



THE
BIRD SONGS
OF
LAS CRUCES



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BIRD SONGS OF LAS CRUCES BIOLOGICAL STATION, COSTA RICA

Introduction

The Pacific slope of Costa Rica (and the south Pacific in particular) is home to high avian species richness and endemism. Surprisingly, there is no commercially-available CD of bird songs from the Pacific slope, even though Costa Rica is one of the best biologically known tropical countries. This CD is a preliminary collection of bird vocalizations of Las Cruces Biological Station that we recorded during a month long study of the birds of Melissa's Meadow. Hopefully, this CD will be useful to scientists, birders, and general nature enthusiasts on the south Pacific slope.

Las Cruces Biological Station is a reserve located near San Vito, Coto Brus county, near the Panamanian border at ~1100 m. The highly diverse premontane wet forest (~4 m annual rainfall) at the site supports 400 species of birds and a number of endemics that are restricted to CR and west Panama. Since we spent most of our time in Melissa's Meadow, early-successional birds are better represented than mature forest species. We only had a month to do this, so the CD is inherently incomplete. Please let us know if you have recordings you would like to add to the collection. Some recordings are good, some are mediocre and some are really quiet. The CD will be best enjoyed with a pair of headphones and especially with sonogram software.

As you might have guessed, we think that today's bird CDs are a little too serious so we tried to spice it up a bit. Keep your ears open for "unusual" sounds that might pop up here and there. The primary recorder used, a M-Audio Microtrack began behaving strangely toward the end of the study so we had to do some recordings in mono instead of stereo.

Taxonomy follows the 2007 American Ornithologists' Union checklist. All recordings are by J. Berton C. Harris (aramidopsis@gmail.com). Feel free to share on Xeno Canto or elsewhere.

Abbreviation legend

Recording info and miscellaneous

nv	natural vocalization
ap	recorded after being stimulated with some kind of vocalization playback
os:	other species in background
int short	intervals shortened between vocalizations
mono	recording is not in stereo
individ	individual of the species
b/w	between

Location

MM	Melissa's Meadow area, including adjacent primary forest
RJT	Rio Java Trail
BG	Wilson Botanical Garden area (near buildings)
GT	Gamboa Trail
R	San Vito - Neilly road (near the station)

Acknowledgements

We must first acknowledge the dedicated work and companionship of our field assistant Jeisson Figueroa. We are grateful to Jim Zook for his help in identifications (especially

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when we practiced “cowboy” ornithology (i.e., record the birds and let Jim sort them out)). We also thank the Las Cruces cooking and administrative staff, Zak Zahawi, Alice Chenault, Larry the Purple-crowned Fairy (despite his nectar-robbing habits), Axle Rose, and the Clos wine company.

Anti-Acknowledgements

Bactris sp. palms and nocturnal invading leafcutter ants.

J. Berton C. Harris & J. Leighton Reid

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TINAMIDAE

Little Tinamou (*Crypturellus soui*). (1) sep7; 8am; MM; nv; 2 individs; os: Clay-colored Robin

CRACIDAE

Gray-headed Chachalaca (*Ortalis cinereiceps*). (1) sep13; 1045am; MM; nv

Crested Guan (*Penelope purpurascens*). (1) sep12; 510am; RJT; nv; in response to another individ

ODONTOPHORIDAE

Marbled Wood-Quail (*Odontophorus gujanensis*). (1) sep 16; 6am; BG; ap; all cuts are same individs (birds not seen); (2) sep 16; 6am; BG; ap; (3) sep 16; 6am; BG; ap

ACCIPITRIDAE

Black Hawk-Eagle (*Spizaetus tyrannus*). (1) sep8; 10am; MM; ap; perched; all 3 cuts same individ; sep8; 10am; MM; ap; perched; os: Social Flycatcher; sep8; 930am; MM; nv; in flight; os: Gray-chested Dove

FALCONIDAE

Barred Forest Falcon (*Micrastur ruficollis*). (1) sep15; 8am; MM; nv; duet; (2) sep15; 8am; MM; ap; barks, one individ

Yellow-headed Caracara (*Milvago chimachima*). (1) sep16-int short; os: Crimson-fronted Parakeet (many)

Laughing Falcon (*Herpetotheres cachinnans*). (1) sep15; 830am; MM; ap; (2) sep17; 9am; MM; nv; laughing calls; os: Gray-capped Flycatcher

RALIDAE

Gray-necked Wood-Rail (*Aramides cajanea*). (1) sep 18; 9am; MM; nv; calling to another individ; mono-from Edirol recorder

COLUMBIDAE

Ruddy Pigeon (*Patagioenas subvinacea*). (1) sep10; 9am; MM; nv; this cut is the 1st 7 sec; *cooks-for-me-too*; (2) sep10; 9am; MM; nv; Ruddy and Short-billed in apparent territorial dispute (species limits in action!)

