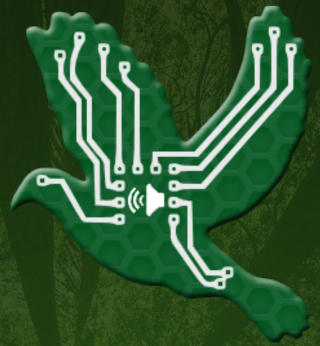
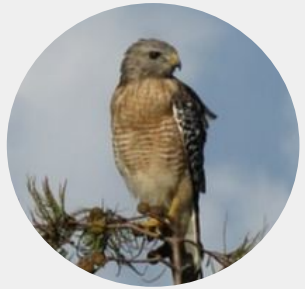


IntelliChirp

Machine Learning Classification of Acoustic Data Components

Steven Enriquez | Michael Ewers | Joshua Kruse | Zhenyu Lei

Mentor: Fabio Santos



"A report by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) found that about

1 million animal and plant species are now threatened with extinction"

Our Clients

Colin Quinn
PhD student NAU

Soundscapes2Landscapes

Current Value **$1.1 million**

Patrick Burns
Research Associate

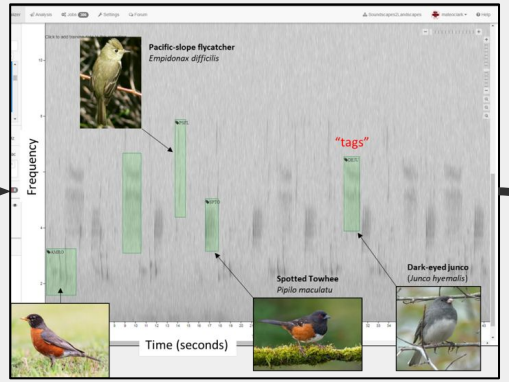
GLOBAL EARTH OBSERVATION & DYNAMICS OF ECOSYSTEMS LAB (GEODE)

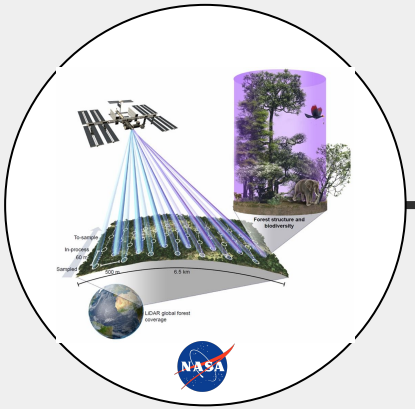
Ecosystem Science – Environmental Change – Remote Sensing

The Process

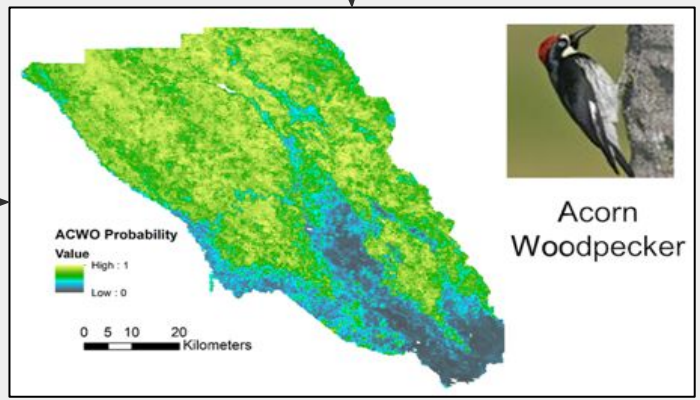
Soundscape Recording

Sound Identification/Analysis





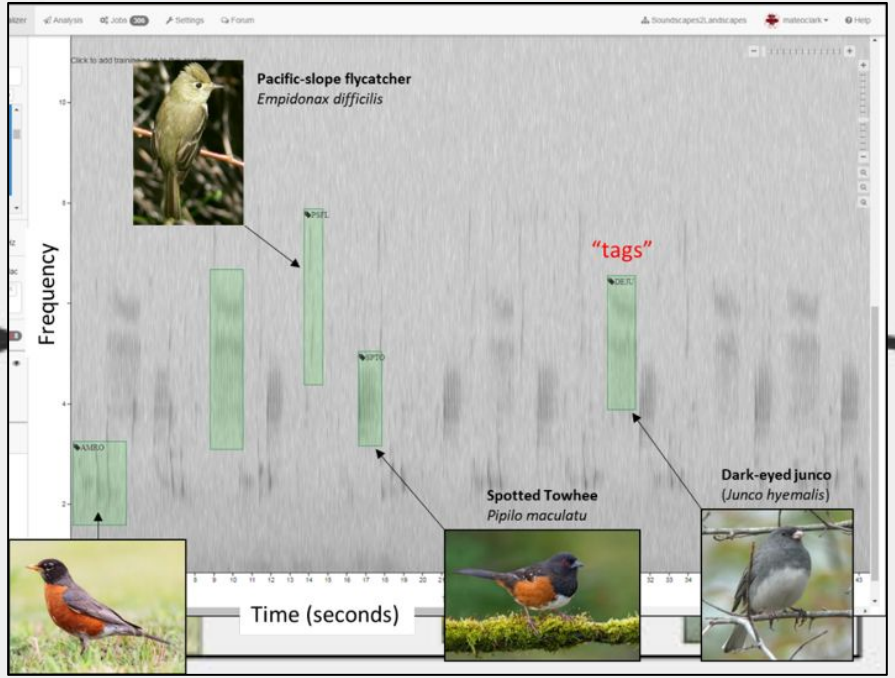
Satellite Imagery



Species Distribution Model

What's Wrong?

Sound Identification/Analysis



Current Analysis Implementation is Hard to Use

Command Line Interface

Background Noise

Sound Identification is Unfinished

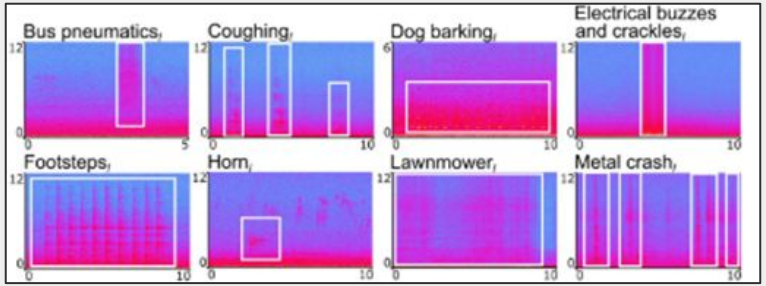
A Solution, the Soundscape Noise Analysis Workbench (SNAW)

Part 1

A user-friendly application to upload sound files for analysis and visual results

Part 2

A Machine Learning algorithm to identify sounds in a soundscape



Our Plan For Development

Our Plan to Succeed

- Weekly client meetings
- Iteratively refine requirements with client
- Gathering advice from knowledgeable faculty

Challenges

- Using Machine learning tools and algorithms to analyze audio files
- Making a standalone, portable version of the software

In Conclusion

Problem	Solution
Unfinished, unfriendly application that manually collects biodiversity data	User-friendly application that uses machine learning to automatically identify the biodiversity


That's all Folks!