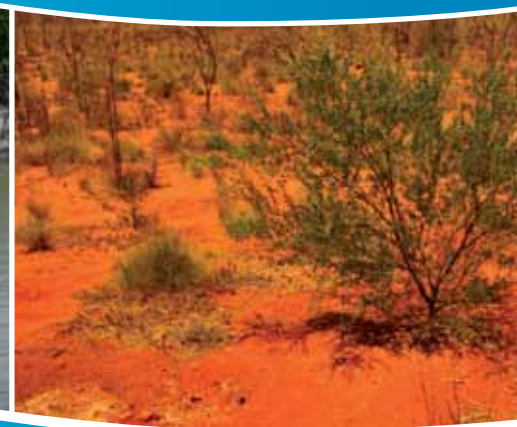




Government of **Western Australia**
Department of **Water**

La Grange

groundwater allocation plan



Looking after all our water needs

Water resource allocation
and planning series
Report no. 25
February 2010

Please note the update to the La Grange groundwater allocation plan as of September 2025

The Department of Water amended the La Grange water allocation plan in September 2025 through the La Grange groundwater allocation statement (the statement).

The statement replaces the water licence assessment approach in the La Grange plan and details the current understanding of the aquifer and its dependent values (Table 1).

The statement includes:

- updated policies to guide applicants during the licence assessment process
- how Native Title rights and interests, Aboriginal heritage and cultural values will be considered during the licence assessment process
- updated information on ecological and cultural values supported by groundwater and how these values should be considered during the licence assessment process
- information about ongoing and future investigations and planning.

Table 1 Sections of the La Grange groundwater allocation plan 2010 that are replaced or updated by the statement

La Grange groundwater allocation plan 2010		La Grange groundwater allocation statement 2025	
Page	Original plan content being updated	Page	Updated plan content in the statement
5–13	Chapter 3.1–3.3 Considerations for water management in La Grange	8–17	Additional information in Chapter 3
22–25	Chapter 6.1, Table 3: General licensing policies	20–26	Replaced by Section 4.3, Table 2: Updated local water licensing policies specific to the La Grange plan area
26–27	Chapter 6.2, Table 4: Licensing rules specific to the Coastal Management Zone Chapter 6.2, Table 5: Licensing rules specific to the Mandora Management Zone	27	Replaced by Section 4.4, Table 3: Updated local licensing policies for water management zones in the La Grange plan area – Policy group A7
28	Chapter 6.3: Regional Monitoring Program	34–36	Replaced by Chapter 5: Updates to monitoring
34–35	Appendix A, Table 8: Decision matrix for determining the level of hydrogeological assessments for water licence applications	21–22	Replaced by Section 4.3, Table 2: Updated local water licensing policies specific to the La Grange plan area – Policy group A2

For more information please contact the North West District office in Kununurra on 08 9166 4100 or email allocation.planning@water.wa.gov.au.



La Grange

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Department of Water

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Report no. 25

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Foreword

The *La Grange groundwater allocation plan* provides the Department of Water's direction for the licensing and allocation of the groundwater resources in the La Grange groundwater subareas.

This plan covers the groundwater resources of the superficial Broome Sandstone aquifer in the La Grange north and La Grange south subareas of the Canning Kimberley groundwater area. This coastal groundwater is currently used for pastoralism, tourism and mineral exploration and sustains wetlands and cultural values. While current water use is low, it has the potential to increase through future development.

We have developed the *La Grange groundwater allocation plan* to protect the area's groundwater-dependent environmental and cultural values, while providing users with secure access to water.

A handwritten signature in black ink, which appears to read 'K Taylor'.

Kim Taylor

Director General, Department of Water



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Summary

What is allocation planning?

The Department of Water uses allocation plans to manage how water is taken from groundwater and surface-water systems. Water allocation plans set an upper limit (allocation limit) on the amount of water that can be taken for use and include allocation policies to guide the assessment of water licence applications. The allocation limit and licensing policies detailed in this plan are designed to meet the plan's objectives stated in Section 2.2.

Why is the Department of Water developing an allocation plan in this area?

Work on this plan began in 1999 in response to the Western Agricultural Industries irrigated agriculture proposal and is informed by the La Grange Groundwater Committee (which operated from 1999 to 2001), as well as ongoing interaction with the area's traditional owners and other stakeholders. We are finalising the plan to fulfil the commitments we made to the La Grange Groundwater Committee.

What is the status of groundwater resources in the La Grange subareas?

This plan covers the superficial Broome Sandstone aquifer, which is the most accessible resource. Current use in the La Grange subareas is low – about 6.7 GL – representing approximately 13 per cent of the allocation limit.

How have we considered the public's submissions in finalising the plan?

We have improved this plan by considering the public's submissions received during the draft consultation and public comment period and making the appropriate changes. Please see the *La Grange groundwater allocation plan: Statement of response* for our response to submissions and how we have changed the plan.



Chapter one

La Grange groundwater allocation plan

1.1 The plan's purpose

The plan's purpose is to manage groundwater resources in the La Grange area to maintain environmental, social and cultural values while providing for the sustainable use of water for commercial and stock and domestic use. The principles set out in Chapter 2 expand on this purpose and provide a context for the plan's management objectives.

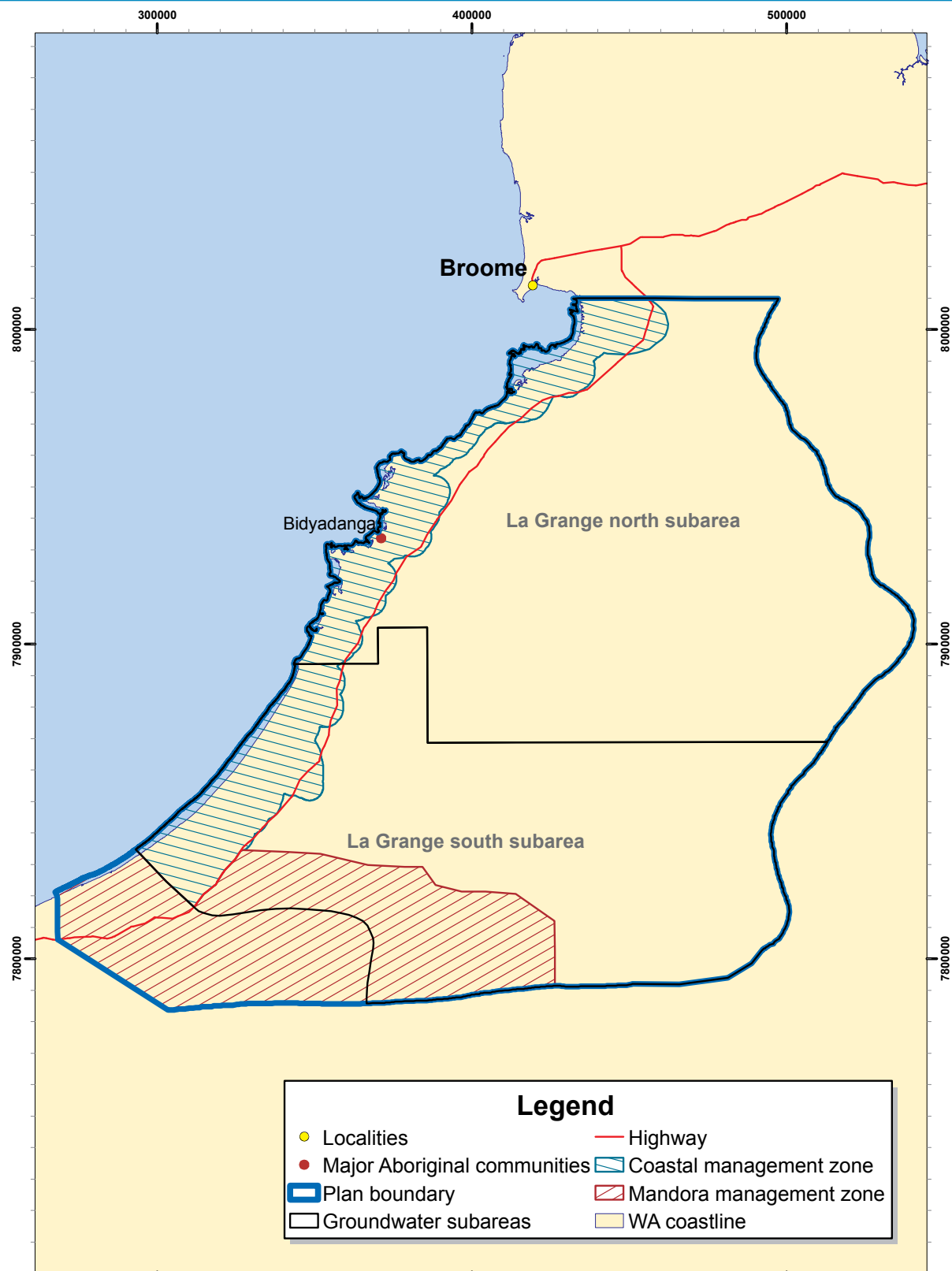
1.2 The plan area

The plan covers the groundwater resources of the superficial Broome Sandstone aquifer (uppermost aquifer) in the La Grange north and south subareas and a portion of the Canning Pardoo subarea covered by the Mandora Marsh management zone. The subareas are within the Canning Kimberley groundwater area. This area was proclaimed in 1997 under provisions of the *Rights in Water and Irrigation Act 1914* (WA). The Canning Kimberley groundwater area covers the western portion of the sedimentary aquifer of the Canning Basin.

The plan area is located south of Broome (Figure 1).

1.3 When and for how long will this plan apply?

The *La Grange groundwater allocation plan* will come into effect from the date the final plan is released. This plan will be valid until the Department of Water reviews and updates or replaces it.



