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COMMENTARY

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A Heuristic for Integrating Sense of Place Into Ocean Governance

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Abstract

Sense of place (SoP) is a powerful yet underutilised social value with significant potential to improve collaboration and inclusivity in ocean governance. Recent evidence, however, has shown that a range of barriers prevent the routine integration of SoP in this space. To help overcome this, this commentary proposes a preliminary heuristic—or rules of thumb—that can help guide researchers and practitioners to help them incorporate SoP into ocean governance. The heuristic emphasizes fostering collaboration, inclusivity, and shared understanding among diverse stakeholders and non-academic actors. It advocates for the co-production of knowledge across disciplines and institutions, iterative reflexivity to address positionality, and the creation of shared definitions and measures of SoP tailored to specific contexts. It explores balancing a broad conceptual understanding of SoP with localized tangible applications to ensure relevance and impact. Celebrating "bright spots," or successful instances where research has informed policy, is also highlighted as a way to inspire and support the utilization of SoP in management decisions. By utilizing SoP as a relational tool, we posit that ocean governance practitioners can enhance trust, promote more meaningful stakeholder engagement, and align diverse perspectives toward common goals, thus building more inclusive and collaborative management practices.

Keywords

marine management; ocean governance; sense of place; social values; stakeholder collaboration

1. Introduction

Humanity is exerting more pressure on the planet than ever before (Steffen et al., 2007), and these pressures are pushing planetary boundaries beyond a safe operating space (Nash et al., 2022; Steffen et al., 2007).

Marine systems in particular are facing significant threats, with warming oceans, the spread of invasive species, overfishing, and myriad more pressures, all of which have cumulative impacts (Nash et al., 2022). These impacts do not exist in isolation; they are deeply intertwined and interact as part of broader social-ecological systems, that is, the "integrated system(s) of ecosystems and human society with reciprocal feedback and interdependence" (Folke et al., 2010, p. 3). These interlinkages mean that successfully navigating these challenges requires the integration of diverse social values, knowledge systems, and voices to make governance processes more inclusive and collaborative, ultimately leading to their success (N. J. Bennett et al., 2017).

One phenomenon that is gaining increased attention in the literature is the sense of place (SoP). Broadly defined as the emotional bond that an individual or group has with a place (van Putten et al., 2018). SoP incorporates and encompasses other related concepts such as place attachment, dependence, and identity (Masterson et al., 2017; Stedman, 2002) and place meaning (Farnum et al., 2005; Raymond et al., 2017). Each of these components is largely interrelated and interconnected, varying in importance depending on the context and discipline within which they are explored (Farnum et al., 2005; Jorgensen & Stedman, 2001; Stedman & Beckley, 2007; Williams & Patterson, 2007). However, for our research, they all fall, at least in part, under the general concept of SoP (Jorgensen & Stedman, 2001; Trentelman, 2009). For this commentary, we adopt the definition of Hausmann et al. (2016, p. 117) that states: "[SoP] embeds all dimensions of peoples' perceptions and interpretations of the environment, such as attachment, identity or symbolic meaning, and has the potential to link social and ecological issues." This link to social and ecological issues positions SoP as a prime candidate for consideration and inclusion in the governance of social-ecological systems, being both a driver and an outcome of social-ecological processes (Masterson et al., 2017).

SoP has been shown to be an indicator of community resilience against disruption (Faulkner et al., 2018) and can be a powerful motivating force for adaptation. It can also be an indicator of pro-environmental behaviour (Alonso-Vazquez et al., 2018). and has been shown to have links to physical and psychological well-being (Hausmann et al., 2016; Scannell & Gifford, 2017). Additionally, SoP can also be a tool for collaboration; building social cohesion between stakeholders with shared SoP (Enqvist et al., 2017; Rodríguez-Morales et al., 2020). For a comprehensive overview of SoP see Raymond et al. (2021).

Ocean governance in particular is an area where recent research has shown both researchers and decision-makers see relevance and value for SoP (Duggan et al., 2024a; van Putten et al., 2018). However, there remain limited examples of its effective inclusion into decision-making processes (Duggan et al., 2023b). This is largely driven by a range of structural and institutional barriers (Duggan et al., 2023a), alongside challenges in effectively articulating a phenomenon that can be simultaneously tangible and abstract (Duggan et al., 2023b, 2024a) and perceived barriers in crossing the interface between science and policy (Duggan et al., 2024b). As such, it seems timely to work with and better support decision-makers to incorporate SoP into their decision-making processes to make them more inclusive and collaborative.

