Policy is rarely intentional or substantial for coastal issues in Australia

Carmen E. Elrick-Barr a,b,⁎, Timothy F. Smith a,b,c

a School of Law and Society / Sustainability Research Centre, University of the Sunshine Coast, Queensland, 4558, Australia
b Environmental Sustainability Research Centre, Brock University, 1812 Sir Isaac Brock Way, St. Catharines, ON, L2S 3A1, Canada
c SWEDESD, Uppsala University, Campus Gotland, SE-621 67, Visby, Sweden

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ABSTRACT

The condition of coastal areas around the world continues to decline despite over 50 years of integrated coastal management efforts. A myriad of institutional instruments such as legislation, policies and plans influence decisions made in the coastal zone. Despite this, there is limited comprehensive analysis of the degree to which institutional arrangements are focused on coastal issues and able to progress coastal management objectives. To address this gap we developed and applied an intentionality and substantiality framework to analyse 92 instruments with a role in coastal management at State, regional and local scales in Australia. We found that: (i) threats to Australia’s coast are not adequately identified or managed via institutional instruments; (ii) institutional instruments do not make a contribution to coastal management unless intentionally designed to do so; and (iii) even in the presence of intention, comprehensiveness in the proposed actions is limited. The lack of comprehensive action is particularly evident in instruments operating at the local scale. Consequently, a reliance on local scale support to meet coastal management objectives in isolation is misplaced. While some States have recently implemented coastal reforms, the findings show that the decline in coastal condition is unlikely to be comprehensively addressed through current institutional arrangements.

1. Introduction

Despite almost 50 years of integrated coastal zone management efforts, the condition of coastal areas around the world continues to decline (Glaovic 2013), whilst facing increasing threats associated with population growth, urbanisation and climate change (Glaovic et al., 2015; Hinkel et al., 2008; Nicholls et al., 2007). In Australia, the most recent State of the Environment Report describes coastal management as only ‘partially effective’ (Clark and Johnston 2016). Shortfalls in coordination, integration and the availability of biophysical data, in combination with limited consideration of cumulative impacts, contribute to the partial rating: a rating that has not improved since reports began in 1996. This is despite efforts to reform coastal management through, for example, integrated coastal zone management (ICZM), in many Australian States (Clarke and Harvey 2013; Harvey 2016; Harvey and Clarke 2019). Today, climate change, population growth, and human use and development are placing further pressures on the coastal margin, and the need for effective coastal management to respond to these challenges is more critical than ever (Harvey and Caton 2010; Harvey and Clarke 2019).

Institutional instruments (e.g. legislation, policies and plans) play a key role in guiding management effectiveness; defining the level of attention placed on the coast, the goals sought, the recommended approach to achieve goals, and identifying the resourcing needed to implement recommended strategies. Yet despite the role of institutional instruments in determining the outcomes for the coast, there has been limited evaluation of the degree to which they meet the principles of good-practice coastal management (Jacobson et al., 2014), such as addressing coastal values, threats, and actions. Furthermore, Australia’s federated system of governance fragments coastal management, which is planned and implemented by multiple levels of government across several jurisdictions (Clark and Johnston 2016; Clarke and Harvey 2013; Wescott 2009). Variability in institutional approaches exists across these jurisdictions and scales. However, as Clark and Johnston (2016, p.105) highlight, ‘no body of information contains the various management policies and strategies found around Australia’, nor assessments of the actual intent or substantiveness of those instruments to further coastal management goals.

To address this gap, we examined the extent to which institutional instruments throughout Australia related to coastal management by
analysing the intentionality and substantiability of those instruments. The notion of intentionality captures the extent to which instruments purposefully target the issue of focus (i.e. coastal issues), while substantiability refers to the depth of coverage (Dupuis and Biesbroek 2013). While previous studies have captured the evolution of coastal legislation and policy across Australian States (e.g. Harvey and Clarke 2019), the content of this policy with respect to its contribution to coastal management has not been explored beyond issue-specific areas of concern: for example, private property protection (Harvey 2019; O’Donnell 2016, 2019), or the use of regulatory instruments to manage coastal climate change risk (Robb et al., 2019). In a national scale assessment that sought to link State level coastal policy and institutional frameworks to the local scale, Gurran et al. (2007) explored the interpretation of one policy instrument per State. In this paper, we consider the range of instruments operating across scales (State, regional and local) and themes (e.g. coastal, marine, natural resource management, and planning). In doing so, we provide a nuanced understanding of the contribution of institutional instruments to coastal management in Australia, exposing the priority given to coastal issues in Australia.

