

# Norfolk Island Water Resource Assessment Project

The CSIRO has been engaged to assist the Norfolk Island community to develop a scientific understanding of Norfolk Island's water resources and to identify opportunities to increase water security on the island.

## About the Project

CSIRO is working with the Norfolk Island community to undertake a Water Resource Assessment Project. The Project will draw on local understanding of Norfolk's water resources which has accumulated over many generations of managing water and observing changes in the water cycle.

Like many other sub-tropical south Pacific islands and communities throughout the region, Norfolk Island is experiencing changing weather patterns, including reductions in rainfall, extended dry spells and rising temperatures. This has resulted in unprecedented water stress in recent times and reports of a depleted supply.



To guide how the community might adapt to these changes, more information about the island's water resources is required. CSIRO's Water Resource Assessment Project will bring scientists, engineers and the latest technology together with local expertise to build a picture of how Norfolk Island's water resources are faring. CSIRO will also be working closely with the Bureau of Meteorology.

## Why is it necessary?

Norfolk Islanders understand the need to be careful with water, particularly in periods of drought. Norfolk Island has experienced numerous dry periods in the past, but there is now strong evidence that the frequency and severity of dry periods have been and will continue to increase. Similar reductions in cool season rainfall (April to October) in southern parts of the Australian continent have been amplified in reductions of surface runoff and recharge to groundwater. This has resulted in significant challenges for water management around the region, in many cases requiring upgrades to water storage and supply infrastructure to reliably meet current demands. It is thought likely that similar reductions in the recharge of groundwater have also occurred on Norfolk. There is uncertainty about whether current demands on Norfolk's groundwater can be sustained. Although recent rainfall events on Norfolk Island have provided short-term relief to residents, they are unlikely to have replenished groundwater. To replenish groundwater, extended periods of above average rainfall are required. Seasonal climate outlooks issued by the Bureau of Meteorology suggest this is unlikely to occur. Longer term climate models project that Norfolk Island's winter and spring in particular will continue to be drier in the future.

## Project goals

CSIRO's Project will build upon existing studies, local knowledge, and the responses provided to the recent survey circulated by Norfolk Island Regional Council on behalf of Emergency Management Norfolk Island (EMNI) to provide a contemporary understanding of the water resources of Norfolk Island. CSIRO is seeking to understand

how Norfolk's water resources are changing so that Council, EMNI and residents alike can develop prevention, preparedness and response measures and be supported by the best available science. CSIRO's Project will also seek to identify opportunities to increase water security on the island, drawing on water security innovation from around the world and the ingenuity of the Norfolk Island community. CSIRO's Project is about providing information to assist the community and Council adapt management of water resources to the new conditions and guide how the Australian Government can best support the community's efforts.

### Project activities

Together with members of the local community, CSIRO will undertake a program of data collection and field measurements on both public and private land. This will include measurements of water infiltrating into the soil, surface runoff, groundwater storage, water used by vegetation and water used by participating households. A lack of hydrological data on Norfolk Island means anecdotal information and records, such as bore drilling logs and stories of water of the past, will be vital to the success of the Project. Please contact us to share your information.

Please also contact us if you own a property with a bore, well, creek, dam and/or tanks and would like to be a part of CSIRO's hydrological measurement and monitoring program to learn more about your water supply and contribute to a scientific understanding of Norfolk Island's water resources. The more locations CSIRO are able to study, the clearer the understanding of Norfolk Island's water resources will be which will guide sustainability.

Please note, your involvement is entirely voluntary. CSIRO will not enter your property without your prior permission. CSIRO is committed to protecting your personal information and any data collected will be de-identified. For further information, please ask us or see CSIRO's privacy policy at [www.csiro.au/en/Privacy.aspx](http://www.csiro.au/en/Privacy.aspx).

CSIRO will also undertake a pre-feasibility analysis to assess water source and storage options for increasing the resilience of existing water supplies and the potential for providing redundancy in supply.

### How can locals be involved and contribute?

If you would like to be involved in CSIRO's Project including joining the Project's Steering Committee and/or stay up to date with the Project's progress, please contact the CSIRO project leader Cuan Petheram on [cuan.petheram@csiro.au](mailto:cuan.petheram@csiro.au) or phone 52491. The Project's team will engage a number of local residents.

### How will the results be used?

Community members will be able to use the results to make decisions about how they monitor and manage their water, including by using the latest technology. Council will be able to use the results to refine a water resource management plan and make decisions on how to improve resilience and prevent a water related emergency. EMNI will use the results to guide emergency preparedness by way of a Water Response Plan for the community. The University of Newcastle's Environmental Assessment is looking at broader questions of sustainability for Norfolk Island and will complement CSIRO's work on hydrology and focus on broader questions of sustainability.

Importantly, CSIRO will not make decisions on how water is to be managed on Norfolk Island. CSIRO will not seek to replace any planning processes, or advocate for changes. It is acknowledged that there is some concern in the community about the underlying intentions of information gathering; the intention of this project is to provide information to empower the Norfolk Island community to generate water security in the interests of sustainability.

*This is a multi-year project and is funded by the Department of Infrastructure, Regional Development and Cities; a joint initiative of the Department's Norfolk Island based team, the CSIRO and Norfolk Island Regional Council.*

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#### FOR FURTHER INFORMATION

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