To this end, in this commentary, the authors reflect on their cumulative experience of over 50 years in research and practice at the science-policy interface (with much of this in the marine space, via a combination of academic research, environmental impact assessments, and reserve management) to identify a heuristic—or rules of thumb—for incorporating SoP into decision-making for improved ocean governance.

In terms of an SoP focus, this heuristic builds on the work of Raymond et al. (2021), acknowledging the complexities and diverse conceptualisations of SoP, and is informed by and builds on research into the conceptualisation, measurement, application, and articulation of the phenomenon (Duggan et al., 2023a, 2023b, 2024a, 2024b; Duggan & Sokini, 2021). This heuristic (Figure 1) is not intended to be a comprehensive conceptual framework, but rather a selection of practical considerations and tools based on experiential knowledge and research, presented as a jumping-off point for further conversation and research.

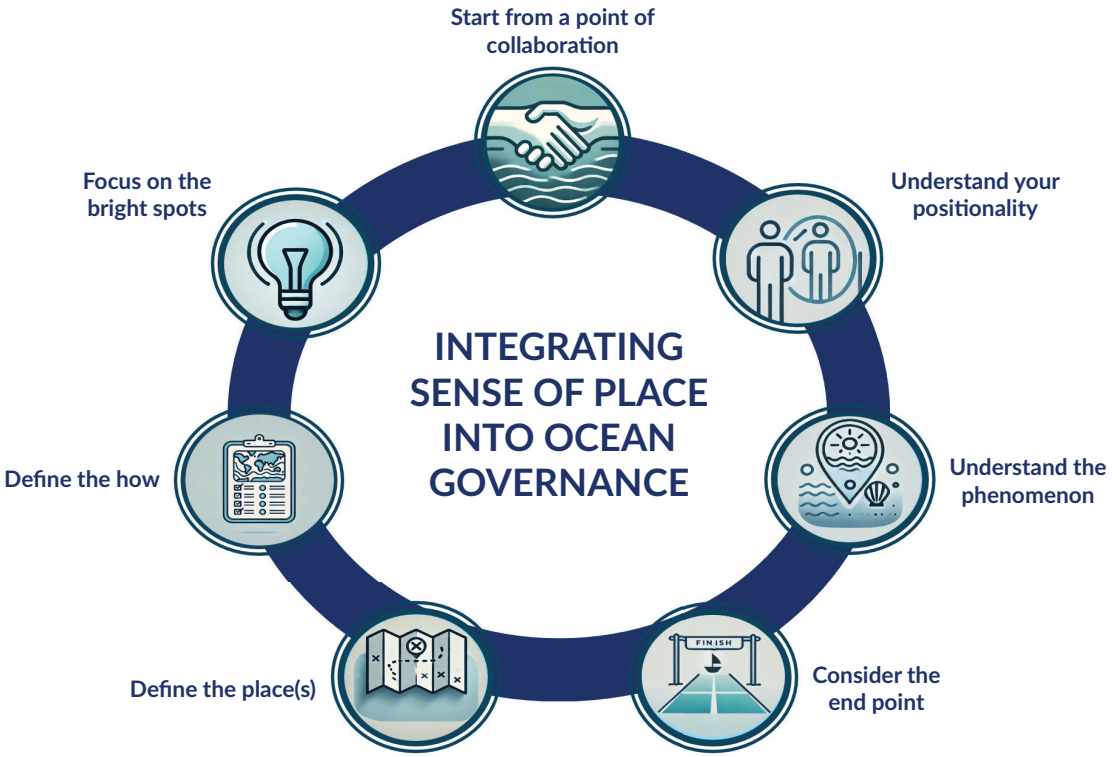

Figure 1. Visual summary of our heuristic—or rules of thumb—for improving the integrating of SoP into ocean governance.

2. A Heuristic

2.1. Start From a Point of Collaboration

We see collaboration as the foundational principle as part of any work that seeks to incorporate SoP into ocean governance. From a research perspective, this begins with moving from siloed research towards multi-, inter-, and trans-disciplinary research (Kelly et al., 2019), approaches that seek to intentionally weave different knowledge systems together (Alexander et al., 2018). From a decision-maker perspective, this must start with removing the barriers that inhibit deep collaboration with research (Cvitanovic et al., 2015). Moving along the spectrum of engagement from consultation (stakeholders as inputs to research), to engagement (increasing involvement in research) and co-production (stakeholders as partners in research) can lead to increased knowledge sharing and knowledge uptake by end users (Cvitanovic et al., 2019). This is not to say that lower levels of engagement are destined to failure—they are often required when a research

direction has already been set (Reed et al., 2018), but certainly meaningful coproduction when time and resources allow can lead to useful and impactful research outputs (Duggan & Sokini, 2021).

