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REVIEW ARTICLE

On an ocean restoration supra-alliance (ORSA): a seascape-based collaborative platform for scalable marine ecosystem restoration

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Global degradation of marine and coastal ecosystems driven by climate change, habitat destruction, and other anthropogenic pressures has intensified the need to upscale marine ecosystem restoration (MER). This requires moving beyond single habitats to seascape-scale approaches that not only achieve scale but facilitate ecological connectivity, ecosystem resilience, and sustainable delivery of ecosystem services. MER remains predominantly habitat specific, with limited opportunity for interhabitat collaboration and addressing cross-habitat interactions, habitat mosaics, large-scale ecosystem functionality, and on-the-ground delivery. In response to this, the European Chapter of the Society for Ecological Restoration (SER-Europe) proposes a global Ocean Restoration Supra-Alliance (ORSA) to convene a community already advancing MER, and to push this to a coordinated seascape approach. To assess the need for an ORSA, two panel discussions were conducted with representatives from global and European MER alliances. Participants expressed unanimous support for establishing an ORSA, affiliated with the Society for Ecological Restoration (SER), to foster cross-habitat knowledge exchange, strengthen a global community of practice, and enhance science–policy integration. Overall, the findings demonstrate strong practitioner support for an ORSA. Key opportunities identified include pooling technical expertise, standardizing monitoring approaches, advocating collectively for seascape restoration, and closing gaps between science and policy. Anticipated challenges include ensuring inclusive representation, avoiding duplication of existing initiatives, securing sustained funding, and delivering tangible outcomes. By uniting habitat-specific alliances and advancing seascape-scale restoration, the proposed ORSA could contribute meaningfully to MER and international biodiversity and climate goals.

Key words: climate adaptation, collaboration, ecological connectivity, ecosystem resilience, marine ecosystem restoration, science–policy integration, seascape approach, supra-alliance

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Implications for Practice

- The proposed ORSA has significant implications for advancing global marine ecosystem restoration by addressing fragmentation across habitat-specific initiatives through building a strong community of practice consisting of expert MER practitioners and their respective habitat alliances.
- By fostering collaboration and connection between practitioners, the Society for Ecological Restoration, and individual habitat alliances, an ORSA could enable seascape restoration efforts that better reflect the ecological connectivity of coastal and marine systems.
- The emphasis on knowledge exchange and practitioner alignment may also strengthen the translation of marine science into policy.
- If effectively implemented, the ORSA could play a critical role in advancing seascape restoration initiatives, science-informed policy, and contribute to international climate and biodiversity initiatives.

Introduction

Due to the impacts of habitat destruction and climate change, coastal and marine habitats have been degraded, and continue to degrade, globally (Preston et al. 2025). With recorded losses of 50% of salt marshes, 29% of seagrasses (Barbier 2017), 40–60% of kelp forests (UNEP 2023) and, as of 2017, up to 89% of native oyster reefs globally (Barbier 2017) it is clear why there has been an expressed need to upscale conservation and restoration efforts through global (e.g. UN Decade on Ecosystem Restoration, the Kunming-Montreal Global Biodiversity Framework), and regional (e.g. EU Nature Restoration Law) initiatives (Vozzo et al. 2024). Alongside the foundations for ocean-climate action through these agreements, guiding ambition and early action, there are coastal habitat-specific targets set through the UN Ocean Breakthroughs. Presently, five habitat-specific breakthroughs fall under the marine conservation breakthrough (Ocean Breakthroughs n.d.-a): the Coral Reef Breakthrough, the Mangrove Breakthrough (Ocean Breakthroughs n.d.-a), the Kelp Forest Challenge (Eger et al. 2026), the Saltmarsh Breakthrough (Blue Marine Foundation 2025), and the Seagrass Breakthrough (Dugong and Seagrass Hub n.d.). These set a "unifying framework positioning the ocean as a key climate ally to deliver up to 35% of the emission reductions needed by 2050 while strengthening biodiversity, resilience, and livelihoods" (Ocean Breakthroughs n.d.-b). These targets are ambitious, and while current progress remains limited (Eger et al. 2025a), they do reflect global trends for collective action across policy and finance, with science-based evidence underpinning delivery (Agardy et al. 2025).

