Spatial behaviour of the Aquatic Warbler *Acrocephalus paludicola*: relations between males

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Introduction

The Aquatic warbler is still a relatively unknown species,
a lot of questions about its biology and behavior remain unexplored.
The bird has a very specific kind of singing, consisting of complex combinations of rattles and whistles. Our studies has to make its singing more understandable and to facilitate our studies on its behaviour.

Purpose of research

The purpose of our research will be to find key to identify male aquatic warbler.
It would make it possible to deepen many studies and get answers for questions such as habits of males or relations between competitors or their spatial distribution on the breeding grounds as locations change.
What is more, we will try to check, that the same male come to the same place every year.

Methods

- Recordings of singing males
- Location Bagno Bubnów – Polesie National Park
- 1 male – 5 minutes

We analysed recordings in Audacity program to create „library” of Aquatic warbler sounds. „Library” is actualised with every new sound we find, during analysing data.

Every type of rattle or whistle has its own spectrogram and audio file.

Every phrase of song is described with
number (number of syllables in phrase)
and letter according to types of whistle or rattle.

A couple of years ago, Dr Glapan wrote his doctoral thesis on the geographical variation of Aquatic Warbler singing. The aim of this work was to show if Aquatic Warbler populations from different regions (Pomeranian Biebrza, Belarus, Hungary) differ from each other and create dialects.

The results of the study showed that the bigger the differences in dialects are in larger populations like the Biebrza for example

Encouraged by these results, we decided to go one step further and investigate the variation in individual singing.

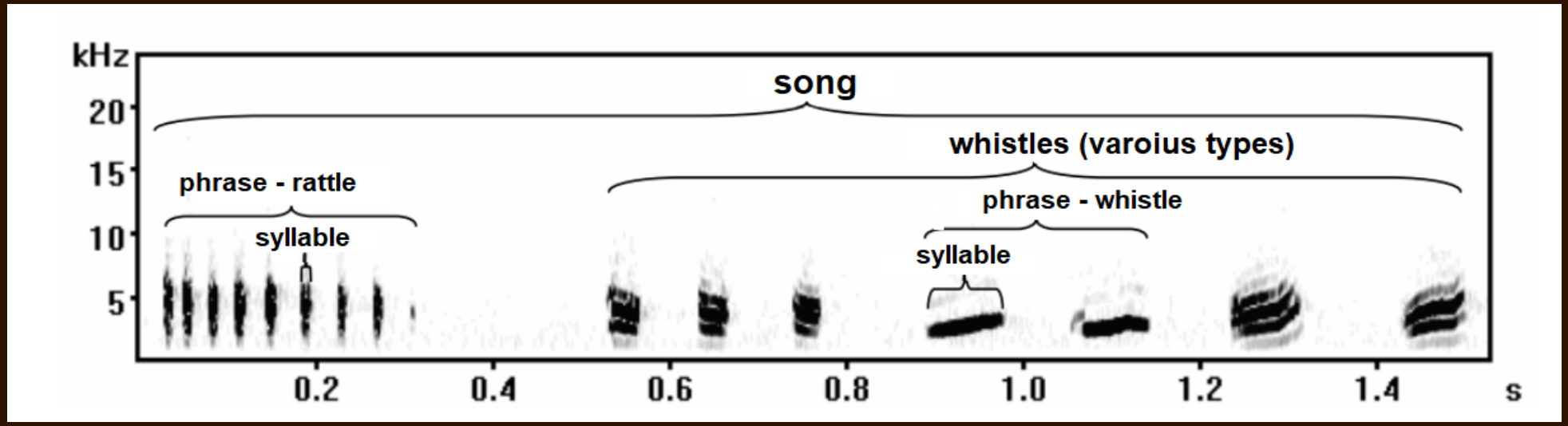
The differences is that we make research only in one population (bagno Bubnów, Poleski National Park).

We use symilar methods like recording and later anylizing the audio, but in a little different way.

Paying particular attention to the unique syllable types occurring in individual males

Acoustic terms – according to dr Glapan

Song
Phrase (whistles, rattles)
Syllables
Elements (notes)



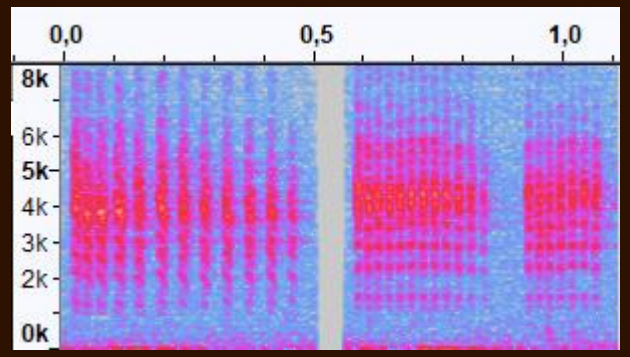
Results

This is just the beginning of our research, which will continue this year. We would like to show you some examples of diversity of sounds in Aquatic warbler songs.

