



Vlaams Instituut voor de Zee vzw
Flanders Marine Institute

VACANCY

Researcher underwater sound: marine acoustic environment and meaning for biodiversity

SITUATION

For 20 years, the Flanders Marine Institute (VLIZ) has been strengthening the accumulation of marine knowledge and the excellence of marine scientific research in Flanders. VLIZ is a coordination and information platform, a focal point for marine and coastal research, which also serves as an international contact point for marine science. Important activities are national and international networking, information and data management, scientific communication for policy and industry, education and the general public, and logistical support of marine research. Since 2017, the institute also initiates, promotes and executes innovative and multidisciplinary marine research, and this at the service of, in collaboration with or complementary to Flemish and international marine research groups.

To strengthen its research capacity, VLIZ is hiring 14 new colleagues in its Research Department. Join our multidisciplinary team in Oostende at the Belgian coast and be part of a new wave of marine research in Flanders. You will work in a unique institute in which your science will be supported by state-of-the-art data systems and services, research infrastructure, science communication and an extensive marine library. Moreover, VLIZ is part of a wide network of Belgian and international marine research groups, offering many opportunities for scientific collaboration.

In addition to these open positions, VLIZ sets up a recruitment reserve for potential temporary jobs. Opportunities may arise for the following profiles: ecological modeler, environmental data analyst/modeler with experience in R, marine biologist/taxonomist, molecular ecologist, marine geologist. Candidates with such a profile are encouraged to make a spontaneous application.

For each function, VLIZ considers enthusiastic involvement, open servitude, excellent professionalism and integrity as important characteristics.

RESEARCHER UNDERWATER SOUND: MARINE ACOUSTIC ENVIRONMENT AND MEANING FOR BIODIVERSITY

Sound is omnipresent in the marine environment and can travel over long distances. Consequently, it plays a major role in the life of marine fauna (communication, predator-prey relationships, retrieval of environmental information, habitat selection, foraging...). Sound has two main components: particle motion and sound pressure. Marine underwater sound is generated by three general sources: geophony (sediment transport, type of sediment, waves, currents...), biophony (marine mammal echolocation, fish sounds, shrimp snaps...) and technophony (shipping, sonar...). This array of sound sources contributes to the marine acoustic environment inhabited by marine fauna.

The aim of this research is to obtain knowledge on the sound ecology of the Belgian part of the North Sea (BPNS), which is a heavily exploited area and comprises a unique sand bank system. Shipwrecks are distributed across the BPNS and can function as biodiversity hotspots.

By expanding our current sensor network for harbour porpoise echolocation with hydrophones recording the ambient sound levels in the sea and by deploying an unmanned surface vehicle for complementary recording tracks, VLIZ wants to address the following research questions:

- 1) How can we characterize and map the acoustic environment in the Belgian part of the North Sea?
- 2) What sound sources can be identified and how do they contribute to the general acoustic environment?
- 3) Can the acoustic complexity be linked to benthic habitats to define acoustic habitats?
- 4) Can the underwater sound be linked to ecological and biodiversity values?

This project will be performed in collaboration with one or more university research groups. The research will include investigating the opportunity to develop and implement a particle motion sensor in the sea in combination with a hydrophone system, determining the recording strategy, modelling sound propagation, identifying sound sources, determining acoustic habitats and finally translating the acoustic indicators in an ecological status.

To develop this project, VLIZ hires a researcher in its Marine Observation Centre at the Research Department.

MAIN RESPONSIBILITIES

- To plan and perform a research project on the characterisation of the marine acoustic ecology in the Belgian Part of the North Sea. This involves the planning and performance of sampling and observation campaigns at sea, sample and data processing, data analysis and modelling;
- To take initiative to discuss planning and report progress to the head of the research unit and collaborating scientists;
- To write high quality research manuscripts for submitting to peer-reviewed scientific journals;
- To supervise BSc and MSc students for job student, internship or thesis work;
- To interact and collaborate with colleagues at VLIZ to increase interdisciplinarity in various research projects;
- To possibly contribute to aspects of research and innovation projects in collaboration with partners from the Blue Economy;
- To present research at national and international conferences;
- To network at national and international level with other (marine) scientists;
- To participate in sampling campaigns on board of the RV Simon Stevin and daily tasks of the VLIZ Marine Observation Centre and Research Department;
- To contribute to events organized by the Department or the Institute, such as the VLIZ Marine Science Day.

PROFILE

- MSc in engineering, bio-engineering, (bio)acoustics, or equivalent, with an interest in sound processing and marine ecology;
- Experience with signal processing;
- Experience with sound propagation modelling is a plus;
- Experience with the analysis of large data sets and/or with artificial intelligence is a plus;
- Experience with hardware development is a plus;
- Critical and creative;
- Scientifically integer;
- Open minded and taking initiative;
- Passionate scientist, willing to learn new skills and develop excellent research;
- Strong interpersonal skills, a motivated team player;
- Willing to work in an international context;
- Knowledge of statistics;
- Good written and oral English communication skills;
- Academic writing skills are a plus.

ADDITIONAL INFORMATION

For more information concerning this vacancy, please contact:

- Klaas Deneudt, head of the Marine Observation Centre
 - Mail: klaas.deneudt@vliz.be
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- Michiel Vandegehuchte, Research Director VLIZ
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OUR OFFER

- We offer a challenging job in the dynamic environment of VLIZ
- A contract of two years as researcher, which will be followed by a new two-year contract in case of a positive evaluation. The salary follows the salary scales of scientific personnel in the Flemish Government. Through collaboration with academic research groups, the research may lead to a PhD at a Flemish University.
- Fringe benefits: holiday pay, end-of-year bonus, meal vouchers, hospitalization insurance, bike allowance, free public transport for home-work commuting and an attractive holiday arrangement.

DOES THIS VACANCY APPEAL TO YOU?

Send in your cover letter and CV until May 15th 2019 (23:00 CEST):

- By post: Jan Mees, General director VLIZ, InnovOcean site, Wandelaarkaai 7, 8400 Oostende
- By mail: jobs@vliz.be with subject "12 UOO - Vacancy Acoustic Ecology" Contact us by telephone on +32 (0)59 34 21 30.

VLIZ promotes equality and diversity in the workplace. You will be recruited based on competencies. Qualities of people are decisive, regardless of gender, religion, ethnic origin, age, sexual orientation or any disability.

PROCEDURE

Based on the received motivation letters and CVs, a select group of candidates will be invited for a job interview. You will be informed by email. The job interviews take place in the offices of VLIZ.

Employment can start immediately after the selection procedure and ideally not later than 1st October 2019.

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