Scaling up marine and coastal restoration benefits habitats and ecosystems while also supporting essential socio-economic services to humanity, known as ecosystem services (Barbier 2017), by way of providing nutrition through the support of habitats belonging to commercial fish stocks (Brown et al. 2019), supporting eco-tourism ventures and thus coastal economies (Spalding et al. 2017), and reducing wave energy and increasing coastal storm protection through reef restoration (Ferrario et al. 2014). As habitat extent declines, so does ecosystem service provision (McAfee et al. 2022); thus, active restoration and other nature-based solutions are now key tools to address the loss of ecosystem services and reverse habitat degradation (Lehmann et al. 2025). However, while restoration may help reverse the degradation of marine habitats, it is only one tool among many (Eger et al. 2025a). Restoration alone is insufficient to reverse marine degradation at the scale required to meet global targets and must be conducted alongside other conservation interventions, such as strictly protected areas and marine management plans (Eger et al. 2025a). Equally, protection alone will not meet global targets. For mangroves and seagrass, protection alone is projected to deliver only an approximately 1% gain, whereas protection plus restoration could deliver a approximately 35% gain by 2050 (Buelow et al. 2022).

Single-habitat methods have been the main approach to MER historically, yet there is evidence to suggest that this is insufficient to recover degraded marine systems at the rate and scale required to prevent further irreversible damage and to meet global restoration targets (Vozzo et al. 2024). Scientists and restoration practitioners are therefore advocating for seascape restoration, which considers the connectivity between habitats needed to restore ecosystem functioning and maximize positive interactions between habitats, thereby positively contributing to global restoration targets (Preston et al. 2025).

Seascape restoration statement

Seascape restoration is rooted in the understanding that coastal ecosystems are dynamic and heterogeneous mosaics of habitats interconnected by water through which living organisms, nonliving matter, and energy flow. The socio-ecological context of a site, habitat configuration, and interconnectivity between neighboring habitat types will shape the outcomes of marine restoration projects. To restore complete trophic webs, enhance biodiversity and ecosystem functioning, and deliver ecosystem services requires the existence of a healthy mosaic of coastal habitats, maintained by the flows that occur between them. Therefore, a seascape approach that enhances connectivity and restores structure–function relationships is crucial for successful ecosystem restoration (Preston et al. 2025).

Seascape restoration is the restoration of multiple habitats concurrently or sequentially to restore functionality, connectivity, and

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resilience across the mosaic of habitats in a marine ecosystem (Vozzo et al. 2024; Preston et al. 2025). Technical advancements in oceanography have facilitated the recent evolution of seascape ecology and enabled a better understanding of the role of habitat connectivity in the marine environment (Pittman 2018). The mosaic of habitats that make up a seascape is highly interconnected and experiences transfers of energy, nutrients, genetic material, and organisms (Balbar & Metaxas 2019; Garbutt et al. 2024). As a result, habitat connectivity is recognized as an essential part of marine ecosystem, and thus seascape, function and stability (Sheaves 2009; McAfee et al. 2022). Acknowledging this interconnectedness and approaching restoration at the seascape scale may contribute to large-scale and enable more successful restoration of these damaged systems (Garbutt et al. 2024). Recent evidence indeed suggests that facilitating positive cross-habitat interactions does increase restoration success (Vozzo et al. 2023). That being said, there still exist large gaps in our understanding of these inter-habitat processes (Pittman 2018; Preston et al. 2025) as few restoration initiatives have been conducted on a multi-habitat or seascape scale (Vozzo et al. 2023).

