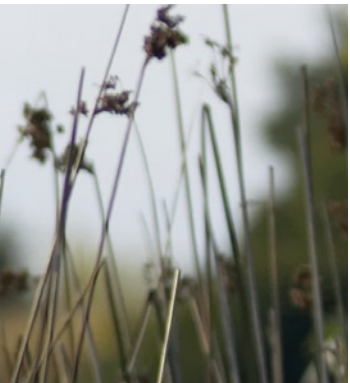




Geelong Wetlands Strategy



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Executive Summary

Introduction

The City of Greater Geelong has a strong commitment to environmental management and specifically wetland conservation and enhancement. The Wetlands Strategy provides strategic direction and guidance in the conservation, management and enhancement of the City's wetlands.

The Geelong Wetlands Strategy is an essential part a larger program the "Geelong Region Wetlands Project" a partnership between the City of Greater Geelong and the Corangamite Catchment Management Authority (CCMA) providing on-ground works, protection of wetlands through the Greater Geelong Planning Scheme and a community education and engagement program.

The Wetlands Strategy provides a framework for Council to protect and enhance the biodiversity and ecological values of the City's wetlands. These values are to be maintained in accordance with relevant legislation, policies and strategies of other agencies and authorities, and the City's existing policies and guidelines including the CCMA's Regional Wetlands Strategy 2006.

The Wetlands Strategy establishes a number of strategic objectives through which the City will see wetlands protected and managed sustainably to ensure that their diversity, their high biological values, their great conservation significance and their ecosystem service functions are maintained or restored. These objectives are:

- Wetland protection through the Planning Scheme
- Integration of wetland protection into major Urban Sustainable Development proposals
- Wetland protection and enhancement through land and water management
- Partnerships with wetland managers
- Wetland education and awareness
- Wetland definition, assessment and monitoring

The Wetlands Strategy will be implemented through a number of recommended actions including research and planning to fill the existing information gaps for the City's wetlands. The most important of these actions is the need to classify and assess the condition of the large number of smaller wetlands identified in the Strategy, and further expand site identification to the full suite of wetlands that exist in the City, **particularly the smaller** wetlands that were not included in the Department of Sustainability and Environment wetlands database.

The implementation of this Strategy will contribute to our obligations as a signatory to the Japan – Australia Migratory Birds Agreement (1974) and China - Australia Migratory Bird Agreement (1986) , Convention on Migratory Species (Bonn Convention 1979) and the Ramsar Convention on Wetlands (1971).

The City of Greater Geelong, boasts some of the most important wetlands in Victoria and for some species Australia. With the highest concentrations of migratory shorebirds in Victoria and a stunning array of other bird life, the City's wetlands are a significant component of the total habitat remaining in the Geelong region.

City of Greater Geelong Wetlands

Wetlands are a unique part of the landscape, supporting distinctive communities of plants and animals. Wetlands are diverse in form, shape and size, and vary in topography, hydrology, water chemistry, vegetation, soils and the extent of human disturbance. However, wetlands commonly share the following distinguishing characteristics:

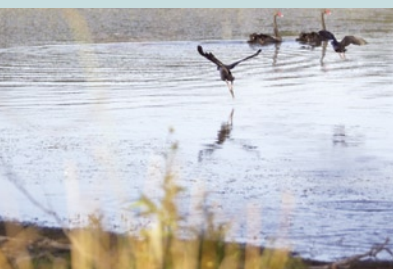
- The presence of water, either at the surface or within the plant root zone;
- The water is either standing or moves very slowly;
- They have unique (hydric) soils, produced under reduced conditions; and
- They contain vegetation that is adapted to wet conditions or flooding (hydrophytes), and plants not tolerant of flooding are absent.

The wetlands in this Strategy are taken to include swamps, marshes, billabongs, lakes, constructed wetlands, created wetlands, intertidal mudflats, and saline, fresh and brackish water wetlands.

A core component of the City's Environment Management Strategy (EMS) has been its strong focus on wetlands, this can be seen in the City's first EMS which was adopted in 1999 and in the updated Environment Management Strategy 2006-2011. This Wetlands Strategy demonstrates the City of Greater Geelong's commitment to implementing the EMS and to the long-term protection and enhancement of the biodiversity and ecological values of the City's wetlands.

The City and other agencies currently manages wetlands within the municipality for their ecological, recreational and aesthetic values. The City is actively working to protect and enhance the values of these important natural assets through the Geelong Region Wetlands Project. The Project brings community groups, landholders, local government and state government agencies together in an integrated way to enhance wetlands located within the Geelong municipality which includes sites within the Port Phillip Bay (Western shoreline) and Bellarine Peninsula Ramsar wetlands.

The Wetlands Strategy was developed using existing information relating to wetlands in the municipality. This information was collated and analysed to establish the location, type and significance of wetlands in the City, and to provide a basis for deciding on their particular management regimes. During this process discussions were held with key stakeholders within the City of Greater Geelong, the Department of Sustainability and Environment (DSE) and Corangamite Catchment Management Authority (CCMA), adjacent Councils, local interest groups and relevant flora and fauna experts.



Wetland Inventory

A wetland inventory was completed by A.H. Corrick in 1982 that included all wetlands generally over 1 ha in area. The wetlands surveyed and mapped represent the most complete wetland inventory data available for the municipality. This has been supplemented by the inclusion of some marine areas. Together this data shows that the City of Greater Geelong contains approximately 114 individual wetlands totalling 11,639 ha in area. While all of the major wetland categories are present, ranging from freshwater meadows through to permanent saline wetlands, the City is dominated by a small number of large saline wetlands associated with the Port Phillip and Bass Strait coasts.