1.1. Coastal management in Australia

The coast holds a special place in the hearts of many Australians – it is ‘fundamental to the national economy, industry, arts, social lifestyle and cultural identity’ (Clark and Johnston 2016, p. iv). Australians reside by and enjoy public access to the coast, a freedom that has become an important part of the national culture. Australian’s strong connection to the coast has not however translated to high priority assigned to its sustainability by government authorities. Over the last two decades, independent reviews into the state of coastal management in Australia have found that ICZM is challenged due to the lack of a definitive national structure to support its delivery, limited funding and unclear roles and responsibilities (Clarke and Harvey 2013); calling for greater coordination across jurisdictions and a stronger lead by the national government (Harvey 2016; Wescott 2009). Yet uncoordinated and variable approaches to coastal management continue to prevail and the Federal government remains distanced from the coast and its management (Clarke and Harvey 2013).

Australia’s 35,821 km of mainland coastline is managed by seven State jurisdictions, each with variable geomorphology, climate, exposure to extreme events, and development patterns and pressures. Thus the history of coastal management differs across jurisdictions: see Harvey and Caton (2010) and Harvey and Clarke (2019) for a summary. Integrated Coastal Zone Management (ICZM) is a globally advocated framework to address: (i) division that results from single-sector management approaches; (ii) fragmentation in jurisdictions among different levels of government; and (iii) discontinuity of the land-water continuum (Cincin-Sain et al., 1998). Within Australia, a national ICZM framework has been formally outlined (Natural Resource Management Ministerial Council 2006). However, the way States choose to navigate the complex challenges associated with managing the coastal zone can vary widely depending on: (i) where they place emphasis for coastal management (e.g. planning or environment); (ii) the degree of coordination and consultation sought (e.g. inter-governmental, intra-governmental, or communities of place or interest); and (iii) the degree of legislative/statutory control deemed necessary (Kelly et al. 2019; Robert et al. 1997). While variation in itself is not necessarily negative, it is the complexity surrounding the legislative and policy settings for coastal management, which operate at multiple scales (state, regional, local) and across multiple fields (e.g. marine conservation, natural resource management, land-use planning) that has the potential to result in a diluted focus on the coast and its sustainability.

1.2. Integrated coastal zone management and institutional instruments

Integrated Coastal Zone Management (ICZM) seeks to promote sustainable development by recognizing the need for horizontally and vertically integrated management practices to resolve conflicting interests. However, achieving ICZM in practice has proved elusive (Glawovic 2014) due to complexity of uses, interests and assets (natural and human) on the coast. To manage often-competitive interests, Federal, State and local governments adopt legislative and policy tools to guide decisions and actions, both directly on the coast and across sectors that operate on the coast (for example, biodiversity, climate change, natural resource management, land use-planning). Thus the extent to which, and the way in which, the coast features in legislation and policy shapes the priority given to it by the sectors and groups that operate within. The policy framework specifies not only the objects (goals) sought but also the recommended approach (guidelines) to achieve the goals, the resourcing available and whether or what form of compliance monitoring will be undertaken.

Despite the role played by institutional instruments including policy in determining coastal outcomes, research efforts seeking to understand the lack of progress in ICZM have paid limited attention to policy settings (although see Beeharry et al. 2014; Dahlem 2019; Utterwyk et al. 2019). While institutional aspects are often one element of reviews of ICZM practice, see for example the Decalogue methodology widely applied in Latin America (e.g. Barragán and Lazo 2018; Caviedes, Arenas-Granados, and Barragán-Muñoz 2020; Nava Fuentes, Arenas Granados, and Martins 2017) and a review of ICZM against principles of coastal sustainability (Gallagher 2010), scope is often limited to whether policy settings for ICZM exist and/or their foci. There is limited analysis of the content of the policy against criteria for good practice management.

A first step in understanding the potential effectiveness of any public policy, including ICZM, is critical review of whether the instruments that seek to coordinate across scales and sectors adequately address the problem (Dunn 2015). In other words, from a coastal perspective, to ask: ‘to what extent are coasts the focus of policy (i.e. is there intent to address issues affecting coastal areas) and are aspects of good practice coastal management incorporated’. By asking these questions of institutional instruments that contribute to coastal management in Australia, we identify gaps in policy frameworks that can hamper achievement of a sustainable coast, whilst also providing an assessment framework that can be applied in other coastal contexts.

