Learning and local government: the local government coastal management strategy, South Australia

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Abstract

The coast of South Australia is more than 4,000 km long (including many offshore islands), cuts across Commonwealth and State jurisdictions and is home to about 80% of South Australia's population. The coastline is also an area of high environmental, social and economic values, not all of them compatible with each other, and increasingly pressured by internal migration and climate change. Local governments in South Australia have mandate under the *Local Government Act 1999* and the *Development Act 1993* to contribute to the management of the coast. Indeed, in 2002/02 a survey of coastal councils in South Australia showed that on average councils had a gross expenditure of $17,546,200 on coastal management. This demonstrates that local governments have a key role to play in coastal management. In recognition of this, in 2003, the local government association of South Australia (LGASA) launched a Local Government Coastal Management Strategy. The vision for this strategy was to recognise the need for governments, the community and industry to work together to sustainably manage coastal and marine resources and to enhance the sense of stewardship South Australians feel for their coastal and marine areas. Based on case studies this paper presents the results of a qualitative mixed method study that documents the progress of the coastal management strategy since its inception, and evaluates the various lessons learned by local governments in South Australia. The role of social learning and communities of practice is discussed, and the paper concludes with an assessment of and recommendations about the utility of this type of strategy for local governments to manage their coastal zones.

Biography

Melissa Nursey-Bray is Senior Lecturer, Discipline of Geography, Environment and Population, University of Adelaide. She is a researcher in the CSIRO Coastal Cluster and Theme Leader of Adaptive Governance, within the Indo-Pacific Governance Research Centre. She is interested in how communities contribute to decision making in coastal management.

Learning and Coastal Management

Introduction

The coast of South Australia is more than 4,000 km long (including many offshore islands), cuts across Commonwealth and State jurisdictions and is home to about 80% of South Australia's population. The coastline is also an area of high environmental, social and economic values, not all of them compatible with each other, and increasingly pressured by internal migration and climate change. South Australia was the first state in Australia to develop specific coastal climate change adaption strategies through its 1991 'Policy on Coast Protection and New Coastal Development' by way of setback provisions and height specifications for new development (Harvey et al. in press). The policy requires an allowance for 1 m of SLR to 2100 and requires setbacks based on projected coastal erosion incorporating SLR predictions. These policies were incorporated into South Australian Development Plans, which now contain standard planning policies dealing with SLR. The Coast Protection Board Strategic Plan 2009-2014, directly responds to climate change and threat of SLR. Proposed amendments to the CPB policy regarding climate change provisions are currently under review (Harvey et al. in press). South Australia has also passed the *Climate Change and Greenhouse Emissions Reduction Act 2006* which sets out targets to: (i) reduce emissions by 60% of 1990 levels by 2050 and (ii) to increase renewable electricity generated so it makes up at least 20% of electricity generated in the State by the end of 2014 (Nursey-Bray and Shaw 2010).

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Method

This paper is based on documentary analysis that comprised the history of coastal management in South Australia over the last 15 years. Specifically, over 50 policy and related government and other documents were reviewed. This review was supported by a series of semi structured interviews of CEO's from 12 local governments in South Australia, whose geographic distribution goes from Ceduna in the State's Far north west to the Victorian border in the South-east. Of those interviewed, just over 40 percent (5) were based in the Adelaide metropolitan region. Each CEO agreed to undertake a face to face interview, which comprised a series of questions pertaining to the following:- (i) history of coastal zone management in their region, (ii) interactions and relationship with other institutions and individuals including decision making processes, (iii) identification of the key coastal issues in South Australia, (iv) their view on managing climate change in that context, (v) the influence of key and other coastal

management policy documents and (vi) what key lessons they have learnt or perceive they could learn in relation to coastal management. Results were analysed using documentary and thematic analysis.