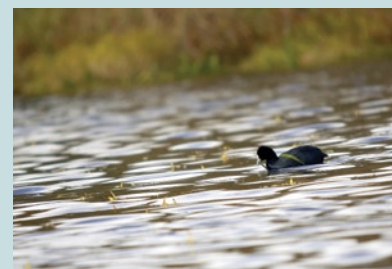
Other freshwater wetlands are distributed throughout the hinterland of the municipality, and these are mostly much smaller in size. Just over 50% of the wetland area in the City of Greater Geelong is made up of permanent saline wetlands, which comprise the estuaries of Hovells Creek and the Barwon River, and the intertidal and marine areas of Swan Bay and the northern Corio Bay coastline between the Western Treatment Plant and Limeburners Bay. Saline wetlands also make up another third of the total wetland area in the City, when the semi-permanent saltmarsh areas adjacent to the coast and the Cheetham salt works at Moolap and Avalon are included.

A variety of freshwater wetlands are spread throughout the City, with the largest being Reedy Lake, a deep freshwater marsh, at the lower end of the Barwon River. Sewerage lagoons comprise the next largest wetland type in area, mostly consisting of constructed and modified lagoons at the Western Treatment Plant. Farm dams, water supply service basins and other constructed water bodies, have been developed throughout the City and make up a significant proportion of the permanent open freshwater wetlands, which, constitutes the largest number of wetlands in the City.

There are also a number of smaller, natural wetlands spread across the volcanic and coastal plains in the City, consisting of freshwater meadows, and shallow and deep freshwater marshes. These tend to be located in depressions in the landscape, formed from localised drainage patterns, or in the floodplains of waterways.

The extent of wetland coverage in Victoria has been estimated at the time when European settlement commenced in Australia in 1788. Using this data and comparing it with the details in the 1982 wetland inventory enables the City to assess how the number, size and type of wetlands have changed over that period. In the main these changes have been brought about by land use and development, and alterations to waterways, water use and the wetlands themselves.

Sixty-eight fauna species recorded in or in close proximity to wetlands of Greater Geelong have a conservation status, including the Swift Parrot (*Lathamus discolor*), Southern Giant-Petrel (*Macronectes giganteus*), Growling Grass Frog (*Litoria reniformis*), Orange-bellied Parrot (*Neophema chrysogaster*), and Australian Grayling (*Protroctes maraena*).



Why are Wetlands Important?

Wetlands are highly diverse and productive ecosystems. They are critical for conservation of biodiversity and ecological productivity. They are also part of our natural wealth, providing a variety of ecosystem services to the benefit of our society.

A summary of the functions, services and benefits of wetlands as listed by the Ramsar Convention secretariat are provided below.

Wetlands provide:

- Flood Control
- Groundwater Replenishment
- Shoreline Stabilization and Storm Protection
- Sediment and Nutrient Retention and Export
- Climate Change Mitigation
- Water Purification
- Reservoirs of Biodiversity
- Recreation and Tourism uses
- Cultural Value

Threats to Wetlands

The integrity and values of wetlands can be impacted by a large number of processes and activities. These threats can be direct or indirect, either acting on the wetland themselves or acting on the wetlands through activities in their catchments.

Threats to wetlands include:

- Drainage of wetlands or modification through agriculture, horticulture and forestry
- Nutrient enrichment following the clearing of catchments for development
- Commercial and other developments, involving reclamation or modification of wetlands, such as residential developments, marinas, roads and landfill
- Salinisation of wetlands associated with the clearing of perennial deep-rooted species and the replacement with annual pastures.
- Other effects on clearing a catchment including erosion, flooding and inundation
- Discharges of industrial effluent
- Flood mitigation works and activities
- Weed invasion, both terrestrial and aquatic
- Introduced pests eg, carp and mosquito fish.
- Insect control, pressure to drain some wetlands to control pests including mosquitos
- Grazing of vegetation by stock
- Inappropriate recreational activities, including hunting, power boating and four wheel drive vehicles.



Wetlands Strategy

Vision

It is the City of Greater Geelong's vision that:

Wetlands be protected, enhanced and managed sustainably to ensure their diversity, their high biological values, their conservation significance and their ecosystem service functions are maintained or restored.

To achieve this vision the City will:

- provide leadership to the community in protecting, managing, advising and advocating for the protection and enhancement of the City's wetlands.
- demonstrate the important roles that wetlands play within the City.
- demonstrate how others can contribute, and assist the many and varied players to better contribute their skills and knowledge to achieve better outcome for wetlands.
- establish a strong, clear and effective planning framework that ensures our wetlands are protected.

The values provided by wetlands to Geelong, to the Australian and the world community, are in partnership, the responsibility of the City to protect and nurture. The City will ensure the actions described in this Strategy are actively implemented to achieve the vision.

Targets

In any strategic approach performance measures or targets are important to ensure that the vision for wetland protection is being met and the actions implemented are appropriate and meaningful. The targets for wetlands in the City of Greater Geelong include:

1. No further reduction in the number and area of wetlands based on wetlands identified in the DSE wetlands database.
2. Identify, characterise and assess all wetlands in the City that are not included in the DSE database by 2008.
3. Allocate ratings to all wetlands in the City based on ecological qualities (vegetation, fauna, significant features, landscape qualities) by 2009.
4. Increase the funding and resources allocated to managing wetlands by 2010.
5. Identify approaches to urban planning that protect the water cycle and make our settlements more sustainable by 2007.
6. Increase awareness of wetlands in the municipality and their values to the community by 2008.
7. Reduce threats to wetlands (weeds, vermin, hydrologic stress) through the implementation of the Geelong Regional Wetlands Project by 2008.
8. Establish stormwater quality programs and water sensitive urban design in new urban developments by 2007.
9. Establish a wetlands database information system by 2008.