2. Methods

A desktop review of institutional instruments (e.g. legislation, policies, and plans) with a focus on, or contribution to, coastal management was conducted. The review involved instrument selection followed by analysis.

2.1. Instrument selection

Instruments were selected based on their reference to the coast and its management, either direct (e.g. coastal legislation and policy) or indirect (e.g. land use planning, natural resource management, climate change adaptation, marine management, and disaster management). The assessment was confined to legislation, policy and management plans, as opposed to incorporating market, economic or suasive instruments (Wurzel et al. 2013). We considered instruments operating at three scales, State, regional and local. The Federal scale was not included because there is no national coastal legislation, policy or management plan, and the Australian government’s direct role in this regard is limited to issues such as overseeing national conservation goals and maritime safety. The State level was the primary focus, as management of the coastal zone is largely the responsibility of the States and Northern Territory within Australia. Local governments are primarily responsible for implementing coastal management (Harvey and Caton 2010), yet they have no constitutional recognition and therefore are reliant on State powers to guide coastal management (Kelly et al., 2019).
However, numerous coastal management plans and strategies exist at regional and local scales. For the purposes of this paper, one local case study area was selected in each State based on areas that had experienced the most rapid population growth between 2006 and 2016 (Table 1). The local cases are not indicative of the range (or intentionality and substantiality) of instruments at this scale but rather provide an example of the translation of State level instruments.

The institutional instruments identified via desktop review were compiled into a preliminary policy map for each State and sent to coastal management practitioners for verification and addition of other relevant instruments. In total, 92 instruments were incorporated in the review.

### 2.2. Analysis

Policy analysis is a process of investigation aimed at developing and critically assessing information to understand and improve public policies (Dunn 2015, p.2, Vogel and Henstra 2015, p. 111). There is no universally recognised method for policy analysis, with practitioners selecting methods based on their analysis objectives (e.g. investigating policy content versus the policy process) (Dunn 2012; Vogel and Henstra 2015). Our analysis sought to identify the degree to which instruments met the principles of good practice coastal management and uncover any differences between jurisdictions. Thus we undertook comparative policy analysis with a focus on policy content (see Vogel and Henstra 2015).

The analysis was based on a conceptual framework developed by Dupuis and Biesbroek (2013), which was initially used to support policy analysts consider the scope and intent of climate change adaptation policy. We adapted this approach with the objective of extending the framework from a conceptual to an analytical tool. This involved developing a rating system to classify instruments according to their level of intentionality and substantiality (Table 2). Intention is defined as a plan or aim. In psychology, the theory of intentionality developed as an addition to the causal model applied to explain human behaviour (Turner 2017). From a policy perspective, the notion of intentionality captures the extent to which policies purposefully target the issue of focus. Thus we defined instruments that were intentional as those that had the goals of coastal management as the primary objective of the instrument. The purpose of ICZM is to maintain, restore or improve coastal ecosystems and the associated human values derived from those ecosystems (Olsen 2003). Thus an instrument was intentional when it sought to manage the coastal zone by identifying and addressing issues affecting coastal values.

Substantiality refers to the level of contribution to the sought-after outcome (Dupuis and Biesbroek 2013). For issues characterised by complexity, such as coastal management, defining and evaluating substantiality is unavoidably normative (Bovens et al., 2009; Dupuis and Biesbroek 2013). To address this, Dupuis and Biesbroek (2013) suggest comparing policy to an ideal model of ‘successful’ policy. Coastal management is considered successful when it sustains multiple values now and in the future (Olsen 2003). There are three key components to achieving this goal: (i) defining the values to be sustained; (ii) identifying threats to values; and (iii) developing strategies to address identified threats.

ICZM seeks to address environmental, economic, and social objectives, within the limits set by natural dynamics (Clark and Johnston 2016). An instrument was considered substantive in terms of ‘values’ if it identified social, economic and environmental values as attributes to be maintained, protected or enhanced. If the three pillars of sustainability (social, economic and environmental) were not all covered within the instrument it received either a partial or null rating for this component. Similarly, as ICZM promotes consideration of the coastal zone as a system of interconnectedness (Stojanovic et al. 2004), instruments were considered substantial under ‘threats’ when they addressed social-ecological threats. A partial or null rating was assigned when only one of the elements, or no specific threats, were noted as requiring attention. Finally, instruments were considered substantial in terms of addressing threats if they included actions to directly address them.

