MSP and **MPA planning** are two **different processes** used worldwide to support ocean **sustainability**

Both must used **synergistically** and further **integrated** especially under a changing climate

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MARINE SPATIAL PLANNING AND MARINE PROTECTED AREA PLANNING ARE NOT THE SAME AND BOTH ARE KEY FOR SUSTAINABILITY IN A CHANGING OCEAN

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MSP AND MPA PLANNING ARE TWO **DISTINCT AREA-BASED MANAGEMENT PROCESSES** USED WORLDWIDE TO SUPPORT SUSTAINABLE OCEAN USE AND CONSERVATION. WHILE THEY SHARE SIMILARITIES, THEY TARGET DIFFERENT GOALS AND OBJECTIVES, AND USE DIFFERENT METHODOLOGIES, TOOLS, AND PRACTITIONER SKILLSETS. STILL, THEY ARE EASILY **CONFLATED** IN MULTIPLE CONTEXTS

RECOGNISING BOTH AS SERVING DIFFERENT GOALS AND RESULTING IN DIFFERENT OUTCOMES IS A PREREQUISITE TO **LEVERAGING SYNERGIES** BETWEEN MSP AND MPA PLANNING. THE TWO ARE NOT INTERCHANGEABLE (NOR COMPETING) APPROACHES. MSP IS NOT INTENDED TO SUBSTITUTE MPA PLANNING. BOTH PROCESSES ARE FUNDAMENTAL AND **MUTUALLY SYNERGISTIC** AND SHOULD WORK IN PARALLEL — AND BE FURTHER **INTEGRATED**—TO SUPPORT OCEAN SUSTAINABILITY UNDER DRAMATIC AND RAPID CHANGE

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Marine spatial planning and marine protected area planning are not the same and both are key for sustainability in a changing ocean

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Marine spatial planning (MSP) and marine protected area (MPA) planning are two distinct area-based management processes that are often conflated. While engaging in MPA planning is crucially important for biodiversity conservation and localized sustainable use, it cannot bring the benefits that larger scale MSP can deliver. Conflating the two can lead not only to missed opportunities to support ocean sustainability, but also to inefficiencies and even conflict. Here, we clearly define and distinguish each approach, then discuss opportunities to optimise synergies, especially under rapidly changing climate. MSP can support conservation efforts by taking the broader context into account, while integrating conservation and MPA planning into MSP allows for the maintenance of ocean health — always a core goal of marine management.

Marine spatial planning (MSP) and marine protected area (MPA) planning are two distinct area-based management processes used worldwide to support sustainable ocean use and conservation[1]. Both approaches are prominent for improving marine management, particularly in the face of increasing ocean change in the Anthropocene[2]. Despite this, the terms MSP and MPA planning are often used interchangeably in multiple contexts[3–5], leading to confusion, conflict, and missed opportunities to achieve ocean sustainability (Box 1).

As the world moves to incorporate climate change considerations into planning, the lack of clarity around these distinct approaches may see further confusion and limit our pathways to sustainable solutions. To ensure progress, there is an urgent need to dispel confusion about these approaches and provide a clear pathway for practitioners to adopt "climate-smart" approaches in MSP and MPA planning practices. Both MSP and MPA planning are affected by climate-driven changes in marine environments and by how humans use the ocean in response[6–8]. Thus, there is a need for a better coordination of each approach and maximize its benefits while leveraging complementarity. Here, we clearly distinguish MSP from MPA planning (Fig. 1) and climate-smart MSP from climate-smart MPA planning, critically evaluate the key contributions from each approach, and identify future opportunities to optimise synergies between them to support ocean sustainability.