Short-billed Pigeon (*Patagioenas nigrirostris*). (1) see Ruddy Pigeon cut 2; this species says *who-cooks-for-you*

Gray-chested Dove (*Leptotila cassini*). (1) sep16; 620am; BG; nv; 95 % certainty os: White-winged Becard, Clay-colored Robin (calls), House Wren (calls); (2) sep 13; 530am; MM; nv

Ruddy Quail-Dove (*Geotrygon montana*). (1) sep 9; 7am; GT; nv; deep hoots; os: Chestnut-mandibled Toucan, Black-faced Anttrush

PSITTACIDAE

Crimson-fronted Parakeet (*Aratinga finschi*). (1) sep6; 4pm; BG; nv; os: Clay-colored Robin; (2) sep6; 4pm; BG; nv; group; os: Boat-billed Flycatcher, Clay-colored Robin

Brown-hooded Parrot (*Pionopsitta haematotis*). (1) sep9; 8am; GT; nv; perched group

Blue-headed Parrot (*Pionus menstruus*). (1) sep16; 8am; R; nv; 1 individ in flight; os: Pale-breasted Spinetail; (2) sep16; 6am; BG; nv; 1 pair in flight then another pair in flight; os: noise from dining room

White-crowned Parrot (*Pionus senilis*). (1) sep 5; 8am; MM; nv; perched

CUCULIDAE

Squirrel Cuckoo (*Piaya cayana*). (1) sep 13; 7am; MM; nv; os: Rufous-tailed Hummingbird; (2) sep 8; 7am; MM; nv; calls; os: Ruddy Pigeon, Buff-throated Saltator

APODIDAE

Costa Rican Swift (*Chaetura fumosa*). (1) sep 20; 7am; MM; nv; 1 or 2 individs in a group of 10; 95% certainty; Note: repeated once

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TROCHILIDAE

Green Hermit (*Phaethornis guy*). (1) sep 6; 7am; MM; nv; in flight; os: Rufous-browed Peppershrike, Gray-capped Flycatcher

Stripe-throated Hermit (*Phaethornis striigularis*). (1) sep 14; 630am; nv; hovering at a flower; repeated twice

Snowy-bellied Hummingbird (*Amazilia edward*). (1) sep 22; 6am; MM; nv; repeated twice

Rufous-tailed Hummingbird (*Amazilia tzacatl*). (1) sep 17; 6am; MM; nv; song and calls while perched; os: Cherrie's Tanager, Orange-billed Nightengale-Thrush; (2) sep 13; 11am; RJT; nv; perched; (3) sep 6; 7am; MM; nv; trill in flight; os: Chestnut-capped Brush-Finch, Cherrie's Tanager

Purple-crowned Fairy (*Heliothryx barroti*). (1) sep 17; 11am; BG; nv; mono; int short. Thanks Larry.

TROGONIDAE

Violaceous Trogon (*Trogon violaceus*). (1) sep 25; 6am; MM; nv; 2 individs; os: Scale-crested Pygmy-Tyrant

Black-throated Trogon (*Trogon rufus*). (1) sep 7; 6am; MM; nv; os: Ruddy Pigeon, Plain Antvireo, Long-billed Gnatwren, Gray-chested Dove

MOTMOTIDAE

Blue-crowned Motmot (*Momotus momota*). (1) sep 26; 6am; MM; nv; (2) sep 17; 7am; MM; nv; hoots; os: Slaty-capped Flycatcher, Laughing Falcon; Note: Also see Golden-crowned Spadebill cut 1

GALBULIDAE

Rufous-tailed Jacamar (*Galbula ruficauda*). (1) sep 13; 1030am; RJT; ap; int short (b/w 2nd & 3rd songs by 12 sec); (2) sep 13; 1030am; RJT; ap; one song-same individ

RAMPHASTIDAE

Fiery-billed Aracari (*Pteroglossus frantzii*). (1) sep 15; 530am; MM; nv; 3 individs; os: Black-faced Anthrush, Golden-crowned Spadebill

Chestnut-mandibled Toucan (*Ramphastos swainsonii*). (1) sep 9; 7am; GT; nv; os: Scaly-breasted Wren, Gray-capped Flycatcher

PICIDAE

Olivaceous Piculet (*Picumnus olivaceus*). (1) sep 14; 7am; MM; nv; os: Plain-breasted Spinetail, Buff-throated Saltator, Slate-headed Tody-Flycatcher

Golden-naped Woodpecker (*Melanerpes chrysauchen*). (1) sep 15; 7am; MM; nv; os: Plain Wren, Green Shrike-Vireo

Red-crowned Woodpecker (*Melanerpes rubricapillus*). (1) sep 7; 8am; MM; nv; (2) sep 14; 7am; MM; nv; bird not seen; os: probable Plain-breasted Spinetail; Note: Also see Rufous-browed Peppershrike cut 1 for calls of *M. rubricapillus*

Smoky-brown Woodpecker (*Veniliornis fumigatus*). (1) sep 17; 8am; MM; nv; os: Spot-crowned Euphonia; repeated once; (2) sep 26; 7am; MM; nv; with chainsaw; repeated once. Sorry these recordings are so bad. We thought it was better than nothing.

