

Table S1. List of all bird species ($n = 149$) captured across the 43-year study period (1977-2020) at the Limbo plot, Soberanía National Park, Panama, including taxonomic family, migratory tendency (Migrant, Resident), foraging guild [ant-follower (AF), aquatic (AQ), bark insectivore (BI), canopy frugivore (CF), canopy insectivore (CI), canopy omnivore (CO), nectarivore (N), raptor (RA), terrestrial frugivore (TF), terrestrial granivore (TG), terrestrial insectivore (TI), terrestrial omnivore (TO), understory frugivore (UF), understory insectivore (UI), understory omnivore (UO)], body mass, number of captures, and number of individuals captured for each species (listed in order of highest to lowest number of captures). For number of individuals, we do not list totals for migrants, hummingbirds or kingfishers as we did not band species in these categories.

Common name <i>Scientific name</i>	Family	Migratory tendency	Guild	Mass (grams) ¹	No. capts.	No. individs.
Red-capped Manakin <i>Ceratopipra mentalis</i>	Pipridae	Res	UF	15.0	2022	1451
Ochre-bellied Flycatcher <i>Mionectes oleagineus</i>	Tyrannidae	Res	UF	11.7	1140	816
Bicolored Antbird <i>Gymnopithys bicolor</i>	Thamnophilidae	Res	AF	29.4	995	617
Long-billed Hermit <i>Phaethornis longirostris</i>	Trochilidae	Res	N	6.0	677	--
Blue-crowned Manakin <i>Lepidothrix coronata</i>	Pipridae	Res	UF	8.4	669	425
Spotted Antbird <i>Hylophylax naeviioides</i>	Thamnophilidae	Res	AF	17.8	663	349
Golden-crowned Spadebill <i>Platyrinchus coronatus</i>	Tyrannidae	Res	UI	9.1	522	254
Song Wren <i>Cyphorhinus phaeocephalus</i>	Troglodytidae	Res	UI	24.6	507	307
Ruddy Quail-dove <i>Geotrygon montana</i>	Columbidae	Res	TF	123.1	409	285
Scaly-throated Leaf-tosser <i>Sclerurus guatemalensis</i>	Furnariidae	Res	TI	34.7	379	190
Black-crowned Antshrike <i>Thamnophilus atrinucha</i>	Thamnophilidae	Res	UI	23.6	377	233

Checker-throated Stipplethroat <i>Epinecrophylla fulviventris</i>	Thamnophilidae	Res	UI	10.4	361	239
Plain-brown Woodcreeper <i>Dendrocincla fuliginosa</i>	Furnariidae	Res	AF	38.8	348	210
White-flanked Antwren <i>Myrmotherula axillaris</i>	Thamnophilidae	Res	UI	8.2	340	220
Ruddy-tailed Flycatcher <i>Terenotriccus erythrurus</i>	Tyrannidae	Res	UI	7.4	325	184
Ocellated Antbird <i>Phaenostictus mcleannani</i>	Thamnophilidae	Res	AF	51.1	317	228
Black-faced Antthrush <i>Formicarius analis</i>	Formicariidae	Res	TI	62.2	248	152
White-whiskered Puffbird <i>Malacoptila panamensis</i>	Bucconidae	Res	UI	42.6	244	169
Plain Xenops <i>Xenops minutus</i>	Furnariidae	Res	BI	10.6	240	132
Olivaceous Flatbill <i>Rhynchocyclus olivaceus</i>	Tyrannidae	Res	UI	21.3	208	132
Tawny-faced Gnatwren <i>Microbates cinereiventris</i>	Poliotilidae	Res	UI	11.9	203	141
Sulphur-rumped Flycatcher <i>Myiobius sulphureipygius</i>	Tyrannidae	Res	UI	11.9	190	118
Blue-black Grosbeak <i>Cyanoloxia cyanooides</i>	Cardinalidae	Res	UO	32.5	186	117
Buff-throated Foliage-gleaner <i>Automolus ochrolaemus</i>	Furnariidae	Res	UI	40.2	163	89
Cocoa Woodcreeper <i>Xiphorhynchus susurrans</i>	Furnariidae	Res	BI	46.9	161	76

