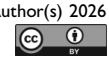
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Cultivating capital: A practice-based approach to understanding communities within the Great Barrier Reef

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Abstract

Despite continued calls for environments to be governed as dynamic socioecological systems, conventional environmental management continues to imagine humans as operating separately from ecological processes, holding discrete, pre-given and self-evident interests in either using or protecting an environment's resources and services. This downplays the contingent, fluid and ambiguous connections that people actually practice within these systems, overlooking important nuance when it comes involving communities in the governance challenges and sociotechnical transitions provoked by climate change. In this paper, we consider an alternative approach using a comprehensive body of qualitative research conducted with communities living and working in proximity to Australia's Great Barrier Reef. Using Bourdieu's theory of practice, we examine our participants' personal narratives about the Reef as accounts of participation in an overlapping set of social fields, tracing how these engagements involve different subjective dispositions, multiple interests, and the consolidation, mobilisation and cultivation of different types of capital. Our goal is to demonstrate the opportunities to be

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gained by practice-based approaches within environmental governance and the flexible, relational understandings of communities they offer. These understandings are imperative, we argue, when working to help communities negotiate complex change and build feasible and equitable environmental futures.

Keywords
Climate adaptation, Great Barrier Reef, ecological habitus, environmental communities, social practice, cultural capital, social capital

Introduction

Australia's iconic Great Barrier Reef (shortened to either 'the GBR' or 'the Reef') is a coral reef ecosystem of profound beauty and size. Despite being subject to comprehensive and cross-jurisdictional frameworks of management, the GBR is vulnerable to climate change and is predicted to experience more frequent coral bleaching events even if drastic global greenhouse gas emissions reductions are achieved (IPCC, 2022). Amid proliferating concern about its future, scientists and decision-makers have advocated a shift to resilience-focused management in the GBR and investments in scientific and technological interventions to help it survive, recover from and adapt to climate change (Anthony et al., 2020; McLeod et al., 2019, 2022; Shaver et al., 2022). Assisted adaptation in the GBR is not only a significant technical challenge but a watershed moment in its governance. To be feasible, it will require new regulatory frameworks, effective partnerships with First Nations and industries, and meaningful engagement with local communities and publics (Kong et al., 2024; Shumway et al., 2023, 2025; Vella et al., 2021).

As social scientists within the GBR region, we work to engage local communities and the Australian public about the prospect of assisted adaptation in the Reef so their expectations and aspirations can be brought into dialogue with intervention science and decision-making (Lockie et al., 2025; Paxton et al., 2024). These efforts are borne of a deep commitment to participatory processes as co-constitutive of responsible science and innovation (Bauer et al., 2021; Chilvers and Kearnes, 2020), and to deliberative social research as a means to multiply the voices and agencies involved in the development of novel technologies and the governance of environmental futures (Macnaghten, 2021; Wyborn et al., 2016). Translating these commitments into practice involves confrontation with a set of mundane but important empirical challenges around how to best elicit, understand and represent community perspectives in an arena already characterised by profound change and polarised discourse (Konkes and Foxwell-Norton, 2021; Lockie and Paxton, 2026).

The challenge discussed in this paper relates to what Chilvers and Kearnes (2020: 349) call the 'residual realism' that lingers, unchecked, in the imaginaries, practices and literatures used within participatory governance, whereby both the public and governance are

rendered as pregiven and natural categories readily imported into participatory processes. Within mainstream environmental governance, this is seen in the ways that social relations are broken down into functional policy units (Arts et al., 2012; Kasper, 2009; Shove, 2010) and humans treated as external to ecosystem dynamics holding discrete and self-evident interests in either using or protecting an environment's resources and services (Jackson and Palmer, 2015). Much of the social science conducted to support GBR management, for example, distils its 'social dimensions' into a set of material and psychosocial human benefits, aggregating communities according to the singular rights or 'stakes' they are considered to hold in these benefits (e.g. Deloitte, 2017; GBRMPA, 2017; Goldberg et al., 2018; Marshall et al., 2013, 2016).

While this may offer expedience in certain policy contexts, scholars note how these models downplay the dynamic and contingent engagements that people form within environments (e.g. Campbell and Gurney, 2024; Ojha et al., 2016; Stone and Nyaupane, 2014; West et al., 2020). This was certainly the case when we spoke to 140 people living and working within the GBR and observed the candor with which they described multiple ways it mattered in their lives. This readiness to confound pre-given categories provoked us, in turn, to consider what might be gained by approaching their accounts differently. In this paper, we draw on Bourdieu's theory of practice to treat our participants not as external users exercising discrete interests over a stock of Reef resources and services but as actors pursuing different interests and cultivating different flows of capital within the Reef. Our goal is not to provide a comprehensive map of socio-ecological relations or community interests in the GBR, but to highlight the opportunities this creates for social researchers and engagement practitioners working to foster productive dialogue around novel technologies and socio-ecological change.