Golden-olive Woodpecker (*Piculus rubiginosus*). (1) sep 21; 530am; MM; nv; os: Buff-throated Saltator; repeated once

Pale-billed Woodpecker (*Campephilus guatemalensis*). (1) sep 9; 730am; GT; nv; double knock; os: Green Shrike-Vireo

FURNARIIDAE

Pale-breasted Spinetail (*Synallaxis albescens*). (1) sep 16; 8am; R; nv; song; os: Yellow-faced Grassquit; (2) sep 14; 10am; MM; nv; calls; 99% certainty

Slaty Spinetail (*Synallaxis brachyura*). (1) sep 11; 7am; MM; nv; also see Great Antshrike

Red-faced Spinetail (*Cranioleuca erythrops*). (1) sep 16; 530pm; BG; nv; song; os: 1st ringing note prob. a *Euphonia*

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Plain Xenops (*Xenops minutus*). (1) sep14; 7am; MM; nv

Buff-throated Foliage-Gleaner (*Automolus ochrolaemus*). (1) sep 14; 7am; MM; nv; song and calls; (2) sep 10; 9am; MM; nv; calls; (3) sep 13; 8am; MM; nv; calls and song, 2 individs; os: Tropical Parula, Crested Guan

Ruddy Foliage-Gleaner (*Automolus rubiginosus*). (1) sep 5; 7am; MM; nv; song; os: Buff-throated Saltator; (2) sep 5; 6am; MM; nv; calls; os: unknown high-pitched calls, Silver-throated Tanager; (3) sep 6; 6am; MM; nv; calls; os: White-winged Tanager; (4) sep 6; 6am; MM; ap; calls, same individ as cut 3

Tawny-winged Woodcreeper (*Dendrocicla anabatina*). (1) sep 10; 7am; MM; nv; (2) sep 9; 9am; GT; nv; 2 individs

Wedge-billed Woodcreeper (*Glyphorhynchus spirurus*). (1) sep7; 6am; MM; nv; calls; (2) sep6; 7am; MM; nv; calls; os: Spot-crowned Euphonia; (3) sep10; 530am; MM; nv; quiet, ascending song; os: Bright-rumped Attila

Spotted Woodcreeper (*Xiphorhynchus erythropygius*). (1) sep 12; 530am; MM; nv; dawn song; os: Golden-crowned Warbler (song)

Streak-headed Woodcreeper (*Lepidocolaptes souleyetii*). (1) sep 17; 730am; MM; short songs of two individuals ap; os: Yellow Tyrannulet

Brown-billed Scythebill (*Campylorhamphus pusillus*). (1) sep 7; 6am; MM; nv; song; os: wren scold; (2) sep 12; 7am; MM; nv; song; os: Social Flycatcher, Lesser Greenlet

THAMNOPHILIDAE

Great Antshrike (*Taraba major*). (1) sep 21; 530am; MM; nv; song; os: Greenish Elaenia, Slaty Spinetail, Green Shrike-Vireo, Rufous-breasted Wren; (2) sep 15; 7am; MM; nv; growling calls; certainty 90%; os: Plain Wren (song)

Black-hooded Antshrike (*Thamnophilus bridgesi*). (1) sep 7; 7am; MM; nv; song; (2) sep 4; 7am; MM; nv; calls; (3) sep 9; 7am; GT; nv; calls; (4) Note: See also Slaty Antwren cut 1

Russet Antshrike (*Thamnistes anabatinus*). (1) sep 8; 9am; MM; nv; song; os: Green Shrike-Vireo, Black-faced Antthrush; (2) sep 14; 7am; MM; ap; song; (3) sep 9; 7am; GT; nv; squeaky calls; os: with a flock

Plain Antwren (*Dysithamnus mentalis*). (1) sep 20; 530am; MM; nv; song; os: Bright-rumped Attila; (2) sep 7; 6am; MM; nv; calls; (3) sep 11; 8am; MM; nv; ascending calls; os: Tropical Parula; (4) sep 15; 6am; MM; nv; calls; (5) sep 5; 7am; MM; calls; ap

