

# The Sound and Marine Life JIP

Enabling the science to understand and mitigate for anthropogenic ocean sound.

Our vision is to enable healthy, resilient oceans. By increasing our knowledge of how the sound we generate interacts with the ocean ecosystems we will:

- Develop scientifically based monitoring and mitigation methods for environmental management.
- Provide a body of peer reviewed, independent science that can inform regulators.
- Continue to ensure safe and efficient operations.
- Continue to evolve by identifying and managing potential challenges associated with sound in the marine environment.

Photo: Espen Bergersen



## How it works?

The JIP provides financial support for multiple projects which are selected through a competitive review process to study important global issues related to marine sound.

Subject areas related to perpetual and emerging challenges are regularly reviewed by JIP members. **2024 topics include:**

- Operational shutdowns during low visibility
- Influence of sound on fish and their larvae
- Alternative seismic sound sources and sound reduction
- Long term acoustic monitoring of marine life and underwater sound levels
- Cumulative effects of underwater sound and stressors
- Biological significance of continuous and impulsive sounds
- Effectiveness of mitigation measures
- Auditory masking in marine species from continuous or long duration sounds

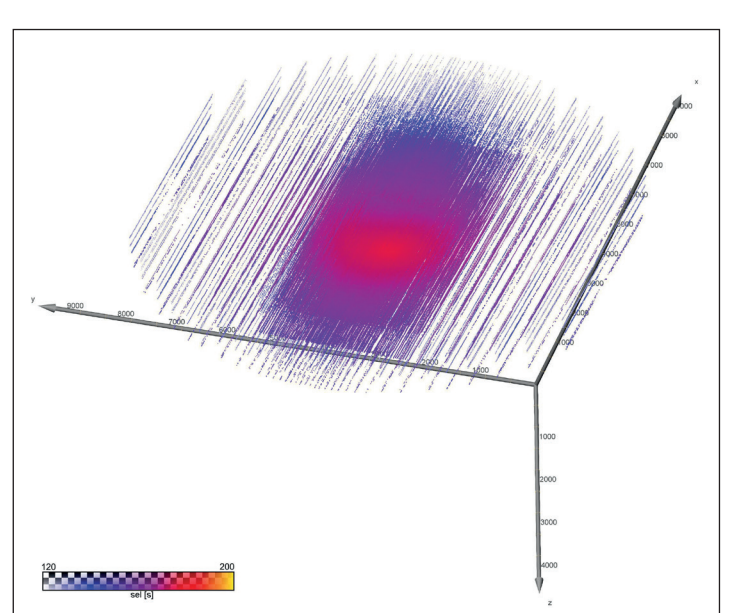
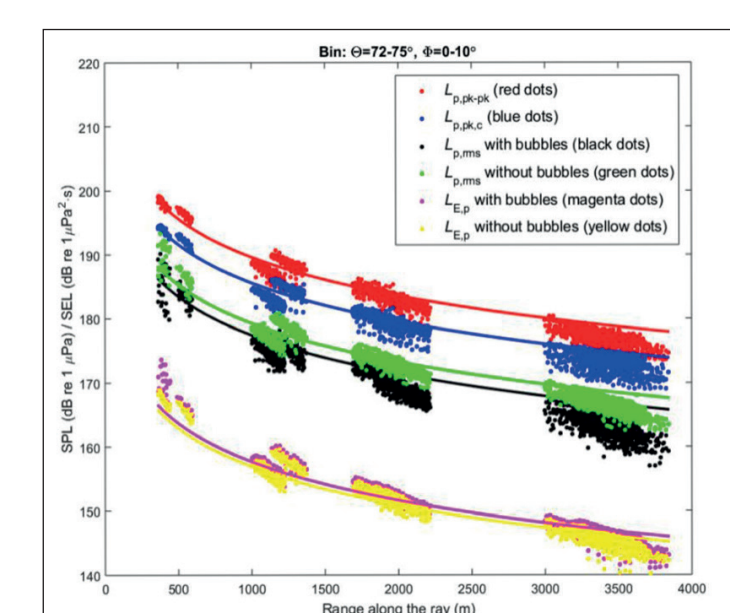
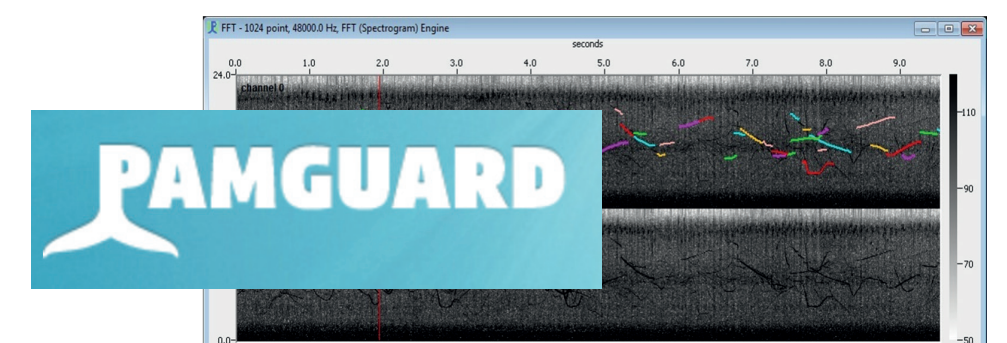
## Objectives