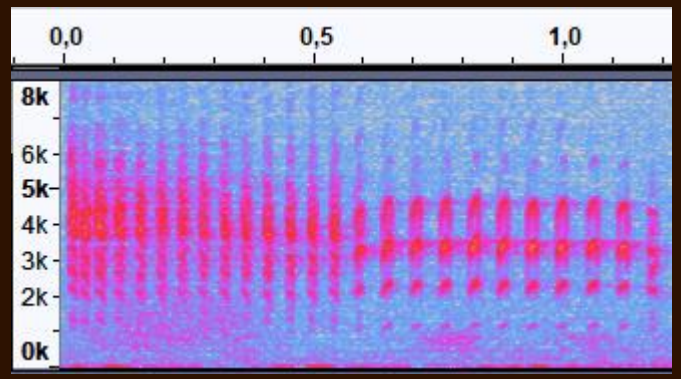
Rattle

2 types of phrase:

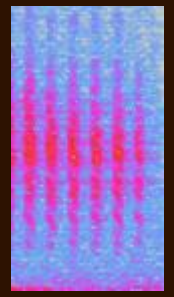
homogenous



heterogenous



3 types of syllables



i

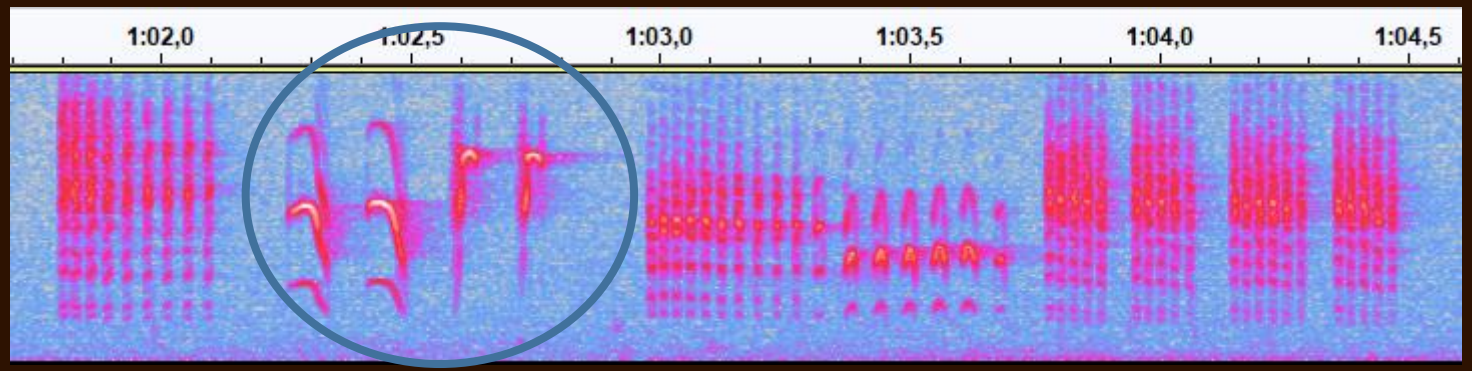
e

y

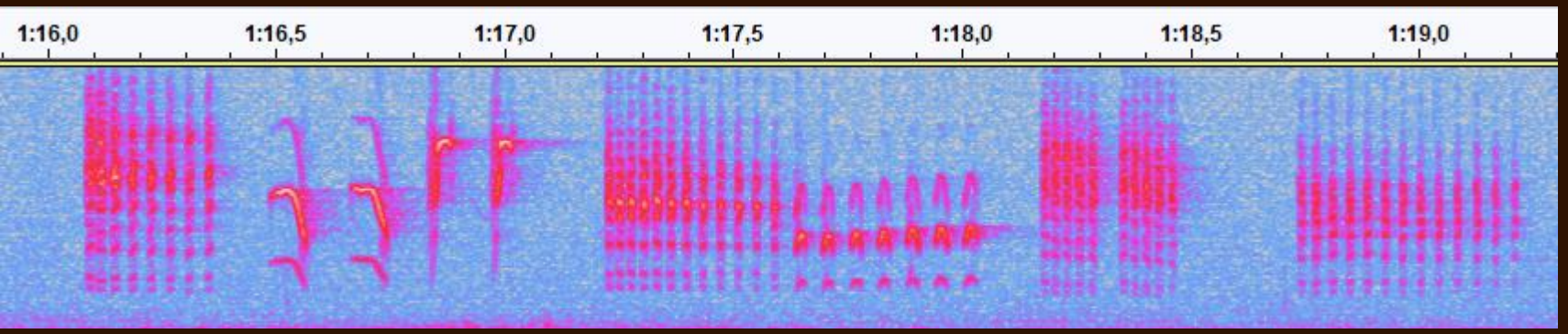
Whistle - Types of syllables

During the analysis of just 6 recordings, 13 types of whistles were extracted. They differ in the frequency, shape of syllables and the number of notes in one