

A vibrant orange-headed bird, likely a Yellow Warbler, is perched on a mossy branch. The bird has a bright orange head and neck, with a black patch around its eye. Its body is primarily yellow, with dark brown and white streaks on its wings and back. The background is a soft-focus forest scene with various branches and green foliage.

Costa Rica
Bird Observatories
ANNUAL REPORT

2014

Piranga bidentata. Foto: Pablo Elizondo



Costa Rica Bird Observatories ANNUAL REPORT 2014

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www.costaricabird.org

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Message from the Executive Director

When we were born in 1994, we had a vision to become the first and largest Bird Observatory outside of the US and Canada. Today we celebrate 20 years studying the birds, elegant creatures that have served humans as inspirations for the world of poetry, music, aviation, and much more; for us they have been our careers and our priority at all cost.

We made it this far due to our diligent vision of creating partnerships and set the conservation agenda as our very first priority.

Today we continue with our efforts of ensuring that field work is carried out, publishing results that are meaningful for the conservation community, and most importantly, saving and understanding -- one bird at the time.

This year we will get incorporated as a non-profit organization in Costa Rica, and this will open many possibilities of leveraging our imprint on conservation and science, through accessing funds, creating membership programs and increasing our organizational impact. We hope to have you on board the new CRBO.



Pablo Elizondo
Executive Director. Costa Rica Bird Observatories





About CRBO

The Costa Rica Bird Observatories is a nationwide monitoring initiative created and managed through partnerships among the National Institute of Biodiversity (INBio), US Forest Service, Klamath Bird Observatory, and many other collaborators, both private and public. The Observatories' primary objective includes the promotion of bird conservation and education in Costa Rica through scientific monitoring.

Humans and birds depend on intact ecosystems for food resources, shelter and other broad environmental processes such as carbon sequestration and atmospheric regulation. Human enterprise routinely degrades ecosystems causing the global decline of many bird populations. To manage and conserve bird species in peril we must identify factors preventing population-level recovery, thereby moving beyond estimates of mere population size to demographics and to the underlying causes of population changes.

Our vision

To be the organization leading the bird conservation and research process in Costa Rica. To be recognized for its science driven thinking applied to the research and conservation programs in the region.

Our mission:

To facilitate on-going bird monitoring in Costa Rica through the establishment of successful cooperative scientific field efforts that result in strategic decisions pertaining to bird conservation at a regional scale.

Our objectives:

- Establish and maintain long-term, sustainable bird monitoring programs in Costa Rica.
- Generate and promote the collection, archiving and analysis of bird monitoring data to make better management decisions and to further our understanding of migrant and resident bird population dynamics.
- Generate information pertaining to the complete annual cycle and natural history of migrant and resident birds that will lead to a better understanding of avian demographics and factors regulating population growth.
- Provide training opportunities for local and international volunteers, students, and biologists in the area of bird monitoring.
- Provide an education program that focuses on awareness and appreciation for resident and migrant birds through outreach programs at each field station for Costa Rican people and through national media coverage.
- Produce regular communications , public outreach events, scientific publications, and reports for various publics and the World Wide Web.

Our methods

Through a series of international and domestic Costa Rican Partnerships we gather, preserve, and analyze data, as well as generate tools that enhance and promote bird science and conservation, serving as a model for implementation across the Americas. All of our data is collected under rigorous standards of the North American Banding Council, and is available via the Landbird Monitoring Network of the Americas. Our efforts will be integrated with local scientists, NGOs, conservationists, and policy decision makers. Our operations involve participation of interns and volunteers, primarily from Costa Rica, and also from the rest of the Americas and Europe.

