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

Cristian Pérez-Granados^{1,2}  | Jon Morant²  | Kevin F. A. Darras³ |
 Oscar H. Marín-Gómez⁴  | Irene Mendoza^{5,6} |
 Miguel A. Muñoz-Mohedano^{6,7}  | Eduardo Santamaría-García⁶ |
 Giulia Bastianelli⁶ | Alba Márquez-Rodríguez^{6,8} | Michał Budka⁹ |
 Gerard Bota¹  | José M. De la Peña-Rubio¹⁰ | Eladio L. García de la Morena¹¹ |
 Manu Santa-Cruz¹² | Pablo de la Nava¹³ | Mario Fernández-Tizón¹⁴ |
 Hugo Sánchez-Mateos¹⁵ | Adrián Barrero^{16,17}  | Juan Traba^{16,17} |
 Tomasz S. Osiejuk⁹ | Patrick J. Hart¹⁸ | Amanda K. Navine¹⁸ |
 Andrés F. Montoya Muñoz⁴ | Carlos B. de Araujo¹⁹ | Gabriel L. M. Rosa²⁰ |
 Ingrid M. Denóbile Torres²¹ | Ana L. Camargo Catalano²¹ |
 Cássio Rachid Simões^{21,22} | Diego Llusia^{16,17,23} | Manuel B. Morales^{16,17} |
 Pablo Acebes^{16,17} | Juan A. Medina²⁴ | Nicholas Brown^{16,25} |
 Christos Astaras²⁶ | Ilias Karmiris²⁶ | Elizabeth Navarrete²⁶ |
 Maxime Cauchoix²⁷ | Luc Barbaro²⁸  | David Funosas²⁹ | Dominik Arend³⁰ |
 Sandra Müller³⁰  | Fernando González-García³¹ | Alberto González-Romero³¹ |
 Christos Mammides³²  | Michaelangelo Pontikis³³ | Giordano Jacuzzi³⁴ |
 Julian D. Olden³⁴ | Sara P. Bombaci³⁵ | Gabriel Marcacci³⁶  | Alain Jacot³⁶ |
 Juan P. Zurano¹⁹ | Elena Gangenova¹⁹ | Diego Varela¹⁹  |
 Facundo Di Sallo¹⁹ | Gustavo A. Zurita¹⁹  | Andrey Atemasov³⁷ |
 Junior A. Tremblay³⁸  | Vincent Lamarre³⁸ | Anja Hutschenreiter³⁹ |
 Alan Monroy-Ojeda⁴⁰ | Mauricio Díaz-Vallejo^{41,42} | Sergio Chaparro-Herrera⁴³ |
 Robert A. Briers⁴⁴  | Renata Sousa-Lima⁴⁵ | Thiago Pinheiro⁴⁵ |
 Wigna C. da Silva⁴⁵ | Alice Calvente⁴⁶ | Anamaria Dal Molin⁴⁷  |
 Alexandre Antonelli^{48,49,50} | Svetlana Gogoleva^{51,52} | Igo Palko⁵² |
 Hiếu Vũ Trọng⁵² | Marina H. Lage Duarte^{53,54} | Natalia dos Santos Saturnino⁵⁴ |
 Samuel R. Silva⁵⁴ | Ana Rainho⁵⁵ | Paula Lopes^{55,56} |
 Karl-L. Schuchmann^{57,58}  | Marinêz I. Marques⁵⁷  | Ana S. de Oliveira⁵⁷ |