Sources

The Department of Water acknowledges the following datasets and their custodians in the production of this map:

[Dataset Name]-(CUSTODIAN ACRONYM)-(Date last updated)

WA Coastline, WRC (Poly) - DoW - 13/10/2000

Water Management Zones - DoW - 10/2009

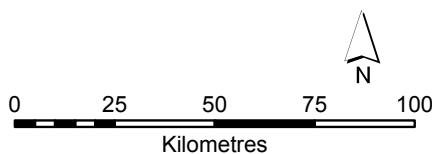
State Roads - DOLA - 05/11/1999

Water Allocation Plans - DoW - 10/2009

Localities - AUSLIG - 15/12/1998

Western Australia Towns - DJI - 12/07/2001

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Figure 1
Location of the La Grange groundwater subareas

Chapter two

What we want this plan to achieve

2.1 Principles that guided the plan's development

The following principles have guided the Department of Water in developing the *La Grange groundwater allocation plan*.

- Water use will be managed to minimise the risk to water-dependent values and existing users.
- Water allocation limits will be set to meet the needs of all water-dependent values including Ramsar sites and national wetlands of importance, as well as the region's cultural and social values.
- Water allocation limits and policies will provide security for community and domestic water supplies.
- Aboriginal connections to groundwater will be recognised and protected in water allocation limits and licensing policies.
- The importance of horticulture, agriculture and other development to the future economic needs of the region and community will be recognised.

2.2 Objectives

The objectives for managing groundwater levels and abstraction in the La Grange area are based on the considerations in Chapter 3.

Resource objectives

Objective 1

Maintain the saltwater/freshwater interface to avoid impacts on existing near-coastal water users, water-dependent values and community water supplies.

Objective 2

Manage groundwater allocation to avoid impacts on Mandora Marsh and the flow at Mandora Springs.

Objective 3

Minimise the impact of water abstraction on all water-dependent values.

Management objectives

Objective 4

Manage new licence applications to avoid impacts on reliability of water supply to current users.

Objective 5

Conduct the licence assessment process in recognition of Native Title holder's rights.



Chapter three

Considerations for water management in La Grange

3.1 Hydrogeology

The La Grange groundwater subareas consist of a hydrogeological system with two main aquifers: the Broome Sandstone aquifer and the Wallal Sandstone aquifer (Figure 2).

The Broome Sandstone aquifer contains a fresh groundwater resource. The aquifer begins on the plan area's eastern edge and reaches its greatest thickness at the coast. The coastal saltwater interface is maintained by throughflow within the aquifer from the east towards the coast. The exact position and extent of this saltwater interface has not been studied in detail.

Recharge, throughflow and the saltwater interface

Recharge is the term used to describe the amount of water entering an aquifer. The water may come directly from rainfall seeping into the ground, seepage of surface-water runoff or leakage from adjacent or overlying aquifers. Once water has entered the aquifer it will tend to flow towards a lower-lying area: this movement of groundwater is known as throughflow.

Throughflow is towards the coast in the La Grange area. This throughflow interacts with saline seawater (Figure 2) and this interaction is known as the saltwater interface.

Abstraction of groundwater can reduce throughflow and therefore allow the saltwater interface to move inland and impact on the environment and water users. Typical problems caused by inland movement of the saltwater interface are increased salinity of water pumped from coastal bores and saline water entering groundwater-dependent ecosystems in coastal areas.

The Department of Water considers the saltwater interface to be critically important to managing the La Grange groundwater resource, a position supported by Indigenous knowledge of the resource. Thus the saltwater interface is a high priority for management.

3

Considerations for water management in La Grange

The Wallal Sandstone aquifer contains a relatively brackish to saline groundwater resource that sits under the impermeable Jarlemai Siltstone. This siltstone layer prevents connectivity between the two aquifers. The deeper Wallal aquifer is impractical to access due to depth and high salinity and is not considered in this plan.

The Karajarri Native Title claim was subsequently determined over much of the La Grange subareas, including areas that WAI needed to access for groundwater investigations. WAI were unable to negotiate access to the land for exploratory drilling and thus did not undertake detailed hydrogeological investigation at that time.

In 2004 the MOU that supported the project and the investigation program was not renewed by the state government. While the community consultation process and the studies into ecological and cultural values studies were complete, the drilling program was not finished.

Western Agricultural Industries irrigated agriculture proposal

In the late 1990s Western Agricultural Industries (WAI) entered into a Memorandum of Understanding (MOU) with the state government that set out parameters for a feasibility study into large-scale irrigated cotton production in the La Grange area.

The MOU stipulated requirements for a major investigation into the La Grange area's groundwater resources, a community consultation process and other studies into ecological and cultural values.

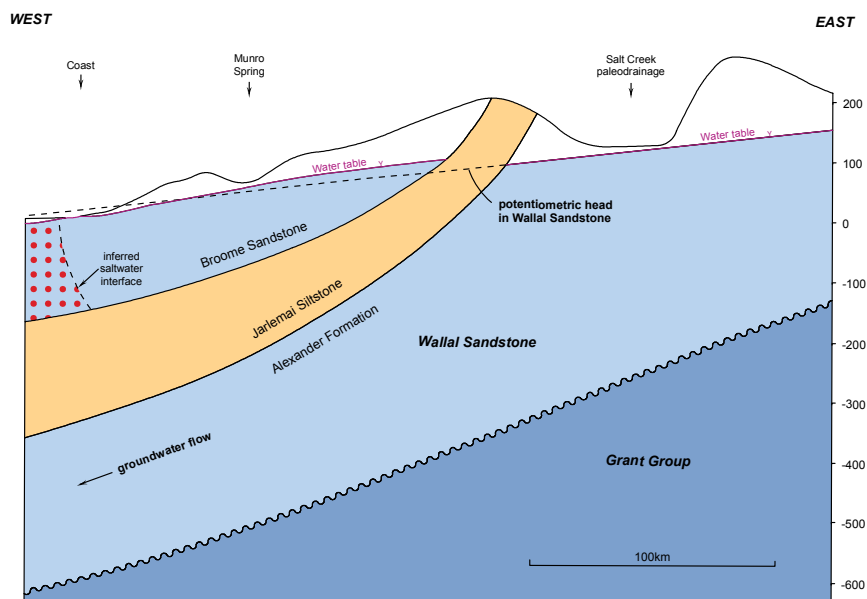


Figure 2
Hydrogeological cross-section

The available hydrogeological information for the La Grange groundwater subareas is adequate for this plan's purposes. In accordance with *Operational policy no. 5.12 - Hydrogeological reporting associated with a groundwater well licence*, the department will require proponents to provide hydrogeological information as part of the licence assessment process at a level appropriate to the volume of use and risk to the resource.

Water users and mineral and petroleum explorers may hold useful hydrogeological information in the form of bore logs and pump test data. Such information would help to improve our understanding of the resource and may be used in future planning.

Action 1 - La Grange management

We will request bore logs and pump test data from bore owners. Holders of mineral and petroleum bore logs will also be contacted for further information.

3.2 Ecological considerations

V & C Semeniuk Research Group (2000) reviewed and assessed the region's wetlands and identified nine wetland zones of significance in the La Grange groundwater subareas (see Figure 3 and Appendix B). Other groundwater-dependent ecosystems may exist in the La Grange groundwater subareas and further work is being conducted through a collaborative Dampierland project to improve our knowledge.

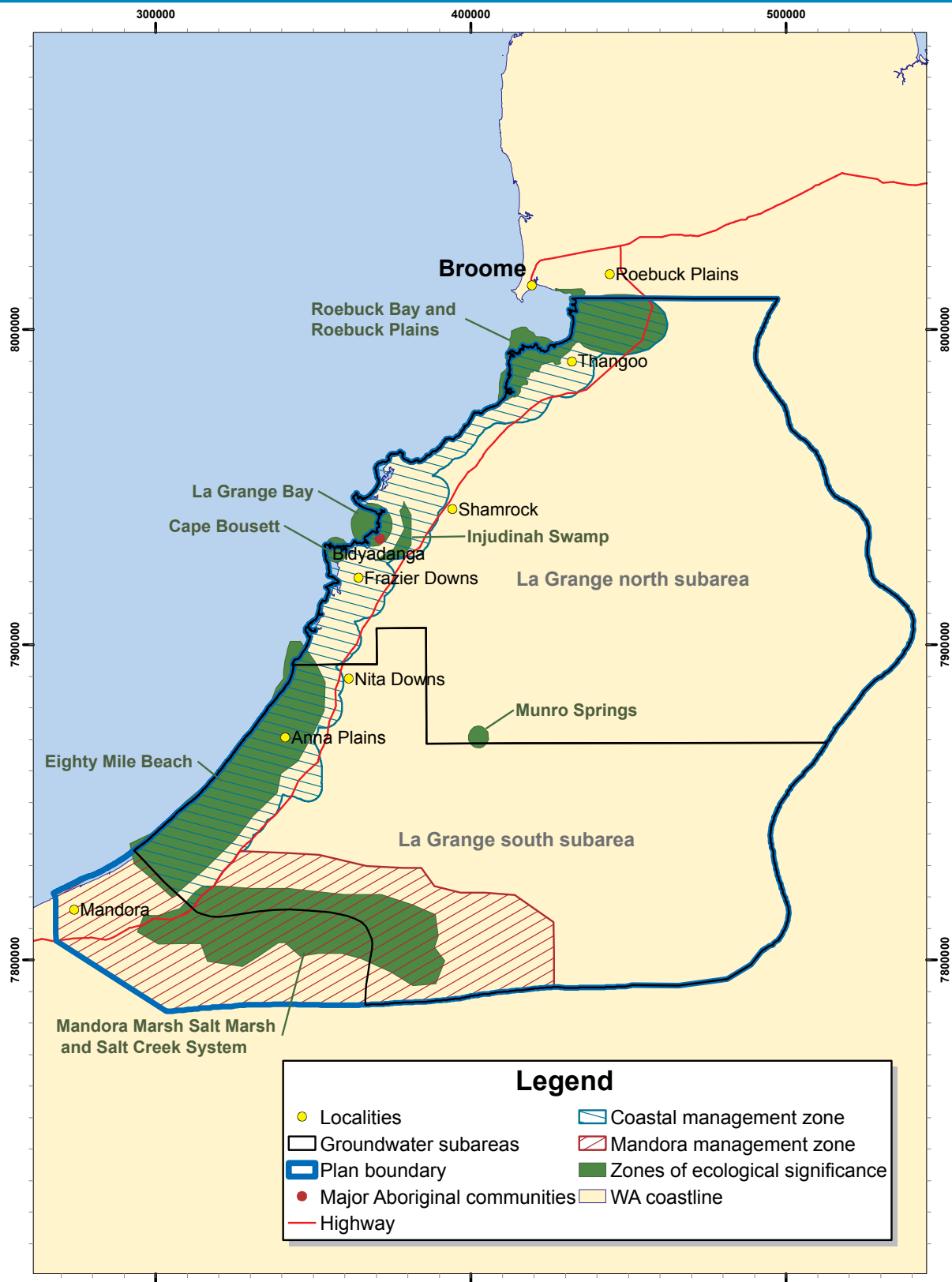
The wetland sites include springs, playas, mounding of fresh water, soaks or expressions of linear seepage that support the wetlands. The wetlands and their associated groundwater-dependent species are supported by a range of hydrogeological mechanisms, as described by V & C Semeniuk Research Group.

