Towards end-to-end (E2E) marine ecosystem models: R&D needs for ecosystem-based management

EMB expert workshop, 7 July 2017,
Marine Matters Centre, PML, Plymouth, UK

Agenda

08:40 Coffee + Registration.

09:00 Introduction: The European Marine Board, motivation for workshop, expected outcomes and impact   *(Kate Larkin, EMB Secretariat)*

09:10 E2E marine ecosystem modelling: Where are we now and where are we heading?
(*Chair Morten Skogen and co-Chair Sheila Heymans*)

09:30 Session 1: E2E marine ecosystem models as tools for ecosystem-based management (EBM)

Overview: This session will identify existing and emerging policy needs for ecosystem-based management and current capabilities of E2E marine ecosystem modelling as decision support tools for addressing these requirements.

Structured discussion in groups (40 mins; assign a rapporteur for each table)

1)What are the existing and emerging policy drivers/needs for ecosystem-based management?
2)For each policy question/application identified in Q1, assess the current capabilities in E2E marine ecosystem modelling to address these needs. Where does Europe have a leading capability? What are the gaps and limitations to achieving comprehensive, fully functional E2E marine ecosystem models?

Output: List of current and future policy needs for ecosystem-based management, current capabilities in E2E marine ecosystem modelling for addressing these needs, major gaps and limitations (1 summary sheet / group)

10:10 **Plenary discussion on Session 1** *(Chaired by Sheila Heymans)*
Key points from Group rapporteurs/participants on key policy drivers and current capabilities

10:40 Comfort break (Refreshments will be available throughout the meeting)

10:50 **Session 2: Horizon scanning: R&D needs for next generation E2E marine ecosystem models**

Overview: This session will produce recommendations on Research and Development (R&D) needs for developing next generation E2E marine ecosystem models as more effective decision support tools for ecosystem-based management. R&D needs should take into account policy drivers from Session 1, new marine research frontiers e.g. –omics, emerging capabilities, e.g. in advanced computing (cluster/cloud computing) and the need for a transdisciplinary approach.

Structured discussion in groups: (60 mins; assign a rapporteur for each table)

1) *What R&D is required to make E2E marine ecosystem models more realistic and relevant for ecosystem-based management? How will new research frontiers drive better validation and new developments?*
2) *What steps are needed to get from bespoke models to a fully functional E2E marine ecosystem model? Are there alternatives to this approach?*
3) *How can we achieve E2E marine ecosystem models with true forecasting ability?*

Where possible R&D needs should indicate if they are a) short-term (i.e. achievable by 2025) and b) longer-term requirements (i.e. 2035).

Output: List of R&D needs and future directions for next generation E2E marine ecosystem modelling for ecosystem-based management including advancement towards a) fully functional E2E models b) true forecasting ability c) new applications? (1 summary sheet / group)

11:50 Plenary discussion on Session 2 *(Chaired by Morten Skogen)*

Key points from Group rapporteurs/participants on R&D needs

12:30 Key messages from Sessions 1 + 2 *(Morten Skogen and Sheila Heymans)*

12:40 Lunch (provided at the venue)

13:15 Session 3: Increasing the uptake and impact of E2E marine ecosystem modelling in ecosystem-based management

Overview: *This session looks at cross-cutting areas and key enablers that will a) underpin next generation E2E marine ecosystem modelling b) increase the uptake and impact of E2E marine ecosystem models by policy makers for ecosystem-based management*

Structured discussion in groups: (30 mins; assign a rapporteur for each table)

1) *What are the key enablers for next generation E2E marine ecosystem modelling? e.g. infrastructure, hardware, transdisciplinarity?*
2) *What skills sets will next generation E2E marine ecosystem modellers require? What is missing from current training programmes?*
3) *How can we increase the uptake and impact of E2E marine ecosystem models by policy makers for ecosystem-based management?*

13:45 Plenary discussion on Session 3 *(Chaired by Sheila Heymans)*

14:15 Closing discussion and next steps

14:30 Workshop ends

Outcomes of the workshop will inform the development of a European Marine Board (EMB) Policy Brief, summarizing key R&D needs for next generation end-to-end marine ecosystem modelling.

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