

A guide to managing and restoring wetlands in Western Australia

Roles and responsibilities

In Chapter 5: **Protecting wetlands**

Version 1



Australian Government



Department of
Environment and Conservation

Our environment, our future 

Introduction to the guide

Western Australia's unique and diverse wetlands are rich in ecological and cultural values and form an integral part of the natural environment of the state. *A guide to managing and restoring wetlands in Western Australia* (the guide) provides information about the nature of WA's wetlands, and practical guidance on how to manage and restore them for nature conservation.

The focus of the guide is natural 'standing' wetlands that retain conservation value. Wetlands not addressed in this guide include waterways, estuaries, tidal and artificial wetlands.

The guide consists of multiple topics within five chapters. These topics are available in PDF format free of charge from the Western Australian Department of Environment and Conservation (DEC) website at www.dec.wa.gov.au/wetlandsguide.

The guide is a DEC initiative. Topics of the guide have predominantly been prepared by the department's Wetlands Section with input from reviewers and contributors from a wide range of fields and sectors. Through the guide and other initiatives, DEC seeks to assist individuals, groups and organisations to manage the state's wetlands for nature conservation.

The development of the guide has received funding from the Australian Government, the Government of Western Australia, DEC and the Department of Planning. It has received the support of the Western Australian Wetlands Coordinating Committee, the state's peak wetland conservation policy coordinating body.

For more information about the guide, including scope, purpose and target audience, please refer to the topic 'Introduction to the guide'.

DEC welcomes your feedback and suggestions on the guide. A publication feedback form is available from the DEC website at www.dec.wa.gov.au/wetlandsguide.

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'Roles and responsibilities' topic

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Disclaimer

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INTRODUCTION

Wetland conservation and management is the collective responsibility of individuals, education and research institutions, businesses, non-government organisations and local, state, and national government. The roles of these stakeholders can be complex and often overlapping. This topic provides an overview of the roles of these stakeholders in wetland conservation and management, with the aim of unravelling the confusion surrounding 'who is responsible for what?'

Table 1 broadly summarises the roles and responsibilities of stakeholders in wetland management and conservation. Much more detailed information is provided in subsequent sections, grouped into three parts: community stakeholders, organisations, and government.

THE ROLE OF COMMUNITY

Both as individuals and a collective, the community has an important role in, and contributes significantly to, wetland conservation in Western Australia. The community can take on-ground action to manage privately owned wetlands, assist in the management of wetlands on public land, and significantly influence the policy and decision-making of organisations and government.

Community values and expectations influence both the private and the non-government conservation sector. In the private sector, the influence of community and increasing requirement for corporations to be accountable has led to corporations integrating the principles of corporate social responsibility into business models and day-to-day operations.

Non-government conservation groups are also influenced by the community, as community concern for particular environmental issues can draw attention to them and place them on an organisation's agenda. Many conservation programs are driven and reliant upon community involvement and those which have greater community support are deemed more likely to succeed.

Community wetland conservation efforts can be greatly assisted by understanding the role of other stakeholders and the processes within which they operate. This enables the community to direct efforts to the most appropriate agency or organisation, through the best process and at a stage in the process that will have the greatest possible influence on wetland conservation outcomes.

Table 1. A summary of stakeholder roles and responsibilities in wetland management and conservation

Key

Level of responsibility		
No role	Low	Significant
N/A	✓	✓

	Conservation on private land	Conservation on public lands	Conservation estate/Bush Forever/Riverpark	Planning and policy development	Development assessment	Research	Formal advice	Water allocation licensing	Licensing of industry
Community	✓	✓	✓	✓	✓	✓	N/A	✓	N/A
Regional NRM organisations	✓	✓	N/A	✓	N/A	✓	N/A	✓	N/A
Local governments	✓	✓	✓	✓	✓	✓	✓	✓	N/A
Department of Environment and Conservation (DEC)	✓	✓	✓	✓	✓	✓	✓	✓	✓
Office of the Environmental Protection Authority (OEPA)	✓	✓	✓	✓	✓	N/A	✓	N/A	N/A
Department of Water (DoW)	✓	✓	✓	✓	✓	✓	✓	✓	N/A
Department of Planning (DoP)	✓	✓	✓	✓	✓	N/A	✓	N/A	N/A
Department of Agriculture and Food (DAFWA)	✓	✓	N/A	✓	✓	✓	✓	N/A	N/A
Swan River Trust (SRT)	N/A	✓	✓	✓	✓	✓	✓	✓	N/A
Wetlands Coordinating Committee (WCC)	N/A	N/A	N/A	✓	N/A	N/A	✓	N/A	N/A
Environmental Protection Authority (EPA)	✓	✓	✓	✓	✓	N/A	✓	N/A	N/A
Western Australian Planning Commission (WAPC)	✓	✓	✓	✓	✓	N/A	✓	N/A	N/A
Conservation Commission of WA (CCWA)	N/A	✓	✓	✓	N/A	N/A	✓	N/A	N/A
Department of Sustainability, Environment, Water, Population and Communities (DSEWCaP) (Aust. Govt)	✓	N/A	N/A	✓	✓	✓	✓	N/A	N/A
Aquatic Ecosystems Task Group (AETG) (national)	N/A	N/A	N/A	✓	N/A	N/A	✓	N/A	N/A
Wetlands and Waterbirds Taskforce (WWTF) (national)	N/A	N/A	N/A	✓	N/A	N/A	✓	N/A	N/A

Individual or group action?

Members of the community, whether as individuals or a group member, can take action to benefit wetlands.

Landowners can take direct action to manage wetlands on their property. Assistance is available to individuals wishing to manage wetlands on their property for conservation purposes. This includes funding, training and access to other resources. For example, Doug and Eva Russell, cattle farmers in Manypeaks on the South Coast, have fenced off a wetland and remnant vegetation on their farm from cattle (Figure 1). They have created ecological corridors to connect their wetland with dryland remnant vegetation by fencing, direct seeding and planting. They have received funding and technical assistance from the National Trust and DEC's Land for Wildlife program.

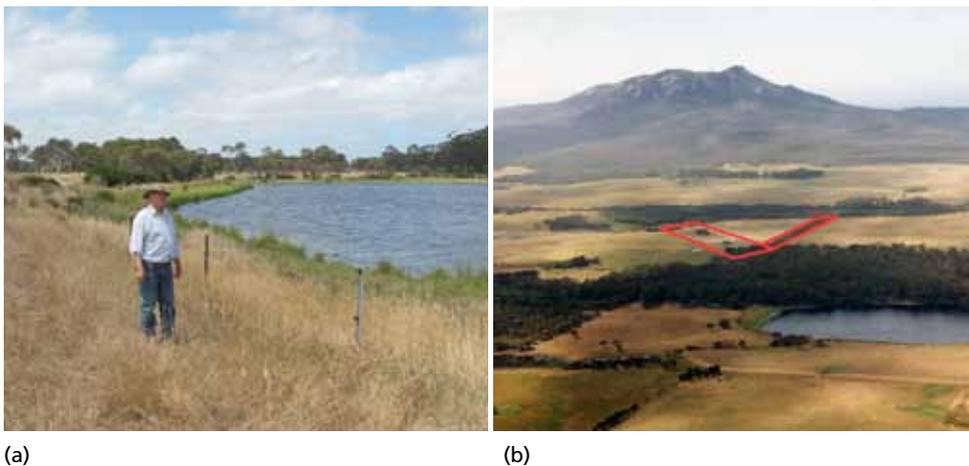


Figure 1. Landowners are in a unique position of being able to manage wetlands on their property. (a) The Russells have fenced off their wetland in Manypeaks, South Coast. Photo – B Schur/Green Skills Inc. (b) They have also revegetated ecological corridors (shown in red), connecting the wetland with nearby bush. Photo – K Hopkinson/ Green Skills Inc.

- For listings of various programs that provide assistance to individuals to manage wetlands, see the topic 'Funding, training and resources' in Chapter 1.

Individuals can also help protect and manage WA's wetlands by participating in citizen science. This is the name given to research or monitoring conducted by individuals or communities in the public interest. Citizen science is how ordinary citizens help scientific research and in doing so help society. The contribution of individuals with an interest in a particular species, site or type of ecosystem can be invaluable. Many organisations have citizen science programs that individuals can participate in.

For example, the ClimateWatch program encourages citizens to record sightings of wetland species including a number of WA frogs: www.climatewatch.org.au/species/frogs and the oblong turtle: www.climatewatch.org.au/species/reptiles/oblong-turtle.

- There are many ways to get involved in protecting and managing wetlands using citizen science, the following are just examples:

www.ala.org.au/get-involved/citizen-science/

www.climatewatch.org.au/

www.citizensciencealliance.org

For complex issues or large wetlands, taking action as an individual can sometimes be a daunting task and so it may be preferable to join or form a community group, or to seek the assistance of a regional or sub-regional natural resource management organisation (outlined in the section 'Regional natural resource management organisations'). Local community groups have demonstrated excellence in protecting and conserving the WA environment, being heavily represented at the annual Western Australian Environment Awards. Local community groups are often integral to the conservation of a site, as shown in the case study in this topic entitled 'Working collaboratively to manage and restore Lake Mealup'.

- ▶ There are many local community groups interested in wetlands in specific areas of WA. Some groups are listed in the 'Environment conservation and heritage' directory on Our Community Pty Ltd: www.ourcommunity.com.au. Other sources of information on local community groups include local governments, regional and sub-regional NRM organisations and local DEC offices.
- ▶ Information on forming a community group can be accessed from various sources, including:
 - Urban Bushland Council's notes: www.bushlandperth.org.au/images/stories/PDF/Resources/forming_a_friends_group_resource_notes.pdf
 - the Shire of Kalamunda's hints: <http://nrpg.org.au/page/Intro-to-Friends-Groups.aspx>
 - the Shire of Mundaring's notes: www.bushlandperth.org.au/images/stories/PDF/Resources/shire_of_mundaring_friends_group_manual.pdf

Visual surveillance of reserves is another important community function. Reporting activities that impact on a wetland, such as dumping of waste, damaging vegetation or lighting fires, can assist responsible authorities to avert environmental harm.

- ▶ Report illegal dumping to the illegal dumping hotline: 1300 766 541 or phone your local council. For more information see www.kabc.wa.gov.au/illegal-dumping.html
- ▶ Report pollution on the pollution hotline: 1300 784 782 (24 hours) or email pollutionwatch@dec.wa.gov.au; in the event of a hazardous materials release or life-threatening incident, call 000 and ask for Fire and Rescue.
- ▶ Report known or suspected arson (including suspicious behaviour) to Crimestoppers: 1800 333 000, or if it is an emergency, dial 000. See www.bushfirearson.gov.au/Pages/default.aspx for more information.

Community – helping to get things done at wetlands

The community can have a significant influence on wetland protection and management outcomes through participation in on-ground and wetland management planning activities.

Community assistance and guidance is often necessary for government to achieve successful, long-term implementation of programs. Public agencies responsible for management of public lands have recognised this and in particular the importance of community involvement in planning and undertaking wetland management.

In recognising that genuine engagement with the community is critical for environmental protection and natural resource management in Western Australia, DEC has embedded

this ethos in its mission statement. It has developed a number of formal policies to encourage, support and guide volunteer involvement in management activities and to ensure that volunteers are covered by insurance when participating in these activities.¹

Individuals can participate in working bees organised by land managers or community groups working in association with land managers. There are often a variety of on-ground management actions people can become involved in, including activities such as planting seedlings, weeding, fencing, conducting plant and animal surveys, water quality monitoring, and numerous other activities. Most restoration and management activities are restricted by the number of people available to assist and so every pair of hands helps. As the number of volunteer hours recorded for specific projects are a reflection of community engagement and concern for an area, this information is often used by government agencies to determine future allocation of funding and future projects to be implemented. Organised events will often be advertised in the local paper and local government websites.

There are a number of organisations that have valuable volunteer programs to help manage wetlands and other natural areas. DEC has a number of short-term and ongoing projects involving volunteers.

A program that provides help and assistance to community groups managing urban natural areas is DEC's Urban Nature program. Urban Nature provides technical advice and on-ground support for land managers and supporting groups working to protect, manage and restore bushlands and wetlands in the Perth metropolitan area and beyond, with a primary focus on regionally significant areas. For more information, see the Urban Nature webpage on the DEC website: www.dec.wa.gov.au/content/category/45/879/2024/.

Many community groups are eligible to apply for funding to do on-ground works at wetlands. Community groups often actively facilitate and broker relationships with community members, agencies and research organisations to improve wetland management (see the case study 'Working collaboratively to manage Lake Mealup' at the end of this topic for a great example of this).

- For listings of various programs that provide assistance to community groups to manage wetlands, see the topic 'Funding, training and resources' in Chapter 1.
- Details of DEC projects involving volunteers are provided on the volunteer webpage on the DEC website: www.dec.wa.gov.au/content/view/196/534/
- Local governments can also be contacted for information about upcoming events at wetlands managed by the local government.
- Information on volunteering is available from Volunteering WA: www.volunteeringwa.org.au.

A community voice in government policy development

The community has an important role in setting political agendas and raising government awareness of wetland conservation issues. While specific government agencies are assigned responsibilities for wetland conservation by the state government, government agendas and programs are frequently influenced by community concerns and opinions (Figure 2).

For example, the community was vocal in seeking the banning of recreational duck shooting in WA wetlands. Many groups and individuals formed the Coalition Against Duck Shooting. As a result of community opposition, recreational duck shooting was

banned in 1992 in WA (the first state or territory to do so) by changes to legislation. Recreational shooting is still allowed in some other Australian states and territories.

Government agencies and committees prepare broad policy statements, strategies and/or position statements in regard to environmental issues. These policies provide the community and the private sector with a greater understanding of the government's likely position on any proposal or plan that affects that issue.

Some government committees include community representatives to facilitate greater consideration of community opinions when developing policy and making decisions. For example, the Wetlands Coordinating Committee (described later) and a number of its sub-committees include representatives of the voluntary conservation movement and wetland scientists from universities and the private sector.

Most policies, strategies, and position statements developed by government agencies or committees are released in draft form for public comment. Submissions made during this time are usually considered through a formal process and a response is made to each substantive point raised. Submissions with well defined and explained points make it easier for the agency or committee to respond. Most agencies publish guidelines for preparing submissions. The response to submissions is sometimes published.

