



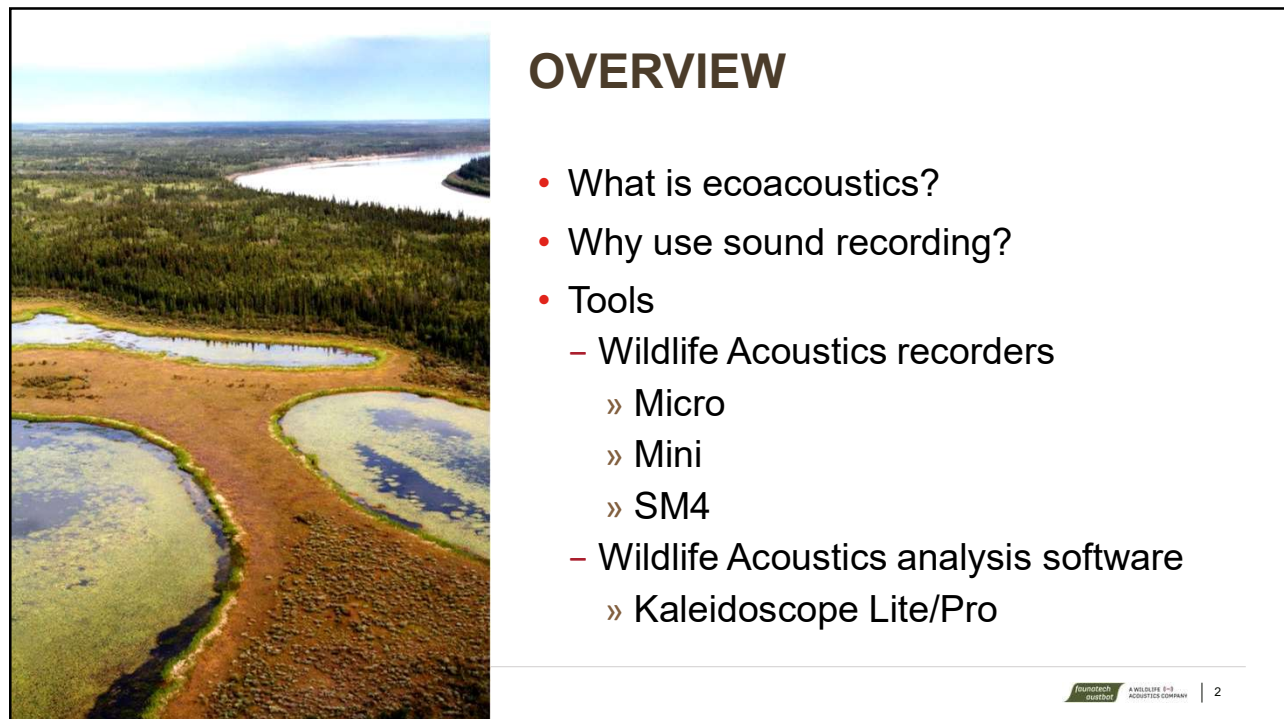
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**INTRODUCTION TO
ECOACOUSTICS AND
WILDLIFE ACOUSTICS TOOLS:
SONG METER MICRO, MINI & SM4
KALEIDOSCOPE**
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17/03/2023

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OVERVIEW

- What is ecoacoustics?
- Why use sound recording?
- Tools
 - Wildlife Acoustics recorders
 - » Micro
 - » Mini
 - » SM4
 - Wildlife Acoustics analysis software
 - » Kaleidoscope Lite/Pro

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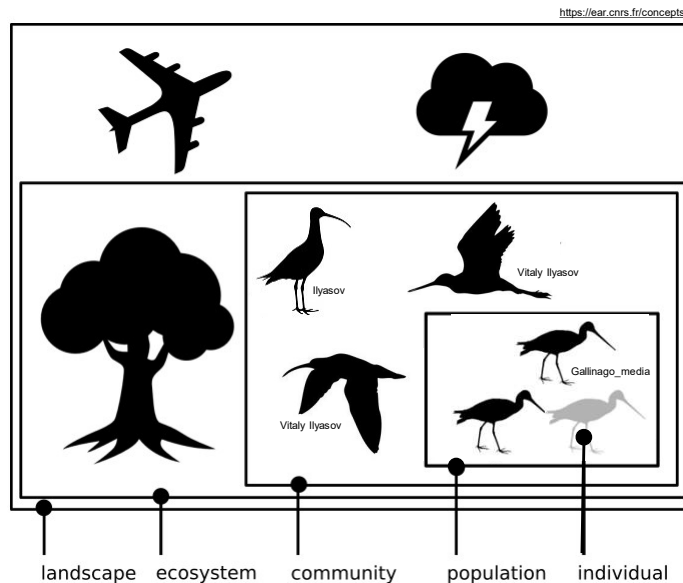
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DEFINITION

Ecoacoustics

The consideration of environmental sounds for ecological investigations¹

- Larger scales



1 - Sueur, Jérôme & Farina, Almo (2015). Ecoacoustics: the Ecological Investigation and Interpretation of Environmental Sound. *Bioacoustics* 8 (3):493-502.

