Managing the Pilbara region’s water resources

Next to the unique landscape and rich biodiversity, water is a defining feature of the Pilbara region of Western Australia. Aboriginal people have lived in the Pilbara’s arid and variable environment for thousands of years: their way of life and system of beliefs are intimately linked to water, on which their survival traditionally depended. With European settlement and the building of towns and ports supporting the growth of the tourism, pastoral and mining industries, water remains a vital ingredient to the Pilbara’s future.

The Pilbara region’s mineral and petroleum sectors are major drivers of the state’s and Australia’s economy. Even with the unprecedented increase in iron-ore mining in recent years, production is expected to double over the next 10 years. The growth in mining has seen more water being abstracted at mine sites and increased demand on water supply-schemes that serve the towns and ports which are poised for significant expansion.

Water availability in the Pilbara is problematic. Severe droughts can be followed by major floods. Climatic conditions are dominated by tropical cyclones which occur predominantly from January to March. The number of cyclones and the amount of water they bring changes from year to year, making water a highly variable resource. Recent work by CSIRO suggest that the region’s surface water and groundwater sources are likely to become more variable in the future due to climate variability and a longer term drying climate trend.

More information
The Pilbara regional water plan 2010-2030 and the Supporting detail are available on the department’s website at: www.water.wa.gov.au/Publications/Find+a+publication/default.aspx
Alternatively contact the following for more information:
Pilbara regional office
Lot 4608, Karratha, WA 6714
Telephone: 08 9144 2000

Disclaimer
This document has been published by the Department of Water. Any representation, statement, opinion or advice expressed or implied in this publication is made in good faith and for the benefit of the Department of Water and is not intended to be a substitute for professional advice. The Department of Water does not accept any liability for any errors or omissions or for any loss or damage suffered by any person acting upon the information in this document without first seeking professional advice.

Department of Water
46 St Georges Terrace, Perth, Western Australia
PO Box 500 0510
www.water.wa.gov.au

Looking after all our water needs
Water planning for the Pilbara Region 2010–2030
May 2010
Next to the unique landscape and rich biodiversity, water is a defining feature of the Pilbara region of Western Australia. Aboriginal people have lived in the Pilbara’s arid and variable environment for thousands of years: their way of life and system of beliefs are intimately linked to water, on which their survival traditionally depended. With European settlement and the building of towns and ports supporting the growth of the tourism, pastoral and mining industries, water remains a vital ingredient to the Pilbara’s future.

The Pilbara region’s iron and petroleum sectors are major drivers of the state and Australia’s economy. Even with the unprecedented increase in iron ore mining in recent years, production is expected to double over the next 10 years. The growth in mining has seen more water being abstracted at mine sites and increased demand on water supply-schemes that serve the towns and ports which are poised for significant expansion.

Water availability in the Pilbara is problematic. Severe droughts can be followed by major floods. Climatic conditions are dominated by tropical cyclones which occur predominantly from January to March. The number of cyclones and the amount of water they bring changes from year to year, making water a highly variable resource. Recent work by CSIRO suggest that the region’s surface water and groundwater sources are likely to become more variable in the future due to climate variability and a longer term drying climate trend.

Managing the Pilbara region’s water resources

The Pilbara regional water plan 2010–2030 and the Supporting detail are available on the department’s website at: www.water.wa.gov.au/Publications/Find+a+publication/default.aspx

Alternatively contact the following for more information:

Pilbara regional office
Lot 4608, Karratha, WA 6714
Telephone: 08 9144 2000

Disclaimer

This document has been published by the Department of Water. Any representation, statement, opinion or advice expressed or implied in this publication is made in good faith and on the basis that the Department of Water and its employees are not liable for any damage or loss, whatsoever which may arise from the application of the information contained in this document to particular circumstances.

