

Quieting the Oceans: Innovative Technologies to Reduce Underwater Noise Pollution in South Africa

Underwater noise pollution is a growing concern in South African marine environments, with major sources including shipping, seismic surveys for oil and gas exploration, and offshore construction. This noise can have significant adverse impacts on marine life, disrupting critical behaviors like communication, feeding, and navigation for whales, dolphins, fish, and even plankton.

To address this issue, a range of noise reduction technologies and best practices are available:

- Quieting Technologies for Shipping.
- Propeller and hull design optimizations to reduce cavitation and radiated noise.
- Air lubrication systems that reduce friction and noise.
- Onboard noise control measures like damping materials and enclosures for machinery.

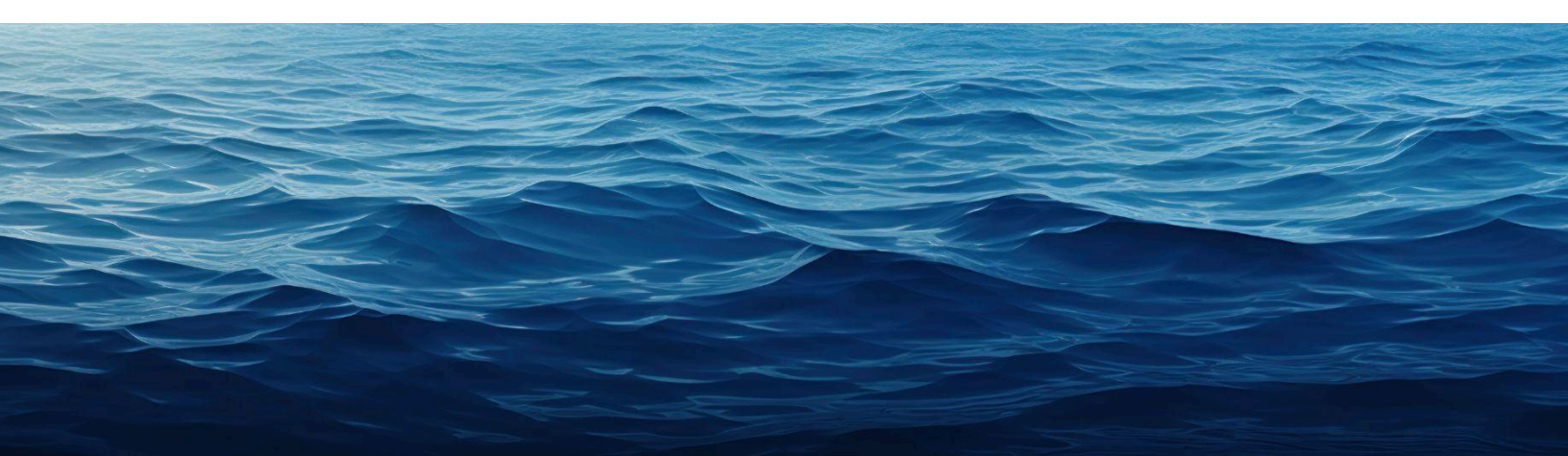
Quieting Technologies for Seismic Surveys

- Alternative technologies like marine vibroseis that use vibration instead of airguns.
- Optimization of airgun arrays to reduce the overall sound output.
- Ramp-up procedures that gradually increase noise levels to allow animals to move away.

Quieting Technologies for Offshore Construction

- Noise mitigation systems like hydro sound dampers, bubble curtains, and isolation casings for pile driving.





- Alternative foundation designs that require less or quieter pile driving.
- Time-area closures to avoid sensitive species and habitats.

Implementing these quieting technologies and best practices can significantly reduce underwater noise levels. For example, a study found that applying quieting measures to ships could reduce noise by 40%, lower collision risk with whales by 50%, and cut greenhouse gas emissions.

To drive the adoption of these solutions in South Africa, key steps include:

- Revising legal instruments to align with international frameworks on underwater noise management.
- Conducting more research on the cumulative impacts of noise on the marine environment.
- Developing a shipping noise map to guide policy and protect sensitive areas.
- Effective stakeholder engagement to balance competing needs while applying a precautionary approach.

By embracing these innovative quieting technologies and best practices, South Africa can lead the way in reducing underwater noise pollution and safeguarding its rich marine ecosystems. The time to turn down the volume and protect our oceans is now.

