Coastal and Marine Ecosystem Services

NEA WP 3b

Kerry Turner – UEA

Laurence Mee - SAMS

Mike Elliot - Hull

Julian Andrews - UEA

Tim Jickells - UEA

Marije Schaafsma - UEA

Gianna Palmieri - UEA

Daryl Burdon - Hull

Jonathan Atkins - Hull

Steve Barnard - Hull

Paul Tett - SAMS

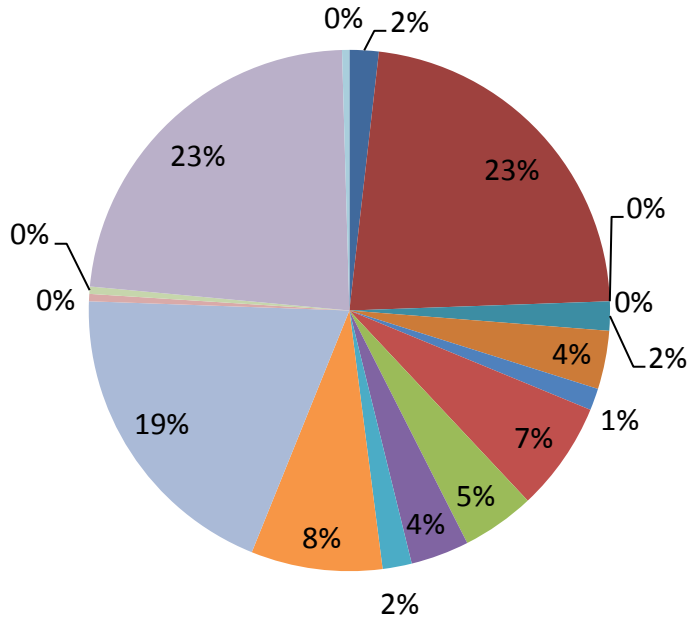Tiziana Luisetti - CEFAS

Sonja van Leeuwen - CEFAS

Suzannah Walmsley - ABPmer
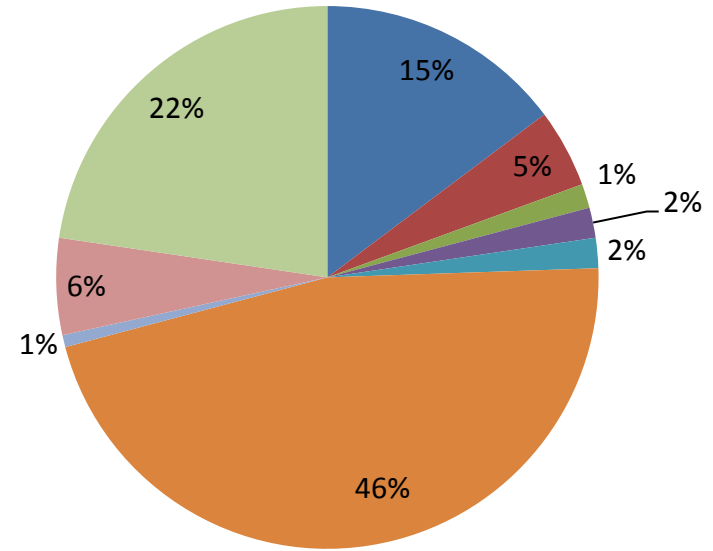
Jamie Tratalos - ABPmer