Defining MSP and MPA planning

MSP is a multi-sectoral, and multi-objective process that broadly targets the spatial and temporal distribution of human activities in marine areas to achieve ecological, economic, and social objectives (Fig. 1). While MSP takes many forms in practice (Box 1) and is highly context-dependent, the most well-established definition of MSP is from the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organization (UNESCO-IOC). UNESCO-IOC guidance defines MSP as "a public process of analysing and allocating the spatial and temporal

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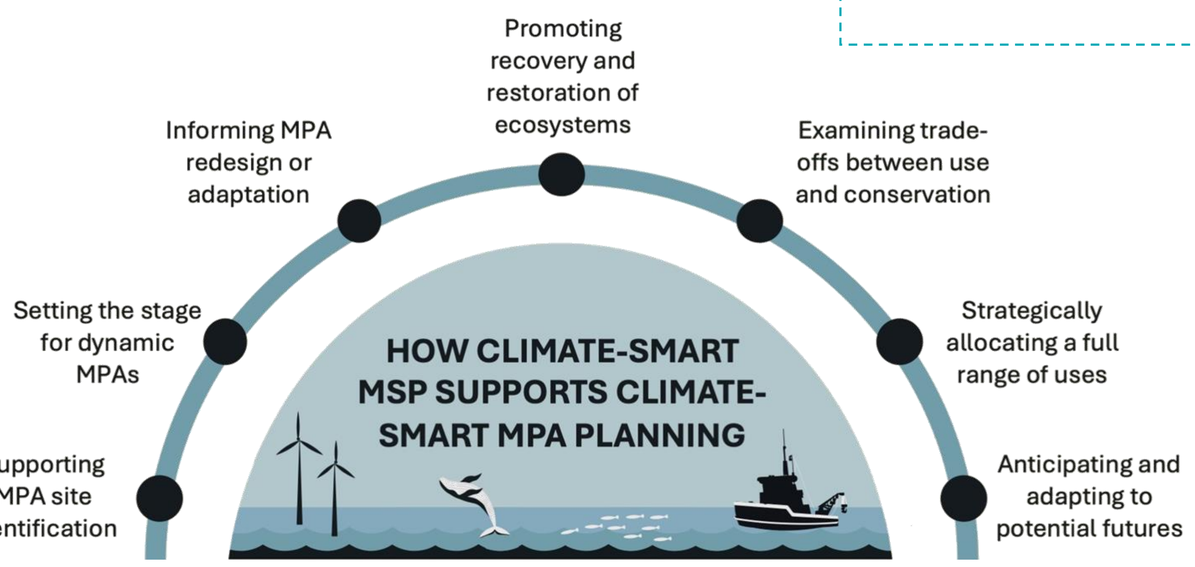

LEVERAGING SYNERGIES: HOW CLIMATE-SMART MSP CAN SUPPORT CLIMATE-SMART MPA PLANNING

The **broader scope of MSP** offers opportunities to expand MPA planning, by considering pressures beyond boundaries of protection, ensuring conservation interests have a seat at the table, mediating conflicts. Incorporating **MPA planning into MSP** can ensure a central emphasis on ocean health, boosting biodiversity protection, and contributing to global sustainability commitments as from the Global Biodiversity Framework, the United Nations Sustainable Development Goals, or the High Seas Treaty (i.e., BBNJ Agreement). **Climate-smart MSP can advance MPA planning** through multiple pathways from supporting MPA site identification to setting the stage for dynamic MPA's, informing MPA redesign and adaptation, promoting ecosystem recovery and restoration, examining trade-offs between use and conservation, strategically allocating ocean uses, and anticipating and adapting to potential futures. These include: **1.** highlighting areas where new MPAs (and networks of MPAs) need to be established to meet a variety of conservation objectives under a changing ocean, **2.** setting the stage for dynamic MPAs as part of dynamic ocean planning and management, **3.** furthering our understanding of social-ecological systems to help redesign or adapt existing MPAs to be more effective, **4.** promoting both natural (passive) recovery as well as restoration of ecosystem functioning and ocean health, **5.** allowing examination of trade-offs between use and conservation, and the sustainability of use over time, in light of climate change, **6.** strategically allocating a full range of uses in such a way that conflicts are minimised and both human well-being and a sustainable blue economy are enhanced, and **7.** helping local communities, the public, and decision-makers to anticipate — and adapt to — potential futures.

