



Wetlands

What are they?

A wetland is an area of land covered by shallow water. Wetlands can be natural or artificial, permanent or temporary. The water in wetlands can be still or flowing, fresh, brackish (between freshwater and salt water) or salty. Wetlands cover only about 3% of the Earth's surface, but are vital to our environment because they act as sponges (storing and soaking up excess water) and filters (cleaning water as it flows through).

Stormwater quality wetlands

Stormwater quality wetlands are specifically constructed to remove pollutants from stormwater. They are usually located next to rivers and creeks that require water quality treatment. We manage 117 constructed wetlands in Melbourne, and more are being designed or constructed to treat run-off.

Wetland design

Stormwater quality wetlands are based on a series of shallow and deep ponds and special plants, which all play a part in the treatment process.

The largest particles in the stormwater settle on the bottom of the wetland ponds, and fine particles are absorbed by the plant stems.

The wetlands are also designed to slow the flow of water. Flow control structures are used to direct the required amount of water into the wetland and ensure that the water is held in the wetland for a specific amount of time to enable biological processes, sunlight and time to purify the water.

Wetland wildlife

Each wetland has its own unique ecosystem that provides food, water and habitat for an array of plants and animals.

Some of Melbourne's most notable wetlands are at our Western Treatment Plant at Werribee which attract some 270 species of birds. The site is listed under the Ramsar Convention for significant international wetlands.

Edithvale-Seaford Wetlands, another Ramsar site on the other side of Port Phillip Bay, has recorded over 190 bird species, including 25 international migratory birds. We also manage a number of stormwater quality wetlands and Sites of Environmental Significance.

What are the areas within a wetland?

Wetlands are divided into three areas or zones:

1. Inlet zone - Where rivers and creeks meet the wetland. This zone slows the water flowing into the wetland to enable larger particles carried in the water to settle and sink. The ephemeral carbon filter trap, located at the beginning of the wetland, is vegetation that traps leaves and organic matter before it enters the wetland.
2. Large plant zone - Plants that grow wholly or partly underwater in this zone convert the nutrients in the water and assist in the treatment of stormwater.
3. Open water zone - This is a deeper area that allows time for finer particles to settle and sink to the bottom of the pond and sunlight to kill bacteria.

Which plants are used?

Indigenous plants, including sedges and rushes, which adapt well in wetlands, rivers and creeks are chosen to remove nutrients such as nitrogen and other pollutants from stormwater as it passes through the wetland. Plants vary in size, with the largest growing up to 1.2 metres out of the water.

Our investment in the future

We invest about \$6 million a year building wetlands to remove nitrogen and other pollutants from stormwater. Our wetlands will help reduce the amount of nitrogen entering Port Phillip Bay by 100 tonnes a year by 2010. We also work with developers and local councils to incorporate wetlands into new subdivisions to minimise the environmental impact of urban growth and development.