# Marine Institute Job Description

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## Brief description of the Marine Institute:

The Marine Institute is a non-commercial semi-state body, which was formally established by statute (Marine Institute Act, 1991) in October 1992.

Under the Act, the Marine Institute was given the responsibility:

> “to undertake, to co-ordinate, to promote and to assist in marine research and development and to provide such services related to marine research and development, that in the opinion of the Institute will promote economic development and create employment and protect the marine environment “.

The Marine Institute is the national agency responsible for marine research, technology, development and innovation (RTDI). The Marine Institute seeks to assess and realise the economic potential of Ireland’s 220 million acre marine resource; promote the sustainable development of marine industry through strategic funding programmes and scientific services; and safeguard the marine environment through research and environmental monitoring. The Institute works in conjunction with the Department of Agriculture, Food and Marine (DAFM) and a network of other Government Departments, semi-state agencies, national and international marine partners.

The vision of the Marine Institute is

> “a thriving maritime economy in harmony with the ecosystem and supported by the delivery of excellence in our services “

In order to achieve this vision, the MI have six service areas; (1) Ocean Science and Information Services, (2) Marine Environment & Food Safety Services, (3) Fisheries Ecosystems Advisory Services, (4) Irish Maritime Development Office, (5) Policy, Innovation and Research Support Services and (6) Corporate Services.


Harnessing our Ocean Wealth (HOOW) is an Integrated Maritime Plan (IMP) for Ireland. HOOW sets out a roadmap for the Irish Government’s vision, high level goals and integrated actions across policy, governance and business to enable our marine potential to be realised. Goal 2 of HOOW focuses on healthy marine ecosystems and specifically; to protect and conserve our rich marine biodiversity and ecosystems; manage our living and non-living resources in harmony with the ecosystem; implement and comply with environmental legislation (see [http://www.ouroceanwealth.ie/](http://www.ouroceanwealth.ie/))
Description of appropriate Service Group:

The mission of OSIS is “To provide scientific, operational and analytical support and services to strategic RTDI and statutory monitoring programmes (at national and international level) to promote and support the sustainable development of Ireland’s marine resources”

Ocean Science and Information Services incorporates:
- Information Services & Development
- Advanced Mapping Services
- Research Vessel Operations
- Oceanographic Services
- Research Infrastructures
- Operational elements of Discovery R&D Programmes including
  - Advanced Technology including SMARTBAY
  - Ocean Energy

Summary of the Role:

The Marine Institute (MI) is seeking a self-motivated, enthusiastic Post-Doctoral Data Analyst to work on the Co-development of Climate Services for Adaptation to Changing Marine Ecosystems (CoCliME) project.

Background to Requirement:

Project description
The CoCliME project will co-develop and co-produce bespoke, proof-of-concepts or prototype marine ecosystem climate services and a transferable framework for climate services development, to support informed decision making relevant to climate change-related ecological and socio-economic impacts across different coastal regions. To achieve these objectives the newly established CoCliME consortium brings together a transdisciplinary team of natural and social scientists, decision makers, and users of climate services that will dynamically interact to identify common and priority climate change-related vulnerabilities and solutions in six European coastal areas (Atlantic, Baltic, Black, Mediterranean, North and Norwegian Seas case studies). In these areas, CoCliME will focus on coastal ecosystem status indicators (e.g. harmful algal blooms, marine biotoxins and pathogens, marine microbial biodiversity) that can be markedly influenced by climate change and have direct impacts on human health (food-borne poisoning and water-quality related health disorders), economic prosperity (fisheries, aquaculture, tourism) and social wellbeing (recreation). From the very start a co-production and co-development approach to climate services will identify the information and knowledge needs of decision makers and users, and facilitate and accelerate local, national and European decision making concerning adaptation to climate change impacts. This marine ecosystem climate service framework will feed into mechanisms such as the UN Sustainable Development Goals, Marine Strategy Framework Directive, Marine Spatial Planning, national monitoring and reporting requirements, and climate adaptation planning to ensure the protection and sustainable use of Europe’s marine and coastal ecosystems for future generations.

