

## CoastAdapt datasets

26 March 2018



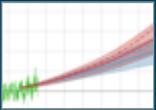
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**Shoreline Explorer:**  
Present day information



**Sea-level rise and You:**  
Information about the future

### Sea-Level Rise and You: information about future risks

In its original version, [Sea-Level Rise and You](#) only contained information on future sea-level rise and associated inundation. We have now added information on climate (temperature and rainfall) extremes.

The datasets in [Sea-Level Rise and You](#) are for:

- every coastal local council in Australia
- the present-day through to 2100
- up to four greenhouse gas concentration scenarios (the [Representative Concentration Pathways](#), or RCPs).

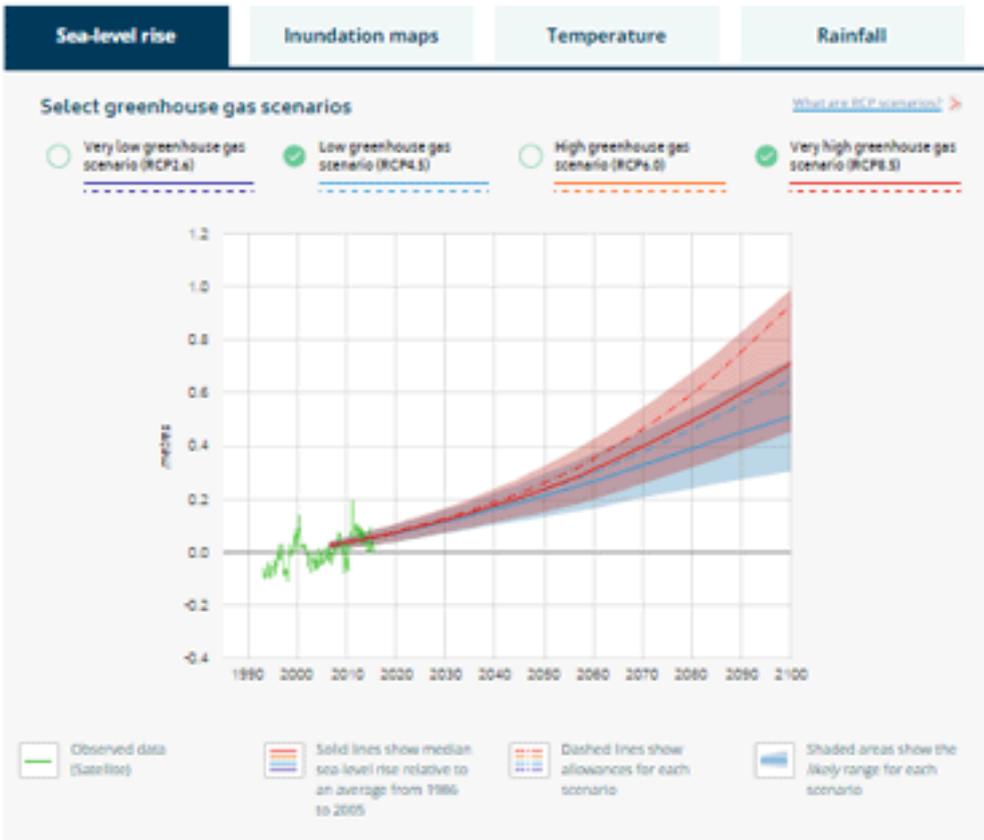
# Sea-level rise information for Australian coastal councils

Select your Local Government Area in the dropdown box on the right to view sea-level rise information.

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return to datasets page

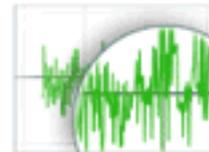
## Joondalup, WA



### Sea-level rise:

(relative to an average calculated between 1986 and 2005)

Date (unit)	Greenhouse gas scenario (RCP)			
	Very low (RCP2.6)	Low (RCP4.5)	High (RCP6.0)	Very high (RCP8.5)
2030 (m)	0.11 (0.07-0.15)	0.12 (0.07-0.16)	0.11 (0.06-0.16)	0.12 (0.08-0.17)
2050 (m)	0.20 (0.12-0.28)	0.21 (0.13-0.30)	0.21 (0.13-0.29)	0.24 (0.15-0.33)
2070 (m)	0.30 (0.18-0.42)	0.33 (0.21-0.46)	0.32 (0.20-0.45)	0.40 (0.26-0.55)
2090 (m)	0.38 (0.22-0.56)	0.45 (0.28-0.64)	0.46 (0.29-0.65)	0.60 (0.39-0.84)
Rate of change at 2100 (mm/yr)	4.2 (1.6-6.7)	6.0 (3.1-9.0)	7.4 (4.6-10.5)	10.9 (6.8-15.7)



See observed satellite data only >

## Access Sea-level Rise and You

- [📄 Summary guidance: Dataset Guidance 2](#)
- [📄 Detailed guidance on sea-level rise projections](#)
- [📄 Detailed guidance on temperature and rainfall datasets](#)

In *Sea-level Rise and You*, we have labelled the RCP scenarios:

**Very high: RCP8.5**

**High:** RCP6.0

**Low:** RCP4.5

**Very low:** RCP2.6

The terminology refers to the **change** in greenhouse gas concentration in the atmosphere, not the absolute amount.