One approach for achieving this is via deliberate efforts to co-produce knowledge through "iterative and collaborative processes involving diverse types of expertise, knowledge and actors to produce context-specific knowledge and pathways towards a sustainable future" (Norström et al., 2020, p. 183). It is critical, however, that the notion of co-production is far more than just a "tick box." Rather, it must involve deep, deliberate, and agile collaboration with all non-academic partners (Chambers et al., 2022; Muhl et al., 2023), which must include Indigenous and local knowledge systems (Gavin et al., 2015; Sterling et al., 2017). To this end, the notion of "two-eyed seeing" also provides a useful conceptual framework for equitably embracing multiple perspectives, knowledge systems, and values in coastal communities (Reid et al., 2021). Defined by Mi'kmaw Elder Albert Marshall as:

> Learning to see from one eye with the strengths of indigenous knowledges and ways of knowing, and from the other eye with the strengths of mainstream knowledges and ways of knowing, and to use both eyes together, for the benefit of all. (Bartlett et al., 2012, p. 355)

Two-eyed seeing is a framework that centres on a process rather than an outcome, valuing collective action built upon the shared understandings, insights, knowledges, and skills of different people and communities.

If resources and time allow, collaboration can be more targeted and efficient if underpinned by a formal stakeholder mapping process (Cvitanovic et al., 2016). This would include a focus on understanding the diverse values and goals of diverse actors at the onset to ensure initial engagement is informed by a mutual understanding/interest in the topic. This process may also minimise the risk of "too many cooks" that can occur when seeking more voices in such collaborations (Clement, 2022). Regardless of the approach used, starting from a point of collaboration creates time and space for the subsequent elements of this heuristic to occur.

2.2. Understand Your Positionality

Broadly speaking, one's positionality is made up of their ontology (how they view the world) and epistemology (how they generate knowledge; Moon et al., 2019a). An awareness of one's positionality, or how they fit in and interact with the world, provides crucial context around how one forms research questions, conducts research, interprets results, engages with stakeholders, and conducts and interprets every other step from knowledge production to implementation (Darwin Holmes, 2020; Moon et al., 2019b; Moon & Blackman, 2014). For example, an awareness of positionality may support stakeholders to understand whether they identify or are seen by others, as an insider or outsider to the area of study (Berger, 2015). An important consideration, particularly when seeking to incorporate SoP into ocean governance, given that an insider/outsider status could impact whether or not researchers or decision-makers have access to locations, the sort of data they are able to collect, and how it may be interpreted (Lusambili et al., 2020).

There are myriad ways for researchers and decision-makers to identify their positionality, from diaries and logs to peer consultation (Berger, 2015; Moon et al., 2016). It must be noted that simply identifying one's positionality is not a panacea. It does not change systemic barriers that reinforce biases (Nagar & Ali, 2003),

and there is a risk that some stakeholders will stop attempting to control their biases following the penning of a single positionality statement (Savolainen et al., 2023). Identifying positionality should not be a single act but instead a constant iterative process of reflexivity (Nicholls, 2009).

2.3. Understand and Define the Phenomenon

Developing a shared understanding and definition of SoP can support the flow of knowledge from research to decision-making (Tuohy et al., 2023), and in our experience, stands to provide avenues for meaningful input into ocean governance from a diverse range of stakeholders. SoP is a broad but contested phenomenon in the literature, that can at one time be described as something clear and tangible, and at other times complex and intangible (Duggan et al., 2023a, 2024a, 2024b). The debate (Stedman & Beckley, 2007; Williams & Patterson, 2007), conceptualisation (Tuan, 1974), and reconceptualisation (Raymond, et al., 2021) of the phenomenon is a good thing, it drives exploration and adds complexity to the conversation, but it also presents a challenge when seeking to incorporate the phenomenon into ocean governance (Duggan et al., 2024a). Ultimately, the final definition (or potentially multiple definitions) of SoP agreed upon by stakeholders is not the most crucial thing. Instead, the process of generating a shared understanding—what SoP is and what it isn't—is a key process that can serve to strengthen collaboration and increase the inclusion of diverse perspectives.

