

Appendix 2. Total counts of birds detected in bioacoustic surveys in the Área de Conservación Guanacaste, Costa Rica, during bioacoustic monitoring in the dry and wet season of 2018 and 2019 (some sites sampled in both years); counts are summed across sites of similar age.

Scientific Name ¹	Common name	Approximate forest age in years (number of surveys per group)							Season totals		Grand Total
		20 (20)	30 (48)	40 (8)	50 (6)	60 (22)	70 (24)	>100 (22)	Dry	Wet	
<i>Crypturellus cinnamomeus</i>	Thicket Tinamou	37	83	19	15	40	27	22	125	118	243
<i>Ortalis vetula</i>	Plain Chachalaca	1	1	1	0	0	0	0	3	0	3
<i>Penelope purpurascens</i>	Crested Guan	6	17	0	1	11	8	7	30	20	50
<i>Crax rubra</i>	Great Curassow	0	0	0	0	0	1	6	4	3	7
<i>Colinus cristatus</i>	Crested Bobwhite	7	3	2	0	0	0	0	6	6	12
<i>Patagioenas flavirostris</i>	Red-billed Pigeon	7	21	1	4	19	19	13	43	41	84
<i>Columbina inca</i>	Inca Dove	4	7	6	4	0	1	1	17	6	23
<i>Columbina passerine</i>	Common Ground Dove	4	11	4	0	2	1	2	16	8	24
<i>Claravis pretiosa</i>	Blue Ground Dove	0	0	0	0	5	0	0	0	5	5
<i>Leptotila verreauxi</i>	White-tipped Dove	28	89	18	17	26	45	25	150	98	248
<i>Zenaida asiatica</i>	White-winged Dove	6	10	4	2	4	1	3	14	16	30
<i>Morococcyx erythropygus</i>	Lesser Ground-Cuckoo	3	2	0	0	0	0	0	2	3	5
<i>Piaya cayana</i>	Squirrel Cuckoo	0	1	0	2	4	7	3	12	5	17
<i>Trochilidae sp.</i>	Hummingbird sp.	0	11	0	3	5	3	4	13	13	26
<i>Burhinus bistriatus</i>	Double-striped Thick-knee	0	1	2	0	0	0	0	1	2	3
<i>Vanellus chilensis</i>	Southern Lapwing	0	5	1	0	0	0	0	5	1	6
<i>Leptodon cayanensis</i>	Gray-headed Kite	0	1	0	0	0	0	0	0	1	1
<i>Rupornis magnirostris</i>	Roadside Hawk	3	7	0	2	1	0	0	8	5	13
<i>Trogon melanocephalus</i>	Black-headed Trogon	18	28	8	10	8	25	5	39	63	102
<i>Trogon caligatus</i>	Gartered Trogon	0	2	0	1	1	7	1	7	5	12
<i>Trogon elegans</i>	Elegant Trogon	8	40	14	12	32	53	22	73	108	181
<i>Momotus lessonii</i>	Lesson's Motmot	0	6	0	0	10	14	13	10	33	43
<i>Eumomota superciliosa</i>	Turquoise-browed Motmot	6	11	4	2	6	12	7	30	18	48

<i>Notharchus hyperrhynchus</i>	White-necked Puffbird	0	2	0	0	1	1	2	4	2	6
<i>Ramphastos sulfuratus</i>	Keel-billed Toucan	0	1	0	1	0	2	1	4	1	5
<i>Melanerpes hoffmannii</i>	Hoffmann's Woodpecker	14	49	11	18	18	24	8	73	69	142
<i>Dryocopus lineatus</i>	Lineated Woodpecker	0	0	0	0	0	0	2	0	2	2
<i>Campephilus guatemalensis</i>	Pale-billed Woodpecker	0	6	5	1	12	7	6	23	14	37
<i>Herpetotheres cachinnans</i>	Laughing Falcon	2	0	0	2	0	0	0	0	4	4
<i>Micrastur semitorquatus</i>	Collared Forest-Falcon	0	1	0	0	2	1	1	3	2	5
<i>Eupsittula canicularis</i>	Orange-fronted Parakeet *	32	88	21	8	17	22	12	133	67	200
<i>Brotogeris jugularis</i>	Orange-chinned Parakeet *	13	44	5	14	77	37	21	106	105	211
<i>Amazona albifrons</i>	White-fronted Parrot *	6	33	5	8	15	6	4	32	45	77
<i>Amazona farinose</i>	Mealy Parrot *	0	0	1	0	0	0	0	1	0	1
<i>Amazona auropalliata</i>	Yellow-naped Parrot *	11	35	7	12	7	9	5	39	47	86
<i>Thamnophilus doliatus</i>	Barred Antshrike	0	5	0	1	18	24	24	40	32	72
<i>Sittasomus griseicapillus</i>	Olivaceous Woodcreeper	1	6	0	2	9	6	11	22	13	35
<i>Dendrocincla homochroa</i>	Ruddy Woodcreeper	0	1	0	0	2	0	3	3	3	6
<i>Dendrocolaptes sanctithomae</i>	Northern Barred Woodcreeper	0	4	0	0	1	7	2	9	5	14
<i>Xiphorhynchus flavigaster</i>	Ivory-billed Woodcreeper	2	14	0	2	13	8	12	19	32	51
<i>Lepidocolaptes souleyetii</i>	Streak-headed Woodcreeper	0	7	1	9	16	18	20	45	26	71
<i>Chiroxiphia linearis</i>	Long-tailed Manakin	9	41	4	11	37	45	66	103	110	213
<i>Tityra semifasciata</i>	Masked Tityra	0	0	0	0	0	1	2	3	0	3
<i>Pachyramphus aglaiae</i>	Rose-throated Becard	0	1	0	0	0	0	0	0	1	1
<i>Onychorhynchus coronatus</i>	Royal Flycatcher	0	0	0	0	1	0	3	3	1	4
<i>Platyrinchus cancrominus</i>	Stub-tailed Spadebill	0	0	0	0	0	3	2	1	4	5
<i>Oncostoma cinereigulare</i>	Northern Bentbill	0	1	0	0	4	2	7	6	8	14
<i>Poecilotriccus sylvia</i>	Slate-headed Tody-flycatcher	0	2	0	0	3	8	11	9	15	24
<i>Todirostrum cinereum</i>	Common Tody-Flycatcher	0	0	0	0	1	0	1	2	0	2
<i>Tolmomyias sulphurescens</i>	Yellow-olive Flycatcher	4	66	4	26	46	61	37	117	127	244