Our steering committee

- Dr. Alvaro Umaña (CATIE)
- Dr. Carlos Hernández (INBio)
- Dr. C. John Ralph (U.S. Forest Service)
- Dr. Greg Butcher (U.S. Forest Service)
- Dr. John Alexander (Klamath Bird Observatory)

20 years of developing science and bird conservation

It was in December of 1994 when a dream began, a dream to understand the dynamics and demography of migratory and tropical resident birds, with the ultimate goal of empowering a small country in Central America to be able to help preserve bird populations and the ecosystems they rely on. It was an ambitious goal, but 20 years, over 60.000 birds, 600 biologists, 30 scientific papers, and 13 stations later, we are still on a roll. We are meeting a future where climate plays a major role in the conservation landscape, and understanding how biodiversity responds to climatic scenarios is critical to ensure perpetuity and sound conservation measures for wildlife.

The origins of CRBO date back to then-called Tortuguero Integrated Bird Monitoring Program, that in 2008 became the Costa Rica Bird Observatories, migrating from a Tortuguero based operation into a nationwide set of bird observatories, with stations in the Caribbean north west of Tortuguero, INBio in the central valley, the highlands of the Cerro de la Muerte, the Valley of Coto Brus adjacent to the border with Panama and the world famous La Selva Biological Station in the Sarapiquí region.



We currently operate 13 sites that are very well distributed from a geographical standpoint, and allow us to generate demographic data from a large number of species in a country with close to 10% of the world bird species, in less that 0.03% of the planet's surface.

Current statistical methods and computing power allow us to analyze and visualize data in a way we never had thought before, allowing us to use our dataset in many ways, for example focusing on climate, physical condition and survivorship.

Our work has long contributed to inform the process of science, capacity building and conservation in Costa Rica, and has served as a model that has been implemented in other countries of the region.

Today we feel proud of our achievements and continue to find mechanisms to increase the scope and depth of our data, empower partners and collaborators to use the data, and to inform the conservation process of the flying creatures that we study.

Our efforts are driven by a very capable Steering Committee and a strategic plan set up to guide our operations for the next 5 years.

Generating scientific data that leads the process of conservation

Data collection is the first step of the science driven conservation process and, CRBO has been collecting data over the past 20 years, including bird banding, area search and migration counts among others.

Since 2008 CRBO has been involved with the Alianza Alas Doradas, a group created among scientist and conservationist to address conservation issues and data gaps of the Golden-winged Warbler, a Neartic-Neotropical migrant that spends the winter in Central and South America, with a steep decline of 76% over the past 50 years.



The group has been focused on understanding the limiting factors for the populations on this species from a wintering perspective, taking into account that those birds spend up to three quarters of their time outside of the United States and Canada, where they might face the implications of deforestation, forest fragmentation and anthropogenic practices that limit their populations.

For the past few years CRBO collected data in partnership with the Asociación Ornitológica de Costa Rica and American Bird Conservancy, to determine the most important areas for the conservation of Golden-winged warblers.

For 4 years we participated in the process of point counts, data analysis and participative encounters with experts to come out with the areas that are most important to preserve.

As a result we were able to identify 14 focal areas that are outside of current conservation programs, and host important habitat for the Golden-winged warbler. Our work continues with the conception and development of suitable mechanisms for the conservation of the sites and the analysis of feasibility of a regional conservation agreement.

Empowering the next generation of field biologist

CRBO is mostly a volunteer based organization; our volunteers come from all over the world, with extensive training at their home countries, we take full advantage of this and mix them with Latin American in order to create the capacity needed to implement bird monitoring activities. We take training seriously, we estimate that over 600 people have been trained in one of our stations; several banding courses and certifications have been held at CRBO stations.

Over the past few years we have expanded our core of expertise in training personnel, and have expanded our contributions at a regional scale. Last year we were able to support for the third time an advanced training course in Brazil. This course is part of large effort to train and empower Latinos, so that they can learn the most recent, ethical and proficient mechanisms to study the avifauna in the Americas.

The course is also a great source of future interns at CRBO, and thanks to our set of partnerships with organizations like the Klamath Bird Observatory (KBO) we are able to further their experience, starting in Brazil, advancing in Costa Rica and getting fully proficient and certified banders at KBO.



Birds in a changing climate

Climate change is perhaps the most serious and widespread environmental phenomenon of recent years, but it's also an understudied threat to tropical birds. Most bird species are vulnerable to the impacts of climate change, thus understanding how climate drives survival and condition of birds is critical for the sound and timely conservation of the ecosystems where they occur.