Some agencies or committees will invite community input before a draft is prepared, in the form of a workshop or survey. Invitations may be extended on a random basis or to known representative community members. For example, in development of Network City, the strategic framework used to create sustainable development of the Perth and Peel areas, the (then) Minister for Planning and Infrastructure ensured the process provided for extensive community involvement from the very beginning of the framework's development. The consultation process included a resident survey, publication of issues papers, a television program, interactive website, school competition, radio coverage, a large interactive forum and publication of a draft for public comment.²

Broad policy development can also be initiated by government in response to an issue raised by the community through individual or group lobbying to the responsible Cabinet Minister. The community response to a specific plan or proposal can also contribute to broader policy development on an issue. For example, the development of the *State Planning Policy 2.6 (State Coastal Planning)* formalised planning requirements for coastal setbacks in new developments, following community reaction to the initial proposal for redevelopment of Leighton Beach in Perth.³

- A list of policies that influence wetland management and protection, and descriptions of these policies, is available in the topic 'Legislation and policy' in Chapter 5.
- DEC recognises the right of members of the public to have a meaningful role in protecting and conserving Western Australia's natural environment and advertises documents for comment online at www.dec.wa.gov.au/community-and-education/have-your-say.html

A community voice in government decision-making

Decision-making processes often have a public consultation phase built-in. Community input during these phases can be a very effective way to influence a decision-making authority's determination of a proposal (a decision-making authority, or DMA, is a public authority empowered by legislation to make a decision in respect of a proposal). Raising issues early in the planning process is most effective, as it provides the proponent with more opportunity to address an issue or modify a proposal during the earlier stages of

planning.

Planning development and new infrastructure can require considerable investment and the later in the process an issue is raised, the less likely it will be that the proponent will



Figure 2. A community group speaking with media in the Kimberley region, WA. Photo – M Coote/DEC.

want to, or be able to afford to change the proposal.

More formally, the environmental impact assessment (EIA) process grants members of the community specific rights to have concerns and views regarding proposals taken into consideration.

These rights are generally applicable where a proposal is formally assessed, however, the EPA may request targeted public input into proposals that are assessed informally and that do not have to undergo a full EIA assessment.

The types of submissions and appeals an individual may make include:

- (i) a submission to the EPA during the public submission period of a project proposal undergoing environmental impact assessment
- (ii) an appeal against decisions, recommendations and orders issued in respect to the EIA process and applications to clear native vegetation to the Minister for Environment.

Appeal rights include the right to appeal:

- the decision of the EPA not to assess a proposal
- the content or recommendations of an EPA report.

The following appeals are only available to the proponent of the proposal:

- conditions imposed on a proposal by the Minister

- an order imposed on a proponent by the Minister following a breach of conditions.

Applications to clear native vegetation in WA are regulated through Part V of the *Environmental Protection Act 1986*. The process grants members of the community specific rights to have comments regarding proposals taken into consideration.

Table 2 provides some examples of statutory decision-making processes relevant to wetland conservation that involve an advertised public comment or appeal period.

Table 2. Examples of statutory decision-making processes in WA with public comment or appeal periods.

Decision	Decision-making authority	Public consultation process	Appeals process	Legislation
Local planning scheme amendment	Department of Planning	Submission	State Administrative Tribunal	<i>Planning and Development Act 2005</i>
Local planning scheme amendment (assessed)	Environmental Protection Authority	Submission	Appeals Convenor	<i>Environment Protection Act 1986</i>
Development or subdivision proposal (assessed)	Environmental Protection Authority	Submission	Appeals Convenor	<i>Environment Protection Act 1986</i>
Clearing application	Department of Environment and Conservation	Public comment	Appeals Convenor	<i>Environment Protection Act 1986</i>
Groundwater allocation (regional/area) plans	Department of Water	Submission	State Administrative Tribunal	<i>Rights in Water and Irrigation Act 1914</i>

Community can also raise concerns or highlight opportunities for wetland conservation outcomes through a general enquiry to the relevant government agency or committee or local member of Parliament.

- For additional details on relevant legislation that provides for public consultation during decision-making processes, see the topic 'Legislation and policy' in Chapter 5.
- The Environmental Defender's Office of WA also provides a range of useful fact sheets on this matter: www.edowa.org.au
- For further information on current EIA proposals open for public submissions or to make a submission, see the EPA website at www.epa.wa.gov.au/public-comment
- DEC publishes applications received for Part V licences, works approvals and clearing permits online at www.dec.wa.gov.au/news/advertisements.html and in the Public Notices section of *The West Australian* newspaper each Monday.
- For further information on the appeals process or to make an appeal, see the Appeals Convenor website at www.appealsconvenor.wa.gov.au and the State Administrative Tribunal website at www.sat.justice.wa.gov.au.

THE ROLE OF ORGANISATIONS

For the purposes of this guide, the term 'organisation' is used to collectively refer to businesses, not-for-profit organisations such as environment groups and public institutions such as universities, education centres and schools.

Organisations have varying roles in wetland conservation, depending on their structure and purpose. In particular, whether it operates for profit, is a not-for-profit organisation or a research institution.

For-profit organisations

Corporate social responsibility (or corporate citizenship) enables companies to embrace responsibility for the social and environmental impact of their business over and above what is legally required, and promote the public interest by encouraging community development and sustainability and voluntarily eliminating practices that harm the public realm.

For example, corporations can demonstrate corporate social responsibility by voluntarily lowering environmental emissions and waste, consulting with local communities prior to planning of projects, contributing funding and facilities to the community and enabling employees to participate in local environmental projects and events, such as planting days.

Corporations and environmental or community groups can form partnerships to facilitate positive environmental or social outcomes. The Coles Group Ltd (formerly Coles Myer) began a partnership with Landcare Australia in 2001 and has achieved a number of positive outcomes for the environment. These include reducing plastic bag usage by 45 per cent between 2004–2005, raising funds for Coastcare through a reusable bag initiative and contributing funds to the Junior Landcare Program aimed at reducing the impact of salinity and other environmental issues on communities.⁴

The growing number of businesses now competing in the annual Western Australian Environment Awards is an indication that the private sector is becoming increasingly aware of the value that corporate environmental responsibility can provide to their business.

- ▶ The Western Australian Environment Awards' *Winners* book, available at www.dec.wa.gov.au, provides inspiring examples of corporate participation and innovation in conservation and sustainability.
- ▶ *Working together: involving community and stakeholders in decision-making*⁵ is a guide by the Government of WA.

Land developers have a specific role in wetland management during the course of, and in the years following, the subdivision and development of an area of land. If a wetland is located within the parcel of land, it may be required to be ceded to the Crown free of cost as 'public open space' (often abbreviated to POS). For wetlands retained in areas of public open space within a residential development, it is common for developers to be assigned responsibility for the management of the wetland for a period of up to three years following the completion of a development. They are generally required to manage the wetland and associated wetland buffer in accordance with a wetland management plan that has been prepared in liaison with and approved by relevant authorities (for example, DEC and/or the local government). After this period, if the developer has satisfied the requirements and implemented all management actions outlined in the approved wetland management plan, transfer of the open space and therefore responsibility for the management of the wetland passes to the nominated vesting body,

typically the local government. Community can have an important role in the scoping of the wetland's management, and should be consulted by the land developer as a matter of course during the development of the plan. For more information on public open space in residential areas, see *Liveable Neighbourhoods*⁶ (Element 4, R11, page 7).

Corporatised and privatised service providers

Corporatised and privatised service providers of water, gas, electricity, and communication services are now largely commercial organisations which operate for profit or under strict regulatory control. These include Water Corporation, Western Power and Alinta Gas. Their association with state government varies between organisations, however, they are all regulated under legislation and policy and are required to meet government objectives.

While they do not have a lead role in wetland conservation, service providers have the potential to impact wetlands through infrastructure development and maintenance. As such, providers are required to conduct their business within the constraints of legislation and policies. This may include planning of infrastructure corridors to avoid impact on intact natural areas including wetlands, obtaining clearing permits prior to vegetation clearing for infrastructure corridors and conducting threatened flora and fauna surveys in environmentally sensitive areas prior to maintenance of infrastructure corridors.

Some service providers have developed internal policies to ensure business activities adhere to legislation and policy, ultimately reducing impacts on wetlands and other natural areas.

For example, Western Power has standards and instructions in place to restrict the movement of soil and plant life during construction and maintenance activities, which minimises the risk of spreading the pathogen *Phytophthora cinnamomi*, which causes Phytophthora dieback. Western Power has also supported the research efforts of the Centre for Phytophthora Science and Management with funding over four years.

extra information

Working with utility providers in and near wetlands

Utility providers may often need to access infrastructure in or near a wetland. Overhead or underground services may be located within a wetland area, often in formal drainage reserves or easements.

An easement is a right held by one person to make specific, limited use of land owned by another person. An easement is granted by the owner of the property for the convenience, or ease, of the person using the property. Common easements include the right to pass across the property, the right to construct and maintain a roadway across the property, the right to construct a pipeline under the land, or a power line over the land. Care should be taken to identify the location of these easements and ensure that the organisations that have access rights to the reserve are aware of the wetland management requirements. It is important to understand how their works and maintenance requirements may be made compatible with the values of the reserve.

For example, where an overhead power line enters a natural area, care should be taken by any vehicle that is entering the site in order to undertake pruning or other line maintenance work. Western Power now places signage on each power pole within conservation reserves that advise workers of the site's environmental sensitivity, and the need to take appropriate care. In addition

to these signs, sites are registered in databases and geographic information systems. Prior to undertaking any work near these areas, appropriate procedures are determined and field personnel are issued with work instructions that must be adhered to.

Whilst the *Utility Providers Code of Practice for Western Australia*⁷ has been designed for works in road reserves, it provides a starting point when consulting with any of these organisations (for example, Alinta Gas, Western Power, Horizon Power, or any one of the number of telecommunications carriers). It is available from the Main Roads WA website: www.mainroads.wa.gov.au.

Key principles when encouraging responsible action by utility providers include:

- ensure that the utility is advised of environmental values and sensitivities of the wetland and surrounding natural area, preferably both in writing and in liaison for on-site staff
- both parties should establish an agreement in writing, making clear the responsibilities of the utility provider, its contractors, the local government and/or community groups
- utilities should avoid locating new services in natural areas
- utilities and their contractors should adopt a 'do not disturb' approach to native vegetation when working in the natural area
- utilities and their contractors should follow *Phytophthora* dieback hygiene protocols when working in the natural area
- utilities and their contractors should follow weed and pest hygiene protocols when working in the natural area.

Privatised water service providers

Water Corporation

The main role of the privatised water suppliers such as Water Corporation is to supply water of a high quality to residential and commercial properties throughout the state. The Water Corporation is also responsible for the main drain network and the conveyance, treatment and disposal of wastewater via its reticulated wastewater system. The Water Corporation is a corporatised organisation with a business agenda, owned solely by a single shareholder, the state government. Any profits from the Water Corporation business are returned to the state as a dividend to contribute to future development of water supply. It has a board of directors who report to the Minister for Water.

- For more information, see the Water Corporation website: www.watercorporation.com.au

The enactment of the *Water Services Act 2012* and the *Water Services Legislation Amendment and Repeal Act 2012* will facilitate, amongst other matters, easier entry of new water service providers to the market. For the first time, all water service providers will operate under the same set of powers and obligations. The changes will also allow some of the state's water service providers to offer new services such as bulk water supplies, drainage, recycled water and sewerage services. It allows for the development of codes of practice for water service providers.⁸

Working with drainage service providers at individual wetlands

Relationships between local community groups and service providers can sometimes make or break wetland management efforts. In the case of Lightning Swamp located in Noranda, metropolitan Perth, a healthy working relationship has formed between the Friends of Lightning Swamp Bushland, City of Bayswater and the Water Corporation.

Management of the main drain that lead into, through and out of the wetlands in the reserve was a key issue identified through a management planning process. Routine mechanical removal of the introduced bulrush, *Typha orientalis*, from the drain by Water Corporation contractors was causing the loss of mature paperbarks and other native vegetation fringing the drain. The local community was understandably concerned.



Figure 3. The infestation of *Typha orientalis* that was present in the Water Corporation drain at Lightning Swamp. Photo – Friends of Lightning Swamp Bushland.

Representatives of the group met with Water Corporation staff responsible for the planning of drainage management. Through a process of negotiation, the Water Corporation agreed to keep all machinery out of the reserve on the basis that the group would take responsibility for the management of weeds in the drains. The group has successfully controlled the introduced bulrush and there has been no need to use heavy machinery to clear the drains.

Lightning Swamp case study acknowledgements: prepared by A. Del Marco, Ironbark Environmental with input from John Williams, Chairperson, Friends of Lightning Swamp Bushland and Jeremy Maher, Environmental Officer, City of Bayswater.

Harvey Water and Ord Irrigation Co-operative

Privatised water organisations such as Harvey Water and the Ord Irrigation Co-operative also have a role in water management in the state. These organisations are licensed by the Department of Water to deliver water sourced from catchment dams to regional irrigators through piping and channels for use in agriculture. Membership of these agencies is by means of shares that entitle irrigators (shareholders) to a relative allocation of water based on the amount of shares they own. The redistribution of water across the landscape by these organisations has the potential to impact wetland condition through altering wetland water regimes.

Public institutions

Public institutions are those organisations established for the public good and to undertake research, facilitate and deliver training and education to the public. They include institutions such as universities, schools, technical and educational centres. These organisations are often partially funded by government and partially funded privately through grants and partnerships with government, industry and other private sources.

Public institutions play a pivotal role in wetland conservation by conducting research and delivering education and training that enhances knowledge of wetland ecology and associated fields and develops the skills and knowledge necessary for management and conservation of wetlands. Wetland research conducted by university academics and research fellows facilitates development of innovative and more effective wetland management and conservation methods. Academics also play a valuable advisory role on many committees and collaborative projects. Education in primary and high schools is important to foster appreciation, understanding and respect in children for wetlands.

Not-for-profit organisations

Not-for-profit organisations (NPOs) are non-government organisations that are comprised of people with a common interest in addressing specific issues in support of the public good, through delivery of programs and services on a local, national or international level. These organisations do not exist to earn surplus funds (profits) to distribute to owners or shareholders, but instead use profits to help the organisation pursue its goals.⁹

As non-government organisations, NPOs are entities which remain independent of government, regardless of whether they receive complete or partial funding from government.

The goals and programs of NPOs, their membership base and available funding determine the role each NPO has on wetland conservation and protection. The role of some organisations may change over time, with some organisations only operating for a limited period while a cause is urgent.