WP3b Modules

- Ecosystem services: **Valuation**

- Ecosystem services: **Indicators**

- Ecosystem services: **Catchment to coastal water models**

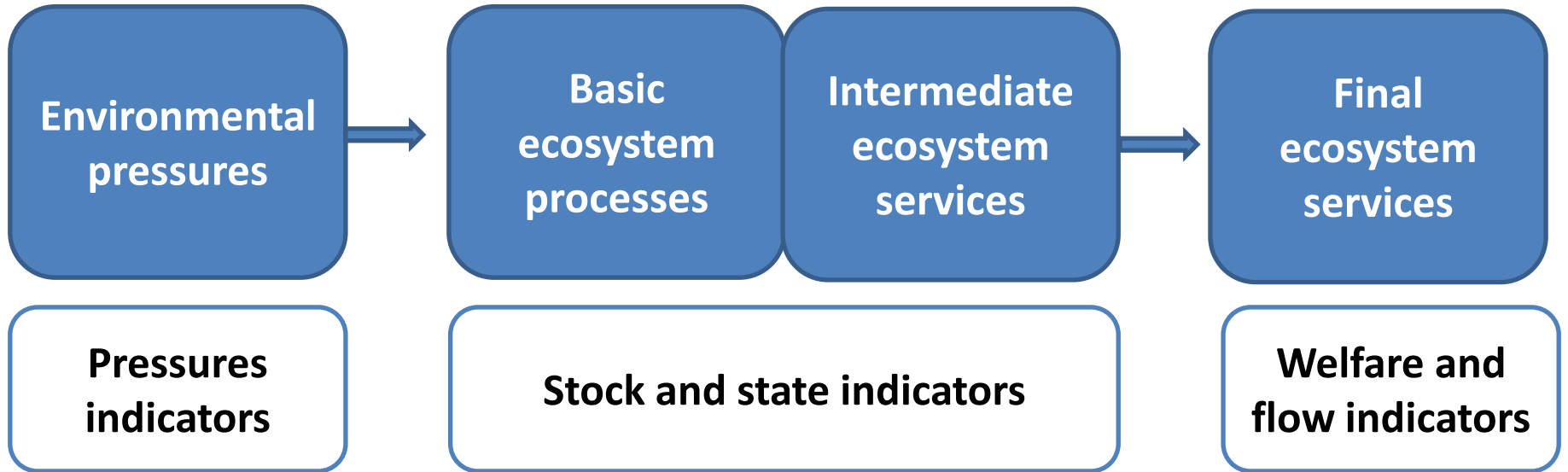- Ecosystem services: **Marine futures scenarios**

Valuation of coastal ecosystem final services

Valuation literature ~ 200 studies

Pie chart 1 (left) – habitat types:
- dunes — 2%
- machair — 0%
- coastal lagoons — 0%
- mudflats — 0%
- intertidal wetlands* — 5%
- kelp forests — 2%
- coral reefs — 19%
- cold water coral — 0%
- open ocean — 0%
- beaches — 23%
- sea cliffs, small islands — 4%
- salt and tidal marshes — 8%
- mangroves — 7%
- seagrass beds — 4%
- estuaries, fjords, bays** — 1%
- rocky bottom — 0%
- coastal shelf*** — 23%

Pie chart 2 (right) – benefit types:
- Raw material, food (incl. nursery) — 15%
- Sea defence — 5%
- Coastal protection (erosion control) — 1%
- Water purification* — 2%
- Carbon sequestration** — 2%
- Tourism, recreation — 46%
- Education, R&D — 1%
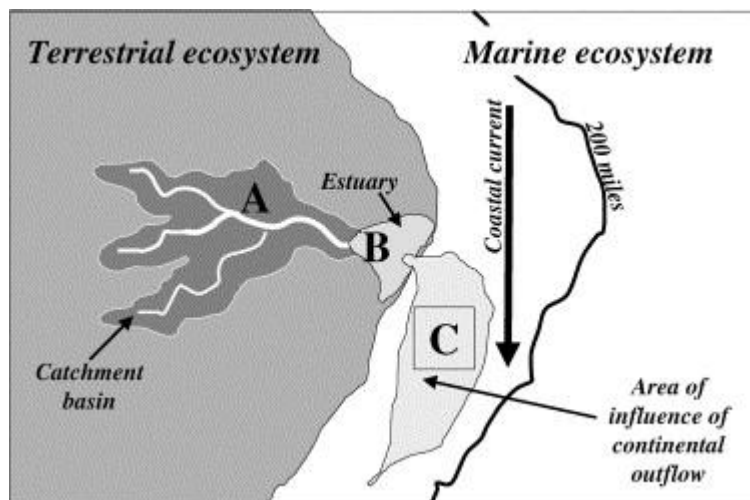- Amenity: property — 6%
- Biodiversity, habitat — 22%

Note: * Not a final benefit

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.