It is important to note that this shared definition is not about stamping out epistemic pluralism, but rather engaging with this diversity (Miller et al., 2008). The common definition should be about identifying points of overlap in different meanings of SoP. Stakeholders and non-academic actors can still hold true their individual definitions and associations of SoP (Raymond et al., 2021). There are several approaches that can lead to effectively developing shared understandings. Bracken and Oughton (2006) advocate for a common understanding between the natural and social sciences, driven by active listening and careful consideration of language. Lang et al. (2012) propose a comprehensive series of design principles that includes multiple steps designed to facilitate a shared understanding of terms. Polk (2015) begins to explore a tailored transdisciplinary co-production framework that includes stages for integrating knowledge from different groups. We would advise against overcomplicating this process, instead tailor the method to suit the stakeholders involved. Co-production approaches are one proven approach to drawing out common understandings (Nyboer et al., 2023; Polk, 2015; Schwilch et al., 2012). This shared understanding is the first step in identifying shared measures of success and shared goals, which further increases the likelihood of successful transdisciplinary research (Cvitanovic & Hobday, 2018; Norström et al., 2020).

2.4. Consider the End Point of the Data

A key challenge in integrating SoP into ocean governance is ensuring that the scientific information generated is salient for decision-makers (Duggan et al., 2024a, 2024b). This is a challenge faced in environmental and societal research more broadly (Kueffer et al., 2012). Certainly, increased meaningful collaboration, including co-productive research approaches (as outlined in Section 2.1), would aid this by driving improved decision-maker understanding of the constraints faced by researchers and, vice versa, an improved understanding for researchers of the process of policymaking as well as the logic behind appropriateness and meaningfulness of information (Cairney & Kwiatkowski, 2017; Dewulf et al., 2020).

Achieving this improved understanding is not necessarily a straightforward solution and, unsurprisingly, much of the literature focuses on what researchers can do to engage decision-makers. Evans and Cvitanovic (2018) outline a series of practical steps that researchers (and particularly early career researchers) can take to increase the likelihood of their work having a policy impact, from identifying who is involved in the policy process, building a public profile, building relationships, and contributing to policy discussions. Rose et al. (2020) advocate for increased awareness and the ability to capitalise on policy windows—those discrete periods of time where the chance of policy impact is increased. Marshall et al. (2017) specifically outline 10 things for social scientists to consider to improve the extent to which their research is salient to decision-makers, while Cvitanovic et al. (2021, 2024) provide empirically grounded guidance for building trust among academic and non-academic actors to increase the salience and use of data in decision-making.

On the other hand, there is some work dedicated to understanding how decision-makers can be actively involved in the research process. Kueffer et al. (2012) recommend ensuring there is time and space for a dedicated problem-framing phase in research design so that targeted research questions can be devised and outputs planned that address policy requirements. Gluckman et al. (2021) advocate strongly for dedicated knowledge brokers to aid in information transfer (Cvitanovic et al., 2025). Another consideration to increase the uptake of information into decision-making lies in framing. Cairney and Kwiatkowski (2017) highlight the importance of framing evidence in a way that is tailored to what decision-makers demand and understand. This tailoring should begin by clearly defining what we mean by the "place" in SoP.

2.5. Define the Place(s)

A shared understanding between stakeholders on where the study will focus and how SoP will be measured is crucial (Balvanera et al., 2017). As with a shared definition, the exact location is not the most important decision. Largely this can be driven by research and policy priorities. The key requirement is shared agreement and understanding of the drivers behind choosing that location.

Related to the question of where to measure SoP, is the issue of scale. As Lewicka (2011, p. 211) states: "The favourite target of place attachment research is neighborhood, followed by home, city and, much less often, national regions and continents." The issue here, though, is that these definitions of scale aren't necessarily standardised or used consistently between disciplines. Recent research has measured SoP at many scales, from the watershed (Almeida-García et al., 2020) to intra- and inter-town (Artmann et al., 2020; Lai et al., 2017), regional (Kirkpatrick et al., 2018), and the country level (Sijtsma et al., 2019). The articulation of these spatial scales is often inconsistent. For example, a city or town can range in spatial size and population. In addition, places are spatially layered phenomena, whereby one place can sit inside another (e.g., a suburb within a city, within a country; Relph, 1976; Tuan, 1974). All this is to say that identifying and articulating the scale you are investigating is important, particularly if you seek to make comparisons between places (Lewicka, 2011). When seeking to incorporate SoP into ocean governance, the most logical approach would be to set boundaries that effectively reflect how people interact with nature (Atwell et al., 2009). Some methodologies, such as auto-photography, can actually let that scale emerge and be refined throughout the data collection process (Devine-Wright & Wiersma, 2021).