Working at the scale of a seascape is complex. It requires intensive coordinated collaboration between a diverse team of experienced practitioners and organizations (ZSL 2025) who equitably and inclusively represent coastal and marine habitats (Constant & Hughes 2023). Preston et al. (2025) have presented a set of seven recommendations to deliver seascape restoration. Among these they have suggested facilitating knowledge exchange and providing guidance to deliver multiple habitat restoration through established networks, the integration of seascape ecology and the understanding of habitat connectivity into the planning stages of multi-habitat seascape restoration projects, as well as policy changes in parallel to the development of restoration practice and innovation to aid in seascape restoration implementation at scale (Vozzo et al. 2023; Preston et al. 2025). The European Chapter of the Society for Ecological Restoration (SER-Europe), through work with the European Marine Restoration Working Group (eMRWG), has also recognized the need for marine ecosystem restoration (MER) practitioners to align habitat-specific knowledge and restoration best practices to upscale and integrate MER practice and policy in order to move from isolated interventions to a coordinated seascape restoration portfolio through an established network. This recognition of alignment has thus led to a proposal from SER-Europe for a global Ocean Restoration Supra-Alliance (ORSA).

The ORSA is a proposed alliance affiliated with SER aimed at upscaling MER efforts through collaboration and coordination with expert restoration practitioners and coastal and marine habitat alliances from across the globe. There presently exists a range of habitat specific, global scale MER alliances focused, for example, on coral reefs (ICRI n.d.), shellfish reefs (ISRS n.d.), mangroves (GMA n.d.), seagrasses (WSA n.d.), kelp forests (KFA n.d.), and coastal wetlands (GLOW n.d.). However, there is no dedicated forum in which practitioners from across these disciplines can collaborate across the seascape to consider the mosaic of habitats at multiple scales. By maximizing knowledge exchange between previously separate habitat specialist groups we will be better positioned to consider the wider seascape context, maximize the benefits of multiple habitat approaches where appropriate, and increase the efficacy of MER efforts. The ORSA could offer a distinctive contribution to the global restoration community and would be the only SER-affiliated initiative specifically designed to bring together knowledge, practice, and policy insights across entire seascapes.

Methods

To assess the need and desire for an ORSA, two panel discussions with experts from established global marine and coastal habitat restoration alliances were conducted. The experts who were called upon to participate in the symposia as panelists are comprised of both leading scientists and researchers in marine restoration as well as practitioners who apply marine restoration research and best practices in their daily work. The first panel discussion took place during the symposium session "The Collaborations We Need for the Ocean We Want: Advancing Global Marine Restoration Through Alliances, Standards and Innovation" at the 11th International Conference on Ecological Restoration (SER2025) in Denver, Colorado with the second panel discussion taking place during the symposium session "Collaboration for Restoration Success" at the 6th Native Oyster Restoration Alliance Conference (NORA6) in Cartagena, Spain.

Those contacted to participate in the symposia were selected with care and consideration to ensure a diverse group of experts was brought together to provide the best possible representation of global MER practitioners and habitat alliances. Those that were convened during the SER2025 conference are hereafter referred to as "global expert practitioners" whereas those that were convened during the NORA6 conference are hereafter referred to as "European expert practitioners." The participating habitat alliances are represented in Figure 1.

In preparation for the panel discussions, a series of questions was established in collaboration with a facilitator to best assess the panelists' desire for an ORSA. The discussion questions, which can be found in Supplement S1, were structured to guide the panel discussion in a way that provided symposium conveners with the most pertinent information for the beginning phases of establishing an ORSA while allowing the panel discussion to be a free-flowing and organic conversation. Due to time constraints, not all of the questions listed in Supplement S1 were posed during the session at the SER2025 conference. The questions that were asked during this panel discussion are listed in Supplement S2. Slight amendments were made to the original set of discussion questions ahead of the panel discussion at the NORA6 conference. These changes can be found in Supplement S3.

