

How will climate change affect flows into reservoirs in regional South Australia?

Impact of climate change on the surface water resources of the Kangaroo Island Natural Resources Management Region

This project was undertaken using the SA Climate Ready data, which is helping to improve planning and decision making and make South Australia the most climate ready State in the nation.

Project partners:



Government of South Australia
Department of Environment,
Water and Natural Resources

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Less rainfall in the future will reduce the amount of water flowing into South Australian reservoirs. Better planning now will help make sure our regions have enough drinking water in the future and improve decisions about how to invest in existing and new water management assets.

Why undertake the project?

Kangaroo Island is renowned for its farm produce, tourism attractions and natural assets. It is one of South Australia's most isolated regions and is solely reliant on rainfall to produce drinking water for people living on and visiting the Island. Surface water also supports important aquatic ecosystems.

Middle River Reservoir is the primary source of piped water for much of the Island's population. Changes in the amount of run-off from the Middle River Catchment affect the amount of water that can be stored in the Middle River reservoir and subsequently the availability of water for people on the island, such as those living in Kingscote.

What was done?

To assess the impact of projected changes in climate on the surface water resources of Kangaroo Island, rainfall and potential evapotranspiration information for intermediate and high emissions scenarios, was incorporated into a recently updated rainfall-runoff model for Middle River. Using the SA Climate Ready data the project team was able to consider runoff projections to 2100.

What did we learn?

Annual rainfall is projected to decrease in the future, with the high emissions scenario projecting a greater reduction. Potential evapotranspiration is also expected to increase. Overall, the decrease in runoff is disproportionately greater than the decrease in rainfall.

Significant reductions in mean annual catchment flow and Middle River Reservoir inflow are projected for most time horizons. For example, by 2070 median reservoir inflow was found to drop by 26% and 31% under intermediate and high emissions scenarios, respectively.

The overall trend of a reduction in the runoff within this catchment is important information for helping water resources managers understand future water supply scenarios in the region.

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The Goyder Institute for Water Research is a partnership between the South Australian Government through the Department of Environment, Water and Natural Resources, CSIRO, Flinders University, University of Adelaide and the University of South Australia.