Slaty Antwren (*Myrmotherula schisticolor*). (1) sep11; 8am; MM; nv; squeaky calls; os: Black-hooded Antshrike (calls); (2) sep 7; 9am; MM; nv; 2 squeaky calls in flock; os: Lesser Greenlet; (3) sep 14; 7am; MM; nv; squeaky calls

Dot-winged Antwren (*Microrhoptias quixensis*). (1) sep 15; 9am; MM; nv; song in flock; 90% certainty-bird not seen; (2) sep7; 7am; MM; nv; os: Long-billed Gnatwren, Green Shrike-vireo; (3) sep 7; 7am; MM; nv; int short; in flock; (4) sep14; 7am; MM; nv; os: Black-faced Antthrush, Bicolored Antbird, Green Shrike-Vireo

Dusky Antbird (*Cercomacra tyrannina*). (1) sep 10; 6am; MM; nv; song; int short b/w songs 1 & 2 by 17 sec; os: metallic calls of Blue-black Grosbeak; (2) sep 10; 6am; MM; nv; calls with Casio watch beep; (3) sep 13; 11am; RJT; nv; calls-bird not seen; (4) sep 10; 6am; MM; nv; same scold calls followed a 2 note hiccup

Bicolored Antbird (*Gymnopithys leucaspis*). (1) sep 14; 8am; MM; nv; calls; different individs from cut 2; (2) sep14; 630am; MM; nv; song and two types of calls; quarrelling group of three individs; os: Black-faced Antthrush

FORMICARIIDAE

Black-faced Antthrush (*Formicarius analis*). (1) sep15; 7am; MM; nv; 3 note song; (2) sep14; 6am; MM; nv; one 2-note song; (3) sep 11; 8am; MM; nv; with burp from Leighton; (4) sep8; 7am; MM; nv; call; certainty 90 %

TYRANNIDAE

Yellow-bellied Tyrannulet (*Ornithion semiflavum*). (1) sep 21; 530am; MM; nv; two calls and then song 99% certainty; os: Buff-throated Saltator; (2) sep 9; 10am; MM; nv; 2 calls; int short; os: Buff-throated Saltator, White-breasted Wood-Wren scolds; repeated once

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Bright-rumped Attila (*Attila spadiceus*). (1) sep17; 530am; MM; nv; (2) sep 8; 7am; MM; nv; (3) sep 20; 530am; MM; nv-also see cut 1 of Plain Antvireo

Rufous Mourner (*Rhytipterna holerythra*). (1) sep13; 530am; MM; nv; mournful 2-note song; (2) sep20; 530am; MM; nv; one note song; Note: two cuts repeated twice

Yellow Tyrannulet (*Capsiempis flaveola*). (1) sep 5; 6am; MM; ap; 2 individs; os: White-crowned Parrot

Greenish Elaenia (*Myiopagis viridicata*). (1) sep 10; 530am; MM; nv; dawn song; os: Clay-colored Robin, Buff-throated Saltator, Common Tody Flycatcher, Little Tinamou; (2) sep 13; 630am; MM; nv; int short b/w last two calls; os: Slate-throated Redstart, White-breasted Wood-Wren

Yellow-bellied Elaenia (*Elaenia flavogaster*). (1) sep16; 8am; R; nv; (2) sep 19; 630am; BG; nv; int short; (3) sep16; 8am; R; nv; os: Pale-breasted Spinetail

Ochre-bellied Flycatcher (*Mionectes oleagineus*). (1) sep13; 11am; RJT; nv; os: Silver-throated Tanager

Slaty-capped Flycatcher (*Leptopogon superciliaris*). (1) sep6; 1045am; RJT; nv; int short between song and calls

Rough-legged Tyrannulet (*Phyllomyias burmeisteri*). (1) sep6; 6am; MM; nv; os: Green Shrike-Vireo, White-breasted Wood-Wren; (2) sep9; 9am; GT; nv; Note: Also known as Zeledon's Tyrannulet

Paltry Tyrannulet (*Zimmerius vilissimus*). (1) sep6; 8am; MM; nv; os: Cherrie's Tanager

Scale-crested Pygmy-Tyrant (*Lophotriccus pileatus*). (1) sep 15; 7am; MM; nv; os: Social Flycatcher; (2) sep 20; 6am; MM; nv; (3) sep 20; 7am; MM; nv; (4) sep17; 7am; MM; nv; int short; calls; os: prob. *Tangara* calls

Northern Bentbill (*Oncostoma cinereigulare*). (1) sep 17; 630am; MM; nv; os: Laughing Falcon; (2) sep 14; 9am; MM; ap; int short; songs and a call; (3) sep14; 9am; MM; nv; int short; songs; (4) sep 11; 8am; MM; after playback of Bicolored Antbird