Three sites are Ramsar-listed wetland zones:

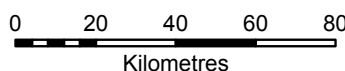
- Eighty Mile Beach wetland system (including the Anna Plains wetland system)
- Mandora Marsh wetland system
- Roebuck Bay wetland system.

The significance of the Mandora Marsh wetland system has been identified by traditional owners and highlighted in an assessment conducted by the then Department of Conservation and Land Management in 1999. It found that Mandora Marsh contains an unusually rich and diverse number of wetland types of both saline and freshwater origin. Extending about 50 km inland and surrounded by desert, the area supports the most-inland mangrove community in Australia. Raised peat bogs and mound springs are also of considerable scientific interest. In addition, the area contains populations of threatened plants and animals including a species of bush tobacco, *Nicotiana hetherantha*, and the bilby, *Macrotis lagotis*. Several new species of flora and fauna have also been discovered at Mandora Marsh.

An investigation into the marsh's cultural values (Yu 2000) specified the particular significance it represented to the traditional owners. The department has set strong rules to protect Mandora Marsh in collaboration with the traditional owners (see Section 6.2).



Sources
The Department of Water acknowledges the following datasets and their custodians in the production of this map:
[Dataset Name] - (CUSTODIAN ACRONYM) - (Date last updated)
WA Coastline - WRC (Poly) - DoW - 13/10/2020
Water Management Zones - DoW - 10/2009
Zones ecological significance - Semiruk Rth Group - 2000
State Roads - DOLA - 06/01/1999
Water Allocation Plans - DoW - 10/2009
Localities - AUSLIG - 15/12/1998
Western Australia Towns - DJI - 12/07/2001
Groundwater Subareas - DoW - 11/03/2009



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Figure 3
Zone of ecological significance

Environmental water

The department is responsible for managing groundwater resources on a sustainable basis in accordance with *Statewide policy no. 5: Environmental water provisions policy for Western Australia* (WRC 2000a).

In the absence of site-specific ecological water requirements, the department manages the impacts on the environment through a risk-based assessment of water licences and inclusion of appropriate monitoring and reporting requirements to minimise impacts. We have established management zones (Mandora management zone and coastal management zone) with additional rules to protect the identified groundwater-dependent values in the La Grange subareas. See Section 6.2 for more detail.

Information gaps in determining the ecological water requirements for sites of significance include:

- identification of locally specific groundwater-dependent ecosystems
- sensitivity of groundwater-dependent ecosystems to water regime changes due to groundwater abstraction
- sensitivity of groundwater-dependent ecosystems to water quality changes due to the taking or use of water
- sensitivity of other biota to changes in groundwater-dependent ecosystems.

The department will identify what investigative work is needed to define an ecological water requirement. This work would be a first step toward identifying an environmental water requirement to inform future water allocation plans.

Conservation areas

In 2015, the state government will be excising portions of some pastoral leases for inclusion in conservation reserves. An extended process of negotiation has taken place to nominate areas for excision, some of which are within the La Grange subareas. Coastal and southern parts of Anna Plains and coastal parts of Thangoo stations will be excised: these areas include parts of the three Ramsar-listed wetlands mentioned in Section 3.2.

See Section 6.2 for information on how we will manage key water-dependent environmental values.

3.3 Cultural and social considerations

Cultural values

The La Grange groundwater subareas come under the traditional custodianship of Aboriginal people in four related language groups (Nyangumarta, Karajarri, Nyikina-Mangala and Yawuru) who have identified sites and broader values of cultural significance. These Aboriginal groups have a strong existing connection to and custodial responsibilities toward the entire landscape and its underlying water regardless of specific features.

There are at least eight Aboriginal communities located within the plan area – Bidyadanga being the largest in population. The coastal zone is an important area for its Indigenous residents but there is also special significance assigned to the groundwater resources and surface-water expressions of groundwater, and the groundwater throughflow that maintains them.

Action 2 – La Grange management

We will identify the local investigations required to determine an ecological water requirement.

3

Considerations for water management in La Grange

A study of the area's cultural values and the links with ecological features was carried out by Sarah Yu in 2000 and described in *Ngapa kunangkul (living water): An Indigenous view of groundwater*. The study highlighted three key characteristics of groundwater that were important to the local people:

- the interface between salt and fresh water along the coastal zone
- the importance of groundwater-dependent ecosystems including jila (permanent waterholes), springs, soaks and other 'on-top' waters
- recharge of the underground aquifer to maintain water cycles.

In the study 131 sites of specific cultural value were recorded, including areas along the coastal zone that are groundwater-dependent (e.g. Injudinah Swamp), springs and soaks along the coast and inland wetlands such as Munro Springs.

These places are significant for one or more reasons – as fishing and hunting places, for spiritual reasons and as law sites. At a number of sites, drinking water is sourced from soaks or shallow groundwater. These places may be susceptible to the lowering of regional groundwater levels and decisions about water licences will take their cultural values into account.

The Department of Water (previously the Water and Rivers Commission) consulted with local Aboriginal groups as part of a water planning process triggered by WAI's large-scale cotton development proposal in 1999. The consultation identified a strong connectivity between land and groundwater resources. Aboriginal people expressed serious concern about the effect of drilling bores and water abstraction on their ability to look after country. Aboriginal people and communities reiterated this message during consultations in 2008 and 2009.

Environmental water provisions

Statewide policy no. 5: Environmental water provisions policy for Western Australia describes the protection of in situ water-dependent values and considers ecological, social and economic values. Cultural values are acknowledged as requiring specific consideration, which we have done in this plan. We are working to revise the *Statewide policy no. 5* to explicitly include cultural values.

Environmental water provisions are criteria and measures designed to maintain water-dependent values at a low level of risk.

Water abstraction can affect groundwater-dependent values in a number of ways – depending on factors such as geological formations and the underground water flow that supports them. It is therefore important to consider both localised and regional changes in water use when developing criteria and measures to avoid impacts.

Native Title

Much of the La Grange groundwater subarea is covered by the Karajarri Native Title determination and to a lesser extent by the Rubibi and Nyangumarta determinations (Figure 4 and Appendix D). A Native Title determination represents legal recognition of an applicant's traditional and continuing connections to the land and water in the determined area.

The department considers Native Title decisions in its water licence assessments. Native Title holders, or their representative body, will be notified of new applications to take water where Native Title exists and given an opportunity to comment as per Policy 18 in Table 3 (Section 6.1). Native Title holders will also have the opportunity to provide submissions when applications are advertised publicly as per Policy 4 in Table 3.

Karajarri Native Title determination

The Karajarri Native Title determined areas (Area A FCA 660 and Area B FCA 1156) include exclusive and non-exclusive Native Title rights to a sizeable area amounting to over half of the La Grange groundwater subareas.

Rubibi Native Title determination (Yawuru people)

The northern portion of the La Grange north subarea coincides with the Rubibi determined area (FCA 607). The area covers a portion of the subarea extending down to Thangoo Station's southern boundary.

Nyangumarta Native Title determination

The Nyangumarta determination (FCA 654) coincides with the southern portion of the La Grange south subarea, covering most of the Anna Plains pastoral lease and the Mandora Marsh wetland system. A large part of the Nyangumarta claim that falls within the La Grange south subarea coincides with the Mandora management zone (Figure 1) and additional rules apply to this area.

Aboriginal Heritage Act 1972

Aboriginal heritage sites are places of significance to Aboriginal people that are listed on the Aboriginal Site Register held under Section 38 of the *Aboriginal Heritage Act 1972* (WA). Many of these sites in the La Grange groundwater subareas are found near various water sources, such as rivers, springs, creeks, swamps and wetlands.

See Policy 19 in Table 3 (Section 6.1) for further information on our approach to Aboriginal heritage.

Social values

Social values are non-consumptive uses of water for social purposes such as:

- recreational and tourism pursuits (camping, swimming, paddle sports, recreational fishing)
- landscape and aesthetic values such as experiencing a sense of wilderness and observing nature
- educational and scientific values
- heritage values.

Through allocation planning, the department tries to identify the places where social and cultural values are linked to groundwater. Where required, we may quantify the water needed to maintain the values, referred to as a social water requirement. The social water requirement may be defined as a water level or water regime that needs to be met to protect the social and cultural values at a particular location.

The La Grange groundwater subareas encompass significant sites of social value, some of which are groundwater-dependent and others, such as Eighty Mile Beach, which are not. However, social values in the La Grange groundwater subareas have not been comprehensively researched.