Results and Discussion

Outcomes From the Panel Discussion "The Collaborations We Need for the Ocean We Want: Advancing Global Marine Restoration Through Alliances, Standards and Innovation" (SER2025)

Opportunities Within an ORSA. This panel discussion resulted in unanimous agreement among the panelists that an

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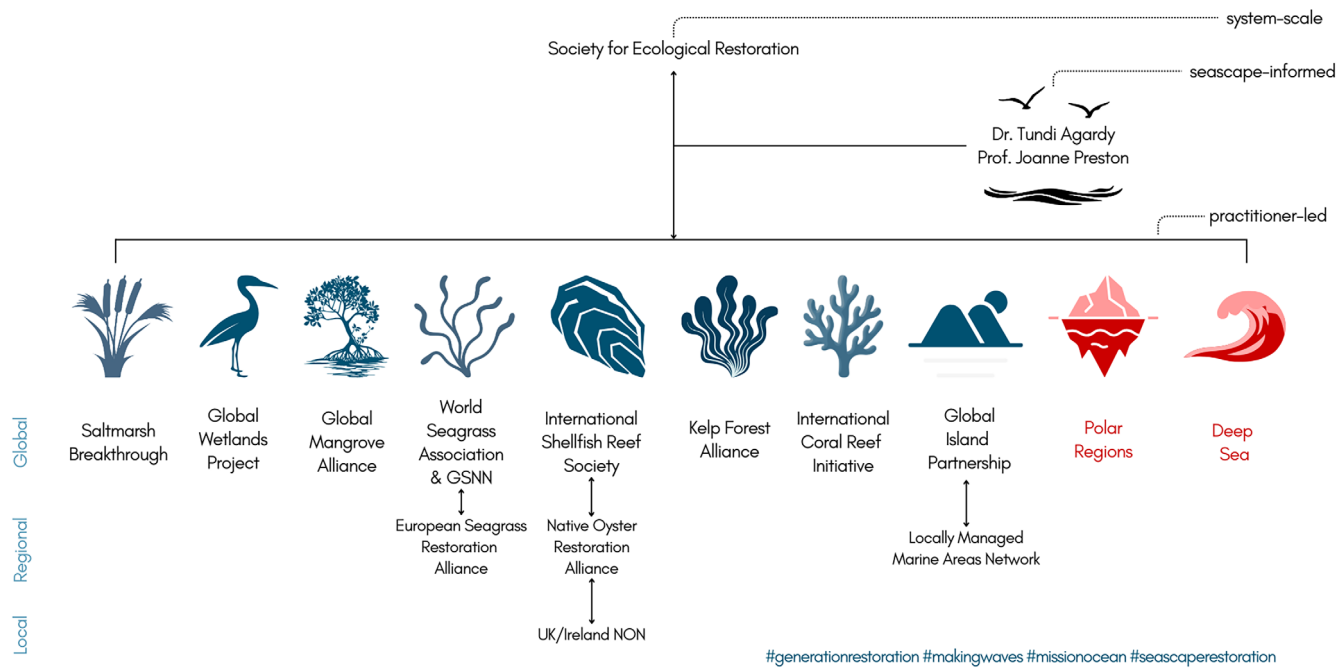

Figure 1. A visual representation of the groups convened to participate in the development of the ORSA, illustrating the interrelationships between local, regional, and global groups as well as the necessary guidance from selected experts. Note, the International Coral Reef Initiative (ICRI) and the Global Island Partnership (GLISPA) have been contacted for their participation in an ORSA; however, they were not present for the panel discussions. There does not presently exist representation for restoration of polar regions or the deep sea. Credit: Sahar Stevenson-Jones.

ORSA focused on pooling practitioner knowledge and fostering collaboration and alignment between global MER and coastal restoration alliances and associated coalitions could drive the delivery of global seascape restoration.