Rufous Motmot <i>Baryphthengus martii</i>	Momotidae	Res	UO	159.7	160	110
Wedge-billed Woodcreeper <i>Glyphorhynchus spirurus</i>	Furnariidae	Res	BI	14.6	154	82
Chestnut-backed Antbird <i>Poliocrania exsul</i>	Thamnophilidae	Res	TI	26.5	149	95
Gray-headed Tanager <i>Eucometis penicillata</i>	Thraupidae	Res	AF	27.0	143	110
White-breasted Wood-wren <i>Henicorhina leucosticta</i>	Troglodytidae	Res	UI	14.8	130	77
Russet-winged Schiffornis <i>Schiffornis stenorhyncha</i>	Tityridae	Res	UO	31.7	124	62
Gray-chested Dove <i>Leptotila cassini</i>	Columbidae	Res	TF	159.0	114	69
Kentucky Warbler <i>Geothlypis formosa</i>	Parulidae	Mig	TI	14.0	98	--
Brownish Twistwing <i>Cnipodectes subbrunneus</i>	Tyrannidae	Res	UI	23.2	97	55
American Pygmy Kingfisher <i>Chloroceryle aenea</i>	Alcedinidae	Res	AQ	14.0	92	--
Crowned Woodnymph <i>Thalurania colombica</i>	Trochilidae	Res	N	4.5	91	--
Streak-chested Antpitta <i>Hylopezus perspicillatus</i>	Grallariidae	Res	TI	43.0	90	60
Long-tailed Woodcreeper <i>Deconychura longicauda</i>	Furnariidae	Res	BI	23.8	87	60
Bright-rumped Attila <i>Attila spadiceus</i>	Tyrannidae	Res	UI	39.1	83	55

Golden-collared Manakin <i>Manacus vitellinus</i>	Pipridae	Res	UF	18.2	71	46
Wing-banded Antbird <i>Myrmornis torquata</i>	Thamnophilidae	Res	TI	46.7	70	49
Black-throated Trogon <i>Trogon rufus</i>	Trogonidae	Res	UO	53.8	67	41
Swainson's Thrush <i>Catharus ustulatus</i>	Turdidae	Mig	UO	30.3	66	--
Scaly-breasted Wren <i>Microcerculus marginatus</i>	Troglodytidae	Res	UI	17.9	60	43
Northern Barred Woodcreeper <i>Dendrocolaptes sanctithomae</i>	Furnariidae	Res	AF	66.9	56	41
Wood Thrush <i>Hylocichla mustelina</i>	Turdidae	Mig	TI	50.2	55	--
Blue-chested Hummingbird <i>Amazilia amabilis</i>	Trochilidae	Res	N	4.3	53	--
Spot-crowned Antvireo <i>Dysithamnus puncticeps</i>	Thamnophilidae	Res	UI	14.9	49	32
Ruddy Woodcreeper <i>Dendrocincla homochroa</i>	Furnariidae	Res	AF	41.1	45	24
White-necked Jacobin <i>Florisuga mellivora</i>	Trochilidae	Res	N	7.4	44	--
Southern Bentbill <i>Oncostoma olivaceum</i>	Tyrannidae	Res	UI	6.6	43	30
Acadian Flycatcher <i>Empidonax virescens</i>	Tyrannidae	Mig	UI	12.6	40	--
Violet-bellied Hummingbird <i>Juliomyia julie</i>	Trochilidae	Res	N	3.3	37	--
Northern Waterthrush	Parulidae	Mig	TI	16.3	34	--

