

WABAD: A world annotated bird acoustic dataset for passive acoustic monitoring

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Abstract

Under the current global biodiversity crisis, there is a need for automated and noninvasive monitoring techniques that can gather large amounts of data cost-effectively at various ecological scales, from local to large spatial scales. These data can then be analyzed to inform stakeholders and decision-makers. One such technique is passive acoustic monitoring, which is commonly coupled with automatic identification of animal species based on their sound. Automated sound analyses usually require the training of sound detection and identification algorithms. These algorithms are based on annotated acoustic datasets which mark the occurrence of sounds of species inside sound recordings. However, compiling large annotated acoustic datasets is time-consuming and requires experts, and therefore, they normally cover reduced spatial, temporal, and taxonomic scales. This data paper presents WABAD, the World Annotated Bird Acoustic Dataset for passive acoustic monitoring. WABAD is designed to provide the public, the research community, and conservation managers with a novel and globally representative annotated acoustic dataset. This database includes 5047 min of audio files annotated to species-level by local experts with the start and end time and the upper and lower frequencies of each identified bird vocalization in the recordings. The database has a wide taxonomic and spatial coverage, including information on 91,931 vocalizations from 1192 bird species recorded at 72 recording sites in 29 recording locations (mainly countries) and distributed across 13 biomes. WABAD can be used, for example, for developing and/or validating automatic species detection algorithms, answering ecological questions, such as assessing geographical variations on bird vocalizations, or comparing acoustic diversity indices with species-based diversity indices. The dataset is published under a Creative Commons Attribution 4.0 International license that permits redistribution and reuse on the condition that the original work is properly credited.

KEYWORDS

animal vocalizations, automated sound recorder, autonomous recording units, birds, human expert annotation, passive acoustic monitoring, song, soundscape

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT

Metadata are available as [Supporting Information](#). Due to size, the complete audio files, their annotations, and associated metadata are available in Zenodo at <https://doi.org/10.5281/zenodo.17293588>.

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SUPPORTING INFORMATION

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