A turn to practice

Practice-based approaches became prominent within sociology as a means to move beyond debates over whether macro-level structural forces or micro-level agencies constitute the primary drivers of social reality. They examine social life instead as 'an ensemble of doings, sayings and things' (Arts et al., 2012: 9) configured in an interplay of structural and subjective influences. Bourdieu (1990; Bourdieu and Nice, 1977) offers a seminal theory of practice that imagines social reality to be comprised of meso-level practical arenas referred to as social fields. His own work explored fields such as education, science and television and, while careful to distinguish these from physical spaces, he considered them somewhat analogous to sports fields in that they consisted of bounded constellations of actors sharing a common purpose and interacting in 'constant, permanent relationships of inequality' (Bourdieu, 1996: 40; see also Thomson, 2014). While these actors were capable of improvisation and free-will, Bourdieu acknowledged that fields were always materially and socially structured and the practices within shaped by a 'multiplicity of forces' (Bourdieu, 1990).

Two additional concepts illuminate the interplay of structure and agency in practice. The first – *habitus* – relates to actors' subjective engagements within fields and the internal logics ordering their choices and actions (Bourdieu, 1990). Bourdieu resisted

defining subjective interests and preferences as intrinsic to the individual, considering them instead as relational products developed in much the same way that a player builds grace and adeptness at a particular sport: through dedicated and ongoing field-based practice. Through participation in social fields, actors embody the rules of the game, developing skills, competency and dispositions often taken to be internal to one's own self. These serve to produce and reproduce the rules and logics of the field, making habitus 'structured structures predisposed to function as structuring structures' (Bourdieu, 1990: 53; Maton, 2014).

While habitus refers to one's disposition within a social field, the second concept – *capital* – relates to one's position and mobility in relation to others. Bourdieu used capital to refer to any resource that could be accumulated and mobilised to secure or advance one's position in a social field, observing that those with greater stocks not only enjoyed more advantaged positions, but wielded greater influence over the expectations, norms and values that ordered the field (Bourdieu, 1986; Moore, 2014). This reproduced the disparities within these fields, as privileged actors came to reify the value of their own capital while those with smaller stocks were forced to improvise and wait for opportunities to advance (Fligstein and McAdam, 2011).

While Bourdieu was careful to point out that capital had no universal value beyond the power and advantage it enabled in a particular field, he distinguished four types circulating in and across social fields (Bourdieu, 1986). *Economic* capital refers to power wielded through the possession, production and exchange of material commodities, assets and money and *social* capital to the advantage gained through social bonds and connections. *Cultural* capital refers to the power and privilege of a 'well-formed habitus' (Moore, 2014) and embodying the knowledge and dispositional qualities needed to negotiate a particular field with fluency and confidence. Finally, *symbolic* capital refers to the possession and use of symbolic markers of one's capital (e.g. medals, designer clothes, qualifications, awards and titles) to gain advantage in the field. Bourdieu also noted that capital could exist in different forms (e.g. material, institutional and embodied) and that these could highlight or obfuscate the way it was instrumentally employed within a field. He considered economic capital unique in that its forms typically made its accumulation and exchange transparent, whereas cultural capital was more frequently presented as qualities intrinsic to the individual (e.g. natural intelligence, refined tastes and manners or artistic talent) rather than something strategically cultivated (Moore, 2014).

Practice in the GBR

While Bourdieu did not extend his analysis to the environment, scholars have used his concepts to examine a range of environmental matters, including ecological management (Arts et al., 2012), sustainability transitions (Kungl and Hess, 2021) and environmental behaviours and consumption patterns (Shove, 2010; Spaargaren, 2011). These scholars demonstrate the holistic, integrated understanding that practice-based approaches enable in an arena in which social action is typically conceptualised within broader systemic and evolutionary processes (Kungl and Hess, 2021) or explained using individualistic choice theories (Shove, 2010; Spaargaren, 2011). This enables an understanding of both the

macro-level social and material conditions that structure environmental action and how these are reproduced in subjective dispositions and 'ecological habitus' (Kasper, 2009).

Using practice to examine relations with the GBR is not an attempt to downplay its ecological services or instrumental importance to regional economies or the Australian nation. Rather, it seeks to enrich understanding of the social opportunities it offers without imagining these to be fixed or self-evident. This builds on scholarship that already acknowledges the GBR as an arena comprising multiple social fields and the power that accumulates in fields such as science, the media and industries such as tourism (Deloitte, 2017; Konkes and Foxwell-Norton, 2021; Stoeckl et al., 2011). It also deepens conventional understanding of the subjective passions, skills, knowledge and dispositions that connect people to the Reef, imagining these not as a discrete set of 'stakes' but as embodied habitus developed in lived relations with the Reef and participation in its industries, professions, vocations, communities and coalitions. Explicit attention to habitus as a 'structuring structure' (Bourdieu, 1990: 53) also adds to critical scholarship around the competing human interests and pursuits that have shaped the Reef's history (Elias, 2019; Lloyd, 2022; Pocock, 2002, 2021) and influence how its future is imagined (Braverman, 2018; Datta et al., 2024; Paxton et al., 2024).