Yellow-olive Flycatcher (*Tolmomyias sulphurescens*). (1) sep12; 930am; MM; nv; int short; os: *Phaethornis* sp. at the end

White-throated Spadebill (*Platyrinchus mystaceus*). (1) sep 13; 7am; MM; nv; Buff-throated Saltator, Yellow-bellied Flycatcher, Black-throated Trogon, Marbled Wood-Quail; (2) sep 13; 7am; MM; ap; one call

Golden-crowned Spadebill (*Platyrinchus coronatus*). (1) sep 11; 7am; MM; nv; song; os: Blue-crowned Motmot; (2) sep 15; 8am; MM; nv; short song; os: Fiery-billed Aracari, Plain Antvireo (calls); (3) sep 11; 7am; MM; nv; 2-3 individs fighting

Bran-colored Flycatcher (*Myiophobus fasciatus*). (1) sep11; 7am; MM; nv; os: Slaty Spinetail; (2) sep11; 7am; MM; ap; os: Slaty Spinetail; (3) sep11; 7am; MM; nv; os: Gray-capped Flycatcher, Tropical Parula; (4) sep 14; 8am; MM; nv

Olive-sided Flycatcher (*Contopus cooperi*). (1) sep 17; 9am; MM; nv; calls; MONO; 99% certainty; (2) sep 17; 9am; MM; nv; calls; MONO; os: sneezy song of Slaty-capped Flycatcher

Western Wood-Pewee (*Contopus sordidulus*). (1) sep 11; 8am; MM; nv; 95% certainty

Yellow-bellied Flycatcher (*Empidonax flaviventris*). (1) sep 4; 6am; MM; nv

Slate-headed Tody-Flycatcher (*Poecilotriccus sylvia*). (1) sep14; 7am; MM; nv; (2) sep4; 8am; MM; nv; int short

Common Tody-Flycatcher (*Todirostrum cinereum*). (1) sep 26;10am; MM; nv; bird not seen; (2) sep 5; 8am; MM; nv; possible begging calls

Eye-ringed Flatbill (*Rhychocyclus brevirostris*). (1) sep 15; 7am; MM; nv; repeated twice

Boat-billed Flycatcher (*Megarynchus pitangua*). (1) sep 6; 430pm; BG; nv; os: Clay-colored Robin; first 3 cuts same individs; (2) sep 6; 430pm; BG; nv; os: Golden-hooded Tanager, Crimson-fronted Parakeet; (3) sep 6; 430pm; BG; nv; os: Laughing Falcon; (4) sep 7; 6am; MM; nv; alternate song; os: Bright-rumped Attila

Social Flycatcher (*Myiozetetes similis*). (1) sep10; 7am; MM; nv; os: Bright-rumped Attila; (2) sep10; 7am; MM; nv; one call

Gray-capped Flycatcher (*Myiozetetes granadensis*). (1) sep 13; 7am; MM; nv; (2) sep 13; 7am; MM; nv; os: Rufous-breasted Wren (calls); (3) sep 5; 8am; MM; ap

Tropical Kingbird (*Tyrannus melancholicus*). sep 25; 5am; BG; nv; dawn song

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INCERTAE SEDIS

Rufous Piha (*Lipaugus unirufus*). (1) sep 9; 6am; GT; nv; distant whistle song with Golden-crowned Spadebill (high pitched), also Chestnut-mandibled Toucan; (2) sep 15; 9am; MM; nv; in the middle of a Dot-winged Antwren song; repeated once

White-winged Becard (*Pachyramphus polychopterus*). (1) sep 16; 630am; BG; nv; int short; os: Gray-chested Dove, White-ruffed Manakin, House Wren (song); (2) sep 8; 7am; MM; nv; (3) sep 8; 7am; MM; nv; same individ as cut 2; os: Green Shrike-Vireo

Masked Tityra (*Tityra semifasciata*). (1) sep 18; 530am; MM; nv; quiet vocalizations recorded with Ediol recorder; os: Lesser Greenlet

PIPRIDAE

Orange-collared Manakin (*Manacus aurantiacus*). (1) sep 6; 6am; MM; nv; calls; os: Clay-colored Robin, Cherrie's Tanager, probable saltator call (very high pitched); (2) sep 5; 7am; MM; nv; wing snap; (3) sep 9; 7am; GT; nv; fluttering wings in flight and calls

White-ruffed Manakin (*Corapipo altera*). (1) sep 6; 7am; MM; nv; (2) sep 9; 6am; GT; nv; one call; os: Green Shrike-Vireo; this cut repeated once; (3) sep 14; 6am; MM; nv; os: Laughing Falcon, White-throated Robin (frog-like croaks), Chestnut-mandibled Toucan