<i>Parkesia noveboracensis</i>						
Red-throated Ant-tanager <i>Habia fuscicauda</i>	Cardinalidae	Res	UO	38.2	29	21
Stripe-throated Hermit <i>Phaethornis striigularis</i>	Trochilidae	Res	N	3.0	28	--
Speckled Mourner <i>Laniocera rufescens</i>	Tityridae	Res	UO	48.1	27	25
Tawny-crowned Greenlet <i>Tunchiornis ochraceiceps</i>	Vireonidae	Res	UI	11.6	27	18
Olive-striped Flycatcher <i>Mionectes olivaceus</i>	Tyrannidae	Res	UO	15.0	26	17
Royal Flycatcher <i>Onychorhynchus coronatus</i>	Oxyruncidae	Res	UI	14.0	25	21
Violaceous Quail-Dove <i>Geotrygon violacea</i>	Columbidae	Res	TF	95.2	23	18
Green-and-Rufous Kingfisher <i>Chloroceryle inda</i>	Alcedinidae	Res	AQ	52.1	22	--
Barred Forest-falcon <i>Micrastur ruficollis</i>	Falconidae	Res	RA	178.5	19	13
Broad-billed Motmot <i>Electron platyrhynchum</i>	Momotidae	Res	CO	73.0	19	17
Band-tailed Barbthroat <i>Threnetes ruckeri</i>	Trochilidae	Res	N	5.2	19	--
Yellow-margined Flycatcher <i>Tolmomyias assimilis</i>	Tyrannidae	Res	CI	17.0	19	16
Dusky Antbird <i>Cercomacroides tyrannina</i>	Thamnophilidae	Res	UI	16.3	18	14
Snowy-bellied Hummingbird	Trochilidae	Res	N	4.7	17	--

<i>Amazilia edward</i>						
Louisiana Waterthrush <i>Parkesia motacilla</i>	Parulidae	Mig	TI	19.9	16	--
Collared Aracari <i>Pteroglossus torquatus</i>	Ramphastidae	Res	UO	226.1	15	12
Thick-billed Seedfinch <i>Sporophila funerea</i>	Thraupidae	Res	TG	12.3	15	15
Scarlet-rumped Cacique <i>Cacicus uropygialis</i>	Icteridae	Res	UO	61.7	14	14
White-shouldered Tanager <i>Tachyphonus luctuosus</i>	Thraupidae	Res	UO	13.0	14	13
Black-striped Woodcreeper <i>Xiphorhynchus lachrymosus</i>	Furnariidae	Res	BI	56.4	13	13
Long-billed Gnatwren <i>Ramphocaenus melanurus</i>	Poliophtilidae	Res	UI	9.7	13	12
Black-bellied Wren <i>Pheugopedius fasciatoventris</i>	Troglodytidae	Res	UI	24.0	12	10
Carmioli's Tanager <i>Chlorothraupis carmioli</i>	Thraupidae	Res	UO	38.1	12	9
Garden Emerald <i>Chlorostilbon assimilis</i>	Trochilidae	Res	N	3.0	11	--
Olive-backed Quail-dove <i>Leptotrygon veraguensis</i>	Columbidae	Res	TF	155.0	11	7
Keel-billed Toucan <i>Ramphastos sulfuratus</i>	Ramphastidae	Res	CO	415.4	9	6
Rufous Mourner <i>Rhytipterna holerythra</i>	Tyrannidae	Res	UO	36.8	9	6
Slaty-backed Forest-falcon <i>Micrastur mirandollei</i>	Falconidae	Res	RA	549.0	9	3

