

ARTICLE

Addendum to the *Bird Song Key to the Birds of Pipeline Road Area, Soberanía National Park, Panama: Two Additional Wrens*

Kent Livezey*

East Coast Tower, Costa del Este, Panama City, Panama

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ABSTRACT

In 2016, I published a bird song key to the Pipeline Road area in and adjacent to Soberanía National Park, Panama^[1]. This key is, to my knowledge, the largest bird song key in the world. Since the key was published, Rufous-breasted Wren (*Pheugopedius rutilus*; Figure 1) and Rufous-and-white Wren (*Thryophilus rufalbus*; Figure 2) have moved into the area. This addendum adds three songs of Rufous-breasted Wren and three songs Rufous-and-white Wren to the key, thereby increasing the key's song total to 327 and its species total to 218.

1. Introduction

Identifying species of birds by their songs is an important part of censusing, watching, and enjoying birds. However, differentiating among scores or hundreds of bird songs in an area can be difficult. Placing songs into a descriptive key can help in this endeavor by requiring the user to analyze each song and to identify similarities and differences among songs.

In 2016, I published a bird song key to the Pipeline Road area in and adjacent to Soberanía National Park, Panama^[1], which included 321 songs of 216 species. This key is, to my knowledge, the largest bird song key in the world. Since the key was published, Rufous-breasted Wren (*Pheugopedius rutilus*; Figure 1) and Rufous-and-white Wren (*Thryophilus rufalbus*; Figure 2) have moved into the area (Domiciano Alveo pers. comm., Nando

Quiroz pers. comm., pers. obs.). This addendum adds three songs of Rufous-breasted Wren and three songs Rufous-and-white Wren to the key, thereby increasing the key's song total to 327 and its species total to 218.



Figure 1. Rufous-breasted Wren (photo by Josanel Sugasti)

*Corresponding Author:

Kent Livezey

East Coast Tower, Panama City, Panama

kentbl@gmail.com



Figure 2. Rufous-and-white Wren (photo by Josanel Sugasti)

2. Methods

Methods employed to produce the key and terms used (e.g., invariable, repertoire, trill, upslur, downslur, quaver) are presented and defined in the key ^[1]. As of this writing, Rufous-breasted Wrens and Rufous-and-white Wrens are found in the fragmented forests adjacent to the entrance to Pipeline Road (Part II of the key). However, one or both species could be detected by the wetlands (Part III) and may soon move into the intact forests along Pipeline Road (Part I). Consequently, in this appendix I place these songs into Part II and include descriptions that differentiate these songs from similar songs in Parts I and III. Definitions of terms in the key and final species choices there and below are linked to recordings of songs freely available in www.xeno-canto.org.

3. Results

The following shows where to insert these additional songs into the key. One song of Rufous-and-white Wren appears in two places (both with and without trills). Page numbers [“key p.”] indicate where in the key these additions now belong.

PART II. KEY TO SONGS OF DIURNAL BIRDS IN THE FRAGMENTED FORESTS, FOREST EDGES, AND GRASSY AREAS ADJACENT TO THE ENTRANCE TO PIPELINE ROAD

SONG IS A TRILL OR CHURR

TEMPO ACCELERATES AND DECELERATES [new first choice; key p. 96]

Rufous-breasted Wren. A churr that accelerates and decelerates. Invariable.

www.xeno-canto.org/271508 by Peter Boesman

TEMPO IS ERRATIC [new third choice; key p. 96]

Rufous-and-white Wren. Seemingly random groupings of about 1–8 burry elements with erratic

1–2-sec gaps between them. Invariable. www.xeno-canto.org/454106 by Jerome Fischer, www.xeno-canto.org/80946 by Scott Olmstead

TEMPO IS STEADY

Pitch rises and falls [new first choice; key p. 96]

Rufous-breasted Wren. A churr that falls quickly (sometimes rises and falls quickly), then rises. Invariable. www.xeno-canto.org/454418 by Jerome Fischer

