



**E&P SOUND
& MARINE LIFE
PROGRAMME**

www.soundandmarinelife.org

Joint Industry Program (JIP)

Research program update

Our Structure



Part of the Sound & Marine Life Community

Frequent interactions

With NSF, ONR, LMR to leverage funding, NOAA, BOEM for funding partnerships and their data needs, U.S. Marine Mammal Commission to inform their oversight mandate.

Projects of interest to the whole community

PCAD, TTS (ONR)

Density Estimation method (NOAA)

Behavioral responses (BOEM and MOCHA)

Summary: The JIP is well integrated into the sound & marine life community

JIP Philosophy on the Value of Science

The JIP members firmly believe that effective policy must stem from good, independent science.

Advancements to understanding of the effect of E&P sound on marine life helps us all make better decisions and develop effective mitigation strategies as appropriate.



Partners in Joint Industry Program, 2014-2016

Total budget 2006-2016 ~ \$50M

Amount available 2014-2016 ~ \$18M



International Association of Oil & Gas Producers



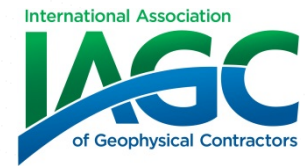
woodside



Statoil



BG GROUP 



ExxonMobil



Santos
We have the energy.



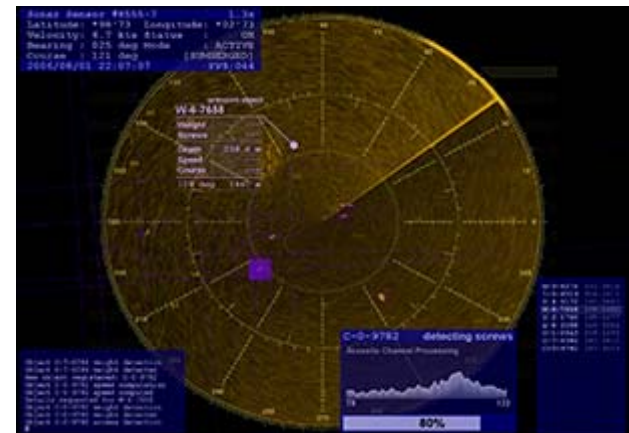
Sample Results, 2006-2013

- Dolphins exposed to 10 consecutive airgun pulses at 195 dB SEL did not result in TTS (Finneran et al. 2013)
- Preliminary results of BRAHSS suggest that humpback whales exposed to sound from airguns displayed limited behavioral responses (initial papers by Cato, Noad, and Dunlop), funded with BOEM
- New PCoD model of foraging in capital breeding seals (Costa et al, 2012) Air and water audiograms and critical ratios in spotted seal (Sills et al., 2014)



Sample Results, 2006-2013

- Model of minke whale hearing based on ear anatomy (Tubelli et al. 2012)
- Hearing ability in three life stages of loggerhead sea turtle (Bartol and Bartol, 2011)
- Statistical method for estimating cetacean population density from fixed PAM receivers (Thomas, et al. 2010), funded with NOAA and ONR
- Supported development of PAMGuard software system for acoustic monitoring marine mammals near offshore operations (Gillespie, 2011)



Ongoing projects

Source characteristics of a full airgun array

Final report due 2015

Source characteristics of single airguns and typical airgun clusters used in airgun arrays

Final report completed

Additional project analyzing data being developed

Propagation models available for industry use

Report drafted



Ongoing projects

Aerial and underwater hearing, and TTS from airguns in three species of Arctic seals

Review paper on auditory masking in vertebrates with a list of research needs for marine mammals

Responses of Australian humpback whales to sound from airguns and ramp-up using a full commercial array as sound source

Final Report due 2015



Phase III Projects

Support update to Southall et al. 2007 Noise Exposure Criteria for Marine Mammals using new scientific data since last review

Masking in seals from nearby and distant airgun operations

Population Consequences of Disturbance; an energy-based model on income breeding species and its application to sound impact assessment

Updated inventory industry sound sources

Comparing techniques and equipment for use in Low Visibility conditions

Phase III Projects – cont.

Auditory Weighting Function Expert Panel (RFP closed November 2014)

Hearing Recovery in Marine Mammals Exposed to Intermittent Impulse Sounds (RFP closed 27 March)

Literature review of Autonomous Aerial and Marine Technology Understanding (RFP closed 3 April)

Behavioral response of fish to seismic sound (proposal under review)

Long Term Fixed Acoustic Monitoring of Marine Mammals throughout the Life Cycle of an Offshore E&P Field Development (RFP just posted)

Topics Under Discussion

(Other topics to be discussed later in the program)

- Measure acoustic output of some new industry sources (submerged pumping stations, high frequency sources, dynamic positioning ships, etc.)
- Test and Refine Propagation Models, Investigate Model Parameterization
- Mysticete hearing
- Masking
- + Others..



A new website

www.soundandmarinelife.org

A library with links to publications and reports from JIP-sponsored research

Details on research focus areas

Funding opportunities



TOP

- THE OCEAN
- SOUND IN THE SEA
- THE SCIENCE
- OUR RESEARCH
- COLLABORATION
- INNOVATION



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THE E&P SOUND & MARINE LIFE JOINT INDUSTRY PROGRAMME

The Joint Industry Programme, or JIP, supports research to help increase understanding of the effect of sound on marine life generated by oil and gas exploration and production activity. The research helps governments make regulatory decisions based on the best science and the industry develop effective mitigation strategies. This helps us supply much needed energy to people around the world.

SCROLL TO DIVE INTO THE ISSUE ▼

OUR RESEARCH

The JIP's research is divided into five categories – from understanding how sound travels in underwater, to the possible effects of sound on marine fauna's physical and behavioural well-being, to how sound can be mitigated

SOUND & SOURCE | PHYSICAL AND PHYSIOLOGICAL EFFECTS | BEHAVIOURAL REACTIONS
MITIGATION & MONITORING | RESEARCH TOOLS | FUNDING



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