Department of Water
168 St Georges Terrace, Perth, Western Australia
PO Box K822 Perth Western Australia 6842
Phone: 08 6364 7600
Fax: 08 6364 7601
www.water.wa.gov.au

Looking after all our water needs

May 2010

Government of Western Australia
Department of Water
Challenges

As with other regions in Western Australia, the Pilbara has a number of challenges to overcome in meeting its current and future water needs. A clear, dynamic vision and careful planning can help the mining industry and regional community to adapt to the challenges of:

- meeting current water needs for the inland towns and communities with sufficient quantity and quality of water supply
- projected water demand approaching or exceeding the available supply at the coastal towns and ports,
- the unreliability of rainfall dependent surface water and groundwater sources which will mean a greater focus on non-traditional water sources such as the use of mine dewater, recovery from slurry pipelines and desalination
- continued expansion in mining activities which will mean increasing amounts of mine dewater and mine wastewater and a greater emphasis on mine void water management
- managing for the cumulative impacts of multiple mining and other development activities in an area
- ensuring that Aboriginal people continue to have a strong cultural connection to water
- improving water use efficiency and using the most important water use or consumption/end use as a water resource
- supporting the development of local, self-sufficient, sustainable, water resource management systems.

The Pilbara regional water plan

The plan sets the strategic directions for the management and development of the Pilbara’s limited water resources in a sustainable manner that is compatible with its natural environment, cultural and spiritual values and quality of life. It provides a strategic overview of the major challenges facing the Pilbara region today and is likely to face the region in the future as we respond to regional growth, climate variability and a longer term drying climate trend. To meet these challenges, a vision for the region’s water future to 2030 has been developed with an action plan over a five-year time frame.

A shared vision, common purpose and strong partnerships in the region are the best way to ensure healthy water resources and a sustainable environment for future generations.

Objective 1

Ensure security of water supply for the current and future needs of all water users.

Objective 2

Ensure water use is balanced to meet environmental, social, cultural and economic values.

Objective 3

Ensure that impacts, including cumulative impacts, are managed to protect the long-term health of waterways, aquifers, wetlands, springs, floodplains and estuaries.

Objective 4

Integrate land-use, infrastructure and natural resource management planning with water planning.

Objective 5

Recognise and protect Aboriginal and other heritage values associated with water.

Objective 6

Ensure the quantity and quality of water used is appropriate for the purpose for which the water is being used.

Objective 7

Support high-value use by industry and agriculture with the least adverse impact.

The vision

Pilbara water future 2030 vision

The shared vision for water in the Pilbara is that:

“Our precious water resources are managed and developed in a sustainable manner to maintain and enhance our natural environment, our cultural and spiritual values, our quality of life and the economic development of the Pilbara.”

The vision is supported by objectives developed in conjunction with the Pilbara regional water plan’s consultative committee, which includes representatives from government agencies, landholders, traditional owners and industry.

The plan outlines the department’s strategic actions to support the stated objectives. These actions focus on areas where the most significant gains can be made during the first five years.

The plan’s supporting draft document contains all the relevant information underlying the plan and provides a deeper understanding of the issues and proposed solutions.

Pilbara water planning framework

The Pilbara regional water plan is part of a series of nested planning activities under the Division of Water, as outlined in the planning framework.
Challenges
As with other regions in Western Australia, the Pilbara faces a number of challenges to overcome in meeting its present and future water needs. A clear, dynamic vision and careful planning can help the mining industry and regional community adapt to the challenges of:

• Meeting current water needs for the inland towns and communities with sufficient quantity and quality of water supply.

• Projected water demand approaching or exceeding the available supply at the coastal towns and ports.

• The unreliability of rainfall dependent surface water and groundwater sources which will mean a greater focus on non-traditional water sources such as the use of mine dewater, recovery from slurry pipelines and desalination.

• Continued expansion of mining activities and the resulting amounts of mine dewater, mine wastewater and greater emphasis on mine void water management.

• Managing for the cumulative impacts of multiple mining and other development activities.

• Ensuring that Aboriginal people continue to have a strong cultural connection to water.

• Ensuring water use efficiency and using the best available water treatment technologies.

• Protecting water-borne diseases and other water-borne and water-related illnesses.

The Pilbara regional water plan
The plan sets the strategic directions for the management and development of the Pilbara’s water resources in a sustainable manner that is compatible with its natural environment, cultural and spiritual values and quality of life.

A shared vision, common purpose and strong partnerships in the region are the best way to ensure healthy water resources and a sustainable environment for future generations.

