HANDBOOK OF THE BIRDS OF THE WORLD Alive

ORNITHOLOGICAL NOTES

Notes on the vocalizations of Lesser Woodcreeper *(Xiphorhynchus fuscus*)

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In the following we briefly analyze and compare voice of the different races of Lesser Woodcreeper (*Xiphorhynchus fuscus*). We also try to quantify the extent of any vocal differences using the criteria proposed by Tobias *et al.* (2010), as a support for taxonomic review. We have made use of sound recordings available on-line from Xeno Canto (XC).

Voice in general is quite variable, the more extensive vocalizations can be considered 'full loudsong', but there are also shorter versions which are either a 'short song' or a 'long call', but it is not clear whether these vocalizations have a different function.
From a screening of the available recordings, it would seem that there are 3 vocal groups (no recordings for sure of *brevirostris,* as exact boundaries of this taxon not well-defined):

atlanticus
Typical song is a fast series of notes, usually starting with only a few slower notes (sometimes none), then shifting immediately to a fast series of notes (which may initially go down in pitch and/or go up in pitch again), and slowing down slightly towards the end (Fig. 1). Pace quite variable, sometimes very fast, sometimes less so.
Measurements:

max. freq.	3570-5050Hz
max. pace	0.05-0.086s
min. note length	0.04-0.05s
max. note length	0.06-0.08s
total length	2.28-3.55
# of notes	21-47
length first 5 notes	0.20-0.80s
length last 5 notes	0.51-0.90s

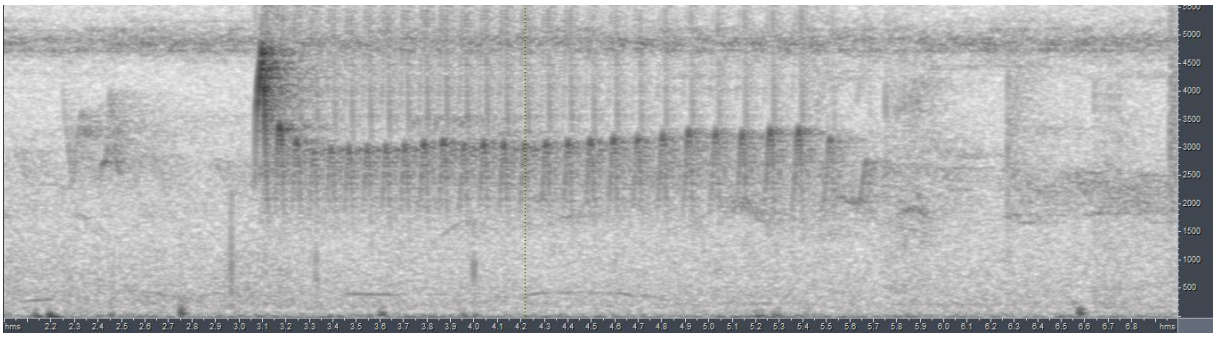

Figure 1: typical song of *atlanticus*

tenuirostris

Song apparently a descending series of rather slowly delivered notes, without clear acceleration/deceleration (Fig. 2). Very different from other taxa. Note shape is rather irregular.

Measurements:

max. freq.	3500-4420Hz
max. pace	0.11-0.21s
min. note length	0.07-0.10s
max. note length	0.14-0.24s
total length	2.33-3.60s
# of notes	11-18
length first 5 notes	0.47-1.12s
length last 5 notes	0.90-1.18s

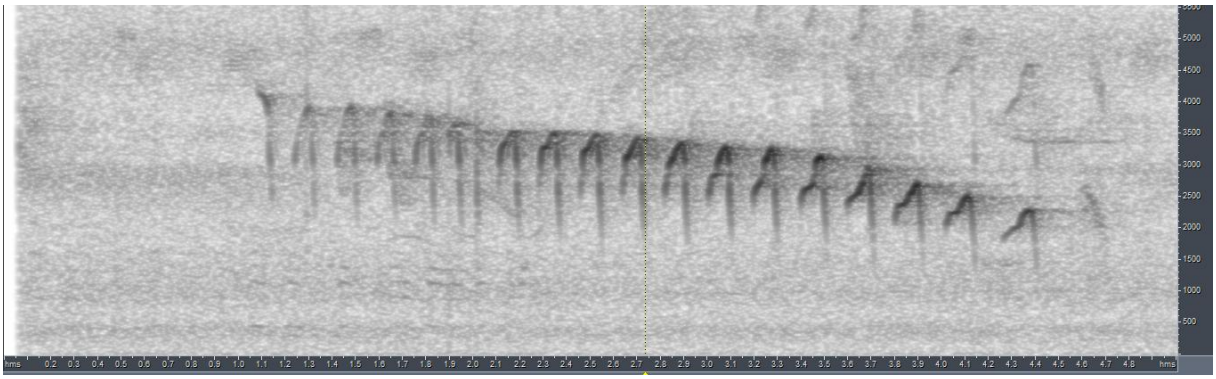

Figure 2: typical presumed song of *tenuirostris*

fuscus

Typical song quite diagnostic: a series of slowly delivered notes at stable pitch, gradually accelerating into a fast series which goes down and up again in pitch, slowing down towards the end. Some shorter vocalizations of *fuscus* (short song or long call??) are however less typical, and could be confused with *atlanticus* (Fig. 3). Such vocalizations seem to be the most common in the northern part of the *fuscus* range, and less so in the southern part (the transition occurring somewhere between Rio De Janeiro and Sao Paulo.

