Socio-oceanography 2025

Marine species on the move: how climate change driven redistribution of marine species is going to change how we perceive, value, manage and research the UK marine environment
(Env lead: Dr Alexandra Loveridge, NOC; Social Science lead: tbd)

A storyline approach using seagrass and mauve stinger jellyfish as case studies to explore impacts of climate-induced species redistribution in UK waters

Summary:

This workshop session examines the effects of climate change on species redistribution and its socio-economic and environmental impacts. Using two case studies—the potential increase of the mauve stinger jellyfish in UK waters and the vulnerability of seagrass restoration efforts—participants will develop narrative approaches to assess future risks, opportunities, and priorities for research and management across environmental, economic, and societal dimensions.

Abstract

Climate change is currently driving the largest recorded redistribution of life on Earth. The implications of these changes for ecosystems and the communities that rely on them are not yet fully understood, particularly in areas where these redistributions are less visible. Human well-being, biodiversity and environmental quality are tightly related, but efforts to link environmental forecasts with governance measures and societal values are still undervalued in climate adaptation. To overcome this, storyline approaches are increasingly emerging as a promising tool to reframe climate change communication by engaging a wide range of expertise on a chosen topic.

This session will bring together an interdisciplinary group of natural and social scientists to create two species-on-the-move narratives in a local UK context and to explore the consequences of these changes on the social, economic and environmental landscapes of the British Isles. Firstly, with an increase in suitable environmental conditions due to climate change, non-native species are likely to become more frequent and abundant in UK waters. The mauve stinger (*Pelagia noctiluca*) is a jellyfish species currently commonplace in the Mediterranean, where it is responsible for the majority of stings incurred by tourists. Increasing sea temperatures and changing weather patterns may result in this species may become more common in UK coastal areas, with large blooms threatening tourism, fisheries and socio-ecological systems. Secondly, native UK species will also be impacted, particularly those that are already at risk from human activities. Following the widespread loss of seagrass around the UK from pollution and physical disturbance, multiple seagrass restoration projects are working to restore this important habitat as well as the services it provides, such as coastal protection and carbon sequestration. However, emerging climate change stressors such as marine heatwaves (MHWs) are likely to threaten these efforts in the future, risking further decline. In both cases, highly tailored future ocean projections will be essential to predict and prepare for the consequences of such impacts. What metrics and indicators will the ocean and climate modelling research communities need to provide to ensure we are prepared for these "species on the move"?

To develop these two narrative case studies (seagrass, jellyfish), we will identify likely scenarios and consequences across three areas (environment, economy, society), as well as future management and research priorities that could support the restoration of sensitive habitats, safeguard coastal livelihoods and explore the opportunities that could arise from these changes. We aim to engage scientists from multiple disciplines and career stages, to work together to publish a perspective style article on the developed storylines.