Our papers for the past couple of years (Wolfe et al. 2015, Wolfe et al. 2013, Ralph et al. 2012, Wolfe et al. 2012, Wolfe and Ralph 2009) have focused on how different climatic events shape the future of bird populations, offering land managers with critical information for the proper management of species.

From our banding dataset we were able to also generate impactful research. A new paper by Jared Wolfe, C. John Ralph and Pablo Elizondo, published

in the journal *Oecologia*, reveals the impact of El Niño and La Nina weather events, into the survivorship of the White-collared Manakin, and it's the first published study on the influence of such events on the survival of a resident Neotropical bird species.

This study serves as a unique tool for conservation, as results show that mature forest has more stable survivorship estimates than younger forest, the publication also reveals that El Niño Southern Oscillation (ENSO) has little effects when individuals occur in mature forest, however when dry El Niño events, manakin survival is negatively influenced by ENSO.

Partnerships with a vision

The road that led to where we are right now was paved with the help of many partners and individuals who have believed in their responsibility with nature and conservation. Our organization is focused in establishing partnership that strategically benefit and facilitate our research process, our partners range from financial organizations to fast food chains, because we believe that everyone should be incorporated in the conservation picture. For a partner like the TV station is beneficial to have fresh content related to science, nature and conservation, for us is a window to promote conservation.



CRBO has been working with partners like the San Vito Bird Club, over the past 10 years in helping them manage their dataset and logistical operations, they have ensure funding and staffing for the operation of 3 sites in the Coto Brus Region, very close to the border with Panama. Starting 2015 CRBO has assumed the challenge of running the entire operation with financial support from SVBC. This means that

CRBO ensures data management, staffing, permits and operation of the stations.

For 2015 there are several partnerships that will positively impact CRBO, one of them is the agreement with Comunicacion Corporativa, one of the largest Public Relations agencies in Central America and local partner of Ketchum (one of the largest PR agencies in the world) for the region. With them we will be working out our communications and outreach strategies and will serve as a mechanism to recruit many other organizations and individuals from the corporate sector.

List of CRBO 2014 partners



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Table of volunteers at CRBO 2014

Name	Country
Pablo Adrover	Spain
Oلمان Alvarado	Costa Rica
Danissa Astorga	Costa Rica
Richard Dobbins	UK
Chelsey Hunts	USA
Sebastian Orue	Perú
Pauline Pearse	Australia
Jade Porter	USA
Isabel Martin	Costa Rica
Vanessa Muñiz	México
Agustín Vega	Costa Rica
Jorge Villachica	Costa Rica
Kimberly Wetten	USA

Table of species we have banded at our stations in 2014

	Scientific name	English name	Status	INBio	MadreSelva	Tortuguero
1	<i>Accipiter superciliosus</i>	Tiny Hawk	R			x
2	<i>Amazilia tzacatl</i>	Rufous-tailed Hummingbird	R	x		x
3	<i>Arremon brunneinucha</i>	Chestnut-capped Brush-Finch	R		x	
4	<i>Atlapetes albinucha</i>	White-naped Brush-Finch	R		x	
5	<i>Attila spadiceus</i>	Bright-rumped Attila	R			x
6	<i>Basileuterus culicivorus</i>	Golden-crowned Warbler	R		x	
7	<i>Basileuterus melanogenys</i>	Black-cheeked Warbler	R		x	
8	<i>Basileuterus rufifrons</i>	Rufous-capped Warbler	R	x		
9	<i>Campephilus guatemalensis</i>	Pale-billed Woodpecker	R			x
10	<i>Campylopterus hemileucurus</i>	Violet Sabrewing	R		x	
11	<i>Cantorchilus modestus</i>	Plain Wren	R	x		
12	<i>Cantorchilus nigricapillus</i>	Bay Wren	R			x
13	<i>Cantorchilus thoracicus</i>	Stripe-breasted Wren	R			x
14	<i>Cardellina pusilla</i>	Wilson's Warbler	M		x	
15	<i>Catharus frantzii</i>	Ruddy-capped Nightingale-Thrush	R		x	
16	<i>Catharus fuscescens</i>	Veery	M			x
17	<i>Catharus gracilirostris</i>	Black-billed Nightingale-Thrush	R		x	

