![IQOE International Quiet Ocean Experiment]

IQOE News #1
June 2018

IQOE has been busy since the last message to the IQOE email list in January. The IQOE Science Committee (SC) met for the third time on 12-14 March 2018 at the Bremerhaven, Germany at the Alfred Wegener Institute. The SC received national reports from SC members, updates from IQOE working groups and endorsed projects, and presentations from related projects, organizations, and agencies conducting IQOE-relevant work. Decisions included the following:

- IQOE will continue to seek additional liaisons and endorsed projects
- A supplement to the *IQOE Science Plan* will be written, to update the Executive Summary and implementation activities.
- IQOE will consider draft terms of reference and membership for a working group on opportunities for observing ocean soundscapes before and after moving of shipping lanes, before and after infrastructure projects, etc.
- The IQOE brochure will be revised and distributed at relevant meetings.

Publications Referring to IQOE—Three publications appeared since January referring specifically to IQOE:

- Miksis-Olds, J.L., B. Martin, and Peter L. Tyack. 2018. Exploring the Ocean Through Soundscapes. *Acoustics Today* 14(1):26-34.
- Williams, R., C. Erbe, I.M.I. Dewantama, and I.G. Hendrawan. 2018. Effect on ocean noise: Nyepi, a Balinese day of silence. *Oceanography* 31(2)
- POGO Task Force on Ocean Biological Observations. 2018. White paper.

Endorsed projects—IQOE has issued five endorsement letters and three of the endorsed projects have been funded; one is still under consideration. IQOE would like to endorse any research project or observation activity that is relevant to IQOE. Information about the endorsement process and endorsed projects can be found at http://www.iqoe.org/projects.

Website Improvements and Needs for Input: Features continue to be added to the IQOE Website to make it more useful for the global community of scientists working in the area of ocean acoustics and bioacoustics. Since January, we have added a portal to acoustic data (http://www.iqoe.org/acoustic-data-portal), a portal to Websites with information about marine animal sounds (http://iqoe.org/marine-animal-sounds), and a page listing organizational liaisons to IQOE (http://iqoe.org/liaisons). The IQOE Aquatic Acoustic Archive (http://iqoe.org/library) now includes 4,493 references and abstracts.

We still need help from the community to do the following:

- update the database of passive acoustic observatories (http://iqoe.org/systems),
- submit IQOE-relevant papers for the IQOE literature database,
- submit entries for the portal to acoustic data,
- submit entries for the portal to marine animal sounds, and
- submit projects for endorsement.

WG Progress—IQOE currently supports four working groups, each of which has made progress since January:

- *WG on Acoustic Measurement of Ocean Biodiversity Hotspots* (chaired by Aran Mooney, USA): this group held its first in-person meeting on 20-21 May 2018 at the Woods Hole Oceanographic Institution. The group is working on a "perspectives" paper on the use of passive acoustics to assess and monitor diversity of marine life. The group also explored the issue of how to help with the identification of unknown sounds made by marine organisms, through an on-line portal, publication, or some other approach.
- *WG on Arctic Acoustic Environment* (co-chaired by Hanne Sagen, Norway and Philippe Blondel, UK): the co-chairs of this group met in February 2018 to do planning for the group's activities. Dates are being sought for the first in-person meeting; in the meantime, subgroups of the working group will meet at POLAR-2018 in Davos, Switzerland in June 2018 and at the Acoustical Society of America Meeting in Victoria, B.C., Canada in November 2018.

- *WG on Data Management and Access* (chaired by Rob McCauley, Australia): members of this group have held two conference calls and are discussing with the IQOE Science Committee the requirements for IQOE data management.
- *WG on Standardization* (co-chaired by Christ de Jong and Michael Ainslie, Netherlands): this group has created an *[Inventory of Existing Standards for Observations of Sound in the Ocean](#)* and is working on an overview of calibration facilities for hydrophones.

POGO IQOE Working Group—This group, formed and supported by the Partnership for Observation of the Global Oceans (POGO), conducted two tasks: (1) liaison with the IQOE Web developer to create the online version of the IQOE database of observing systems (http://iqoe.org/systems) and (2) creation of an acoustic Essential Ocean Variable (EOV) specification, which is being considered by the Global Ocean Observing System (SOOS) Steering Committee.

ASA Forum—IQOE convened a Forum on Approaches for Studying Effects of Sound on Marine Organisms and Ecosystems on 6 May 2018, in conjunction with the meeting of the Acoustical Society of America meeting in Minneapolis, Minnesota, USA. The recommendations of the meeting have been forwarded to the IQOE Science Committee for action. Forum participants were interested in forming an IQOE working group to make it easier for acoustic and bioacoustic data to be used by managers.

OceanObs'19—The OceanObs series of meetings, at 10-year intervals, have been a major tool of the ocean observation and research communities and agencies to shape the development of GOOS. OceanObs'19 will be held in Honolulu, Hawaii, USA on 16-20 September 2019. Scientists involved in IQOE submitted an abstract to propose a white paper on adding passive acoustics to GOOS. The ideas in this abstract will be combined with the ideas contained in three abstracts on active acoustics, to create a white paper on ocean acoustics for OceanObs'19. From IQOE, Hanne Sagen and Jennifer Miksis-Olds are on the leadership team for this white paper.

Capacity Building—The Scientific Committee on Oceanic Research (SCOR), one of IQOE's sponsors, is supporting the participation of two students from Brazil to participate in the [SeaBASS Summer School](#) on 8-13 July 2018 at the University of

New Hampshire. IQOE is exploring the possibility of holding an international summer school on IQOE-related topics in 2019 or 2021.

Stakeholder Engagement

- United Nations— The United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea picks a topic for consideration each year. For 2018, the topic is anthropogenic underwater noise (see http://www.un.org/Depts/los/consultative_process/consultative_process.htm). This issue will be the focus of discussions at the UN Headquarters in New York City on 18-22 June 2018. Peter Tyack (participating on a science panel) and Jesse Ausubel will represent IQOE at this event.

  IQOE submitted a list of peer-reviewed references regarding sound effects in the ocean, organized by sound source in 2017 (see http://iqoe.org/sites/default/files/files/References%20to%20UN.pdf), which was updated in 2018 (see http://iqoe.org/sites/default/files/files/References%20to%20UN-V2(1).pdf).
- Industry—Jesse Ausubel made a presentation on IQOE to the World Ocean Council in Halifax, Nova Scotia, Canada in November 2017.

National/Regional Activities

- Europe: The first tethered underwater sound measurement station has been deployed in the North Sea as part of the IQOE-endorsed project JOMPANS (http://www.northsearegion.eu/jomopans/).
- UK: The UK Sound Forum met on 20 June 2018.
- USA: The U.S. Quiet Ocean Project will hold a data "standards" workshop on 6-7 August 2018 in Washington, D.C. The IQOE-endorsed ADEON project (https://adeon.unh.edu/) is well underway, with the next ADEON cruise on the R/V *Endeavor* leaving on 6 June and returning on June 25. The cruise blog is at https://adeon.unh.edu.

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