We will produce a report on water-dependent sites of social value to inform future water allocation plans.

Action 3 – La Grange management

Before this plan is reviewed, we will report on sites with in situ water dependent values.

3.4 Community issues

In response to increasing demand for water in the West Canning Basin, in 1999 the department began the La Grange groundwater planning process. We consulted extensively with local stakeholders and, as a result, established a community reference group – the La Grange Groundwater Committee – to work with the department.

Through the engagement process, community members were able to express their views on the use and management of the area's water resources.

In the lead up to this plan's release, in 2008 and 2009 the department further consulted with local stakeholders. We identified key issues and community interests that helped inform the development of the water allocation rules and policies in this plan (Table 2).

The department released the plan for a three-month public comment period in September 2008. We have used the submissions to improve the final plan. For more information on the comments received throughout the public review process and our responses, please see the *La Grange groundwater allocation plan: Statement of response*.

Table 1

Key community issues identified during the plan's development and public comment period

Issue no.	Community Issues	How will these issues be addressed?
1	The potential negative impact on local area bores (stock and drinking water) through increased salinity or drawdown effects.	See Policy 2 in Table 3 for new developments and applications to take water.
2	The potential for pesticides and fertilisers to leach into the groundwater and affect local stock and drinking water sources.	See Policy 16 in Table 3.
3	The availability and suitability of groundwater for existing or future agricultural activities in the area such as intensive horticulture and irrigation.	See Section 5.2 and Chapter 2.
4	The participation of traditional owners, who have extensive knowledge of the area, in the assessment of applications to take water for potential developments.	See Chapter 2 and Policy 18 in Table 3 on Native Title.
5	The need for a clear departmental water allocation process.	This plan provides transparency in the planning process and decisions made to manage water resources in the La Grange groundwater subareas.
6	The possibility of tradeable water rights if the water resources become fully allocated.	See Policy 20 in Table 3 for water trading.
7	How will the public know when the management triggers specified in Table 7 are reached?	See Action 7 in Table 6.
8	The plan must provide adequate protection for important water-dependent ecological and cultural sites.	See Appendix C for how the allocation limit protects water-dependant values at a regional scale. See Section 6.2 for management zones that protect specific values and Policy 2 in Table 3.
9	The reservation of water for Indigenous commercial access.	See Management action 6 in Table 6.

Note: All issues raised during the public comment period are addressed in *La Grange groundwater allocation plan: Statement of response*

Chapter four

Allocation limits for the water resources in the La Grange subareas

4.1 Allocation limits

An allocation limit is the volume of groundwater available for abstraction on an annual basis. The Department of Water sets allocation limits and licensing policies to manage the impacts of water use on the resource and water-dependent values. The department has set allocation limits for the La Grange subareas to minimise the impacts of the annual groundwater abstraction regime on the resource (both its quality and quantity), its dependent ecosystems, and its social and cultural values.

The department has set allocation limits for each subarea in the unconfined Broome sandstone aquifer (Table 2).

Appendix C details the process we used to set allocation limits for the La Grange groundwater subareas. We will review allocation limits if monitoring shows a significant change in aquifer condition. We will use information from investigations, including water level and water quality trends, to revise allocation limits if required.

4.2 La Grange subareas

The boundary of the La Grange groundwater subareas is based on the hydrogeology of the underlying Broome Sandstone aquifer.

In this plan the original La Grange subarea has been split into the La Grange north subarea and La Grange south subarea. These boundaries have created zones of management that take into account potential intensive horticultural growth in the northern area and possible mining towards the south.

4.3 Water availability

For this plan, water availability at a particular date is the allocation limit minus the existing uses of water (licensed use, exempt use). This gives the volume of water currently available for licensing (Table 2).

Water availability will change as new licences are issued or existing licences are cancelled.

Please contact the department's Kimberley regional office on (08) 9166 4100 for up-to-date information on water availability.

Allocation limits for the water resources in the La Grange subareas

Table 2

Water available in the La Grange groundwater subareas

Subarea	Aquifer	Allocation limit (kL/year)	Water currently licensed and committed (kL/year)	Estimate of exempt and unlicensed community, domestic and stock use (kL/year)	Percentage of resource licensed, committed, exempt and unlicensed (rounded)	Balance available for future licensing (kL/year)
La Grange north	Broome Sandstone	35 000 000	2 591 275	1 500 000	12%	30 908 725
La Grange south	Broome Sandstone	15 000 000	1 120 000	1 500 000	17%	12 380 000
TOTAL		50 000 000	3 711 275	3 000 000	13%	43 288 725

Note: Allocations and licensed allocations as at November 2009

Chapter five

Existing allocation and use of groundwater

5.1 Current water use

Licensed abstraction of water in the La Grange groundwater subareas is currently low. Existing licensed water abstraction of approximately 3.7 GL/year is used for horticultural developments, pasture production, domestic consumption and tourism. The Department of Water estimates that approximately 3.0 GL/year is being used for unlicensed or exempt purposes. Exempt uses include water for stock watering, ordinary domestic purposes and fire fighting.

Current licensing records and a groundwater-use survey conducted in 1999 show that water abstraction is distributed along the coast and highway (Figure 4). The information gained from the records and the survey has enabled the department to assess the potential impacts of pending applications to take water, as well as cumulative impacts along the coastal strip. To improve accounting of water, an updated survey will be required to refine knowledge of the licensed, exempt and unlicensed water use.

Action 4 – La Grange management

Our Kimberley regional office will survey unlicensed and exempt water use to refine the estimates used in this allocation plan.

5.2 Future demand and development

Water demand has the potential to increase as a result of pastoral diversification, expansion of the mining industry and Indigenous economic development. This plan considers the land-use changes expected to take place in the area.

Horticulture

Pastoralists and Indigenous communities are interested in developing a range of enterprises including irrigated fodder, horticulture, native food production, tree plantations and tourism ventures, all of which have the potential to increase groundwater use. Horticultural ventures are primarily located in the La Grange north subarea. The Department of Agriculture and Food (DAFWA) is assessing the feasibility of a horticultural precinct in La Grange, along with others in the Kimberley.

The Australian Government has shown some interest in the potential of La Grange's groundwater resources to support extensive agricultural development, but no proposals have been put forward as yet.

Horticultural and agricultural weeds

Some existing users of water are irrigating crops classed as weeds on registers held by DAFWA and the Department of Environment and Conservation. While the use of water for this operation may be considered sustainable, the land use may not be suitable. See Policy 7.6 in Table 4 for more information on how weeds will be considered in the licensing process.

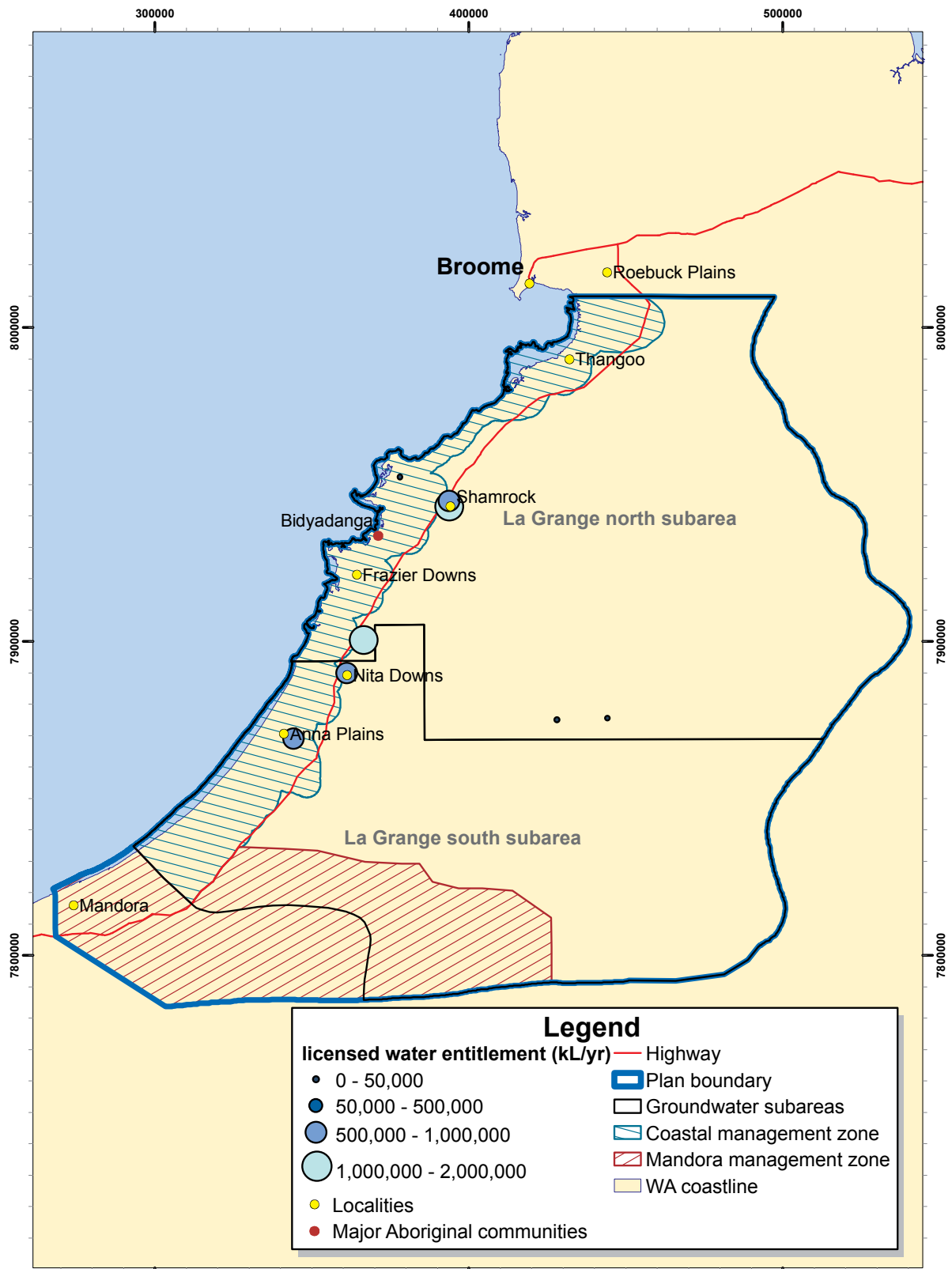


Figure 5
Water use in the La Grange

Mining

There are no operational mines in the La Grange groundwater subareas, although there is the potential for mining and exploration activity to increase.