VIREONIDAE

Tawny-crowned Greenlet (*Hylophilus ocraceiceps*). (1) sep 7; 6am; MM; nv; repeated once; (2) sep 7; 6am; MM; nv; os: Buff-throated Saltator; repeated once; (3) sep 8; 7am; MM; nv; 2 whistles; (4) sep 8; 7am; MM; nv; 2 whistles; same individ as cut 3; os: Black-throated Trogon, Lesser Greenlet; (5) sep 20; 7am; MM; nv; excited song; os: Spot-crowned Euphonia

Lesser Greenlet (*Hylophilus decurtatus*). (1) sep 14; 6am; MM; nv; 2 songs; (2) sep 14; 6am; MM; nv; same individ as cut 1; os: Russet Antshrike (song), Buff-throated Saltator; (3) sep 13; 10am; MM; nv; harsh calls; repeated once

Green Shrike-Vireo (*Vireolanus pulchellus*). (1) sep 9; 6am; GT; nv; os: double knock of Pale-billed Woodpecker

Rufous-browed Peppershrike (*Cyclarhis gujanensis*). (1) sep 6; 530am; MM; nv; os: Red-crowned Woodpecker (calls), Rufous-breasted Wren (calls)

TROGLODYTIDAE

Black-bellied Wren (*Thryothorus fasciatoventris*). (1) sep 20; 7am; MM; nv; calls (rattle and liquid note); os: note before 1st wren call unknown, also saltator metallic chip; (2) sep 20; 7am; MM; ap; calls (rattle and liquid note); int short b/w 3rd and 4th calls; (3) sep 20; 7am; MM; ap; begging calls from young; os: Buff-throated Saltator, Little Tinamou

Riverside Wren (*Thryothorus semibadius*). (1) sep 7; 6am; MM; nv; song; (2) sep 6; 8am; MM; nv; short songs; os: Black-throated Trogon, Lesser Greenlet; (3) sep 5; 7am; MM; nv; calls; os: Green Shrike-Vireo, Black-faced Antthrush, Gray-chested Dove, Long-billed Gnatwren; (4) sep 6; 630am; MM; nv; int short; scolds and calls

Rufous-breasted Wren (*Thryothorus rutilus*). (1) sep 21; 530am; MM; nv; os: Greenish Elaenia, Slaty Spinetail; (2) sep 5; 7am; MM; nv; duet; (3) sep 6; 6am; MM; nv; calls; (4) sep 13; 7am; MM; nv; calls

Plain Wren (*Thryothorus modestus*). (1) sep 8; 7am; MM; nv; song; (2) sep 8; 7am; MM; ap; song-same individ as 1st cut; (3) sep 11; 6am; MM; nv; song; (4) sep 7; 6am; MM; nv; scolds

White-breasted Wood-Wren (*Henicorhina leucosticta*). (1) sep 5; 6am; MM; nv; duet; (2) sep 9; 7am; GT; nv; scolds; os: Green Shrike-Vireo, Silver-throated Tanager; (3) sep 20; 8am; MM; nv; calls

House Wren (*Troglodytes aedon*). (1) sep 16; 8am; R; nv; song; os: Pale-breasted Spintail, also a Tico; (2) sep 16; 8am; R; nv; song; os: Rufous-collared Sparrow, Yellow-faced Grassquit; (3) sep 16; 6am; BG; nv; song; Note: Also see cut 1 of Gray-chested Dove for calls of *T. aedon*

SYLVIIDAE

Long-billed Gnatwren (*Ramphocaenus melanurus*). (1) sep 6; 6am; MM; ap; os: Green Shrike-Vireo; (2) sep 6; 6am; MM; ap; same individ as cut 1

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Tropical Gnatcatcher (*Poliophtila caerulea*). (1) sep 11; 630am; MM; ap; calls; (2) sep 11; 630am; MM; ap; calls-same individ as cut 1

TURDIDAE

Orange-billed Nightingale-Thrush (*Catharus aurantiirostris*). (1) sep 17; 6am; MM; nv; song os: Olivaceous Piculet, Scaly-breasted Wren; (2) sep 8; 6am; MM; nv; calls; os: Black-hooded Antshrike, Boat-billed Flycatcher; (3) sep 8; 6am; MM; ap; calls-same individ as cut 2.

