were to:

A. Re-visit all plots that were established in 2002.
B. For each quadrat determine:
    a. The number of palms per plot
    b. Assess whether palms were fruiting
    c. Count the number of leaves on each palm
    d. Count the number of leaves that had been harvested

Estimating key demographic parameters for any population of long-lived plants (such as fishtail palm) requires long-term data collection. Our previous four years of monitoring has made large gains towards this objective, and we feel that our 2006 research (our fifth year) will give us a greater degree of confidence in developing some initial estimates of demographic parameters. Therefore, at the conclusion of this year's research, we will draft a separate report to be sent to the Forest Department, which will summarize our first five years of fishtail palm monitoring and research at Las Cuevas. In addition, any scientific publications resulting from this work will be directed to the Forest Department Conservation Division.

Appendix 1. Capture information for all individual birds caught in mist nets at Las Cuevas in 2005. Common names are shown. Local (resident birds) were banded with a unique 4-number band; all migrant birds were banded with a uniquely numbered U.S. Fish and Wildlife Service aluminium band. The time of capture is shown on a 24-hour clock. Trap number refers to the specific net of capture at the jungle or edge sites (see Figures 1 and 2 for exact locations). The amount of visible subcutaneous fat each bird had was assigned a score from 0 (no fat) to 4 (copious fat).

Species Name	Band #	Date	Time trapped	Trap #	Site	Fat
Sulphur-rumped Flycatcher	0043	28-Apr-05	NA	NA	Jungle	0.0
Stub-tailed Spadebill	0044	28-Apr-05	1030	F/G	Jungle	0.0
Lesser Greenlet	0045	29-Apr-05	800	D	Jungle	0.5
Ochre-bellied Flycatcher	0046	29-Apr-05	800	H	Jungle	0.5
Golden-crowned Warbler	0047	29-Apr-05	800	F/G	Jungle	0.0
Golden-crowned Warbler	0048	29-Apr-05	800	F/G	Jungle	0.0
Eye-ringed Flatbill	0049	29-Apr-05	1000	D	Jungle	NA
Sulphur-rumped Flycatcher	0050	30-Apr-05	710	B2	Jungle	0.0
White-collared Seedeater	0051	1-May-05	1550	3	Edge	0.0
White-collared Seedeater	0052	1-May-05	1550	3	Edge	0.5
Yellow-faced Grassquit	0053	1-May-05	1550	7	Edge	0.5
Yellow-faced Grassquit	0054	1-May-05	1550	7	Edge	2.0
White-collared Seedeater	0055	1-May-05	1640	3	Edge	1.0
Golden-crowned Warbler	0056	1-May-05	1730	8	Edge	0.0
Stub-tailed Spadebill	0057	2-May-05	620	B2	Jungle	0.0
Stub-tailed Spadebill	0058	2-May-05	710	E	Jungle	0.0
Greenish Elaenia	0059	2-May-05	940	B2	Jungle	0.5
Ochre-bellied Flycatcher	0060	2-May-05	1000	D	Jungle	1.0
Sepia-capped Flycatcher	0061	2-May-05	1000	E	Jungle	NA
Ochre-bellied Flycatcher	0062	2-May-05	1000	E	Jungle	NA
Sulphur-rumped Flycatcher	0063	2-May-05	1100	B2	Jungle	NA
Tawny-crowned Greenlet	0064	3-May-05	620	B2	Jungle	0.0
Sulphur-rumped Flycatcher	0065	3-May-05	620	C	Jungle	0.0
Golden-crowned Warbler	0066	3-May-05	620	D	Jungle	0.0
Sulphur-rumped Flycatcher	0068	3-May-05	820	B2	Jungle	0.0
White-breasted Wood-Wren	0069	3-May-05	910	B2	Jungle	0.5
White-collared Seedeater	0070	3-May-05	1510	8	Edge	0.5
Ochre-bellied Flycatcher	0071	3-May-05	1530	4	Edge	0.0
Ochre-bellied Flycatcher	0072	2-May-05	540	5	Edge	NA
White-bellied Wren	0073	2-May-05	610	1	Edge	NA
Yellow-faced Grassquit	0074	2-May-05	610	3	Edge	NA
White-breasted Wood-Wren	0075	2-May-05	710	8	Edge	0.0
White-breasted Wood-Wren	0076	2-May-05	710	8	Edge	0.0
Long-billed Gnatwren	0077	2-May-05	710	1	Edge	0.0
Variable Seedeater	0078	2-May-05	900	3	Edge	NA
White-collared Seedeater	0079	2-May-05	900	3	Edge	NA
White-collared Seedeater	0080	2-May-05	900	3	Edge	NA
Yellow-faced Grassquit	0081	2-May-05	900	3	Edge	NA
Lesser Greenlet	0082	2-May-05	900	8	Edge	NA
Yellow-olive Flycatcher	0083	2-May-05	900	8	Edge	0.5
Blue-black Grassquit	0085	3-May-05	1630	5	Edge	2.0
Yellow-faced Grassquit	0086	3-May-05	1630	3	Edge	2.0
Yellow-faced Grassquit	0087	3-May-05	NA	3	Edge	0.0
White-collared Seedeater	0088	3-May-05	NA	NA	Edge	0.5