Capital already receives some attention within GBR social science, with the Reef frequently acknowledged as a generator of economic capital and regional livelihoods (Deloitte, 2017; Stoeckl et al., 2011) and social capital as a key mediator in the achievement of management objectives (Bohnet, 2010; Gooch et al., 2012). Explicit attention to other types and forms of capital, however, would enable a closer examination of the disparities created within the Reef's social fields and how these are reproduced in Reef management. The need for this attention is foregrounded in calls made by Reef Traditional Owners for greater recognition of their knowledge and cultural authority in GBR management (Dale et al., 2018; Grant, 2021). It is also central in scholarship highlighting the disproportionate symbolic and cultural capital that accumulates within institutional science and policy settings (e.g. Foxwell-Norton and Konkes, 2022; Foxwell-Norton and Lester, 2017; Konkes and Foxwell-Norton, 2021) and how this reifies dominant cultural interests (e.g. Elias, 2019; Pocock, 2021). More broadly, recognition of the different capitals cultivated within communities is considered critical to enabling them to 'spiral up' (Emery and Flora, 2006) their existing resources in order to negotiate challenges such as climate change (Fritz et al., 2021; Kais and Islam, 2016; Thompson and Lopez Barrera, 2019).

Research approach

Methods

Our analysis draws on qualitative research conducted as part of public and community engagement under the Reef Restoration and Adaptation Program (RRAP). Between late 2021 and early 2023, 117 interviews were conducted involving a total of 140 participants located across the GBR catchment. The majority of these were conducted face-to-face, and flexible and open-ended questions were used to encourage candid discussion of participants' firsthand connections with the Reef, visions for its future and

nascent responses to assisted ecosystem adaptation strategies to help the GBR recover and adapt to climate change. An interview protocol is included as Supplementary Material.

Participants were identified through a combination of purposive and snowball (referral) sampling, following an established typology that divides reef communities into four key groups (see Taylor et al., 2019). These are Reef Traditional Owners, Livelihood Stakeholders (including representatives from commercial enterprises such as tourism, fishing and coral collecting/aquariums), Institutional Stakeholders (including government, research and scientific institutions with connections to Reef management and protection), and Civil Society Stakeholders (including non-government conservation and marine management organisations and recreational users such as anglers, snorkelers/SCUBA divers and photographers). As alluded to in the introduction, however, participants frequently confounded these categories by describing multiple and overlapping interests and connections to the Reef.

Interviews were audio-recorded and transcribed verbatim. This research was approved by the James Cook University Human Research Ethics Committee (Approval No. H8435). Participants were provided with written and verbal research information and provided signed or verbal consent prior to interviews. Data are archived in the James Cook University institutional repository. They are not available for free use under confidentiality requirements stipulated by the Ethics Committee.

Analysis

Our insights draw on two aspects of the interviews: the ways participants described and referred to the GBR over the course of the discussion, and their responses to the first interview question – *Can you please tell me about yourself and your connections with the GBR?* Responding to this question required the articulation of a personal or life narrative (a logical and sequential story with themselves as the central protagonist). The way this was done conveyed much about participants' intentions and desires, and the circumstances shaping their actions and choices (Mason, 2004).

Aided by the software package NVivo, we applied Tracy's (2020) phronetic-iterative analytic approach, alternating between emic exploration of participants' accounts and etic consideration through Bourdieu's theory of practice. Initial codes openly captured (a) the different ways participants framed and made reference to the GBR, and (b) the myriad ways our participants framed themselves and their trajectories in connection to the GBR. Subsequent coding saw these organised into:

- Ten themes relating to the different ways the Reef is referred to and described, which provide insights into the potential fields of action that participants engage in as they inhabit and work with the Reef; and
- Three themes relating to stages in participants' personal narratives or stories. These reflect temporal progression (roughly aligning with recalled past, present circumstances and future plans) and the key practical challenges and concerns

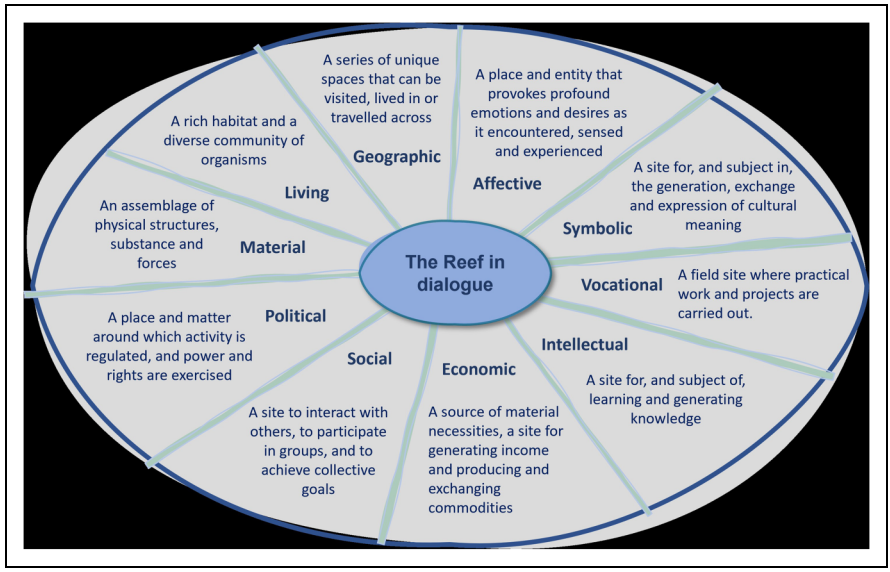


Figure 1. Multiple representations of the GBR as articulated by interview participants.

encountered at each of these stages. These enable insights into participants' interests, positionality and their strategic use of capital.

