Ecuador's avifauna: the state of knowledge and availability of sound-recordings (1987–2007)

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Hace dos décadas, cuando empezaron a surgir las publicaciones auditivas de las aves neotropicales, no existían grabaciones comerciales específicas sobre las aves del Ecuador. Desde la primera publicación en 1992 surgió un desarrollo importante de estas grabaciones, al punto que ahora las vocalizaciones de las aves ecuatorianas son quizá las mejor documentadas de toda la región Neotropical. La serie de publicaciones generada por John V. Moore Nature Recordings cubre alrededor de 1.300 especies ecuatorianas y pronto aumentará este número con la publicación de nuevos volúmenes. Aun así, existen varias especies cuyas vocalizaciones todavía no se han documentado, evidenciando la necesidad de continuar grabando las voces y cantos de las aves del país.

More is currently known about the vocalisations of the birds of Ecuador than of any other bird-rich area in the world. There are more audio publications dedicated to Ecuadorian birds, covering a greater number of species and subspecies, as well as a large proportion of the entire avifauna. Recordings of the primary songs as well as subsongs and many calls are now easily available for most of Ecuador's bird species^{2,3,8–17}.

This was not the case almost 20 years ago, when I began birding in Ecuador. Ecuador's bird vocalisations were then not easily accessible and, indeed, many vocalisations were actually not known. A guide to the birds of Colombia⁶ and The tanagers7 had just been published; whilst descriptions of individual species' vocalisations in these books were very helpful, they were often insufficient to identify all bird songs and calls in such a species-rich country. John W. Hardy et al.'s ARA series of cassettes had just started to emerge⁴. He and his co-authors were to follow with more cassette publications covering some of the major bird families of the New World, as well as an audio publication $_{
m the}$ birds to of Galápagos⁵. Unfortunately, they never tackled antbirds (Thamnophilidae), antpittas (Formicariidae) and flycatchers (Tyrannidae), some of the most diverse, difficult to observe and vocally complex Neotropical bird families. Also published by ARA at this time was Ben & Lulu Coffey's Bird songs and calls from southeast Peru¹, updated several times. Finally, the only other easily obtainable audio publication pertaining to Ecuador in the late 1980s was Ted Parker's wonderful cassette Voices of the Peruvian $rainforest^{18}$.

None of these publications specifically covered Ecuadorian birds, but all were invaluable in contributing to knowledge of the vocalisations of the more common and widespread species in the country. The first commercial audio publication devoted entirely to Ecuador's birds was not published until 1992³. Although many vocalisations were not recorded in Ecuador, all covered species occurred in the eastern lowlands of the country. A year later I released my first Ecuador audio publication¹², which consisted entirely of recordings I had made in Ecuador's eastern lowlands. I followed this publication with a series of cassettes^{13–15} attempting to supplement the first two publications, to capture vocalisations of all the birds in this area. A fourth cassette would have been produced, but in 1997 I was enthused by Robert Ridgely and Paul Greenfield to spearhead an audio publication that would include all the birds of Ecuador.

The first person they recommended to aid in this endeavour was Paul Coopmans. Paul's knowledge of bird vocalisations was already unsurpassed, as he had almost 200 hours of bird recordings he had made from Ecuador. Paul was also a meticulous reviewer and, in the ensuing years, saved all his co-authors from a few embarrassing mistakes. Hence, our milestone project began. Initially, we (R. Ridgely, Mitch Lysinger, P. Coopmans and I) decided to publish a series of CD sets from each of the major biogeographic areas in Ecuador, through John V. Moore Nature Recordings. Our division of Ecuador has resulted in five audio publications to date, as follows: northlowlands and lower north-western upper foothills and subtropics¹⁶, eastern lowlands (still in preparation), eastern foothills and lower subtropics 11, Andean highlands, and the south-west². The eastern upper subtropics were already covered by two of us in a previous publication¹⁷. Later, other co-authors joined this project, namely Niels Krabbe, who had always generously shared his recordings and knowledge with us. Then Olaf Jahn and Patricio Mena Valenzuela co-authored the north-western lowlands publication. Other people contributed and several made such significant contributions that they were added as co-authors in one or more publications. These include Lelis Navarette, Jonas Nilsson, Karl Berg and Daniel Lane. In addition to the co-authors listed above, over 25 people have contributed recordings to our publications, and others have contributed advice and knowledge. The Macaulay Library (LNS, Cornell University) and The British Library National Sound Archive (BLNS) also provided recordings and advice.