Indigenous economic development

Through engagement with traditional owners in La Grange and organisations such as the Kimberley Land Council and the Indigenous Water Policy Group of the North Australia Indigenous Land and Sea Management Alliance, Indigenous interests in accessing water for commercial use have arisen. The department and these groups have begun discussions about water allocation issues and opportunities for future water use.

Traditional owners are concerned that all the water in the region will be licensed for use by others before they have a chance to develop enterprises that might require water. Local Indigenous people want some certainty that water will be available if or when they seek water for commercial use in the future.

The department understands the importance of this issue and is considering how to address traditional owners concerns.

Action 5 - La Grange management

The Department will continue to work with other state agencies, through the Indigenous Implementation Steering Committee and with aboriginal communities to identify ways that good water management can assist with Aboriginal economic and social development.



Chapter six

Licensing policies and rules

Allocation and licensing policies are developed to ensure water is allocated in an equitable and considered way. Allocation policies provide advice on where and under what circumstances water may be taken and how water abstraction is managed.

All state and Commonwealth legislation relating to water and its use apply to *La Grange groundwater allocation plan* area. All statewide and operational policies endorsed by the Department of Water apply to this plan. Specific aspects of existing statewide and operational policies have been developed further to be more applicable at a local scale to the management of water resources in the plan area.

The allocation policies were developed to support the principles and objectives of the plan. They were developed to provide a sound basis for groundwater licensing over the life of the plan. The policies aim to protect all groundwater use and as such cover ecological, social and economic aspects, as well as water quality and quantity.

Licensing decisions should be based on the best-available scientific knowledge, and through the decision-making process, take into consideration local and regional scale impacts of abstraction. All licensing decisions must be in line with this plan. Licensing of groundwater in the plan area is administered by the department's Kimberley regional office.

An outline of the licensing process and licence application forms can be found on the department's website at www.water.wa.gov.au. Applicants should be aware of the licensing policies that may apply to their area before submitting their groundwater licence application to the department.

6.1 General licensing policies

Table 3

General licensing policies for La Grange groundwater subareas

Policy name	Policy detail
Licensing rules and requirements	
1 Administration	<p>1.1 A licence to construct a bore (26D) or take water (5C) is required under the <i>Rights in Water and Irrigation Act 1914</i> within the La Grange plan area.</p> <p>Note: Some water uses are exempt from this requirement, see policy 11 in this table for more detail.</p> <p>1.2 It is the licence holder's responsibility to make an application to extend the term of an existing licence before the expiry date. The department will treat any licence application submitted after the expiry date as a new licence application.</p> <p>1.3 In fully allocated areas, licensees must not allow their licences to expire as the department cannot guarantee that water will be available for a new licence.</p> <p>1.4 The department will allocate groundwater licences in the La Grange plan area on a first-in first-served basis.</p>
2 New developments and applications for water	<p>2.1 It is the applicant's responsibility to demonstrate that their proposed development will be sustainable in the long term.</p> <p>2.2 The department may require the applicant to undertake additional work to support their application. The department will advise the applicant of these requirements during the licence assessment process. The requirements may include a timetable for development and social, ecological and cultural studies.</p> <p>2.3 Applications to irrigate crops identified as weeds will be referred to the Department of Environment and Conservation and/or the Department of Agriculture and Food WA for advice prior to a licence being issued.</p>
3 Additional information	<p>3.1 The department may require proponents to submit additional information to support an application. The department cannot finalise the assessment until the requested information is submitted to the department.</p> <p>3.2 <i>Operational Policy 5.11 - Timely submission of further required information</i> (DoW 2009) outlines the timelines for submitting additional information.</p> <p>3.3 For applications with the potential to significantly impact on water resources, potential groundwater-dependent ecosystems and nearby users (existing licensees and domestic users), the department will require the applicant to prepare a hydrogeological assessment as per <i>Operational policy no. 5.12 - Hydrogeological reporting associated with a groundwater well licence</i> (DoW 2009).</p>
4 Advertising	<p>4.1 All new licence applications requesting > 100 000 kL/yr must be advertised in the Public Notices section of a local newspaper and a state newspaper, with invitation to comment (closing 15 days following the advertisement notice) on the application. Proof of advertising and the public comments are to be submitted to the department.</p>
5 Pastoral diversification activities	<p>5.1 Pastoral diversification activities requiring water will need to be referred to the department for licensing to ensure there are no long-term impacts on neighbouring water users.</p> <p>Note: An established process is in place in the Kimberley region to ensure that any diversification proposals are referred to the department and assessment of the potential impacts on the water resource are considered.</p>

Table 3 Continues

General licensing policies for La Grange groundwater subareas

Policy name	Policy detail
Licensing rules and requirements	
6 Water-use efficiency	<p>6.1 Groundwater must be used efficiently and in accordance with best management practices and irrigation methods. The department will determine the minimum level of water efficiency required by an operation in assessing the licence application.</p> <p>6.2 Mine water efficiency will be negotiated through operating strategies.</p>
7 Operating strategies	<p>7.1 The department will apply operating strategies as per <i>Statewide policy no. 10: Use of operating strategies in the water licensing process</i> (WRC 2004). The operating strategy will form part of the licence conditions. The requirements in the strategy must be auditable and appropriate for the purpose of the abstraction.</p>
8 Monitoring	<p>8.1 A monitoring bore may be required. Monitoring bores must be located on land the licensee has legal access to and be constructed in accordance with <i>Operational policy no. 5.12 and Minimum construction requirements for water bores in Australia</i> (NMBSC 2003). The licensee will be responsible for the maintenance, monitoring and reporting associated with the monitoring bore(s).</p> <p>8.2 The department may require a licensee to monitor, measure, and report on salinity, water quality and water levels as part of their licence conditions if we consider that their water usage may affect these parameters.</p>
9 Reporting	<p>9.1 The department may include conditions in licences to require licensee's to submit regular monitoring reports.</p> <p>9.2 It is the individual licensee's responsibility to submit monitoring and aquifer review reports and other reporting requirements by the date specified in the conditions of their licence. It is also the licensee's responsibility to contact the department if reporting conditions cannot be fulfilled due to extenuating circumstances.</p> <p>9.3 The department may use monitoring information submitted by licensees to improve the department's understanding of the water resource and in the department's reporting on aquifer condition in the plan area. Data that may be used includes water level, water chemistry, abstraction (metered use) and hydrogeological work (including any local models).</p>
10 Metering	<p>10.1 All new groundwater licences with an allocation $\geq 50\,000$ kL/yr may be subject to a condition requiring installation and maintenance of a department-approved flow meter to measure abstraction. For more information see: <i>Rights in Water and Irrigation (Approved Meters) Order 2009</i> <i>Strategic policy 5.03 – Metering the taking of water</i> (DoW 2009d) <i>Guidelines for water meter installation</i> (DoW 2009).</p> <p>10.2 The department will specify (in licence conditions) how often licensees must take meter readings. Readings must be submitted annually by the date specified in licence conditions. The department can increase or decrease the required frequency of meter readings as per the risk assignment in <i>Operational policy no. 5.12</i>.</p>

Table 3 Continues

General licensing policies for La Grange groundwater subareas

Policy name		Policy detail	
Community, stock and domestic use			
11	Stock and domestic water use	11.1	The <i>Rights in Water and Irrigation Act 1914</i> Exemption and Repeal Order 2007, s. 26 (c) (stock and domestic bore exemption) applies to the plan area. Any subsequent amendments to this order also apply.
12	Community drinking water sources	12.1	<i>Community drinking water sources – protection and management, Water quality protection note no. 9</i> (DoW 2006a) provides water quality advice on water resources that are managed by a local group for household (drinking) water supplies.
13	Private drinking water supplies	13.1	<i>Private drinking water supplies, Water quality protection note no. 41</i> (DoW 2004) provides advice on water quality requirements for household usage, farm and pastoral lease supply, processing of commercial products and irrigation of gardens and crops. <i>The Australian drinking water guidelines (NHMRC 2004) and Australian and New Zealand guidelines for fresh and marine water quality</i> (ANZECC & ARMCANZ 2000) provide information on relevant drinking water quality criteria.
14	Exempt and unlicensed water use	14.1	Assessment of licence applications will take into account potential impacts on exempt or unlicensed water users such as community water supply.
Environment/water-dependent cultural and social values			
15	Application of fertilisers and other nutrients	15.1	The department may require an operating strategy for activities that have the potential to contaminate water sources through the application of fertilisers and nutrients.
16	Environmental legislation	16.1	All proposals requiring a groundwater licence must also comply with relevant environmental legislation as well as the policies contained in this plan.

