



**GREAT ARTESIAN BASIN
STRATEGIC MANAGEMENT PLAN:
FOCUS AND PROSPECTS
2008-2015**



Citation: *Great Artesian Basin Strategic Management Plan: Focus & Prospects 2008-2015*

© 2009 Great Artesian Basin Coordinating Committee

GABCC Secretariat
PO Box 3318
MANUKA ACT 2603
AUSTRALIA

Phone: +61-2-6295-7573
Fax: +61-2-6295-9277
Email: gabcc@secretariat.com.au
Web: www.gabcc.org.au



GREAT ARTESIAN BASIN STRATEGIC MANAGEMENT PLAN: FOCUS AND PROSPECTS 2008-2015

ABOUT THIS DOCUMENT

The Great Artesian Basin (GAB) Strategic Management Plan (SMP) was published in 2000. Since that time, significant changes have occurred in technical, social and political contexts relevant to management of the GAB.

An end-of-stage review of the SMP was undertaken in 2006 and considered by the Great Artesian Basin Coordinating Committee (GABCC). The review indicated that the SMP needed to be brought up to date by incorporating contemporary issues and developments, and needed a tighter focus with fewer objectives, clearer strategies, and practical performance targets.

The SMP is sufficiently comprehensive to remain a useful guide to strategic management of the GAB resource at the whole-of-Basin scale. However, it does not contain sufficient detail or defined focus for implementation in the next phase, does not include adequate mechanisms for assessing and reporting progress, and does not identify responsibilities.

Rather than rewrite the SMP, the GABCC has developed two complementary documents:
Great Artesian Basin Strategic Management Plan: Progress and Achievements to 2008 - a retrospective analysis capturing changes in context which have taken place since 2000 and their implications for GAB management
Great Artesian Basin Strategic Management Plan: Focus & Prospects 2008-2015 - defining a sharper focus for implementation of the SMP during the period 2008-2015, and in particular those elements most affected by changes which have taken place since 2000.

This redefined focus will:

- continue to shape the coordinated approach being taken to whole-of-Basin management in matters which are beyond the capability or scope of individual jurisdictions
- aid communication with stakeholders; and
- help to guide the next rounds of State and Territory GAB water planning.

EXECUTIVE SUMMARY

This forward-looking document is termed **Focus & Prospects 2008-2015**. It includes:

- Outcomes sought for the Basin over the period 2008-2015 (3 pages)
- Overview of an Assessment and Reporting Framework to monitor and describe achievement, and evaluate the program (1 page)
- Simplified program logic for the SMP and other Basin-wide programs (**Attachment A** - 2 pages)

This document assumes that:

- demand for GAB water saved will increase its value
- the GAB will continue to be a vital resource for industries and other developments that are planned and some that are yet to be conceived; and
- the need to maintain the health of the GAB and the water dependent ecosystems that depend on it will not be diminished.

Implementation of GAB SMP objectives during the period 2008-2015 will need to:

- refocus the GAB as a vital resource with the capacity to support new developments that continue to add value for the community and the nation as a whole
- ensure that bore rehabilitation works continue, and that they have longevity
- ensure reforms in water management policy and industry policy
- ensure that robust State/Territory water planning continues, with due attention paid to whole-of-Basin issues

An approach to monitoring and communicating achievement of targets/desired outcomes is contained in the related document named: *GAB Strategic Management Plan Assessment & Reporting Framework 2008-2015*.

FOCUS & PROSPECTS 2008-2015: DESIRED OUTCOMES

A simplified program logic for the GAB Strategic Management Plan and related activities is summarised at **Attachment A**.

This logic has been used to shape an outcomes hierarchy and associated targets in the *GAB Strategic Management Plan Assessment and Reporting Framework*.

ASPIRATIONS FOR BASIN-WIDE MANAGEMENT

[Note: These Aspirations are written as if they have already been achieved.]

Key elements of the **Vision** for the state of the Great Artesian Basin *in 50 years*:

- The GAB is widely recognised and cooperatively managed as a resource of national importance
- Water managers have a sound understanding of the dynamic hydrological functioning of the GAB resource
- Recognising the benefits for all Australians, judicious management of GAB water:
 - maximises productivity within limits of sustainability, based on scientific evidence
 - retains options to allocate water for uses which may not yet have been conceived, for the benefit of future generations
 - enhances biodiversity and cultural values associated with GAB water; and
 - is integrated effectively with management of land and management of other water resources.

