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Department of Biodiversity,  
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# Water

## Gnangara Sustainability

The Gnangara Sustainability Strategy is an across-government initiative to ensure the future sustainable use of water for drinking and commercial purposes, and to protect the environment, within the Perth region.

The Department of Water has joined forces with the Department of Agriculture and Food WA, the Department of Environment and Conservation, the Department for Planning and Infrastructure, Forest Products Commission, Water Corporation and CSIRO.



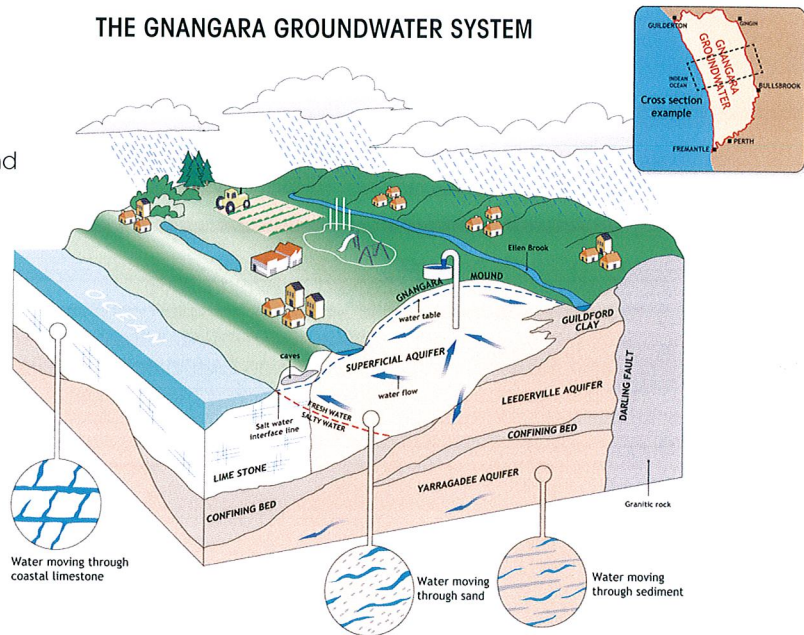
### WHY DO WE NEED A GNANGARA SUSTAINABILITY STRATEGY?

The Gnangara groundwater system provides for 60 per cent of Perth's scheme water needs with large volumes used by agriculture, local government and household garden bore users. It is also an important source for forestry, maintaining wetlands and native vegetation.

Perth is receiving less rainfall — it's a fact — climate scenarios predict it's not likely to get any better. With declining rainfall and a population set to increase by 40 per cent by 2030, it is vital that we continue to look for the best ways to protect our water supply.



### THE GNANGARA GROUNDWATER SYSTEM



### THE GNANGARA COORDINATING COMMITTEE

In 2006, the Government of Western Australia established the Gnangara Coordinating Committee (GCC) to address the rapid decline in groundwater levels. The committee is working to improve our understanding of the Gnangara groundwater system and the effect of various land uses on the system and the environment.

Members were appointed from the participating agencies. Initially, the committee was asked to develop a Gnangara Water Plan. However, it became clear that an integrated land and water management plan was necessary to address issues related to declining water levels.

The committee provides a framework for across-government collaboration between senior decision-makers and for evaluating trade-offs between competing values. The committee is providing well-researched, scientific advice and will make recommendations to the Western Australian Government that will allow for better social, economic and environmental outcomes for the Gnangara groundwater system.

A number of proposed land use options will be presented to the community in a draft strategy in 2009. These may include:

- exploring alternative land uses after the pines are cleared
- recycling wastewater for other uses
- changing vegetation management such as burning Banksia woodland to increase recharge and maintain biodiversity values
- revising groundwater allocation to public and private water supplies
- or a combination of these and other options.



# Water

## Gnangara Sustainability



### GNANGARA SUSTAINABILITY STRATEGY PROJECT REPORTS

In developing the Gnangara Sustainability Strategy (GSS) a number of projects are being implemented to help fill gaps in our knowledge. Below are reports that have been produced so far. These can be accessed from the GSS website: [www.gnangara.water.wa.gov.au](http://www.gnangara.water.wa.gov.au).

GSS project	Reports to January 2009
Biodiversity values on the mound	<i>Assessment of wetland invertebrate and fish biodiversity for the Gnangara Sustainability Strategy</i> , June 2008, prepared by Edith Cowan University on behalf of the Department of Environment and Conservation.
Quantitative analysis and integration of land-use and water management scenarios	<i>Value of the Yanchep Caves: Assessing Yanchep National Park visitor's willingness to pay for environmental improvement to the caves</i> , February 2008. Report prepared by CSIRO.
Regional planning context and future land uses	<i>Investigation into the Regional Planning Context and Future Land Use Options for the Gnangara Mound</i> , Stage 1 Report, May 2008. Report prepared by Connell Wagner on behalf of the Department for Planning and Infrastructure.
Horticulture precinct on the Gnangara Mound	<i>The feasibility of a new horticultural precinct on the Gnangara Mound</i> , November 2008, report and consolidated summary prepared by Science Matters and Economics Consulting Services on behalf of the Department of Agriculture and Food WA.
Plantation forestry	<i>Assessment of silvicultural regimes for softwood plantations established on the Gnangara Mound</i> . Report prepared by URS on behalf of the Forest Products Commission.
	<i>Food resources of Carnaby's black-cockatoo (Calyptorhynchus latirostris) in the Gnangara Sustainability Strategy study area</i> , October 2008. Report prepared by Edith Cowan University on behalf of the Forest Products Commission.
Community engagement and communication	<i>Gnangara Sustainability Strategy, Report on Community Views Survey</i> , July 2008. Report prepared by SAVANT Surveys and Strategies.
	<i>Gnangara Sustainability Strategy, Community Forums Analysis Report</i> , June 2008. Report prepared by Blue Sands Environmental.
	<i>Gnangara Sustainability Strategy Regional Profile</i> includes socio-demographic profiles of 29 areas in the region, based on the Australian Bureau of Statistics' Census of Population and Housing ( <a href="http://www.id.com.au/profile/default.aspx?id=324">www.id.com.au/profile/default.aspx?id=324</a> ).
Six projects being undertaken by the Water Corporation	The Water Corporation has published a number of reports on groundwater. Visit <a href="http://www.watercorporation.com.au/P/publications_supply_storage.cfm">www.watercorporation.com.au/P/publications_supply_storage.cfm</a> .
	<i>Confined Pumping Response</i> , Water Corporation, April 2008.