2.6. Define the How

A shared understanding of how SoP will be measured (as a precursor for inclusion in policy) allows for appropriate research program design to support policy formulation. The process builds on the principles of co-design and co-production discussed earlier, and can enable trust between stakeholders and more resilient governance (Chambers et al., 2021; Coleman & Stern, 2018; Johnson et al., 2019; Lacey et al., 2018; Lockwood et al., 2010). It is important to note that when we say "measure" we are not referring to purely quantitative approaches, but are referencing all the ways SoP could be described, understood, and articulated.

Lewicka (2011) provides a sound overview of approaches for capturing a component of SoP (place attachment) and supporting the process of defining the how. Novel approaches can also help in this regard, such as Public Participation Geographic Information Systems, which have received increased attention in recent times (Brown & Reed, 2012; Brown et al., 2017), as has auto-photography (Devine-Wright & Wiersma, 2021). We would advocate for tried-and-true approaches when the end goal is policy impact. However, if resources are such that novel approaches can be explored, there are a range of emerging and promising techniques for capturing SoP, particularly in the area of soundscapes, or how people perceive and experience sound in a given context (Bai et al., 2024; Korpilo et al., 2023).

It would be remiss at this point to not acknowledge the systemic and resource constraints that limit research and policymakers alike when deciding methodologies for research programs. The methodology for measuring SoP will inevitably be driven by expertise, time, and cost constraints (Duggan et al., 2023a, 2024b), but where possible we advocate for mixed methodologies, offering both a depth and breadth of understanding (Bryman, 2006, 2016). When considering the exact approach, there are myriad effective examples outlined.

2.7. Focus on the Bright Spots

There is a dominant focus on understanding and overcoming "gaps" when it comes to the science-policy interface (Van Kerkhoff, 2014). We would posit that while learning from failure is a valid and important process, the repeated focus on negatives limits progress in research, and it is likely that the same is true in the policy sphere. Emerging research practices that focus on bright spots or "instances where science has successfully influenced policy and practice—and the sense of optimism that this can inspire" (Cvitanovic & Hobday, 2018, p. 1) are demonstrating a way forward to ensure that SoP can cross the science-policy interface (E. M. Bennett et al., 2016; Karcher et al., 2022, 2024).

In the realm of research, the existing examples of SoP specifically being incorporated into policy are limited but growing (Karcher et al., 2021). We can point this to the identification of policies that protect SoP (Pourbahador & Brinkhuijsen, 2023) and research that is purposefully designed for uptake by decision-makers (Brown & Raymond, 2007; Jayakody et al., 2024; Raymond et al., 2009). More broadly, there are frameworks for the incorporation of social values into conservation policy (Manfredo et al., 2021; Whitehead et al., 2014). As the literature in this space grows, it will be important to acknowledge and leverage examples of success. As with all the rules to date, this is not the role of researchers alone, and for all the relevant bright spots to emerge, and be championed, decision-makers will need to share their lessons. The most effective approach to promoting bright spots will depend on context but, as a starting point, the creation of a community of practice across the science-policy divide shows promise (Duggan et al., 2023a).

3. Conclusion

These seven rules of thumb are intended to enable researchers and decision-makers to more effectively support the incorporation of SoP into ocean governance. We acknowledge that broader-scale systemic issues and barriers must be addressed as a matter of priority to ensure appropriate knowledge integration, but believe that SoP can be a key tool in achieving this. Despite its amorphous and complex nature, SoP can still be innately relatable if collaboration and co-development of understanding are central concepts. Even if SoP changes between individuals, groups, places, and scales—it still exists. And recognising and identifying one's SoP and acknowledging the existence of SoP in others can be a great unifier. Research shows us that using SoP as a tool for relationship-building and sense-making between people is possibly the phenomenon's biggest strength (Duggan et al., 2024a, 2024b). Simply by acknowledging its existence, researchers and decision-makers stand to be able to familiarise themselves and others with the phenomenon. This can be a powerful first step in driving systemic change around the acceptance of SoP and recognition of its value as a key tool in ocean governance.

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Conflict of Interests

The authors declare no conflicts of interests.

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Sarah Clement is an associate professor in environmental policy at the ANU Fenner School of Environment and Society. Clement is an environmental social scientist whose research focuses on the governance and transformation in the Anthropocene, as well as how the use of nature-based solutions can support efforts to address complex socio-economic and ecological challenges with a particular interest in nature-based solutions in cities. She is particularly interested in policy and community resilience relating to bushfires and cascading disasters and is currently leading an ARC-funded project on bushfires, which explores how changing governance can help society confront three fundamental challenges relating to wildfires. Her work also has a strong focus on how biodiversity policy and governance can be reformed to address ecosystem loss and decline, while also recognising shifting baselines due to human impacts on the environment.