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WHY SHOULD I USE ECOACOUSTICS?

- High sampling effort with low technical investment
 - Can be used in most environments
 - Unattended data capture
 - Continuous or regular sampling over long time periods
 - Collect large datasets with little human effort
 - Greater spatial range than many other techniques
 - Not as prone to occlusion as imagery
 - Low impact to wildlife and environment at the study site
 - Low cost
 - Data can be reanalysed (results reproduceable)
 - Snapshot in time for future use

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WHEN WILL THIS WORK?

- Subject of interest reliably emits an identifiable sound
 - Audible
 - Ultrasonic
 - Mixture of both
- Access to the recording location
 - *In situ*
 - Controlled environment
- Privacy is not an issue

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APPLICATIONS

- Signal identification for species detection or inventory
- Soundscape analysis to characterise the sound environment
- Understand a multitude of research topics, for example:
 - Which types of animals live in the study area? Do threatened species occur here?
 - What does the study area sound like through the year?
 - Are there distinct patterns or changes to communities with season?
 - When can we expect migratory species to arrive at the study area?
 - Is there a trigger for nomadic species to appear at a location?
 - Is the study area changing over time?
 - What is the success rate of breeding pairs of an endangered species?
 - How healthy is the study area?
 - How are human actions impacting the ecology of the study area?
 - How does my study species use vocal communication?
 - ...

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SONG METER FAMILY OVERVIEW



Micro



Mini



SM4

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WHAT IS THE SONG METER MICRO?

- Recording device + app
- Compact and light weight wildlife recorder – 195g with batteries
- Acoustic
- Intuitive app
 - Create schedules
 - Change recorder settings
 - Check recorder status
- One built-in microphone
- One MicroSD card slot
- Internal power lasts up to up to 180 hours with 3 Alkaline AA batteries
- Warranty: 1 year
- Simple, small and light. Developed for low-budget projects.



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WHAT IS THE SONG METER MINI?

- Recording device + app
- Compact and light weight wildlife recorder – 290g with batteries
- Intuitive app – same as Micro app but with a few extras
- One low-noise built-in microphone
- Optional extra: second microphone for stereo recordings
- One SD card slot
- Logs internal temperature
- Internal power lasts up to 210 hours on 4 AA batteries
- Lithium lid option for long deployment 1040 hours with 6 lithium batteries AUD\$242
- Warranty: 2 year recorder, 1.5 years mic
- Simplicity without sacrificing quality.



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WHAT IS THE SONG METER SM4?

- Recording device + computer configuration
- Compact wildlife recorder – 1.2kg with batteries
- Two superior low-noise built-in microphones
- Option to use cabled microphones
- Two SD card slots
- Internal power lasts up to 510 hours on 4 D batteries
- External power connector (e.g. solar panel+battery)
- Flexibility with settings (gain, high-pass filters)
- Logs internal temperature
- Warranty: 3 years
- Flexible recording tool. Proven industry standard.



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SONG METER FAMILY OVERVIEW



Micro



Mini



SM4

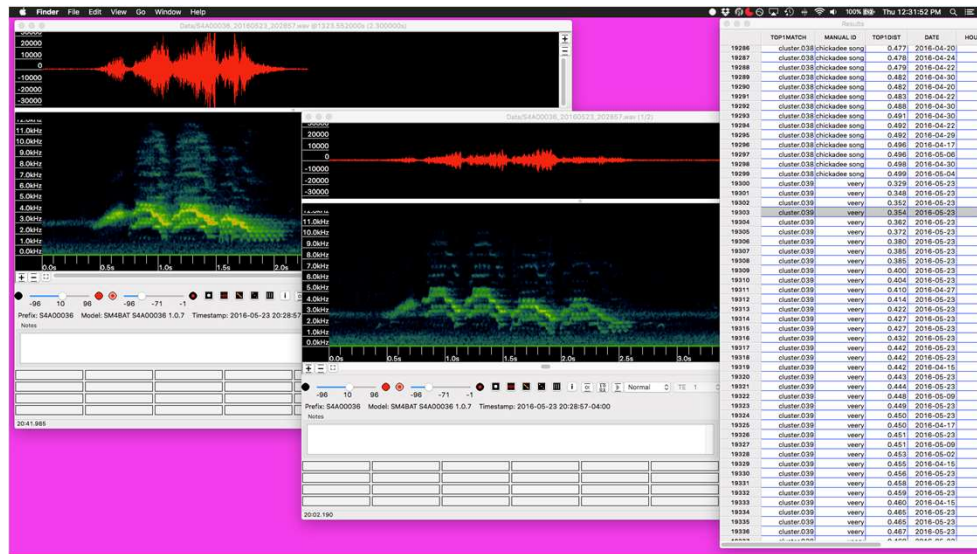
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ECOACOUSTICS GENERAL WORKFLOW

- Why are we here? Sound → answering a burning question
- What have we done? Collected sound recordings
- What is in the recordings? Listen < Look + Listen
- How do we pull information out of them?
 - Signal detection
 - » Inventory of all wildlife
 - » Search for a target species/behaviour
 - Soundscape analysis

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KALEIDOSCOPE



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Thank you!

