Coastal and Marine Ecosystem Services NEA WP 3b

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WP3b Modules

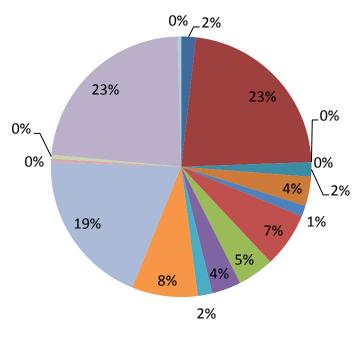
- Ecosystem services: Valuation
- Ecosystem services: Indicators
- Ecosystem services: Catchment to coastal water models
- Ecosystem services: Marine futures scenarios

Valuation of coastal ecosystem final services

Intermediate Services Goods/Benefits **Final Ecosystem Services** Food **Supporting Services Marine Ecosystem** Fish/shellfish Fish feed Primary production Other wild food Larval/Gamete supply Fertiliser Components, e.g. **Nutrient cycling** Seaweed (Fertiliser) Habitats/Species Water cycling rnaments Sea space Ornamental m Sea water **Final Ecosystem Services** cines Formation of Substratum species habitat Genetic res Physical barriers climate Raw materials · Pleasant scenery Climate regu Processes, e.g. coastal erosion Production Natural hazard Decomposition Sea defence fence Food web dynamics **Regulating Services** Waste break **Ecological interactions** nd sediments Coastal protection detoxifica (inter and intraspecific) Biological control Hydrological processes Natural hazard regulation of pollutants Geological processes (e.g. erosion control) Carbon sequestration **Evolutionary processes** · Regulation of water and Meaningful ure watching Socially valued sediment quality ural wellbeing Carbon sequestration Tourism and recreation benefits ation **Property values** (amenity) Regulating Cultural Education and research Supporting **Provisioning**

Landscape and

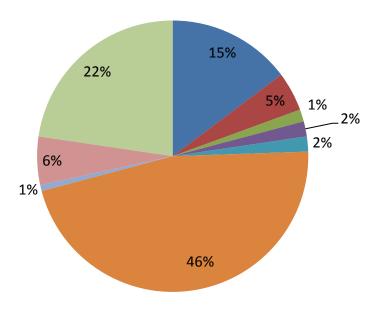
Valuation literature ~ 200 studies





- machair
- coastal lagoons
- mudflats
- intertidal wetlands*
- kelp forests
- coral reefs
- cold water coral
- open ocean

- beaches
- sea cliffs, small islands
- salt and tidal marshes
- mangroves
- seagrass beds
- estuaries, fjords, bays**
- rocky bottom
- coastal shelf***

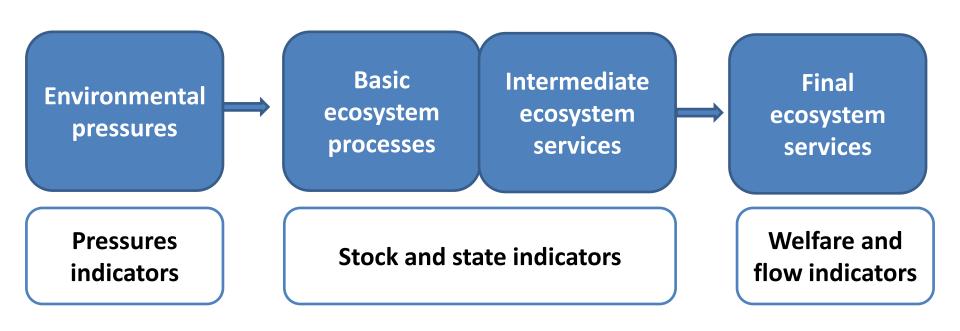


- Raw material, food (incl. nursery)
- Sea defence
- Coastal protection (erosion control)
- Water purification*

Note: * Not a final benefit

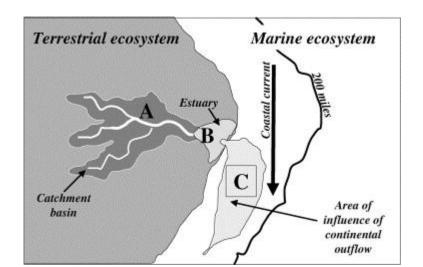
- Carbon sequestration**
- Tourism, recreation
- Education, R&D
- Amenity: property
- Biodiversity, habitat

Indicators



Models

- Stochastic models Bayesian Belief Modelling
- Spreadsheet based DPSWR
- Formal integrated catchment (landuse) –
 estuary coastal waters model



Scenarios

- Future marine scenarios (joint work with WP6)
- Extension of NEA1 scenarios into marine context
- Inclusion of system shocks.