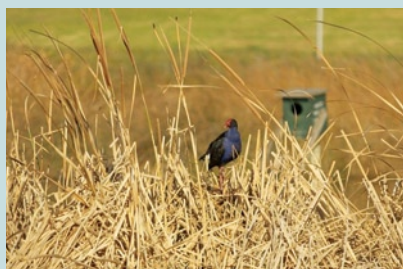
Strategic Objectives


A set of Strategic Objectives is the core of the Wetlands Strategy. These objectives provide the direction, approach, role and actions to guide the City of Greater Geelong's programs to manage and protect the municipality's wetlands.

As a land manager, the City of Greater Geelong can demonstrate care and excellence in its own activities, and it can also provide a model of good stewardship to others with responsibilities for wetlands. However to be effective in achieving these objectives it requires the assistance and co-operation of a number of other key stakeholders within the Geelong community.

The Strategic Objectives of the Geelong Wetlands Strategy are:

- Wetland protection through the planning scheme
- Integration of wetland protection into major Urban Sustainable Development proposals
- Wetland protection and enhancement through land and water management
- Partnerships with wetland managers
- Wetland education and awareness
- Wetland definition, assessment and monitoring





Strategic Objective 1:

Wetland protection through the Planning Scheme

Background

The Council is the Planning Authority for the Greater Geelong municipality. The Planning Scheme is particularly important as a means of protecting existing high value wetlands by establishing controls over land use change and development. It also provides the framework that guides the development process and the evaluation that occurs in considering whether changes and developments are appropriate, and what conditions should apply to them. In considering development applications and rezoning proposals, Council performs a role of assessing potential impacts, and also of ensuring that other interested parties, particularly referral authorities, have the opportunity to evaluate and consider any impacts on wetlands.

The Planning Scheme is a very effective means of allocating acceptable uses to wetlands and of indicating any special values or features that require protection. The Wetlands Strategy includes as one of its most significant strategic objectives, recognition in the City of Greater Geelong's Planning Scheme, and its associated procedures and documents, to ensure that wetlands and their values are protected. It also establishes a clear and effective framework for ensuring that the use and development of land, and the wetlands themselves, can occur in a manner that is compatible with the protection of wetland values. This framework is also designed to ensure that in the face of ongoing change and development in the City of Greater Geelong, wetlands increase in extent and value over time.

Goal

Establish planning controls that will be effective in protecting existing wetland values, and provide a framework for wetland use and development that brings about an overall increase in the area and value of wetlands in the municipality.

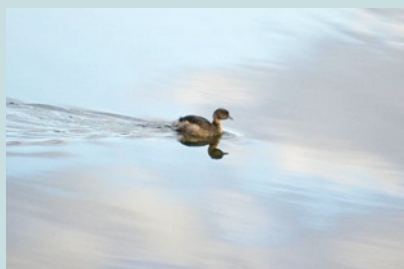
These controls will establish as appropriate, objectives and policies within the Planning Scheme, zones or overlays appropriate for wetland protection, and signal the presence of significant features.

Approach

1. Adopt a hierarchical approach to wetland protection based on the values that they carry. Wetlands with the highest values will be protected with appropriate zones and overlays to ensure that land use changes or development only occur if they are compatible with the objectives of conserving and improving wetland values.
2. Where wetlands have been degraded and are of contributory value proposals for land use change and development will be required to provide for an overall gain in wetland values. A framework for the management of a system of wetland offsetting will be developed for administration through the Planning Scheme.
3. Appropriate buffer zones will be included in the Planning Scheme to ensure that the areas around and influencing wetlands have appropriate land use controls over them.
4. A clear system will be provided for evaluating potential impacts on wetlands.
5. The planning system will provide clear guidance for City planners to ensure that other responsible authorities and interested bodies have the opportunity to evaluate and comment on proposals. This will also ensure that proponents have a clear indication of their responsibilities under related legislation that applies to wetlands.
6. Council officers will be trained and have appropriate knowledge and access to sufficient information to allow them to evaluate proposals adequately and to be aware of the obligations pertinent to landholders and proponents.

Actions

1. Establish as appropriate Planning Scheme recognition for Environmental Significance Overlays to protect wetlands with Medium, High and Very High Values. These are to also extend to buffer zones around the wetlands.
2. Prepare appropriate supporting material for the Planning Scheme covering wetlands.
3. Establish a framework and operational guidelines for the management of contributory value wetlands, and the appropriate alteration or development of other wetlands, to provide for the net gain of wetland values in the City.
4. Review operating procedures for the Planning Scheme to provide a clear and comprehensive framework to guide proponents and Council officers on approvals, referrals and notifications associated with wetland projects.
5. Establish a training manual and undertake training for officers administering the Greater Geelong Planning Scheme covering the use of new wetland protection provisions.
6. Review Planning Scheme protection associated with Council's Biodiversity Strategy and the Stormwater Quality Management Plan to ensure they are compatible and consistent with those developed for wetlands.





Strategic Objective 2:

Integration of wetland protection into major Urban Sustainable Development proposals

Background

Whilst wetlands in the City of Greater Geelong have been impacted by activities occurring over the last 200 or so years, it is the future and the potential changes in the municipality that have the potential to bring major change to wetlands if not well managed. Geelong is already a substantial urban centre, and the City and surrounding settlements continue to experience demands for urban growth. Urban development poses the most significant threat to the City's valuable wetlands. This threat has many facets; competition for land, altered water regimes, increased water diversions, disturbance through human activities and pets, and increased weeds and vermin.