SONG INCLUDES TRILLS OR CHURRS

SONG IS COMPOSED OF A SERIES OF SIMPLE ELEMENTS MIXED WITH ELEMENTS THAT UPSLUR AND/OR DOWNSLUR [new second choice; key p. 97]

Rufous-and-white Wren. “Song is a series of deep mellow hooting whistles, with first few notes on the same pitch before changing to a different pitch, then [typically] ending with a [quick, upslurring] note at a higher pitch: *who, who, wu-hu-hu-hu-hu-hu-whit!* (sometimes interspersed with trills, sharp notes, and churrs)” ^[2:292]. Some elements can upslur and/or downslur. Usually include several or many repeating notes (in addition to a trill), unlike the similarly low songs of Black-bellied Wren. Lower, richer, and more flute-like than songs of House Wren, Bay-breasted Wren, Isthmian Wren (formerly Plain Wren), Rufous-breasted Wren, Bay Wren, White-breasted Wood-Wren, and Yellow-tailed Oriole. Repertoire. www.xeno-canto.org/83098 by Brian Cox, www.xeno-canto.org/494983 by William Adsett

SONG IS NOT A TRILL OR CHURR AND DOES NOT INCLUDE TRILLS OR CHURRS

ELEMENTS UPSLUR AND DOWNSLUR

Tempo accelerates and decelerates [new first choice; key p. 97]

Rufous-and-white Wren. “Song is a series of deep mellow hooting whistles, with first few notes on the same pitch before changing to a different pitch, then [typically] ending with a [quick, upslurring] note at a higher pitch: *who, who, wu-hu-hu-hu-hu-hu-whit!*” ^[2:292]. Usually include several or many repeating notes, unlike the similarly low songs of Black-bellied Wren. Lower, richer, and more flute-like than songs of House Wren, Bay-breasted Wren, Isthmian Wren (formerly Plain Wren), Rufous-breasted Wren, Bay Wren, White-breasted Wood-Wren, and Yellow-tailed Oriole. Repertoire. www.xeno-canto.org/2810 by David Bradley, www.xeno-canto.org/2811 by David Bradley, www.xeno-canto.org/15712 by Don Jones,

www.xeno-canto.org/571666 by Kent Livezey

Tempo is steady

Pitch is medium or high

Song is composed of a series of identical or nearly identical elements

Song hoots [new first choice; key p. 98]

Rufous-and-white Wren. Two (sometimes 1 or 3) clear hoots. Invariable. www.xeno-canto.org/2812 by David Bradley

Song is composed of a complex series of elements or phrases

Song does not include quavers

Phrases are sung with at least a 1-sec pause between them [this changes choice “Phrases are sung with a 1–3-sec pause between them”]; key p. 98]

Rufous-breasted Wren. A series of about 5–7 upslurred and downslurred elements, falling at the end: “*wheet, er, wheder, wheder whee-oo*”^[2:292]. Songs always fall downward at the end, unlike songs of Streaked Flycatcher, Crimson-backed Tanager, and Golden-fronted Greenlet. Can string songs together without pauses between them. Invariable. www.xeno-canto.org/29243 by Karl Kaufmann, www.xeno-canto.org/410783 by Kent Livezey

4. Discussion

This bird song key not only presents how to identify sev-

eral hundred songs in central Panama, it also provides a model for the construction of keys of bird songs in other areas. In addition, this work describes and utilizes many characteristics of bird songs that, if employed, can improve users’ abilities to listen to, appreciate, differentiate, identify, and remember bird songs.

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Conflict of Interest

There was no conflict of interest.

Availability of Data and Material

All recordings are freely available via www.xeno-canto.org.

References

- [1] Livezey, K. An approach to identifying bird songs: a key to more than 300 songs in the Pipeline Road area, Soberanía National Park, Panama. *The Open Ornithology Journal*, 2016, 9: 70–112.
- [2] Angehr, G., Dean R. *The birds of Panama: a field guide*. Ithaca, NY: Cornell University Press, 2010.