	<i>Scientific name</i>	<i>English name</i>	<i>Status</i>	<i>INBio</i>	<i>MadreSelva</i>	<i>Tortuguero</i>
18	<i>Catharus minimus</i>	Gray-cheeked Thrush	M	x		x
19	<i>Catharus ustulatus</i>	Swainson's Thrush	M	x	x	x
20	<i>Cercomacra tyrannina</i>	Dusky Antbird	R			x
21	<i>Chloroceryle aenea</i>	American Pygmy Kingfisher	R			x
22	<i>Chlorophanes spiza</i>	Green Honeycreeper	R			x
23	<i>Chlorospingus ophthalmicus</i>	Common Bush-Tanager	R		x	
24	<i>Chlorospingus pileatus</i>	Sooty-capped Bush-Tanager	R		x	
25	<i>Colibri thalassinus</i>	Green Violetear	R		x	
26	<i>Contopus virens</i>	Eastern Wood-Pewee	M			x
27	<i>Cyclarhis gujanensis</i>	Rufous-browed Peppershrike	R		x	
28	<i>Dendrocolaptes sanctithomae</i>	Northern-barred Woodcreeper	R			x
29	<i>Diglossa plumbea</i>	Slaty Flowerpiercer	R		x	
30	<i>Doryfera ludovicae</i>	Green-fronted Lancebill	R		x	
31	<i>Dumetella carolinensis</i>	Gray Catbird	M			x
32	<i>Elaenia frantzii</i>	Mountain Elaenia	R		x	
33	<i>Empidonax atriceps</i>	Black-capped Flycatcher	R		x	
34	<i>Empidonax flavescens</i>	Yellowish Flycatcher	R		x	
35	<i>Empidonax flaviventris</i>	Yellow-bellied Flycatcher	M	x		x
36	<i>Empidonax virescens</i>	Acadian Flycatcher	M			x

	<i>Scientific name</i>	English name	Status	INBio	MadreSelva	Tortuguero
37	<i>Epinecrophilla fulviventris</i>	Checker-throated Antwren	R			x
38	<i>Eugenes fulgens</i>	Magnificent Hummingbird	R		x	
39	<i>Euphonia gouldi</i>	Olive-backed Euphonia	R			x
40	<i>Florisuga mellivora</i>	White-necked Jacobin	R			x
41	<i>Geothlypis formosa</i>	Kentucky Warbler	M			x
42	<i>Geothlypis philadelphia</i>	Mourning Warbler	M			x
43	<i>Geothlypis semiflava</i>	Olive-crowned Yellowthroat	R			x
44	<i>Geotrygon costaricensis</i>	Buff-fronted Quail-Dove	R		x	
45	<i>Geotrygon montana</i>	Ruddy Quail-Dove	R			x
46	<i>Glaucis aeneus</i>	Bronzy Hermit	R			x
47	<i>Glyphorhynchus spirurus</i>	Wedge-billed Woodcreeper	R			x
48	<i>Gymnopithys leucaspis</i>	Bicolored Antbird	R			x
49	<i>Haplospiza rustica</i>	Slaty Finch	R		x	
50	<i>Helmitheros vermivorum</i>	Worm-eating Warbler	M			x
51	<i>Henicorhina leucophrys</i>	Gray-breasted Wood-Wren	R		x	x
52	<i>Henicorhina leucosticta</i>	White-breasted Wood-Wren	R			x
53	<i>Hylocharis eliciae</i>	Blue-throated Goldentail	R			x
54	<i>Hylocichla mustelina</i>	Wood Thrush	M	x		x
55	<i>Hylophilus decurtatus</i>	Lesser Greenlet	R			x
56	<i>Hylophylax naevioides</i>	Spotted Antbird	R			x