Environment centres

WA's environmental education centres are very important and greatly increase community awareness and the capacity of individuals to make decisions and implement positive management actions for wetlands on their property, or the public properties they are involved in managing through Friends of groups or other associations.

Cockburn Wetlands Education Centre holds an annual conference on World Wetlands Day, 2 February. This highly successful conference, which has been held annually since 2005, brings together people involved in protecting and managing wetlands from across WA. For more information, see: www.cockburnwetlandscentre.wordpress.com

- Education centres that incorporate nearby wetlands into their activities include:
- Canning River Eco Education Centre: www.canning.wa.gov.au
 - Cockburn Wetlands Education Centre: www.cockburnwetlandscentre.wordpress.com
 - Henderson Environment Centre: www.stirling.wa.gov.au
 - Herdsman Lake Wildlife Centre (WA Gould League Inc): www.wagouldleague.com.au
 - Kings Park Education Centre and Rio Tinto Naturescape: www.bgpa.wa.gov.au/education
 - Naragebup Rockingham Environment Centre: www.naragebup.org.au
 - Piney Lakes Environmental Education Centre: www.melvillecity.com.au
 - South West Environment Centre: www.swecwa.org

Non-government conservation organisations

Non-government, voluntary conservation organisations may be organised on a local, regional, national or international level to address issues which may impact on environmental values or promote conservation.

Non-government organisations (NGOs) can play a pivotal role in delivering on-ground management advice, funding, and assistance to private landowners who have high conservation value wetlands on their property. WWF Australia is one such conservation NGO operating within WA that has provided such a service, through its 'Wetland Watch' program (not currently running).

Conservation NGOs are very important in bringing community concerns regarding the implementation of policy and programs to the attention of government and the wider community. These NGOs serve as environmental watchdogs, by reviewing proposals and draft policies and helping to identify where environmental values are at risk and not being managed appropriately. For example, the Wetlands Conservation Society (<http://cockburncommunity.asn.au/WetlandsConservationSociety>) formed in 1985 to campaign for the protection of wetlands throughout the state. It has been based at the Cockburn Wetlands Education Centre since 1993. The Wetlands Conservation Society is involved in a wide range of activities aimed at conserving WA wetlands including submissions, education, wetland revegetation and excursions to wetlands. The Wildflower Society (<http://members.ozemail.com.au/~wildflowers/conservation.html>) has also been active for many years in considering conservation issues as they pertain to WA's native flora. It makes submissions and meets with government as well as interested parties as and when it can.

Some of WA's conservation NGOs exist as 'umbrella' community groups that represent the views of many affiliated groups and individuals and advocate upon their behalf. Examples include the Urban Bushland Council, the Conservation Council of WA and the Environmental Defenders Office.

Other organisations such as Green Skills Inc. deliver sustainability programs on-ground and deliver training and employment opportunities across a wide range of industries. Green Skills Inc. has worked with landholders on the South Coast to deliver wetland management plans.

The following is a brief overview of each organisation:

- Conservation Council of WA: the main objective of the Council is to promote conservation of the natural environment and environmental protection in WA. It is an umbrella group for approximately one hundred affiliated groups. CCWA seeks to facilitate advocacy and action through policy development and legislative change, consultation, campaigning, submission writing, and environmental education. Website: www.ccwa.org.au
- Environmental Defenders Office (EDO): endeavours to provide protection of WA's environment by providing community groups and individuals with environmental legal services including advice, education, representation, and opportunity to participate in reform of laws affecting the environment. The EDO provides free legal advice over the phone to members of the community in public interest environmental law matters. It also provides fact sheets on a wide range of matters, including wetlands. Call on (08) 9221 3030 or Freecall 1800 175 542 (for WA callers outside the Perth Metropolitan Region). Website: www.edowa.org.au
- Urban Bushland Council (UBC): the peak community organisation for the recognition and protection of urban bushland in Western Australia. It comprises approximately sixty community conservation groups concerned about urban bushland (including wetland). The UBC is involved in local action and networking, policy development, lobbying and raising public awareness of issues regarding urban bushland. Website: www.bushlandperth.org.au
- Green Skills Inc.: operates a diverse range of environmental sustainability programs in metropolitan and regional areas to address local, regional and national priorities. In addition to wetland conservation activities, such as planning and implementing wetland restoration on private land, Green Skills' work integrates project management, training and employment programs across a wide range of industries, including sustainable living, energy and water efficiency, waste management, landcare and farm forestry. Website: www.greenskills.org.au

A number of NGOs work nationally to implement programs on an Australia-wide scale to effectively address national environmental issues such as water management and climate change. Some of the national NGOs involved in wetland conservation and protection in Western Australia include WWF Australia, Greening Australia, The Wilderness Society, and the Australian Conservation Foundation. One of the national programs which demonstrates the benefits of a national approach to conservation planning is The Wilderness Society's 'WildCountry' program which involves protection of high value remnants of Australia's natural environment, and restoration of important areas to maintain and/or restore ecological connections across the continent.

Many national and international organisations work in partnership with other NGOs, industry, scientific experts, government and the community to develop both scientific and rational economic solutions which help to influence governmental policy and practice and generally allow for better management of Australia's environmental values.

Regional natural resource management organisations

There are six community-based regional natural resource management (NRM) organisations in WA, which are a part of a national network of fifty-six regions. Working in partnership with stakeholders, the regional and sub-regional NRM organisations play a key role in the regional delivery of natural resource management programs in their regions: Northern Agricultural, Perth, Rangelands, South Coast, South West, and Wheatbelt as detailed in Table 3.

Table 3. Regional NRM organisation and sub-regions¹²

NRM regional organisation	NRM sub-regions
Northern Agricultural Catchments Council www.nacc.com.au	Greenough Moore River West Midlands Yarra Yarra
Perth Region NRM www.perthregionnrm.com	North North-East East South Coastal
Rangelands NRM WA www.rangelandswa.com.au	Kimberley Pilbara Gascoyne Murchison Goldfields Nullarbor Desert Rangelands
South Coast Natural Resource Management Inc. www.southcoastnrm.com.au	Albany Hinterland Esperance Mallee Esperance Sandplain Fitzgerald Biosphere Kent Frankland North Stirlings Pallinup
South West Catchments Council www.swccnrm.org.au	Blackwood Cape to Cape Geographe Leschenault Peel-Harvey Warren
Wheatbelt NRM www.wheatbeltnrm.org.au	Avon Lockhart Yilgarn

In addition to the regional NRM organisations, many organisations are active in sub-regions. They include catchment groups, landcare groups and regional councils. For example, in the Perth Region NRM area, the Ellen Brockman Integrated Catchment Group, the Eastern Metropolitan Regional Council and the South East Regional Catchment Urban Landcare WA carry out NRM functions.

NRM regional organisations are eligible for funding via the Australian Government's Caring for our Country funding program and the Government of Western Australia's State NRM program (in previous years initiatives such as the National Action Plan for Salinity and Water Quality (NAP) and the Natural Heritage Trust (NHT) were the primary funding programs).

With community input, each regional NRM organisation and many sub-regional NRM organisations have prepared a regional strategy outlining their evaluation of the natural assets (including wetlands) in their region and their condition; threats to those assets; goals and targets to improve their condition; actions to achieve those goals; and targets and a framework for implementing those actions. Investment plans have also been prepared to allocate funding to projects towards achieving the goals and targets outlined in the regional strategies.

Through the regional strategies, a number of the regional NRM organisations identified that their region's wetlands were poorly documented, and they applied for funding to carry out wetland mapping, monitoring and research programs to improve knowledge of the wetlands and their values. This process has resulted in much better knowledge of wetlands in the Rangelands, Northern Agricultural, South West and Wheatbelt regions. For example, in the Wheatbelt catchment, wetland mapping was carried out to identify the location of wetlands and characterise them into wetland types. Methodologies for evaluating their values at a broad scale (1:100,000) and a much finer scale (1:25,000) were also developed, and the broad scale methodology was applied to a range of wetlands across the area. As a result of this identification and evaluation of wetlands across the Wheatbelt, there is now a much better understanding of where wetlands are and their values, providing individuals, organisations and government with a better understanding of wetland protection and management priorities in the region. Rangelands NRM WA established a project that brought together a wide range of stakeholders to discuss Kimberley region wetlands, culminating in the report, *Establishing priorities for wetland conservation and management in the Kimberley Region*.¹⁰

- ▶ DEC undertakes wetland mapping projects as funding permits and is the lead agency for wetland inventory standards and endorsement of wetland mapping across the state.

NRM regional organisations often significantly contribute to a range of on-ground activities at wetlands and in their catchments. Planting, weeding, fencing and control of feral animals and cattle are just a few of the wide range of on-ground activities that NRM regional organisations participate in.

NRM regional organisations can also play a leading role in water management. For example, the Peel-Harvey Catchment Council, within the South West Catchments Council region, has partnered in an agreement with the City of Mandurah and the Shire of Murray to implement seven new stormwater retrofit projects by 2013 in the Peel-Harvey.¹¹ Activities of this nature can have significant water quantity and water quality benefits in wetlands.

- ▶ For more information on the role of regional NRM organisations in wetland conservation, see the State NRM Office website: www.nrm.wa.gov.au.
- ▶ For more information on the Wheatbelt and other wetland mapping around the state, see the DEC wetlands webpage: www.dec.wa.gov.au/wetlands then selecting the 'Wetland mapping' tab.

Western Australian Local Government Association

The Western Australian Local Government Association (WALGA) is a non-government organisation that lobbies and negotiates on behalf of the 142 local governments of WA.¹² As such, it is referred to as 'the voice of local government'. WALGA aims to enhance the capacity of local governments by negotiating service agreements and providing other economic, social, and environmentally sustainable services and infrastructure to meet the needs of the community.

The operations of WALGA are funded by membership subscriptions, businesses and grants.¹³

WALGA has undertaken or facilitated a number of projects that contribute significantly to wetland conservation outcomes including programs such as:

- Perth Biodiversity Project: supports local governments to use their functions and powers effectively to protect and manage local natural areas; see <http://pbp.walga.asn.au>

- South West Biodiversity Project: (now ceased but still provides resources) supports local governments to use their functions and powers effectively to protect and manage local natural areas; see www.walga.asn.au/AboutWALGA/Policy/SouthWestBiodiversityProject.aspx
- ▶ More information on these programs is available from the WALGA website: www.walga.asn.au.

COLLABORATIONS: NON-GOVERNMENT AND GOVERNMENT WORKING TOGETHER

An emerging trend in conservation is consortiums who collaborate to achieve conservation outcomes. Two examples of consortiums whose work affects WA wetlands are:

- The New WAtEr Ways aim is to build the water sensitive urban design capacity of Government and industry to improve the delivery of urban water management and water sensitive cities through partnerships, collaboration and consultation. It is a partnership of the Department of Water, Department of Planning, Western Australian Local Government Association, Water Corporation, Urban Development Institute of Australia (WA) and Swan River Trust. Website: www.newwaterways.org.au
- The Southwest Australia Ecoregion Initiative (SWAEI), a consortium of partner organisations and government agencies. It is a multi-stakeholder, non-sectoral group and authority is not vested in any one government agency or non-government organisation. It is jointly co-chaired by WWF-Australia and the Department of Environment and Conservation. Website: <http://swaecoregion.org/>

THE ROLE OF GOVERNMENT

The role of government is discussed below under the three tiers: local, state and national. The role of each tier of government is defined by legislation.

Government agencies have the ability to influence policy and actions of other government agencies in wetland conservation in a similar manner to community members or groups, as described above. For example, a state government agency may provide a response to a local government on an advertised policy or proposal.

The profile of each agency or committee has been provided in the tables below to allow quick identification of information of interest.



When seeking government action on a matter, it is important to understand who has lead responsibility for that matter within government. It is also important to understand which agencies or individuals are *advice giving* agencies on any particular matter, and which are a *decision-making authority* for a matter. A decision-making authority, or DMA, is a public authority empowered to make a decision in respect of a proposal. It is important to note that the legislative authority for many decisions is a Minister of government, not a government agency.

Local government

Local government is the tier of government responsible for managing the development and operation of individual local government areas, development and maintenance of assets, and provision of local services.

There are 142 local governments (also called shires or councils) in the state. These are each responsible for a specific geographic area varying in size from 1.5 square kilometres (Shire of Peppermint Grove) to 379,000 square kilometres (Shire of East Pilbara).¹³

Each local government has the power to make local policies under the *Local Government Act 1995* on a range of matters including wetland protection, subdivision and development, lot sizes, stormwater management and housing densities. Local governments are responsible for the detailed planning of the use of land via the development of 'local planning schemes' which set out rules for subdivision and development of land. As such, local governments have significant potential to positively influence wetland protection and conservation by:

- ensuring local planning schemes, subdivisions and developments protect wetlands, buffers and ecological corridors, wetland water regimes and water quality, and ensure their long-term management;
- managing stormwater via local drainage networks to reduce environmental impacts; and
- ensuring land use activities within the area are in accordance with the approved land use plans.

Local governments have the power to reserve land through their local planning schemes to protect places of special heritage significance or of significance to the community. They may also include other land into a 'scheme' reserve such as local parks and primary school sites.¹⁴

Through the planning process, local governments may also have wetlands vested with them. As a result, they are often managers of wetlands and therefore play an important ongoing management role. If a wetland is located within the parcel of land proposed for development, it may be required to be ceded by the land owner to the Crown free of cost as 'public open space' (POS). For wetlands retained in areas of open space within a residential or industrial development, it is common for developers to be assigned responsibility for the management of the wetland for a period of up to three years following the completion of a development. They are generally required to manage the wetland and associated wetland buffer in accordance with a wetland management plan that has been prepared in liaison with and approved by relevant authorities (for example, DEC and/or the local government). After this period, if the developer has satisfied the requirements and implemented all management actions outlined in the approved wetland management plan, transfer of the open space and therefore responsibility for the management of the wetland passes to the nominated vesting body, typically the local government. For more information on public open space in residential areas, see *Liveable Neighbourhoods*⁶ (Element 4, R11, page 7).

Local governments also have significant networks of local drains. The management of existing drains and the creation of new drains can both have significant impacts on wetlands. A number of local governments are now taking the proactive step of retrofitting existing stormwater drains to reduce their impacts on wetlands and other ecosystems via initiatives and resources such as the *Stormwater management manual for Western Australia*¹⁵, the International Council for Local Environmental Initiatives' Water Campaign™ and the New WAter Ways program.

