Comparison of Calls of the Rufous-Throated Solitaire in Different Locations on Dominica

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Abstract:

The Rufous-throated Solitaire is a small passerine located in the high elevation forest on the island of Dominica. This bird is most known for its distinctive call. After recording the calls of the Rufous-throated Solitaire the frequencies and call types were compared to see if there was any variation in frequency in different habitats. Four different calls were recorded and only one type of call was recorded in more than one location. The calls had varying frequencies in different locations.

Introduction:

Dominica is a small island known as the "Nature Isle", in the eastern Caribbean, within a group of islands known as the Lesser Antilles. There is a high diversity of plants and animals found on the island, such as the Rufous-Throated Solitaire or *Myadestes genibarbis.* The Rufous-throated Solitaire is located in higher elevation rainforest, montane thicket, and elfin thicket forests in the national parks such as Morne Trois Pitons National Park, and Morne Diablotin National Park. The Rufous-Throated Solitaire is a small bird that is mostly slate grey in color with dark grey wings and tail with white outer tail feathers (As shown in the picture on the cover page.) The under belly of the bird is grey as well except for the rufous orange throat, which is where the name comes from (Evans, 1990.). The Rufous-throated Solitaire also has a local name of the Mountain Whistler, because of the songs it sings, and is usually heard more often than seen, while hiking along the many trails in Dominica (James, Durand, and Baptiste, 2005.)

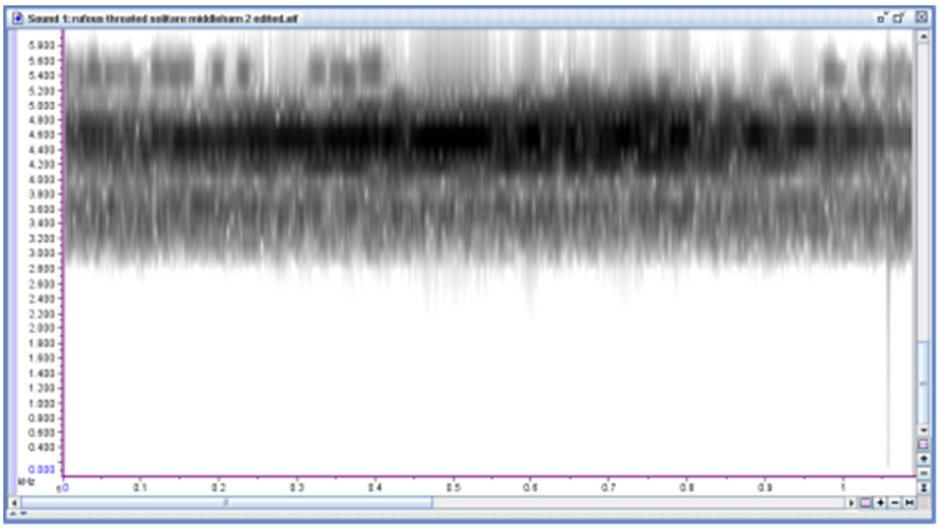
The group traveled to four different high elevation areas which allowed me five chances to record the songs of the Rufous-throated Solitaire. After editing the sounds, I compared the frequency of the different calls as well as just the different calls recorded to see if there was any variation in frequency among different locations.

Materials and Methods:

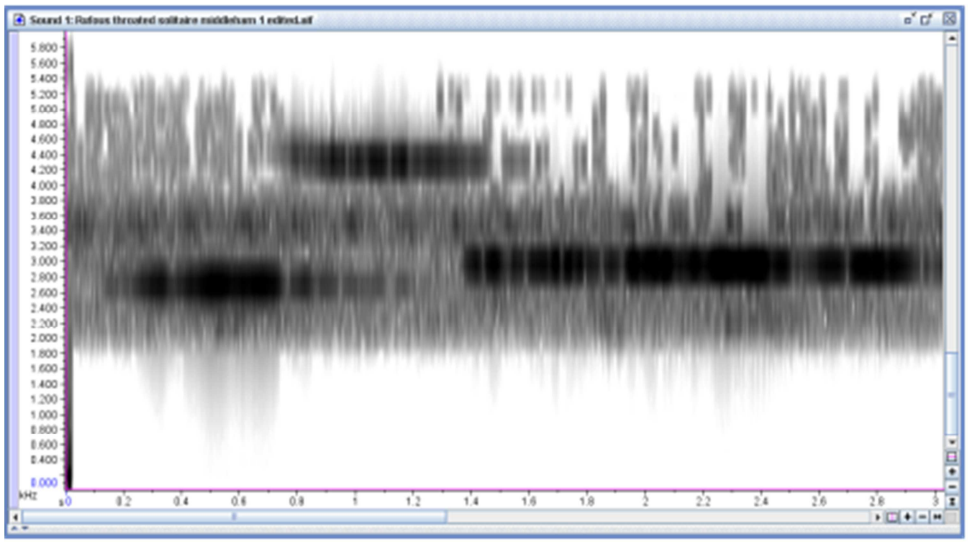
Recordings of the Rufous-throated Solitaire were made using the Marantz Professional Recorder and Azden SGM Professional Shotgun Microphone, in the Middleham Falls, Syndicate Trails, Boeri Lake, and Boiling Lake habitats. Two different recordings were taken at all four locations. The recordings were then transferred onto the computer and using Raven Pro 1.3 each of the recordings were then edited and analyzed to compare the frequencies of call from each location.

