

Bioacoustics Research Program

Providing wildlife monitoring solutions for researchers, industry, and government agencies

Bioacoustic Monitoring Systems for marine and terrestrial environments

Marine Autonomous Recording Units

The Pop-up-samarinerecordingssystem designed to operate autonomously up to a maximum sampling rate of 48 kHz, and to a deployment depth of 2,500 meters. A sensitive external hydrophone is mounted on a 17" glass sphere containing electronics and an alkaline battery power source. Non-lossy digital recordings are stored on a hard drive in binary format and post processed into AIFF files for data analysis. Multiple units can be deployed in synchronized arrays for location-based analysis. The unit "pops up" for easy retrieval when an acoustic signal triggers the cable to release from the anchor.



Auto-Detection Buoy System

The Bioacoustics Research Program and Woods Hole Oceanographic Institution have developed an autonomous, near real-time, automatic detection buoy system. Government agencies and the shipping industry have used this system to avert deadly collisions with the highly endangered North Atlantic right whale in high traffic port areas. The system is optimized to detect and signal the presence of vocalizing right whales within the buoy's 5-nautical-mile listening range. A complete monitoring system may include auto-detection buoys, an Iridium satellite communications system, backend server, and data confirmation services. For more information, visit www.listenforwhales.org.

Terrestrial Autonomous Recording Units

SoundCache

SoundCache is a flash-memory-based digital recorder, optimized for field portability, programming ease, recording quality, and simple back-end analysis processing procedures.



Consultation, Data Analysis, and Interpretation helping you make sound decisions

Our core competency lies in the analysis and handling of large scale data sets associated with passive acoustic monitoring, interpretation, and reporting of results and consultation on findings. These services are provided by Dr. Christopher W. Clark and a staff of 55 engineers, scientists, and analysts. The Bioacoustics Research Program leads in wildlife monitoring and development of passive acoustic technology as an essential mechanism for achieving environmental assessments, determining anthropogenic noise impacts, and implementing monitoring and mitigation programs.



Professional Training for hardware and software applications

Individualized Training

We provide application-specific and general-purpose training to use our data collection hardware products, sound analysis and visualization software, and the protocols and procedures we have developed for use with these tools. These services are provided at our Cornell facilities in Ithaca, New York, and in customer-designated locations.

Sound Analysis Workshops

We conduct week-long workshops to help users become adept with our sound analysis software. Students from around the world learn the basic principles of sound spectrogram analysis and applications for biological research. Participants also learn techniques for large-scale monitoring programs and detailed analysis of specific vocalizations. Each workshop is tailored to the interests and requirements of the participants. For more information, visit www.birds.cornell.edu/brp/workshop.

Bioacoustic Analysis Software to make sound data visible

Raven Pro Sound Analysis Software

Raven Pro is a software application used for the acquisition, visualization, measurement, and analysis of acoustic signals. Developed with the support of the National Science Foundation, Raven Pro provides a powerful, user-friendly research and teaching tool tailored to the needs of biologists working with acoustic signals. Raven Exhibit employs the capabilities of Raven Pro in a modified format to inform and entertain in a classroom or public exhibition environment. Raven runs on Microsoft Windows, Mac OS X, and Linux operating systems. For more information, visit www.RavenSoundSoftware.com.



XBAT: Extensible Acoustic Analysis

XBAT is an open-source extensible sound analysis MATLAB application for developing new sound analysis tools and algorithms, and for managing large-scale data sets. XBAT also provides visualization, measurement, and analysis of acoustic data. Features include extended and improved access to sound file formats, transparent access to arbitrarily large multiple-file recordings, efficient and flexible spectrogram computations, log files to uniformly store the results of computations, integrated interactive automatic detection and measurement, efficient programming interfaces, and GUI development framework. For more information, visit xbat.org.



"By listening in on the world's creatures, we make it possible for their voices to be heard on critical conservation issues."

~ Christopher W. Clark