

Risk assessment - links to external data and visualisation sites

This content provides information on data and visualization sites that are available outside CoastAdapt and that can be drawn on in risk assessments.

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Climate change risk assessments need to be informed by robust data and information that align with the purpose and scale of the assessment. For high-level assessments it is often sufficient to draw on existing maps and qualitative information, whereas local assessments are likely to require more detailed data to underpin decision-making.

Data needs for risk assessment span climate change scenarios, coastal hazard data, and data on exposed communities, people, infrastructure, natural environments and other assets. Within CoastAdapt, data and visualisation products are available on sea-level rise, coastal compartments and hazard visualisation (see [Guide to CoastAdapt Datasets - Coastal sensitivity to flooding and erosion](#), and [Guide to CoastAdapt Datasets - Future sea-level rise and its effects on coastal inundation](#)). Here we identify a range of external data and visualisation sources that can be used for risk assessments.

Data and visualisation needs for risk assessment

Climate change risk assessments need to be informed by robust data and information that aligns with the purpose and scale of the assessment. For example, high level or first pass assessments that identify and prioritise the range of risks in a region may adequately be supported by national and state mapping tools and qualitative information, whereas a local assessment to underpin a decision on costly and long-life coastal protection infrastructure needs detailed quantitative information and data.

Typically, the data needs for risk assessment span

- climate, including present-day and future climate and sea-level rise
- data to understand coastal hazards
- data to identify risks to communities, people, infrastructure, natural environments and other assets.

Here, we provide information on data and visualisation sites that are available outside CoastAdapt and that can be used for risk assessment. Information on data availability and guidance on use within CoastAdapt is provided in Box 1.

Box 1: Data availability and guidance on use within CoastAdapt

Data and visualisations can be accessed on sea-level rise, flood risk and inundation, and information is provided on coastal geomorphology and coastal currents to support understanding of exposure to risk (see [Guide to CoastAdapt Datasets](#) and [Information Manual 3: Available datasets](#)).

Guidance on risk assessment, including on use of data, can be found in [Guidance on risk assessment](#), [National mapping and coastal risks](#) and C-CADS Step 2 [Assess risks and vulnerabilities](#).

External sources of data useful to understand impacts and assess risk

Climate, including present-day and future climate and sea-level rise

- areas exposed to cyclones or east coast lows
- mapping of areas susceptible to erosion and recession.

Key sources of external data and visualisation products are described in Table 2.

Table 2: Data sources for coastal hazards (all web links accessed 21 May 2016).

Coastal hazard	State and developer	Source of information
Inundation from sea level rise, including storm surge	Developed areas of coastline – Qld, NSW, Vic, Tas, SA, WA, CRCSI	Coastal Risk Australia tool – interactive web tool showing sea inundation using high quality elevation and tide data and bath-tub model http://www.coastalrisk.com.au/
	State Government inundation mapping	http://www.dpac.tas.gov.au/_data/assets/pdf_file/0003/222924/Coastal_Inundation_Mapping_-_Stage_2.pdf
	Storm surge – update re BoM	McInnes, K.L., Church, J., Monselesan, D., Hunter, J.R., O'Grady, J.G., Haigh, I.D., & Zhang, X., 2015: Information for Australian Impact and adaptation planning in response to sea-level rise. <i>Australian Meteorology and Oceanography Journal</i> 65, 127-149.
Low-lying areas at risk of inundation	All Geoscience Australia and CRCSI	National Elevation Data Portal http://www.ga.gov.au/scientific-topics/national-location-information/digital-elevation-data/data-contributors
Catchment flooding	All Geoscience Australia	Australian Flood Risk Information Portal (catchment flooding mostly) www.ga.gov.au/flood-study-web/
	All Bureau of Meteorology	Extreme design rainfall events (intensity-frequency-duration information) http://www.bom.gov.au/water/designRainfalls/efd/
Extreme wind and cyclones	All Bureau of Meteorology	http://www.bom.gov.au/cyclone/history/index.shtml
Erosion	All Geoscience Australia	Smartline Coastal Geomorphology Map is available on the OoCoasts website www.oocoasts.org.au
	All Geoscience Australia	Primary and secondary coastal compartments mapping http://www.ga.gov.au/metadata-gateway/metadata/record/ocst_76502
	All, but variable coverage Geoscience Australia and state governments	Aerial photography http://www.ga.gov.au/scientific-topics/earth-obs/accessing-satellite-imagery/serial-photography
	State government surveys and mapping	http://www.dpac.tas.gov.au/_data/assets/pdf_file/0004/222925/Coastal_Erosion_Susceptibility_Zone_Mapping.pdf https://www.ehp.qld.gov.au/coastal/development/assessment/erosion-prone-area/erosion-prone-area-mapping
Recession	State government mapping or datasets	See Section 5.4 in Information Manual 3: Available Datasets http://coastadapt.com.au/information-manuals/available-data-datasets-and-derived-information-support-coastal-hazard-assessment-and-planning

Data and visualisation on risks to coastal assets

A wide range of data is required to understand the risks that coastal hazards from climate change can pose to coastal communities, assets and environments. Data that local councils might need for a climate change risk assessment include:

- property and boundary information in coastal areas exposed to hazard
- type, number and location of major assets and infrastructure
- socio-economic profile of the population in the coastal areas exposed to hazard
- main businesses and facilities operating in the coastal area
- ecosystems, refuges, fauna and flora present, particularly endangered species, ecological communities and assemblages.

Most of this information is likely to be accessible from local or state sources. However, there are a number of datasets managed at the national level which could be useful in a risk and

vulnerability assessment. Table 3 provides a summary of relevant national datasets.

Table 3: National data sources relevant to coastal risk assessment (all web links accessed 21 May 2016).

Variable or impact	State and developer	Source of information
Buildings and Infrastructure	All Geoscience Australia	The National Exposure Information System, managed by Geoscience Australia, contains information on the spatial location of residential, commercial and industrial buildings http://www.ga.gov.au/scientific-topics/hazards/risk-impact/nexis
	All Department of the Environment	The National Coastal Risk Assessment identifies Local Government Areas with high numbers of buildings and transport infrastructure exposed to sea level rise www.environment.gov.au/climate-change/adaptation/australias-coasts/national-coastal-risk-assessment
	All National ICT Australia (NICTA)/CSIRO	The National Map contains a number of infrastructure datasets www.nationalmap.gov.au
Boundaries	All NICTA/CSIRO	The National Map contains a number of boundary datasets www.nationalmap.gov.au
Water	All Bureau of Meteorology	The Australian Water Resources Information System www.bom.gov.au/water/about/wip/awris.shtml
	All Geoscience Australia	The National Surface Water Information System http://www.ga.gov.au/scientific-topics/water/national-surface-water-information
Vegetation, land use and ecosystems	All NICTA/CSIRO	The National Map contains a number of vegetation and land use datasets www.nationalmap.gov.au
	All Department of the Environment	The Species of National Environmental Significance database www.environment.gov.au/science/erin/databases-maps/snes
Cities and urban areas	All University of Melbourne, as part of the National Collaborative Research Infrastructure Strategy	The Australian Urban Research Infrastructure Network portal on demography, social indicators, housing, health http://aurin.org.au/resources/
Population	All Australian Bureau of Statistics	Datasets on population distribution and projections http://www.abs.gov.au/
Social, cultural and economic information	All Australian Bureau of Statistics	Datasets on health, labour force, education, culture http://www.abs.gov.au/

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Also in CoastAdapt

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The Climate Change in Australia website: a useful resource to support adaptation

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