Identifying material, including references to specific people and geographic locations, has been removed from the interview material presented here. We also avoid gender-specific pronouns unless directly quoted by our participants.

Results

The Reef as multiple fields of action

While participants were recruited in line with an established typology of GBR rights-holders and stakeholder groups, their accounts reflected more fluid engagements. They discussed the GBR in connection with various aspects of their lives, described complex interests in it, and identified with multiple Reef communities or sectors. It was not uncommon, for example, for a tourism operator to discuss commercial activities in the GBR and also their involvement in political activism, recreational pursuits and/or management activities.

The ways the Reef was articulated in this dialogue were also rich and varied. These are encompassed in ten overlapping themes (see Figure 1). Three of these themes relate to the Reef as a material, ecological and geographic entity. Participants' accounts were understandably rich with references to Reef animals and ecologies, to different physical structures and processes, and to specific sites and places within the Reef region. The remaining

themes relate to the Reef as a site of subjective experiences, social interaction and strategic pursuits. Participants discussed the Reef as something they inhabited, visited, travelled across and encountered through activities like walking, hunting and fishing, sailing, SCUBA diving, coral collecting and others. As they did, the GBR became a site where they had sensory experiences and affective encounters. It was also discussed as a site for collective pursuits, including the exchange of symbolic meaning and the development of embodied skills and practical know-how. Finally, it was discussed as a context for achieving security and advantage through vocational, professional and intellectual pursuits, economic activity, cultural expression and art and political influence and activism.

Pursuing personal and practical concerns

As outlined in the 'Analysis' section, three themes were identified that reflected both a temporal stage and a practical concern in participants' personal narratives. These are discussed in turn.

Articulating connections. When asked to describe themselves and their connections to the Reef, participants typically began by making reference to the past ('who I was') and plotting a trajectory towards their current position ('who I am now'). Geography ('where I was' and 'where I went') also had important implications for the ways participants framed their dispositions and the interests and logics driving their trajectories.

Novel encounters. The majority of participants (89 of the 117 interviews) had moved from somewhere outside the GBR region to live and work in proximity to the Reef. While these participants may have had an existing interest in marine environments or coral reefs prior to this move, their narratives typically contained accounts of formative events or experiences that had provoked their move to the Reef. These were often early visits to the GBR region or first encounters with coral reefs or marine wildlife and were always enabled by some form of infrastructure or technology (e.g. vessels, SCUBA, scientific apparatus, photography, or information technologies).

The affective power of the Reef was central in these formative experiences, with emphasis given to its profound beauty, alterity, vast size and remoteness. Participants described the acute feelings (such as awe, excitement, wonder, fear and a sense of smallness) provoked by the Reef, and subsequent changes in their awareness, interests and passions. In Quote 1, a participant describes their first encounter with the Reef and how this provoked a rapid shift in their sensibility (described as 'falling in love') and the emergence of a less awkward sense of self:

> Q1: I went to the Great Barrier Reef when I was 12, for a family trip to Cairns. I actually found a photo of it a couple of weeks ago. I look terrible, this young kid with this horrible matching fluoro outfit on. We went out [to an island on a tourist boat]. That was pretty much where I fell in love with the Reef… It was just a day trip, and they couldn't get me out of the water, I was just snorkelling the whole time, like, 'this is amazing, this is epic!' … I remember vividly the spot that I went out to snorkel from. Civil society stakeholder (outside GBR catchment)

These encounters also provoked new intentions and the desire to cultivate connections with the Reef. In Q2 below, an initial encounter with the Reef is the catalyst for a series of decisions that transform the participant from being an inexperienced 'yokel' to a professional and activist living and working with the Reef:

> Q2: I grew up 300 kilometres inland … [I'd never heard of Cairns] revealing what a yokel from the bush I am, but … [I came to visit a friend and] did my first open water course at the Great Barrier Reef and … I was just hooked. I was like "this is amazing, I want to do this forever". After I finished my [degree] … I wanted to come back and work … it was a long dream [but] I finally managed to move back over here and do my Dive Master, and yeah, haven't looked back. I've been working at the Reef ever since. Livelihood stakeholder, Far North GBR

Everyday experiences. A smaller number of participants (29 of the 117 interviews) described themselves as having always been in, or 'coming from', the GBR region. These participants (including all Reef Traditional Owners and some Livelihood and Civil Society users) tended to foreground their ongoing connections with the Reef by emphasizing its ubiquitous presence in their routines, identities and associations with family, kin and community. In Q3, a Reef Traditional Owner illustrates the importance of their connections with the Reef with an account of collecting and consuming shellfish in their local coastal environment:

> Q3: We feed off all the seashells that lie in the bay, on the seagrass … That's where all the dugongs come in there as well. [The seashells] lie in the shallow muddy waters out in the bay … We use the shells for our craft, jewellery and stuff. Yeah, but it's a delicacy for us, that meat in there … so we love it, and obviously the oysters as well. We love our oysters. [We all go] out and crack the oysters. Traditional Owner, Far North GBR

The participant highlights their familiar and everyday connections within the Reef, detailing the material (mud, water), spatial (bay, shallows) and ecological (seagrass, dugongs) contexts that afford the collection of shellfish. They also highlight the subjective and social outcomes of finding, cracking and eating the shellfish, describing the knowledge, practical skills, well-being and pleasure they gain from this practice. In Q4, the same participant acknowledges the effects of competing interests and practices on these routine, endogenous practices:

> Q4 …over the years, it's been really hard for any of our mob to go out and get [the shellfish] because of the dredging. It's built up all the mud, and it's made the mud really hard … So a lot of our mob can't go out and get the seashells that lie in the shallow water because the dredging has affected us. Traditional Owner, Far North GBR.