	<i>Scientific name</i>	<i>English name</i>	<i>Status</i>	<i>INBio</i>	<i>MadreSelva</i>	<i>Tortuguero</i>
57	<i>Lampornis calolaemus</i>	Purple-throated Mountain-gem	R		x	
58	<i>Lampornis castaneiventris</i>	White-throated Mountain-gem	R		x	
59	<i>Lepidocolaptes affinis</i>	Spot-crowned Woodcreeper	R		x	
60	<i>Lepidocolaptes souleyetii</i>	Streak-headed Woodcreeper	R			x
61	<i>Leptotila cassinii</i>	Gray-chested Dove	R			x
62	<i>Leptotila verreauxi</i>	White-tipped Dove	R	x		
63	<i>Malacoptila panamensis</i>	White-whiskered Puffbird	R			x
64	<i>Manacus candei</i>	White-collared Manakin	R			x
65	<i>Margarornis rubiginosus</i>	Ruddy Treerunner	R		x	
66	<i>Melanerpes hoffmannii</i>	Hoffmann's Woodpecker	R	x		
67	<i>Melospiza biarcuata</i>	Prevost's Ground-Sparrow	R	x		
68	<i>Melospiza leucotis</i>	White-eared Ground-Sparrow	R	x		
69	<i>Micrastur ruficollis</i>	Barred Forest-Falcon	R		x	
70	<i>Mionectes oleagineus</i>	Ochre-bellied Flycatcher	R			x
71	<i>Mionectes olivaceus</i>	Olive-striped Flycatcher	R		x	
72	<i>Mniotilta varia</i>	Black-and-white Warbler	M		x	
73	<i>Momotus momota</i>	Blue-crowned Motmot	R	x		
74	<i>Myadestes melanops</i>	Black-faced Solitaire	R		x	
75	<i>Myiarchus crinitus</i>	Great Crested Flycatcher	M			x