- Support planning of offshore activities and risk assessments.
- Provide the basis for appropriate operation measures that are protective of marine life.
- Inform policy and regulatory development.

## Research highlights

We firmly believe that effective policy must stem from good, independent science. The JIP enables cutting edge scientific studies to be conducted, such as:

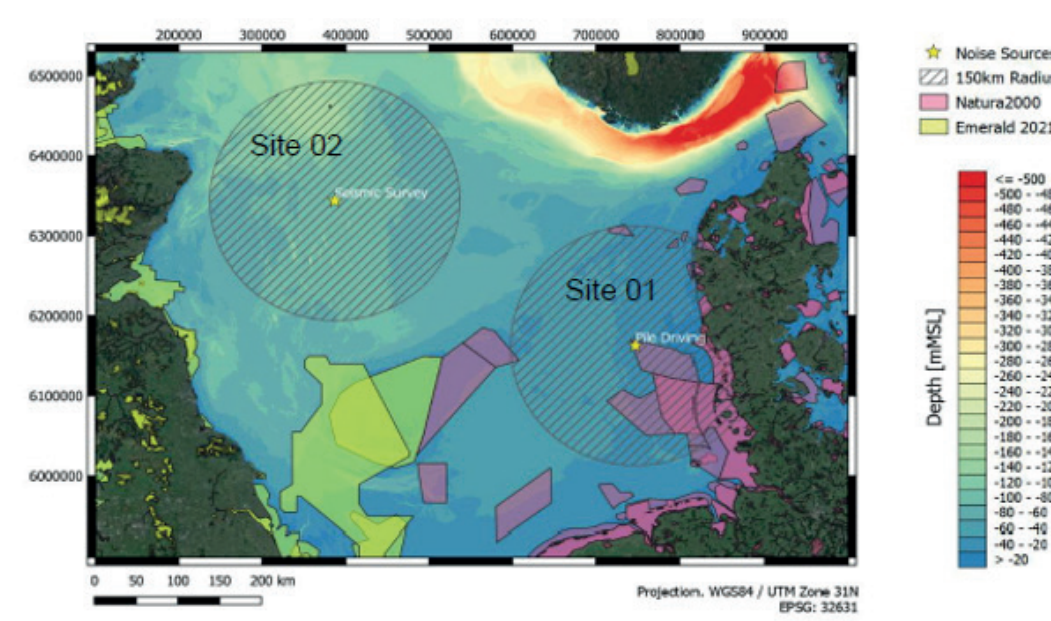
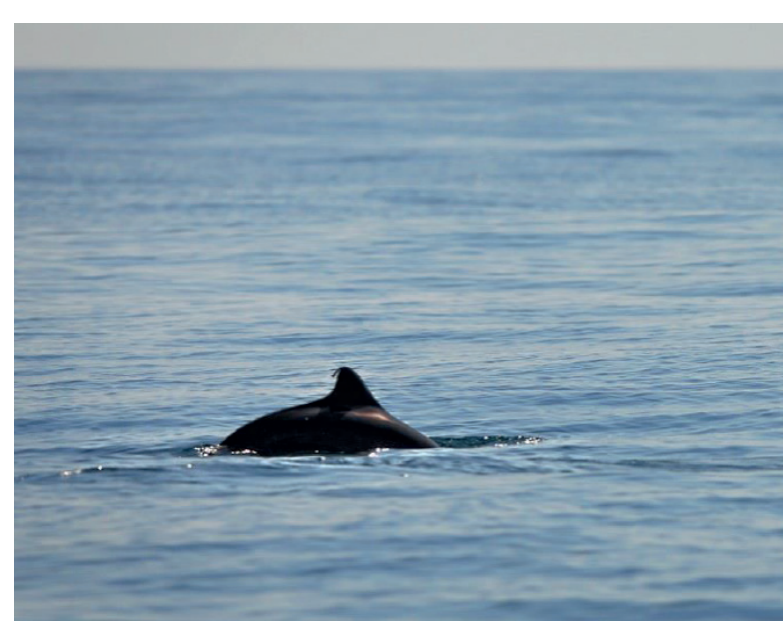
- **Behavioural Response of Australian Humpback whales to Seismic Surveys (BRAHSS)** – provides a better understanding of behavioral responses to seismic surveys and determine efficacy of mitigation measures.
- **PAMGuard software** – was developed to be and is used globally, by both industry and researchers for detection and monitoring of vocalizing marine mammals.
- **3D Sound Source Characterisation** – provides better understanding of high frequency output from conventional seismic sources.



