

## The Team

CSIRO is drawing on the scientific leadership and technical expertise of Australian and State Government agencies, as well as leading Australian industry consultants.

Technical staff from CSIRO and the Tasmanian Department of Primary Industries and Water are contributing to the project, supported by both an internal and independent external review process to deliver robust assessments of water yield across the State.

A project team of approximately 10 full time staff has been established which draws on the expertise of staff from within CSIRO and the Tasmanian Department of Primary Industries and Water, as well as various consultants. The project team is divided into seven groups: Project Management, Climate, Runoff, Groundwater, Rivers, Environment, and Reporting.

## For Further Information

### Project Team

**Project Leader** – David Post  
Phone: (02) 6246 5751  
Email: david.post@csiro.au

**Climate** – Francis Chiew  
Phone: (02) 6246 5717  
Email: francis.chiew@csiro.au

**Runoff** – Neil Viney  
Phone: (02) 6246 5814  
Email: neil.viney@csiro.au

**Groundwater** – Glenn Harrington  
Phone: (08) 8303 8406  
Email: glenn.harrington@csiro.au

**Rivers** – Fiona Ling  
Phone: (03) 6245 4543  
Email: fiona.ling@hydro.com.au

**Environment** – Bryce Grahamt  
Phone: (03) 6233 5308  
Email: bryce.graham@dpiw.tas.gov.au

**Reporting** – Susan Cuddy  
Phone: (02) 6246 5705  
Email: susan.cuddy@csiro.au

### Tasmania Sustainable Yields Steering Committee

Richard McLoughlin (Chair)  
Department of the Environment, Water, Heritage and the Arts, Australian Government  
Phone: (02) 6275 9063  
Email: richard.mcloughlin@environment.gov.au

Alan Harradine  
Department of Primary Industries and Water, Tasmanian Government  
Phone: (03) 6233 5424  
Email: alan.harradine@dpiw.tas.gov.au

Tom Hatton  
CSIRO, Water for a Healthy Country Flagship  
Phone: (02) 6246 5745  
Email: tom.hatton@csiro.au

### Observers

Louise Minty  
Bureau of Meteorology  
Phone: (03) 9669 4542  
Email: l.minty@bom.gov.au

Mac Kirby  
CSIRO Land and Water  
Phone: (02) 6246 5921  
Email: mac.kirby@csiro.au

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## Contact Us

Phone: 1300 363 400  
+61 3 9545 2176

Email: [enquiries@csiro.au](mailto:enquiries@csiro.au)

Web: [www.csiro.au](http://www.csiro.au)

[www.csiro.au](http://www.csiro.au)

# Estimating water yields in Tasmania in 2030

October 2008



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## CSIRO is providing the science to help underpin the planning and sustainable management of Tasmania's water resources

### Tasmania Sustainable Yields

The Tasmania Sustainable Yields (TasSY) Project is the most comprehensive assessment of water yield in 2030 undertaken to-date in Tasmania.



CSIRO's *Water for a Healthy Country Flagship* will work in partnership with the Tasmanian Government's Department of Primary Industries and Water to provide the science to help underpin the planning and sustainable management of the State's water resources. The project is funded by the Australian Government.

The project will provide water managers and users with robust estimates of current and future water yield for the northern and eastern regions of Tasmania, where irrigation is either currently occurring or is proposed for the future.

#### Background

In 2007 and 2008, CSIRO carried out the Murray-Darling Basin Sustainable Yields Project and produced a series of reports examining the likely water yield of surface and groundwater catchments in the Murray-Darling Basin as a result of current and future climate and possible land management changes.

The Murray-Darling Basin Sustainable Yields Project was the first water resource assessment of its scale in the world and is currently informing stakeholders of the overall impact of climate change on the Basin's water.

In March 2008, the Council of Australian Governments agreed to extend this assessment to three other areas – northern Australia, Tasmania and the south-west of Western Australia.

When these new assessments are complete, Australia will have a comprehensive scientific assessment of water yield in most of its major water systems. This will provide a consistent analytical framework for national water policy decisions.

The TasSY Project will provide critical information on current and likely future water yield in Tasmania as a result of climate change, the development of irrigation under the Tasmanian Government's *Drought-proofing Tasmania* plan, and other water interception activities such as forestry and changes in groundwater.

This information will help government, industry and communities in considering the environmental, social and economic aspects of the sustainable use and management of Tasmania's water assets.

CSIRO will work closely with the Tasmanian Department of Primary Industries and Water to ensure that the climate, surface and groundwater models that are used in the assessment are the best available and are accessible after the completion of the project. In this way, the results will inform State Government regional and statutory water management plans for the foreseeable future.

#### The Project Area

Assessments of the impact of climate change on rainfall, potential evapotranspiration and runoff will be carried out across the entire State. However an assessment of these impacts on water resources will only be carried out for catchments in the east and north of the State (including King and Flinders Islands) which currently or may in the future have significant amounts of irrigation.

Reporting on the potential impacts of climate change and other water interception activities such as forestry and changes in groundwater on water resources will be carried out in five regions:

- Arthur-Ingles-Cam
- Mersey-Forth
- Pipers-Ringarooma
- South Esk
- Derwent-South East.

In addition, an assessment of the potential impact of proposed future irrigation on water resources will be carried out for those catchments identified in the Tasmanian Government's *Drought-proofing Tasmania* plan (those shown with cross-hatching on the map).

#### The Project

The project is looking at changes to current and future water yields as a result of climate change, the development of irrigation under the Tasmanian Government's *Drought-proofing Tasmania* plan, and other water interception activities such as forestry and changes in groundwater.

The project will assess water resources on a catchment by catchment basis using four different climate scenarios:

- Historical climate (1924 to 2007) and current development
- Recent climate (1997 to 2007) and current development
- Future climate (2030) and current development
- Future climate (2030) and future development.

These four climate scenarios will be reported for each of the five reporting regions.

The project includes:

- the generation of time series of climate data to describe these four climate scenarios
- using spatial-temporal modelling to assess the implications of these four climate scenarios for catchment runoff and aquifer recharge
- propagating the runoff/recharge predictions through existing river systems and groundwater models, including explicit consideration of surface-groundwater exchanges

- the assessment and reporting of the implications of the four climate scenarios for water yield and water use.

The project will be overseen by a Steering Committee comprised of representatives from the Australian Government Department of the Environment, Water, Heritage and the Arts, the Tasmanian Department of Primary Industries and Water, and CSIRO. An observer from the Bureau of Meteorology also participates on the Steering Committee.

The project is to be completed by the end of December 2009.