Collaboration and communication within habitat-specific alliances is strong, according to the global expert practitioners. However, there does not presently exist a facilitated platform where practitioners across the seascape can come together to engage in knowledge exchange, despite the need for such a platform expressed by the panelists (Eger et al. 2025b). The global expert practitioners agreed that an ORSA could provide a dedicated and much-needed forum for expert practitioners to engage in knowledge exchange as well as to facilitate building a community of practice toward seascape restoration by acting as a connector between individual global marine and coastal habitat restoration alliances and expert practitioners (Eger et al. 2025b). With this, the global expert practitioners also stated that an ORSA would provide a space to develop and 'socialize' the concept of seascape restoration to policymakers and funders, paving the way for more science-informed policy (Eger et al. 2025b). A cohesive unit, such as that proposed for an ORSA, would likely be more efficient in coordinating efforts and procuring relevant expertise for seascape-focused projects, drawing attention to the pressing need for coordinated MER efforts and acting on the need for collaboration between marine and coastal habitat alliances (Eger et al. 2025b).

Moreover, the global expert practitioners voiced a united desire for the ORSA to be a hub for high-level policy advocacy aligning with aforementioned UN initiatives (Garbutt 2025). The global expert practitioners highlighted that if restoration *action* is to be generated as a result of the convening of an ORSA, as was a desired objective heavily stressed during the panel discussion, policy advocacy will need to be a component of the convened group (Eger et al. 2025b). SER itself works closely with high-level environmental policies and frameworks such as the UN Decade on Ecosystem Restoration and could contribute significantly in raising the profile of MER efforts at this level. These connections will lend additional political sway to an ORSA as well as being a significant benefit of having an ORSA under the umbrella of SER. As the group would be SER-affiliated, there would also be ample opportunity to establish multi-way lines of communication between MER practitioners, habitat alliances, and SER, further strengthening the community of practice. SER would act as a convenor between these practitioners, marine and coastal habitat alliances, and the ORSA, allowing for increased political and restoration reach for the group.

Barriers to Successful Implementation. Despite enthusiastic interest in SER establishing an ORSA, some cautions and foreseen challenges were raised during the discussion by both the panelists and the conveners. One such concern identified by the ORSA conveners is ensuring the ORSA reflects equitable, diverse, and inclusive representation, both across regions and across types of habitat alliances.

Concerns were also expressed regarding the potential to establish an ORSA only for it to become "just another working

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group" (Eger et al. 2025b) that ultimately does not lead to anything actionable (Eger et al. 2025b). This has been an issue experienced by the global expert practitioners in the past and it is crucial for an ORSA to ensure this is avoided by providing meaningful work and restoration action through the alliance (Eger et al. 2025b).

Additionally, it was stated that established alliances invited to participate in an ORSA may feel that the new global alliance will take over the work of individual habitat alliances, thereby diminishing their efforts (Jackson 2025).

Furthermore, the ORSA conveners expressed concern about the uniqueness of ORSA and the potential for creating redundancy and duplicating the efforts of existing MER working groups and global initiatives, such as the Global Biodiversity Framework, the UN Decade on Ecosystem Restoration, and the Ocean Decade.

Lastly, the funding barrier was heavily emphasized. Procuring and maintaining funding is highly competitive in the MER sector and an ORSA would not be exempt from this challenge (Wodehouse 2025). However, it was also suggested that acting as a united front under an ORSA may be more efficient in procuring funding compared to the separate efforts of individual habitat alliances (Wodehouse 2025).

Pathways to Success. To address concerns about insufficient inclusivity and representation, panelists emphasized the need for consistent opportunities for communication among members (Tawake 2025). Ensuring that all members, regardless of membership level, can participate meaningfully in discussions and decision-making processes through their respective habitat alliances was identified as critical (Jackson 2025). Furthermore, it was suggested that appointing a neutral third party to coordinate meetings and administrative responsibilities would help maintain balanced representation and ensure that the aim of an ORSA does not get lost in the delineated goals of the independent habitat alliances that make up the group (Wodehouse 2025).