The analysis allowed an understanding of the extent to which instruments are intentionally focussed on the coast and its management, and the extent to which they comprehensively address the three elements of good-practice coastal management (i.e. addressing coastal values, threats, and actions). Combining intentionality and substantiality enables the classification of instruments into one of four categories: (i) Concrete, with high intentionality and substantiality (i.e. intentionally designed to address the impacts to coastal values and do so in a comprehensive manner); (ii) Contributive, where instruments make a substantive contribution to coastal management, but coasts and their management are not the core focus of the instrument; (iii) Symbolic, where the intent is to deal with coastal management but it exerts only symbolic effect (e.g. coastal legislation or policy that does not direct action); and (iv) Contiguous, which has limited characteristics of being able to contribute to coastal management and few ancillary benefits or direct effects on reducing the threats (Table 3).

A review template was developed to summarise the content of each instrument, capturing goal(s)/object(s), targets, values, threats, instruments/approach and agents (following Vogel and Henstra 2015). Intentionality and substantiality ratings where then applied. Once all instruments were rated, trends were examined across scale (State, regional, local), jurisdiction (between States), and theme (e.g. coastal management focussed, planning focussed, natural resource management focussed, or marine management focussed).

### Table 2

<table>
<thead>
<tr>
<th>Rating</th>
<th>Intentionality</th>
<th>Substantiality</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No intent to address coastal issues or values</td>
<td>Does not address (i) values, (ii) threats or (iii) actions</td>
</tr>
<tr>
<td>1 Very low</td>
<td>Coastal issues and values are incidental to the focus of the instrument</td>
<td>Addresses 1 of 3 in part</td>
</tr>
<tr>
<td>1 Low</td>
<td>Coastal issues and values are not reported, and other issues (beyond coastal) are of greater focus</td>
<td>Addresses 2 of 3 in part; or 1 comprehensively</td>
</tr>
<tr>
<td>2 Fairly low</td>
<td>Coastal issues are a partial focus; values are partially (e.g. indirectly addressed) or not addressed</td>
<td>Addresses 3 in part; or 1 comprehensively and 1 in part</td>
</tr>
<tr>
<td>4 Fairly high</td>
<td>Coastal issues are a key focus, values are considered (perhaps indirectly), and the coast receives equal or greater attention to other issues</td>
<td>Addresses 1 comprehensively, 2 in part; or 2 comprehensively</td>
</tr>
<tr>
<td>5 High</td>
<td>Coastal issues and values are a major (but not sole) focus of the instrument</td>
<td>Addresses 2 comprehensively, 1 in part</td>
</tr>
<tr>
<td>6 Very high</td>
<td>Absolute intent of the instrument is on coastal issues and values</td>
<td>Addresses values, threats and actions comprehensively</td>
</tr>
</tbody>
</table>

### Table 1

<table>
<thead>
<tr>
<th>State</th>
<th>Local government area</th>
<th>Number of instruments incorporated in review</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Territory</td>
<td>City of Darwin</td>
<td>7</td>
</tr>
<tr>
<td>Queensland</td>
<td>Sunshine Coast</td>
<td>16</td>
</tr>
<tr>
<td>New South Wales</td>
<td>Shell Harbour</td>
<td>13</td>
</tr>
<tr>
<td>Victoria</td>
<td>Surf Coast</td>
<td>15</td>
</tr>
<tr>
<td>Tasmania</td>
<td>Kingborough</td>
<td>15</td>
</tr>
<tr>
<td>South Australia</td>
<td>Onkaparinga</td>
<td>9</td>
</tr>
<tr>
<td>Western Australia</td>
<td>Rockingham</td>
<td>17</td>
</tr>
</tbody>
</table>
3. Results and discussion

3.1. Intentionality and substantiality of coastal management in Australia

Our results show there are shortfalls in the degree to which institutional instruments address the principles of good-practice coastal management in Australia (i.e. addressing values, threats and actions). Of the 92 instruments identified and incorporated in the review only one third (34.8%) were classified as concrete – intentionally designed to address the impacts to coastal values and in a substantive manner (see Supplementary materials for list of reviewed instruments). In comparison, almost half (45.7%) were classified as contiguous, that is being relevant to the coast but little or no acknowledgment of coastal values or threats (Table 4). There was almost a complete absence of instruments classified as contributive (2.2%), while symbolic instruments made up 17.4% of the reviewed instruments.

