UK National Ecosystem Assessment
Follow-on

Work Package 3b: Marine economics

Why: The coastal/marine environments encompass a diverse range of habitats (natural capital stock) which can supply a significant flow of ecosystem services of immense value to the economy and wider society. Coastal zones are however highly dynamic environments under constant environmental change, with local, regional and international/global drivers and pressures all playing a role in the change process. An adaptive management approach is required in order to sustainably manage the stock and flow of coastal/marine ecosystem services. A number of key components of a decision support system for adaptive management remain under- developed – indicators of change, scenarios to kelp cope with future uncertainty, models to better understand the change process and its consequences for ecosystem services, and valuation data to aid trade- off choice making. This WP aims to help to start filling some of these gaps.

What:

Aim: To value ecosystem services in coastal and marine environments; investigate how they link to changes in terrestrial and freshwater ecosystems through appropriate indicators of change; and understand how future changes to the marine environment may impact ecosystem service delivery

Summary: This work package will review ecosystem service valuation estimates for coastal and marine environments, effectively providing a link to the land-based valuations reported in work package (WP) 3a. This would include guidelines for connecting the land-use change modeling in WP3a to estuarine and coastal models. This work will be supplemented by a marine-focused futures scenario exercise.

Outputs/outcomes:

Output/outcome	Status	Opportunity for input	Anticipated audience(s)
Scenario analysis report	Draft report written: under revision	None	Aim to address all audiences
Report on spatially explicit ecosystem services within the coastal continuum and appropriate indicators of change	Draft report currently being written	None	Aim to address all audiences
Literature review for marine/coastal ecosystem services and values	Final draft report written : under revision	None	Aim to address all audiences
Guidelines on coupled modelling	Draft report currently being written	None	Aim to address all audiences

Methods/tools being developed:

- Extended cost benefit analysis incorporating a 'Balance sheets' approach
- Guidelines for a 'coupled' modelling assessment of environmental change (land-use change modelling) in catchments and the ecosystem services impacts through estuaries and into coastal waters
- Marine futures scenario analysis

Anticipated Case Studies:

- Case studies will focus on a set of ecosystem services: carbon storage, fish nurseries, recreation and amenity and cultural services for the Humber, Wash, and Blackwater estuaries and the River Thames.

Links to other Work packages:

- WP1: Understand value of future performance of NK (natural capital) assets
- WP3a: Expanding on and complementing the terrestrial work
- WP4: Understanding of cultural values from natural capital assets
- WP5: Possible shared marine case study
- WP6: Marine scenarios; Implementation of futures scenarios exercise

Team:

Principal Investigators:

- Mike Elliot (University of Hull)
- Laurence Mee (The Scottish Association for Marine Science)
- Kerry Turner (University of East Anglia)

Team Members:

- Julian Andrews, Tim Jickells, Marije Schaafsma, Gianna Palmieri (University of East Anglia)
- Jon Atkins, Daryl Burdon, Steve Barnard (University of Hull)
- Paul Tett (The Scottish Association for Marine Science)
- Tiziana Luisetti, Sonja van Leeuwen (CEFAS)
- Suzannah Walmsley, Jamie Tratalos (ABPmer)

Resource allocated: £150,000