To enable delivering on tangible outcomes and restoration action through an ORSA, the global expert practitioners stressed the importance of building a solid foundation focused on aligning restoration practices and action before moving on to more complex activities (Garbutt 2025). To achieve this, the global expert practitioners suggested the ORSA should slowly build momentum by strictly defining the group's objectives and building a solid community of practice between the members and individual habitat alliances that make up the ORSA before taking on intensive projects such as policy advocacy at the international level or the planning of large-scale inter-habitat MER projects (Eger et al. 2025b). An aligned mission and practices would help to stabilize the group and keep the underlying core objectives at the forefront to ensure that things move forward at a sustainable pace (Eger et al. 2025b). Establishing Terms of Reference (ToR) and reviewing them periodically was suggested as a tool to achieve this as it may prove beneficial in keeping the aim of the group aligned and maintaining relevant objectives (Garbutt 2025).

In response to the ORSA convener's concerns regarding the duplication of existing restoration initiatives and creating redundancy within the global restoration landscape, participants claimed that the concept of the proposed ORSA and its emphasis on fostering a community of practice and delivering seascape restoration at scale is unique and could fill an unoccupied niche in this space, thus bringing a new angle to global MER efforts (Eger et al. 2025b).

Regarding funding concerns, it was proposed that in operating as a united alliance there is a higher chance to accurately represent each ecosystem expertly and convince policy makers and other large funders of the inherent value in funding seascape scale restoration compared to individual habitat alliances (Wodehouse 2025). That being said, procuring adequate funding in the MER sector is a major challenge faced by practitioners and restoration alliances and relies heavily on political climates (Stewart-Sinclair et al. 2020).

During the panel discussion, when the conversation was open to audience input, Dr. Tundi Agardy emphasized the importance of not only seascape restoration but also ecoscape restoration (Agardy 2025). While an ORSA would aim to target seascape restoration, the authors feel it is necessary to acknowledge the ecoscape perspective as well.

Ecoscapes may be comprised of both landscapes and seascapes or any combination thereof and "at the core of an ecoscape is the interconnectedness between human activities and nature in offshore, nearshore, coastal, estuarine, watershed, and land-based habitats" (Wedding et al. 2025). Thus, it has been suggested that the ecoscape should be the scale by which coastal and MER should be conducted where "ecoscape restoration is defined as an approach that considers the interconnected recovery of landscapes and seascapes in tandem at large geographical and temporal scales" (Wedding et al. 2025). This approach largely ties into upscaling restoration at both the terrestrial and marine levels which is being called for globally (CBD & UNEP 2024), and while we acknowledge the importance of ecoscape restoration conceptually, an ORSA would be focused on seascapes exclusively. However, ecoscape restoration bears consideration with regard to ecological restoration initiatives and there is space for ecoscape restoration work within the discipline.

Outcomes from the Panel Discussion "Collaboration for Restoration Success" (NORA6)

Opportunities Within an ORSA. This supplementary panel discussion yielded similar results to the discussion during the SER2025 conference symposium session. Here too, there was unanimous agreement among the panelists that an ORSA focused on driving seascape restoration and facilitating knowledge exchange and practitioner alignment is called for in MER.

The European expert practitioners supported the ORSA's desire to foster the pooling of technical restoration expertise and knowledge exchange between expert practitioners and habitat alliances in addition to advocating for the translation of practitioner knowledge exchange to policy advocacy as core outcomes of an ORSA (Carboni et al. 2025; Lilley 2025). It was established that facilitating knowledge exchange and practitioner alignment across habitat-specific alliances could provide a strong foundation for building seascape restoration efforts (Lilley 2025). Presently,

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communication generally remains between European habitat-specific alliances (Preston et al. 2025), thus a dedicated space aimed at facilitating expert knowledge exchanging and building a wider community of practice would prove beneficial (Carboni et al. 2025; Lilley 2025). However, seascape restoration and habitat connectivity has been extensively socialized in recent years in the European MER space (Preston et al. 2025). This socialization is what has allowed practitioners to begin planning and implementing seascape restoration projects (Preston et al. 2025), as exemplified by the Solent Seascape Project (Solent Seascape Project n.d.).

