ESP 11 World Conference

"From global to local ecosystem services: pathways to Nature-based Solutions inspired from Down Under"

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SESSION DESCRIPTION

ID: B1b

Navigating tomorrow's seas through integrative ecosystem service assessments and decision-support tools

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Abstract:

The growing intensity of human activities and their environmental impacts on marine and terrestrial environments requires long-term planning to balance blue growth with ecosystem preservation. This is the core purpose of marine spatial planning.

Over the past two decades, emerging challenges in energy transition (including the development of offshore wind farms), intensification of maritime transport and nature conservation (designation of marine protected areas) have created new planning needs. Political initiatives focused on energy strategies and marine spatial planning now span all scales—from local to national and international—to address these evolving demands and ensure effective space allocation.

However, implementing effective marine spatial planning faces key methodological challenges:

- Reconciling ecological and socio-economic issues
- Integrating the land-sea continuum
- Harmonizing planning across different spatial scales

- Ensuring meaningful engagement of stakeholders and citizens
- Adopting a sustainable long-term vision for the blue economy

The ecosystem service framework can address these challenges by helping to provide a comprehensive and integrated approach to support marine spatial planning (Depellegrin et al., 2020). It enables interdisciplinary methods that combine ecological and socio-economic data to map biodiversity, ecological functions, and sea uses—allowing to evaluate ecosystem services' supply, use, and demand while anticipating potential evolutions in response to global changes (Galparsoro et al., 2021; Van de Pol et al., 2023).

This framework helps develop decision-making tools by illustrating the connections between marine ecosystems and society (Baulaz et al., 2023). It enable testing various management scenarios while promoting participatory approaches and clear management objectives for sustainable ocean use.

This session explores how ecosystem services approaches can enhance spatial planning practices and ecological transitions across scales, with a particular focus on marine spatial planning and the sustainable management of ocean resources.

References

- Baulaz, Y., Mouchet, M., Niquil, N., Ben Rais Lasram, F., 2023. An integrated conceptual model to characterize the effects of offshore wind farms on ecosystem services. Ecosyst. Serv. 60. https://doi.org/10.1016/j.ecoser.2023.101513

- Depellegrin, D., Galparsoro, I., Pınarbaşı, K., 2020. Operationalizing ecosystem services in support of ecosystem-based marine spatial planning. Ocean Coast. Manag. 198, 105346. https://doi.org/10.1016/j.ocecoaman.2020.105346

- Galparsoro, I., Pınarbaşı, K., Gissi, E., Culhane, F., Gacutan, J., Kotta, J., Cabana, D., Wanke, S., Aps, R., Bazzucchi, D., Cozzolino, G., Custodio, M., Fetissov, M., Inácio, M., Jernberg, S., Piazzi, A., Paudel, K.P., Ziemba, A., Depellegrin, D., 2021. Operationalisation of ecosystem services in support of ecosystem-based marine spatial planning: insights into needs and recommendations. Mar. Policy 131. https://doi.org/10.1016/j.marpol.2021.104609

- Van de Pol, L., Van der Biest, K., Taelman, S.E., De Luca Peña, L., Everaert, G., Hernandez, S., Culhane, F., Borja, A., Heymans, J.J., Van Hoey, G., Vanaverbeke, J., Meire, P., 2023. Impacts of human activities on the supply of marine ecosystem services: A conceptual model for offshore wind farms to aid quantitative assessments. Heliyon 9, 14. https://doi.org/10.1016/j.heliyon.2023.e13589

Goals and objectives of the session:

We welcome presentations of diverse case studies—from local to regional and global—that showcase innovative methodologies and practical decision-support tools. These approaches can support marine spatial planning processes for renewable energy development, protected area identification and coastal planning while promoting an integrative and sustainable perspective.

The session will focus on submissions demonstrating integrated assessment approaches, including:

- Methods that examine how marine spatial planning affects biodiversity and ecosystem services through changes in ecosystem structure and human activity distribution. This includes impacts on service supply, access, and demand.
- Assessment of ecosystem service bundles and their positive and negative responses to different planning scenarios.

- Innovative tools for coastal community engagement, such as participatory modeling tools and serious games.
- Transdisciplinary approaches that facilitate meaningful participation of local stakeholders and citizens.

Planned output / Deliverables:

Contributions should demonstrate a strong practical orientation, with the potential to inspire improvements in decision-support tools and the application of planning-related regulatory frameworks.

The planned outputs for this session could include a special issue or collective publication gathering the most innovative case studies and methodologies presented during the session. It could also include a shared repository of tools, methods and best practices for decision-makers and practitioners.

Session format:

We propose a 2-4 hour oral presentation session (depending on the number of abstracts we receive), with 15-minute presentations + 5 minutes for questions.

Voluntary contributions accepted:

Yes, I allow any abstract to be submitted to my session for review

Related to ESP Working Group:

BWG 1 - Marine systems