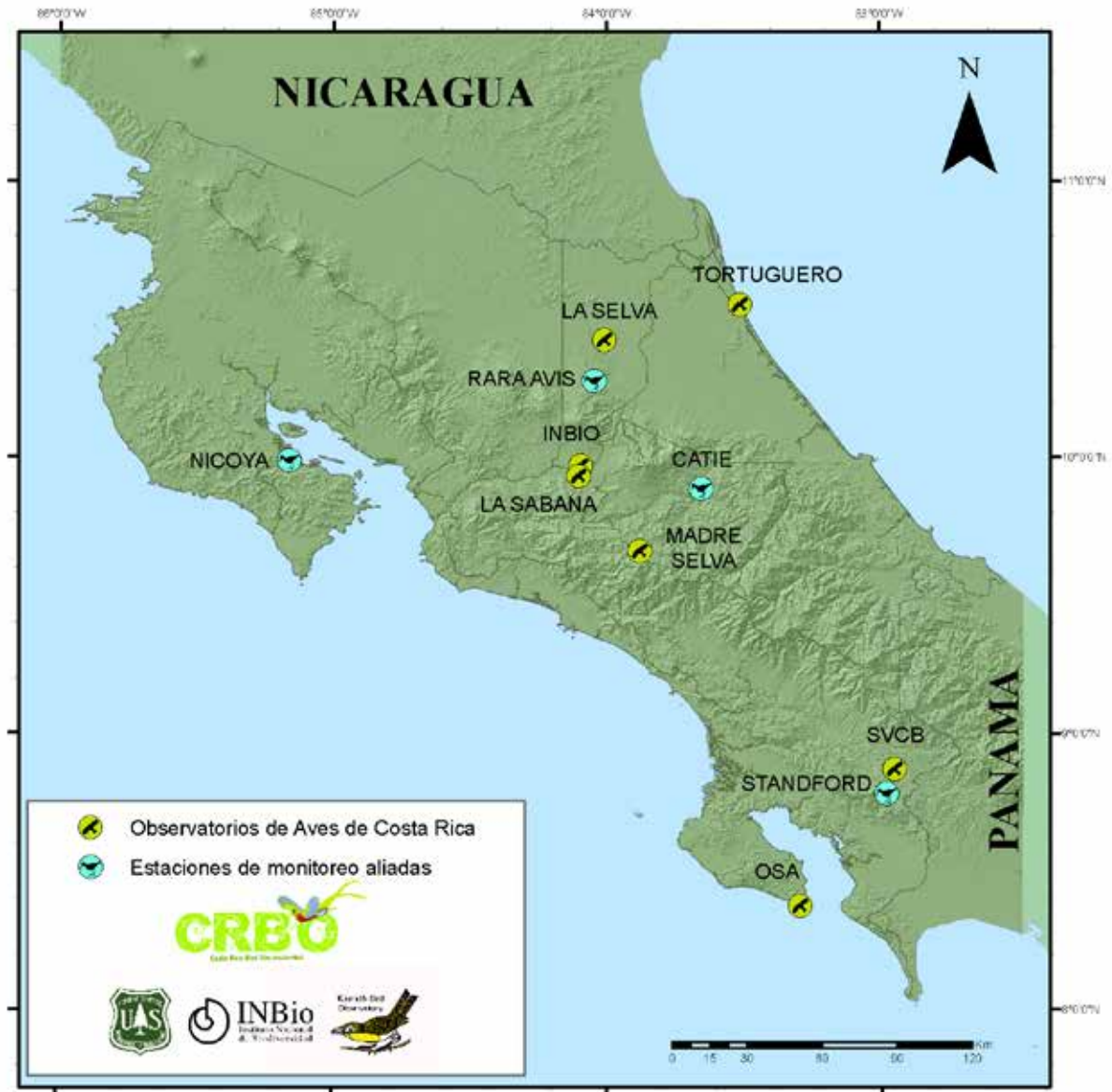
	<i>Scientific name</i>	English name	Status	INBio	MadreSelva	Tortuguero
76	<i>Myioborus miniatus</i>	Slate-throated Redstart	R		x	
77	<i>Myioborus torquatus</i>	Collared Redstart	R		x	
78	<i>Myrmeciza exsul</i>	Chestnut-backed Antbird	R			x
79	<i>Myrmotherula axillaris</i>	White-flanked Antwren	R			x
80	<i>Nyctidromus albicollis</i>	Common Pauraque	R		x	
81	<i>Odontophorus guttatus</i>	Spotted Wood-Quail	R		x	
82	<i>Oreothlypis gutturalis</i>	Flame-throated Warbler	R		x	
83	<i>Oreothlypis peregrina</i>	Tennessee Warbler	M	x		x
84	<i>Oryzoborus funereus</i>	Thick-billed Seed-Finch	R			x
85	<i>Pachyramphus versicolor</i>	Barred Becard	R		x	
86	<i>Panterpe insignis</i>	Fiery-throated Hummingbird	R		x	
87	<i>Parkesia motacilla</i>	Louisiana Waterthrush	M		x	
88	<i>Parkesia noveboracensis</i>	Northern Waterthrush	M		x	x
89	<i>Pezopetes capitalis</i>	Large-footed Finch	R		x	
90	<i>Phaethornis longirostris</i>	Long-billed Hermit	R			x
91	<i>Phaethornis striigularis</i>	Stripe-throated Hermit	R			x
92	<i>Phainoptila melanoxantha</i>	Black-and-yellow Silky-Flycatcher	R		x	
93	<i>Pharomachrus mocinno</i>	Resplendent quetzal	R			x
94	<i>Pheucticus ludovicianus</i>	Rose-breasted Grosbeak	M	x		