By the summer of 2007, there was a cornucopia of publications available on the vocalisations of Ecuador's birds. In 2001, the collection of audio publications was complemented by the written descriptions of nearly every species' vocalisations²⁰. Paul Coopmans provided the main collaboration in this effort and his expertise is evident throughout. In 2003, N. Krabbe and J. Nilsson published an astonishing DVD-ROM¹⁰. This publication contains over 6,000 recordings of almost 1,200 species occurring in Ecuador. It also includes over 800 photos. The variety of vocalisations included therein is truly impressive. The authors will be updating this publication soon with many additional vocalisations and co-authors. The main difference between the latter publication and those produced by John V. Moore Nature Recordings (JVM), apart from format, is that the DVD-ROM includes many examples, where available, of the same vocalisation types, whereas the JVM series usually presents only one or few examples for each sound type per species. Further, the JVM publications use mostly filtered and edited recordings whereas the DVD-ROM, for the most part, uses original unedited recordings.

The publications by JVM feature vocalisations from almost 1,300 species found in Ecuador and contain almost 5,000 recordings. The next publication in the series, *The birds of eastern Ecuador II: the lowlands*, is due to be published in 2008. Updated and expanded publications for north-west Ecuador are also forthcoming.

In addition to the above publications dealing solely with Ecuador's birds, there are a number of audio publications now available that are pertinent to Ecuador bird vocalisations. Restall et al. 19 presents a complete discography for the entire region. Compiled by Shaun Peters, it lists over 240 audio publications covering all the world's bird species. There are also several websites that permit downloading of Neotropical bird vocalisations. One such site. Xeno-Canto (www.xenocanto.org/index.php) boasts almost 13.000 recordings of over 2,800 species, 1,200 of which occur in Ecuador. The Macaulay Library offers an incredible collection of Neotropical bird vocalisalistening, at www.animal behaviorarchive.org. Finally, the BLNS allows a search (but no audio) of their available recordings at www.bl.uk/collections/sound-archive/cat.html.

With the proliferation of the internet, the ability to quickly acquire specific bird vocalisations will only become easier.

With all these resources available, is there much remaining to be learned about Ecuadorian bird sounds? The answer is, yes. Although we do now know the most frequently heard sounds of a large number of species, many remain represented by just a few recordings (at least 15% and possibly as high as 30%; JVM, N. Krabbe & O. Jahn unpubl. estimates). In addition, there are several Ecuadorian species for which no published recordings exist, and many more subspecies occurring in Ecuador remain vocally unrecorded. Ecuadorian species which have no published vocalisations include: Fasciated Tiger Heron Tigrisoma fasciatum, Torrent Duck Merganetta armata, Rufous-thighed Kite Harpagus diodon, Red-billed Ground Cuckoo Neomorphus pucherani, Lesser Swallow-tailed Swift Panyptila cavennensis, Rustybreasted Nunlet Nonnula rubecula, Star-chested Treerunner Margarornis stellatus, Spectacled Prickletail Siptornis striaticollis, Little Muscisaxicolafluviatilis, Dark-faced *maclovianus* and White-browed Ground Tyrants *M*. albilora, Chestnut-bellied Cotinga Doliornis remseni, Blue Cotinga Cotinga nattererii, Barenecked Fruitcrow Gymnoderusfoetidus, Straw-backed Tanager Tangara argyrofenges and Scarlet-thighed Dacnis Dacnis venusta. Vocalisations of approximately half the above species are offered by the Macaulay Library but were not recorded in Ecuador. In addition, over 10% of Ecuador's 230 hummingbird species (Trochilidae) lack audio recordings. Therefore, even though Ecuador has seemingly the most complete published audio collections available commercially of any bird-rich country, there remains much to be done by future recordists.

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