Participants frequently positioned their endogenous dispositions within a broader context of change and competing interests. In Q5, terms like 'flash-bang' and 'dollar value'

are used to juxtapose more ostentatious and demonstrable commercial interests in the Reef against its everyday significance for local communities:

> Q5: There's so many different [things], besides tourism, that [the Reef] and our ecosystem provides. Like, tourism's brilliant, it's the flash-bang money but it's also the stuff from the education of kids, just people being able to walk along a beach and pick up a shell that's washed up off the Reef and think where it's come from, imagination, things like that. [There's] so many intangibles the Reef holds, and that's one of the things that the politicians don't get, they're only thinking about the dollar value. Civil society stakeholder, Far North GBR.

In highlighting these intangible but profound connections, these participants also highlight their fragility and the importance of protecting them within a changing and expanding field.

Securing position. Upon articulating their subjective connections to the Reef, participants then turned to the challenge of consolidating these and securing their place in the Reef. Livelihoods and economic participation were central in these narratives, and for those coming from outside the GBR region, this often involved entering new fields such as Reef industries, management institutions and professions and securing positions as employees or business owners. Those already living in the GBR region often described the processes through which they sought to maintain existing livelihood practices by cultivating new skills and extending these into adjacent and associated fields.

Participants were typically frank about the need to generate economic capital to secure their connections to the Reef, discussing employment, business establishment, grant applications, forming NGOs, accessing markets, engaging with industry and building wealth as self-evident criteria for participation in the field. Their accounts frequently included references to the Reef in its biological forms (e.g. its organisms and ecological communities, biological processes and events), material forms (e.g. its structures, chemical substances and physical processes) and geographic forms (e.g. sites, places and destinations). These were converted into economic capital and livelihoods in two broad ways:

Producing commercial products and services. Some participants described practices in which the Reef – in material, biological and geographic form – was more-or-less directly converted into marketable commodities. Commercial fishers and coral collectors, for example, described industrial processes through which they extracted fish and coral, converted them into sellable products (e.g. seafood, aquarium products) and distributed and marketed them to customers. Other participants provided Reef-related services in exchange for payment, including leisure-based experiences (e.g. tourism), training programs (e.g. SCUBA certification) and the transportation of people and goods (e.g. commercial shipping). Others discussed translating the Reef into cultural and discursive products such as art, literature, media, photography and film for commercial exchange.

Due to the Reef's location and the difficulty of negotiating marine environments, establishing commercial livelihoods required participants to have significant existing resources. This included material infrastructure and equipment such as vessels, fishing

and SCUBA equipment as well as institutional resources such as regulatory permissions and licences. In addition, participants needed advanced practical know-how, tenacity and a thorough enjoyment of the marine environment. In Q6 and Q7, a tourism operator and a coral collector recollect how they started businesses two or three decades earlier. Both rely on family assets and practical know-how gained through childhoods spent sailing and diving, consolidating these into the infrastructure needed to create Reef commodities and services:

> Q6: I was originally in [town] to sail off around the world, but… [I was] having so much fun with it that I decided "there's got to be a way to make a living out of this". I couldn't afford a boat or anything so, in my stupidity, I decided to build a boat and take tourists out to the Reef. It was very early days in the tourism industry … I just started to build one and mortgaged my parents' house … It's a long story, but I managed to get something in the water and off we went from there. Livelihood stakeholder, Far North GBR

> Q7: My father was a builder [in a southern State] … but always loved diving [for abalone, crayfish, and scallops]. Yeah, it was kind of in the blood. I've always been into diving and fishing … boats and that. So, I just followed Dad … He was reading through the [newspaper] one day and saw a [reef business for sale] … and said 'we're selling up and moving'… So, we loaded up everything into a container … and drove up, and on the way up chose a boat and bought the business. Livelihood stakeholder, Far North GBR

This consolidation, an early step in what would become much larger commercial operations, occurred when tourism and coral fisheries in the Reef were still in their infancy. These participants benefited from a field with low competition and supportive regulatory institutions. In the account below, a commercial fisher 'born and raised' on the Reef describes a more recent endeavour to secure their family business. Despite having access to Reef-sourced fish, existing family connections, supply chains and important knowledge and skills, they encounter increased competition and must improvise to secure their livelihood. This is achieved, first, by seeking employment in an external field to build the economic capital required to obtain a vessel. Then, social media and visual technology are used to extend their products into urban seafood markets:

> Q8: I've been fishing [this] area since I was bloody five years old with the old man. He fished it since he was a kid and my grandfather fished it [too] … I wanted to have my own boat, so I thought, "well, I'm not going to get enough money working for someone" [so I did ex-situ work in resources sector for several years]. We thought we had enough money, and … started our own business. We were going nowhere … [Eventually] we started marketing our fish a lot better … and, yeah, we basically doubled the price of our fish by doing that. We catch less now than we ever have, but we make more money out of it. Livelihood stakeholder, North GBR

Developing knowledge, expertise and skills. Other participants cultivated economic capital by drawing on associations with Reef-related industries (particularly tourism),

government and non-governmental organisations involved in the care, regulation and management of the Reef, scientific and research institutions, Traditional Owner-led environmental management organisations and environmental advocacy groups. Through these associations, participants earned income by participating in activities such as the development of Reef policy and regulations, the coordination and delivery of on-water Reef stewardship and management projects, political advocacy, community engagement and development and field and laboratory-based research and monitoring.