Much of the present urban growth, and the potential future growth, have the potential to change the hydrological cycle in the catchments and on the waterways that contain or feed into very significant wetlands. Much of Geelong drains into the Barwon and Moorabool Rivers which subsequently flow to the Lake Connewarre Ramsar site and wetland complex. At the mouth of the Barwon River, the township of Barwon Heads is experiencing great pressure for growth. In the catchment of Hovells Creek, and a short distance from Limeburners Bay, lies the expanding urban settlement of Lara. In the extensive catchment of Swan Bay there is ongoing demand for increased subdivision and land use change, while at St Leonards, near Edwards Point, and around the Lake Victoria, urban development has grown close to the wetlands creating pressure from human use and conflicts through close proximity. Water use in a growing urban municipality increases demands on an already stressed river system, particularly the Barwon.

For the long-term protection of the City's high value wetlands strategic decisions are required to influence the nature and location of urban growth, and how the environment is managed.

Goal

The goal of the strategic objective is to establish a future vision for the City of Greater Geelong where urban growth is provided for in a manner that does not adversely impact on the wetlands of the municipality. This entails the establishment of strategies to guide the areas where development will occur, the type of development and its form, and the means through which resources are utilised and managed in the City. This is the strategic objective that provides for sustainable urban development in the Geelong municipality.

Through strategic planning at several levels within the City, structural changes will be made to the way in which decisions are made, and the use of resources by the City and its occupants. The City will undertake and participate in strategic planning that directs how and where urban growth and development occurs, how the water cycle is managed, including the way water is consumed, the life cycle implications of purchasing decisions, and how environmental matters are managed. The protection and enhancement of wetlands will be incorporated into the objectives in the City's strategic plans and management programs.

Approach

1. Plan for growth in the City of Greater Geelong with consideration for the impacts on specific wetlands and their values as well as for wetland conservation across the whole municipality.
2. Assessments will be made of potential impacts on individual wetlands, wetland complexes and wetland values across the whole of the City.
3. Participate in strategic land use and infrastructure development, augmentation and replacement decisions and provide a wetlands protection perspective.
4. Include wetlands as a specific environmental component of triple bottom line assessments, including impact assessments associated with strategic decisions.
5. Establish strategies to use water more efficiently, and to reduce the impacts of water use on wetlands and their supply sources. Establish Geelong as a 'Water Smart' city.
6. Assess and provide clear guidance for wetland protection in Council's environmental management decisions and work procedures.

Actions

1. Review the Urban Growth Strategy for the City of Greater Geelong, identify the elements that have the potential to impact on wetlands, and develop strategies to mitigate, minimise or avoid adverse impacts at local, catchment and regional scales.
2. Prepare a Sustainable Water Use Plan for the City of Greater Geelong that incorporates water conservation, wastewater management and stormwater conservation and water reuse.





Strategic Objective 3:

Wetland protection and enhancement on private and Council owned and managed land

Background

Council manages a number of assets including, waterways and drains, and therefore has the capability to directly influence the condition, values and longevity of a wide range of wetlands. Some areas are part of high value wetlands, such as the reserves of Limeburners Bay, Point Henry and Point Richards, while others contain facilities located within wetland areas, such as the boat ramps at Kirks Point, Avalon Beach and Ocean Grove. The manner in which these areas are managed and planned can have a direct impact on wetland values. Other lands near or adjacent to, and sometimes even in the catchment of wetlands, can also affect wetland values according to how they are managed. For example, poor land management in open space and roadsides can influence the spread of weeds.

The discharge of urban stormwater to waterways and bays from the large and growing urban centres has the potential to adversely impact on water quality and hydrology in wetlands. Some of the most sensitive and high value wetlands are directly impacted by stormwater and these impacts will increase unless specific and strong action is taken. Much of the urban area of Geelong, for instance, discharges its stormwater directly into the Barwon River system, only a short distance upstream from the Ramsar listed Lake Connewarre wetland complex. Other urban centres that have the potential to impact on waters of significant wetlands include Leopold, Lara, Barwon Heads, Portarlington and St Leonards.

In recent years Council has developed and is implementing the Geelong Healthy Waterways Program and is making substantial progress in improving the quality of urban stormwater. There is however, still much to be done to consolidate the successes of this program. Major improvements in the way stormwater is managed in the City will be required if the present and inevitable adverse impacts on high value wetlands are to be minimised. In addition, the implementation of water sensitive urban design (WSUD) is being undertaken in a number of urban developments and is appropriate to minimise not only water quality impacts, but importantly, adverse hydrological changes that threaten wetland integrity.

Goal

The goal of this strategic objective is to establish a “wetland-aware” municipality that has the appropriate management regimes, practices, plans, and culture, to protect wetland values. The objectives of plans and management activities on land and sites managed by the City will include the protection and enhancement of wetlands. Geelong will provide an example to other land managers of its commitment to wetland protection in the manner that it conducts its management programs. This will be an explicit and visible component of the culture of all employees of the City.

The City of Greater Geelong will be a “water-smart city”, conserving and re-using its stormwater, and ensuring that the drainage from urban areas mimics natural flow regimes in both quantity and quality. New development will employ water sensitive urban design to minimise its impacts on downstream receiving waters and minimise the additional demands on water supply sources that may compete with the water provided to wetlands.