Table 3 Continues

General licensing policies for La Grange groundwater subareas

Policy name	Policy detail
Native Title and Aboriginal heritage	
17 Native Title	<p>17.1 Section 24 HA (7) of the <i>Native Title Act 1993</i> (Cwlth) requires the Department of Water to notify Native Title groups, potentially affected by the grant of a licence, about any new licence applications and to provide them with an opportunity to comment.</p> <p>17.2 The department will have regard to the following factors in deciding to notify Native Title groups:</p> <ul style="list-style-type: none"> • Whether a registered native title determination or claim exists over an area of land or water • Whether land tenure effectively extinguishes native title. <p>Where an application is received for water use relating to Pastoral Diversification or significant developments, the Department of Water will notify and request comment from Native Title groups.</p> <p>If notification is warranted the department will notify the applicant and the Native Title group in writing. The department will request comments on the proposal by the Native Title group. Comments must be provided in a reasonable timeframe, as identified in the letter of notification from the department.</p> <p>Comments received by the department from the Native Title holders or claimants will be considered in the assessment of the application to take water under Section 7(2) of the <i>Rights in Water and Irrigation Act 1914</i>. If no comments are received in the specified timeframe, the assessment will proceed.</p> <p>17.3 Additional time to prepare comments may be provided where a request is made within the specified timeframe.</p>
18 Aboriginal heritage	<p>18.1 Applicants for water licences must comply with all state and Commonwealth legislation including the <i>Aboriginal Heritage Act 1972</i> (WA).</p> <p>Note: Approval of a water licence does not affect the proponent's obligation to obtain all other necessary approvals. The identification and assessment of potential impacts on Aboriginal heritage sites is the responsibility of the applicant and the Department of Indigenous Affairs.</p>
Water trading and transfer	
19 Water trading	<p>19.1 Trading of licences may occur as per <i>Statewide policy no. 6: Transferable (tradeable) water entitlements for Western Australia</i> (WRC 2001).</p> <p>19.2 Trading will not be permitted between subareas.</p>
Construction of bores/wells	
20 Construction of bores/wells	<p>20.1 After a bore is constructed it is the licensee's responsibility to submit a Form L or a certified driller's borehole construction report before the department can issue a licence (5C) to take water. This may include a description of the lithology, surveyed level of bore, geophysical logs and pump test results.</p> <p>20.2 The construction, modification or decommissioning of monitoring and abstraction bores must be in accordance with <i>Groundwater monitoring bores, Water quality protection note no. 30</i> (DoW 2006d) and <i>Minimum construction requirements for water bores in Australia</i> (NMBSC 2003).</p>

6.2 Management zones

The department has established two management zones in the plan area: the coastal management zone and the Mandora management zone, which will cater for specific water resource management issues. We have developed local area rules for both management zones (tables 4 and 5) to protect groundwater-dependent values from the impacts of groundwater abstraction and to manage the resource sustainably.

Areas with important ecological or social value outside these zones will still be managed appropriately through the licence assessment process.

Table 4

Coastal management zone rules

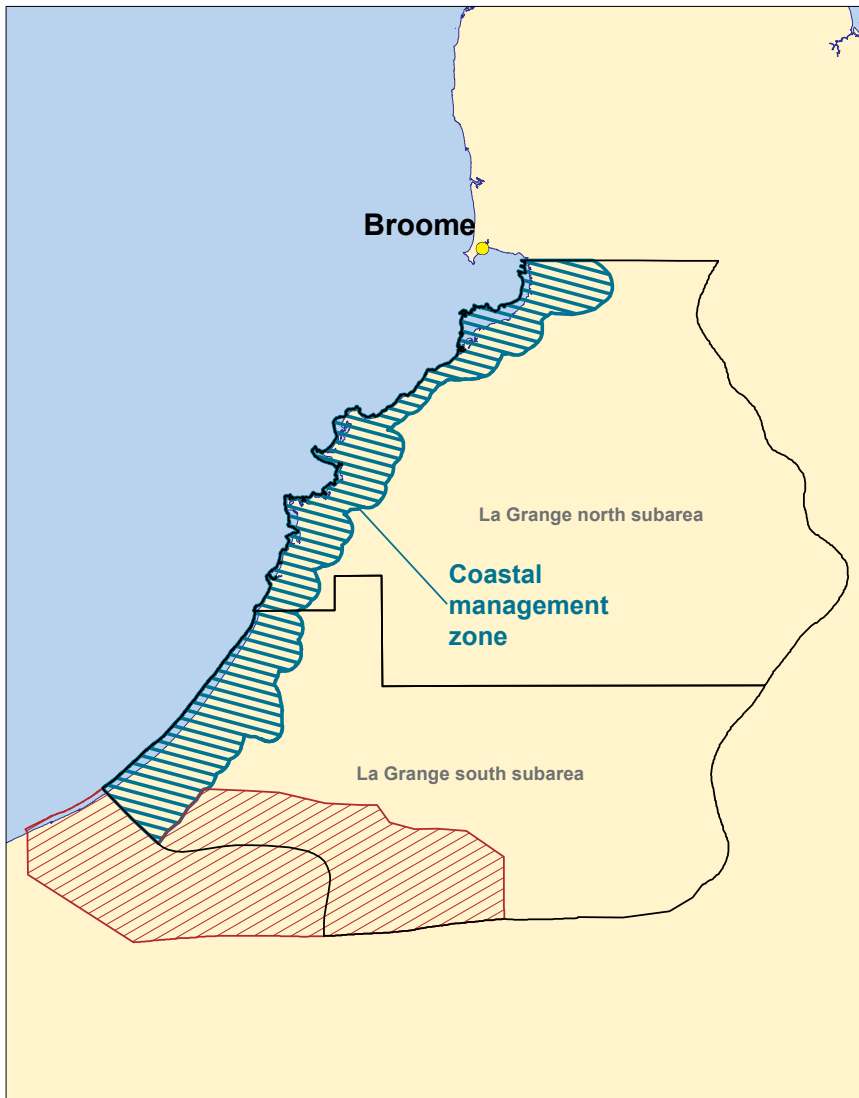
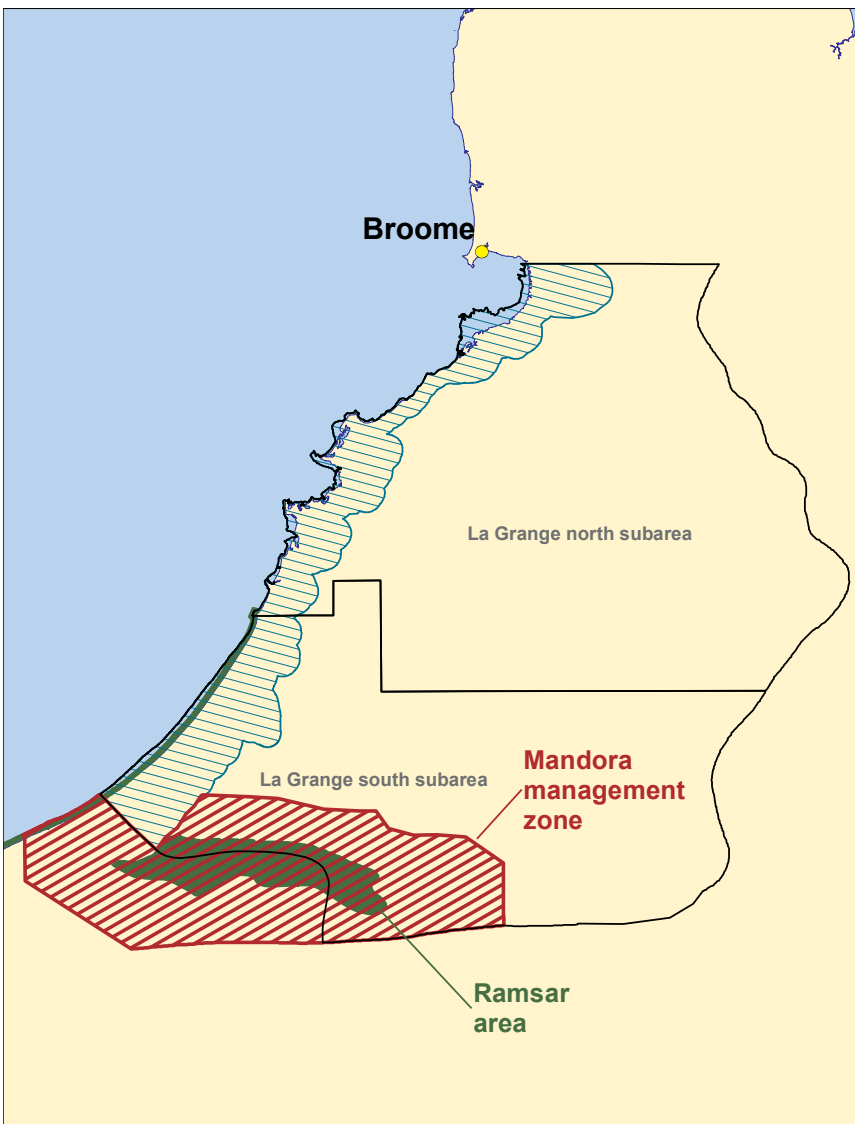
Coastal management zone rules	Location
Proponents must include quarterly salinity measurements as part of the monitoring and reporting to be submitted annually and in accordance with licence conditions.	
When conducting a hydrogeological reporting assessment, licensing officers must (<i>Operational policy no. 5.12</i>) add an extra 1 point to columns d and e of Table 8 when assessing licence applications (Appendix A) that fall within the management zone.	

Table 5
Mandora management zone rules

Mandora management zone rules	Location
The department will assess any licence application at the H2 level or higher as per Operational policy no. 5.12. In addition to this assessment the applicant's operating strategy will need to address nutrient irrigation management.	 <p>The map shows the coastal area of La Grange. The Broome coastline is at the top. The La Grange north subarea is the yellow region to the east of the coast. The La Grange south subarea is the yellow region to the south of the north subarea. The Mandora management zone is a red hatched area located within the La Grange south subarea. The Ramsar area is a green hatched area located within the Mandora management zone.</p>
No new bores can be drilled within the Ramsar boundary.	
No new bores can be drilled within the Mandora management zone boundary unless they are for the purposes of monitoring or investigation and are outside the Ramsar boundary.	
When conducting a hydrogeological reporting assessment, licensing officers must add an extra 2 points to column d of Table 8 when assessing licence applications (Appendix A) that fall within the management zone.	

