What Council will do

Council has a host of formal responsibilities under planning and water Acts and other legislation. Beyond those responsibilities,

- Prioritise programs related to water catchment (water quality) and aquatic habitats.
- Continue to develop management plans in related areas (e.g. stormwater, wastewater, water consumption).
- Liaise with other authorities, particularly Melbourne Water, to promote flora and fauna values in connection with water management.
- Improve the amount of buffering around Council land adjacent to waterways.
- Revegetate the degraded aquatic areas of Council-managed land that are priority sites for water quality or habitat improvement.
- Ensure new waterway structures do not limit the natural movement of aquatic or semi-aquatic fauna.
- Investigate a joint project with Melbourne Water and Department of Primary Industries to resolve the Olinda Creek/Lillydale Lake outlet structure, which acts as a barrier to fish and platypus.
- Participate as a partner in the Platypus Count (a program to monitor the status of platypus and Australian water-rats along selected waterways, including the Yarra River, conducted by volunteers).
- Report to the appropriate State Government Agency, any observed death of aquatic wildlife that may be symptomatic of threatening disease (eg. Chytrid fungus in Frogs) or water quality (eg. chemical spills).
- In areas beyond its immediate responsibility, Council will proactively influence other agencies to protect waterways. This includes Department of Sustainability and Environment's role in forestry, where Council supports:
  - pre - and post-cut auditing on all timber harvesting operations to ensure all precautions to protect waterways have been taken;
  - prohibition of clear-fell timber harvesting operations in all water catchment areas (open and closed catchments).

Legal responsibility

The main governing legislation is the Catchment and Land Protection Act 1994 (Vic), which provides for special water supply catchment areas. Under this Act land owners must also take all reasonable steps to avoid causing or contributing to land degradation, to conserve soil, and to protect water resources.

The Wildlife Act 1975 (Vic), administered by the Department of Sustainability and Environment, regulates hunting of wildlife including waterfowl, and prohibits removal of vegetation that contains known habitat for protected wildlife.

The Planning and Environment Act 1987 (Vic) makes specific provision for the Upper Yarra Valley and Dandenong Ranges and establishes a planning scheme that regulates the use and development of land. The Water Act 1989 (Vic) provides for environmental water reserves as well as the supply and allocation of water.

The Environment Protection and Biodiversity Conservation Act 1999 refers to conventions on biodiversity, conservation of migratory species of wild animals, wetlands for waterfowl habitat, and world cultural and natural heritage.

Victorian Flora and Fauna Guarantee Act 1988 seeks to put in place preventative management mechanisms to ensure no biota or ecological communities become extinct and that the processes that threaten biodiversity are identified and addressed.

Yarra Ranges Council

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Action Sheet 4

Waterways and wetlands as habitats

Related materials

Guidelines

Yarra Ranges Council Flora & Fauna Plan 2012: Sustaining biodiversity for current and future generations Yarra Ranges Council Environment Department

Websites

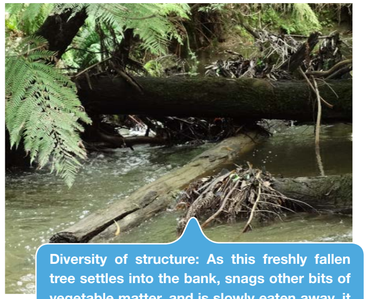
- ***Rebates to install rain water tanks***
  - http://www.water.vic.gov.au/saving/home/rebates
- ***Learn how to build a raingarden***
  - http://raingardens.melbournewater.com.au
- ***Waterwatch Melbourne region***
  - www.waterwatchmelbourne.org.au/
- ***Melbourne Water and Stream Frontage Management Program***
  - www.melbournewater.com.au/
- ***Yarra River Keepers Association***
  - www.yarrariver.org.au
- ***Platypus information***
  - www.platypus.asn.au/

Photo acknowledgements: Faye Bedford, Fleur Brennan, Marty White

Waterways and wetlands as habitats

1 Broad-scale Habitat
2 Property Habitat
3 Urban Backyards
4 Waterways & Wetlands
5 Fire
6 Threatened Species
7 Weeds
8 Pest Animals

Waterways and wetlands as habitats



Diversity of structure: As this freshly fallen tree settles into the bank, snags other bits of vegetable matter, and is slowly eaten away, it will provide structure for new habitats quite different from those it offered as a tree in the landscape.

This Action sheet focuses on waterways and wetlands at the habitat management level. This could mean a single property, or a larger region (a patch of wetland or other freshwater environment). Water is a basic need for every living thing, and a critical part of every ecosystem. Waterways and wetlands are themselves specialised ecosystems.

Integrated management of waterways and wetlands

Our municipality is a critically important water catchment area for greater Melbourne. The health of waterways is closely linked to the surrounding land, and at the wider landscape level, waterways and wetlands impact on climate. Erosion, litter, run-off containing pollution and trampling of soil and vegetation by people and livestock all place stress on waterways.

Healthy ecosystems need water and reliable natural water cycles. Think of waterways and wetlands as a patch of habitat **(see Action sheet 1)**. Rivers, creeks, lakes, lagoons, swamps and marshes form natural waterways.