Slate-colored Grosbeak <i>Saltator grossus</i>	Thraupidae	Res	UO	44.2	9	9
Tawny-crested Tanager <i>Tachyphonus delatrii</i>	Thraupidae	Res	UO	18.0	9	9
Brown-capped Tyrannulet <i>Ornithion brunneicapillus</i>	Tyrannidae	Res	CI	7.1	8	8
Double-toothed Kite <i>Harpagus bidentatus</i>	Acciptridae	Res	RA	218.5	8	4
Dot-winged Antwren <i>Microrhophias quixensis</i>	Thamnophilidae	Res	UI	7.9	7	6
Fasciated Antshrike <i>Cymbilaimus lineatus</i>	Thamnophilidae	Res	UO	35.8	7	6
Green Kingfisher <i>Chloroceryle americana</i>	Alcedinidae	Res	AQ	32.1	7	2
Tawny-throated Leaf Tosser <i>Sclerurus mexicanus</i>	Furnariidae	Res	TI	25.1	7	7
Orange-billed Sparrow <i>Arremon aurantirostris</i>	Passerellidae	Res	TO	34.5	6	6
Yellow-bellied Flycatcher <i>Empidonax flaviventris</i>	Tyrannidae	Mig	UI	11.8	6	--
White-vented Plumeleteer <i>Chalybura buffonii</i>	Trochilidae	Res	N	6.8	5	--
Crimson-bellied Woodpecker <i>Campephilus haematogaster</i>	Picidae	Res	UI	237.0	4	4
Dusky-faced Tanager <i>Mitrospingus cassinii</i>	Thraupidae	Res	UO	40.4	4	4
Gray-cheeked Thrush <i>Catharus minimus</i>	Turdidae	Mig	UO	31.6	4	--
Tiny Hawk	Acciptridae	Res	RA	104.0	4	4

<i>Accipiter superciliosus</i>						
Chestnut-headed Oropendola <i>Psarocolius wagleri</i>	Icteridae	Res	CO	163.5	3	2
Dusky-capped Flycatcher <i>Myiarchus tuberculifer</i>	Tyrannidae	Res	UI	18.4	3	3
Fulvous-vented Euphonia <i>Euphonia fulvicrissa</i>	Fringillidae	Res	UO	11.0	3	3
Golden-fronted Greenlet <i>Pachysylvia aurantiifrons</i>	Vireonidae	Res	UI	9.5	3	3
Green Honeycreeper <i>Chlorophanes spiza</i>	Thraupidae	Res	CO	19.0	3	3
Little Tinamou <i>Crypturellus soui</i>	Tinamidae	Res	TF	217.0	3	3
Ovenbird <i>Seiurus aurocapilla</i>	Parulidae	Mig	TI	18.8	3	--
Semiplumbeous Hawk <i>Leucopternis semiplumbeus</i>	Acciptridae	Res	RA	287.5	3	3
White-tipped Sicklebill <i>Eutoxeres aquila</i>	Trochilidae	Res	N	10.6	3	--
Blue Dacnis <i>Dacnis cayana</i>	Thraupidae	Res	CO	13.0	2	2
Buff-rumped Warbler <i>Myiothlypis fulvicauda</i>	Parulidae	Res	TI	14.9	2	2
Black-tailed Flycatcher <i>Myiobius atricaudus</i>	Tyrannidae	Res	UI	10.0	2	2
Broad-winged Hawk <i>Buteo platypterus</i>	Acciptridae	Mig	RA	455.0	2	--
Crimson-crested Woodpecker <i>Campephilus melanoleucos</i>	Picidae	Res	CO	256.0	2	