Results:

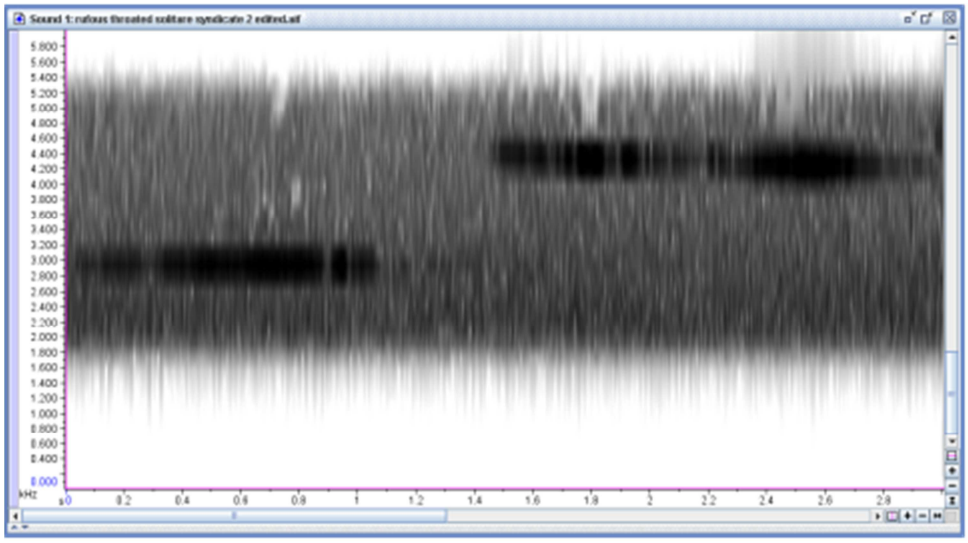
There were eight different recordings and four different types of calls observed at the different four locations.



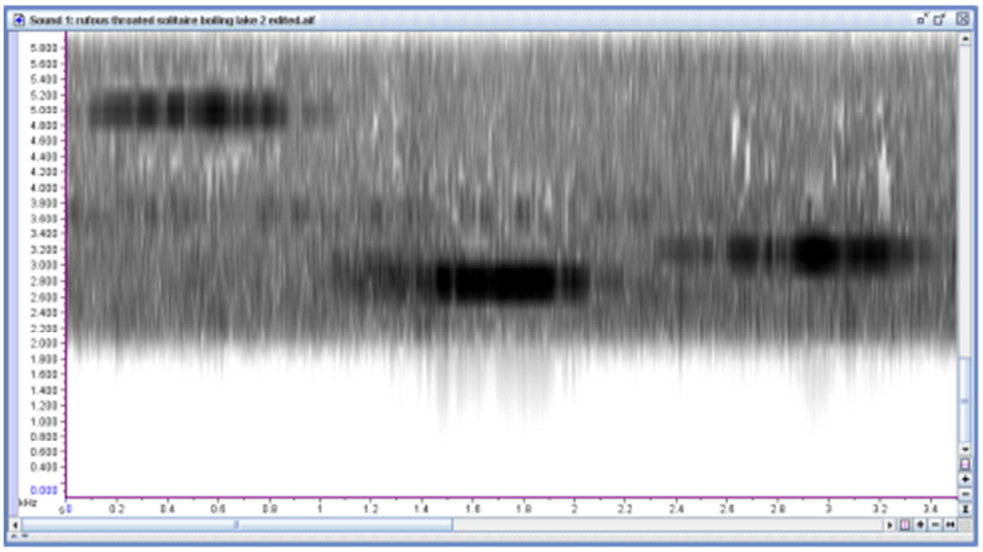
Type A



Type B



Type C



Type D

Figure 1. Four types of Rufous-Throated Solitaire calls recorded at various locations.

Type A call is a single note call that spans over a time of about one second with a frequency ranging from 3.0-4.6 kHz (Figure 1). This type of call was observed three out of the four locations at Middleham Falls trail, Freshwater and Boeri Lake trail, and along the trail to Boiling Lake (Table 1).

Type B call is a three note call (Figure 1). The first note has the lowest frequency and is held for about one second with a frequency range of about 2.4-3.0 kHz. The second note has the highest frequency of the call and is held for about half a second with a frequency range of abouu 3.9-4.6 kHz. The third note is at a slightly higher frequency than the first note with a frequency range of 2.8-3.2 kHz and is held for about one and a half seconds. The entire call is about three seconds long. This call was only observed at Middleham Falls trail (Table 1).