Given the Reef's socio-ecological complexity, engaging in these activities often required specialised knowledge and practical competencies. This included the ability to operate a vessel, navigate and operate underwater and use various technologies; the ability to operate effectively in diverse teams and negotiate institutional and commercial landscapes; the ability to build empirical knowledge about the Reef and to collect and manage scientific data; and the ability to communicate and educate the public and create effective written and visual media. Specific dispositional qualities were also important, like having a deep interest, or passion, for the Reef's preservation, a willingness to tolerate long periods at sea and the confidence and tenacity to build the skills and expertise needed to interact with the Reef.

This cultural capital was often discussed as a self-evident product of sustained and ongoing correspondence with the Reef and participation in its industries, institutions and organisations. However, many participants – especially more recent arrivals to the GBR region – also described processes in which they deliberately cultivated cultural capital in order to secure livelihoods and economic connections within the Reef. A common strategy was through formal education and training, which was valued not just as a means to gain knowledge, skills and expertise, but for the symbolic capital enabled by academic qualifications (e.g. marine sciences, engineering) and industry certifications (e.g. SCUBA certification and vessel licences). In Q9, a participant details the circuitous path to a coveted position within a government GBR management agency. Candidly attributing the achievement of multiple academic qualifications in the marine sciences to a long-held desire to engage in practical on-water reef management, the participant highlights how these signify habitus more disposed towards tenacity, pragmatism and institutional objectives than to intellectual pursuits.

> Q9: Research is probably not my jam. I don't really like writing scientific papers … I think sometime either in high school or during my uni, I was out fishing with Dad and I see [a marine park vessel with a government logo go past] … I was like, "Yeah, that's what I want to do … whatever they're doing." [details graduate and postgraduate study, work experience and diving certifications] … I was like "I'm here, this is me … let me in!". I had to keep plugging away at it a few times before I got in, but totally worth it. Institutional stakeholder, Far North GBR

While institutions like universities were readily used by participants to develop cultural and symbolic capital, others encountered more difficulty mobilizing it. In Q10, a Reef Traditional Owner emphasises the value of their cultural knowledge and the profound resilience it enables in the face of entrenched disadvantage. Despite these resources, the participant still experiences discomfort within cross-institutional GBR

governance networks, due to a relative lack of symbolic capital (the necessary academic qualifications) and embodied cultural capital (not talking the right way). While these might have excluded the participant from these networks, the cultivation of social capital (through mentorship) not only enables them to participate in cross-institutional GBR management but also to enjoy a position of authority and new types of embodied cultural capital (expressed as feelings of pride and confidence):

> Q10: I grew up in a housing commission area, a low social economic place. My connection to Sea Country is what saved me from suffocating in this white world … I had my stories, I had my song lines, had my language. That there is what motivated me and that's what I fight for now. [When my mentors encouraged me to become involved in Reef governance] I didn't say yes straight away. I think it was because I was scared because I didn't have an academic background. I didn't want to be embarrassed because of the way I talk … Then I realized that they wanted my lived experience … because I am a Traditional Owner, a grassroots Murri! I have something that they don't have and that's On-Country value and On-Country life lessons. Once I acknowledged that … I was like, "You know what, this is my platform." Traditional Owner, Central GBR.

Negotiating the future. After describing their past and present positions, participants typically projected their narratives forward, articulating their expectations and plans for the future. Discourse and debate about the escalating impacts of climate change were a dominant and ubiquitous aspect of these accounts. Participants expressed dissonant perspectives regarding scientific predictions of ecological decline in the GBR, which are discussed in detail elsewhere (Paxton et al., 2024, 2025). Their more personal plans regarding how they would protect their positions, livelihoods and well-being in the face of change involved three key strategies:

Maintaining the Reef's ecological capacities. Given the number of participants directly or indirectly involved in GBR management institutions and organisations, it is not surprising that strategies to protect care for and cultivate its lifeforms, ecological processes and material structures were a common element in accounts about future security and change. Participants discussed existing strategies to reduce pressure and disturbance on the Reef, such as litter removal and pollution reduction, sustainable fishing practices, wildlife rescue, habitat protection, Crown-of-thorns starfish management, changes to agricultural practices and the cultivation of riparian, coastal and wetland ecologies. They also discussed innovative strategies to enhance and assist reef ecologies in times of change. This included coral gardening and other restoration practices implemented at local reefs – through coral nurseries, fragmentation and artificial reefs – as well as coral aquaculture, coral biobanking and interventions in coral life cycles (such as larval slick collection).