For affiliations refer to page 3

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Nick A. Littlewood⁵⁹ | Mao-Ning Tuanmu⁶⁰  | Yi-Ru Cheng⁶⁰ |
Hsuan Chao⁶⁰ | Sebastian Kepfer-Rojas⁶¹ | Andrea L. Aguilera⁶² |
Lluís Brotons^{1,63,64} | Mariano J. Feldman¹ | Louis Imbeau⁶⁵ |
Pooja Panwar⁶⁶ | Aaron S. Weed⁶⁷ | Anant Deshwal⁶⁸ |
Raiane Vital da Paz^{69,70}  | Carlos Salustio-Gomes^{69,70} |
Dorgival D. Oliveira-Júnior^{69,70} | Cicero S. Lima-Santos^{69,70} |
Mauro Pichorim^{69,70}  | Wuyuan Pan⁷¹ | Eben Goodale⁷²  |
Alfredo Attisano⁷³ | Jörn Theuerkauf⁷³ | Esther Sebastián-González^{2,74} 

Correspondence

Cristian Pérez-Granados
Email: cristian.perez@ctfc.cat

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L. Cottingham

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

AFFILIATIONS

- ¹Biodiversity Conservation and Management Programme, Forest Science and Technology Center of Catalonia (CTFC), Lleida, Spain
- ²Department of Ecology, University of Alicante, Alicante, Spain
- ³EFNO, INRAE, Nogent-sur-Vernisson, France
- ⁴Programa de Biología, Universidad del Quindío, Armenia, Quindío, Colombia
- ⁵Department of Plant Biology and Ecology, University of Sevilla, Seville, Spain
- ⁶Doñana Biological Station (CSIC), ICTS-Doñana (Infraestructura Científico-Técnica Singular de Doñana), Seville, Spain
- ⁷Complex Systems Group, Department of Agroforestry Engineering, ETSIAAB, Universidad Politécnica de Madrid, Madrid, Spain
- ⁸Institute of Marine Research (INMAR), Centro CEIMAR, International Campus of Excellence in Marine Science (CEIMAR), Universidad de Cádiz, Cádiz, Spain
- ⁹Department of Behavioural Ecology, Institute of Environmental Biology, Faculty of Biology, Adam Mickiewicz University, Poznań, Poland
- ¹⁰Blue Nature Birding and Nature Tours SL, Madrid, Spain
- ¹¹Biodiversity Node, Sector Foresta, Madrid, Spain
- ¹²Eurofins MITOX B.V., Amsterdam, Netherlands
- ¹³SEO/BirdLife, Madrid, Spain
- ¹⁴Instituto de Investigación en Recursos Cinegéticos, IREC-CSIC-UCLM-JCCM, Ciudad Real, Spain
- ¹⁵Iduna Tours, Cáceres, Spain
- ¹⁶Terrestrial Ecology Group (TEG-UAM), Departamento de Ecología, Universidad Autónoma de Madrid, Madrid, Spain
- ¹⁷Centro de Investigación en Biodiversidad y Cambio Global (CIBC-UAM), Universidad Autónoma de Madrid, Madrid, Spain
- ¹⁸Department of Biology, University of Hawai'i at Hilo, Hilo, Hawai'i, USA
- ¹⁹Observatorio de Biodiversidad del Bosque Atlántico, Instituto de Biología Subtropical, CONICET-Universidad Nacional de Misiones, Puerto Iguazú, Argentina
- ²⁰Laboratório de Ornitologia e Bioacústica, Universidade Estadual de Londrina, Londrina, Brazil
- ²¹ConservaSom, João Pessoa, Paraíba, Brazil
- ²²Programa de Pós-graduação em Biodiversidade e Evolução, Instituto de Biologia, Universidade Federal da Bahia, Salvador, Brazil
- ²³Laboratório de Herpetologia e Comportamento Animal, Departamento de Ecologia, Instituto de Ciências Biológicas, Universidade Federal de Goiás, Campus Samambaia, Goiânia, Goiás, Brazil
- ²⁴BUTEO Environmental Initiatives, Mojados, Valladolid, Spain
- ²⁵Department of Life Sciences, Imperial College London, London, UK
- ²⁶Forest Research Institute, ELGO-DIMITRA, Thessaloniki, Greece
- ²⁷Station d'Écologie Théorique et Expérimentale, SETE, CNRS, Moulis, France
- ²⁸Dynafor, INRAE, University of Toulouse, Castanet-Tolosan, France
- ²⁹Université Paul Sabatier - Toulouse III, Toulouse, France
- ³⁰Geobotany, Faculty of Biology, University of Freiburg, Freiburg, Germany
- ³¹Red Biología y Conservación de Vertebrados, Instituto de Ecología, A.C., Veracruz, México
- ³²Nature Conservation Unit, Frederick University, Nicosia, Cyprus
- ³³Department of Biological Sciences, University of Cyprus, Nicosia, Cyprus
- ³⁴School of Aquatic and Fishery Sciences, College of the Environment, University of Washington, Seattle, Washington, USA
- ³⁵Department of Fish, Wildlife, and Conservation Biology, Colorado State University, Fort Collins, Colorado, USA
- ³⁶Swiss Ornithological Institute, Sempach, Switzerland
- ³⁷V.N.Karazin Kharkiv National University, Kharkiv, Ukraine
- ³⁸Environment and Climate Change Canada, Québec, Canada
- ³⁹Instituto de Investigaciones en Ecosistemas y Sustentabilidad, Universidad Autónoma de México, Morelia, Michoacan, Mexico
- ⁴⁰Kiekari Bird Observatory, KiekariTerra A.C., Xico, Veracruz, Mexico
- ⁴¹Grupo de Ecología y Evolución de Vertebrados, Instituto de Biología, Universidad de Antioquia, Medellín, Colombia
- ⁴²Red de Biología Evolutiva, Instituto de Ecología, A.C., Xalapa, Veracruz, México
- ⁴³Proyecto Atlapetes, Antioquia, Colombia; Laboratorio de Ecología Evolutiva y Urbana, Universidad del Norte, Barranquilla, Colombia
- ⁴⁴Centre for Conservation and Restoration Science, School of Applied Sciences, Edinburgh Napier University, Sighthill Campus, Edinburgh, UK
- ⁴⁵EcoAcoustic Research Hub, Biosciences Center, Universidade Federal do Rio Grande do Norte, Campus Universitário, Natal, Rio Grande do Norte, Brazil
- ⁴⁶Departamento de Botânica e Zoologia, Universidade Federal do Rio Grande do Norte, Campus Universitário, Lagoa Nova, Natal, Rio Grande do Norte, Brazil