Type C call is a two note call (Figure 1). The first note in the call is the lowest frequency with a range of 2.6-3.2 kHz and lasts for almost one second. The second note is the highest frequency

of this call with a frequency of 4.2-4.6 kHz and covers a span of about one and a half seconds. This call was recorded twice at Syndicate because the same bird was making both calls (Table 1).

Type D call is also a three note call (Figure 1). The highest frequency of the call is first note ranging from 4.6-5.2 kHz and it covers the span of about one second. The second note in the calls is about one second long as well and is the lowest frequency of the call ranging from 2.4-3.0 kHz. The third note has a slightly higher frequency than the second note and is about one second long as well with a frequency range of 2.9-3.5 kHz. This call was only observed on the trail to Boiling Lake (Table 1).

	Call Type A	Call Type B	Call Type C	Call Type D
Middleham Falls 5/28	X	X		
Syndicate 5/29			X	
FreshWater/Boeri Lake Trail 6/5	X			
Trail to Boiling Lake 6/7	X			X

Table 1. Table showing different calls recorded at various locations

Type A call occurred multiple times in the various location with some variation in the frequencies at different locations (Figure 2). Boeri Lake Call 1 and Boiling lake both had type A

calls with a frequency of 3.0 kHz. The type A call from Middleham falls had frequency of 4.6 kHz, and the second call from Boeri lake had a frequency of 4.0 kHz (Figure 2.)

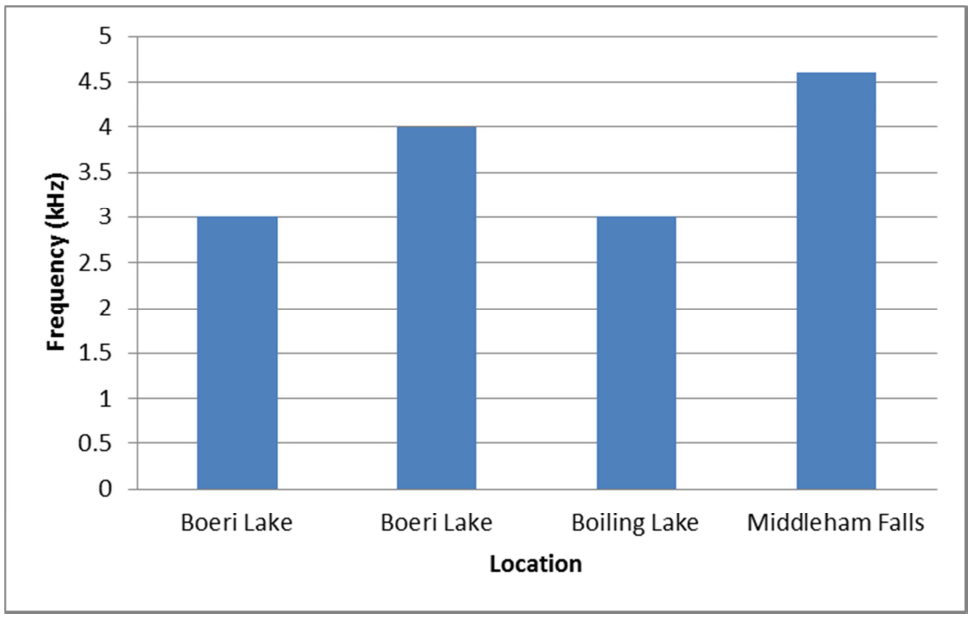


Figure 2. Frequency of Call Type A for Rufous-throated Solitaire in Different Locations

Discussion:

There was some variation in the frequency of the type A call. Since there was some variation in the two calls taken at Boeri lake habitat the difference in frequenies is apparently not due to the different locations. The variation in frequencies might be a result of the Rufous-throated solitaire using the single note call to for multiple purposes under various circumstances.

The first noticeable variation in the multi-note calls is that two of the calls are three note calls and one is a two note call. However the highest note and lowest note of call type B and call type C are in the same frequency range. Both frequencies can be heard in all three multi-note calls that were recorded. Call type D has the highest frequency range of all the calls. The single note call can be seen as a component of every multi-note call.

The variation in call types could have multiple reasons. One reason is mating season for the Rufous-throated Solitaire occurs between April to August (James, Durand, and Baptiste,

2005.) The different call types could be the males using the different notes to attract a mate, and since the birds were not seen for the majority of calls there was no way to determine if male or female was making the call. Another reason for the different calls could be a result of territorial claim. The Rufous-throated Solitaire could be warning other birds as well as other Rufous-throated Solitaire's to stay away from the area.

There are many aspects of the Rufous-throated Solitaire that still need to be studied. There is relatively little information known about this mysterious bird. There could be a more extensive study done on the vocalization and behavior of the Rufous-throated Solitaire.

Acknowledgements

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