Results of documentary analysis

Coastal Management by local governments in South Australia: an overview

While coastal management does not seem to be the overarching funding priority for either coastal councils or the statutory authorities such as DENR, a review of documents available within the state highlight that there is nonetheless a diverse range of policy and related documents that consider coastal management. Two points emerge – they are by and large disconnected from each other temporally and practically, so points of convergence and synergy between them is difficult. Second, these policies occur at multiple scales, and again the commonalities between them are harder to draw as they address different scales of the problem. Table 1, while not comprehensive, presents examples of some of the levels and layers of coastal governance within South Australia.

Item	Description
The Coast Protection Board	The Coast Protection Board the overarching body of South Australia was formed in 1972 in conjunction with the formation of the Coastal Protection Act 1972. Working over the years they have developed the Living Coast Strategy in 2004, which includes the various objectives that are to gained through partnership between local governments, industry and communities. With a large coastline, the state has divided it into 5 main Coast Protection Boards namely: Eyre; Fleurieu; Kangaroo Island; Metropolitan; South East and Yorke. Each district has its own sets of studies and management plans.
Coast Protection Regulation (2000)	Coast Protection Regulations (2000) under the 1972 Act have been formulated for each region (http://www.environment.sa.gov.au/About_Us/Legislation)
The Living Coast Strategy 2004	The Living Coast Strategy 2004 is a framework document that strives to achieve the various objectives mentioned by the State Government through cooperation between local government communities and industries. Some of the notable joint ventures between them are namely the Spencer Gulf Marine Plan, Marine Protected Areas, Adelaide Dolphin Sanctuary (http://www.environment.sa.gov.au/files/042f3437-4483-42a7-afb6-9e9a00a01556/living_coast.pdf)
The Adelaide Living Beaches	The Adelaide Living Beaches document shows the various objectives that the SA government would like the coastline involved councils in Adelaide Metropolitan region to achieve. This strategy is formulated on the basis of 5 major sand replenishment and restoration methods. Some of these objectives include handling pollution issues related to the coast and marine. Simultaneously it also mentions the importance of establishing Marine parks along the selected areas of the SA coastline (http://www.environment.sa.gov.au/Conservation/Coastal_marine/Adelaides_Living_Beaches/Resources)
Regional Plans **These are plans that provide direction for**	Starting from the Eyre Coast Protection District the document **Eyre Peninsula Coastal Developmental Strategy (2007)** from Planning SA shows how the initiatives taken up between

different regions in SA	the Eyre Peninsula local government association and councils of Eyre Peninsula along with South Australian state government.
	The website describes the nine guiding principles adopted in the Strategy:
	▪ Ensuring ecologically sustainable development
	▪ Protecting cultural and heritage values
	▪ Enhancing economic development opportunities
	▪ Recognising the interdependence between land and sea
	▪ Integrating infrastructure and land use planning
	▪ Protecting biodiversity and areas of biological significance
	▪ Protecting coastal landscapes and wilderness values
	▪ Facilitating appropriate public access to the coast
	▪ Minimising the exposure of people and property to coastal hazards
	(http://www.planning.sa.gov.au/download.cfm?DownloadFile=0C42A8A8-F203-0D46-A887B6A2697B69CC)
	Spencer Gulf Marine Park (2006) The draft plan for Spencer Gulf Marine Park (2006) illustrates the concentrated implementation of a marine park in the Spencer Gulf (http://www.bofmrp.ca/home/images/uploads/sg_marine_plan_draft.pdf)
Individual coastal plans **These are plans that provide direction for different local government regions in SA**	Individual councils such as Streaky Bay and Franklin Harbour in the Eyre Peninsula have formulated their own coastal plans (listed below) to incorporate the Eyre Peninsula Coastal Developmental Strategy (http://www.streakybay.sa.gov.au/webdata/resources/files/110726_coastal_plan_FINAL_DRAFT[1]_FOR_PC_Reduced.pdf) (http://www.franklinharbour.sa.gov.au/webdata/resources/files/Franklin_Harbour_Strategic_Plan_2009.pdf) Coastal Plans for the councils in the Fleurieu Peninsula namely Council of Victor Harbor, Yankalilla and Alexandrina show the action plan taken up for the southern coastal regions. (http://amlrnrm.sa.gov.au/Portals/2/Part_A_Southern_Fleurieu_Action_Plan_lr.pdf)
Local beach plans **These are plans that provide direction for different beaches in SA, highly localised focus**	For example, the North Brighton Coastal PAR describes the importance of retaining the remaining Minda sand dunes that were originally part of the lengthy Adelaide Metropolitan shoreline. (http://www.planning.sa.gov.au/index.cfm?objectid=3CF3F8A8-96B8-CC2B-6029315BD67FA916)