All RCP scenarios show an increase in atmospheric greenhouse gas concentrations over the present day up to 2100 – whereas the increase for RCP8.5 (little attempt at mitigation) is very high, the increase for RCP2.6 (a strong mitigation scenario) is very low.

## Future sea-level rise and its effects

For every coastal council in Australia, CoastAdapt provides graphs and tables on:

- **mean sea-level rise**, together with a confidence interval
- **the allowance** - the height that coastal defences would need to be raised in order to provide the same level of protection as they do today.

Information is provided for all four RCP scenarios, and from now to 2100. It takes into account both thermal and dynamic influences on sea level, including changes in ocean currents. It does not take into account changes in wave height or local land movements such as subsidence. The information is for the open coast - for closed bays or estuaries, additional changes may be possible.

CoastAdapt provides maps of:

- **inundation extent.** Inundation is defined here as the temporary flooding of a portion of land within the coastal zone.

The maps are for two RCP scenarios (8.5 and 4.5) and for two time slices: 2050 and 2100. Inundation is modelled using high-resolution digital elevation data and a simple ['bucket fill' approach](#). Initiating sea-level rise information is taken from Sea-level Rise and You. The result is approximate only: the model does not take account of existing sea walls, storm surge, erosion etc. The notional map resolution is 1:50,000.

If you wish to explore additional inundation scenarios (different time periods, sea-level rise scenarios etc.) a good resource is the [Coastal Risk Australia](#) website.

Information on methods and presentation, and how to use Sea-level Rise and You, is provided in [Dataset Guidance 2](#).

## Extremes of temperature and rainfall

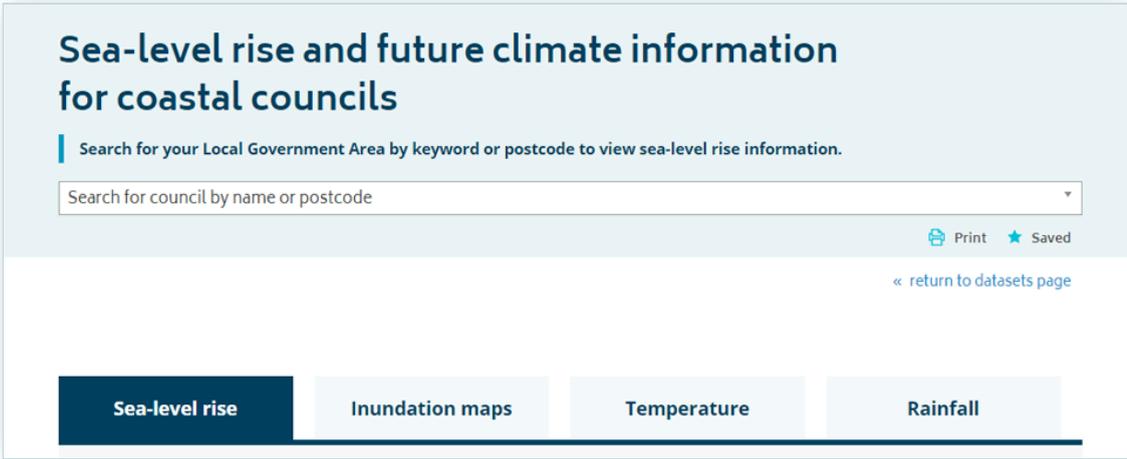
For every coastal council in Australia, CoastAdapt provides graphs of future trends in:

- **Hot days:** Mean annual number of days with maximum temperature greater than 30 °C
- **Warm nights:** Mean annual number of days with minimum temperature greater than 25 °C
- **Heatwaves:** Average of longest run of days in each year with maximum temperature greater than 30 °C
- **Very wet days:** Mean annual number of days when rainfall exceeds the historic 99.9th percentile
- **Dry conditions:** Mean annual (May to Apr) number of months when total rainfall is less than the historic 10th percentile

Information on methods and presentation, and how to use Sea-level Rise and You, is provided in [Dataset Guidance 2](#).

## Accessing [Sea-Level Rise and You](#)

Clicking on the link above takes you to this page:



The screenshot shows the top section of a website. At the top, the title "Sea-level rise and future climate information for coastal councils" is displayed in a dark teal font. Below the title is a search instruction: "Search for your Local Government Area by keyword or postcode to view sea-level rise information." Underneath this is a search input field with the placeholder text "Search for council by name or postcode". To the right of the search field are two icons: a printer icon labeled "Print" and a star icon labeled "Saved". Below the search field is a link that says "« return to datasets page". At the bottom of the screenshot, there are four navigation tabs: "Sea-level rise" (which is highlighted in dark teal), "Inundation maps", "Temperature", and "Rainfall".

You can enter a council name or postcode in the top search box and then select one of the four tabs below (the default is sea-level rise) to see information for your chosen council.

Although *Sea-level Rise and You* is designed to be highly intuitive, we strongly advise you to read [Dataset Guidance 2](#), which provides you with background to all the datasets and their use.

## Acknowledgements

We are grateful to CSIRO for the provision of the sea-level rise and allowances data, in a project led by John Church and Kathy McInnes. A detailed technical [Guidance Report](#) is available. The temperature and rainfall extremes data were provided by CSIRO in a project led by John Clarke. Information on the derivation of these datasets is available [here](#). The Collaborative Research Centre for Spatial Information provided the inundation mapping.

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**Australian Government**  
**Department of the Environment and Energy**

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