Even if your property does not include obvious waterways, you can contribute to protecting water quality.

Ecological principles

Given the central importance of water, all four ecological principles are closely connected to water management.

1 Strength with diversity

A healthy and varied aquatic environment will contain a range of different elements in the habitat (e.g. different channel formations, such as logs and pools, and a variety of species of plants) to support a diversity of aquatic species. Each environment supports different combinations of flora and fauna. Aquatic fauna not only includes the more visible fish, platypus and frogs but also includes the vitally important water invertebrates (waterbugs).

2 Disturbance starts a natural process of change

Aquatic life relies on the natural flow of water to survive. The natural water regime (frequency, duration and depth of flooding) for waterways and wetlands is a critical component influencing habitat for flora and fauna species reliant on these environments. Cyclic variations in the flow of water result in periods of wetting and drying, from peak flows to exposure of portions of the river bed. Native species have evolved to adapt their own life rhythms to these cycles.

Flow regimes are often drastically altered by human activities. In rural areas, taking water out of rivers for irrigation and storing water in large dams reduces the volume of water available for the environment. In urban areas, stormwater runoff from hard surfaces (roads, roofs and carparks) increases the frequency and intensity of flooding – resulting in erosion and reduced water quality.

3 Ecology of modified landscapes

Rivers connect habitats for aquatic animals. Human construction not only affects the natural flow by blocking or diverting water – it also acts as a barrier to fish and other animals such as platypus.

Australia's native freshwater fish populations are in serious decline. There are 36 fish species in Yarra Ranges, 77% of them indigenous to the area. Fish travel upstream and downstream in rivers, spawning and feeding. Barriers restrict fish and other animals to a narrow home range. Introduced fish feed on or compete with native species.

Waterways also attract human and animal use, which causes disturbance to soil and vegetation and degrades water quality. For example domestic wastewater discharges carry a high nutrient load to the environment, and may lead to toxic algal blooms; chemicals such as pesticides and herbicides reach unintended targets; stormwater can carry items with it (rubbish from roads, weed seeds, gravel) and move them to new locations or drop them along the journey. Logging in water catchments has significant adverse impacts on flora and fauna as well as water quality and quantity.

Smaller patches of aquatic vegetation that are close enough to form a linked corridor can permit travel between patches by small creatures such as frogs. At the scale of individual land holdings, small plantings close together can help all kinds of animals reach drinking water and cooler aquatic habitats.

4 Threatened ecosystems and species

Native aquatic species are threatened when their habitats are degraded from any cause. **(See Action sheet 6 on threatened species.)**

A platypus needs to eat about 15–30% of its body weight each day. Their diet consists mainly of freshwater invertebrates such as shrimps, worms, yabbies, pea-shell mussels, and immature and adult aquatic insects (including mayflies, dragonflies, caddisflies, stoneflies, aquatic beetles, and water bugs), occasional small frogs and fish eggs, and a few land-based insects that happen to fall into the water from overhanging vegetation.

Flora and fauna goals

Goal 1 PROTECT

In addition to **protecting aquatic habitats** (preserving features of the environment such as logs, pools, and indigenous aquatic vegetation that provide a place for animals to live), working towards this goal involves keeping weeds at bay, minimising the impact of invasive animals, reducing the impact of wastewater and stormwater, protecting soil health, and maximising carbon storage in vegetation and soil in order to provide healthy habitat.

Goal 2 ENHANCE

Goal 3 RESTORE

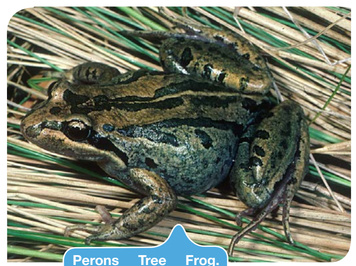
Enhancing and restoring waterways involves reinstating a more natural flow regime where it has been altered, improving water quality by tackling sources of pollution, promoting natural regeneration of indigenous aquatic plant species, and revegetating banks where necessary. All this helps the aquatic animals that rely on water.

Goal 7 INFLUENCE

This goal is critical in relation to water. Council is a catchment area for greater Melbourne beyond Council boundaries. Controlled water flows through the municipality rather than belonging to the municipality. This means prioritising cooperative partnerships with regulatory bodies, and encouraging educational activities that reach communities.

What you can do

- Maintain a buffer zone around the edges of waterways such as riverbanks ('riparian zones'). Keep grazing animals away, and don't clear existing native vegetation.
- Replant degraded areas after removing weeds **(see Action sheet 7).**
- Set up a wetland or water feature to provide a new habitat that supports aquatic plants and pond life, such as frogs and small fish.
- Install a rainwater tank to capture stormwater.
- Build a raingarden.
- Garden organically, using safe, sustainable management practices to avoid adding to the load of chemicals that leach into our waterways from the soil.
- Join Waterwatch, a program managed by Melbourne Water and sponsored by Council. Volunteers help by testing and monitoring water quality and rainfall on their properties and in nearby waterways. Kids can join the Healthy Waterways program.
- If you have land with natural riparian zones and native aquatic habitats, you can receive extra support under Melbourne Water's Stream Frontage Management Program.



Perons Tree Frog. Limnodynastes peroni