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A CONFLATION EXAMPLE FROM THE POLES

A recent analysis of perceptions on the status and challenges of MSP development in the Arctic and Southern oceans, led by the University of Lisbon, involved 172 polar experts, largely from academia (natural and social sciences) and government sectors, from over 30 countries.

Results showed an overall low level of familiarity with the concept of MSP amongst polar experts in both the Arctic and the Antarctic regions and indicated that MSP and MPA planning were easily conflated, especially in the Southern Ocean. As an example, while many respondents stated they were aware of MSP initiatives, many experts cited examples that corresponded to MPAs planned by the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR)—e.g., the Ross Sea MPA, the Weddell Sea MPA, or the South Georgia and South Sandwich Islands MPA—and not integrated, cross-sectoral MSP.

This suggests that the MSP community has further work to do to articulate how MSP differs from MPA planning, and what benefits MSP can deliver. The Southern Ocean has been identified as the ideal place to trial climate-smart MSP, which could serve as an important model, especially in areas beyond national jurisdiction; yet it remains the only sea basin worldwide without true MSP.

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WHAT IS MARINE SPATIAL PLANNING?

MSP is a **multi-sectoral and multi-objective** public process. It involves analysing and allocating the spatial and temporal distribution of human activities in marine areas to achieve ecological, economic, and social objectives. MSP seeks to integrate all existing and emergent human uses, minimising conflicts and fostering compatibility among them, as well as between such uses and the environment. MSP involves creating a shared vision for the future across many divergent viewpoints and aspirations, from multiple stakeholders and sectors.

EHLER AND DOUVERE 2009, *UNESCO GUIDE*

AND MPA PLANNING?

MPA planning is a management process focused explicitly on **biodiversity protection and meeting conservation goals**. MPAs are clearly defined geographical spaces that are recognised, dedicated and managed through legal or other effective means to achieve the long-term conservation of nature with associated ecosystem services and cultural values. There is a 'continuum' of MPAs allowing differing degrees of human use, from 'fully protected' to 'multiple-use'. Various types of MPAs all aim to limit uses that are destructive or incompatible with nature protection.

DAY ET AL. 2019, *IUCN GUIDELINES*

KEY DIFFERENCES BETWEEN BOTH

The figure below highlights a number of aspects that both **bring together and set apart** MSP and MPA planning: the use of zonation, temporal and spatial scales, stakeholder involvement, the use of a "systems" view, and the integration of climate change considerations.

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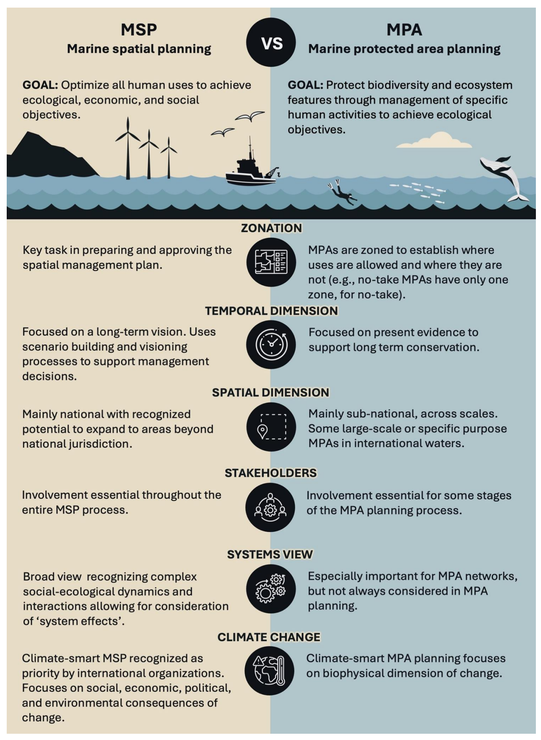

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