Approach

1. Ensure that management of reserves, open space and facilities is consistent with the protection of wetland values.
2. Ensure that land management practices within the catchments of wetlands are undertaken in a manner that protects and enhances wetland values.
3. The City’s wetland and catchment management program will establish an example for other management agencies, landholders and residents to follow, and clearly display the values of wetland protection and care.
4. A risk-based approach, based on wetland values and threats, will be utilised to establish priorities for management action.
5. The City of Greater Geelong will become a “water-smart city”, detaining and treating urban runoff and minimising its impacts on nearby and downstream wetlands.

Actions

1. Identify those reserves, areas of open space and facilities that are located within or adjacent to wetlands and review the management objectives and practices to ensure that they contribute to the protection and enhancement of wetland values. Where management plans exist for these areas, they will be reviewed and amended.
2. Review the relevant strategies and identify those management and operational practices that have the potential to impact on wetlands and develop work procedures and guidelines to minimise or avoid impacts and contribute to wetland improvement.
3. Continue the implementation of the Geelong Healthy Waterways Program to improve the quality of stormwater flows to the City’s wetlands and other receiving waters.
4. Incorporate water conservation measures into stormwater reuse and water conservation planning.



Strategic objective 4:

Partnerships with other wetland managers

Background

The City is blessed with a number of magnificent, large wetlands. Most of these areas are managed by authorities other than the City of Greater Geelong, particularly Parks Victoria, the Department of Sustainability and Environment and Melbourne Water. In most cases these authorities have developed management plans for their sites and have dedicated management resources to them. The City of Greater Geelong has responsibilities for land and facilities adjacent to, near or in the catchment of these wetlands and there would be substantial benefits in establishing co-operative arrangements with these authorities to maximise the benefit and efficiency of managing the wetland complexes. This can be as simple as co-ordinating weed and vermin control projects on adjacent lands, to more complex activities such as catchment planning.

The Corangamite Catchment Management Authority has responsibilities for floodplain and waterway management in the region, as well as for strategic management of natural resources, including vegetation, salinity and water quality. The CCMA is also preparing a Wetlands Strategy for the Corangamite Catchment. There would be benefits to the wetlands in this the municipality if there was a strong working relationship between the City and the CCMA. Such benefits could include a free flow of information on wetlands, biodiversity and vegetation in the municipality, and the development of joint programs for management of wetlands, and their vegetation and water quality.

There are also significant wetlands present on private land and Commonwealth land in the City. The two salt production sites, at Avalon and Moolap, located on leased Crown land and private freehold land, are large, saline wetlands, with significant conservation values, and their primary purpose is consistent with the protection of their values. Alcoa's production facility at Point Henry is adjacent to the Cheetham Salt Moolap saltworks. Establishing strong working relationships with these companies is likely to be beneficial to the wetlands they manage. For instance Council can provide information to assist in wetland management, establish co-ordinated management programs with Government agencies, and identify opportunities for developing or reinforcing a positive community profile for these companies through wetland conservation activities.

On broad acre freehold land outside of established areas, there are also a number of wetlands, although these tend to be smaller in size, and often more degraded. Rural land use practices can contribute directly to wetland loss or impairment, and areas adjacent to urban zones are often subject to the additional pressures associated with the urban edge. While many landholders are responsible environmental managers and some have taken positive steps to protect or improve their wetlands, a number do not have sufficient information, skills or resources to manage their wetlands well.

The City can play a significant role in assisting these landholders to protect and manage wetlands on their land, and to manage their land in a way that reduces risks to wetlands elsewhere in the catchment. Other agencies play important roles in working with these landholders, particularly the CCMA and the DSE. In addition there are local community groups, such as Landcare, that contribute to natural resource management on rural land. The City can also work effectively with these groups to establish appropriate land and wetland management programs.

Goal

The City of Greater Geelong will establish productive and effective relationships with other public agencies and authorities in order to improve program delivery for wetlands enhancement, as well as improve the value of wetland management by these agencies. Strategic and detailed planning will be undertaken co-operatively for wetlands to achieve shared aims and objectives. Co-operation in the delivery of management programs will also benefit wetlands and their managers by contributing to more efficient use of resources and information sharing.

Working relationships will be established with private companies with interests in, and responsibilities for wetlands to achieve wetland protection and enhancement through partnerships.

Private landholders will be provided with resources, information, incentives and encouragement to enable them to protect wetlands on the properties and to improve their condition where this is appropriate. The City aims to ensure that all landowners with wetlands on their properties are aware of their responsibilities for the management of these sites.

Approach

1. Seek to engage with other major wetland managers and owners in an open and positive manner and co-operatively identify opportunities to establish or improve relationships that will aid in better planning and management of wetlands.
2. Make information on wetlands available to other managers and also seek information from them to assist in planning and management of their wetlands.
3. Identify and approach private corporations and companies that have significant interests in or management responsibilities for wetlands in the City.
4. Seek to establish working relationships that will enable Council to provide advice, information and assistance for its wetland management.
5. Identify landholders with wetlands on their properties and assist them to protect and improve the management of their wetlands.
6. Engage community and Landcare groups in areas where wetlands exist and assist them to improve the management of wetlands on private land.

Actions

1. Identify priority projects to be undertaken with partner agencies in the timeframe of one to two years for specific, high priority wetlands.
2. Investigate the opportunities to establish a corporate sponsorship program to provide management assistance to wetlands.
3. Review the floodplain management strategies for the Barwon River in conjunction with the CCMA to ensure that floodplain wetlands are protected.
4. Establish a City of Greater Geelong database of wetlands on private land, with landholder details and contact information. Produce an information kit on wetland values, planning, regulatory requirements and landholder assistance schemes and provide this to landholders. Where appropriate, contact landholders to explain the information and encourage their participation in wetland protection programs.
5. Identify specific community and Landcare groups that have an interest in areas containing wetlands and engage and assist them to deliver education and management assistance to landholders and the City of Greater Geelong.
6. Provide assistance and support to landholders in sensitive catchments to strategically revegetate waterways, drainage lines and wetlands in conjunction with the CCMA and partner agencies.