Symbolic instruments describe sought-after outcomes in general terms but provide limited detail on how to practically achieve those outcomes. Gustafsson (1983) argues that symbolic policies have ‘become the main functional answer to inconsistent demands, diffusion of power, and uncertainty about means and goals in the short and long run’ (p. 271). As such, symbolic instruments are characteristic of governance in complex environments, a tool used to ‘muddle through’ situations characterised by competing interests and/or lack of information (Gustafsson, 1983).

The number of symbolic instruments in Australian coastal management emphasises the challenges faced by policy makers in developing actionable policy in an area characterised by competing demands, fragmentation of power across scales, and uncertainty about means and goals in the short and long term. Furthermore, limited contributive instruments indicates that the coast receives limited co-benefits from instruments designed to support other sectors. Thus coastal management in Australia relies on instruments intentionally designed to address coastal management concerns – a concerning finding given the range of activities that occur on the coast (ports, shipping, fishing, tourism) and the multiple actors responsible for their management.

Intentionality and substantiality also varied within instruments classified as concrete. Whilst a majority of instruments addressed values comprehensively (87.5% acknowledged social, economic and environmental coastal values), only one third (37.5%) addressed threats to values comprehensively by acknowledging social-ecological impacts (i.e. instruments were largely focused on natural hazards in isolation from other threats). In addition, only half (50.0%) presented actions to address the identified threats (i.e. the remainder addressed isolated threats identified or only in some locations). Therefore, despite receiving a concrete classification, a majority of the reviewed instruments did not acknowledge the range of threats to coastal areas, or adequately develop strategies to respond to the threats identified. Consequently threats to Australia’s coast are rarely adequately identified or managed via institutional instruments in line with good-practice coastal management. The following discussion is focused on the 32 concrete instruments (Table 5) in terms of scale, theme and jurisdiction findings.

3.1.1. Comprehensiveness by scale

The social, economic and environmental values of the coast were consistently recognised across scales (Table 6). Regional scale instruments most frequently incorporated a comprehensive assessment of threats to values, while State level instruments most frequently included actions targeting the identified threats.

Comprehensiveness in actions to treat identified threats to coastal sustainability was weakest at the local scale; however, local scale instruments more frequently considered a broader range of impacts affecting coastal values than State level instruments. While State level concrete instruments outlined actions to treat identified threats, just under half of these instruments were guidelines or manuals. Thus, they provide direction to determine the actions that will respond to threats, but implementation of actions and their effectiveness is not implicit.

In Australia, local governments are primarily responsible for implementing coastal management, yet they have no constitutional recognition (Kelly et al., 2019). Consequently, local government authorities rely on State government for both direction and resourcing to implement coastal management. The financial and technical support provided by the State is often tied to adoption or adherence to State level frameworks and approaches.

We found that State level instruments in many cases focus on climate-driven impacts alone (89%). In contrast, our results show that local governments recognise that coastal impacts extend beyond climate-driven hazards such as erosion and inundation; however, their ability to address these comprehensively is limited. This is because of local governments’ reliance on State support, which promotes consideration of climate-driven hazards generally to the exclusion of other coastal issues. Natural Resource Management (NRM) instruments at State and regional scales have the potential to address the shortfall with respect to a broader conceptualisation of coastal impacts. However, the mandate for NRM extends beyond the coastal zone and NRM instruments rarely featured in the concrete classification (12.5%), and as such, a reliance on local scale action to meet coastal sustainability objectives is misplaced in the absence of providing greater support at the State level.

3.1.2. Comprehensiveness by theme

Instruments classified as concrete predominately fell within the themes of coastal management focused (15 instruments), planning...
focused (11 instruments), NRM focused (4 instruments), and marine management focused (2 instruments) (Table 7). While planning instruments made up a high proportion of the total number of instruments providing a concrete contribution to coastal management in Australia, they performed poorly comparative to other themes across all three criterion. Marine themed concrete instruments comprehensively addressed all three elements of good-practice coastal management.\footnote{Note, only two marine themed instruments were classified as concrete, from a possible seven marine themed instruments included in the review.} In contrast, the coastal management themed concrete instruments rarely

Table 4
Number of instruments at each rating of Intentionality and substantiality across all States and scales.

