

Underwater noise poses a risk to human food security

Wädenswil, 6th November 2017: Until recently, concerns about the impacts of underwater noise predominantly related to marine mammals, in particular deep-diving whale species. However, a new literature review documents alarming evidence of the detrimental impacts of underwater noise activities on fish and invertebrates. This growing documentation should ring alarm bells for decision makers, as noise sources may compromise the health of the marine food web and consequently fisheries and even human food security.

OceanCare, an international marine conservation organisation, commissioned Dr. Linda Weilgart from Dalhousie University, Canada, to prepare this review. Dr. Weilgart reviewed 114 studies, of those 104 in peer-reviewed journals, encompassing various human-produced underwater noise sources, 61 species of fish and 26 species of invertebrates. The findings are alarming.

Impacts are documented:

- on development, including body malformations and higher egg or immature mortality;
- on anatomy, involving internal injuries, causing disorientation and even death;
- causing damage to hearing structures which can worsen over time, temporary hearing loss which can last for months, or even permanent hearing loss;
- causing stress, with negative consequences on the immune system and reproductive rates, etc.;
- causing behavioural changes, including aggression, flight reactions, reduced communication and foraging;
- on DNA integrity and physiology;
- on zooplankton which suffered high mortality in the presence of noise.

Noise sources used in the reviewed studies included ship and boat noise, airguns used to explore hydrocarbon resources and the seabed in general, pile-driving used in building offshore wind farms, sonars, and others.

“To marine fish and invertebrates which use sound for most vital life functions, noise can affect their development, anatomy, physiology, and behaviour. It is clear that noise presents an ecosystem-wide impact which degrades the habitat of marine life,” states Dr. Linda Weilgart, the author of the review.

“Potentially harmful noise activities must be strictly managed, especially in areas important for marine biodiversity. A failure to incorporate noise into responsible ocean management will endanger achievement of the UN Sustainable Development Goals to save our oceans, and moreover, risk food security for coastal communities. Given that noise can cause commercial fish catch rates to drop by up to 80%, increase bycatch, and kill zooplankton over a substantial area, the strictest precaution in the regulation of noisy human activities is warranted,” states Sigrid Lüber, president of OceanCare.

Announcement: On November 22nd and 23rd, OceanCare in collaboration with the Natural Resources Defense Council (NRDC) and supported by the Deutsche Bundesstiftung Umwelt (DBU) are going to host an expert workshop in Split, Croatia: „Workshop on mitigating the impact of underwater noise on marine biodiversity with specific focus on seismic surveys in the southeastern European waters in the Mediterranean Sea”.

For those interested in the workshop and its outcomes, please contact Nicolas Entrup, OceanCare, E-Mail: nentrup@oceancare.org



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Further links and information

- Review „The impact of ocean noise pollution on fish and invertebrates“ (Weilgart, 2017): https://www.oceancare.org/wp-content/uploads/2017/10/noise_and_fish_review_paper-20171016.pdf
- Underwater noise: <https://www.oceancare.org/en/our-work/ocean-conservation/underwater-noise/>

OceanCare

OceanCare has been working for the protection of marine mammals and oceans since 1989. With research and conservation projects, campaigns, environmental education as well as its contributions to a range of important international committees, OceanCare has undertaken concrete steps worldwide to improve the conditions of life in the world's oceans. In 2011, OceanCare was granted Special Consultative Status with the Economic and Social Council of the United Nations. www.oceancare.org