- ▶ WALGA has produced an excellent series of fact sheets about local government and natural resource management, available from the WALGA website at www.walga.asn.au.¹² These include 'Factsheet 2: Understanding Local Government roles and responsibilities' and 'Factsheet 3: Local Government processes and engagement tips'.
- ▶ WALGA has developed a range of tools that local governments can use to identify and prioritise their environmental assets, and plan for their management, such as local biodiversity strategies. See the Perth Biodiversity Project for more information: <http://pbp.walga.asn.au>

Case study

The City of Cockburn was awarded the 'Government leading by example' award at the 2011 WA Environment Awards. The city has undertaken a number of initiatives that will have a positive effect on wetlands in their area. These include:

- a published wetland conservation policy (policy SPD5)
- provisions within the City of Cockburn Town Planning Scheme No. 3 supporting the protection and management of wetlands and wetland buffers from development and adjacent land uses
- a new Conservation Zone in its Town Planning Scheme that ensures landowners who opt to retain areas of conservation value within a development protect, manage, preserve and enhance these areas
- publication of wetland management plans on its website
- a Landowner Biodiversity Conservation Grant Program that gives financial support of up to \$3,000 to landowners to carry out on-ground works that directly relate to the conservation and improvement of privately-owned natural bushland and wetland areas on their property. Some examples of works include: fencing to exclude livestock, weed control, revegetation, erosion control, habitat creation, water quality enhancement and dieback treatment.
- support for WWF's now-finished Wetlands Watch program, which provided technical and financial assistance for private landowners to manage and rehabilitate high conservation value wetlands in Cockburn and surrounding LGAs.¹⁶
- advocating measures to minimise the need for spraying of wetlands, including encouraging residents to minimise midge and mosquito breeding conditions on their property and take steps to protect themselves from mosquitoes when outdoors
- converting drains to living streams
- participating since 2007 in the Water Campaign™ run by the International Council for Local Environmental Initiatives, and publishing a local water action plan committing to actions to improve its water management
- publishing a 'Parks, wetland and beach guide' online
- running the 'Better Tomorrow Sustainability Grants' to encourage and reward community participation in sustainability initiatives; and the 'Native plant subsidy scheme' to encourage the use of native plants in the city.

Local governments	Role Responsible for planning and management of the local area by administration of local planning schemes, policies, strategies in accordance with the local planning strategy ¹⁴ ; reserve management and delivery of local amenities and services ¹²
Website www.<LGName>.wa.gov.au	
Processes or programs that contribute to wetland conservation	
<ul style="list-style-type: none"> • Management of local government reserves • Preparation and implementation of local planning schemes • Preparation and implementation of local planning strategies • Planning and development approvals • Development and implementation of planning policies 	
Legislation relevant to wetland conservation	
<i>Local Government Act 1995</i>	
Relevant committees assisted Refer to each local government	Minister Minister for Local Government

extra information

Key considerations when working with local governments

- A. Del Marco, *Ironbark Environmental*

The management of wetlands vested with a local government largely depends on the resources and priorities of the individual local government and the interests of the local community. Many local governments are taking up the challenge of actively managing wetlands in their reserves and preparing management plans. However, because their roles are broad, the capacity of each local government to manage wetlands under their care is variable. Key points to consider when working with your local government are outlined below.

Capacity: gauge the local government’s capacity to prepare a wetland management plan or undertake management of the wetland. This may involve speaking with relevant senior staff, and then following this up with a letter to the Chief Executive to build a more formal relationship. Where their capacity or willingness is low, initially consider simple joint activities that could be undertaken that raise Councillor and community awareness of the wetland. These include nature walks, rubbish pick-ups, or erection of a sign or fence. It may take one or two years before a small local government agrees to prepare a management plan or invest significant resources in a reserve.

Big picture approach: for local governments that manage numerous wetlands, or have numerous wetlands on local government and private lands, encourage them to undertake a broad-scale assessment of the municipality’s wetlands. Better still, they could do this as part of a local biodiversity strategy.

Budget lead times: local governments have a long lead time between proposing and finalising an annual budget. The annual budget preparations for the following financial year generally commence by November of the previous financial year. Therefore it is necessary to submit proposals as early as possible in the preceding financial year. Better still, make comment on their forward five-year financial plan. These are called principal activity plans or future plans. This is where substantial projects and investments are planned by Council.

Legal responsibilities: remember that local governments have legal responsibility for lands vested in the Council, and will need to give approval for all works carried out in the reserve. This is best achieved through a management planning process, or where required, approval of a one or two year works program that is signed off by the Council.

extra information

Foster partnerships: help your local government work with another organisation to plan or undertake wetland management. There are many opportunities to develop co-operative projects and receive funding with regional Natural Resource Management organisations and local governments.

Develop partnerships: appreciate the skills and resources you and your group have to offer your local government. You may be able to provide expertise on an aspect of wetland management, or help the local government prepare a funding submission. You may be eligible for many grants that the local government is not eligible for.

Co-operate: keeping an eye on a reserve to ensure it is not being impacted by illegal activity (such as trail bike riding, dumping of garden refuse, and so on) is challenging for even the most well-resourced local governments. Local people enjoying and taking care of an area make for highly visible management and maximise passive surveillance to discourage illegal use of an area.

State government

Several state government authorities play very important roles in the protection and management of wetlands within Western Australia. The primary decision-making authorities are the Minister for Environment, the Minister for Water and the Minister for Planning.

<p>Minister for Environment</p>	<p>Role Decision-making authority under environment legislation</p>
<p>Website www.premier.wa.gov.au</p>	
<p>Power <i>Environmental Protection Act 1986</i> <i>Conservation and Land Management Act 1984</i> <i>Wildlife Conservation Act 1950</i> <i>Swan and Canning Rivers Management Act 2006</i></p>	<p>Processes or programs relevant to wetland conservation</p> <ul style="list-style-type: none"> • Decision-making authority under EP Act <ul style="list-style-type: none"> - determines appeals lodged under the Act - sets environmental conditions on proposals after consultation with other relevant decision-making authorities • Reports to Parliament • Ensures EPA has resources and facilities to function • Issue requests to EPA for advice and policy development on environmental matters and special reporting and auditing requirements
<p>Agency</p> <ul style="list-style-type: none"> • Appeals Convenor • Department of Environment and Conservation • Environmental Protection Authority • Swan River Trust 	

Minister for Water	Role Decision-making authority under water resources management legislation
Website www.premier.wa.gov.au	
Power <i>Water Agencies (Powers) Act 1984</i> <i>Rights in Water and Irrigation Act 1914</i> <i>Waterways Conservation Act 1976</i> <i>Water Services Act 2012</i> <i>Water Services Legislation Amendment and Repeal Act 2012</i>	Processes or programs relevant to wetland conservation <ul style="list-style-type: none"> • Decision-making authority under relevant acts <ul style="list-style-type: none"> - general function of conserving, protecting and managing water resources, assessing water resources and planning for the use of water resources under Section 9 of the <i>Water Agencies (Powers) Act 1984</i> - determines outcome of appeals regarding applications to take water - determines outcome of proposals in respect of bed and bank disturbance in consultation with relevant ministers • Reports to Parliament
Agency <ul style="list-style-type: none"> • Department of Water • Water Corporation 	

Minister for Planning	Role Decision-making authority under planning legislation
Website www.premier.wa.gov.au	
Power <i>Planning and Development Act 2005</i> <i>Town Planning Regulations 1967</i> <i>Town Planning and Development (Subdivision) Regulations 2000</i> <i>Metropolitan Redevelopment Authority Act 2011</i>	Processes or programs relevant to wetland conservation <ul style="list-style-type: none"> • Decision-making authority under relevant acts <ul style="list-style-type: none"> - overseeing the administration of planning agencies - maintaining and reviewing planning legislation - directing statutory and strategic planning matters - approving regional planning schemes and local planning schemes - approving some planning policies. • Reports to Parliament
Agency <ul style="list-style-type: none"> • Department of Planning • Metropolitan Redevelopment Authority • LandCorp • Development assessment panels 	

State government statutory offices, boards, tribunals, and committees

The following statutory offices, boards, tribunals and committees have been established under state government legislation and processes, and have significant roles and responsibilities in wetland protection and management:

- Environmental Protection Authority
- Appeals Convenor
- Western Australian Planning Commission
- Conservation Commission
- State Administrative Tribunal
- Wetlands Coordinating Committee

Environmental Protection Authority (EPA)	Role Board that provides independent advice to the state government on environmental matters ¹⁷
Website www.epa.wa.gov.au	
Objective To protect the environment and to prevent, control and abate pollution and environmental harm ¹⁷	
Power Statutory authority but not regulatory, provides advice to government via the Minister to assist decision making	Processes or programs that contribute to wetland conservation <ul style="list-style-type: none"> • Environmental impact assessment (EIA) resulting in recommendations on the environmental acceptability of proposals, schemes and their amendments • Publication of environmental protection bulletins (formerly position statements) and environmental assessment guidelines (formerly guidance statements) as indicators of the EPA's expectations in regards to specific issues • Formulation of environmental protection policies (EPPs) gazetted to protect specific parts of the environment • State of the Environment reporting indicating the status of major environmental issues in WA • Provision of strategic advice and on the formulation of regulations
Legislation relevant to wetland conservation <i>Environmental Protection Act 1986</i>	
Agency Office of the Environmental Protection Authority	Minister Minister for Environment
Membership Five members who are not public servants A full-time chairman, a part-time Deputy Chairman and three part-time members Appointed by the Governor of Western Australia on the recommendation of the Minister for Environment ¹⁷	Meeting frequency Fortnightly
	Sub-committees None
Publications specific to wetlands Chapter B4 ('Wetlands') of <i>Guidance Statement 33: Environmental guidance for planning and development</i> <i>Position Statement 4: Environmental protection of wetlands</i> A number of other EPA policies are relevant to wetlands. See the 'Legislation and policy' topic for a full list.	

Appeals Convenor	Role Statutory office that investigates and provides advice to the Minister for Environment regarding appeals made under the <i>Environmental Protection Act 1986</i>	
Website www.appealsconvenor.wa.gov.au		
Power <i>Environmental Protection Act 1986</i> (section 107A)	Processes or programs relevant to wetland conservation <ul style="list-style-type: none"> • Advice to the Minister for Environment on appeals made under the EP Act, in regard to environmental impact assessment, permits for clearing native vegetation and conditions applying to certain industrial and commercial premises. • Consult with DEC, EPA, appellant and others as required in consideration of appeals • Provide fair hearings • Resolve disagreements between parties • Provide reports to the Minister on conclusion of appeal investigations 	
Agency Office of Appeals Convenor (inclusive of a Deputy Appeals Convenor, a Registrar and four appeals assessors who are employed under the <i>Public Sector Management Act 1994</i>)	Minister Minister for Environment	

Western Australian Planning Commission (WAPC)	Role Statutory authority responsible for urban, rural and regional land use planning and land development matters Responsible for the strategic planning of the state in response to the strategic direction of government	
Website www.wapc.wa.gov.au		
Objective To formulate and coordinate land use strategies for Western Australia to facilitate its growth while continuously enhancing its unique quality of life and environment ¹⁸		
Power Statutory decision-making authority	Processes or programs relevant to wetland conservation <ul style="list-style-type: none"> • Strategic planning of land use, including regional parks, other parks and recreation reservation • Decisions on planning proposals, including all subdivision proposals • Administration of regional planning schemes • Recommendations to the Minister on local planning schemes¹⁴ • Management of reserves e.g. Whiteman Park • Preparation and review of planning strategies, policies, standards and guidelines • Land acquisition • Implementation of Bush Forever¹⁹ 	
Legislation relevant to wetland conservation <i>Planning and Development Act 2005</i>		
Subsidiary legislation Metropolitan Region Scheme Peel Region Scheme Greater Bunbury Region Scheme		
Agency Department of Planning	Minister Minister for Planning	

<p>Membership Up to 15 members, appointed by the Governor</p> <p>An independent chairman, individual Director Generals from the Department of Housing, Department of Planning, Department of Transport, Department of State Development, Department Environment and Conservation and Department of Water and representatives from economic, social and environmental areas and Local Government.¹⁸</p>	<p>Meeting frequency Monthly</p>
	<p>Sub-committees 23 committees with a range of expertise and local community knowledge. For example, Environment and Natural Resources Management Committee¹⁸</p>

<p>Publications relevant to wetlands</p> <ul style="list-style-type: none"> • <i>Better urban water management (2008)</i> • <i>Liveable neighbourhoods: a Western Australian Government sustainable cities initiative (2009)</i> • <i>Statement of Planning Policy 2.2 Gnangara groundwater protection (2005)</i> • <i>Statement of Planning Policy 2.3 Jandakot groundwater protection (2003)</i> • <i>State Planning Policy 2.8 Bushland policy for the Perth Metropolitan Region (2004)</i> • <i>State Planning Policy 2.9 Water resources (2006)</i>

<p>Conservation Commission of Western Australia</p>	<p>Role Statutory authority that is the vesting body for all terrestrial lands under the <i>Conservation and Land Management Act 1984</i>, including national parks, conservation parks, nature reserves, state forests and timber reserves</p> <p>Advisory body to the Minister for Environment on management of native flora and fauna and ecologically sustainable forest management</p>
<p>Website www.wapc.wa.gov.au</p>	

<p>Objective To conserve the State’s biological diversity and to ensure the land estate, for which it has responsibility, is managed in an ecologically sustainable manner</p>

<p>Power Statutory authority but not regulatory, provides advice to assist government decision making via the Minister.</p>	<p>Processes or programs relevant to wetland conservation</p> <ul style="list-style-type: none"> • Vesting of terrestrial lands and their management, for conservation, including national parks, conservation parks, nature reserves, State forests and timber reserves (DEC manages land on the Commission’s behalf). • Development of policies to protect the state’s natural environment and for the appreciation and enjoyment of that environment by the community • Promotion and facilitation of community involvement • Guidelines for ecotourism
<p>Legislation relevant to wetland conservation <i>Conservation and Land Management Act 1984</i> <i>Conservation and Land Management Amendment Act 2000</i></p>	

<p>Agency Department of Environment and Conservation</p>	<p>Minister Minister for Environment</p>
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<p>Membership Nine Commissioners Appointed by the Governor of Western Australia on the nomination of the Minister for Environment</p>	<p>Meeting frequency Monthly</p>
	<p>Sub-committees None</p>

