



Purpose of the *Research Prospectus* [see www.gabcc.org.au for full text]

The Great Artesian Basin (GAB) is the world's largest fresh water artesian aquifer system and one of Australia's most important water resources. Landholders and governments have invested many millions of dollars in the GAB to rehabilitate bores, renew water delivery infrastructure and improve knowledge about the Basin and the benefits that it provides. With this investment comes the opportunity to improve GAB management and support the values attached to the GAB. However, our knowledge of the Basin is incomplete. Additional research is required on the structure, functions and values of the GAB, the infrastructure used to access GAB resources, higher value uses for GAB resources and GAB management and investment. The Great Artesian Basin Coordinating Committee, a national advisory group to government on management of the GAB, with representatives from all stakeholder groups, is well placed to work with research and funding organisations to encourage and facilitate priority research.

The aim of the *Research Prospectus* is to identify priority GAB research. It is hoped that the *Prospectus* will guide the preparation of new research proposals that provide an opportunity for researchers, industry and resource managers to collaborate in meeting the needs of the management of the Basin into the future.

In principle:

- research should focus on identified areas of strategic priority, and inform/influence practice and policy.
- research findings should be accessible to a wide audience, and
- cooperation should be maximised and duplication minimised.

In this context, research is defined as any form of inquiry seeking evidence to increase knowledge and includes activities that expand, clarify, reorganise and/or create knowledge. It includes not only traditional scientific research but also approaches like surveys, literature reviews, case studies, statistical analysis and focus groups.

Addressing the research questions

The GABCC has identified important knowledge gaps in a range of research areas. The GABCC invites potential researchers/contractors to provide proposals to address the priority research questions outlined below. These questions have been grouped under five themes: 1. Understanding the resource; 2. GAB access infrastructure; 3. Monitoring and measurement; 4. Higher values uses; and 5. Valuing investment and allocation.

This document outlines the questions in **theme 5: Valuing investment and allocation**.

5. Valuing investment and allocation

5.1 Cost/benefit - return on investment

Water from the GAB supports a variety of natural and cultural values and a wide range of human activities across the GAB. Environmental, social and economic costs and benefits accrue as an outcome of these values and activities. A substantial investment has been and will continue to be required to cover costs associated with rehabilitation and ongoing maintenance of infrastructure and the management of activities that affect the GAB. A clear understanding of the value of GAB resources, and the costs and benefits of various uses, is fundamental to making appropriate investment and management decisions. Additional research is required into valuing GAB resources and developing comparative models for various industries and activities supported by GAB resources (in terms of their environmental, social and economic significance), and to assess the returns on investment in water infrastructure.

Priority research questions

- a. What is the total value of GAB water?
- b. What is the comparative value of the major uses of GAB water?
- c. What is the cost benefit analysis for activities supported by GAB resources?
- d. What is the value of water allocation for various industries?
- e. What are the rights and responsibilities for costs, benefits and risk management?
- f. Where are the likely impacts of climate change on the values of GAB resources?

5.2 Water pricing and trading

Increased demand for GAB water is anticipated in key areas beyond the volume of water currently available under jurisdictional water planning frameworks. Planning and management approaches will need to be more flexible to accommodate this demand and include mechanisms that allow trading, relocation, water sharing rules, emergency supplies and other special circumstances. Additional research is required to investigate the best way to design and use market mechanisms, including water trading that meet the needs of water users and the requirements of the National Water Initiative.

Priority research questions

- a. What pricing principles are appropriate for GAB water?
- b. How could inter-jurisdictional trading occur?
- c. What tools or measures do we need to assess and respond to these issues?

Further information

Partnerships

The Committee is not well placed to directly undertake research. However, the Committee is well placed to

- provide leadership and focus strategic research
- broker relationships within the research community and between industry, policy and research groups
- build a knowledge base, and
- communicate research to a wide audience.

Scholarships

The GABCC has established two PhD top-up scholarships, each valued at \$5,000 per annum over three years. These top-up scholarships are intended to supplement the funding of primary scholarship holders who intend to conduct innovative research that will address priority research questions and themes identified in the *Research Prospectus*.

How to get involved

For further information on the *Research Prospectus*, potential for partnering or the PhD top-up scholarships, or to indicate your interest, please contact the GABCC Secretariat or complete a registration of interest form – see www.gabcc.org.au for further information.