



ADEON

Atlantic Deepwater Ecosystem Observatory Network

National Projects

Scientific activities in many countries can contribute to IQOE, which operates an endorsement process to affiliate national projects to IQOE and helps the projects work together. Recently endorsed projects include the Atlantic Deepwater Ecosystem Observation Network (ADEON: USA) and Joint Monitoring Programme for Ambient Noise in the North Sea (JOMOPANS; multinational). Information about endorsed projects and the endorsement process is at http://www.scor-int.org/IQOE_Project_Endorsements.htm. National projects such as UNDER-ICE (see photo below) will be important contributors to IQOE and its working groups.



Deployment of an integrated ocean acoustic ice station in the Fram Strait under the UNDER-ICE project.

Credit: Provided by Hanne Sagen

IQOE Scientific Committee

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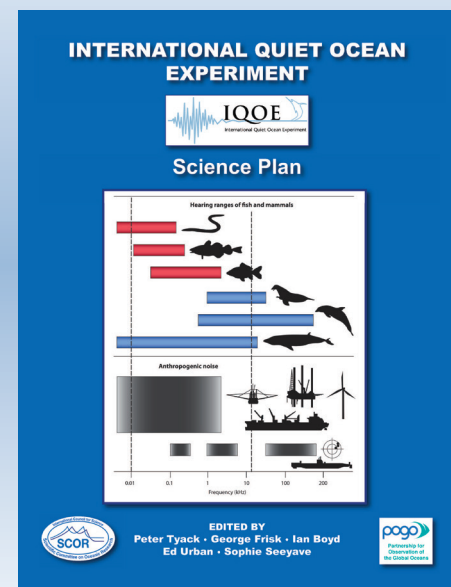
IQOE is supported in part by collaboration of the Urban Coast Institute (Monmouth University, New Jersey USA) and the Program for the Human Environment (The Rockefeller University, New York USA), and by the Scientific Committee on Oceanic Research (SCOR) and the Partnership for Observation of the Global Oceans (POGO).



Version 9 June 2017



IQOE is an international scientific program designed to promote research, observations, and modelling to improve understanding of ocean soundscapes and effects of sound on marine organisms.



Established in 2016 and benefiting from variability of ocean noise in time and space, the IQOE learns by listening without adding sound.



IQOE's Fundamental Questions

1. How have human activities affected the global ocean soundscape compared with natural changes over geologic time?
2. What are current levels and distribution of anthropogenic sound in the ocean?
3. What are trends in anthropogenic sound levels across the global ocean?
4. What are current effects of anthropogenic sound on important marine animal populations?
5. What are potential future effects of sound on marine life?

Science could much better relate the effects of anthropogenic sound to the well-being of marine life. Current uncertainty makes it difficult to balance caution in protecting marine ecosystems with the benefits of activities such as commercial shipping, offshore energy exploration and development, and military readiness.

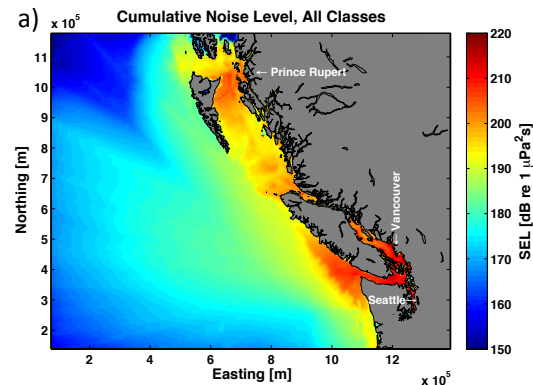
IQOE promotes more and improved observations of sound in the ocean, both natural and human-made, by working with the Global Ocean Observing System and helping establish standards and mechanisms to draw together currently separate passive observations. Knowledge gained from IQOE can help improve efficiency and effectiveness of laws and regulations to protect marine life and foster innovative, affordable practices for maritime industry, navies, and other sound-producers.

IQOE Website

The IQOE Website provides access to information about the project and resources related to ocean acoustics and bioacoustics, including the following information:

- The scientific focus and implementation activities of the project, including details about IQOE working groups
- Members of the IQOE Science Committee, working groups, and sponsors
- A link to the Aquatic Acoustic Archive Literature Library
- Access to IQOE documents
- Links to Websites and projects, articles and reports, and meetings on ocean acoustics and bioacoustics
- A list of IQOE-endorsed projects and information about the process for endorsement of national projects by IQOE.

A feature will be added to the IQOE Website to allow the input of information about passive acoustic observing systems, and for searches of a database of these systems.



Cumulative sound exposure level from vessel traffic from Jan. to Dec. 2008. Figure 2(a) from Erbe, C., A. MacGillivray, and R. Williams. 2012. Mapping cumulative noise from shipping to inform marine spatial planning. *The Journal of the Acoustical Society of America* 132, EL423; doi: 10.1121/1.475877. Credit: Creative Commons.

Working Groups

For some topics requiring focused attention, Working Groups (WGs) have been formed to draw on expertise beyond the IQOE Science Committee:

- **Standardization**—identifies existing standards relevant to IQOE and opportunities/facilities for intercalibration, and promotes means of calibration and methods for assessing and reporting uncertainty in observations.
- **Data Management and Access**—works to increase access to historic and new acoustic observations and related biological and experimental results; and will develop data management and data access policies for scientists and data centers involved in IQOE.
- **Arctic Acoustic Environment**—aims to produce an acoustic baseline of sound in the Arctic Ocean against which future soundscapes can be compared and will promote passive acoustic observations in the Arctic region.
- **Acoustic Measurement of Biodiversity on Coral Reefs**—aims to develop the potential to monitor sound on coral reefs continuously to help characterize reef biodiversity.
- **POGO Working Group**—compiles information about existing and planned passive observing systems and will identify a ranked set of essential ocean variables (EOVs) for sound.