The following Department of Water documents are available on participant's memory stick:



- *Gnangara Sustainability Strategy brochure*
- *Managing water resources in Perth-Peel Region brochure*
- *Potential Use of Stormwater in the Perth Region GHD report*
- Activity sheet developed for school children as a part of a community education program around the issues of the GSS.

# Water

## Climate change in fisheries and the aquatic environment: impacts and adaptation

The Western Australian Department of Fisheries has started a project to help develop climate change adaptation strategies in line with the National Climate Change and Fisheries Action Plan. The objectives of the project are to:

- raise understanding of how climate change will impact on communities that are reliant on or associated with the aquatic environment;
- develop a set of agreed and collaborative strategies on how best to respond to these potential impacts;
- report these strategies to relevant agencies, funding bodies, stakeholders and associated action plans and strategies; and
- develop a generic consultative methodology for carrying out future adaptation assessments.



While the project recognises the importance of climate change mitigation, its clear focus is on adaptation response. It also recognises that while adaptation will be undoubtedly beneficial, there are likely to be constraints that limit the implementation and effectiveness of measures and that investments are likely to be most effective where adaptive capacity is highest. Exploring regional and local contexts for adaptive capacity can provide insights into where best to focus adaptation measures.

Therefore, an objective of this project is to communicate adaptive options to reduce climate change vulnerability and risks, while identifying barriers to the successful implementation of adaptation and risk management strategies.

The methodology is based on the non government organisations publication: *Climate Change: Impacts and Risk Management: A Guide for Business and Government*. It involves conducting a series of workshops with relevant stakeholders. The Phase One workshop identifies potential climatic impacts on the aquatic environment and the possible environmental consequences, current coping capacity in the community, and the identification of vulnerable groups and regions. The Phase Two workshop assesses risk and develops risk and adaptation strategies with a prioritisation of the impacts defined in the first workshop. A range of adaptive responses is then identified for the higher risk impacts that will increase the coping capacity of communities and decision-makers.

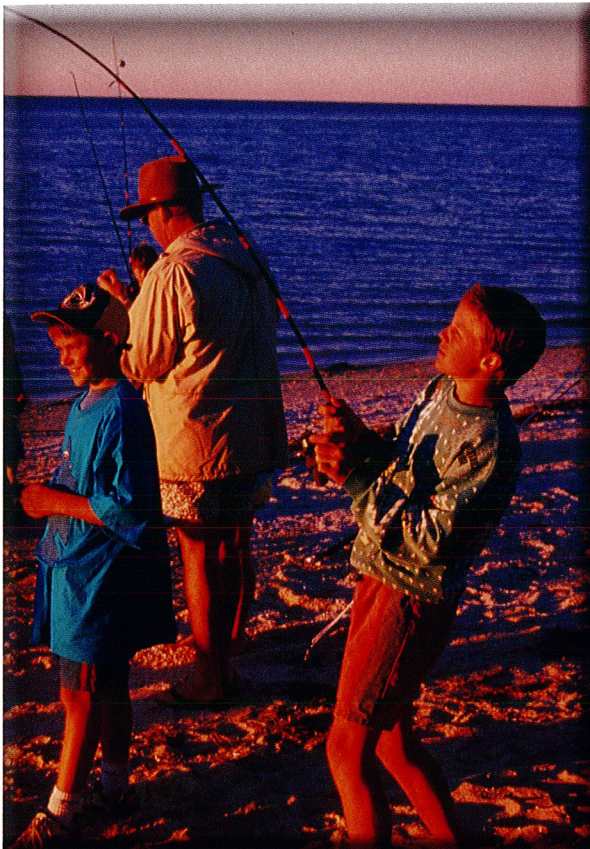


# Water

## Climate change in fisheries and the aquatic environment: impacts and adaptation

The methodology has been initially piloted on South West Inland and Estuarine Fisheries. The first workshop, held in November 2008, attracted more than 50 participants. The attendees were from government agencies and relevant local governments, natural resource management groups, commercial fishing, aquaculture, recreational fishing and conservation groups, and universities and insurance companies. A report summarising the outcomes of this workshop is now available. The risk assessment of the impacts has been started and the second workshop to develop adaptations strategies will be held in April 2009.

Adaptation measures to address the vulnerabilities and impacts identified during the workshop will be critical to a successful response to climate change in WA. Phase One suggests that current coping capacity is incomplete in many sectors and will need to be addressed if we are to ensure the sustainability of inland and estuarine waters.



The project has clearly demonstrated the need for a consultative approach and collaboration between sectors and government. Autonomous adaptation by the inland and estuarine fishery sector in isolation will be insufficient to address the range of identified impacts and issues expected from a changing climate. Communication of the responsibilities and collaborative links between sectors, government and across research disciplines will be a necessary outcome. A targeted, methodical and coordinated approach will best increase adaptive capacity.

### For more information

A PDF copy of a report on the project and more information can be obtained from:

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