While the European expert practitioners communicated a desire for an ORSA to be both a hub for practitioner knowledge exchange and policy advocacy, they suggested policy advocacy should be the primary focus of the alliance (Lilley 2025) compared to the relatively even split between knowledge exchange and policy advocacy communicated by the global expert practitioners. The objectives of the BioAgora project, an EU funded project to enhance knowledge exchange between practitioners and policy makers (BioAgora n.d.), were used as an example of what informing policy could resemble within an ORSA. BioAgora is largely focused on generating dialogue between scientists and politicians to create gateways for science to more easily inform policy. There was strong support for the incorporation of this goal within the ORSA as there is a need for a global initiative focused on enabling dialogue between restoration practitioners, science, and policy makers. The European expert practitioners concurred that informing policy should be a very active part of the proposed ORSA while still maintaining that it remains essential to enable knowledge exchange and the pooling of practitioner expertise as a core outcome of the group (Carboni et al. 2025).

Along with a suggested focus on the science-policy interface and building a community of practice, the European expert practitioners also recommended that standardizing monitoring methodologies between habitat-specific alliances and in MER as a whole, where applicable, should be an objective of the proposed group (Lilley 2025). It was suggested that standardizing monitoring methodologies and establishing a pathway to data deposition could inform much needed long-term finance regarding MER efforts (Preston et al. 2025). This was subsequently labeled as professionalizing MER practice and may help to reduce the perceived risk associated with funding restoration efforts (Preston et al. 2025).

Barriers to Successful Implementation. While there was plenty of support for the proposed ORSA, the European expert practitioners did foresee some challenges in its implementation.

The primary challenge identified by the European expert practitioners is the need for this alliance to add real value to the marine/seascape restoration space (Lilley 2025). There are currently multiple initiatives and working groups in this sector; thus, it is critical to avoid duplicating efforts and contribute meaningful work to seascape restoration with an ORSA (Carboni et al. 2025). Another potential issue associated with the alliance could be an accidental dilution of the statement of need for seascape restoration (Preston et al. 2025). By flooding the literature with calls for action and seascape restoration, the statement of need may become diluted, which would harm restoration initiatives (Preston et al. 2025).

Similarly to the panel discussion at SER2025, the ORSA conveners raised concerns regarding incorporating equitable, inclusive, and diverse representation within an ORSA as appropriate representation is critical to the aims of a global alliance such as the one proposed herein.

Additionally, there was an emphasis on the need to be mindful of the resources available to the ORSA, as well as the logistics and practicalities of any seascape projects that result from such a group, to ensure their longevity and durability (Carboni et al. 2025).

Pathways to Success. To ensure the proposed ORSA contributes meaningfully to the marine and seascape restoration space, the European expert practitioners suggested that an assessment of existing initiatives and working groups should be conducted in order to identify what initiatives and working groups already exist in this sector to identify what services are lacking. This would give an idea of what services are needed and could be provided by an ORSA. An assessment geared toward understanding the service gaps present in established MER initiatives would also help to avoid the duplication of efforts alongside said initiatives. Furthermore, it was recommended that an ORSA be primarily focused on marine and coastal restoration implementation and action grounded in the principles of seascape restoration, as the abovementioned global initiatives (e.g. UN Ocean Decade) are primarily focused on setting goals and targets which leaves room for groups such as an ORSA to work toward MER and true protection including engaging at the political level to work toward these targets (Preston et al. 2025). The European expert practitioners also stated that focusing on forming a strong community of practice through networks and knowledge exchange (Lilley 2025), collaborating with existing initiatives and working groups to build a path to seascape restoration implementation, and setting clear and specific objectives for the ORSA (Carboni et al. 2025) could also ensure the ORSA contributes meaningfully to marine and seascape restoration.