Results of interviews

Coastal zone management in local government contexts

Set against this context, research interviews show that history of coastal management in the context of local government in South Australia is variable – some regions, such as Onkaparinga Council – Adelaide's largest metropolitan council have extensive planning frameworks while others have minimum planning arrangements. The Coastal Protection Board was identified as the dominant and most recognisable coastal management institution due to its ongoing role in addressing coastal issues via its assessment of development applications for local government as the pivotal factor in the implementation of coastal management. Many councils also belonged to and were part of Coastal Council bodies and party to regional planning documents such as the Eyre Peninsula Coastal Developmental Strategy. However it was clear that despite its emerging significance as an issue (especially in the context of climate change impacts such as sea level rise, increased storm frequency and inundation), coastal management while viewed as important, is not as yet a pressing management priority for local government.

"Roads, Rubbish, Rates": Identification of the key coastal issues in South Australia

As one respondent (3) noted, local governments are primarily concerned about 'roads, rubbish, rates'. Indeed, in all cases, respondents identified these issues as up front and centre in their planning. Environmental management is closely aligned with development concerns, and environmental planning was more articulated for those local governments that were facing or had dealt with high development pressures.

Results show that for all councils, independent of whether they were small or large, regional or metropolitan, management of coastal infrastructure and development was seen as the major *coastal* issue. Related to that was the issue of how to manage flood, fire and other risks, although CEO's differentially accepting of the fact that these events may be caused by climate change.

Another key issue was that of access. Ensuring equitable access to coastal regions without compromising environmental values is clearly a core challenge. For local governments concerned with maintaining community good will, rate payer security and visitor amenity, access to their coastal regions brings with it many related issues such as erosion, boardwalk or road construction and maintenance, management of services and infrastructure such as boat ramps, jetties and surf clubs.

This issue was underscored by confusion over tenure arrangements, or at least difficulty in understanding how to manage different tenures over the same region. Responsibility for management and/or compliance in these instances was not clear – for example, in the Nullarbor region, Ceduna Council has a role to play, yet the Alinytjara Wilurara (Aboriginal) NRM and Eyre Peninsula NRM groups also run a number of coastal management plans. In the case of the Alinytjara Wilurara Natural Resources Management group, there is no obligation to work with local government as the land is held by Aboriginal peoples. Another example in Ceduna relates to the access point to Shelly beach which is via the caravan park – the owners of the park have tenure of the area up to the coast but not the beach itself. Yet access is sometime impeded by the fact visitors have to drive or walk through the park to access the beach feel self conscious about and thus inhibited to walk through.

Overall there emerged a distinction between city and regional councils regarding emphasis of issues. For example, urban councils rated coastal management as a higher priority than regional councils who stated that education, employment, health and roads still ranked consistently higher than environment as overarching concerns. Two other issues emerged as 'hot topics' during interviews – climate change and the current program to establish Marine Protected Areas (MPAs).

Managing climate change

Climate change itself emerged as an issue that all CEOs felt they had to engage with, despite the fact that not all believed in it, or where they did if it was natural or human induced. Flooding and erosion emerged as the key issues here. Damage to infrastructure was the highest priority/concern with many recent instances given of impacts, potentially resulting from climate change to various structures at local government level. Communication was also a key issue – how to communicate climate change – not just within constituencies but also between staff and councillors. More than one CEO noted that if elected councillors were sceptical of climate change it was harder to progress reform in this area. For example, Whyalla and Robe Councils were identified as having active conservation communities, thus facilitating environmental policy and action, whereas, those in Mt Gambier or Kingston were pro-development councils who found it harder to drive environmental policy. Some climate change/coast initiatives were described; the Eyre Peninsula Local Government Association is currently trying to obtain funds of up to $500, 000 to undertake coastal mapping. Moreover, every local government in South Australia has been part of a co-investment by the Local Government Association and insurers (Mutual Liability Scheme) and participated in a climate change risk assessment. All local governments in South Australia are also (via the Climate Adaptation Pathways program) developing their own climate change adaptation strategies.

