

Theme Session L Report

2024

Evaluating ecosystem-based management performance: examples of success

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Session synopsis

Ecosystem-based management (EBM) is globally recognized as the best practice for managing multiple ocean-use sectors. By facilitating sustainable and resilient ecosystems, EBM accounts for both good environmental health and human wellbeing. This is all well in theory, but how well are we doing in practice? How do we evaluate success of EBM?

One way to evaluate if we are achieving our objectives in EBM is through the use of performance measures, metrics used to quantify the effectiveness or progress of a management action. While there are performance measures for individual ocean-use sectors and marine ecosystem status, there is a need for performance measures that integrate across sectors, and that includes human wellbeing, to evaluate performance of EBM. While we acknowledge that performance measures for EBM are not well developed, identifying which ones could be developed and what data needs to be collected should be considered progress.

The current state of the world's ecosystems underscores the urgency of EBM. Recent work has shown that increasing numbers of stakeholders are participating and investing in EBM. Knowing when we are doing successful EBM is not just valuable to decision-makers, but also to regions where EBM has yet to be implemented. This session explored the multiple ways that EBM can be implemented, how to evaluate the performance of that EBM implementation, success in process and in outcomes, and showcased examples of the benefits and success of EBM to move us further along the EBM journey.

Session L was a great success, to the extent that there was standing room only, although unfortunately, some ICES participants that would have liked to have attended were unable to do so due to space restrictions. This speaks to the broad interest in EBM across the ICES community, the importance of the topic, and the need to continue to make progress on EBM in ICES.

The session began with four presentations that outlined methods to assess EBM performance, including an EBM performance evaluation framework, an ecosystem-based MSP assessment tool, and a policy evaluation approach using change theory, with examples of their use. The next five papers explored the types of information and approaches that EBM requires, including using history to inform the future, local/fisheries ecological knowledge and the importance of working collaboratively with the fishers, recognising stakeholders' values and how they may differ, and exploring how concepts of carrying capacity can contribute to all dimensions of EBM. The two papers in the final session outlined an ICES pathway to EBM and ended with some concern raised about the equality of different types of objectives.

In addition to the importance of engaging with stakeholders, four key themes emerged from these papers and the ensuing discussions.

1. **Scale:** the spatial and temporal scale at which EBM is assessed matters. Spatially, EBM can take place at multiple scales (small bay to large ecoregions), but there can be a mismatch between the scale of governance and implementation and scale of assessment. One example is inshore coastal activities and offshore activities. Some activities and their impacts only occur in one spatial area, while others can occur in both. The temporal scale at which indicators are measured also matters.

Some indicators, e.g., total landings, we can expect to change annually, and it is important to assess their trend. Other indicators, e.g., perception of place, will operate on a longer spatial scale, perhaps decadal. EBM assessment requires indicators at multiple spatial and temporal scales and this needs to be taken into account in the evaluation process. Thus, the likelihood of the projected change over the temporal scale interacts with the scoring of performance measures and how they must be integrated.

2. **History – Do look back!** In a fascinating study, Camilla Sguotti and colleagues from WGHIST explored examples of EBM in the past to inform current EBM processes. Using 11 case-studies and the Integrated Ecosystem Assessment (IEA) loop, they were able to demonstrate that EBM was practised in the past, including adaptive management, involving stakeholders, but noted that success was often in distinct locations. Several other papers also used a retrospective analysis to inform future practice, underscoring the value in exploring the past for insights into how to manage for the future. A key theme that arose during the session was that EBM has, and is occurring, without being labelled as EBM.
3. **Straight-jackets and box-ticking:** several concerns were discussed regarding the dangers of developing criteria for EBM that morph, over time, into a pass/fail mode (unintended consequences). The concept then becomes straight jacketed into the indicators used in the assessment framework. This does not allow for flexibility or dynamism in EBM in practice. A parallel danger is that EBM assessment could become a simple box-ticking exercise, especially when performance measures are binary, e.g., do we have legislation, or a plan in place?
4. **EBM indicators, objectives and weighting:** some objectives are clear and explicit for everyone; others may be more implicit, and the evidence used to measure these objectives can range from empirical quantitative data to more “fluffy” information. Should these be given equal weight?

From the beginning of the session, it was acknowledged that EBM is a journey, with multiple paths and multiple endpoints. There is no “model” EBM, but key principles have been identified. What EBM looks like will vary with the context in which it is practised and the key EBM principles that it embodies. One key principle is adaptive management. Assessing progress in EBM, as proposed in this session, enables learning, adaptation, and progress on the EBM journey. The three evaluation frameworks described in this session provide a basis for evaluation and learning, the Framework for Ecosystem-Informed Science and Advice (FEISA) outlines a possible path forward for ICES, but we must be aware that there can be implicit priorities among objectives and differences in the evidence basis for EBM.