To address concerns about resource limitations and the broader financing gap in MER, it was recommended that projects emerging from the proposed ORSA be planned for multiple years beyond their initial phases before deployment (Carboni et al. 2025). This long-term planning approach would ensure appropriate funding strategies and sustained monitoring of long-term impacts, supporting the sustainability of restoration initiatives and the continued relevance of the group itself (Carboni et al. 2025).

To meet the identified need for representation, inclusivity, and equitability within the alliance, it was recommended for these principles to be embedded within the structure and purpose of the ORSA (Preston et al. 2025), as supported by the SER International Principles and Standards of Ecosystem Restoration (Gann et al. 2019). This would present as having a clear purpose for the group designed with representation and inclusivity as main underlying principles (Preston et al. 2025) and ensuring all stakeholders (expert practitioners, individual habitat alliances, etc.) are involved

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in the activities of an ORSA, including industry representatives and wider society when applicable (Carboni et al. 2025).

Lastly, it was said that to maximize the success of MER and science informed policies as a result of an ORSA, there would also need to be concerted efforts to educate the public and clearly communicate its working objectives (Carboni et al. 2025). Public opinion is a contributing factor to political decision making; thus, the success of the ORSA may rely heavily on public outreach as the alliance begins to inform policy. It was recommended that an ORSA should also make efforts to communicate with and educate the public regarding the work of the alliance (Carboni et al. 2025).

Conclusion

With the growing recognition of the importance of accounting for the fact that marine and coastal ecosystems function as a mosaic of interconnected habitats with regards to MER, a need for approaches that match the complexity and scale of seascapes has been identified. During both panel discussions at the SER2025 Conference and the NORA6 Conference, expert practitioners expressed strong support for the formation of an ORSA as a way to advance seascape restoration.

The objectives of this global alliance would thus include:

- Enabling communication between habitat-specific restoration alliances and knowledge exchange at the global level.
- Coordinating a strong global community of MER practitioners who have direct communication channels to SER and thus impact global policy.
- Advocating for seascape restoration as a concept in the MER space as well as to policymakers and the public.
- Facilitating dialogue and the creation of pathways between scientists and policymakers to close the gap between science and policy, and increase science-informed policymaking.

It was repeatedly stressed that the successful implementation of an ORSA would first require the establishment of a strong foundation consisting of representatives from a global community of practice who are focused on enabling communication and knowledge exchange across habitats with a focus on inclusivity and representation. This basis would help ensure that an ORSA can build steadily upon itself before advancing to more resource-intensive objectives. This would also pave the way for an ORSA to add real value to the MER space as well as to ensure there is no duplication of efforts regarding the objectives of other international initiatives. This could be achieved by focusing on project implementation, a global interconnected cross-habitat community of practice, and closing the gap in the science-policy interface by coordinating efforts with other global initiatives.

As evidenced through the overwhelming support of the expert practitioners, there is a need and desire for an ORSA with the objectives proposed herein. By uniting practitioners across habitats, strengthening pathways for science to inform policy, and taking action toward seascape-scale restoration, the proposed ORSA has the potential to address existing barriers to global marine and seascape restoration initiatives. While this alliance would work predominantly within the concept of seascapes, it also addresses the call to align with the concept of ecoscape restoration, thus emphasizing the importance of recovering both terrestrial and marine systems in tandem to maximize restoration success by working with the connectivity between both landscapes and seascapes. The proposed ORSA represents the opportunity to elevate seascape restoration globally, enhance ecological resilience through a focus on habitat connectivity, and contribute meaningfully to achieving international biodiversity and MER targets by generating impactful seascape restoration initiatives.

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Supporting Information

The following information may be found in the online version of this article:

Supplement S1. Original Set of Discussion Questions Formulated for the Panel Discussion at SER2025.

Supplement S2. The Ammended Set of Discussion Questions Posed During the SER2025 Panel Discussion.

Supplement S3. Discussion Questions Posed During the NORA6 Panel Discussion.

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