Drawing on their present involvement in reef and ecological management, participants also recognised that efforts to protect and cultivate the Reef often came with opportunities to develop associated forms of capital – including traditional, vernacular and institutional knowledge, practical skills and expertise, vocational networks, technologies and infrastructure. In Q11 below, an employee from a government reef management agency

describes the substantial collective opportunities created when skilled management practitioners with various management and institutional backgrounds come together to participate as a team on a Reef monitoring and management vessel.

> Q11: We have these multidisciplinary teams to try and bring in all the skills to get jobs done and to share and exchange knowledge… It's a big financial investment to run our boat … so if we send lots of people out and lots of resources we try to do multiple taskings in a single area, so we'll have multiple things happening at once if we can, to try and tick off a number of our priorities … So, if there are 16 people, all of those people need to be able to do their job pretty well … [Some people] can't drive boats, crew the vessel … but they're there because they bring their intellectual knowledge and that allows information sharing … They may not be able to clean the toilets but the information exchange is awesome [laughs]. Institutional stakeholder, Far North GBR

As already discussed, on-water reef activities require infrastructure and other resources and participants recognised that a lack of access to these resources might preclude certain communities and organisations from engaging in reef management as a means to negotiate change. In Q12, a Reef Traditional Owner discusses how, despite having a substantial knowledge base and a team of skilled staff, they are unable to directly participate in reef and coral restoration because they do not have an adequate vessel:

> Q12: We want to be more involved, of course. And I think particularly being coastal people and where our traditional lands are, we definitely need a boat to go out and start doing some hands-on work. So that would be terrific but, as it is now, we're restricted to looking out for the water quality flowing to the Reef. We'd like to extend that right out and look at the whole system. Traditional Owner, North GBR.

Strengthening local dispositions and resilience. The cultivation of cultural and social capital in association with GBR management was frequently described as a way to enhance community resilience in the face of change. As participants described the infrastructure, social networks, qualifications, skills and knowledge that enabled their own security and position, they often expressed the desire to use these resources to help others. In Q13 below, a participant describes the value of their own endogenous connections and experiences with the Reef. They have leveraged this cultural capital to secure a teaching role with an environmental organisation and they describe teaching, not simply as an act of imparting institutional knowledge and information, but of sharing this capital with younger members of their community. The outcomes of this investment can be seen in the disposition and well-being of their students and the confidence with which they engage with their local environment:

> Q13: I grew up [here] snorkeling and going out to the Reef all the time. I was a Lifesaver and worked on the [tourist] boats for years. When I became a teacher [I brought students to the environmental education centre] and I was so impressed … [by] the environmental side of it, but also the wellbeing side of it … [describes process of gaining employment in environmental

education]. Some of these kids … in the classroom environment, they can feel a bit threatened, challenged. Bring them out here … they just absolutely shine … We take them on the boats down the river and they'll be pointing out all the different animals … They're amazing out here. They have that opportunity to show that they are smart and they're capable. Civil society stakeholder, Far North GBR.

In Q14 below, a Reef Traditional Owner (also quoted in Q10), outlines plans to invest the cultural and social capital they have gained through participation in institutional GBR management into their local community. They imagine how this investment might compound into enhanced economic security, cultural pride and community cohesion, strength and well-being:

Q14: I've become more mature because of my responsibilities [in Reef management] … The next 10 years is about growth and then, when that 10 years is over, I'm going to circle back around and I'm going to start working back home in my Country … So, this is bigger than me, this is for my people… I have to do this so that I can help all them other young kids, the other mob back home … I want to be that person that helps kids find their culture and make a living out of it. Traditional Owner, Central GBR.

Provoking exogenous exchange. Participants also described processes whereby cultural capital – particularly in mobile, symbolic forms – could be used to exert influence and provoke dispositions more broadly. In Q15, a commercial tourism operator describes coral gardening where fragments of coral are planted and encouraged to grow. While it is a practice designed to achieve ecological outcomes, it also produces cultural capital in embodied forms (described as feelings of excitement and competence as a coral gardener) and symbolic forms (cultivating a global icon). The participant imagines this having both endogenous and exogenous outcomes in challenging public expectations of the Reef's loss and enhancing community confidence in the effectiveness of local stewardship:

Q15: I love it. There's something electric about planting a piece of coral and then going, "I did that, that's going to grow into a bigger coral". It's like gardening, but it's more than that because you're not just gardening in your backyard, you're gardening on one of the world's greatest icons, and you have this feeling that you're being a part of its success, because you hear so much negative about it … Even we get affected by the negative comments over and over again. Livelihood stakeholder, Far North GBR.

In Q16, a participant involved in the creative industries expresses a wish that their writing might produce similar outcomes. By challenging readers' expectations for the Reef and generating renewed interest in its future, the participant imagines their artistic practice as a form of exogenous influence and also a way to reify their own position and agency in this field.

Q16: If you can instill a love of something or put a fire in somebody to do something about something … it takes your [work] to a higher level, doesn't it? You feel like you're achieving something with it. You're not just entertaining, you're educating and maybe inspiring people to experience it themselves, and maybe do something about it if they see it's a problem. Civil society stakeholder, Central GBR.

