

## **The Centre for Environment, Fisheries and Aquaculture Science (Cefas), UK.**

**1. Track Record:** Cefas is a multidisciplinary scientific research centre promoting sustainable management of the marine environment. We work across fresh water and marine systems. Our portfolio covers a long history of collaboration over national and international projects. We are a government agency, our remit is to provide the UK Government's Department for Environment, Food and Rural Affairs (Defra) and The Department for Business, Energy and Industrial Strategy (BEIS, formerly known as DECC). Our international portfolio concentrates on international governments, business, maritime and fishing industry, non-governmental organisations, research institutes, universities, civil society and schools to collate and share knowledge. Together we can understand and value our seas to secure a sustainable blue future for us all and help create a greater place for living. Our overseas work is focused to Commonwealth countries, United Kingdom Overseas Territories, South East Asia and the Middle East. The work we conduct is based on gathering the best scientific advice to support scientific assessments to understand environmental effects of human activities and climate change in the coastal zone and shelf seas. Our science is structured across three themes, these are: safeguarding animal and human health, enabling food security and supporting marine economies. We have a purpose-built vessel *RV Cefas Endeavour* (with an installed PCO<sub>2</sub> monitoring system and multibeam technology) and laboratory facilities (temperature and PCO<sub>2</sub> system). Cefas also has a dedicated Marine Climate Change Centre (MC<sup>3</sup>). We have a broad portfolio of projects looking at the climate impacts, adaptation, and mitigation. Cefas is also the secretariat for the UK Marine Climate Change Impacts Partnership (MCCIP). MCCIP act as the co-ordination body, providing evidence on marine climate change impacts and guidance on adaptation, to policy advisors and decision makers. The MCCIP product is a series of report cards with information on the science and evidence gaps to understand climate change. This information has contributed to Charting Progress 2, OSPAR QSR and UKCP09.

Cefas scientists played a key role during the first phase of the INSITE programme. We led two multidisciplinary projects. These were i) Assessing the Ecological Connectivity between man-made structures in the North Sea (EcoConnect); ii) Investigating food web effects due to man-made structures using Coupled Spatial Modelling (COSM) and iii) collaborated on an international consortium led by colleagues at the Alfred Wegner Institute (AWI, Bremerhaven, Germany) under the project UNDERstanding the INfluence of man-made structures on the Ecosystem functions of the North Sea (Undine). Cefas scientists developed a strong understating of ecological and ecosystems changes that could be influenced by the presence of introduced man-made structures. Therefore, we are well placed to contribute and support the second phase of INSITE.

**2. Our contribution to NERC and across consortiums:** the work conducted during INSITE phase I will help as foundations stages for the second phase of INSITE. Cefas will contribute with: i) modelling tools to support ecosystem assessments (ecopath and ecosim- EwE); ii) large scale data sets (including benthic time-series, biological traits information, fish distribution and stomach content data sets, contaminants and biomagnification including top predators, pressure data on wrecks, pipelines, wind farms; and, iii) synthesis and modelling capability (e.g. network analysis, ecosystem models, large scale assessment),iv) biogeochemical data sets and measurements over soft sediment areas; v) socio-economic expertise to underpin cost/benefit and ecosystem services analyses and vi) our regulatory and advisory capabilities to ensure the new science knowledge is translated accordingly to fulfil industry and regulatory needs in support of decommissioning practices.

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