Clay-colored Robin (*Turdus grayii*). (1) sep 14; 7am; MM; nv; calls; (2) sep 4; 6am; MM; nv; chucks

White-throated Robin (*Turdus assimilis*). (1) sep 6; 6am; MM; nv; int short; calls; 95 % certainty; (2) sep 14; 7am; MM; nv; frog-like call; os: Laughing Falcon, Chestnut-mandibled Toucan, Slate-throated Redstart, White-ruffed Manakin

PARULIDAE

Tropical Parula (*Parula pitiayumi*). (1) sep 12; 8am; MM; nv; song; os: Buff-throated Foliage-Gleaner; (2) sep 4; 7am; MM; nv; song; (3) sep 14; 1030am; MM; nv; high pitched calls; os: probable spinetail calls (lower pitched with the same rhythm as the parula) also Paltry Tyrannulet

American Redstart (*Setophaga ruticilla*). (1) sep 17; 630am; MM; nv; calls from adult male; os: one call of a *Phaethornis* sp. at 11 sec, Green Shrike-Vireo, Laughing Falcon; Blue-crowned Motmot

Northern Waterthrush (*Seiurus noveboracensis*). (1) sep16; 6am; BG; nv; calls; os: Chestnut-capped Brush-Finch

Kentucky Warbler (*Oporornis formosus*). (1) sep 26; 9am; MM; nv; calls

Slate-throated Redstart (*Myioborus miniatus*). (1) sep 5; 7am; MM; nv; song; os: Buff-throated Saltator; see also Greenish Elaenia; (2) sep 13; 6am; MM; nv; song; os: White-breasted Wood-Wren; (3) sep 6; 7am; MM; nv; calls; repeated once

Golden-crowned Warbler (*Basileuterus culicivorus*). (1) sep 9; 7am; GT; nv; distant song repeated once; (2) sep 13; 7am; MM; nv; distant song repeated once; (3) sep 11; 8am; MM; ap; calls; os: Chestnut-mandibled Toucan, Golden-crowned Spadebill

Rufous-capped Warbler (*Basileuterus rufifrons*). (1) sep14; 7am; MM; nv; one song; (2) sep 11; 8am; MM; nv; one song; (3) sep 11; 8am; MM; nv; songs; os: Buff-throated Saltator, Bananaquit; (4) sep 6; 6am; MM; nv; single calls; (5) sep 7; 8am; MM; nv; multiple calls; os: Buff-throated Saltator, Black-hooded Antshrike, Laughing Falcon; (6) sep 11; 8am; MM; nv; multiple calls

Buff-rumped Warbler (*Phaeothlypis fulvicauda*). (1) sep16; 6am; BG; nv; 2 songs; os: probably Marbled Wood-Quail; (2) sep16; 6am; BG; nv; 2 songs; same individ as cut 2; (3) sep 9; 10am; MM; nv; calls; (4) sep 12; 1030am; RJT; nv; calls; os: Rufous-breasted Wren

INCERTAE SEDIS

Bananaquit (*Coereba flaveola*). (1) sep6; 7am; MM; ap; (2) sep 20; 8am; MM; nv; calls; os: Rufous-tailed Hummingbird (trill)

THRAUPIDAE

Common Bush-Tanager (*Chlorospingus ophthalmicus*). (1) sep 16; 530am; BG; nv; os: Crimson-fronted Parakeet; (2) sep 16; 615am; BG; nv; os: Chestnut-capped Brush-Finch; (3) sep 16; 5pm

Gray-headed Tanager (*Eucometis penicillata*). (1) sep 13; 7am; MM; nv; very high pitched calls are this species; scold is Orange-billed Nightingale-Thrush, soft chucks are unknown (possibly Gray-headed Tanager), also whistles of Black-throated Trogon

Red-crowned Ant-Tanager (*Habia rubica*). (1) sep 18; 930am; MM; nv; recorded with Edirol recorder

White-winged Tanager (*Piranga leucoptera*). (1) sep 8; 8am; MM; nv; song and calls (male & female); os: Tropical Parula; (2) sep 8; 8am; MM; nv; calls and songs (same male & female); (3) sep 8; 8am; MM; nv; calls (same male & female)

BIRD SONGS OF LAS CRUCES BIOLOGICAL STATION, COSTA RICA

- Cherrie's Tanager (*Ramphocelus costaricensis*).** (1) sep 6; 7am; MM; nv; os: Paltry Tyrannulet; (2) sep 12; 8am; MM; nv; high pitched calls; os: hummingbird (prob. Rufous-tailed), Black-hooded Antshrike; (3) sep17-MONO; calls; (4) sep17-MONO-excited calls b/w 2 males ap
- Blue-gray Tanager (*Thraupis episcopus*).** (1) sep 26; 9am; MM; nv; songs; 1 individ; (2) sep 7; 7am; MM; nv; (3) sep 11; 8am; MM; nv; os: Slaty Spinetail
- Silver-throated Tanager (*Tangara icterocephala*).** (1) sep 6; 4pm; BG; nv; os: Laughing Falcon, Crimson-fronted Parakeet; (2) sep16; 5pm; BG; nv; os: Chestnut-mandibled Toucan
- Bay-headed Tanager (*Tangara gyrola*).** (1) sep 13; 8am; MM; nv; (2) sep 13; 8am; MM; ap; int short; (3) sep 12; 1030am; nv; int short; calls
- Golden-hooded Tanager (*Tangara larvata*).** (1) sep 5; 7am; MM; nv; os: Black-hooded Antshrike, Ruddy Foliage-Gleaner; (2) sep 6; 4pm; BG; nv; song; os: Laughing Falcon, Silver-throated Tanager (1 call in b/w G-hooded songs 1 & 2, Boat-billed Flycatcher; (3) sep 8; 7am; MM; nv
- Scarlet-thighed Dacnis (*Dacnis venusta*).** (1) sep 17; 7am; MM; nv; very high-pitched, squeaky calls from female; os: Silver-throated Tanager (lower pitched harsh calls); (2) sep 17; 7am; MM; nv; same individ; this cut is last 12 sec; os: Yellow Tyrannulet