6

Licensing policies and rules

6.3 Monitoring

The department does not have a regional monitoring network in the La Grange groundwater subareas, although we collect water resource information through reporting from licensees. We use this information to improve knowledge of the hydrogeology of the La Grange groundwater subareas, as well as to review water availability. The low level of groundwater abstraction in the area has not warranted investment into a regional monitoring network and has meant that other users and ecological and cultural sites are at a low risk of impacts. However, as demand on the water resource increases, a regional monitoring network may be required. An appropriate monitoring and assessment program will be needed as part of any large water user being assessed in the future.

The department will assess the need for a regional monitoring program for the La Grange groundwater subareas before this plan is reviewed. This will include the extent of monitoring and a staged approach to improving the network based on trigger levels of water use. This will ensure appropriate baseline data is available for future management.

Chapter seven

Implementation and review

This Chapter sets out how the Department of Water will implement, evaluate and review the *La Grange groundwater allocation plan* to ensure it is successful.

7.1 Implementation of this plan

Table 6 is a summary of the actions identified throughout this plan and their associated timeline.

Table 6

Summary of management actions

Action		Responsible	Timeline
1	We will request bore logs and pump test data from bore owners. Holders of mineral and petroleum bore logs will also be contacted for further information.	Kimberley regional office	Within one year of plan being released.
2	We will identify the local investigations required to determine an ecological water requirement.	Allocation planning branch	Within one year of plan being released.
3	Before this plan is reviewed, we will report on sites with in situ water dependent values.	Allocation planning branch	Within one year of plan being released.
4	Our Kimberley regional office will survey unlicensed and exempt water use to refine the estimates used in this allocation plan.	Kimberley regional office	Within one year of plan being released.
5	The Department will continue to work with other state agencies, through the Indigenous Implementation Steering Committee and with aboriginal communities to identify ways that good water management can assist with Aboriginal economic and social development.	Strategic water policy and planning branch	Within one year of plan being released.
6	Publish an evaluation statement for this plan. Describe the current water status and the suitability of this plan to manage water issues.	Kimberley regional office	Annually.

7.2 Management triggers and responses

Throughout the plan's life, the department will need to respond to changes in the status of the groundwater resources in the La Grange subareas. We have set triggers for responses that will be necessary when these situations arise.

Table 7

Management triggers and responses

Management triggers	Department management responses
Department of Water identifies impact on other users including community water supplies.	a Review surrounding licences and land-use activities.
	b Identify the cause of impact and amend licence(s) appropriately.
Department of Water identifies impact on groundwater-dependent ecosystems or cultural sites.	a Refuse licence applications within the possible impact area.
	b Undertake compliance review of licences within the possible impact area.
	c Identify the cause of impact and amend licence(s) appropriately.
	d Review allocation limits, if required.
The system reaches 50% of the allocation limit.	a The Department of Water will assess the need for a regional monitoring program.
	b The Department of Water will consult with stakeholders to evaluate if further work needs to be undertaken to improve knowledge of in-situ water-dependent values
Licensed entitlements reach 70% of allocation limit.	a Schedule a review of the allocation limits.
	b Undertake water-use survey of the groundwater users.
The system reaches 90% of the allocation limit.	a Assess the need to review the groundwater allocation plan.
The department is approached regarding a potential application(s) for a significant proportion of the available water.	a Refer to potential applicants to the licensing process and the policy section of this plan, particularly policies 2 and 18.
	b Recommend that all issues, including those beyond the scope of a water licence, be addressed in alignment.

7.3 Evaluating and reviewing the plan

To determine whether the plan's objectives are being achieved through its management strategies, we will release an evaluation statement each year. The statement will identify:

- the status of water use
- the status of all actions required by the plan
- performance against the plan's objectives (Table 1)
- any minor changes to the plan
- whether a formal review of the plan is required.

While this plan sets out our water-use management approach for the next few years, we are also looking ahead and working towards improving planning and management in the La Grange subareas.

We have identified priority actions that will contribute to future planning in the La Grange subareas. We will report on the progress of these actions each year in the evaluation statement.

Throughout the plan's life, monitoring of the water resources and environmental sites as well as changes to management considerations (such as increased demands) may trigger a review of the plan.

Western Australia is currently reviewing and updating its legislation for the state's water resources. Any significant changes to the current legislation that may affect this plan will trigger a review of the plan. The review of the plan may include replacing it with a statutory water allocation plan.



Appendices

La Grange groundwater allocation plan

A

Appendix Decision table for hydrogeological assessments

Within the plan area, the Department of Water must license groundwater use under the *Rights in Water and Irrigation Act 1914* (WA), with the exception of stock and domestic use. Before a groundwater well licence is issued to an applicant, the department undertakes an assessment according to *Operational policy no. 5.12 - Hydrogeological reporting associated with a groundwater well licence* (DoW 2007b), including an evaluation of the potential impacts of taking the groundwater.

The department may require additional information to assess the application. These may include cases where the volume of water requested is large, the level of knowledge about the state of the groundwater source is limited, the demand for accessing a particular groundwater resource is high, or the potential impacts of taking the water are considered significant.

In these cases, the department may ask the licence applicant to undertake a hydrogeological assessment at their own cost, to determine the potential impacts of taking the groundwater. The department will determine the level of assessment that is required, as follows:

- H1 – desktop hydrogeological assessment
- H2 – basic hydrogeological assessment including drilling and test pumping
- H3 – detailed hydrogeological assessment including drilling, test pumping and a groundwater model.

Table 8 summarises the factors that determine whether the application to take water will require hydrogeological assessment and reporting.

How to use Table 8

Assign points for each column in Table 8 for volume, allocation, potential impacts of other users, groundwater-dependent ecosystems and salinity. Add points to give a score = (a + b + c + d + e).

0–7 points Generally no assessment is required, unless other knowledge of risks indicates that an H1 level assessment (desktop hydrogeological assessment) is warranted.

8–12 points H1 level assessment (desktop hydrogeological assessment). However, low volume applications with low risk of impacts may not warrant an assessment. These cases can be discussed with the regional hydrogeologist.

12–18 points H2 level assessment (basic hydrogeological assessment including installation and testing of investigation bores).

> 19 points H3 level assessment (detailed hydrogeological assessment including installation and testing of investigation bores, and a groundwater model).

Table 8

Matrix to determine hydrogeological reporting requirements, reproduced from Operational policy no. 5.12

Volume requested (kL/year)	Level of licensed, exempt and community use	Potential for unacceptable impacts		Current salinity* (mg/L)
		Other users	Groundwater-dependent ecosystems	
<10 000 (0 points)	0 < 30 % (0 points)	Impacts unlikely (0 points)	Impacts unlikely (0 points)	Fresh <500 mg/L (4 points)
10 001–50 000 (2 points)	30 < 70 % (1 point)	Impacts possible (2 points)	Impacts possible (2 points)	Marginal TDS 501–1 500 mg/L (3 points)
50 001–250 000 (4 points)	70 < 100 % (3 points)	Impacts likely (5 points)	Impacts likely (5 points)	Brackish TDS 1 501–5 000 mg/L (2 points)
250 001–500 000 (6 points)	>= 100 % (5 points)			Saline TDS 5 000–50 000 mg/L (1 point)
500 001–1 000 000 (8 points)				Hypersaline >50 000 mg/L (0 points)
1 000 001–2 500 000 (15 points)				
>2 500 000 (20 points)				
a = points assigned in this column	b = points assigned in this column	c = points assigned in this column	d = points assigned in this column	e = points assigned in this column

Note: Policies or management plans developed for specific areas may override this decision-making process in those areas.

*Salinity categories obtained from National Land and Water Audit (2000).

TDS = total dissolved salts

The following classifications are given to the identified wetland zones relating to the La Grange groundwater subareas in the report *Wetlands of the north western Great Sandy Desert* (V & C Semeniuk Research Group 2000) and in Environment Australia's *Directory of important wetlands in Australia*.

Table 9

Important wetlands of significance in the La Grange groundwater subareas

Wetland zone	Area	International significance (Ramsar)	National significance	State-wide significance
Cape Bousett Embayment	Coastal			✓
La Grange Bay	Coastal			✓
Munro Springs wetland system	Inland			✓
Eighty Mile Beach wetland system (including Anna Plains)	Coastal	✓		
Mandora Marsh wetland system	Inland	✓		
Roebuck Bay wetland system	Coastal	✓		
Roebuck Plains	Coastal		✓	
Injudinah Swamp	Coastal			✓
Salt Creek system	Inland			✓

Allocation limits for the La Grange groundwater subareas

The Department of Water has set allocation limits for the Broome Sandstone aquifer in the La Grange groundwater subareas based on the best information available. However, information on the hydrogeology and water-dependent values in the area is limited, so the allocation limits are conservative to protect those values and the security of current and future water entitlements.

In *A review of the major groundwater resources in Western Australia*, the Geological Survey of Western Australia (1992) estimated recharge for the Broome Sandstone aquifer. The estimate was calculated for a similar area to the plan area. The report estimated a mean annual recharge of 380 GL/year to the aquifer based on a four per cent proportion of the average rainfall of 450 mm/year recharging the aquifer over an area of 21 500 km². The estimated average volume of water able to be taken without affecting aquifer levels was determined to be 190 GL/year (50 per cent of the mean annual recharge).

The department has reviewed this estimate based on data collected Water Management Consultants in 1999. The estimate was based on measured groundwater levels and pressures and a 20 m/day hydraulic conductivity (the rate at which water moves through the aquifer). After subtracting 25 per cent for maintenance of the saltwater interface, the volume of water available for abstraction without impacting on the aquifer and before ecological and cultural considerations was estimated at 105 GL/year. The department considers this throughflow estimate using bore data to be more comprehensive and representative of actual groundwater conditions than the use of recharge-based estimates only.