Strategic Objective 5:

Wetland education and awareness

Background

Wetlands have been undervalued in the past and the community has not generally been aware of the contributions that they make to the health, beauty and economy of a municipality. This lack of awareness has been a factor in the ongoing loss and degradation of wetlands. Today there is still often a stigma attached to wetlands in the minds of some, and a focus on their perceived negative attributes. The community is comprised of many individuals and groups, some of whom can make significant contributions to the welfare of wetlands, through their daily work activities, their recreation, their urban behaviour, and in their agreement to and even involvement in management activities on wetlands.

In essence it is the members of Geelong's community that will provide the basis of success or otherwise of any programs undertaken by Council to protect and improve wetlands; without their support such programs will not be successful. An increased awareness of wetlands and the important role they play in our welfare and quality of life can also assist in a wider awareness and acceptance of other environmental management issues and programs. Enjoying the majesty of waterbirds on wetlands has often been an early step on the path to greater environmental interest and activity.

All levels of Government have a responsibility to the Victorian community and to people elsewhere in the world to protect the values of the striking array of wetlands that are found here. These wetlands should be a source of pride to the City's residents. Wetlands also contribute to the identity of the municipality, and be a marker by which the Geelong community describes and distinguishes itself from other localities. For wetlands to become such a community icon there needs to be information provided in a variety of forms and forums to assist members of the community to become more aware, and hopefully more interested, concerned and proud of their wetlands. Education and awareness is also a precursor to people taking a more active interest in assisting to protect and improve the wetlands, whether it involves participating in working bees or other community activities.

The wetlands and their associated birdlife are a major feature and potential attraction of the area between Melbourne and Geelong. This area contains one of the most significant, accessible and impressive collection of wetland-associated birdlife in Victoria, and in fact in Australia. International visitors with an interest in birdwatching are known to visit this region when they come to Australia. There are opportunities to develop and market tourism and recreational opportunities based on the City's significant wetlands.

Goal

The goal of this strategic objective is to increase the awareness and knowledge of the residents of the City of Greater Geelong to the values that wetlands hold and the services that they provide to the community and to the municipality. This increased awareness will translate into a greater interest in the welfare of wetlands, community acceptance of measures required to protect and manage them, and the ways in which community members can contribute.

An aspiration arising from this Strategy, and one measure of its success, is the extent to

which wetlands become a source of pride for the City's residents, and the extent to which wetlands become associated with the image of the City and contribute to residents' sense of identity in their municipality.

Visitor interest in wetlands and their associated fauna, particularly the waterbirds, will be increased and opportunities to provide recreational and ecotourism experiences will be realised.

Approach

1. Establish the extent of awareness and the associated perceptions of wetlands for residents of and visitors to Greater Geelong.
2. Identify the most appropriate and effective means of communicating the key messages related to wetlands to the community through the development of a marketing strategy.
3. Provide targeted information to identified groups within the Geelong community through a variety of means in order to increase their general awareness of wetlands and their values.
4. Promote the wetlands and their values through provision of information at the wetlands themselves where this is appropriate for the site, and in other venues visited by tourists and residents.
5. Establish a tourist promotional program that includes the wetlands in conjunction with other major wetland managers and tourism bodies.
6. Work with educational groups to include wetland related educational material in curriculum materials.
7. Work with the CCMA, DSE and Parks Victoria to provide or augment community-based monitoring and educational projects with wetland components.

Actions

1. Undertake market research to identify the awareness of wetlands of residents and visitors to the City of Greater Geelong.
2. Develop a marketing strategy to increase awareness and interest in the City's wetlands, including identification of levels of awareness and understanding within the community, the best means of providing information to them, and the key messages to be delivered.
3. Provide information to landholders in areas adjacent to high value wetlands, and in their catchments, on the significance of the wetlands, the impacts that human activities can have, and what they can do to assist in protecting wetland values.
4. Develop a signage program to raise the profile of wetlands in the City, focusing on key, high value wetlands.
5. Review the availability of information provided at wetlands where visitors gain access to and use the wetlands, and develop appropriate information and educational material for selected sites.
6. Provide material on wetlands, and references and links to other wetland information sources in the City of Greater Geelong's web site.
7. Develop a wetlands trail with partner organisations to raise awareness of the City's wetlands and other local attractions.



Strategic Objective 6:

Wetland definition, assessment and monitoring

Background

There is a lot that we don't know about the wetlands in the City of Greater Geelong. The high value wetlands on public land have been researched to varying degrees and there are generally good descriptions of their characteristics, values and threatening processes. However, there is still a lot more that we need to know to manage them appropriately. Partly this is due to the evolving and early state of understanding of ecological processes and how they operate, and partly it is due to the lack of an agreed system of measurement and comparison for wetlands, which is made all the more difficult by the great diversity of forms that wetlands are found in.

For a lot of the wetlands in the City of Greater Geelong however, there is a need for more data. The only common information that is available at this time is type, size and location of the wetlands, and even this information is based on data that is now more than ten years old. For the smaller wetlands, particularly those on private land, there is no quality data on the vegetation or fauna that are found there, how significant these are, how birds and other animals use the complex of wetlands across the municipality, what the water regimes are, and how they have been affected by land use activities in the immediate vicinity and in the catchments draining to them.