<table>
<thead>
<tr>
<th>Symbolic</th>
<th>Concrete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>Substantiality</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>1</td>
<td>18</td>
</tr>
</tbody>
</table>

Table 5
Focus of proceeding discussion in terms of scale, theme and jurisdiction findings.

<table>
<thead>
<tr>
<th>Symbolic</th>
<th>Concrete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>Substantiality</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>1</td>
<td>18</td>
</tr>
</tbody>
</table>

Table 6
Comprehensiveness by Scale (concrete instruments).

<table>
<thead>
<tr>
<th>Local scale instruments</th>
<th>Regional scale instruments</th>
<th>State scale instruments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Values</td>
<td>86%</td>
<td>80%</td>
</tr>
<tr>
<td>Threats</td>
<td>43%</td>
<td>60%</td>
</tr>
<tr>
<td>Actions</td>
<td>29%</td>
<td>50%</td>
</tr>
</tbody>
</table>

Table 7
Comprehensiveness by Theme (concrete instruments).

<table>
<thead>
<tr>
<th>Coastal (15)</th>
<th>Planning (11)</th>
<th>NRM (4)</th>
<th>Marine (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Values</td>
<td>93%</td>
<td>70%</td>
<td>100%</td>
</tr>
<tr>
<td>Threats</td>
<td>20%</td>
<td>30%</td>
<td>75%</td>
</tr>
<tr>
<td>Actions</td>
<td>53%</td>
<td>40%</td>
<td>25%</td>
</tr>
</tbody>
</table>

Note, value (%) indicates the proportion of concrete instruments that comprehensively addressed good-practice coastal management (values, threats and actions).
comprehensively addressed a range of threats, and actions to treat the threats were comprehensive in only 50% of cases.

Concrete coastal themed instruments addressed climate-driven hazards alone in 80% of cases (12 from 15), and within those instruments, actions to address the threats (e.g. erosion and inundation) were comprehensively outlined in only 50% (6 from 12) of cases. Similarly, of the concrete planning instruments that solely addressed climate-driven hazards (63.6%), only 43% (3 from 7) addressed the identified climate-driven threats in a comprehensive manner. While NRM themed instruments classified as concrete more frequently incorporated a broader range of threats to coastal areas (75%), comprehensiveness in action was lower still (25%). Thus, of the instruments incorporated in the review, marine and NRM themed instruments took a broader view of the range of impacts affecting coastal areas than coastal or planning instruments, yet beyond concrete marine focussed instruments, a comprehensive intent to address threats through action was limited.

In summary, of the concrete instruments we found: (i) limited consideration of threats beyond climate-driven (i.e. erosion and inundation); (ii) less than half of the instruments outlined actions that would address erosion and inundation (i.e. the identified threats); and finally, (iii) even in the presence of intent to address erosion and inundation, effectiveness is not implicit. The implication is that multiple threats to the Australian coast are not being adequately addressed by the institutional instruments that are relied upon to guide action and, in turn, deliver sustainable outcomes for coastal communities.

3.2. Intentionality and substantiality by jurisdiction

The scale at which concrete institutional instruments take effect differs across States, with some States only having concrete instruments operating at one scale (i.e. South Australia and Northern Territory), others with concrete instruments at dual scales, e.g. State and local scales (i.e. Queensland, and New South Wales) or State and regional scales (Tasmania), and only two States (Victoria and Western Australia) with concrete instruments for coastal management across all three scales (local, regional and State) (Table 8). The lack of concrete instruments across scales in a majority of jurisdictions suggests that priority is not given equally to the coast across State, regional and local scales. In particular, there are limited instruments of high intentionality and substantiality at regional scales. The scale at which priority is placed on the coast indicates differences in where responsibility for the coast and coastal value. However, given variability in the number of concrete instruments per jurisdiction, a clearer understanding of the way States choose to address coastal management is available from their respective intentionality and substantiality matrices (Figs. 1–7).

