SUSTAINABLE MARINE ENERGY

Head of Marine Ecology

Dartmouth, Nova Scotia, Canada
Permanent, Full-time

Sustainable Marine is a world-leading developer of sustainable energy solutions for islands and coastal communities. The company is currently building one of the world's largest tidal-stream energy projects at the Fundy Ocean Research Centre for Energy (FORCE) in the Minas Passage in Nova Scotia. Sustainable Marine is working to increase the scientific knowledge and understanding of fish and marine mammal behavior in tidal flows and their potential interaction with man-made objects including floating tidal energy platforms.

The Opportunity

Marine renewables have the potential to be a major source of clean energy that is almost completely untapped at present. To meet the UNFCCC Paris Agreement's 2050 net zero targets and avoid catastrophic climate change, many consider that it is vital for countries to be able to harness the reliable and predictable resource of tidal energy in order to displace polluting forms of generation such as coal and diesel. Historically tidal energy projects have been barrage based, damming entire estuaries or rivers with associated impacts on the marine ecology. Sustainable Marine's solution is different, utilizing innovative moored floating platforms with in-stream tidal turbines.

Marine scientists, fishers, indigenous communities, government regulators and the public are all interested in understanding the potential interactions of marine mammals and fish with this new technology. The scientific consensus to date is that in-stream tidal turbines are unlikely to have much of an impact on marine ecology. However, work is still ongoing due to the following:

- the sector is at a relatively early stage of development,
- minimal use of monitoring equipment in fast flowing, energetic and potentially turbid waters of tidal energy sites, and
- differences between site locations, ecology and presence of individual species.

Sustainable Marine is investing in the development of world-class monitoring and data gathering systems that are designed to operate reliably in this environment, building upon its experience gathered to date. To achieve this, the company is supporting several industry-leading initiatives with a number of collaborators and partners. We are also investigating the wider applicability of the solutions developed to supporting the development of a sustainable blue economy.

The Head of Marine Ecology will lead this stream of work, developing systems that use novel and innovative sensing technologies and data gathering techniques to inform the science of fish and marine mammal behavior in the unique and challenging environment of fast flowing tidal streams.

The successful candidate will be responsible for:

- Coordinate with local research organizations and facilities such as Offshore Energy Research Association (OERA), FORCE, Bedford Institute of Oceanography, academic institutions, external consultants, provincial and federal government regulators and partners, as well as international subject matter experts working in this field,
- Ensure that scientific hypotheses are appropriately defined, peer-reviewed, tested and reported,
- Work with Sustainable Marine's engineering team to develop and test monitoring systems, ensuring it is performing as required and monitoring the development of new sensing technologies that could enhance our systems' performance.
- Manage data gathering, storage and analysis with third parties as appropriate.
- Develop advanced analysis techniques to process data. This will include working with leading developers of automated techniques such as artificial intelligence and machine learning in order to filter, sort and interpret data to provide near-real time reporting and identify what requires deeper investigation.
- Provide interpretation and analysis of results to ascertain how fish and marine mammals behave and interact with our tidal energy systems.
- Disseminate this information through research papers and presentations at academic and industry conferences and communicate with a variety of technical and non-technical stakeholders, including regulators, other government agencies, First Nation communities and the public.

Qualifications and Experience

The successful candidate is likely to have a Masters or PhD in marine biology, ecology or similar with a focus on environmental research in the marine environment, with:

- Experience and strong interest in marine ecology and fish and marine mammal behavior and interaction with man-made objects within dynamic situations.
- Experience in the development, deployment and operation of environmental monitoring systems such as echosounders, marine mammal click detectors, fish tag detectors, hydrophones and imaging sonars.
- Proven ability to design, implement and deliver scientific programs with external partners within budget and timelines to provide clear and unambiguous progress updates to key stakeholders.
- Dynamic leader who takes the initiative and is a strong communicator.

Prior experience with tidal energy or other marine renewable energy technologies would be an asset but is not a prerequisite for this role.

Application Process

To apply please email a cover letter and your resume to careers@sustainablemarine.com.

All applications will be reviewed by one of our recruiters. If the recruiter sees a potential opportunity (current or future) that matches your skills and experience, you will be contacted to discuss your qualifications for a position with Sustainable Marine.

We thank all candidates for their interest, however, only those selected for interviews will be contacted.