One aspect of wetlands for which we have the least information is the cultural values that they support. These values arise from the cultural importance of wetlands to the Aboriginal residents of the municipality, their place in historical events of the City or the nation, and their aesthetic and landscape values. The community can greatly assist with the research and recording of these aspects.

In order to develop an effective management program for the City's wetlands, dedicated programs are required to more fully define the characteristics and values of the wetlands. Further, a monitoring methodology that enables the City to detect changes in wetland conditions and values over time is required, particularly to assist in measuring the effectiveness of our management programs.

Goal

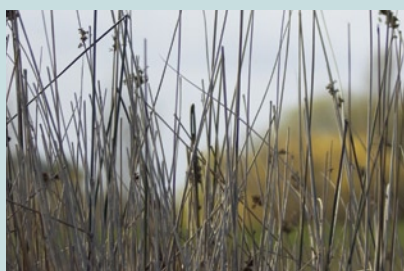
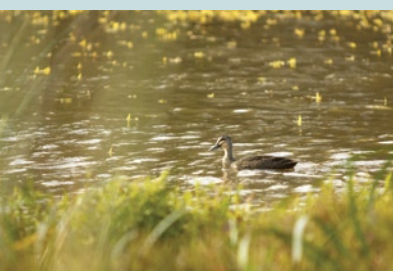
The goal of this strategic objective is to ensure that the information available for wetlands is appropriate, consistent and adequate to inform and contribute to the success of management programs. Information will be obtained on wetland conditions and characteristics sufficient to enable determination of the wetland values, and to detect changes over time to assist in adaptive management programs.

Approach

1. Data and information that is collected by other agencies and bodies will be accessed and utilised wherever possible.
2. Other wetland managers and responsible authorities will be encouraged to establish or augment programs to collect data relating to wetlands in the City of Greater Geelong.
3. The extensive knowledge and values held by members of the community will be utilised and they will be encouraged to assist in further information collection associated with management and monitoring programs. This includes non-government and volunteer groups that sometimes play a very significant role in monitoring, for example ornithological groups.
4. Place the onus of wetland data definition and description on proponents of development and land use change.
5. Base wetland management program and planning permit decisions on the best available information on wetland attributes and values.

Actions

1. Improve identification and verification of wetlands present in the City, through the use of current aerial photographs, and ground truthing.
2. In conjunction with DSE and the CCMA collect data and information on those wetlands that are poorly described at present, and establish a monitoring protocol to measure changes in wetland condition over time.
3. In conjunction with the CCMA undertake Ecological Vegetation Class and Habitat Hectare assessments for vegetation present in all high value wetlands in the City that are on private land.
4. Establish a wetlands information database utilising the information collected in the two actions above, and augment this with wetland data provided by private individuals and companies as part of development applications.
5. Establish a waterbird database for all of the wetlands in the City, comprised of count data collected by DSE (waterfowl) and the Australasian Wader Studies Group (shorebirds) and assess this data at strategic time intervals to establish trends in wetland usage in the municipality.





Implementation / Monitoring and Review of the Strategy

An implementation plan for the Strategy will be prepared to provide a schedule of actions, resource requirements, responsibilities, priorities and timing. This plan will provide the basis for resource allocations by Council through its annual budget, as well as for work projects and responsibilities for Council officers to undertake agency co-ordination, planning, grant applications, enforcement, training and working with the community. The implementation plan will be reviewed after five years following the adoption of the Strategy.

There are a range of projects and initiatives underway in the City of Greater Geelong that will contribute to the protection and enhancement of wetlands, and these will also support or contribute to the Strategy implementation. There are a wide range of measures in this Strategy that will, when implemented, improve the condition and value of the City's wetlands, and provide a sound framework for their conservation in the long term. These measures will be progressively implemented over time, and for some actions this will be measured in a time frame of years. Through the use of monitoring and feedback from both the environment and from residents of the City, actions will be reviewed and if necessary, improved or adjusted. The management of natural, living resources is best served by an adaptive management approach, where programs can be improved over time as indicated by more relevant or up to date information. As we learn how to better manage, we can then improve our management programs.

Monitoring of the Strategy

The success of the implementation of the Strategy will be assessed by the establishment, measurement and reporting of output and outcome indicators. That is, measures of progress in implementing the actions contained within the Strategy (output indicators) and measures of the condition of wetlands in the City (outcome indicators). Implementation of the Strategy is expected to result in a reversal in the decline of the City's wetlands, the ongoing protection of the high values that are present in the wetlands, and the progressive improvement in important elements of the wetland environments.

To establish progress in implementing the Strategy a program will be developed that provides the priority, timing, resourcing and responsibilities for the implementation of the Strategy's actions. This period covers an important period after the Strategy is adopted, the first two years in which additional investigations are undertaken to fill important data gaps, the subsequent review of the Strategy to include this updated information, and then the five-year review of the Strategy. The nature of indicators of Strategy implementation will also be reviewed at this time.

The condition of the City's wetlands will be assessed and monitored in conjunction with other agencies responsible for specific wetlands and the results will be reported at intervals in the State of the Environment Report.

Review of the Overall Strategy

The Wetlands Strategy will have a minor review in 2008 to allow for the consideration of new and updated information that will arise from investigations on the more detailed identification and definition of wetlands in the City and their values. Following this first minor review, it will be appropriate to review the document every five years to establish its currency, and to consider new information and legislative and policy developments. Amendments to the Strategy will also be considered based on assessment of the outcomes of Strategy implementation and monitoring of wetland condition. Such adjustments to the strategy priorities may be made more frequently than the five-year reviews according to needs.