Marine Protected Areas

The establishment of marine protected areas across the State was also frequently cited as an example of 'bad' coastal/environmental management. Across local governments and particularly in Councils located in the north-west and south-east regions of the state, where substantial commercial and recreational fishing activity occurs, the notion of coastal management was constructed as part and parcel of the MPA program. This association meant that the profile of coastal management suffered and government staff and others involved in promoting it viewed with suspicion. This speaks to the importance of trust in government and institutions and the need to effectively involve stakeholders in coastal management.

The influence of key and other coastal management policy documents: key lessons regarding coastal management.

Social learning as a concept has been applied in many contexts, and been advanced as a crucial element in achieving appropriate environmental management. When operationalised, it can support individuals to go beyond themselves and mobilise collectively to be forces for change; it can promote institutional flexibility and malleability and help transform knowledge as facts into knowledge in practice. Olson et al. (1998) discuss 5 essential features of coastal management: (i) issue identification and assessment, (ii) program preparation, (ii) formal adoption and funding, (iv) implementation and (v) evaluation. He then advances a learning cycle, which he frames as a continuing cycle of action and reflection, with the following elements – experiencing, processing, generalising and applying. Smith et al. (2009) argue that complexity, uncertainty and the high decision stakes within the coastal zone in

Australia make adaptive learning an essential tool to managing the coast effectively. They identify a number of factors that make up a learning organisations, (i) proactive seeing of current information and use of multiple sources/forms of date to guide decision making, (ii) open to change in practice and reward applications of learning, having formalised process for monitoring and evaluation, having formalised processes for reflection on management and practice modification and being proactive in seeking knowledge sharing partnerships.

In this context, one of the key foci of the research was to investigate whether or not processes of learning were occurring in the local government context that would help facilitate ongoing and more effective coastal management strategies. Findings highlight that in this case the notion of learning or indeed social learning as a concept does not have much traction. For example, while adaptation as a term had specific weight and meaning to respondents, the notion of 'learning' did not. Given the increasing focus of learning in coastal management this indicates that it has not translated on the ground and remains largely in the academic realm.

However, this does not mean learning wasn't happening: - learning where it was seen to occur was expressed as happening primarily via lived or learned experience. In this sense, coastal issues only become prevalent when rate payers, tourists or other stakeholders bear the brunt of some coastal impact, such as flooding, decreased access or other issues. One respondent noted: "the biggest learning comes from actual events – when you see sea walls floating around, thats when you start to take notice" (Respondent 5). Another noted that learning was: "Like friendship - a shared experience, sharing information and time" (Respondent 11).

In some instances, learning was constructed as occurring within a trial and error situation, where specific management mechanisms were put in place that didn't work, so something else needed to be trialled. One CEO (Respondent 4) noted that 'social learning equals vigilance! Its a moving thing".

Interestingly, there were no instances where respondents identified learning based on implementation of specific policy documents – and as seen is Table 1 earlier there is a wide array to choose from. For example, the starting point for this research - the Local Government Coastal Management Strategy developed by the local Government Association of South Australia (2003) was not referred to once by any respondent, and when prompted, in each case, not one person evidenced either knowledge about or experience in implementing its recommendations. This indicates that much good work on policy does not connect to coastal action on the ground. Given the work of the LGASA unanimously received positive feedback from respondents, this is even more significant. This finding reinforces the observation that local governments rarely avail themselves of or applied the recommendations/actions within the plethora of coastal policy documentation available to them. This seems to be partly due to lack of knowledge about it, but also disinclination due to lack of resources to make too big an investment in this way. One respondent added that part of the problem was that "every week we get new plans, 'tools', frameworks and packages to help us do our job! We never get time to read them let alone implement them..." (Respondent 8).

