

Theme Session I

Marine Spatial Planning: The multidisciplinary Approach

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Summary

Many coastal zones and offshore areas worldwide are subject to an increase in the number and frequency of human activities, which in turn increase both the pressure on the marine environment and potential spatial use conflicts. A place based management, such as marine spatial planning (MSP), is central in the discussion of an integrated management of multiple human activities in the sea, their combined pressures on marine ecosystems and the services they provide. MSP manages human activities to identify synergies and resolve potential conflicts over maritime space while balancing multiple objectives such as sustainable use and marine conservation. Regulating these activities within sustainable limits is a major challenge not only in terms of finding appropriate indicators that measure the total pressure on the ecosystem but also to understand the ecosystem response to those human induced pressures.

Therefore this session intended to showcase MSP or place based management examples in coastal and offshore waters to illustrate the development and application of underpinning science products in this process, including their legal and institutional framework. The presentations within the session could be categorised in three themes with regard to the key issues addressed:

- 1) **Conflicts and synergies:** The analysis of interactions (both conflicts and synergies) between different existing and future human activities such as capture fisheries, aquaculture, renewable energy and other activities in the coastal zone and offshore areas using a number of tools ranging from quantitative spatial predictive models to expert knowledge.
- 2) **Scenario development and evaluation:** The development of spatial management scenarios and risk analysis of their impacts
- 3) **Monitoring and evaluation:** The evaluation and monitoring of the effectiveness of an implemented place based management including in depth governance analyses

From this wide range scientific studies presented it became clear that the underpinning science to support an ecosystem based marine spatial planning reflected both applied research (e.g. conflict and opportunity mapping) and pure research (e.g. as telemetry studies on the behaviour of diving seabirds). While the former science products could feed directly in the planning process and support decision making the latter science products require a further process to make applicable in marine planning. Thus science can make an important contribution to the MSP process and ICES has a significant contribution to make in the development of both streams of research over a wide range of scientific and advisory themes.

Theme one on the multiple use of sea space was dealt with in considerable depth in this session. The presentations identified considerable developments with regard to the mapping and analysis of conflicting human activities, however, gaps have been identified when it comes to the better analysis of synergies between human activities

and their consideration in a planning process. This is a considerable challenge for further scientific developments.

From the presentations of theme two another important emerging issue was the question on how integrative MSP can be? The most prominent example is the integration of the fishing activities into marine spatial plans. Examples from coastal areas showed how progress could be made by the successful integration of local fishers knowledge into mapping and planning process. Such integration in offshore waters would require improved access to fishing data and possibly analyses and a regional or ecosystem scale. For the ICES area, international collaboration of Member States would bring significant benefits to MSP and indeed the implementation of the ecosystem based approach, including the MSFD.

The presentations under theme three showed significant scientific advancement in new products to monitoring and evaluation of place based management. Now as this expertise has been built up in the research communities it is essential that it is applied and used to inform managers and decision makers. This might be a service that ICES could offer.

The last important topic on communication cuts through all three themes. It has been noted that with a rapid development of science products there is a growing need to communicate and translate complex science to planners and stakeholders. This in turn requires well trained planners on one side and experienced marine scientist with training in communication on the other hand side. Here we see a clear role for ICES for instance to help with the application of science products through a training course on MSP and related tools.