MI role in the project
The MI will be coordinating the CoCliME project and will also be leading the Irish case study towards development of bespoke climate services for the Irish Aquaculture Industry and associated policy and decision makers. Biotoxin producing phytoplankton (HABs) cause shellfish toxicity that can result in periodic and often long harvesting closures of wild and farmed mussels and thus constitute a threat to sustainability and development of the sector that may be exacerbated by climate change. To anticipate future susceptibilities to HABs, the MI with CoCliME partners will assess and co-develop adaptation services for the aquaculture industry, policy makers, and food safety regulators that build on existing operational HAB warning services in the NE Atlantic to increase future resilience.
Observations and databases of the NE Atlantic Ocean will be collected and interrogated to identify ocean climate signals related to Harmful Algal Bloom (HAB) events for the Atlantic Case Study. Existing databases will be analysed for occurrence of toxic pelagic HAB species, physical and environmental parameters and dependencies between past physical/chemical parameters and HABs. Following this the co-developers (all parties) will identify the ecosystem impact of HABs, the socio-economic vulnerability and adaptation of HABs and decide on the most suitable SMART climate indicators (determined from the trends and variability observed), to proceed with in the Atlantic Case Study climate service. The modellers will then simulate future climate projections scenarios for relevant time periods in the NE Atlantic in discussion with co-developers to determine likely future conditions (e.g. salinity, SST, oxygen, currents) that could lead to potential changes in future HAB distributions/transport and the identified climate indicators tested in the models. An examination of the future model simulations will be carried out and key events that will likely trigger HAB proliferation will be identified (uncertainties calculated) and included in the climate service. Model outputs will be transferred into integrated climate information in terms of indicators, tailored to user needs. Indicators and information will be integrated into existing national and international web-based portals. The processes involved in the development and fine tuning of the climate service will be well documented and Best Practice identified. The analysis of climate change impacts will aid the identification of necessary adaptation strategies for both policy and industry.

Principal Tasks:

The principal tasks of the CoCLiME PDR will relate to data extraction, collation and analyses of biological (Harmful Algal Bloom species), chemical (biotoxins) and physical (derived from models) variables from datasets housed in the Marine Institute and identification of relationships with ocean phenomena identified and validated in MI coastal hydrodynamic models. The PDR will liaise closely with HAB/biotoxin and modelling specialists at the MI.

The CoCLiME PDR will take responsibility for tasks necessary for the completion of the Marine Institute components of CoCLiME. Two key tasks that are the responsibility of MI are to (i) co-develop and co-produce bespoke, proof-of-concepts or prototype bespoke HAB event climate service for Atlantic use case study to support informed future decision making based on intensive user co-development, exploitation of existing data sets and new scientific knowledge (ii) Develop best practices and a transferrable framework of the climate service developed in CoCLiME.

The CoCLiME PDR will:

- Coordinate the assessment of algal blooms/biotoxin events that have been associated with severe impacts over the past decades and to identify clear links with physical variables from the MI 3D hydrodynamic model. The PDR will be familiar with and conversant in statistical modelling methodologies, and will work closely with both the biotoxinphytoplankton and numerical modelling teams in the MI to facilitate the identification and extraction of relevant data.
- Assemble existing and relevant MI phytoplankton, biotoxin and modelled data to examine possible climate change signals.
- Develop future predictions for the success of the various species under different climate change scenarios.
- Analyse existing climate, climate impact and ecosystem indicators.
- Develop best practices for a climate service to inform decision makers.
- Working with Irish and French partners and Atlantic case study co-developers, the PDR will assess and co-develop adaptation services for the aquaculture industry, policy makers, and food safety regulators and build on existing operational HAB warning services in the NE Atlantic to increase future resilience to toxic and harmful events. Responsibilities will include evaluating the risks presented to producers by selected HABs in close cooperation with co-developers.
- Liaise closely with staff from the Marine Shellfish Safety and Ocean Modelling teams.
- Liaise with MI administrative staff regarding budget tracking and become familiar with reporting structures for technical and budgetary aspects for the project.
CoCliME Data Analyst Job Description

Prepare project reports and relevant documentation closely adhering to project deadlines while responsive to demands as they arise.
Assist the OS team in the preparation of project proposals.
Any other duties as required and relevant to the role and grade.

