



Snapshot

Testing the waters: Coastal management planning in the City of Marion

Summary

The City of Marion forms part of a nationally recognised climate change adaptation planning alliance known as Resilient South, which comprises Adelaide's southern region and includes the cities of Marion, Holdfast Bay, Mitcham and Onkaparinga. Through this initiative, these cities have mapped their climate change hazards, vulnerabilities, risks and adaptation pathways.

The City of Marion has been using CoastAdapt to take a coastal focus on the already strong foundation established by Resilient South. Data collected by the initiative as part of an integrated vulnerability assessment are being used to develop more detailed second and third pass assessments of climate risk along Marion's coast. These risk assessments will be incorporated into the Council's broadly focussed Coastal Management Plan.

The City of Marion is located within the Adelaide metropolitan area, covers 55 km² and has a population of about 88,900 people. The City's coastline extends 7.2 km and includes the coastal suburbs of Marino and Hallett Cove, home to around 15,000 people. Marion's coastal environment is unique in the metropolitan area as it has rocky cliffs and small sandy coves (see Figures 1 and 2). It features two State conservation parks (see Figure 3), world famous geological formations, important sites of remnant coastal vegetation and the significant cultural presence of the Kaurna Tjilbruke Dreaming.

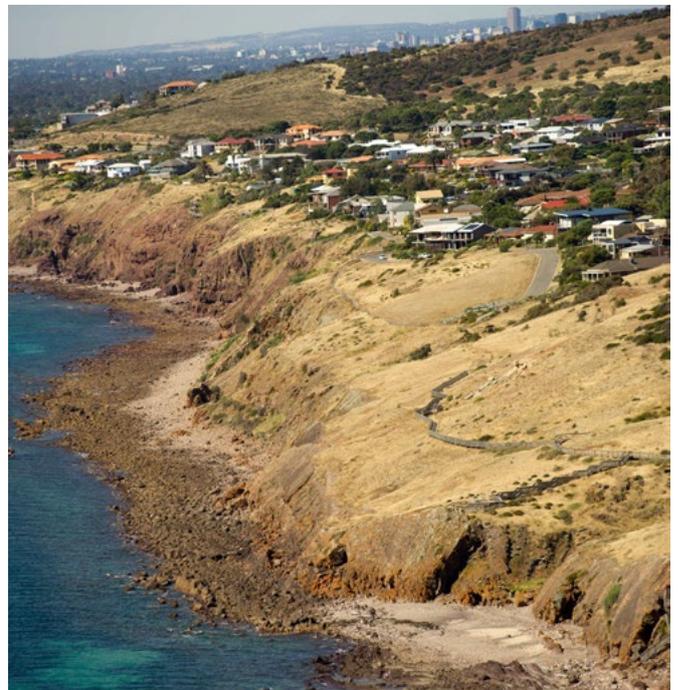


Figure 1: The rocky coastline of the City of Marion as seen by helicopter. Source: © City of Marion.

Keywords

City of Marion, metropolitan, integrated vulnerability assessment, Resilient South, risk assessment, test case



Figure 2: A view of the City of Marion coastline from helicopter. Source: © City of Marion.



Figure 3: Visitors enjoy the walking trails through the Hallet Cove Conservation Park. Source: © Marilee Campbell.

The City of Marion has taken a proactive approach to climate change adaptation through a regional council alliance called Resilient South. Significant work has already occurred through Resilient South, which means that the Council and the community have a good understanding of both coastal and non-coastal climate vulnerabilities and risks. They have also worked together to develop regional adaptation pathways to guide future action.

Building on the work already achieved through Resilient South, and some targeted coastal studies, the City of Marion is now working to identify site and asset specific vulnerabilities in its coastal zone, and to develop a more detailed understanding of localised risk and actions needed to support effective coastal management.

In this context, and as part of a test case supported by NCCARF, the City of Marion used CoastAdapt's Climate Change Adaptation Decision Support tool ([C-CADS](#)) to plan and undertake detailed second and third pass risk assessments of coastal hazards.

A key activity of the test case was a half-day workshop conducted with staff from across the Council that represented a diversity of operations areas: assets and infrastructure management, community development, strategic planning, development assessment planning, environmental planning and sustainability, and economic development. The staff members were asked to discuss the ways in which climate change might be expected to affect the Council's coastal systems at risk (see Figure 4). These systems had been previously identified as part of an Integrated Vulnerability Assessment conducted through the Resilient South project and are the following:

- beaches
- cliffs
- coastal shrubland (including threatened species)
- pest plants and animals (terrestrial)
- near-shore marine environment
- cultural heritage
- Council assets
- surface water management
- private property
- provision and access to recreation facilities
- geological monuments
- community (resident population and visitors).



Figure 4: Workshop attendees discussing the risks climate change poses to the City of Marion in breakout groups. Source: © Marilee Campbell.

During the workshop, the breakout groups were presented with maps that identified assets and familiar local sites, and participants worked in small groups to identify broad risks. Of particular value was the diverse range of interests and expertise represented at the workshop. Landscape architects and development engineers brought technical expertise while community engagement and public art planners offered perspectives on community values.

The cross-organisational discussion in the workshop setting produced an exhaustive list of potential risks. Using the C-CADS framework from CoastAdapt, the greatest risks were identified and analysed in greater detail. Some of the risks that were considered 'High' or 'Extreme' included:

- the locations where dunes and embankments had been eroded in recent storm surge events, which had exposed contamination and sensitive underlying claybeds
- local sites where stormwater infrastructure was already at capacity and failing under extreme rainfall events

- local sites that were experiencing cliff-top 'gullying'
- specific infrastructure that could be at risk in the event of extreme events in the future
- local sites and subjects that need more data to better understand the level of risk – e.g. the effects of sea-level rise on cliff stability.

The City of Marion plans to continue to use the risk assessment tools and resources in CoastAdapt to deepen its understanding of coastal climate change and to prioritise on-ground action and identify areas where further information or regional collaboration is needed.

The results of the CoastAdapt test case will assist the City of Marion with the development of a Coastal Management Plan and will help to further discussions with regional partners and agencies around responsibility for coastal action and strategic prioritisation of funding.

Further reading

All links accessed 16 June 2017:

The City of Marion's website: www.marion.sa.gov.au.

The Resilient South regional climate change adaptation plan, prepared by URPS and Seed Consulting Services as part of the Resilient South project: www.environment.sa.gov.au/files/sharedassets/public/climate-change/regional_adaptation_plans/resilient-south-climate-change-adaptation-plan.pdf.

The Resilient South southern region local government implementation plan 2015-2019, prepared by the Cities of Onkaparinga, Holdfast Bay, Marion and Mitcham in association with the South Australian Local Government Association: <http://www.onkaparingacity.com/public/download.jsp?id=78357>.

The Resilient South project's website: http://www.onkaparingacity.com/onka/living_here/sustainable_onkaparinga/climate_change/resilient_south.jsp.

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