**Title**

Using BirdNET: An Open-Source Algorithm for Identifying Bird Species from Audio Recordings

**Workshop Description (200 Words)**

Since its release, BirdNET has been widely adopted by ornithologists and researchers worldwide. Trained on extensive datasets from Xeno-Canto and the Macaulay Library, the latest BirdNET model can identify over 6,000 bird species globally. A key advantage of BirdNET is its open-source nature, allowing scientists to contribute to its development and adapt the algorithm for various applications. All of BirdNET’s source code is publicly available on its GitHub page: BirdNET Analyzer.

This workshop offers a comprehensive introduction to BirdNET, highlighting its applications in scientific research and citizen science projects, such as BirdNET Pi and Bird Weather. We will cover the background of BirdNET, including how its models are trained and how to properly interpret its outputs. Participants will gain hands-on experience running BirdNET on their laptops, including setting up the BirdNET environment, understanding parameter settings, and using BirdNET to process large acoustic datasets collected by autonomous recording units (ARUs). By the end of the workshop, participants will be equipped to leverage BirdNET for their own research and conservation projects.

**Justification (200 Words)**

**Relevance and Impact:**  
BirdNET offers innovative applications through its integration with machine learning and autonomous recording units (ARUs). This workshop will provide participants with practical training on using BirdNET to process large-scale acoustic datasets, a critical skill for advancing ornithological research and fostering engagement in citizen science initiatives. By highlighting both scientific and community applications, the workshop appeals to a diverse audience and addresses pressing needs in bird conservation and ecology.

**Organizers and Presenters:**  
The organizing team brings expertise in bioacoustics and BirdNET applications. Sunny Tseng has processed ARU data for projects at the University of Northern British Columbia and Birds Canada. She is a contributor to the BirdNET R package and served as a visiting scholar with the BirdNET team in 2025. Sunny has also published peer-reviewed research using BirdNET, demonstrating her commitment to BirdNET’s development and application. Jennifer Foote has been recording and processing ARU data at Algoma University since 2010 and more recently has started incorporating BirdNET into improving processing and workflow for a variety of projects at different species and spatial scales.

**Structure and Organization:**  
This workshop is carefully structured to meet clear learning objectives: understanding BirdNET’s capabilities, setting up its tools, and applying them to real-world challenges. Participants will leave equipped to integrate BirdNET into their work, ensuring impactful and measurable outcomes.

**Learning Objectives**

1. **Demonstrate proficiency in running BirdNET on personal laptops and processing large acoustic datasets**:  
   By the end of the workshop, participants will be able to set up the BirdNET environment, run analyses without errors, and understand parameter settings for processing datasets collected by autonomous recording units (ARUs).
2. **Interpret and validate BirdNET detection outputs for ecological applications**:  
   Participants will learn to interpret BirdNET’s model outputs, including detection confidence levels, and recognize the importance of validating results before using them to address ecological questions or conservation objectives.

**Desired Outcomes (200 Words)**

**Immediately following the session:**

* Participants will be able to successfully run BirdNET on their laptops without errors.
* They will understand how to interpret BirdNET’s model output, including detection results.
* Participants will recognize that BirdNET detections require validation before being used to answer ecological questions.

**Within 3–6 months:**

* Participants who have collected ARU data prior to the workshop will begin processing their datasets using BirdNET.
* Participants will organize workshops, deliver talks, or engage in conversations within their home institutions to teach others how to use BirdNET effectively.

**Within 9–12 months:**

* Participants will initiate scientific analyses using BirdNET to address ecological questions.
* They will produce and submit peer-reviewed publications showcasing their findings, demonstrating the integration of BirdNET in advancing ecological research.

**Draft Agenda**

1. **Introduction to BirdNET (50 minutes)**
   * Overview of BirdNET’s purpose and applications in avian bioacoustics (workflow).
   * Discussion of the training datasets (Xeno-Canto and Macaulay Library) and model capabilities.
   * Showcase the scientific projects and citizen science that have applied BirdNET.
2. **Setting Up the BirdNET Environment (20 minutes)**
   * Step-by-step guidance on downloading and installing the necessary software.
   * Instructions for acquiring and preparing data for analysis.
3. **Break (20 minutes)**
4. **Running BirdNET: Windows GUI and R Package (1.5 hour)**
   * Hands-on demonstration of using BirdNET through the Windows GUI.
   * Practical exercises using the BirdNET R package to process acoustic data.
5. **Discussion and Q&A (30 minutes)**
   * Open forum for participants to ask questions and share insights.
   * Discussion of practical applications and challenges in using BirdNET.