The department has accounted for the water's ecological and cultural values by allowing approximately 50 per cent of the 105 GL/year to remain in the aquifer to support those values. This results in an allocation limit of 50 GL/year in the Broome Sandstone aquifer in La Grange subareas.

To manage environmental impacts, the department split the original La Grange subarea into the La Grange north subarea and La Grange south subarea. The department has divided the available yield of 50 GL/year from the Broome Sandstone aquifer between the two subareas. As such, the allocation limits are 35 GL/year and 15 GL/year for the northern and southern subareas respectively. The decision to manage the water in two separate subareas supports the community's future water source needs by preventing large-scale concentrated abstraction that might have negative effects on the groundwater of both subareas.

D

Appendix Water licensing process

The Department of Water manages water through licences issued under the *Rights in Water and Irrigation Act 1914* (WA). A licence allows a licensee to take a specified volume of water each year. Licences are typically issued for three to five years and are subject to assessment of ongoing impacts and reassessment of total water usage to enable renewal or amendment of a licence. We issue a licence after assessing whether the proposed take and use of water will be sustainable and will not unduly impact on water-dependent values and other exempt and licensed users.

Table 10 outlines the application process for a groundwater licence and the rules according to the Act that the proponent and the department's licensing officers (in handling the application) must follow. The department has developed policies to manage water take and use across the state. These statewide and operational policies are available on the department's website at www.water.wa.gov.au. These policies will apply to the La Grange plan area unless they conflict with the policies specific to the plan area detailed in Table 3. Where a conflict exists, the policies in this plan will take precedence.

A key component of a license for a higher-use proposal is the development of a robust operating strategy that sets out management commitments related to water use, efficiency, impact management and contingency planning, and in some cases weed and nutrient management. The operating strategy also sets out annual monitoring requirements and reporting that are then included as license conditions.

There is currently no statutory timeline on processing a licence. We work to assess applications within appropriate timelines. The timeline for assessment depends largely on the scale and complexity of a proposed development, referral and response times for other agencies and the timely submission of requested additional information by the applicant. Applications that do not meet the departmental and legislative requirements cannot be approved.

How to obtain a water licence

Table 10

How to obtain a water licence

When do you need a licence to take water?	<p>You will need a licence if:</p> <ul style="list-style-type: none"> • you want to take water from an unconfined aquifer in a proclaimed area (some water uses are exempt from this requirement – see Policy 11 in Table 3) • you want to take water from any artesian aquifer.
What licence(s) do you need?	<p>26D licence: required before construction or alteration of any bore, except those exempt from requiring a licence to take water (see Policy 1.2 in Table 3).</p> <p>5C licence: licence to take groundwater and manage use.</p>

It is recommended that you discuss your proposal with your regional office to ensure water is available for your project.

Where do you find an application?	<p>Contact the department's Kimberley regional office.</p> <p>Download an application form, available at www.water.wa.gov.au.</p>
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Complete application form.

Assessment of an application	<p>The extent of departmental assessment including possible input from a groundwater professional will be based on the application. Determining factors will include the quantity of water being asked for, how much water is available and the potential environmental impacts of the application. The department may request further information from applicants during the assessment process, as detailed in <i>Operational Policy 5.11 - Timely submission of further required information</i>.</p>
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The Department of Water will decide whether a licence will be granted or refused.

Issuing of a licence	<p>When the issued licence is received, it is recommended that you:</p> <ul style="list-style-type: none"> • read your new licence • check the terms, conditions, restrictions and duration.
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It is your responsibility to renew your licence before it expires.



Glossary

La Grange groundwater allocation plan

Abstraction	The permanent or temporary withdrawal of water from any source of supply, so that it is no longer part of the resources of the locality.
Allocation limits	Annual volume of water set aside for use from a water resource.
Aquifer	A geological formation or group of formations that is able to receive, store and transmit significant quantities of groundwater.
Artesian aquifer	A confined aquifer in which the hydraulic pressure causes water to rise in a bore or spring above the land surface. If the pressure is insufficient to cause the well to flow at the surface, it is called a sub-artesian aquifer.
Artesian well	A well (including all associated works) from which water flows or has flowed naturally to the surface.
Biota	The total animal and plant life of a region or area.
Bore	A narrow, normally vertical hole drilled in soil or rock to measure or withdraw groundwater from an aquifer.
Confined aquifer	An aquifer lying between confining layers of low permeability strata (such as clay, coal or rock) so that the water in the aquifer cannot easily flow vertically.
Consent determination	A decision reached by Federal Court, High Court or a recognised body in relation to Native Title rights and interests that reflects an agreement reached by the parties under the <i>Native Title Act 1993</i> (Cwlth).
Dewatering	Removing underground water to facilitate construction or other activity. Dewatering is often used as a safety measure in mining below the watertable or as a preliminary step to development in an area.
Discharge	Water that moves from groundwater to the ground surface or above, such as a spring. This includes water that seeps onto the ground surface, evaporation from unsaturated soil and water extracted from groundwater by plants (evapotranspiration) or engineering works (groundwater pumping).
Drawdown	The lowering of a watertable resulting from the removal of water from an aquifer or a reduction in hydraulic pressure.
Ecological Water Requirements (EWR)	The water regime needed to maintain ecological values of water-dependent ecosystems at a low level of risk.

Glossary

Environmental Water Provisions (EWP)	The water regimes that are provided when the water allocation decision-making process takes into account ecological, social, cultural and economic impacts. They may meet the ecological water requirements in part or in full.
First-in first-served	A process by which groundwater entitlements are allocated consistent with the order in which licence applications are received by the Department of Water.
Groundwater	Water that occupies the pores and crevices of rock or soil beneath the land surface.
Groundwater area	The boundaries that are proclaimed under the <i>Rights in Water and Irrigation Act 1914 (WA)</i> and used for water allocation planning and management.
Groundwater subarea	An area defined by the Department of Water within a groundwater area, used for water allocation planning and management.
Groundwater-dependent ecosystem (GDE)	An ecosystem that depends on groundwater for its existence and health.
Hydrogeology	The hydrological and geological science concerned with the occurrence, distribution, quality and movement of groundwater, especially relating to the distribution of aquifers, groundwater flow and groundwater quality.
Impermeable	Not permitting the passage of a substance (in this case, water) through pores of a more dense substance.
Jila	Permanent waterholes, sometimes with surface water visible. They are important as rain-making centres.
Licence	A formal permit that entitles the licence holder to 'take' water from a watercourse, wetland or underground source.
M Ahd	Australian height datum, the height in metres above mean sea level which is + 0.026 m at Fremantle.
Non-artesian well	A well (including all associated works) from which water does not flow or has not flowed naturally to the surface but has to be raised or has been raised by pumping or other artificial means.
Precautionary principle	Taking a cautious approach to development and environmental management decisions when information is uncertain, unreliable or inadequate.
Ramsar	The Convention on Wetlands (signed in 1971 in Ramsar, Iran) is an intergovernmental treaty that provides a framework for national action and international cooperation for the conservation and wise use of wetlands and their resources.
Recharge	Water that infiltrates into the soil to replenish an aquifer.
Salinity	The measure of total soluble salt or mineral constituents in water. Water resources are classified based on salinity in terms of total dissolved salts (TDS) or total soluble salts (TSS). Measurements are usually in milligrams per litre (mg/L) or parts per thousand (ppt).
Saltwater interface	The boundary between the saline, denser ocean/river water below and fresher, less dense groundwater above. It extends inland and is maintained by the pressure of the continual flow of groundwater that may vary according to season and tides.

Social value	A particular in situ quality, attribute or use that is important for public benefit, welfare, state or health (physical and spiritual).
Social water requirement	Elements of the water regime that are needed to maintain social and cultural values.
Stock and domestic water use	<p>Water that is used for ordinary domestic purposes associated with a dwelling such as water for cattle or stock other than those being raised under intensive conditions, or water for up to 0.2 ha (if groundwater) or 2 ha (if surface water) of a garden from which no produce is sold. This take is generally considered a basic right.</p> <p>Note: Intensive conditions' under the <i>Rights in Water and Irrigation Act 1914</i> (WA) means 'conditions in which the cattle or stock: a) are confined to an area smaller than that required for grazing under normal conditions and b) are usually fed by hand or by mechanical means.'</p>
Subarea	A subdivision within a surface-water or groundwater area, defined for the purpose of managing the allocation of groundwater resources. Subareas are not proclaimed and can therefore be changed internally without being gazetted.
Sustainability	Meeting the needs of current and future generations through integration of environmental protection, social advancement and economic prosperity.
Sustainable groundwater yield	The amount of water that can be abstracted/extracted over time from a water resource while maintaining the ecological values (including assets, functions and processes).
Water efficiency	The minimisation of water use through adoption of best management practices.
Water entitlement	The quantity of water that a person is entitled to take on an annual basis in accordance with the <i>Rights in Water and Irrigation Act 1914</i> (WA) or a licence.
Wetland	Areas that are permanently, seasonally or intermittently waterlogged or inundated with water by natural means that may be fresh, saline, flowing or static, including areas of marine water (the depth of which at low tide does not exceed 6 m).

Acronyms and abbreviations / Volumes of water

Acronyms and abbreviations

Acronym	Full title
AHD	Australian height datum (in metres)
ANZECC	Australian and New Zealand Environmental Conservation Council
ARMCANZ	Agriculture and Resource Management Council of Australia and New Zealand
DoW	Department of Water
WRC	Water and Rivers Commission (now the Department of Water)

Volumes of water

Volumes of water			
One litre	1 litre	1 litre	(L)
One thousand litres	1000 litres	1 kilolitre	(kL)
One million litres	1 000 000 litres	1 Megalitre	(ML)
One thousand million litres	1 000 000 000 litres	1 Gigalitre	(GL)

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