Moreover, in many instances trust in the scientific sources and other forms of knowledge was slight. Local government reticence at implementing policy seemed in part due to the fact that they just did not trust the science that underpinned all the policies, plans and frameworks they received in the first place. Again, the establishment of MPAs was cited to justify this point - just over forty percent of the respondents used the example of MPAs to show how scientific information was in their view being misappropriated for political not conservation ends, and in fact

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compromised economic livelihoods: "science is always used in the extreme and cases are used that are not relevant to us – like dynamiting to catch fish – its just not us" (Respondent 7). The internet was also viewed with suspicion: "the internet is the worst thing in the world – so much knowledge but so much crap" (Respondent 5). Learning then was primarily constructed as being ad hoc, experiential, collective and driven by local experience and knowledge.

Interactions and relationship with other institutions and individuals including decision making processes

Finally results show that the most dynamic coastal management occurs when there is interplay between different councils and other bodies. In this sense, a key finding is that belonging to or driving a community of practice in this area is a key to developing effective coastal management. In practice, CoPs can be communities identified by the following traits: (i) the formation of group identity, (ii) the ability to encompass diverse views, (iii) the ability to see their own learning as a way to enhance student learning and (iv) a willingness to assume some responsibility for colleagues' growth (Grossman, Wineburg, & Woolworth, 2001). Samuelowicz and Bain (2001) argue for the idea of communities of interest (CoI), which are characterised by (i) shared ideological and procedural assumptions and (ii) codes, slogans, key words accepted by that community. Wenger (2010, 229) defines a community of practice as "communities that share cultural practices reflecting their collective learning...participating in these communities of practice is essential to our learning"

In this sense, local governments in South Australia are pivotal points and act not only as communities of practice in their own right but also provide connection points and overlap between many other CoPs such as scales of government, fisher groups, local coastal and conservation action groups, local community service groups such as Lions Club's or Rotary, media, health, education, and tourism sectors. Interactions and relationship within and between councils and other institutions occurred in three dimensions. First, all councils indicated a relationship between themselves and the coastal management branch of the Department of Environment and Natural Resources. However, the nature of the relationship ranged from being cooperative to hostile, depending on whether or not staff perceived they had obtained sufficient support from the department. A clear disparity emerged between regional and city councils, and it was clear that city councils were funded at much higher levels to do coastal management work.

A relationship between councils and the Coastal Protection Board was also manifest. Similarly, depending on the council, relations between the two were either positive, ranging to indifferent. Staff turnover affected how relations between these groups worked; in terms of corporate knowledge, while staff at DENR and members of the Coastal Protection Board had maintained some longevity, CEO's reflected on the high turnover in councils, particularly of planners, a factor they asserted as an influencing factor on local coastal management.

Third, councils indicated many relationships between themselves and other council groups – participating on ground such as the South East Coastal Councils Group, or membership with representative groups such as the Local Government Association of South Australia or the Eyre Peninsula Local Government Association helped councils feel supported, offered opportunities to share and pool knowledge and resources. Many depend on groups such as the LGA SA to offer advocacy help when trying to pursue funds or specific management objectives.

Finally, all councils evinced clear relationships between themselves and community groups. For example, Wattle Range council referred constantly to partnerships with community conservation groups on programs to remove invasive species, revegetate dunes and construct board walks. In many cases, these groups often funded these enterprises, with the Lions club and rotary coming up often as investors in recreational facilities such as boat ramps, barbeque areas, boardwalks amongst other things.

Of note is the fact that NRM groups rarely figured in the description of partnerships and relationships favoured by local government. This is despite the fact that there are a number of NRM regions across Australia and that in many cases NRM officers have been located within local government offices. One respondent did indicate there was a cultural shift happening with the recent decision to integrate NRM in South Australia within the State government department of environment and natural resources (DENR). This shift has the potential to influence the types and range of coastal management in local government regions in the future.