South Australia (SA) had the highest proportion of State-level concrete instruments among all jurisdictions; however, few instruments were highly intentional (Fig. 1). Substantiality for coastal management in South Australia is attributed to institutional instruments focused on planning or natural resource management (i.e. State Planning Policy 13 Coastal Environment, and the Landscape Act 2019). There is an absence of concrete instruments operating at regional or local scales, where the updated State planning system and the associated planning and design codes have replaced the need for local development plans. Symbolic instruments include the State’s Coastal Protection Act (1972), which has largely remained unchanged since its inception and provides the basis for a Coastal Board with a role in development approvals and a coastal protection fund. In addition, a regional natural resource management plan (under development at the time of writing) and regional climate change adaptation plan make a symbolic contribution to coastal management.

Substantiality within Queensland (QLD) is confined to guidelines, as opposed to legislation or policies, produced predominantly through the planning system (Fig. 2). QLD has the highest proportion of concrete institutional instruments, when totalled across scales, reflecting the high proportion of concrete instruments at the local scale. Despite a high number of concrete instruments that comprehensively consider social, economic and environmental values of the coast, only one concrete instrument extends consideration of threats to coastal areas beyond climate risks (such as erosion and inundation) and only two comprehensively outline actions that would address the threats identified.

Western Australia’s symbolic Coastal Zone Strategy outlines roles and responsibilities for coastal management, promoting a collaborative approach that emphasises shared responsibility. However, in practice coastal management is led through the planning system via the State Planning Policy (SPP) 2.6 and its associated guidelines. In addition, a State Environmental Policy makes a concrete contribution to coastal management but is limited in its scope to a small geographic region (Fig. 3). There is no legislative support for coastal management within WA and instruments making a concrete contribution to coastal management do not consider threats to coastal values beyond coastal erosion and inundation.

New South Wales (NSW) and Victoria have a similar proportion of concrete instruments at the State scale and across scales. Each has recently implemented changes to the institutional settings for coastal management adopting an updated Coastal Management Act (2016) and Marine and Coastal Act (2018) respectively. In NSW, instruments from the marine sector were more substantial than their coastal counterparts.

Table 8
Scale, comprehensiveness and theme of concrete institutional instruments per jurisdiction.

<table>
<thead>
<tr>
<th>Scale</th>
<th>Comprehensiveness</th>
<th>Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Values</td>
<td>Threats</td>
</tr>
<tr>
<td>South Australia</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Western Australia</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Queensland</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>New South Wales</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Victoria</td>
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* Number of concrete instruments comprehensively addressing values, threats or actions, from the total number of concrete instruments within the State.
largely due to consideration of cumulative threats as opposed to a focus on climate-driven hazards (such as erosion and inundation in Coastal Vulnerability Areas) (Fig. 4). NSW has a higher proportion of coastal themed instruments classified as concrete than any other Australian state. In Victoria, coastal and marine management are connected within the Marine and Coastal Act (2018). The Victorian Marine and Coastal Policy and Victorian Coastal Strategy received the highest ratings of intentionality and substantiality (Fig. 5). However, the remaining concrete instruments did not comprehensively outline actions that address identified threats to coastal values. At the time of writing, the Marine and Coastal Strategy (the implementation component of the Marine Coastal Policy) was under development and therefore was not incorporated within the review.

Tasmania and the Northern Territory (NT) are falling behind other jurisdictions with respect to legislative and policy support for coastal management (Figs. 6 and 7). Despite the high ratio of comprehensiveness in concrete institutional instruments in Tasmania, there are limited substantive instruments at the State level beyond an outdated coastal manual that has no legislative authority. Natural resource management has the potential to fill this gap, with regional natural resource management plans that could incentivize effective coastal management.
management plans receiving the highest rating of substantiality. Other coastal themed instruments, including the State Coastal Policy and a local government climate change and natural hazards report received symbolic classification. The NT is in the early stages of its coastal management journey with only two instruments ranked outside the Contiguous category – the symbolic Coastal and Marine Management Strategy and the concrete NT NRM Plan Top End Region. As per other NRM regional scale instruments, the NRM plan for the Top End identifies threats to values extending beyond climate-driven threats; however, actions do not directly address the threats identified. For example, the development of management plans is recommended, yet their content and therefore contribution is unclear.