State Administrative Tribunal	Role Independent body that makes and reviews a range of administration decisions related to civil, commercial, and personal matters, made by government agencies, public officials and local governments
Website www.sat.justice.wa.gov.au	
Power <i>State Administrative Tribunal Act 2004</i> <i>State Administrative Tribunal (Conferral of Jurisdiction) Amendment and Repeal Act 2004</i> (Conferral Act)	Processes or programs relevant to wetland conservation <ul style="list-style-type: none"> • Efficient, effective resolution of questions, complaints or disputes • Responds to appeals made under water legislation and planning legislation (not the <i>Environmental Protection Act 1986</i> – this is the responsibility of the Appeals Convenor) • Encourages resolution of disputes through mediation • Reviews and/or make decisions regarding individual cases • Publishes and provides in writing to all parties all final decisions within ninety days
Agency No associated agency	Minister State Attorney General

Wetlands Coordinating Committee	Role Committee established by the Minister for the Environment to coordinate the implementation of the <i>Wetlands Conservation Policy for Western Australia</i> ²⁰
Website www.dec.wa.gov.au/wetlands/wetlands_coordinating_committee	
Objective Encourage the conservation and proper management of wetlands and to encourage development to be consistent with objectives of the <i>Wetlands Conservation Policy for Western Australia</i> ²¹	
Power Non-statutory, that is not legally bound or prescribed by policy and or legislation	Processes or programs relevant to wetland conservation <ul style="list-style-type: none"> • Review of and report to the Minister on implementation of actions listed in the <i>Wetlands Conservation Policy for Western Australia</i> (1997) • Endorsement of wetland mapping, classification and evaluation methodologies and data • Review and endorsement of member policy documents affecting wetland conservation
Legislation relevant to wetland conservation Refer to member agencies	
Agency Department of Environment and Conservation	Minister Minister for Environment
Membership Positions appointed by Minister for Environment Chaired by DEC and includes representatives of DEC, Department of Planning, Department of Agriculture and Food, Department of Water, the West Australian Local Government Association, the voluntary conservation movement and non-government wetland scientists	Meeting frequency Annually Sub-committees Active working groups: Wetland Status Working Group (wetland inventory including mapping and loss), Wetland Buffer Guideline Working Group Others: Wetland Conservation Incentives Working Group, Drainage Evaluation Working Group.

State government agencies

State government agencies with responsibilities for aspects of wetland conservation and management in WA are:

- Office of Environmental Protection Authority
- Department of Environment and Conservation
- Department of Water
- Department of Planning
- Department of Agriculture and Food
- State Natural Resource Management Office
- Department of Fisheries

The Office of the Environmental Protection Authority

The Office of the Environmental Protection Authority (OEPA) is the state agency that supports the EPA in conducting environmental impact assessments and developing policies to protect the environment. The OEPA also monitors compliance with Ministerial conditions related to approvals. The OEPA is accountable to the Minister for Environment, as well as to the EPA.

<p>Office of the Environmental Protection Authority (OEPA)</p>	<p>Role Supports the EPA in conducting environmental impact assessments and developing policies to protect the environment.</p>
<p>Website www.epa.wa.gov.au</p>	
<p>Objective To support the EPA to meet its stated objective to use its best endeavours – a) to protect the environment; and b) to prevent, control and abate pollution and environmental harm.</p>	
<p>Processes or programs relevant to wetland conservation</p> <ul style="list-style-type: none"> • Management of the environmental impact assessment process for the Environmental Protection Authority • Implementation of Environmental Protection Authority policy 	
<p>Legislation relevant to wetland conservation</p> <ul style="list-style-type: none"> • <i>Environmental Protection Act 1986</i> 	
<p>Relevant committees assisted/ supported Environmental Protection Authority</p>	<p>Minister Minister for Environment</p>

The Department of Environment and Conservation

The state government agency with a lead role in the protection and management of wetlands is the Department of Environment and Conservation.²² Specifically, it has responsibility for certain activities relating to wetlands except for waterways, their floodplains, estuaries and peripheral estuarine wetlands. These wetland types are the responsibility of the Department of Water unless these areas are, or are proposed to be, DEC managed estate.

Department of Environment and Conservation (DEC)	Role Lead responsibility for protecting and conserving the State's environment and for aspects of natural resource management in Western Australia
Website www.dec.wa.gov.au	
Objective Working with the community, we will ensure that Western Australia's environment is valued, protected and conserved, for its intrinsic value, and for the appreciation and benefit of present and future generations ¹	
Processes or programs relevant to wetland conservation	
<ul style="list-style-type: none"> • Development and advocacy of wetland protection and management through DEC guidelines, standards, procedures and education initiatives; input into broader policies and initiatives e.g. national wetland policies • Lead role in wetland mapping; coordination of wetland mapping, survey and monitoring programs and standards, custodian of various wetland datasets • Advice on the conservation significance of wetlands • Lead role in implementing and achieving the objectives of the <i>Wetlands Conservation Policy for Western Australia</i> (Govt of WA 1997) • Provision of technical wetland advice to the Environmental Protection Authority in environmental impact assessment and broader policy development processes • Provision of expertise and advice to planning authorities to ensure that the appropriate level of protection is given to wetlands in the land planning process • Advocacy for wetland protection via land use planning processes • Advocacy for wetland protection via water planning processes • Management of national parks, conservation parks, state forests, and timber reserves and nature reserves, which include many of WA's nationally and internationally significant wetlands • Support for conservation activities at privately owned wetlands through community engagement and capacity building programs through programs such as Healthy Wetland Habitats and Land for Wildlife • Research into wetland species and processes • Research into climate change and biodiversity • Regulation of clearing of native vegetation • Implementation of international migratory bird treaties • Identification, protection, monitoring and recovery of rare and threatened species and communities • Regulation of industry, contaminated sites and development and draining of acid sulfate soils • Identification of internationally and nationally significant wetlands and proposal for inclusion under the Ramsar Convention and <i>Directory of Important Wetlands of Australia</i> 	
Legislation relevant to wetland conservation	
<ul style="list-style-type: none"> • <i>Environmental Protection Act 1986</i> • <i>Conservation and Land Management Act 1984</i> • <i>Wildlife Conservation Act 1950</i> • Environmental Protection (Clearing of Native Vegetation) Regulations 2004 • Environmental Protection Regulations 1987 	

<p>Publications relevant to wetlands</p> <ul style="list-style-type: none"> • <i>A guide to managing and restoring wetlands in Western Australia</i> (2012) • <i>A guide to the assessment of applications to clear native vegetation under Part V of the Environmental Protection Act 1986</i> (2009) • <i>Guidelines checklist for preparing a wetland management plan</i> (2008) • <i>Draft framework for mapping, classification and evaluation of wetlands in Western Australia</i> (2007) • <i>Protecting our wetlands in Western Australia</i> (2006) • Wetland inventory series – wetland mapping and evaluation reports for areas of WA • <i>Guideline for the determination of wetland buffer requirements</i> (DoP and DEC in preparation) 	
<p>Relevant committees assisted/ supported</p> <p>Environmental Protection Authority Conservation Commission of WA Wetlands Coordinating Committee</p>	<p>Minister</p> <p>Minister for Environment</p>

The Department of Water

The Department of Water (DoW) is the state agency whose core business is to manage the state’s ground and surface water resources to support sustainable use and development to meet the needs of current and future users, while protecting water dependent ecosystems and environments.

It does this by measuring and allocating the state’s water resources, licensing and setting rules for the abstraction of water, integrating land and water planning and protecting the state’s waterways and catchments.²³ The Department is the lead agency for the management of waterways (such as rivers, creeks, streams and brooks) including their floodplains, estuaries, inlets and reservoirs unless these are in DEC estate. Where a waterway or floodplain is listed under the Ramsar Convention but is not within DEC managed estate, DoW works in consultation with DEC.

<p>Department of Water (DoW)</p>	<p>Role</p> <p>Leads the management and protection of the state’s water resources including waterways and groundwater by informing the government and the community on the quantity, quality, use and availability of the state’s water resources and encouraging water conservation and alternative water sources²⁴</p>
<p>Website</p> <p>www.water.wa.gov.au</p>	
<p>Objective</p> <p>Support WA’s growth and development by managing the availability and quality of water sustainably – now and for the future²⁴</p>	
<p>Processes or programs relevant to wetland conservation</p> <ul style="list-style-type: none"> • Provision of expertise and advice to planning authorities to ensure that the appropriate level of protection is given to water resources in the land planning process • Water resource management legislation and reform • Water allocation, including the establishment of environmental water provisions for wetlands • Water management plans • Water licensing and regulation, giving consideration to water requirements of high value ecosystems • Water re-use, recycling and conservation programs • Stormwater/drainage plans, programs and policies • Waterway management plans • Water quality improvement plans • Authorising bed and bank disturbance • Environmental water planning including ecological water requirements and ecological water provisions for wetlands • Algal bloom management techniques • Catchment monitoring programs • Salinity management • River restoration action plans, training and activities 	

<p>Legislation relevant to wetland conservation</p> <ul style="list-style-type: none"> • <i>Water Agencies (Powers) Act 1984</i> • <i>Rights in Water and Irrigation Act 1914</i> • Rights in Water and Irrigation Regulations 2000 • <i>Waterways Conservation Act 1976</i> • <i>Water Services Act 2012</i> • <i>Water Services Legislation Amendment and Repeal Act 2012</i> 	
<p>Publications relevant to wetlands</p> <ul style="list-style-type: none"> • <i>Better urban water management</i> (2008) • <i>Stormwater management manual for Western Australia</i> (2004–2007) • <i>Decision Process for Stormwater Management in WA</i> (2009) • <i>State Water Plan</i> (Government of Western Australia 2007) • <i>Environmental Water Provisions Policy for WA</i> (2000) • <i>Operational policy: identifying and establishing waterways foreshore areas</i> (2012) • <i>The State Waterways Initiative</i> (2008) 	
<p>Relevant committees assisted/ supported</p> <p>Rural Water Advisory Committee</p>	<p>Minister</p> <p>Minister for Water</p>

The Department of Planning

The Department of Planning (DoP) has the potential to influence wetland protection and management in WA, through provision of planning and policy advice to the Western Australian Planning Commission (WAPC).

<p>Department of Planning (DoP)</p>	<p>Role</p> <p>Statewide responsibility for planning for future communities. Plan cities, towns and connecting transport routes.²⁵</p>
<p>Website</p> <p>www.planning.wa.gov.au</p>	
<p>Objective</p> <p>The department plays a vital role in improving the quality of life of all Western Australians. We plan the cities and towns in which we live and the transport routes that connect us to our jobs, friends and places of recreation. We generate thousands of direct and indirect jobs through the planning approval process.²⁵</p>	
<p>Processes or programs relevant to wetland conservation</p> <ul style="list-style-type: none"> • Advice to Western Australian Planning Commission on planning proposals and policies and implementation of the WAPC's decisions • Delegated authority for decisions on subdivision and development applications, when they comply with WAPC policies and practices • Bush Forever • EnviroPlanning (in partnership with WALGA) 	
<p>Legislation relevant to wetland conservation</p> <ul style="list-style-type: none"> • <i>Planning and Development Act 2005</i> • <i>Town Planning Regulations 1967</i> • Region schemes: Metropolitan Region Scheme; Peel Region Scheme¹⁴; Greater Bunbury Regional Scheme 	
<p>Relevant committees assisted/ supported</p> <p>Western Australian Planning Commission</p>	<p>Minister</p> <p>Minister of Planning</p>

The Department of Agriculture and Food

The Department of Agriculture and Food (DAFWA) assists WA's agriculture, food and fibre sectors to be sustainable and profitable. DAFWA has a number of investment priorities which support wetlands management. These include developing long-term management solutions to salinity, soil degradation and water quality to ensure sustainable management of land and water resources in a changing climate. DAFWA is the lead agency for managing biosecurity risks and invasive plants, animals and diseases in WA. It also has a significant role in the state's land and water resources condition assessment and planning. DAFWA supports the State NRM Office which facilitates funding and governance of coordinated community delivery of natural resource management in Western Australia (see State NRM Office, below, for more information).

Department of Agriculture and Food (DAFWA)	Role To work with our partners to develop the agriculture and food sector; and to effectively manage the risks to the natural and biological resources on which the sector relies.
Website www.agric.wa.gov.au	
Objective/mission To foster a progressive, innovative and profitable agriculture and food sector that benefits Western Australia now and in the future.	
Processes or programs relevant to wetland conservation <ul style="list-style-type: none"> • Support the agricultural sector to minimise impacts by ensuring sustainable management of land and water resources in a changing climate • Minimise the introduction of invasive plants, animals and diseases and management of them to exclude, eradicate, control or minimise their impact to agriculture and related natural resources • Administers the <i>Soil and Land Conservation Act 1945</i> to regulate land degradation and proposals to drain sub-surface water to control salinity • Coordination of state NRM policy and funding programs (see below) • Contributes to state government policies including land and water resource allocations, biosecurity and climate change to support sustainable natural resource use for agriculture 	
Legislation relevant to wetland conservation <i>Biosecurity and Agricultural Management Act 2007</i> and regulations <i>Soil and Land Conservation Act 1945</i> Soil and Land Conservation Regulations 1992	
Publications relevant to wetlands Relevant publication topics include biosecurity, invasive species and climate.	
Minister Minister for Agriculture and Food	

The State Natural Resource Management Office

The State Natural Resource Management Office (SNRMO) was formed by the state government in 2003 to facilitate improved coordination of NRM delivery in WA and to advocate NRM activity and engage resource managers on key NRM issues.

State Natural Resource Management Office (SNRMO)	Role Coordinate natural resource management (NRM) across state government.
Website www.nrm.wa.gov.au	
Processes or programs relevant to wetland conservation	
<ul style="list-style-type: none"> • Develop and coordinate 'whole-of-government' state NRM policy • Negotiate and interact with the Commonwealth on matters related to the Caring for Our Country program • Provide strategic advice for regional project and investment plan development • Administer Commonwealth and State NRM funding • Communicate with stakeholders and the broader community on NRM matters • Support NRM councils and committees 	
Relevant committees assisted/ supported WA NRM Ministerial Committee Council for Natural Resource Agency Chief Executives (CONRACE) NRM Senior Officers Group	Minister Minister for Agriculture and Food

The Department of Fisheries

The Department of Fisheries' primary responsibility is to conserve, develop and manage the fish and aquatic resources of Western Australia to ensure there are 'fish for the future'.