Discussion: Coastal Zone Management, Local Government and Australia: Facilitating learning via communities of practice

An implication of this research is that there is a role for advocating social learning. Social learning with respect to sustainable development is based on the participatory processes of social change and societal transformations (Pahl-Wostl, 1995; Bandura 1977). It can make the goals and stakes that are involved in transformation processes much clearer and achieve better (because democratic) solutions to environmental problems, thus fostering the implementation of measures that have been agreed upon.

Results from this project show that learning has not made the transition from journal articles to the ground, to become a conscious element of management: yet learning via doing and via experience is definitely happening. There is also a strong relationship between what is learnt and how it is learnt, in relation to what constituents see as effective knowledge sources. Finally, what is clear is that there exists multiple communities of practice between all players in the coastal space.

Social learning can provide a reinforcing function to adaptive governance of the coast, and could do so via harnessing the energy of the multiple communities of practice that exist in the coastal zone and were identified within this research as the pivotal point within which most management action is happening. Communities of practice are instant formal and informal networks with vertical and horizontal linkages that can facilitate the flow of information and learning across cultures and boundaries.

This is clearly an area of dynamism that could be built on both to implement formal learning and evaluation processes over time, but also to help build and progress collaborative coastal management strategies that may help redress some of the constraints imposed by lack of financial resources and turnover of staff. However, as Aubusson *et al.* (2007) note, developing a learning community is very difficult. Learning is about belonging, experience, doing and becoming and a CoP must be cognisant of this fact, ((Warhurst, 2006, 115). Evans and Powell (2007, 202) go so far to state: 'Communities can be identified. Communities can be supported. Communities may even be facilitated. But they cannot be designed'. Klein, Connell, & Meyer (2005) argue for a typology for CoP around the two key elements of structure and knowledge activity, and include four models: (i) stratified sharing, (ii) stratified nurturing (iii) egalitarian sharing and (iv) egalitarian nurturing.

Collaboration is essential to a successful CoP (Baldwin & Austin, 1995), as is the link between collaborative action research and inclusive practice (Angelides, Georgiou, & Kyriakou, 2008). As such, existing CoPs within coastal councils could be utilised to develop community-based-action learning systems (Snyder and Wenger 2010, 123) at multiple levels. The opportunity will then be provided to have natural brokers between social, economic, economic and environmental systems that will encourage translation and uptake of science into policy.

Summary

This research highlights that (i) there is alot of activity in South Australia in relation to coastal management, which is constituted by a combination of on ground works and policy development; (ii) notwithstanding this activity, there is little productive relationship between them such that coastal management in SA still remains the poor cousin in environmental management terms; (iii) coastal management *per se* is often tainted by or associated with the history of MPAs in South Australia, which ensures that it often becomes a 'too hot' topic and is therefore often left alone; (iv) climate change is emerging as being more than a theoretical concept to become addressed as an issue felt on the ground. It is suggested that one way forward is to build the role of learning into formal coastal management arrangements thus facilitating and supporting existing communities of practice. This will also help harness the existing dynamism within local government, and help strengthen partnerships for the common good. Processes of communication will be smoother and more relevant.

Finally, a more formalised incorporation of the notion of CoP into coastal management is the importance in the coastal zone of negotiating boundaries. Boundaries are very important to learning systems, as they connect communities while offering learning opportunities *per se.* (Wenger 2010). Indeed, the coast is a zone of multiple boundaries between humans and the environment, between multiple laws and institutions, between layers of governance (local to commonwealth), between land to sea, and between cultures and organisations, all of which are located within or have as their focal point, the coast. If CoP are constructed as learning communities, they can be more formally linked to the the institutions and laws/policies that govern management of the coast. This can also help facilitate policy makers to build links between their policies and action on the ground, such as with the implementation of the Coastal Management Strategy developed by the Local Government Association of South Australia.

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