

Workshop on an International Quiet Ocean Experiment

Kingston, Rhode Island, USA

27-29 October 2010

Agenda

Wednesday (27 October)

8:30 a.m. Meet in hotel lobby for carpooling to meeting location

Wireless Log-on at URI

Account: scor.g

Password: 88221373

9:00 a.m. Introduction to the Idea for an International Quiet Ocean Experiment –
Jesse Ausubel (Sloan Foundation) – by phone

9:30 a.m. Goals of Workshop – **Ian Boyd** (Sea Mammal Research Unit) and **George Frisk**
(Florida Atlantic University)

Background presentations (15 minute presentations + 5 minutes for questions/discussion) to set the stage for following discussions. (include chronic versus acute effects)

9:45 a.m. Sound propagation and modeling – summary of key issues on propagation, scattering, absorption, mode coupling – **Jim Miller**

10:05 a.m. Ambient sound and the perspective it provides on noise and marine Life – **Doug Cato** (by phone)

10:25 a.m. Anthropogenic noise - frequency power spectra and empirical trends –
Christine Erbe

10:45 a.m. Break

11:05 a.m. Recent trends in low-frequency oceanic ambient noise in the N. Pacific – **Rex Andrew**

11:25 a.m. Major sound sources and likely future challenges, including major shipping lanes – **Brandon Southall**

11:45 a.m. Sensitivity/response of fish and noise from fisheries – **Tony Hawkins**

- 12:05 p.m. Behavioral Responses and Experimental techniques to measure effects to anthropogenic noise - **Peter Tyack**
- 12:25 p.m. Noise/sound measurement technologies and current capability, including data accessibility from arrays for listening for underwater nuclear explosions, Argo floats with acoustic receivers? – **Dave Moretti**
- 12:45 p.m. Lunch
- 2:00 p.m. Current ocean observation systems and their relevance, acoustic capabilities of GOOS, applications of post-OceanObs'09 working group – **Tom Gross**
- 2:20 p.m. What kind of global ocean acoustics experiment or observations would have the greatest scientific value? – Discussion Leader: Frisk, Rapporteur: Tony Hawkins
- Contributions from participants around the table – each participant's views on the IQOE idea and their thoughts of topics for discussion (max. 5 minutes, no slides). Once we have seen what is on offer we can establish a sequence and try to decide if there are any gaps. We would encourage participants to share past experience at this stage rather than specifically address the issue of the structure of an IQOE.
- 4:00 p.m. Break
- 4:30 p.m. Continue Discussion – Discussion Leader: Boyd, Rapporteur: Tony Hawkins
- 6:00 p.m. Meeting adjourns for the day
- 7:00 p.m. Group Dinner at Coast Guard House (40 Ocean Road, Narragansett, Phone: 401-789-0700)

Thursday (28 October)

- 8:30 a.m. Meet in hotel lobby for carpooling to meeting location
- 9:00 a.m. Two Working Groups Meet in Parallel to Discuss
- Working Group 1: Addresses scientific goals and benefits of an IQOE
Chair: Peter Tyack
Rapporteur: Michael Weise
- Working Group 2: Addresses feasibility, and possible design and implementation of an IQOE
Co-Chairs: Brandon Southall/Kathy Metcalf
Rapporteur: Sophie Seeyave
- 10:30 a.m. Break

11:00 a.m. Continued Working Group Discussions
12:00 noon Lunch
1:00 p.m. Working Groups Report Back in Plenary
3:00 p.m. Break
3:30 p.m. Break into Working Groups Again
6:00 p.m. Break for the day
7:00 p.m. Group Dinner at Turtle Soup (113 Ocean Rd, Narragansett,
Phone: (401) 792-8683)

Friday (29 October)

8:30 a.m. Meet in hotel lobby for carpooling to meeting location
9:00 a.m. Report Back from Working Groups in Plenary and Discussion of their
Recommendations
10:30 a.m. Break
11:00 a.m. **Continued Discussion**
12:00 noon Lunch
1:00 p.m. Planning Committee + working group chairs and rapporteurs draft workshop
report
3:00 p.m. Meeting Adjourns

The following may be revised depending on discussions from Day 1:

Working Group 1: Addresses scientific goals, design and benefits to exploit an IQOE.

Participants: those with in depth scientific expertise.

Address the following

- a) Scientific goals
- b) Experimental design to achieve those goals

- c) What could be learned if the ocean could be temporarily quieted (globally or regionally) that could not be learned from laboratory and other focused experiments? (to be later compared with the cost and feasibility from the second working group).
- d) Would enough be learned to justify the cost to shipping, exploration companies, navies, etc.
- e) How long would the ocean need to be quieted for different experimental purposes?
- f) How much would noise have to be decreased for different experimental purposes?
- g) What kinds of measurements, both of sound and animal behavior (and physiology), should be made, and where? These discussions might be focused on the organisms most likely to be significantly affected.
- h) What would be required to achieve the needed noise reduction?
- i) How do these time and geographic scales (globally, ocean basin, limited area) apply to the different sources of noise
- j) Public Understanding of Science: Could something like an IQOE increase public understanding of ocean sound and its significance and impacts?

Working Group 2: Addresses implementation of an IQOE, the feasibility and logistics.

Participants: ocean users, navy, shipping industry, oil and gas, ocean environmental policy and regulators, NGOs.

Address the following

- a) What sources of noise could be stopped, what could be reduced in output
- b) How long could the reduction be applied
- c) What geographic scales could this be applied to
- d) How feasible is this reduction e.g. costs, willingness of participants
- e) Is this worthwhile from the users and stakeholders point of view.

Output From Meeting:

1. Meeting Report, with recommendations for follow-on work, workshops, publications, funding opportunities
2. From the meeting report, create *Oceanography* article