Department of Fisheries (DoF)	Role Conserve, develop and manage the fish and aquatic resources of WA to ensure there are fish for the future.
Website www.fisheries.wa.gov.au	
Processes or programs relevant to wetland conservation	
<ul style="list-style-type: none"> • Maintain expert knowledge of WA's freshwater fish • Control of the introduction and spread of introduced fish and crayfish, maintenance of the noxious fish list and operation of the FISHWATCH service • Regulation of relocations, introductions and reintroductions of freshwater species of fish and crayfish 	
Legislation relevant to wetland conservation	
<i>Fish Resources Management Act 1994</i> Fish Resources Management Regulations 1995	
Publications relevant to wetlands <i>Freshwater fish distribution in Western Australia database</i> http://freshwater.fish.wa.gov.au	Minister Minister for Fisheries

case study

Case study: organisations involved in urban water supply and stormwater management

There are a number of organisations involved in urban water services and management in WA, including the Water Corporation, Department of Water, local governments and Swan River Trust. Their roles can be complex and overlapping. Similarly, the legislation governing water management is spread across a large number of Acts, some of which are very old. The *Water Services Legislation Amendment and Repeal Act 2012* and the *Water Services Act 2012* will replace and streamline a number of these Acts.

Table 3 outlines the roles of key water management organisations.

Water supply and demand management

Organisations such as Water Corporation, Busselton Water Board and Aqwest (Bunbury Water Board) are authorised to supply water to households and businesses in the state. The Department of Water is responsible for development of the overarching policy and management of water resources (and use) in the state. It is the Department of Water that allocates and licences the amount of water an organisation such as the Water Corporation can use or extract. This is important way of stimulating better water demand management responses by water supply organisations, diversification of water supply sources (e.g. desalination of water) and water disposal options that make use of this precious resource.

The Department of Water is also responsible for licensing water extraction by smaller organisations, such as market gardens, and for developing and implementing policies in this regard. The Department uses allocation limits, licensing, efficiency programs and the recouping of unused entitlements to distribute abstraction to limit impacts on the environment and to reduce abstraction in areas where the reductions will benefit the conservation of wetlands. On the Gnangara Mound, where many wetlands are drying due to the drier climate and water and land uses, the Department of Water has stated that ‘no long term licences for accessing the fresh groundwater resources of the Leederville or Yarragadee aquifers are to be granted for additional groundwater entitlements, other than for extenuating circumstances’.²⁶

A proposal to use water that is likely to have a significant impact on the environment may be referred to the Environmental Protection Authority (EPA) for assessment under Part IV of the *Environmental Protection Act 1986*. The supply of groundwater from the Gnangara Mound for public water supply and private licensed use in Perth is one such case. As a result of the referral of a proposal to abstract groundwater from the Gnangara Mound in the 1990s, the EPA determined that the proposal should be assessed, and made recommendations to the Minister for Environment regarding appropriate conditions and commitments should the Minister approve the proposal. As a result, the Department of Water is required to undertake a range of actions to protect wetlands on the Gnangara Mound in accordance with Ministerial conditions of approval and commitments. For more information, see the report, *Review of Ministerial conditions on the groundwater resources of the Gnangara Mound*.²⁷

Table 3. The role of organisations in water management in Western Australia

Responsibility		Water Corporation	Department of Water	Swan River Trust	Department of Environment & Conservation	Local Government	Harvey Water	Ord Irrigation	Department of Planning
POLICY	Develops policy for wetland management in WA				✓				✓
	Develops policy for water resource management in WA		✓						✓
	Provides input into policy and regulation that affects wetlands		✓		✓	✓			✓

case study		Responsibility	Water Corporation	Department of Water	Swan River Trust	Department of Environment & Conservation	Local Government	Harvey Water	Ord Irrigation	Department of Planning
LICENCES		Licences groundwater and surface water abstraction		✓						
SERVICE DELIVERY		Delivers clean drinking water	✓							
		Removes wastewater	✓							
		Maintains drinking water, drainage network and sewage pipelines from residential and commercial properties to main network	✓							
		Maintains local government drains					✓			
		Pipes irrigation water from local dams to shareholders in Collie, Harvey and Waroona for agricultural use						✓		
		Pipes irrigation water to shareholders from Lake Argyle to the Ord irrigation area in Kununurra for agricultural use							✓	
DEVELOPMENT / LAND USE PLANNING		Ensures future development and land use planning enhances ecological health and amenity of the Swan-Canning Rivers			✓					
		Provides advice on development and land use planning that has the potential to affect waterways, groundwater and catchments		✓		✓	✓			✓
		Provides advice on land use planning (structure plans, subdivisions, development etc) that has the potential to affect wetlands		✓		✓	✓			✓
		Decision-making authority for most development applications					✓			
PROTECTION/ RESTORATION		Protects waterways and catchments in WA		✓			✓			
		Protects wetlands in WA		✓		✓	✓			
		Manages wetlands within reserves				✓	✓			
		Protects and enhances the ecological health and community benefit of the Swan-Canning rivers			✓					
		Catchment management programs and activities e.g. conversion of stormwater drains to 'living streams'		✓	✓	✓	✓			
MONITORING		Monitors surface and groundwater (quality and water levels)		✓				✓	✓	
		Monitors drinking water quality	✓							
		Monitors water quality and water level of Swan-Canning rivers			✓					
		Monitors water quality, quantity and treatment in dams, storage facilities and Perth desalination plant	✓							

Surface and groundwater (drainage) management

The Department of Water is responsible for overseeing surface and ground water management policy and planning in WA.

The urban drainage network is made up of drains that principally flow to wetlands, waterways or the ocean. Most urban drains are managed by local governments. In some parts of the Perth metropolitan area the Water Corporation manages 'main drains' that receive drainage water from the local government drainage network. Main Roads and the Public Transport Authority also manage drainage associated with their infrastructure.

The Water Corporation is required to manage stormwater in the landscape within declared drainage districts, under licence from the Economic Regulatory Authority. Properties within these districts pay an annual drainage service charge for this service. The pipes, roadside channels and open drains known as 'main drains' are all part of the Water Corporation's network. In metropolitan Perth, this is made up of 828 kilometres of drains, diverting water from more than 400,000 hectares of land and preventing the flooding and waterlogging of approximately 260,000 properties.²⁸

Outside of the Perth metropolitan area the Water Corporation is responsible for maintaining rural drainage in defined rural drainage districts. Properties within rural drainage districts do not pay annual service charges. The rural drainage service was initially provided only to make land viable for agricultural. It provides a limited flood protection service, allowing adjacent land to be inundated following major storms.

Unlike the urban drainage of other Australian cities, Perth's main drains are designed to intercept and convey shallow groundwater in addition to surface overland flow.²⁹ Many main drains have been constructed to make land that was naturally waterlogged or inundated, that is, wetland areas, viable for agricultural or urban development. The draining of Perth's wetlands has affected all wetland types but in terms of area, it is particularly the extensive waterlogged wetlands that have been affected over decades, as historically they were not typically considered environmentally valuable.

Many main drains flow through significant wetlands in the Perth and Peel Regions. In fact whole chains of wetlands are influenced by the main drains. These drains, and their impacts on wetlands, are a legacy of historical urban and rural development.

Water regime and drainage

Wetland water regime is the specific pattern of when, where and to what extent water is present in a wetland.³⁰ Its components are the timing, frequency, duration, extent, depth and variability of water presence.³¹ The protection of wetland water regime is fundamental to protecting a wetland's values. Inherent in drainage planning is the concept that water needs to be removed from the landscape, beyond its natural flows, to enable people to inhabit the land. There is a strong potential for drainage to significantly alter wetland water regime, and consequently, wetlands and their natural values. However, there has been significant reform of the urban water planning process over the last decade, resulting in a much more transparent, accountable and environmentally-based planning framework for drainage planning in urban areas (Figure 4). As a result, greater opportunity exists for individuals and groups to be involved to ensure that valuable wetlands are considered appropriately in the planning process. Although the issues involved may be complex, stakeholders can influence the process by supporting this principle and advocating for the protection of wetlands in the planning area. Development proponents are required to address arterial drainage planning issues when proposing land use changes. However, in large and complex catchments, the Department of Water may take lead responsibility in the development of plans, in conjunction with the Department of Planning and local governments.

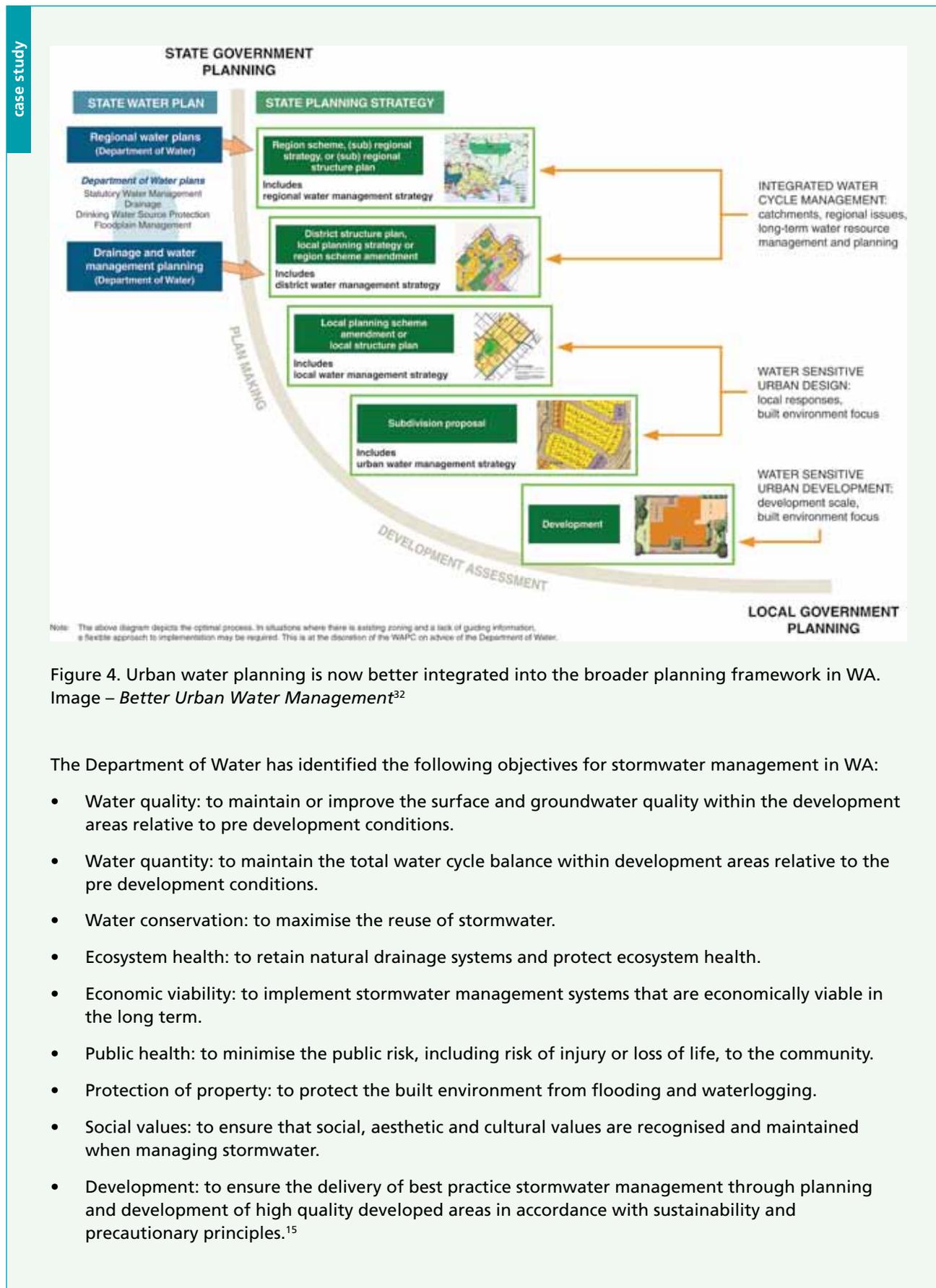


Figure 4. Urban water planning is now better integrated into the broader planning framework in WA. Image – *Better Urban Water Management*³²

The Department of Water has identified the following objectives for stormwater management in WA:

- Water quality: to maintain or improve the surface and groundwater quality within the development areas relative to pre development conditions.
- Water quantity: to maintain the total water cycle balance within development areas relative to the pre development conditions.
- Water conservation: to maximise the reuse of stormwater.
- Ecosystem health: to retain natural drainage systems and protect ecosystem health.
- Economic viability: to implement stormwater management systems that are economically viable in the long term.
- Public health: to minimise the public risk, including risk of injury or loss of life, to the community.
- Protection of property: to protect the built environment from flooding and waterlogging.
- Social values: to ensure that social, aesthetic and cultural values are recognised and maintained when managing stormwater.
- Development: to ensure the delivery of best practice stormwater management through planning and development of high quality developed areas in accordance with sustainability and precautionary principles.¹⁵

- ▶ For additional detail on the water regime of WA wetlands, see the topic 'Wetland hydrology' in Chapter 2.
- ▶ The Department of Water invites comments on drainage plans on its website: www.water.wa.gov.au. There is often a link from the front page of the website to plans currently open for comment.
- ▶ The document outlining how wetland water regimes are protected through urban water planning processes is *Better Urban Water Management*.³² It describes how water resources, including wetlands, should be considered at each stage of the land planning process by identifying the various actions and investigations required to support the particular planning decision being made. It is available online at www.planning.wa.gov.au/dop_pub_pdf/Better_Urban_Water_Management.pdf.
- ▶ The *Stormwater management manual for Western Australia*¹⁵ and the *Decision process for stormwater management in WA*³³ provide stormwater planners and managers with guidance on how to manage stormwater to protect wetlands.

Wetland water quality and drainage

The Department of Water is responsible for overseeing surface water and groundwater management policy in WA. It has spearheaded significant reform in urban water management through a variety of initiatives over the past decade. However, managing the water cycle and its quality in the urban environment requires the participation and compliance of a number of stakeholders, from individuals in the community to local and state government authorities.

Local governments are well placed to make significant improvements to the water quality of the estimated 3,000 kilometres of drains within their networks. In WA, there has been a significant uptake of water quality management initiatives by local governments. For example, more than forty local governments are participants of the Water Campaign™ run by the International Council for Local Environmental Initiatives. As participants, these councils have identified the changes that they will make to the management of water within the local government area. Ratepayers can encourage better wetland outcomes by supporting their local government's uptake of water initiatives such as the Water Campaign™. Resourcing is a constraint facing local governments; ratepayers can help influence the resourcing of such activities by providing their support. A holistic cost-benefit analysis of these activities will often demonstrate that the cost of managing drainage water quality, for example, will be offset by the reduction in costs of managing poor water quality in receiving wetlands and other environments they are responsible for managing.