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Appendix 1 continued…

Species Name	Band #	Date	Time trapped	Trap #	Site	Fat
Plain Xenops	0089	3-May-05	1720	5	Edge	0.5
White-collared Seedeater	0090	3-May-05	1700	3	Edge	1.0
White-collared Seedeater	0091	3-May-05	NA	3	Edge	0.0
Yellow-faced Grassquit	0092	3-May-05	1700	3	Edge	0.5
Blue-black Grassquit	0093	3-May-05	1730	3	Edge	1.0
Wedge-billed Woodcreeper	0095	4-May-05	710	E	Jungle	0.5
Golden-crowned Warbler	0096	4-May-05	830	E	Jungle	0.5
White-breasted Wood-Wren	0103	29-Apr-05	800	D	Jungle	0.0
White-breasted Wood-Wren	0104	2-May-05	720	E	Jungle	0.0
White-breasted Wood-Wren	0105	NA	1700	5	Edge	0.0
Tawny-winged Woodcreeper	0217	28-Apr-05	600	NA	Jungle	0.0
Ruddy Woodcreeper	0218	28-Apr-05	1000	H	Jungle	0.0
Red-crowned Ant-Tanager	0219	30-Apr-05	710	D	Jungle	0.5
Tawny-winged Woodcreeper	0220	30-Apr-05	800	D	Jungle	0.5
Red-crowned Ant-Tanager	0221	3-May-05	700	E	Jungle	0.0
Ivory-billed Woodcreeper	0222	5-May-05	740	E	Jungle	0.0
Buff-throated Foliage-gleaner	0324	28-Apr-05	650	NA	Jungle	0.0
Red-throated Ant-Tanager	0325	28-Apr-05	1000	B2	Jungle	0.0
Scaly-throated Leaftosser	0326	30-Apr-05	620	E	Jungle	0.0
Ivory-billed Woodcreeper	0327	4-May-05	600	Pedro	Jungle	0.0
Orange-billed Sparrow	0328	4-May-05	700	E	Jungle	0.0
Red-throated Ant-Tanager	0329	5-May-05	615	I	Jungle	0.0
Ruddy Woodcreeper	0330	5-May-05	740	D	Jungle	0.0
Brown-crested Flycatcher	0331	2-May-05	710	6	Edge	0.0
Brown-crested Flycatcher	0332	2-May-05	710	6	Edge	0.0
Scarlet-rumped Tanager	0333	2-May-05	830	2	Edge	0.5
Green-backed Sparrow	0334	2-May-05	500	2	Edge	0.0
Buff-throated Foliage-gleaner	0341	5-May-05	740	D	Jungle	0.0
Thrush-like Mourner	0342	5-May-05	900	D	Jungle	0.0
Red-throated Ant-Tanager	0343	5-May-05	900	B2	Jungle	0.0
Red-throated Ant-Tanager	0504	4-May-05	600	E	Jungle	0.0
Crimson-collared Tanager	0511	2-May-05	545	3	Edge	0.0
Clay-coloured Robin	0512	2-May-05	710	6	Edge	0.0
Plain Antvireo	1405	2-May-05	910	NA	Jungle	NA
Plain Xenops	1406	2-May-05	1000	Pedro	Jungle	NA
Red-capped Manakin	1407	3-May-05	910	E	Jungle	0.5
Red-capped Manakin	1408	3-May-05	950	D	Jungle	0.5
Kentucky Warbler	1771-63106	28-Apr-05	600	NA	Jungle	3.0
Ovenbird	1771-63107	28-Apr-05	650	NA	Jungle	0.5
Ovenbird	1771-63108	30-Apr-05	800	NA	Jungle	0.5
Ovenbird	1771-63109	2-May-05	620	B2	Jungle	2.0
Kentucky Warbler	1771-63110	2-May-05	1000	E	Jungle	1.0
American Redstart	1771-63111	2-May-05	900	8	Edge	0.0
Ovenbird	1771-63112	4-May-05	600	H	Jungle	3.0
Northern Waterthrush	1771-63113	2-May-05	510	7	Edge	0.0
Northern Waterthrush	1771-63114	4-May-05	730	E	Jungle	0.5
Ovenbird	1771-63115	6-May-05	700	Pedro	Jungle	0.0
Swainson's Thrush	1861-31013	28-Apr-05	650	C	Jungle	0.5