- ⁴⁷Department of Microbiology and Parasitology, Biosciences Center, Universidade Federal do Rio Grande do Norte, Natal, Rio Grande do Norte, Brazil
- ⁴⁸Royal Botanic Gardens, Richmond, Surrey, UK
- ⁴⁹Gothenburg Global Biodiversity Centre, Department of Biological and Environmental Sciences, University of Gothenburg, Göteborg, Sweden
- ⁵⁰Department of Biology, University of Oxford, Oxford, UK
- ⁵¹Severtsov Institute of Ecology and Evolution of Russian Academy of Sciences, Moscow, Russian Federation
- ⁵²Southern Branch of the Joint Vietnam-Russia Tropical Science and Technology Research Center, HoChiMinh City, Vietnam
- ⁵³School of Science, Engineering and Environment, University of Salford, Manchester, UK
- ⁵⁴Graduate Program in Biodiversity and Environment, Pontifical Catholic University of Minas Gerais, Belo Horizonte, Brazil
- ⁵⁵CE3C-Centre for Ecology, Evolution and Environmental Changes, CHANGE-Global Change and Sustainability Institute & Departamento de Biologia Animal, Faculdade de Ciências, Universidade de Lisboa, Lisbon, Portugal
- ⁵⁶SPEA - Portuguese Society for the Study of Birds, Lisbon, Portugal
- ⁵⁷Computational Bioacoustics Research Unit (CO.BRA), Institute for Science and Technology in Wetlands (INAU), Federal University of Mato Grosso (UFMT), Cuiabá, Brazil
- ⁵⁸Ornithology, Zoological Research Museum A. Koenig (ZFMK), Bonn, Germany
- ⁵⁹Scotland's Rural College, Bucksburn, Aberdeen, UK
- ⁶⁰Biodiversity Research Center, Academia Sinica, Taipei, Taiwan
- ⁶¹Department of Geosciences and Natural Resource Management, University of Copenhagen, Frederiksberg C. Copenhagen, Denmark
- ⁶²Centro de Datos para la Conservación, Centro de Estudios Conservacionistas, Universidad de San Carlos de Guatemala, Guatemala, Guatemala
- ⁶³CREAF, Cerdanyola del Vallès, Spain
- ⁶⁴CSIC, Cerdanyola del Vallès, Spain
- ⁶⁵Institut de recherche sur les forêts, Université du Québec en Abitibi-Témiscamingue, Rouyn-Noranda, Québec, Canada
- ⁶⁶Ecology, Evolution, Environment, and Society, Dartmouth College, Hanover, New Hampshire, USA
- ⁶⁷US Department of Interior, National Park Service, Northeast Temperate Network, Woodstock, Vermont, USA
- ⁶⁸Biology Department, Bradley University, Peoria, Illinois, USA
- ⁶⁹Programa de Pós- Graduação em Ecologia, Centro de Biociências, Universidade Federal do Rio Grande do Norte, Natal, Brazil
- ⁷⁰Laboratório de Ornitologia, Departamento de Botânica e Zoologia, Universidade Federal do Rio Grande do Norte, Natal, Brazil
- ⁷¹Guangxi Key Laboratory of Forest Ecology and Conservation, College of Forestry, Guangxi University, Nanning, Guangxi, China
- ⁷²Department of Health and Environmental Science, Xi'an Jiaotong-Liverpool University, Suzhou, Jiangsu, China
- ⁷³Museum and Institute of Zoology, Polish Academy of Sciences, Warsaw, Poland
- ⁷⁴Instituto Multidisciplinar para el Estudio del Medio "Ramón Margalef", University of Alicante, Alicante, Spain