- ▶ Individuals and community groups can find out if their local government is a participant, and what changes they have committed to, at the ICLEI website: <http://iclei.org/index.php?id=2389te>.

Any modifications to drains, or their management, require the approval of the managing authority. Key concerns of managing authorities will include whether changes to the capacity of the drain will increase the risk of flooding, or reduce the ease of management or public safety. Any proposed changes to the banks, cross-sectional area and levels of drains will require a professional hydrological assessment.

While the Water Corporation is responsible for providing and managing part of the urban and rural drainage networks, the Economic Regulatory Authority operating licence does not require the Water Corporation to control water quality within the main drains. The Water Corporation's stated responsibilities lie in design, construction, operation and maintenance of the drainage networks that convey drainage water to meet the flood protection requirements of the Economic Regulatory Authority operating licence.²⁹ However the Water Corporation has recently stated that it recognises a holistic and integrated catchment scale approach is required for the adequate management of water quality.²⁹ It has recently funded research into the water quality of its main drains²⁹ and undertaken a revegetation trial for a section of a branch drain with the objective of developing a more environmentally sustainable approach to urban drainage management and reducing maintenance by installing long term native vegetation that, once established, would significantly reduce maintenance cost.

- ▶ For more information on managing stormwater quality in WA, see the 'Stormwater' webpage of the Department of Water's website: www.water.wa.gov.au/Managing+water/Urban+water/Stormwater/default.aspx#

Wastewater service providers are responsible for conveying, treating and disposing of wastewater. The Water Corporation is the main provider in WA, however, some local governments, land developers, mining companies, and other organisations are also wastewater service providers. Wastewater service providers are responsible for minimising environmental impacts associated with overflows from their wastewater systems into sensitive receiving environments, including wetlands. The overflow points in



Figure 5. A pumping station. Photo – C Mykytiuk/DEC

wastewater systems are typically located at pumping stations (Figure 5). These stations are generally located at low points in the landscape, and consequently they are often near wetlands. The overflow of wastewater into wetlands has the potential to impact wetland water quality.³⁴ Service providers are required to carry out actions to assess, contain and recover wastewater at overflow sites in accordance with the *Wastewater overflow response procedures*.³⁵

Managing the catchment of the Swan and Canning Rivers

The Swan River Trust (SRT) is another state government agency involved with water management in Perth. Under the *Swan and Canning Rivers Management Act 2006* the SRT is responsible for protecting and enhancing the ecological health and long-term community benefit of the Swan-Canning River system. An important role undertaken by the SRT is to promote sound land use practices in the catchments of the Swan-Canning River system. The Swan-Canning river system includes the Ellen Brook, a westerly section of the Avon River, Helena River, Southern River and the Canning River. The SRT plays an important role in protecting wetlands by delivering a wide range of management programs and activities throughout the Swan Canning catchment to improve water quality in the Swan Canning Riverpark, which also improves water quality of wetlands in the catchment. These range from providing advice on development and land use changes to on-ground projects such as revegetation and fencing, re-engineering drains into living streams, restoring foreshores and improving the health of wetlands and floodplains along tributaries, and creating artificial wetlands in those drains that deliver large nutrient loads to the Swan and Canning Rivers.

- For additional detail on the Swan River Trust including current programs, see the website at www.swanrivertrust.wa.gov.au.

Case study: regulating industry and environmental harm

Pollution control

DEC is responsible for regulating the emissions or discharge of a range of industrial activities that would otherwise pose a significant environmental risk. It has powers to investigate, enforce and to order pollution to be abated and remediated. DEC carries out these responsibilities in accordance with Part V of the *Environmental Protection Act 1986* (EP Act). In particular, DEC manages potential polluting activities of 'prescribed premises' through works approvals and licences.

However, a range of activities do not fall within this regulatory mechanism. Local government approval is required for a range of activities through land use planning, extractive industry and offensive trades approvals and local government by-laws. Department of Mines and Petroleum approvals apply to mine sites, petroleum industries and dangerous goods storage facilities.

Individuals, organisations and community groups such as 'Friends of' groups can play an important role in surveillance and education regarding pollution, and in proactive activities to improve compliance of industry and best practice management by the community in general. For example, the Light Industry Audit Project was delivered by Perth Region NRM between 2007 and 2012. The project aimed to educate and influence managers in regard to the discharge of nutrients and contaminant sources from small and medium sized enterprises by auditing the use, storage and disposal of all types of solid and liquid materials. The subsequent report identified that the main areas where businesses failed to minimise the risk of pollution were:

- inappropriate liquid storage and spill management infrastructure
- inappropriate disposal of wastewater
- wastewater containing detergents, degreasers or sediments not properly treated and/or being discharged to open ground, septic tank system or stormwater drainage
- no emergency spill kit
- no emergency spill management plan and/or staff training for managing spills
- Material Safety Data Sheets not held on site for all chemicals used.

DEC is also responsible for investigating potential environmental harm caused by pollution. Under the EP Act it is an offence to cause environmental harm to the environment. Under the EP Act, an 'alteration of the environment to its detriment or degradation or potential detriment or degradation' or an 'alteration of the environment to the detriment or potential detriment of an environmental value' is considered environmental harm.

- To report pollution, call the Pollution Watch Hotline, 1300 784 782 (24 hours) or email pollutionwatch@dec.wa.gov.au. In the event of a hazardous materials release or life-threatening incident, call 000 and ask for Fire and Rescue).
- DEC publishes details of granted and refused licences. These are available to view at the 'Licensing and regulation' webpage of the DEC website www.dec.wa.gov.au/pollution-prevention/licensing-and-regulation.html.
- Information on the Light Industry Audit Project is available on the Swan River Trust website: www.swanrivertrust.wa.gov.au/the-river-system/tackling-the-issues/addressing-contaminants/light-industry-program

Australian government

National wetland protection and management is coordinated by the Australian government and through two committees. It plays a role in wetland policy and management, particularly with regard to nationally and internationally significant wetlands in WA.

Australian government agencies

The Australian government agency with primary responsibility for wetland protection and management issues of national interest is the Department of Sustainability, Environment, Water, Population and Communities.

<p>Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC)</p>	<p>Role</p> <p>Develops and implements national policy, programs and legislation to protect and conserve Australia’s environment</p>
<p>Website</p> <p>www.environment.gov.au www.nrm.gov.au</p>	
<p>Objective/mission</p> <p>Advancing a sustainable Australia: our environment, water, heritage and communities</p>	
<p>Processes or programs relevant to wetland conservation</p> <ul style="list-style-type: none"> Administrative authority for the Ramsar Convention in Australia. Is the Australian representative; liaises with state and territory governments; designates sites for listing; provides guidance and advice; coordinates reporting on Ramsar sites. For more information see the ‘Case study: roles and responsibilities for Ramsar wetlands’ below. Participates in partnerships and implements agreements that seek to protect migratory species and their flyways as part of Australia’s international commitments to the Convention on Migratory Species (Bonn Convention). Caring for Our Country investment program. Environmental biosecurity and invasive species policy. Implements the <i>Environment Protection and Biodiversity Conservation Act 1999</i> including regulating actions; maintaining the migratory species list; maintaining the list of threatened species, ecological communities and key threatening processes; development conservation advice and recovery plans for listed species and ecological communities; developing and implementing threat abatement plans. 	
<p>Legislation relevant to wetland conservation</p> <p><i>Environment Protection and Biodiversity Conservation Act 1999</i> <i>Natural Heritage Trust of Australia Act 1997</i> <i>Water Act 2007</i></p>	
<p>Publications relevant to wetlands</p> <ul style="list-style-type: none"> <i>The Wetlands Policy of the Commonwealth Government of Australia</i> (1997) EPBC Act Policy Statement 1.1: <i>Matters of national environmental significance</i> (2009) National guidelines for Ramsar Wetlands (publication series) Fact sheets (publication series) <i>Aquatic ecosystems toolkit</i> (2012) <i>Discovering Wetlands in Australia</i> (2011) – a primary classroom resource <i>Issues Paper: The role of wetlands in the carbon cycle</i> (2012) 	

<p>Relevant committees assisted/ supported</p> <p>Standing Council on Environment and Water (SCEW) www.environment.gov.au/about/councils/scew/index.html</p> <p>SCEW Senior Officials Committee</p> <p>National Water Reform Thematic Oversight Group (Water TOG)</p> <p>Landscape and Ecosystems Scale Biodiversity Thematic Oversight Group (Bio TOG)</p> <p>Aquatic Ecosystems Task Group</p> <p>Wetlands and Waterbirds Taskforce</p>	<p>Minister</p> <p>Minister for Sustainability, Environment, Water, Population and Communities</p> <p>Minister for Climate Change and Energy Efficiency</p> <p>Parliamentary Secretary for Sustainability and Urban Water</p>
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Australian government committees

<p>Aquatic Ecosystems Task Group (AETG)</p>	<p>Role</p> <p>Responsible for developing a national approach for the identification, classification and management of high ecological value aquatic ecosystems</p> <p>Responsible for ensuring other high ecological value aquatic ecosystem work undertaken is coordinated and consistent with the AETG objectives³⁶</p>
<p>Website</p> <p>Nil</p>	
<p>Objective</p> <p>Develop a national framework for the identification, classification and management of high ecological value aquatic ecosystems</p> <p>Provide a nationally coordinated approach to policy development for cross-jurisdictional issues within the aquatic ecosystems context</p>	
<p>Power</p> <p>Advice to National Water Reform Thematic Oversight Group (Water TOG) and Standing Council on Environment and Water (SCEW)</p>	<p>Processes or programs relevant to wetland conservation</p> <ul style="list-style-type: none"> • Development of a common definition of high ecological value aquatic ecosystems • Development of a national framework and or methodology for the identification, delineation, classification and description of Australia’s high ecological value aquatic ecosystems • Development of guiding principles for the management of high conservation value aquatic ecosystems³⁶
<p>Legislation relevant to wetland conservation</p> <p><i>Environment Protection and Biodiversity Conservation Act 1999</i></p> <p><i>Water Act 2007</i></p> <p>State and territory environmental legislation</p>	
<p>Agency</p> <p>A Council of Australian Governments (CoAG) committee chaired by the Department of Sustainability, Environment, Water, Population and Communities</p>	<p>Minister</p> <p>Minister for Minister for Sustainability, Environment, Water, Population and Communities</p>
<p>Membership</p> <p>Jurisdictional nominations from relevant agencies. In WA: Principal Coordinator, Wetlands Section, DEC.</p>	<p>Meeting frequency</p> <p>As required</p>

<p>Wetlands and Waterbirds Taskforce (WWTF)</p>	<p>Role Responsible for advising the Standing Council on Environment and Water (SCEW) on the implementation of the Ramsar Convention</p>
<p>Objective To promote a coordinated approach to the implementation of national obligations under the Ramsar Convention and international agreements on migratory waterbirds. To provide advice and undertake actions that facilitates such coordination³</p>	
<p>Power Advisory to the Landscape and Ecosystems Scale Biodiversity Thematic Oversight Group (Bio TOG) and Standing Council on Environment and Water (SCEW)</p>	<p>Processes or programs relevant to wetland conservation</p> <ul style="list-style-type: none"> • Australia’s National Ramsar Committee; National reporting for the Ramsar Convention Conference (of Contracting Parties) and biennial meetings of the bilateral migratory bird agreements between Australia and Japan, China and the Republic of Korea • Provide advice on Australian and New Zealand obligations under the above international agreements and the Bonn convention • Provide advice on Australian and New Zealand’s contribution to ensure long term conservation of migratory waterbirds in the East Asian Australasian Flyway • Provide advice on meeting the objectives for the conservation of wetland biodiversity as enunciated under the National Strategy for the Conservation of Australia’s Biological Diversity³ • Develop and implement a practical three-year rolling plan for coordinated implementation for Ramsar sites
<p>Legislation relevant to wetland conservation <i>Environment Protection and Biodiversity Conservation Act 1999</i> <i>Water Act 2007</i> State and territory environmental legislation</p>	
<p>Sub-committees Wetlands and Waterbirds Advisory Group</p>	
<p>Agency A Council of Australian Governments (CoAG) committee chaired by Department of Sustainability, Environment, Water, Population and Communities</p>	<p>Minister Minister for Sustainability, Environment, Water, Population and Communities</p>
<p>Membership Jurisdictional nominations from Australian state, territory and NZ agencies. In WA: Principal Coordinator, Wetlands Section, DEC.</p>	<p>Meeting frequency Twice yearly</p>

Case study: roles and responsibilities for Ramsar wetlands

- M. Coote, DEC

Australia is one of 160 countries that are party to the Ramsar Convention on Wetlands, which was signed in Ramsar, Iran in 1971. This treaty, officially known as *The Convention on Wetlands of International Importance, especially as Waterfowl Habitat*, currently lists more than 1,906 wetlands worldwide covering some 186.5 million hectares. The Ramsar Convention is an international intergovernmental treaty, which aims to halt and, where possible, reverse, the worldwide loss of wetlands and to conserve those that remain through wise use and management.

Australia was the first to nominate a site—Cobourg Peninsula in the Northern Territory in 1974—and now has sixty-four wetlands listed under the Ramsar Convention. Twelve of these sites occur in Western Australia, covering a total area of 514,800 hectares.

Designation as a Ramsar site confers upon it the prestige of international recognition, it also raises the profile of the site; enhances opportunities for management assistance and improves long-term management of the wetland; and increases legislative protection through the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Nomination of a Ramsar site

Ramsar site nominations can be initiated by the Australian, state and territory governments, non-government organisations (NGOs), community entities, trusts, Traditional Owners, individuals, private landowners or a company. Proposed nominations on state or private land require support from the relevant state government. In practice, most Ramsar site nominations are proposed and developed by the state or territory governments, which have priorities for new Ramsar sites and processes for reviewing and supporting Ramsar nominations.

The development of a Ramsar site nomination should be the result of a collaborative process between site managers/landowners and the Australian and state or territory governments. Consultation with the landowner(s) and key stakeholders is an important consideration in both the preparation of a Ramsar nomination and the negotiation of ongoing management arrangements for the site.