Improvements in the state of the Great Artesian Basin from judicious management of water are evident in the following

Key Outcomes (20 years):

- Basin pressure continues to be restored, to the levels required to meet balanced biophysical, cultural and socio-economic objectives in State/Territory plans, and this pressure can be sustained
- Wastage of water is reduced to negligible levels
- Improved productivity is enabled and sustained
- Land degradation from water use practices is reduced to negligible levels
- The 'natural' condition of biodiversity is enhanced by improved water distribution
- The health of GAB springs and groundwater dependent ecosystems is enhanced and sustained
- Cultural heritage assets associated with the GAB are recognised and protected

These Aspirations form the basis for **Resource Condition Targets** in the *GAB Strategic Management Plan Assessment and Reporting Framework*.

ENABLING ACTIVITIES & RESOURCES

Mechanisms, resources, processes and activities which are *already in place* to enable progress towards these Aspirations include:

- implementation of the GAB Strategic Management Plan
- enabling and supporting the GABCC and State GAB advisory bodies
- developing and implementing State water plans and regulatory frameworks
- implementing the GAB Sustainability Initiative and related inter-governmental agreements
- implementing national policy frameworks including the National Water Initiative, National Groundwater Action Plan
- integrating industry policy
- developing and refining models of GAB hydrology and operation
- developing and refining the database/bibliography on GAB springs and groundwater dependent ecosystems
- developing arrangements to monitor GAB flows and pressure
- integrating with regional NRM delivery frameworks and Caring for Our Country
- integrating with other Basin-wide initiatives and mechanisms e.g. Lake Eyre Basin Community Advisory Committee and Scientific Advisory Panel

PRIORITY ACTIVITIES & OUTPUTS

Priority activities which have *immediate results* in terms of biophysical/landscape outputs and non-biophysical/people outputs form the basis of **Output Targets** in the *GAB Strategic Management Plan Assessment and Reporting Framework*.

These recognise the values of the GAB at local, regional, State/Territory and national levels, and seek to address key threats to achievement of the Aspirations above.

These outputs include:

Biophysical/landscape outputs

- Capping and piping of priority bores
- Restored flow from bores which had ceased to flow under artesian pressure
- Improved, closed water delivery systems
- Water savings, which offer potential availability for future uses
- Reduced impact on GAB springs and groundwater dependent ecosystems, with biodiversity maintained and enhanced
- Reduced salinity and erosion from replacement of open bore drains with closed systems
- Reduction in weeds and feral animals associated with bore drains
- Reduced Greenhouse gas emissions from uncontrolled bore flow

Non-biophysical/people outputs

- Integrated on-farm plans for management of water in the landscape
- Elimination of wasteful practices
- Community awareness and education of Basin values, sustainable practices, and emerging knowledge and technology
- Clear definition of rights and responsibilities of all managers of Basin water
- Clear and assured water user access/entitlements
- Higher value uses enabled for GAB water
- Higher economic and social returns from water used

Priority project/strategy change activities

- Projection of landholder and government costs to take long-term responsibility for infrastructure
- Water user education & extension activities
- Effective network to monitor Basin flows and bore performance, with metering as required
- Identification of priority/threshold bores (those in or out of coverage by GABSI)
- Understanding of the Basin water balance/flow system, including vertical leakage, recharge/discharge relationships, to improve modelling and predictive capability
- Projections of trend in resource condition based on data and scientific evidence
- Scientist & researcher forums and other knowledge sharing opportunities
- Collaboration in collection and sharing of data e.g. hydrological data with the Bureau of Meteorology
- Location and mapping of natural discharge springs
- Measurement of spring biodiversity and flow, enabling assessment of impact of decisions
- On-ground management of springs for biodiversity and cultural values
- Indigenous participation in spring management
- Collaborative engagement and joint activities with other Basin-wide initiatives and mechanisms e.g. Lake Eyre Basin Community Advisory Committee, and Murray-Darling Basin Community Committee

INTERMEDIATE OUTCOMES TO 2015

Over the remainder of the term of the Strategic Management Plan, intermediate outcomes are sought to advance and demonstrate progress towards the Aspirations above.

These are built on priority activities, and will be evident in:

- aggregate changes in how the Great Artesian Basin is managed; and
- practice and attitude change in allocation, management and use of water from the Basin.

These **Intermediate Outcomes** form the basis for **Management Action Targets** in the *GAB Strategic Management Plan Assessment and Reporting Framework*, and include:

- Changed expectations of GAB prospects including future uses, and valuing of GAB resources
- Awareness that the main task in judicious water management in the GAB now extends beyond 'fixing up', and continuing to restore pressure, to encompass on-going management for diverse objectives
- Explicit address of GAB water management in State/Territory water plans, catchment action plans, regional investment strategies, and bilateral agreements, acknowledging groundwater and linking to land management
- Explicit trade-offs between objectives in State/Territory water plans
- Explicit address of GAB objectives in development of water trading protocols (inter- and intra-jurisdictional) and associated water pricing
- All priority/eligible high flowing bores capped and piped
- Changed practices/use by industry
- Changed practices/use by towns
- Closed water delivery systems for stock as part of changed grazing property management
- Awareness and uptake of water infrastructure technology
- Improved quality of life for landholders/managers due to improved water management
- Secure management of infrastructure with provision for long-term maintenance
- Identified socio-economic benefits of judicious water management
- Knowledge of resource condition and trend
- Improved metering and monitoring, with data sharing to agreed standards
- Recognition in management of likely impacts of climatic instability on recharge areas and mechanisms, groundwater-surface water interactions, and demand for GAB water
- Management by aquifer
- Enhanced management of groundwater-dependent ecosystems including springs, and addressing subsurface ecosystems
- Awareness of biodiversity issues and impacts in water remote areas
- Awareness of cultural heritage assets and protection in legislation, State/Territory plans, and regional NRM plans
- Partnerships with regional NRM bodies who lead on land management with awareness of Basin issues and needs

ASSESSMENT & REPORTING FRAMEWORK – OVERVIEW

Targets / Desired Outcomes

The GABCC is consulting with key stakeholders on a *GAB Strategic Management Plan Assessment and Reporting Framework* to support this document.

The Framework defines an approach to monitoring and communicating achievement of targets/desired outcomes, including:

- **Resource Condition Targets** (20+ years) derived from Aspirations for Basin-wide management
- **Management Action Targets** derived from Intermediate Outcomes (to 2015)
- **Output Targets** derived from **Priority Activities** (immediate results)

This will include Indicative Measures for targets/desired outcomes which apply within the term of the Strategic Management Plan (i.e. by 2015).

This recognises that Management Action Targets and Output Targets contribute to improvements in resource condition.

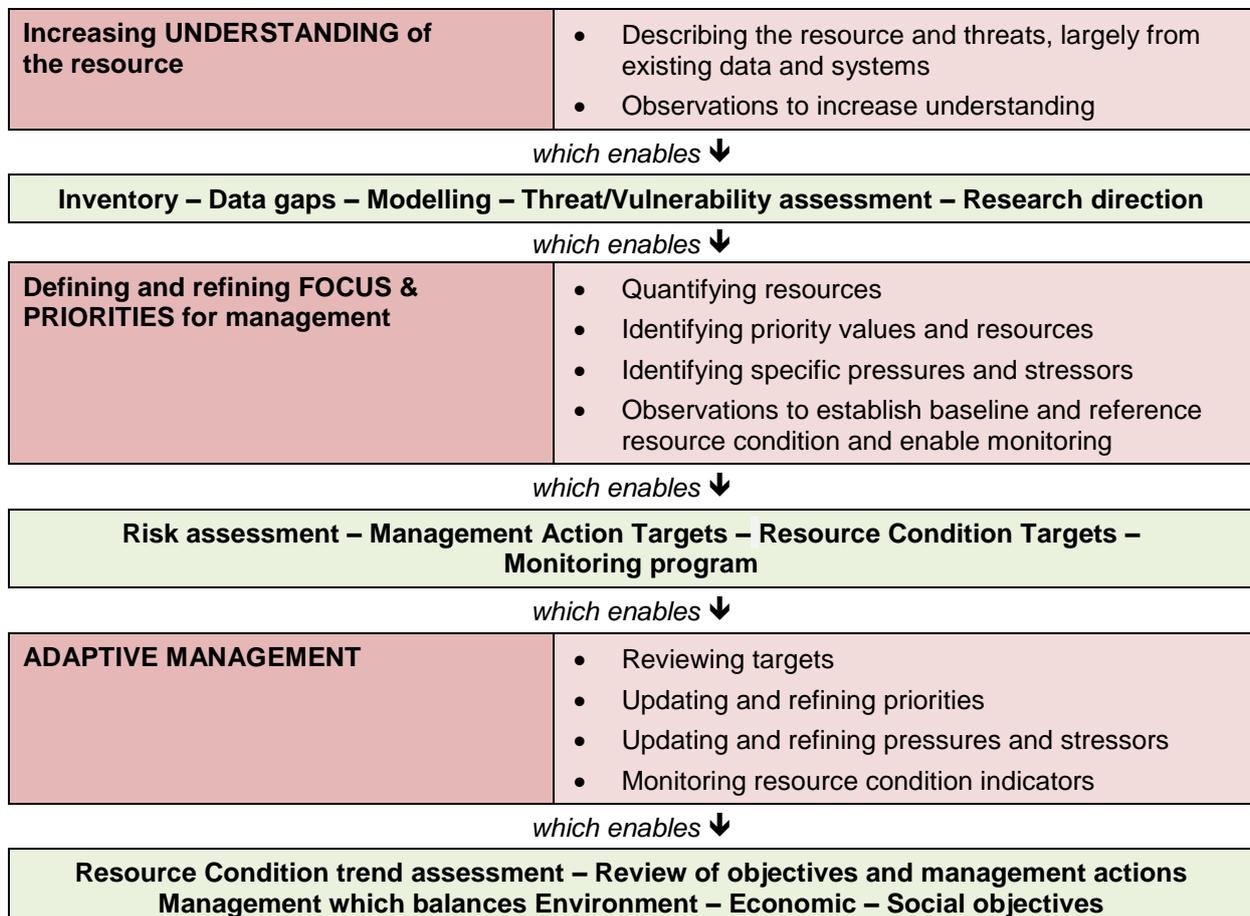
In seeking to implement this Framework, it is acknowledged that:

