Data, models and ecosystem services: the Marine Ecosystems Research Programme

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The effects of marine ecosystem changes on ecosystem services are difficult to predict because of our limited understanding of marine food-webs, how they respond to changes in pressures, and how those changes then influence services. Biogeochemical ecosystem models do a good job of representing change in groups of organisms primarily influenced by spatio-temporal dynamics in physics and chemistry, such as phytoplankton and small zooplankton. For groups of organisms higher in the food-web, such as fish, mammals and birds, a variety of different modelling approaches are used. No particular approach attempts to model the entire system, each viewing the food-web from a different perspective. Links to services are rarely explicit. To allow us to respond appropriately to change we need to improve our understanding of, and ability to model, the marine ecosystem as a whole, and links between changes in the marine ecosystem and its ability to deliver services. The Marine Ecosystems Research Programme (www.marine-ecosystems.org.uk) provides mechanisms to bring together existing data, targeted new data, different models, and to link them to ecosystem services within a common framework. A key aim is to project effects of possible policy decisions on ecosystem services which are mediated by ecosystem processes.

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