3.3. The status of institutional instruments for coastal management in Australia

While there are some institutional instruments in Australia that make a concrete contribution to coastal management, there are few that comprehensively address the range of threats impacting values. This gap, particularly in concrete instruments, is predominantly a function of
the focus on climate driven coastal impacts (such as coastal erosion and inundation). Within literature on vulnerability, discussion has moved beyond a focus on exposure to climate hazards to recognise the multiple stressors that affect the outcomes for coastal communities (e.g. socio-economic stress) (Bennett, Dearden, and Peredo 2014; Lee 2014; O’Brien et al., 2004; Saja et al., 2018; Smith et al. 2006, 2013). The development of successful planning and policy relies on explicit recognition of these multiple conditions and drivers (Bennett et al., 2014; Turner 2000). Despite this, in practice there remains a focus on what is termed ‘outcome’ based vulnerability assessment (O’Brien et al., 2007), where emphasis is placed on understanding the potential impact of climate drivers to the exclusion of considering broader issues affecting the sustainability of coastal communities.

If there is a theoretical appreciation of the need for a broader
conceptualisation of risk in coastal management, why isn’t this occurring in practice? In the Australian context, a part answer to this question lies in the funding arrangements for ICZM, whereby the Australian Government’s funding for the coast promotes a divisive rather than integrative approach. The Australian Government has played a distant role in coastal management in Australia, primarily using its funding powers to direct activity on the coast (Clarke and Harvey 2013). In a review of the Australian Government’s engagement in coastal management, Clarke and Harvey (2013) note that there ‘has been a shift from federally funded, broad-scale coastal projects and initiatives to more narrowly defined incentive schemes … More recently the Australian Government’s funding and effort has narrowed and concentrated on climate change and coastal adaptation’ (p. 918). As such, national support for the coast has been directed through two distinct streams: climate change adaptation and natural resource management. In the later, the coast competes with terrestrial and other non-coastal management programs for resources. This dualistic approach hampers integrated coastal management, which requires a holistic appreciation of climate change threats along with other threats (e.g. biodiversity loss, and population and development pressures).

Moving forward, the findings highlight four key considerations for policy makers, including:

1. Coastal management in Australia relies on instruments intentionally designed to address coastal management concerns, and it cannot be assumed that other sectors that operate on, or influence the coast, will contribute to its management.

2. Multiple and cumulative threats are rarely incorporated within institutional instruments. Their inclusion may require: (i) expansion beyond the risk-based frameworks that dominate coastal adaptation and planning guidance in Australia; and (ii) the integration of coastal hazard management (adaptation planning) and natural resource management (as well as other domains).

3. Although the State level instruments that provide guidance to local coastal managers received high ratings of intentionality and substantiality, the effectiveness of these instruments is not implicit.

4. Building on points 2 and 3 above, a reliance on local scale action to meet coastal sustainability objectives is misplaced in the absence of providing greater support at the State level, through for example guidance (and associated funding) that promotes the consideration of multiple and cumulative threats.

This study provides a first step in critically reviewing the institutional instruments that contribute to coastal management in Australia. The assessment framework applied and the findings provide a basis from which to build future research. For example, future studies could (i) examine the effectiveness (e.g. outcomes/progress/success/failure): of the seven different policy frameworks across Australian jurisdictions and link to the intentionality and substantiality of those frameworks; (ii) conduct a comparative analysis at different scales (State, regional, local) to judge if instruments with different rankings deliver better impacts/outcomes; and (iii) compare the Australian results with case studies from other countries with both similar and distinct regulatory frameworks.

4. Conclusion

Institutional instruments play a crucial role in guiding how the coast is managed. Consequently, instruments that: (i) focus on the coast; (ii) articulate coastal values; (iii) recognise threats; and (iv) identify actions, are required to achieve good-practice coastal management. Despite the important role played by institutional instruments in defining the outcomes for coastal areas, there has been limited comparative analysis within Australia. Through investigation of intentionality and substantiality, we found that despite widespread advocacy for the importance of sustainable coastal areas, there was discrepancy in intentionality and substantiality across levels of government and jurisdictions. In short, we found that existing institutional instruments make a limited contribution to coastal management in Australia unless intentionally designed to do
so; and even in the presence of intention, comprehensive action is limited. The findings suggest significant deficiencies in the priority assigned to the coast and highlight areas in which jurisdictions and levels of government can focus attention. The outputs from this study provide a point for national, state, regional and local level reflections on institutional arrangements for coastal management. The findings also provide essential context for analysis of on-ground effectiveness of coastal management actions.

Declaration of competing interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: Tim Smith is an Editor-in-Chief and Carmen Ehrick-Barr is on the Editorial Board of Ocean and Coastal Management.

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