Discussion

Practical logics

Using practice to analyse our research participants' firsthand accounts of everyday life in the GBR allowed two distinct 'logics of practice' (Arts et al., 2012; Bourdieu, 1990) to be discerned. Neither was exclusive to a particular sector or group, and elements of both could be present in the same account. The first was more pronounced in accounts from those with existing historical connections within the Reef. It emphasised the profound personal and collective value of continuous connections, routine inhabitation and everyday meanings within the Reef and the need to invest in protect and strengthen local positions and ways of life against a backdrop of newer, competing interests. The second logic was more pronounced in accounts from relative newcomers to the Reef. It emphasised the power of novel encounters with the Reef and the need to expand and extend this power to provoke passion, interest and care for the Reef more broadly.

While these logics are not generalisable beyond our interview participants, they demonstrate how our participants did not confine themselves to a single, fixed perspective or concern when discussing their lives and connections with the GBR. Similarly, they did not frame the Reef as an inert means to an end but described it as an arena that offered multiple opportunities for purposive, field-based social action. These pursuits were subjectively driven and shaped by participants' social circumstances and access to resources and capital. Participants described several processes in which they drew on and improvised with different forms of capital in order to participate and advance within different fields. Inwardly focused, endogenous logics typically emphasised embodied cultural capital – including knowledge, skills and practical know-how – accumulated through sustained and immersive interaction with the Reef. This capital held profound personal value and was recognised as central to participation in local and traditional livelihoods, community and family groups and environmental stewardship. Considered critical to community cohesion, well-being and resilience in the face of ecological, industrial and social change, participants often sought to leverage this capital to participate in fields such as institutional governance, science and industry. This often required additional resources such as infrastructure, social bonds and advocacy. In contrast, those coming from outside the Reef often described their early encounters with it as marked by a distinct lack of embodied wisdom and an abundance of awe, adventure and optimism. These participants secured lives in the Reef by accessing more mobile forms of economic, cultural and symbolic capital – such as existing assets and infrastructure, academic qualifications and professional and institutional connections – from outside the Reef and investing these in industries, institutions and professions. In doing so, they established

positions of relative advantage from which they could cultivate the GBR's affective capital and leverage it into exogenous forms of care and political influence.

Enriched participation

So what is gained by shifting away from models that understand GBR communities as distinct and pre-given groups of actors exercising equally distinct interests in the inert resources or services provided by the GBR? Is there a risk that, in complicating these conventional categorisations, practice-based approaches might obscure inequalities in the distribution of benefits and responsibilities? On the contrary, attention to situated logics and the ongoing cultivation of capital in the GBR brought several differences and discrepancies to the surface. This includes the contradiction experienced by Reef Traditional Owners between the recognition of their cultural authority, custodianship and continuing connections with the Reef, and the barriers to the practical expression of these rights and responsibilities arising from a lack of other forms of capital such as infrastructure. Others who had grown up in the Reef catchment had inherited significant cultural and social capital through long-term participation in family businesses, local industries and community stewardship, but still encountered obstacles when 'spiralling up' this capital in fields beyond these immediate pursuits (Emery and Flora, 2006). Their security, mobility and ability to adapt to change demanded tenacity, improvisation and 'bridging' (ibid, p.19) forms of capital (e.g. infrastructure, technology and social networks). These inequities point not to stark disparities between those that possess power and those that do not, but to subtle differences in the mechanisms of power and capital flowing within and between social fields in the GBR, facilitating certain people and pursuits and impeding others (Moon, 2025a).

Using practice to explore the dynamic processes patterning social life in the Reef offers a critical empirical foundation for approaching community and public participation in GBR governance and the development of novel adaptation strategies. It serves as a means to understand GBR communities, not as fixed and coherent categories but as dynamic collectives that emerge in various alliances and coalitions (Moon, 2025b). In turn, it offers a way to approach participatory practices as a means of facilitating different opportunities and spaces for these collectives within GBR governance (Chilvers et al., 2018). In place of assumed and fixed stakes, our research participants have readily demonstrated their rich engagements in the Reef and logics reflective of their evolving day-to-day subjective experiences, their material conditions and social position and their collective cultural and social histories. They have acknowledged the profound importance of existing connections and forms of Reef capital and demonstrated a willingness to experiment and cultivate new opportunities and forms of capital. We have begun to trace the benefits of this as it accumulates and flows in embodied knowledge, habits and skills; in bonds developed between families, teams, community groups and ecologies; in institutions, professions, organisations and industries; in commodities and products (including food, leisure activities, stories, art, policy documents and scientific data); in the material infrastructure and technology that facilitate practices; in formal rights and

lore exercised by Reef Traditional Owners; and in the symbolic power of the Reef as an iconic and threatened, global ecology.

The opportunities for empirical work exploring the various actors, practical logics and unfolding socioecological processes that comprise the vast and iconic GBR are manifold. This paper has not attempted to present a comprehensive map or picture of these relations or to evaluate existing or current participatory practices in GBR governance. Rather, it has used narrative methods, foundational sociological theories of practice and rich, first-hand narratives to illustrate the value of small shifts in the ways environmental communities are imagined. We argue that, as relations with(in) the Reef recalibrate under climate change, a focus on practice facilitates recognition of the full range of opportunities that living and working in the Reef offers, including opportunities to facilitate ecosystem adaptation and recovery, to promote deep reductions in greenhouse gas emissions, and to build more vibrant and resilient Reef communities.

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Supplemental material

Supplemental material for this article is available online.

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