syllable. We would like to show you the most interesting of them.

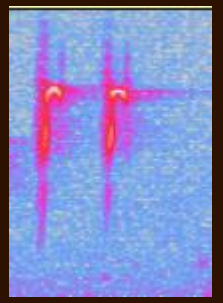
Male 1



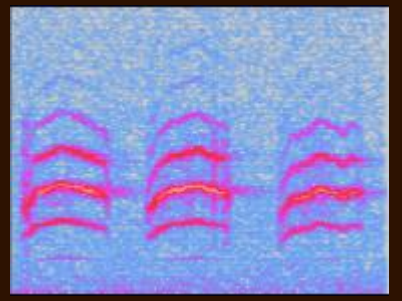
1st song: 9i_2k2f_11i6e_5i 5i 6i 5i
2nd song: 8i_2k2f_12i7e_5i 5i_13i



2k

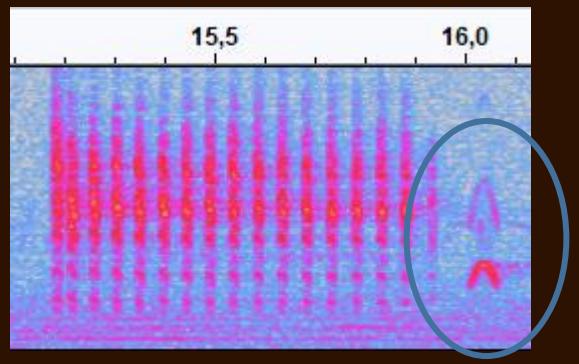


2f



3m

Male 10

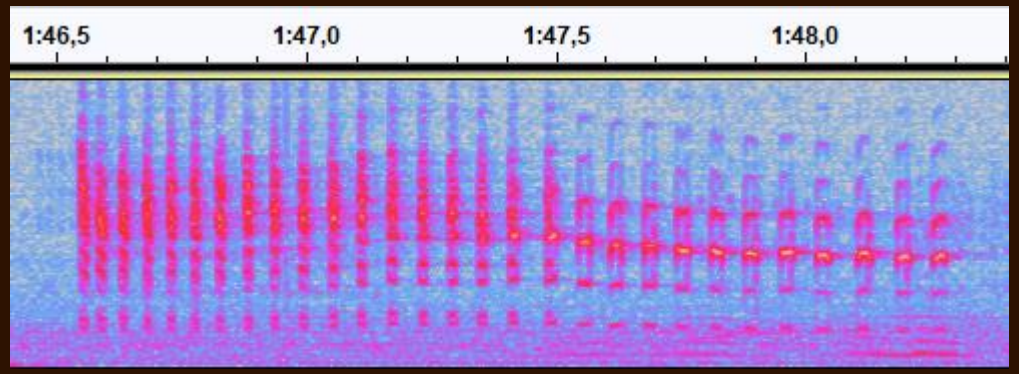


1n

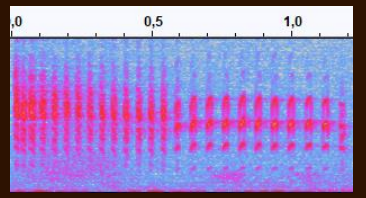
8 songs with 1n at the end
(recording time: 2 min 52 s)