- assessment and reporting against GAB targets takes place within the context of other requirements and expectations for NRM assessment and reporting
- although some information can be obtained from existing data sets, additional monitoring is likely to be required for some targets
- responsibility for measurement and reporting against targets is currently, and will continue to be, spread across levels of government and regional NRM bodies
- any expansion of assessment and reporting has direct and indirect resource implications for those responsible
- it will take time for some parties to develop sufficient capacity to implement comprehensive assessment and reporting

Linkages to Management

This necessitates an approach to assessment and reporting with three levels which are

cumulative and sequential, and which support progressive management improvement:



SIMPLIFIED PROGRAM LOGIC FOR GAB STRATEGIC MANAGEMENT PLAN AND RELATED ACTIVITIES

Hierarchy	Outcome areas					
Level 1 Goals (20+ years)						
Vision for the state of the GAB (50 years)	GAB is recognised and cooperatively managed as a resource of national importance	Sustainable management retains options for future uses of GAB water	Biodiversity and cultural values are enhanced by GAB water management	Productivity is enhanced by GAB water management	The dynamic GAB resource is well understood	
Improvements in the state of the GAB [Basis for Resource Condition Targets]	Infrastructure security	Continued restoration of pressure (partial)	Improvement in condition of GAB springs and other groundwater dependent ecosystems	Improvement in productivity based on judicious use	↑	
	↑	Reduction in water wastage	Improvement in 'natural' biodiversity	Reduction in land degradation due to unwise water use		
		↑	Improved protection of cultural heritage assets	↑		
Level 2 Intermediate Outcomes (to 2015)						
Aggregate changes in how we manage the GAB	Increased taking of responsibility for infrastructure	Capping and piping of bores	Enhanced management of GDEs including springs & subsurface ecosystems	Socio-economic benefits of judicious use	Improvement in ability to manage by aquifer	
Practice & attitude change [Basis for Management Action Targets]	↑	Secure management of infrastructure - long-term maintenance	Closed stock water delivery systems	Attention paid to management of issues in water remote areas	Improvement in quality of life for landholders due to water management	↑
		Awareness/ uptake of water infrastructure technology	↑	Attention paid to management of cultural heritage assets	Integration with NRM planning and delivery	
		Changes in grazing property management		Establishment of regional partnerships - leading on land mgt & GAB-aware		
		Changes in use by industry		↑		
		Changes in use by towns				
Changes in expectations of GAB prospects (including future uses)	↑					

Level 3 Activities & Outputs (Immediate results)					
Biophysical/ landscape outputs [Basis for Standard Output Targets]	↑	Capping and piping for priority bores	Reduction in salinity and erosion caused by bore drains	↑	↑
		Restored flow from sub-artesian bores	Reduction in weeds & feral animals supported by bore drains		
		Improved water delivery systems	Reduced Greenhouse gas emissions from bores		
		Water saved + potential availability for other uses			
Non-biophysical/ people outputs [Basis for Standard Output Targets]	Enhancement of community awareness & education	↑	↑	Projection of landholder & government costs to take responsibility for infrastructure post GABSI scheme	Increase in understanding of water balance/flow – vertical leakage; recharge/ discharge relationships
	Assurance of water user access/ entitlements			Development of integrated on-farm plans	Adoption of agreed data transfer standards
	Clear definition of rights & responsibilities				
Project/strategy change activities [Basis for Standard Output Targets]	Coordinated management and planning across jurisdictional borders	Identification of priority/ threshold bores (in or out of GABSI)	Adaptive on-ground management of springs	↑	Measurement of spring biodiversity and flow
	Expanded water user education & extension		Indigenous participation in spring management		Mapping & location of springs
					Establishment of Monitoring network
					Projections of trend in resource condition
Level 4 Enabling activities and resources					
Mechanisms, processes, resources and activities (existing)	Implement Strategic Management Plan	Enable and support GABCC & State advisory bodies	Implement GABSI including Inter-Governmental Agreements	Implement State water plans	Implement policies including NW1, Water for the Future & C4OC
	Refine hydrogeological models	Implement monitoring network and systems	Integrate with Industry policy	Integrate with NRM frameworks and standards	Implement regulatory frameworks