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Appendix 1 continued…

Species Name	Band #	Date	Time trapped	Trap #	Site	Fat
Swainson's Thrush	1861-31014	29-Apr-05	1000	B2	Jungle	3.0
Swainson's Thrush	1861-31015	30-Apr-05	620	J	Jungle	0.5
Gray-cheeked Thrush	1861-31016	30-Apr-05	800	C	Jungle	0.5
Swainson's Thrush	1861-31017	30-Apr-05	850	D	Jungle	2.0
Swainson's Thrush	1861-31018	1-May-05	1620	3	Edge	2.0
Swainson's Thrush	1861-31019	1-May-05	1710	2	Edge	2.0
Swainson's Thrush	1861-31020	2-May-05	620	F/G	Jungle	1.0
Swainson's Thrush	1861-31021	2-May-05	620	E	Jungle	2.0
Swainson's Thrush	1861-31022	2-May-05	710	6	Edge	NA
Swainson's Thrush	1861-31023	3-May-05	840	F	Jungle	0.5
Swainson's Thrush	1861-31024	3-May-05	910	H	Jungle	1.0
Swainson's Thrush	1861-31025	3-May-05	940	I	Jungle	1.0
Swainson's Thrush	1861-31028	3-May-05	1000	B2	Jungle	0.5
Swainson's Thrush	1861-31029	2-May-05	1530	2	Edge	3.0
Swainson's Thrush	1861-31030	NA	NA	2	Edge	0.5
Swainson's Thrush	1861-31031	4-May-05	730	Pedro	Jungle	1.0
Swainson's Thrush	1861-31032	3-May-05	620	H	Jungle	0.0
Swainson's Thrush	1861-31033	3-May-05	620	F	Jungle	0.0
Swainson's Thrush	1861-31034	3-May-05	810	Pedro	Jungle	1.0
Veery	1861-31035	3-May-05	810	B2	Jungle	1.0
Swainson's Thrush	1861-31036	3-May-05	810	J	Jungle	1.0
Swainson's Thrush	1861-31037	3-May-05	840	B2	Jungle	1.0
Swainson's Thrush	1861-31038	3-May-05	840	J	Jungle	2.0
Gray-cheeked Thrush	1861-31039	4-May-05	900	C	Jungle	2.0
Swainson's Thrush	1861-31040	5-May-05	615	B2	Jungle	2.0
Swainson's Thrush	1861-31041	5-May-05	655	E	Jungle	3.0
Swainson's Thrush	1861-31042	5-May-05	655	E	Jungle	0.0
Swainson's Thrush	1861-31043	5-May-05	825	C	Jungle	0.5
Swainson's Thrush	1861-31044	5-May-05	900	D	Jungle	0.5
Swainson's Thrush	1861-31045	5-May-05	1020	D	Jungle	2.0
Swainson's Thrush	1861-31046	6-May-05	540	C	Jungle	1.0
Swainson's Thrush	1861-31047	6-May-05	820	J	Jungle	3.0
Swainson's Thrush	1861-31048	6-May-05	850	E	Jungle	1.0
Swainson's Thrush	1861-31049	6-May-05	1020	E	Jungle	2.0
Swainson's Thrush	1861-31057	5-May-05	1600	8	Edge	2.0
Dickcissel	1861-31058	5-May-05	NA	3	Edge	0.0
Dickcissel	1861-31059	5-May-05	1620	3	Edge	0.0
Black-and-White Warbler	2290-34001	4-May-05	900	D	Jungle	3.0
Mourning Warbler	2290-34118	1-May-05	1740	4	Edge	0.0
Common Yellowthroat	2290-34119	1-May-05	1540	3	Edge	0.0
Common Yellowthroat	2290-34120	1-May-05	1540	3	Edge	3.0
Mourning Warbler	2290-34122	2-May-05	640	NA	Edge	NA
Common Yellowthroat	2290-34123	2-May-05	640	3	Edge	NA