Chestnut-sided Warbler <i>Setophaga pensylvanica</i>	Parulidae	Mig	CI	9.3	2	--
Lesser Greenlet <i>Pachysylvia decurtata</i>	Vireonidae	Res	CI	8.4	2	
Masked Tityra <i>Tityra semifasciata</i>	Tityridae	Res	CO	79.3	2	
Plain-colored Tanager <i>Tangara inornata</i>	Thraupidae	Res	CO	18.0	2	
Rufous-tailed Hummingbird <i>Amazilia tzacatl</i>	Trochilidae	Res	N	5.0	2	
Golden-hooded Tanager <i>Tangara larvata</i>	Thraupidae	Res	CO	20.0	2	
Alder Flycatcher <i>Empidonax alnorum</i>	Tyrannidae	Mig	UI	12.7	2	--
Boat-billed Flycatcher <i>Megarynchus pitangua</i>	Tyrannidae	Res	CO	73.5	1	1
Broad-billed Sapayoa <i>Sapayoa aenigma</i>	Sapayoidae	Res	UI	20.8	1	1
Black-breasted Puffbird <i>Notharchus pectoralis</i>	Bucconidae	Res	CI	69.1	1	1
Bay-breasted Warbler <i>Setophaga castanea</i>	Parulidae	Mig	CO	11.8	1	1
Whooping Motmot <i>Momotus subrufescens</i>	Momotidae	Res	CO	107.0	1	1
Bay-headed Tanager <i>Tangara gyrola</i>	Thraupidae	Res	CO	21.0	1	1
Blue Ground-Dove <i>Claravis pretiosa</i>	Columbidae	Res	TG	68.2	1	1
Black-and-white Warbler	Parulidae	Mig	BI	10.9	1	1

<i>Mniotila varia</i>						
Canada Warbler <i>Cardellina canadensis</i>	Parulidae	Mig	UI	10.1	1	1
Crimson-backed Tanager <i>Ramphocelus dimidiatus</i>	Thraupidae	Res	UO	28.0	1	1
Fasciated Tiger-heron <i>Tigrisoma fasciatum</i>	Ardeidae	Res	AQ	850.0	1	1
Gray-headed Kite <i>Leptodon cayanensis</i>	Acciptridae	Res	RA	474.0	1	1
Grayish Elaenia <i>Myiopagis caniceps</i>	Tyrannidae	Res	CI	10.5	1	1
Marbled Wood-quail <i>Odontophorus gujanensis</i>	Odontophoridae	Res	TO	314.5	1	1
Mistletoe Tyrannulet <i>Zimmerius parvus</i>	Tyrannidae	Res	CO	9.8	1	1
Purple-crowned Fairy <i>Heliathryx barroti</i>	Trochilidae	Res	N	5.5	1	1
Pied Puffbird <i>Notharchus tectus</i>	Bucconidae	Res	OI	26.8	1	1
Plumbeous Kite <i>Ictinia plumbea</i>	Acciptridae	Res	CI	250.0	1	1
Prothonotary Warbler <i>Protonotaria citrea</i>	Parulidae	Mig	UI	14.3	1	1
Ruddy Ground-dove <i>Columbina talpacoti</i>	Columbidae	Res	TG	46.0	1	1
Rufous-breasted Hermit <i>Glaucis hirsutus</i>	Trochilidae	Res	N	7.3	1	1
Russet Antshrike <i>Thamnistes anabatinus</i>	Thamnophilidae	Res	CI	20.7	1	1

Rufous Piha <i>Lipaugus unirufus</i>	Cotingidae	Res	CI	82.1	1	1
Slaty-tailed Trogon <i>Trogon massena</i>	Trogonidae	Res	CO	141.0	1	1
Summer Tanager <i>Piranga rubra</i>	Cardinalidae	Mig	UO	29.0	1	1
Tawny-faced Quail <i>Rhynchortyx cinctus</i>	Odontophoridae	Res	TO	150.0	1	1
Variable Seedeater <i>Sporophila corvina</i>	Thraupidae	Res	TG	10.4	1	1
Worm-eating Warbler <i>Helmitheros vermivorum</i>	Parulidae	Mig	TI	14.2	1	1
White Hawk <i>Pseudastur albicollis</i>	Acciptridae	Res	RA	709.5	1	1
White-tailed Trogon <i>Trogon chionurus</i>	Trogonidae	Res	CO	89.7	1	1
Shining Honeycreeper <i>Cyanerpes lucidus</i>	Thraupidae	Res	CO	11.4	1	1

¹For species for which local mass data were not available, we used body mass data derived from Dunning 2007 – CRC Handbook of Avian Body Masses.