Supporting Documents and Resources

The following documents and resources contain further more detailed information which formed the original assessment and mapping for the Wetlands Strategy.

The Wetland Inventory includes:

- Classification of wetlands
- Conservation significance of wetlands in the region
- Shorebirds in the City of Greater Geelong
- The value of wetlands in the City of Greater Geelong
- Land status of wetlands in the City of Greater Geelong
- Policy context, legislation and international obligations
- Enhanced wetlands protection controls in the Greater Geelong Planning Scheme
- Operational guidelines for the protection of wetlands - A guide for planning officers.
- Ground truthing data for the Geelong Wetlands Strategy
- Maps
- Summary tables – Listed fauna species, listed flora species
- Shorebird numbers in major wetlands of the City of Greater Geelong
- Legislative and planning framework for wetland management in the City of Greater Geelong.





Actions

The following lists all Actions from the Wetlands Strategy and its ranking.

Ranking

Each Action has been prioritised into the following categories

Critical – 1-2 years

High – within 3 years

Medium – within 5 years

Ongoing – a continuing process (year to year)

ACTION	RANKING
1. Establish as appropriate Planning Scheme recognition for Environmental Significance Overlays to protect wetlands and buffer zones with Medium, High and Very High Values.	Critical
2. Prepare appropriate supporting material for the Planning Scheme covering wetlands.	Critical
3. Review appropriate mechanisms in the Planning Scheme to provide a clear and comprehensive framework to guide proponents and Council officers on approvals, referrals and notifications associated with wetland projects.	Critical
4. Establish a training manual and undertake training for officers administering the Greater Geelong Planning Scheme covering the use of the new wetland protection provisions.	Critical
5. Review Planning Scheme protection associated with Council's Biodiversity Strategy and the Stormwater Quality Management Plan to ensure they are compatible and consistent with those developed for wetlands.	Critical
6. Review the Urban Growth Strategy and structure plans for the City of Greater Geelong, identify the elements that have the potential to impact on wetlands, and develop strategies to mitigate, minimise or avoid adverse impacts at local catchment and regional scales.	Medium
7. Prepare a Sustainable Water Use Plan for the City of Greater Geelong that incorporates water conservation, wastewater management and stormwater conservation and water reuse.	Critical
8. Identify those reserves, areas of open space and facilities that are located within or adjacent to wetlands and review the management objectives and practices to ensure that they contribute to the protection and enhancement of wetland values. Where management plans exist for these areas, they will be reviewed and amended.	High

ACTION	RANKING
9. Review the relevant strategies and identify those management and operational practices that have the potential to impact on wetlands and develop work procedures and guidelines to minimise or avoid impacts and contribute to wetland improvement.	High
10. Continue the implementation of the Geelong Healthy Waterways Program to improve the quality of stormwater flows to the City's wetlands and other receiving waters.	Ongoing
11. Incorporate water conservation measures into stormwater reuse and water conservation planning.	Critical
12. Identify priority projects to be undertaken with partner agencies for specific high priority wetlands.	Ongoing
13. Investigate the opportunities to establish a sponsorship program to provide management assistance to wetlands.	High
14. Review the floodplain management strategies for the Barwon River in conjunction with the CCMA to ensure that floodplain wetlands are protected.	Medium
15. Establish a City of Greater Geelong database of wetlands on private land, with landholder details and contact information.	High
16. Produce an information kit on wetland values, planning, regulatory requirements and landholder assistance schemes and provide this to landholders. Where appropriate, contact landholders to explain the information and encourage their participation in wetland protection programs.	High
17. Identify specific community and Landcare groups that have an interest in areas containing wetlands and engage and assist them to deliver education and management assistance to landholders and the City of Greater Geelong	Medium
18. In conjunction with the CCMA and partner agencies provide assistance and support to landholders in sensitive catchments to strategically revegetate waterways, drainage lines and wetlands.	Critical
19. Undertake market research to identify the awareness of wetlands by residents and visitors to the City of Greater Geelong.	High
20. Develop a marketing strategy to increase awareness and interest in the City's wetlands, including identification of levels of awareness and understanding within the community, the best means of providing information to them, and the key messages to be delivered.	High

ACTION	RANKING
21. Provide information to landholders in areas adjacent to high value wetlands, and in their catchments, on the significance of the wetlands, the impacts that human activities can have, and what they can do to assist in protecting wetland values.	High
22. Develop a signage program to raise the profile of wetlands in the City, focussing on key, high value wetlands.	High
23. Review the availability of information provided at wetlands where visitors gain access to and use the wetlands, and develop appropriate information and educational material for selected sites.	High
24. Provide material on wetlands, and references and links to other wetland information sources in the City of Greater Geelong's web site.	High
25. Develop a wetlands trail with partner organisations to raise awareness of the City's wetlands and other local attractions.	High
26. Improve identification and verification of wetlands present in the City, through the use of current aerial photographs, and field truthing.	High
27. In conjunction with DSE and the CCMA collect data and information on those wetlands that are poorly described at present, and establish a monitoring protocol to measure changes in wetland condition over time.	High
28. In conjunction with the CCMA undertake Ecological Vegetation Class and Habitat Hectare assessments for vegetation present in all high value wetlands in the City that are on private land.	High
29. Establish a wetlands information database utilising the information collected in the two actions above, and augment this with wetland data provided by private individuals and companies as part of development applications.	High
30. Establish a waterbird database for all of the wetlands in the City, comprised of count data collected by DSE (waterfowl) and the Australasian Wader Studies Group (shorebirds) and assess this data at strategic time intervals to establish trends in wetland usage in the municipality.	Medium

Wetlands of the Geelong Region