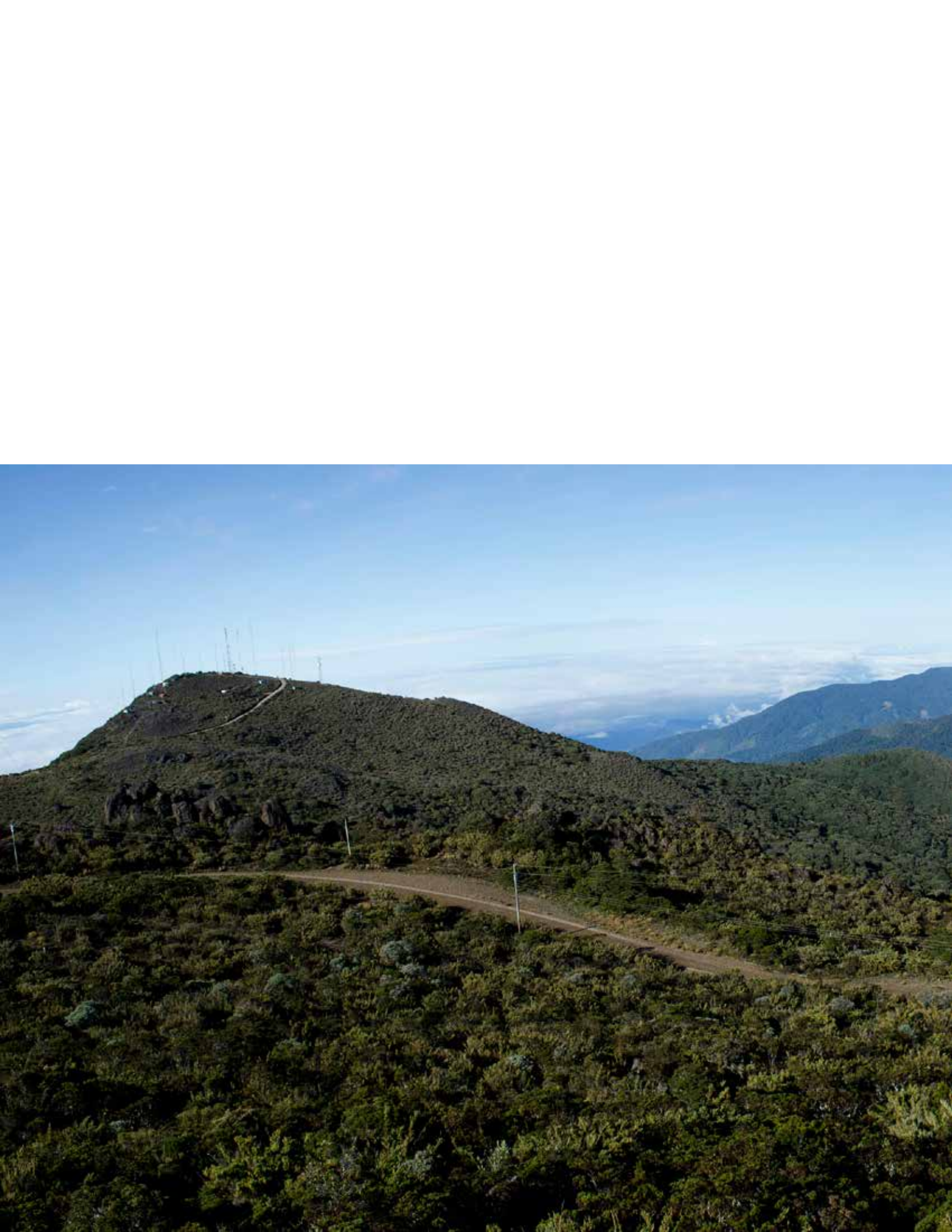
	<i>Scientific name</i>	English name	Status	INBio	MadreSelva	Tortuguero
95	<i>Pheucticus tibialis</i>	Black-thighed Grosbeak	R		x	
96	<i>Picoides villosus</i>	Hairy Woodpecker	R		x	
97	<i>Pipra mentalis</i>	Red-capped Manakin	R			x
98	<i>Piranga bidentata</i>	Flame-colored Tanager	R		x	
99	<i>Piranga olivacea</i>	Scarlet Tanager	M			x
100	<i>Piranga rubra</i>	Summer Tanager	M			x
101	<i>Pitangus sulphuratus</i>	Great Kiskadee	R	x		x
102	<i>Platyrinchus mystaceus</i>	White-throated Spadebill	R		x	
103	<i>Premnoplex brunnescens</i>	Spotted Barbtail	R		x	
104	<i>Protonotaria citrea</i>	Prothonotary Warbler	M			x
105	<i>Psarocolius montezuma</i>	Montezuma Oropendola	R	x		
106	<i>Pselliophorus tibialis</i>	Yellow-thighed Finch	R		x	
107	<i>Pseudocolaptes lawrencii</i>	Buffy Tuftedcheek	R		x	
108	<i>Pteroglossus torquatus</i>	Collared Aracari	R			x
109	<i>Ptilogonys caudatus</i>	Long-tailed Silky-Flycatcher	R		x	
110	<i>Pygochelidon cyanoleuca</i>	Blue-and-white Swallow	R, M		x	
111	<i>Quiscalus mexicanus</i>	Great-tailed Grackle	R			x
112	<i>Rhynchocyclus brevirostris</i>	Eye-ringed Flatbill	R			x
113	<i>Saltator coerulescens</i>	Grayish Saltator	R	x		x
114	<i>Seiurus aurocapilla</i>	Ovenbird	M		x	x

