

# CRITICAL IMPACTS TO BBNJ: INCORPORATING THE MANAGEMENT OF OCEAN NOISE INTO THE NEW LOSC INSTRUMENT

A Side Event Sponsored by OceanCare and Hosted in Cooperation with the Natural Resources Defense Council (NRDC)  
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Managing the impacts of underwater noise pollution in the ocean is crucial to preserving biological diversity in marine areas beyond national jurisdiction. An extensive and rapidly growing base of scientific research has documented the significant adverse effects of noise on a wide array of species, including whales, dolphins, fish, squid, crabs and corals. Ocean acidification due to climate change will likely increase these negative impacts by allowing some frequencies of noise to spread even farther and faster.

The new instrument under the UN Convention on the Law of the Sea for the conservation and sustainable use of biological diversity beyond national jurisdiction offers a unique opportunity to advance protection from acoustic pollution through the express inclusion of appropriate measures in the enabling frameworks for marine protected areas and environmental impact assessments.

The aim of this side event is to provide BBNJ Preparatory Committee delegates with information on how the management of noise pollution can be incorporated into the new instrument, with a specific focus on the elements for MPA and EIA.

## PROGRAM

### Welcome Remarks

Moderator **Kristina M. Gjerde**

Senior High Seas Policy Advisor, IUCN Global Marine and Polar Program

### Presentations

#### **"Mitigation of the Impact of Noise on Marine Biological Diversity: Area-Based Management & Environmental Impact Assessments"**

**Linda S. Weilgart**, PhD

Research Associate, Department of Biology, Dalhousie University

#### **"Integrating the Management of Noise into the New LOSC Instrument: The Legal Framework"**

**Lora L. Nordtvedt Reeve**, MS, MBA, JD

PhD Researcher, Australian National Centre for Ocean Resources and Security, University of Wollongong

### Q&A

### Closing Remarks

Moderator **Kristina M. Gjerde**



## USB FLASH DRIVE CONTENT

The OceanCare USB flash drive provides selected peer-reviewed scientific literature on acoustic pollution and its impacts on marine life, environmental impact assessments that address noise, the risks of ocean acidification due to climate change, and ocean noise regulation. Also included are a summary of recent intergovernmental decisions and an academic bibliography regarding marine species and anthropogenic underwater noise.

### Environmental Impact Assessment

European Commission (2015). *Environmental Impacts of Noise, Vibrations and Electromagnetic Emissions from Marine Renewable Energy*, Final Report

'Making the Case for Environmental Impact Assessments for Marine Seismic Surveys in Areas of Marine Mammal Activity', Hickman A, Client Earth, 2015

Prideaux G and Prideaux M (2015). 'Environmental Impact Assessment Guidelines for Offshore Petroleum Exploration Seismic Surveys', *Impact Assessment and Project Appraisal* 34(1): 33

Thomsen F (2009). 'Assessment of the Environmental Impact of Underwater Noise', OSPAR Commission Biodiversity Series

### Noise and Impact on Marine Life

Hildebrand J A (2009). 'Anthropogenic and Natural Sources of Ambient Noise in the Ocean', *Mar. Ecol. Prog. Series* 395: 5

Reeve L L Nordtvedt (2012). 'Of Whales and Ships: Impacts on the Great Whales of Underwater Noise Pollution from Commercial Shipping and Proposals for Regulation under International Law', *Ocean and Coastal L. J.* 18(1): 127

Slabbekoorn H *et al* (2010). 'A Noisy Spring: The Impact of Globally Rising Underwater Sound Levels on Fish', *Trends in Ecol. and Evolution* 25(7): 419

UNEP CBD Subsidiary Body on Scientific, Technical and Technological Advice, 'Scientific Synthesis on the Impacts of Underwater Noise on Marine and Coastal Biodiversity and Habitats', UNEP/CBD/SBSTTA/16/INF/12, 12 March 2012, provisional agenda item 6.2

Wade L, Whitehead H and Weilgart L (2009). 'Conflict of Interest in Research on Anthropogenic Noise and Marine Mammals: Does Funding Bias Conclusions?' *Mar. Pol.* 34: 320

Weilgart L (2013). 'A Review of the Impacts of Seismic Airgun Surveys on Marine Life', Expert Workshop on Underwater Noise and Its Impacts on Marine and Coastal Biodiversity, Convention on Biological Diversity, 25-27 February 2014

### Ocean Acidification and Noise

Brewer P G and Hester K (2009). 'Ocean Acidification and the Increasing Transparency of the Ocean to Low Frequency Sound', *Oceanography* 22(4): 86

Duda T F (2009). 'Revisiting Experimental Methods for Studies of Acidity-Dependent Ocean Sound Absorption', *J. Acoust. Soc. Am.* 125(4): 1971

Hester K C (2008). 'Unanticipated Consequences of Ocean Acidification: A Noisier Ocean at Lower pH', *Geophysical Res. Lett.* 35(19): L19601

Ilyina T, Zeebe R E and Brewer P G (2009). 'Future Ocean Increasingly Transparent to Low-Frequency Sound Owing to Carbon Dioxide Emissions', *Nature Geoscience* 3(1): 18

Joseph J E and Chiu C-S (2010). 'A Computational Assessment of the Sensitivity of Ambient Noise Level to Ocean Acidification', *J. Acoust. Soc. Am.* 128(3): EL144-9

Reeder D B and Chiu C-S (2009). 'Ocean Acidification and Its Impact on Ocean Noise Level: An Analysis Using Empirical and Physical Models of Acoustic Transmission loss', *J. Acoust. Soc. Am.* 126: 2211

Reeder D B and Chiu C-S (2010). 'Ocean Acidification and Its Impact on Ocean Noise: Phenomenology and Analysis', *J. Acoust. Soc. Am.* 128(3): EL137

Rossi T, Connell S D and Nagelkerken I (2016). 'Silent Oceans: Ocean Acidification Impoverishes Natural Soundscapes by Altering Sound Production of the World's Noisiest Marine Invertebrate', *Proc. R. Soc. B* 283: 20153046

Simpson S D *et al* (2011). 'Ocean Acidification Erodes Crucial Auditory Behaviour in a Marine Fish', *Biol. Lett.* 7: 917

Udovydchenkov I A and Duda T F (2009). 'Ocean Noise Level Change in Response to Ocean Acidification', *J. Acoust. Soc. Am.* 126: 2211

Udovydchenkov I A *et al* (2010). 'Modeling Deep Ocean Shipping Noise in Varying Acidity Conditions', *J. Acoust. Soc. Am.* 128(3): EL130-6

### Precaution and Regulation

ACCOBAMS Resolution 4.17, 'Guidelines to Address the Impact of Anthropogenic Noise on Cetaceans in the ACCOBAMS Area'

IMO (2014). 'Guidelines for the Reduction of Underwater Noise from Commercial Shipping to Address Adverse Impacts on Marine Life'

US National Oceanic and Atmospheric Administration (NOAA) 'DRAFT Ocean Noise Strategy Roadmap', 2016

Weilgart L S (2007). 'The Need for Precaution in the Regulation and Management of Undersea Noise', *J. International Wildlife L. and Pol.* 10(3): 247

Wright A J and Kyhn L A (2014). 'Practical Management of Cumulative Anthropogenic Impacts with Working Marine Examples', *Conservation Biol.* 29(2): 333

### International Decisions and Bibliography

Intergovernmental Decisions and Academic Bibliography relating to Marine Species and Anthropogenic Underwater Noise, compiled by OceanCare, 2016