EMBERIZIDAE

- Variable Seedeater (*Sporophila americana*).** (1) sep 15; 9am; MM; nv; song (lots of mimicking including parrots, etc.); os: Slaty Spinetail; (2) sep 8; 7am; MM; nv; calls; (3) sep 10; 7am; MM; nv; presumably begging calls (2 individs present)
- Ruddy-breasted Seedeater (*Sporophila minuta*).** (1) sep 4; 530am; MM; nv; probably begging calls (2 individuals closeby); os: Bananaquit, Black-faced Antthrush, Violaceous Trogon
- Yellow-faced Grassquit (*Tiaris olivaceus*).** (1) sep16; 8am; R; nv; (2) sep16; 630am; BG; nv; (3) sep16; 9am; R; nv; song; os: Gray-chested Dove; (4) sep16; 5pm; BG; nv; song w/ strange soft phrases at 5 sec & 21 sec; os: Rufous-breasted Wren
- Chestnut-capped Brush-Finch (*Buarremon brunneinucha*).** (1) sep 5; 6am; MM; nv; song; int short; os: Russet Antshrike (call)
- Orange-billed Sparrow (*Arremon aurantirostris*).** (1) sep 14; 6am; MM; nv; song; (2) sep 10; 6am; MM; nv; calls and alternate song
- Black-striped Sparrow (*Arremonops conirostris*).** (1) sep 25; 6am; MM; nv; (2) sep 25; 6am; MM; nv; os: Buff-throated Saltator
- Stripe-headed Brush-Finch (*Buarremon torquatus*).** (1) sep 14; 7am; MM; nv; song; os: Yellow-bellied Flycatcher; (2) sep15; 6am; MM; nv; song; (3) sep 15; 615am; MM; nv; calls; certainty 99%
- Rufous-collared Sparrow (*Zonotrichia capensis*).** (1) sep 16; 8am; R; nv; songs; os: Blue-gray Tanager

CARDINALIDAE

- Streaked Saltator (*Saltator striatipectus*).** (1) sep 26; 530am; MM; nv; song; repeated once; (2) sep 10; 8am; MM; nv; calls; int short; os: Blue-gray Tanager at the end; (3) sep 20; 8am; MM; nv; calls; int short
- Buff-throated Saltator (*Saltator maximus*).** (1) sep 5; 7am; MM; nv; os: Cherrie's Tanager; (2) sep 21; 530am; MM; nv; os: Clay-colored Robin, Little Tinamou; (3) sep 6; 8am; MM; nv; double call; repeated once; os: Gray-capped Flycatcher
- Blue-black Grosbeak (*Cyanocompsa cyanoides*).** (1) sep 10; 7am; MM; nv; calls; os: Chestnut-capped Brush-Finch; (2) sep 11; 8am; MM; ap; calls from female; int short; os: Boat-billed Flycatcher

ICTERIDAE

- Yellow-billed Cacique (*Amblycerus holosericius*).** (1) sep 14; 8am; MM; nv; calls; int short; os: Buff-throated Foliage-Gleaner, Common Tody-Flycatcher

BIRD SONGS OF LAS CRUCES BIOLOGICAL STATION, COSTA RICA

FRINGILLIDAE

Thick-billed Euphonia (*Euphonia laniirostris*). (1) sep12; 10am; MM; nv; complicated song full of mimics-female nearby; (2) sep12; 10am; MM; nv; complicated song full of mimics-female nearby-same individ

Spot-crowned Euphonia (*Euphonia imitans*). (1) sep 6; 8am; MM; nv; song; os: White-breasted Wood-Wren (calls); (2) sep 5; 9am; MM; nv; (3) sep5; 9am; MM; ap; same individ as cut 2; os: Smoky-brown Woodpecker

White-vented Euphonia (*Euphonia minuta*). (1) sep 13; 6am; MM; nv; song; os: Black-throated Trogon, White-throated Spadebill