Reporting Structure:

The successful candidate will be based at the Marine Institute HQ in Oranmore, Galway and will be a member of the Oceanographic Services Section reporting directly to the EU Projects & Oceanographic Research Team Lead.

Contacts:

Marine Institute: EU Projects & Oceanography Research team, Ocean Modelling team, other teams within Oceanographic Services and wider Ocean Science & Information Services, the Marine Environment and Food Services Service Area, the Research Office (administrative staff) and other Service Areas within the MI.

Externally: Regular liaison with project partners and co-developers/stakeholders/end-users from across Europe and internationally, and interaction with national agencies and HEIs.

Education, Professional or Technical Qualifications, Knowledge, Skills, Aptitudes, Experience, and Training

Essential:

- A BSc (Hons) and PhD in marine or environmental science, oceanography, mathematical or similar related discipline with demonstrated experience of data analytics.
- Considerable experience of processing and quantitative analysis of complex scientific datasets.
- Demonstrates an analytical approach to problem solving.
- Experience in statistical modelling techniques and data visualisation. Shows evidence of having worked with environmental data analyses.
- The ability to be well organised and work to deadlines identifying priorities and managing time effectively to plan, organise and coordinate work assignments.
- Demonstrates initiative and enthusiasm for collaborative research.
- Evidence of bringing research from concept through to publication.
- Track record in preparing technical reports and scientific publications.
- A high level of computer literacy (Word, Excel, PowerPoint, Internet/Email).
- Strong interpersonal skills.
- The ability to communicate effectively both in writing and verbally, at all levels.
- The ability to work unsupervised and to work well with others.

Desirable:

- Experience of stakeholder engagement.
- Experience of involvement in project management, particularly within large scale EU projects.
- Experience in the coordination and monitoring of work and scientific projects.
- Evidence of applying for, and obtaining, research grants.
- Hands on experience in climate or marine ecosystem service development.

Special personal attributes required for the position:

- An ability to work in an organised manner and progress work independently.
- Self-starter, dynamic and reliable.
- Self-sufficiency, while being a good team player.
- Excellent interpersonal skills.
- Ability to effectively communicate results to a wide range of stakeholders and end users using appropriate delivery methods.
- Enthusiasm for multidisciplinary and multinational collaboration.

**Salary:**

Remuneration is in accordance with the Public Sector, Department of Finance approved Salary Scale for Post Doctoral Researchers, with a starting salary of €36,489 per annum pro-rated with time worked. You will become a member of the Single Public Service Pension Scheme.

**Annual Leave:**

The annual leave entitlement for a Post-Doctoral Research Scientist is 24 working days per annum prorated to reflect time worked. Annual leave entitlements are exclusive of Public Holidays. All leave must be approved by your manager or their authorised representative; in advance of being taken and in line with Marine Institute leave policies.

**Duration of Contract:**

This temporary specified purpose contract of employment is funded under the JPI Climate ERA4CS Joint Call through the EPA as the Irish Research Funding Organisation and will run for a duration of up to three years. The successful candidate will be on probation for the first six months of this contract.

**How to Apply:**

A C.V. and letter of application, summarising experience and skill set applicable to the position should be emailed to recruitment@marine.ie or posted to Human Resources at the Marine Institute, Rinville, Oranmore, Galway. All correspondence for this post should quote reference OSIS/PDR_CoClime/Nov 2017

**Closing date for applications**

All applications for this post should be received by the Marine Institute in advance of **12:00 noon on Thursday 16th November 2017**. Please note that late applications will not be accepted.