Measurements:

max. freq.	3800-4920Hz
max. pace	0.06-0.14s
min. note length	0.04-0.08s
max. note length	0.07-0.09s
total length	2.44-6.61s
# of notes	16-31
length first 5 notes	1.08-1.75s
length last 5 notes	0.48-1.56s

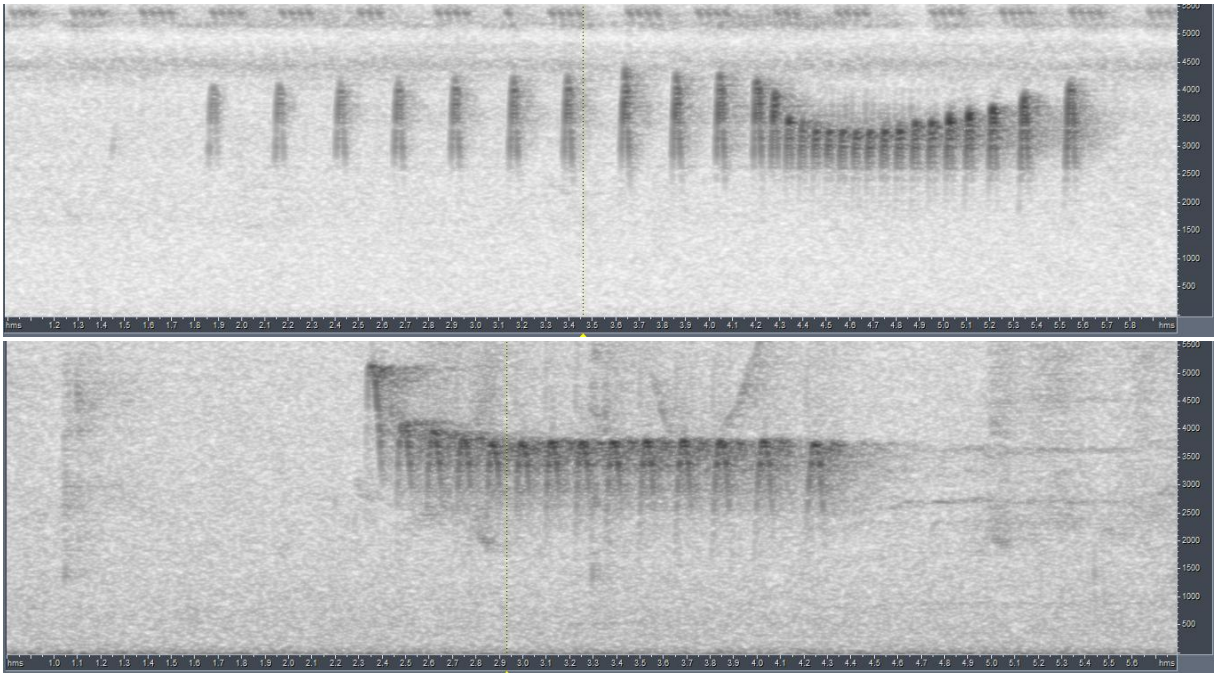

Figure 3: typical song of *fuscus* (top) and shorter version (bottom)

It is clear from the above that vocally *tenuirostris* is the most distinct taxon. It differs from the other taxa by much longer notes (score 2-3) which are fewer in number (score 1-2), having a stable pace (score 2), and a consistently descending series of notes (score 1) with irregular note shape (score 1). This would lead to a total vocal score of about 5 when applying Tobias criteria.

atlanticus and *fuscus* are much less differentiated. *atlanticus* has however typically a faster pace (score 1), lacks the long series of well-spaced introductory notes as in typical *fuscus* (expressed as length of first 5 notes, even in 'short songs' of *fuscus* a notable difference, but then it is in fact again measurement of pace and should thus not be cumulated with faster pace, score 2). This leads to a total score of about 2.

It would thus seem that vocal divergence of geographically intermediate *tenuirostris* is most outspoken. This is quite an unusual outcome, and a possibility is that this population is an effective barrier for gene flow between *fuscus* and *atlanticus*.

This note was finalized on 28th August 2015, using sound recordings available on-line at that moment. We would like to thank in particular the many sound recordists who placed their recordings for this species on XC.

References

Tobias, J.A., Seddon, N., Spottiswoode, C.N., Pilgrim, J.D., Fishpool, L.D.C. & Collar, N.J. (2010). Quantitative criteria for species delimitation. *Ibis* 152(4): 724–746.

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