	<i>Scientific name</i>	English name	Status	INBio	MadreSelva	Tortuguero
115	<i>Selasphorus flammula</i>	Volcano Hummingbird	R		x	
116	<i>Selasphorus scintilla</i>	Scintillant Hummingbird	R		x	
117	<i>Setophaga citrina</i>	Hooded Warbler	M			x
118	<i>Setophaga fusca</i>	Blackburnian Warbler	M			x
119	<i>Setophaga magnolia</i>	Magnolia Warbler	M			x
120	<i>Setophaga pensylvanica</i>	Chestnut-sided Warbler	M			x
121	<i>Setophaga petechia</i>	Yellow Warbler	R, M			x
122	<i>Setophaga virens</i>	Black-throated Green Warbler	M		x	
123	<i>Sporophila americana</i> C	Variable Seedeater	R	x		x
124	<i>Tangara dowii</i>	Spangle-cheeked Tanager	R		x	
125	<i>Tangara larvata</i>	Golden-hooded Tanager	R			x
126	<i>Thalurania colombica</i>	Violet-crowned Woodnymph	R			x
127	<i>Thamnophilus atrinucha</i>	Western-slaty Antshrike	R			x
128	<i>Thraupis episcopus</i>	Blue-gray Tanager	R	x		x
129	<i>Thraupis palmarum</i>	Palm Tanager	R			x
130	<i>Threnetes ruckeri</i>	Band-tailed Barbthroat	R			x
131	<i>Thripadectes rufobrunneus</i>	Streak-breasted Treehunter	R		x	
132	<i>Todirostrum cinereum</i>	Common Tody-Flycatcher	R			x
133	<i>Troglodytes aedon</i>	House Wren	R	x	x	x

	<i>Scientific name</i>	English name	Status	INBio	MadreSelva	Tortuguero
134	<i>Troglodytes ochraceus</i>	Ochraceous Wren	R		x	
135	<i>Trogon collaris</i>	Collared Trogon	R		x	
136	<i>Trogon massena</i>	Slaty-tailed Trogon	R			x
137	<i>Turdus grayi</i>	Clay-colored Thrush	R	x	x	x
138	<i>Turdus plebejus</i>	Mountain Thrush	R		x	
139	<i>Tyrannus melancholicus</i>	Tropical Kingbird	R		x	
140	<i>Vireo carmioli</i>	Yellow-winged Vireo	R		x	
141	<i>Vireo leucophrys</i>	Brown-capped Vireo	R		x	
142	<i>Vireo olivaceus</i>	Red-eyed Vireo	M	x		
143	<i>Vireo philadelphicus</i>	Philadelphia Vireo	M	x		
144	<i>Zimmerius vilissimus</i>	Paltry Tyrannulet	R		x	
145	<i>Zonotrichia capensis</i>	Rufous-collared Sparrow	R		x	

Map of stations







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