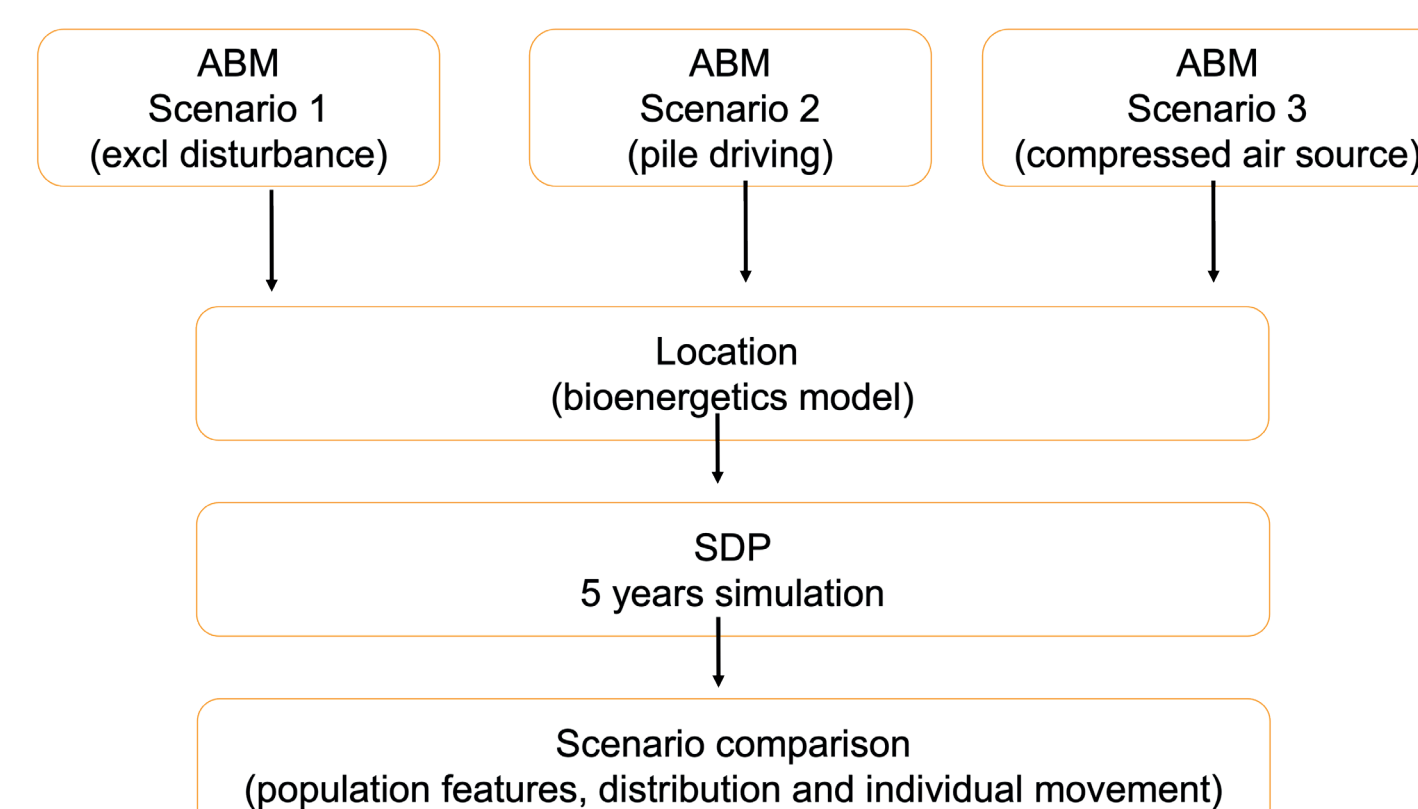
Left: Binned received versus range for straight-line geometry (Sidorovskaia and Li, 2022). Right: Below view of 3D SEL data points (source A.F. Cerwenka\* & H.J. Kriesell).