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>.

ORCID

Cristian Pérez-Granados  <https://orcid.org/0000-0003-3247-4182>

Jon Morant  <https://orcid.org/0000-0001-5702-2348>

Oscar H. Marín-Gómez  <https://orcid.org/0000-0002-0743-8350>

Miguel A. Muñoz-Mohedano  <https://orcid.org/0000-0001-6114-4460>


Gerard Bota  <https://orcid.org/0000-0001-9020-7272>

Adrián Barrero  <https://orcid.org/0000-0002-2980-1202>

Luc Barbaro  <https://orcid.org/0000-0001-7454-5765>

Sandra Müeller  <https://orcid.org/0000-0003-4289-755X>

Christos Mammides  <https://orcid.org/0000-0003-1747-175X>

Gabriel Marcacci  <https://orcid.org/0000-0002-2199-0141>

Diego Varela  <https://orcid.org/0000-0003-3123-6756>

Gustavo A. Zurita  <https://orcid.org/0000-0002-1341-3491>

Junior A. Tremblay  <https://orcid.org/0000-0003-4930-0939>

Robert A. Briers  <https://orcid.org/0000-0003-0341-1203>

Anamaria Dal Molin  <https://orcid.org/0000-0003-0633-3888>

Karl-L. Schuchmann  <https://orcid.org/0000-0002-3233-8917>


Marinêz I. Marques  <https://orcid.org/0000-0002-9890-8505>

Mao-Ning Tuanmu  <https://orcid.org/0000-0002-8233-2935>

Raiane Vital da Paz  <https://orcid.org/0000-0001-8951-9463>

Mauro Pichorim  <https://orcid.org/0000-0002-9340-9010>

Eben Goodale  <https://orcid.org/0000-0003-3403-2847>

Esther Sebastián-González  <https://orcid.org/0000-0001-7229-1845>

SUPPORTING INFORMATION

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