Objective 1
Ensure security of water supply for the current and future needs of all water users.

Objective 2
Ensure water use is balanced to meet environmental, social, cultural and economic values.

Objective 3
Ensure that impacts, including cumulative impacts, are managed to protect the long-term health of waterways, aquifers, wetlands, springs, floodplains and estuaries.

Objective 4
Integrate land-use, infrastructure and natural resource management planning with water planning.

Objective 5
Recognise and protect Aboriginal and other heritage values associated with water.

Objective 6
Ensure the quantity and quality of water used is appropriate for the purpose for which the water is being used.

Objective 7
Support high-value use by industry and agriculture with the least adverse impact.
The Pilbara regional water plan

The plan sets the strategic directions for the management and development of the Pilbara's water resources in a sustainable manner that is compatible with its natural environment, cultural and spiritual values and quality of life. It provides a strategic overview of the major challenges facing the Pilbara region today and are likely to face the region in the future as we respond to regional growth, climate variability and a longer term drying climate trend. To meet these challenges, a vision for the region's water future to 2030 has been developed with an action plan over a five-year time frame.

A shared vision, common purpose and strong partnerships in the region are the best way to ensure healthy water resources and a sustainable environment for future generations.

Objective 1 Ensure security of water supply for the current and future needs of all water users.

Objective 2 Ensure water use is balanced to meet environmental, social, cultural and economic values.

Objective 3 Ensure that impacts, including cumulative impacts, are managed to protect the long-term health of waterways, aquifers, wetlands, springs, floodplains and estuaries.

Objective 4 Integrate land-use, infrastructure and natural resource management planning with water planning.

Objective 5 Recognise and protect Aboriginal and other heritage values associated with water.

Objective 6 Ensure the quantity and quality of water used is appropriate for the purpose for which the water is being used.

Objective 7 Support high-value use by industry and agriculture with the least adverse impact.

The vision

Pilbara water future 2030 vision: The shared vision for water in the Pilbara is that: “Our precious water resources are managed and developed in a sustainable manner to maintain and enhance our natural environment, our cultural and spiritual values, our quality of life and the economic development of the Pilbara.”

The Pilbara regional water plan is part of a series of nested planning activities within the Water Management Strategy, as outlined in the planning framework.
Next to the unique landscape and rich biodiversity, water is a defining feature of the Pilbara region of Western Australia. Aboriginal people have lived in the Pilbara’s arid and variable environment for thousands of years: their way of life and system of beliefs are intimately linked to water, on which their survival traditionally depended. With European settlement and the building of towns and ports supporting the growth of the tourism, pastoral and mining industries, water remains a vital ingredient to the Pilbara’s future.

The Pilbara region’s mineral and petroleum sectors are major drivers of the state’s and Australia’s economy. Even with the unprecedented increase in iron ore mining in recent years, production is expected to double over the next 10 years. The growth in mining has seen more water being abstracted at mine sites and increased demand on water supply schemes that serve the towns and ports which are poised for significant expansion.

Water availability in the Pilbara is problematic. Severe droughts can be followed by major floods. Climatic conditions are dominated by tropical cyclones which occur predominantly from January to March. The number of cyclones and the amount of water they bring changes from year to year, making water a highly variable resource. Recent work by CSIRO suggest that the region’s surface water and groundwater sources are likely to become more variable in the future due to climate variability and a longer term drying climate trend.

Managing the Pilbara region’s water resources

More information

The Pilbara regional water plan 2010–2030 and the Supporting detail are available on the department’s website at: www.water.wa.gov.au/Publications/Find+a+publication/default.aspx

Alternatively contact the following for more information:

Pilbara regional office
Lot 4608, Karratha, WA 6714
Telephone: 08 9144 2000

Disclaimer

This document has been published by the Department of Water. Any representation, statement, opinion or advice expressed or implied in this publication, is made in good faith and on the basis that the Department of Water and its employees are not liable for any damage or loss, whatever, which may arise out of the use of the information or advice contained in this document. Professional advice should be obtained before applying the information contained in this document to particular circumstances.

Department of Water

The Pilbara region

Looking after all our water needs

May 2010