## Ongoing work

The JIP is currently working on Population Consequence of Disturbance (PCoD) methods that are enabling data driven computer-based analysis to characterize population level interactions from individual anthropogenic sound disturbances. The PCoD project develops a Population Consequence of Acoustic Disturbance (PCAD) model integrated through a Stochastic Dynamic Programming (SDP) and Agent Based Modelling (ABM) approach. Future applications include improved assessments of cumulative interactions of multiple stressors (e.g., ship traffic, climate change, industrial operations) at different time and spatial scales.



PCoD integrated knowledge on harbor porpoise movement, bioenergetics, and compared scenarios for two sites of interest in relation to nearby protected areas. Tuhuteru et al. (2024)



What's next for the PCoD software tool:

- Support early planning of new projects
- Optimize procedures
- Inform monitoring
- Communicate findings to regulators

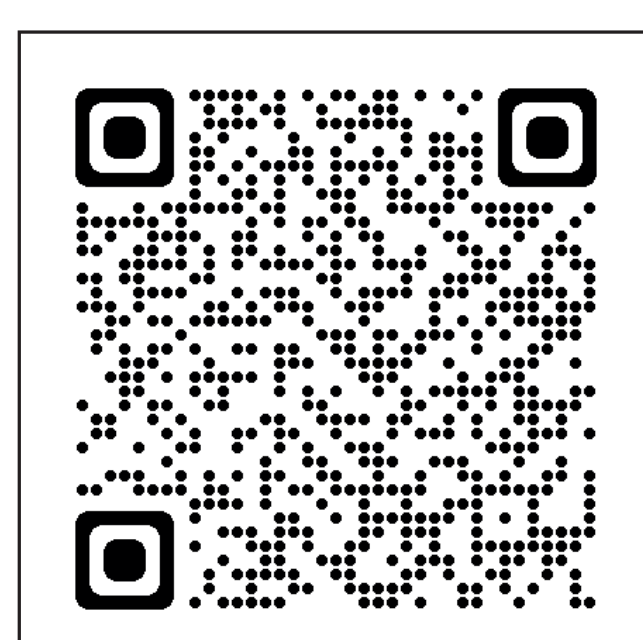
## Future Directions

The JIP will continue to commission independent research and share findings for the benefit of all stakeholder communities. Membership and participation have significant benefits which include Environmental, Social and Governance (ESG) recognition and reputation. **Members gain awareness of technology and scientific findings which allow them to rapidly trial, integrate and operationalize new management solutions and ideas.** Participating companies inform the range of projects undertaken in alignment with their company needs and goals.

"Our ability to support innovative research is strengthened by our collective ambition"

## Future Directions

Collaboration is one of the founding principles of the JIP, who have deliberately engaged independent scientists to guide the research, ensuring that it conforms to the highest standards. Special thanks go to past and current scientist, advisors, and contractors who actively participate in the JIP effort.



## CONTACT US

To find out more about the Sound & Marine Life Programme and its projects please:

Visit our website: [www.soundandmarinelife.org](http://www.soundandmarinelife.org)

Email us: [info@soundandmarine.org](mailto:info@soundandmarine.org)

Media Enquiries: +44 20 3763 9700