<i>Camptostoma imberbe</i>	Northern Beardless-Tyrannulet	1	4	1	2	3	1	1	10	3	13
<i>Myiopagis viridicata</i>	Greenish Elaenia	1	1	0	1	2	12	8	15	10	25
<i>Attila spadiceus</i>	Bright-rumped Attila	2	4	0	1	6	9	12	16	18	34
<i>Myiarchus tuberculifer</i>	Dusky-capped Flycatcher	0	3	1	1	3	5	11	15	9	24
<i>Myiarchus nuttingi</i>	Nutting's Flycatcher	0	3	0	0	1	0	0	0	4	4
<i>Myiarchus tyrannulus</i>	Brown-crested Flycatcher	17	42	9	12	11	10	1	67	35	102
<i>Pitangus sulphuratus</i>	Great Kiskadee	2	5	3	1	1	0	0	8	4	12
<i>Megarynchus pitangua</i>	Boat-billed Flycatcher	0	1	0	0	1	2	1	3	2	5
<i>Myiodynastes luteiventris</i>	Sulphur-bellied Flycatcher	3	11	3	5	7	9	7	29	16	45
<i>Legatus leucophaeus</i>	Piratic Flycatcher	0	5	0	0	0	0	0	4	1	5
<i>Pachysylvia decurtata</i>	Lesser Greenlet	0	24	2	8	18	26	25	43	60	103
<i>Vireo flavoviridis</i>	Yellow-green Vireo	6	99	8	22	80	109	56	194	186	380
<i>Calocitta formosa</i>	White-throated Magpie-Jay	6	9	9	3	1	0	0	22	6	28
<i>Troglodytes aedon</i>	House Wren	1	0	0	0	0	0	0	1	0	1
<i>Campylorhynchus rufinucha</i>	Rufous-naped Wren	35	95	22	27	43	54	16	149	143	292
<i>Thryophilus rufalbus</i>	Rufous-and-white Wren	0	0	0	2	2	1	22	12	15	27
<i>Thryophilus pleurostictus</i>	Banded Wren	39	158	37	30	58	65	20	198	209	407
<i>Cantorchilus modestus</i>	Cabanis's Wren	0	1	0	0	4	8	11	14	10	24
<i>Ramphocaenus melanurus</i>	Long-billed Gnatwren	0	4	0	0	9	5	10	13	15	28
<i>Polioptila albiloris</i>	White-lored Gnatcatcher	3	35	9	3	0	5	1	33	23	56
<i>Polioptila plumbea</i>	Tropical Gnatcatcher	2	9	1	7	28	35	19	61	40	101
<i>Catharus ustulatus</i>	Swainson's Thrush *	0	1	0	0	0	0	0	1	0	1
<i>Turdus grayi</i>	Clay-coloured Thrush	1	4	1	1	1	4	2	7	7	14
<i>Euphonia affinis</i>	Scrub Euphonia	6	27	1	8	20	10	4	50	26	76
<i>Peucaea ruficauda</i>	Stripe-headed Sparrow	1	6	2	0	3	0	0	3	9	12
<i>Arremonops rufivirgatus</i>	Olive Sparrow	1	6	1	0	5	7	2	7	15	22
<i>Icterus pustulatus</i>	Streak-backed Oriole	0	2	0	1	0	0	0	3	0	3
<i>Dives dives</i>	Melodious Blackbird	0	4	0	0	0	0	0	0	4	4
<i>Quiscalus mexicanus</i>	Great-tailed Grackle	2	2	1	0	0	0	0	2	3	5

<i>Setophaga petechia</i>	Yellow Warbler *	0	0	0	1	0	0	0	1	0	1
<i>Basileuterus rufifrons</i>	Rufous-capped Warbler	6	38	4	6	41	33	19	67	80	147
<i>Passerina caerulea</i>	Blue Grosbeak	0	2	0	0	0	0	0	2	0	2
<i>Eucometis penicillata</i>	Gray-headed Tanager	0	1	0	1	1	0	1	2	2	4

¹ Naming follows the American Ornithological Society's Birds of North and Middle America Checklist (Chesser et al. 2019).

* Species marked with asterisks are migratory birds (2 species of songbird) or highly mobile species (5 species of parrot) that were not included in the analyses presented in the manuscript, for reasons stated in the Methods.