



Investigating priority water resources

Pilbara

The Pilbara region is experiencing significant growth. Some of the region's public water supplies, particularly at coastal ports and towns, may need to be increased to meet the projected demand and improve security of supply.

The environment, social and cultural water issues are considered in water planning and future management of water in the Pilbara. The limited and highly variable rainfall and groundwater recharge in the region presents significant supply planning challenges.

The Department of Water is implementing a program of investigation in the Pilbara that is part funded by the Australian Government's \$12.9 billion *Water for the Future* initiative.

Where are the projects occurring?

The Pilbara is an arid region with an annual rainfall of between 200 mm and 350 mm, which is highly variable and dominated by tropical cyclones. Severe droughts and major floods may occur at close intervals, highlighting the need to secure water supply for the worst case and not scenarios based on the average rainfall for the area.

What will the projects involve?

The projects being conducted by the department in this region will improve our understanding of the following topics:

- Pilbara coast alluvial aquifer assessment and review
The lower Robe, lower Fortescue, lower Yule and lower De Grey rivers all contain water in ancient river sediments below the present day water course. Assessing these resources will provide valuable information about how much water is required by the ecosystem, and the quantities may be available for other uses.
- Millstream aquifer modelling program
Investigations such as airborne geophysical and topographical surveys together with groundwater quality and level monitoring will assist with the development of an aquifer model. This computer model will enable simulation of groundwater flows and level changes, and help us assess what might occur if climate or water use patterns change.
- Hydrogeological modelling and assessment of the West Canning Basin
Computer modelling of the aquifer will provide estimates of water availability under a variety of scenarios that will account for the impacts of climate change, water use patterns and ensuring the water resource is managed sustainably.
- Ecological water requirements study
In parallel to the hydrogeological investigations, ecosystems will be assessed to confirm the distribution of species and communities reliant on groundwater and determine their tolerance to altered water availability (ecological water requirements).

- Cultural and social water values study
Consultation with Traditional Owners will provide essential input into water planning and future management processes, and assist us to understand the values placed on water dependant features by Aboriginal people.
- Establish environmental reference sites
Monitoring of riparian ecosystems will be conducted to investigate the influence of natural climate variability on the health of these systems. This will allow us to separate the natural variability in ecosystem health from impacts from water abstraction.
- East Pilbara water study
This study will review available information on existing and potential water supplies in the East Pilbara.
- Development of bore and mining report database
Data and information from bore and mining reports will be extracted and incorporated into a common database as part of this project. This information will inform a range of assessment and decision making processes.
- Identifying significant infrastructure based supplies study
This project will develop a tool to allow the department to evaluate the suitability and comparative cost of alternate future water supplies. It will incorporate aquifer features such as estimates of storage and recharge. The tool will also assess various climate scenarios and evaluate their potential impact on water supply reliability.

Why are we doing the projects?

These projects will result in more information being available about the Pilbara area and this will directly support improvements to future management of the resources. This information will make a substantial contribution to a water management plan(s), due after these projects are completed. A combination of robust science and information from stakeholders and the community about economic, environmental, social and cultural water issues will result in water resource management plan(s) for the Pilbara. This plan will support the Pilbara regional water plan, acknowledge other previous research, and work done to improve water efficiency. The water management plan(s) will help secure water for the Pilbara area, in line with the requirements of the National Water Initiative.