M10 – high variety of repetetive phrases

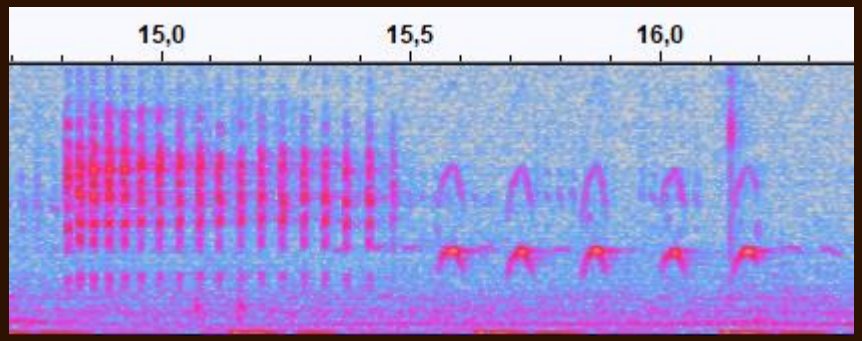
Male 17



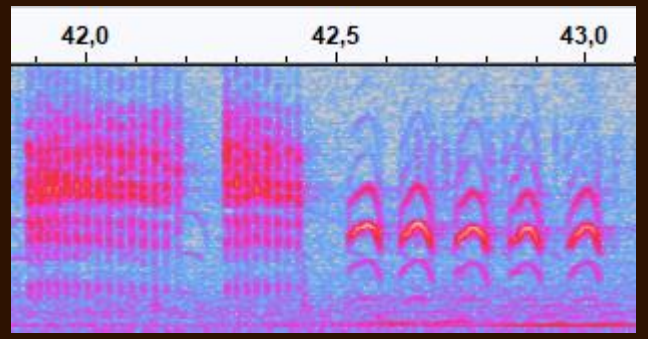
standard rattle:



This male uses many interesting repetitive phrases in his songs,
but we focused on his rattle – it sounds more „wavy” than a „standard” one.

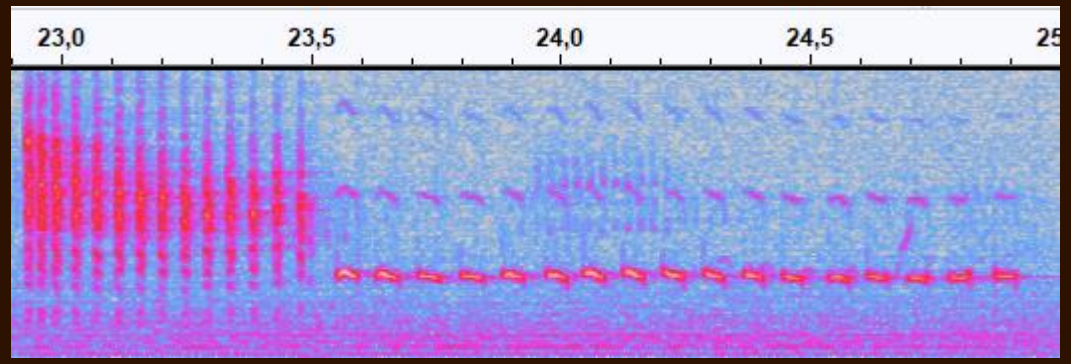


5n



5v

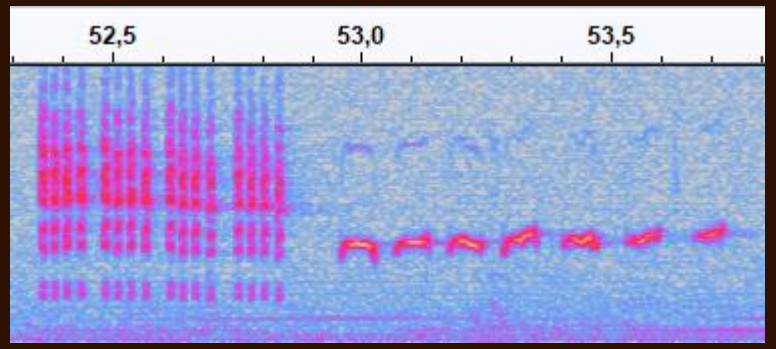
Male 17 often uses syllable „n” and „v” at the end of his song.



17s

Male 18

Male 25



4i 4i 4i 4i

7z

Summary

Every male has his own repertoire of songs, favourite syllables and phrases. Particular combinations of singing elements can be the calling card of an individual. Distinguishing the characteristic features of a male's singing may allow identification in the future. This would allow us to learn more about the behaviour of this species than has previously been possible.

This is only the beginning of this research. We still think how to improved our methods and looking for ways to best achieve our goals. We are focusing on the issue of identifying males based on their singing, because it has great potential.

Thank you for your attention