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Title of Talk: Assessing the environmental impacts of the European seaweed industry: From cultivation to wild harvesting

About Sophie Corrigan

Sophie is a postdoctoral researcher at the Norwegian Institute of Marine Research. Her work focuses on understanding the environmental impacts of the seaweed harvesting and farming industries and the ecological importance of seaweed habitats. Sophie completed her PhD at the Marine Biological Association and the University of Exeter, on the ecological impacts of kelp farming, before undertaking a postdoc at the London Natural History Museum investigating links between seaweed farming and conservation efforts globally. Her current postdoc at the Norwegian Institute of Marine Research assesses the impacts of mechanical kelp harvesting on biodiversity in Norway.

Seaweed industries in Europe are expanding, driven by growing demand for food, feed, and biomaterials. While European production has historically relied on the mechanical harvesting of kelp forests, particularly in Norway, seaweed aquaculture is now developing rapidly in many coastal nations. However, the environmental impacts of both wild harvesting and cultivation remain poorly resolved, limiting the sustainable management of seaweed resources and associated ecosystems.

Kelp forests are among the most productive and biodiverse coastal ecosystems, underpinning carbon and nutrient cycling, fisheries, and the availability of commercially valuable biomass. It is therefore important to understand the resilience of kelp forests and the ecological consequences of repeated harvesting under environmental change. There is also increasing interest in whether seaweed farms replicate the habitat value and ecological functions of natural kelp forests, or whether they instead alter coastal biodiversity through shifts in community composition.

Here I present research spanning both the cultivated and wild-harvested seaweed industries in Europe, focusing on how different forms of seaweed production influence ecosystem structure and functioning across spatial and temporal scales. I further discuss the importance of using standardised, coordinated and multidisciplinary monitoring approaches to assess ecological changes more comprehensively in these industries. This work informs the development of ecosystem-based management strategies for more sustainable and environmentally responsible European seaweed industries.

