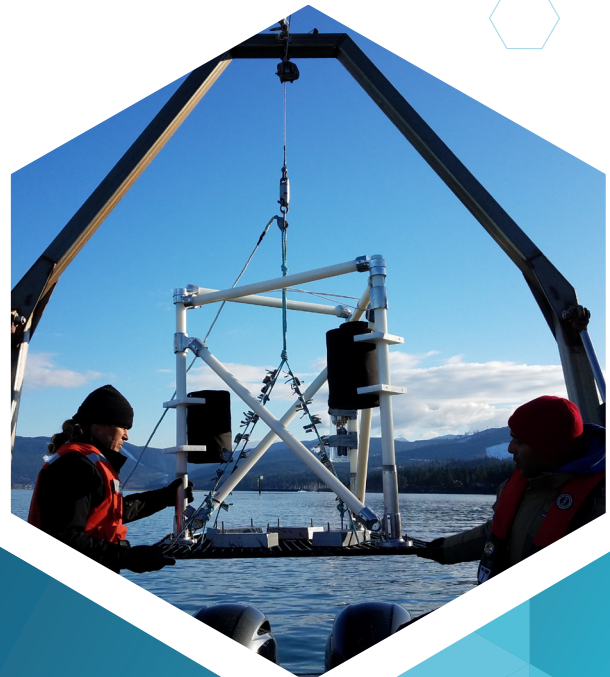


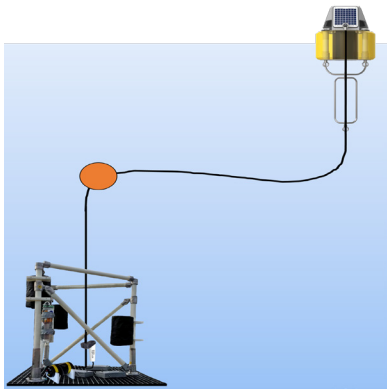
# NoiseSpotter™

## Gather the data you need to evaluate environmental risk from underwater noise.

NoiseSpotter™ is the first state-of-the-art commercial vector sensor array that measures and locates underwater sound sources in near real time. Developed and validated with Sandia National Laboratories, Noise Control Engineering, and Proteus Technologies, NoiseSpotter™ provides acoustic monitoring of underwater noise and marine mammal activity. Now regulators, stakeholders, and developers can learn more about the environmental acoustic effects of activities beneath the sea—from underwater construction to installation of offshore and marine renewable energy devices.

- › EASY DEPLOYMENT
- › ROBUST SOUND PRESSURE/  
PARTICLE MOTION DATA
- › SOURCE LOCALIZATION
- › REAL-TIME  
CHARACTERIZATION
- › ENVIRONMENTAL IMPACT  
ASSESSMENT
- › OFFSHORE ENERGY  
SUPPORT

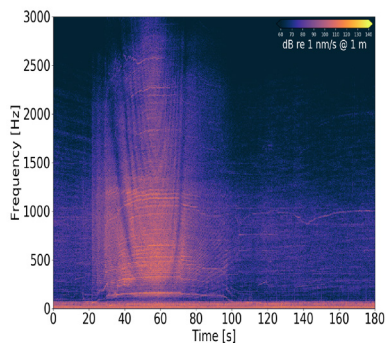




NoiseSpotter™ array is located on a stable bottom platform and connected to a surface buoy using an underwater data cable for real-time telemetry.

## What You Need to Know

NoiseSpotter's™ 3-dimensional acoustic vector sensor array measures pressure and particle motion at each sensor location. Time-synchronized data logging allows for coherent processing, such as beamforming. NoiseSpotter™ also provides real-time telemetry of key data metrics, including sound pressure levels and spectra, to a cloud-based server to facilitate further processing such as source localization.



Spectrogram of particle motion from a passing boat, as measured on the NoiseSpotter™

## How It Works

Existing techniques for locating acoustic sources often require the deployment of large arrays of cabled hydrophones to measure acoustic pressure. The NoiseSpotter™ features a small (2 × 2 × 6-ft) three-sensor array, with each sensor measuring acoustic pressure and particle velocity to geolocate sources of sound more efficiently. Each sensor is housed inside a flow noise suppression shield to allow for data collection in energetic environments.

## STUDIES

Studies funded by the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy included development and field testing of the NoiseSpotter™ array technology. The NoiseSpotter™ distinguished sounds of interest from surrounding noise, including flow noise, and relayed acoustic metrics in near real time to a cloud server using cellular communication technology. The system accurately measured acoustic pressure and particle velocity.

## WHAT WE OFFER

NoiseSpotter™ is available for lease. The system can be shipped anywhere around the globe. We provide full deployment and analysis support for the NoiseSpotter™. Contact us for pricing.

## KEY CONTACTS

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## Specifications

<b>Frequency range</b>	<b>50 Hz to 3 kHz</b>
<b>Acoustic fields</b>	Pressure, 3D particle motion
<b>Number of sensors</b>	3
<b>Vertical spacing</b>	Customizable. Typically 42 cm, 56 cm and 86 cm above seabed
<b>Horizontal spacing</b>	1.25 m
<b>Intended applications</b>	Soundscape characterization, marine mammal monitoring, particle motion measurements, source localization and tracking.
<b>Operating duration</b>	3 weeks continuous recording
<b>Telemetry options</b>	Customizable. Currently sound pressure levels and 10 s spectra every minute.
<b>Depth rating</b>	200 m