Roles and responsibilities for Ramsar in Australia

Australian government (via the lead agency, the Australian Department of Sustainability, Environment, Water, Population and Communities):

- designating Ramsar sites on account of international significance in terms of ecology, biology, zoology, limnology or hydrology
- working with state and territory governments to promote the conservation of Ramsar sites and wise use of all wetlands, and review Ramsar site condition
- reporting any changes to the ecological character of Australia's listed wetlands and responding to the Ramsar Secretariat's inquiries about reports from third parties
- using its best endeavours to ensure there are management plans for wetlands listed under the Ramsar Convention
- regulating actions that will have, or are likely to have, a significant impact on the ecological character of a Ramsar wetland. This includes relevant actions that occur outside the boundaries of a Ramsar wetland.
- providing advice on the Ramsar Convention and any agreed assistance to wetland managers
- reporting to the regular Conference of the Contracting Parties.

State government (via the lead agency, DEC)

- leading the development of the nomination documentation for candidate nominations within the state including the consultation on these nominations
- liaising with the Australian Government about nominations within the jurisdiction
- coordinating and updating information on Ramsar sites within the state (for example, the Ramsar National Report).

Site managers/landowners:

- under the EPBC Act, seek approval prior to undertaking an action within or outside a declared Ramsar wetland if the action has, will have or is likely to have a significant impact on the ecological character of the Ramsar wetland. The action could be a project, a development, an undertaking, an activity or series of activities, or an alteration to any of these things.
- managing the Ramsar site(s) to maintain ecological character through applying the principles of wise use and sustainable resource management. This may be through the development and implementation of a management plan or system for the site.
- having procedures and monitoring in place to detect if any threatening processes are likely to, or have altered the site's ecological character. This will help to identify if there are any actual or likely changes to ecological character of the site.
- taking action to manage or remediate Ramsar sites that have undergone an actual or likely change in ecological character
- report any actual or likely changes in ecological character to the Australian Government
- undertake required site level updates and reporting as required (for example, Ramsar Information Sheet updates)
- seek guidance and assistance about managing and representing the needs of wetlands, if required
- inform the Australian and relevant state governments of any intention to transfer ownership or otherwise sell land on which the wetland is situated and
- notify future land managers of the property's Ramsar status, should the property be sold or otherwise change ownership.

For further information on the details of the roles and responsibilities for Ramsar Convention in Australia see the Australian Ramsar site nomination guidelines, *Module 4 of the National Guidelines for Ramsar Wetlands - Implementing the Ramsar Convention in Australia*.³⁷

Case study: working collaboratively to manage and restore Lake Mealup

Lake Mealup is a large freshwater wetland situated on coastal lowlands on Lake Mealup Rd, West Pinjarra, one kilometre east of the Peel-Harvey Estuary (Figure 6). It is located on the Pinjarra Plain, the most heavily cleared landform unit within the Swan Coastal Plain. Lake Mealup is an excellent representation of coastal lowland wetlands on the coastal plain and its vegetation, as well as surrounding dryland vegetation communities, is home to a number of threatened plant and animal species.



Figure 6. The location of Lake Mealup relative to Harvey Estuary and Peel Inlet, Mandurah. Image – L Duffy/DEC.

Lake Mealup is also one of a number of wetlands in the Peel-Yalgorup wetland system listed under the Convention on Wetlands of International Importance (Ramsar Convention). The Peel-Yalgorup system is known to be the most significant area in the south-west of Western Australia for waterbirds and waders.³⁸ Several migratory bird species such as the great egret (*Egretta alba*) and the sharp-tailed sandpiper (*Calidris acuminata*) have been known to visit the wetland³⁹ and are protected under the EPBC Act. The ecological character of the site is protected under the EPBC Act. Lake Mealup is also listed as a nationally important wetland in the *Directory of Important Wetlands* under the 'Lake McLarty System' listing; on the Register of the National Estate under the 'Peel-Harvey Estuarine System' listing; and identified under the *Environmental Protection (Swan Coastal Plain Lakes) Policy 1992*. The wetland is recognised as a Conservation management category wetland by DEC in the *Geomorphic Wetlands Swan Coastal Plain* dataset, a category assigned to wetlands of the highest conservation value.

► For additional detail regarding wetland policy, see the topic 'Legislation and policy' in Chapter 5.

In the 1990s, it became increasingly evident that declining water levels and drying of the lake beyond its natural variability was leading to increasingly acidic conditions, poor water quality, increasing weed coverage and declining waterbird habitat. The lower water levels have been attributed to a decline in rainfall, changes in drainage management in the catchment and groundwater abstraction.

Collaborative action, initiated by the community

Many individuals and groups have been involved in the restoration of Lake Mealup. Community groups, landholders, Aboriginal groups and representatives, state government agencies, consultants and university staff have all contributed. However, a community group – the Lake Mealup Preservation Society (LMPS) – has been a driving force over a number of decades.

The LMPS formed in 1986 and by 1989 it had purchased three properties adjoining the Lake Mealup Reserve managed by DEC, with the aim of preserving the natural values of the wetland and adjoining bushland. During this time, DEC also purchased an additional lot to expand its existing reserve. The purchase of three properties by the LMPS consolidated the area of land managed for conservation. Historically, ownership of the wetland spanned several properties including Lake Mealup Reserve managed by DEC, and a number of small-scale farming properties including a piggery. The properties purchased by LMPS included Little Lake Mealup, a 10 hectare wetland to the west of Lake Mealup (Figure 7).

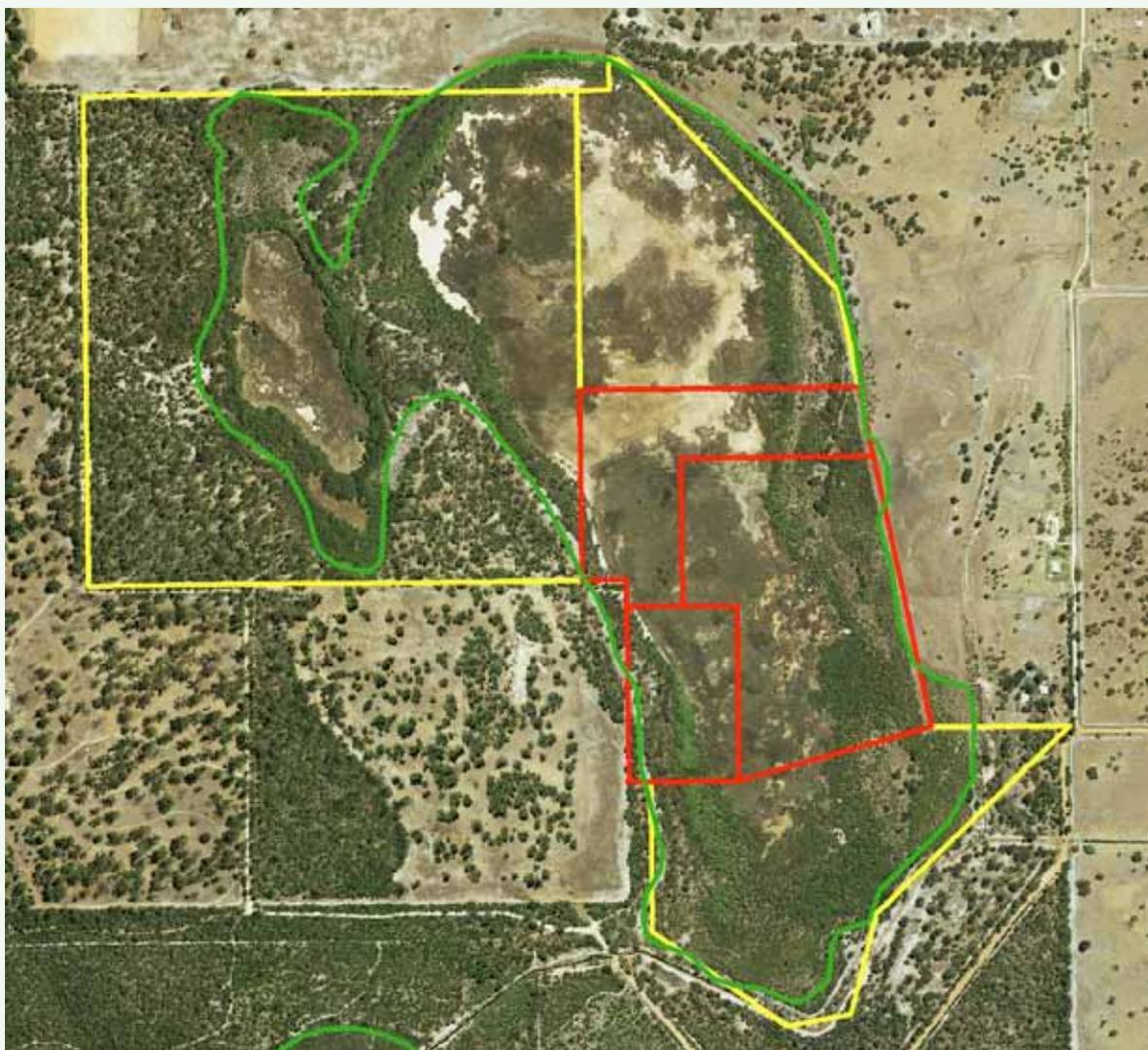


Figure 7. Lake Mealup, showing the wetland boundary (green), the Lake Mealup Preservation Society property boundaries (yellow) and DEC land (red). Image – A Fairs/DEC.

The LMPS has taken a very active role in maintaining and managing the properties and has completed a range of management activities, many on a monthly or annual basis with funding from membership fees and grants. Some activities have occurred in collaboration with the Peel-Harvey Catchment Council (PHCC), consultant wetland scientists V & C Semeniuk Research Group (VCSRG) and DEC. Activities have included:

- hand weeding of introduced bulrush (*Typha orientalis*), dock (*Rumex* sp.), lupin (*Lupinus cosentinii*) and arum lily (*Zantedeschia aethiopica*)
- fencing to exclude livestock
- 1080 fox baiting
- flora, waterbird, macroinvertebrate, mammal and reptile surveys
- ongoing monitoring of an extensive piezometer (groundwater monitoring) bore network since 1996
- monitoring of surface water levels and water quality in the lake since 1987
- revegetation
- community awareness activities
- local seed collection
- annual fire break maintenance
- construction of a birdwalk and bird hide.

LMPS – achieving restoration by engaging other stakeholders

Lake Mealup Preservation Society has taken a very active role engaging relevant NRM and government organisations in Lake Mealup's management over many years. This active engagement has resulted in the group receiving support in the form of specialist skills, funding, equipment and increased exposure through stakeholder communication and some media coverage.

LMPS has been actively collaborating with DEC, PHCC, DoW, Natural Trust of Australia (WA) (NTWA) and VCSRG to address these degrading processes and protect the ecological condition and amenity value of the wetland.

LMPS joined DEC's Land for Wildlife program in 2002. This voluntary program is designed to encourage and assist landholders to provide habitats for wildlife on their property. Through the program, DEC conducted a bushland condition assessment, established a weed prioritisation and management schedule, and provided LMPS with information and books on bushland management and conservation covenants.

In 2003, LMPS registered an agreement with NTWA, placing their properties under a voluntary conservation covenant as a means to legally protect the natural values of the property in perpetuity⁴⁰. Together, the NTWA and LMPS established a bushland management plan for the properties which established the management framework which is used to manage the lake.

In 2009, the LMPS entered a voluntary management agreement with DEC's Healthy Wetland Habitats program. This program provides funding and support to private landholders to manage high conservation value Swan Coastal Plain wetlands. The LMPS was provided \$10,000 to undertake agreed management actions including water quality and hydrology investigations, fencing and weed control over five years (Figure 8).

Typha control and revegetation funding has been provided through the Australian Government's Caring for Our Country funding, via Peel-Harvey Catchment Council and the South West Catchments Council.

Funding and technical support needed to improve water levels in the lake have been provided by the State NRM program via the DoW. In-kind support from stakeholders has also been invaluable.



Figure 8. Lake Mealup Preservation Society representative Peter Wilmot receiving a Healthy Wetland Habitats funding cheque from DEC's HWH Officer Amanda Fairs. DEC Lake Mealup Project Officer Heidi Bucktin, DoW officer Keiryn Kilminster and Peel-Harvey Catchment Council officer Amanda Willmott look on. Photo - L Duffy/DEC.

Progressing Lake Mealup's recovery

In 2007, LMPS compiled the document, *A proposal to improve the quality and quantity of water in Lake Mealup by changes in drainage management*.⁴¹ This was the catalyst for a recovery program implemented over the course of the following five years. In response, DEC developed the *Lake Mealup Nature Reserve Recovery Program 2009*. DEC's Nature Conservation Project Officer coordinates and implements this program with assistance and in collaboration with LMPS.

The first stage of the recovery program, from 2009 to 2010, involved the collection and analysis of hydrological data (surface and groundwater level and quality, rainfall) to investigate whether managing water levels was feasible. This data was collected by LMPS, DEC and PHCC, under advice and assistance from VCSRG (groundwater) and advice and equipment offered by DoW. Analysis was carried out on surface water data collected by LMPS between 1987 and 2008, and groundwater data collected by LMPS under the direction of VCSRG from 1996 to present. Water quality data for the main drain collected by the Department of Water (DoW) intermittently between 1991 and 2004 was analysed. DoW assisted with surface water quality monitoring, providing technical advice and lending monitoring equipment.

In 2010 the Lake Mealup Technical Advisory Group convened for the first time and agreed upon the second stage of the recovery program based on the data collected during the first stage. The focus of the second stage was to reconnect the lake to the catchment and increase its water levels using an adjustable height weir (Figure 9) and drainage modifications. Targets and triggers were developed as part of an adaptive management plan. As the lake is part of a Ramsar site, the adaptive management plan was referred to the Australian Government Department of Sustainability, Environment, Water, Population and Communities. The Conservation Commission's approval was also sought, due to changes on conservation estate land vested in it. The Water Corporation, the authority with whom the drain is vested, approved proposed modifications to the Mealup Main Drain, to divert drainage flows back into the wetland.



Figure 9. The adjustable height weir, receiving flows diverted from the Mealup Main Drain. Photo – H Bucktin/DEC.

Since the first drainage flows were diverted into the lake in May 2012, Lake Mealup is showing the first signs of recovery (Figure 10). Monitoring indicates that the pH of the lake is improving and animals once again inhabit the wetland. DEC and the LMPS will continue to monitor and manage the lake.



Figure 10. Lake Mealup, full in August 2012. Photo – R Rose.

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