

Water & the Environment

This brochure was developed by
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Ipswich Water's commitment to improving wastewater quality before release is the inspiration behind its utilisation and conservation of wetlands in the Ipswich area.





Why save wetlands?

These areas are the second richest ecosystems in the world (the forest is first) and perform many necessary and valuable functions; the most important of which is to manage water. The conservation and creation of these crucial areas will assist in purifying water as wetlands act as natural filtering systems and perform all the functions of a dam by holding water for long periods and slowly releasing it in drought periods.

Ipswich Water's Rosewood Wastewater Centre utilises a wetland to assist in purifying wastewater. As part of the purification process wastewater is further enhanced as it is directed through a lagoon and a series of wetlands prior to disinfection.

The Centre generates a higher quality effluent with lower levels of organic matter and nutrients, producing an environmentally friendlier product. The removal of organics is in the order of 98-99% and 90% of the nitrogen is also removed.

A significant proportion of the reclaimed water from the centre is used by the Rosewood Golf Course for irrigation of the course.

How to Create Your Own Wetland

Discover how you can manage the water in your garden more efficiently.

This is your opportunity to contribute to the massive drive to improve our environment. Whilst national wetlands often cover huge areas, creating a wetland, marsh or bog in your own garden is one of the most wildlife-friendly features that you can develop. Wetlands are vital to the health of ecosystems and are home to a variety of plants as well as animal species, such as frogs, fish and birds.

Follow these guidelines when creating your own bog garden:

- Mark out the required shape with string or sand and dig a trench of about 1m deep with sloping sides.
- Line the trench with black plastic sheeting and make holes in it for drainage – do this by piercing the plastic sheeting with a garden fork at regular 1m intervals.
- Replace the soil and fill it with water and top it up whenever the soil surface is dry. Alternatively allow water to fill slowly into this area so that it is constantly wet. (It would be ideal to build the bog garden next to an existing pond and then allowing the pond to overflow slowly into this new bog area).

Boggy pond areas can be divided into 3 zones each with its own group of plants.

1



Free-floating aquatic plants

These are suspended in the water and absorb all their nourishment through fine roots. They include *Nymphoides crenata* (Wavy Marshwort), *Marsilea mutica* (Nardoo), *Azolla pinnata* (Ferryazolla), *Ludwigia peploides* (water primrose) and *Nymphae gigantea* (giant water lily).

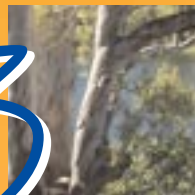
2



Marginal plants

These have roots that are adapted to living in the waterlogged soils at the edge of a pond or in a submerged container in a pond. They include *Juncus usitatus* (common rush), *Philydrum lanuginosum* (frogsmouth) and irises.

3



Moisture tolerant plants

These not only include waterside species, but a wide range of water-loving plants. They include native violet, mandoglass, ferns and *Melaleuca* sp paperbarks.

- Before buying new plants for your bog garden find out if they are not declared weed species.
- Prevent accidents by making sure your bog pond has a safe access.
- Try not to use chemical pesticides near your pond or wetland to avoid the residue contaminating the water.
- Deter mosquitos from breeding in your bog pond by stocking your pond with mosquito-eating native fish (Firetail gudgeon, Pacific blue-eye).

Harvesting nature's resources

Water runoff from paving is a valuable source of water for the garden. Rain that falls on paved areas, (which is non-permeable) has to go somewhere. How can you make sure that your garden receives the benefit of this free water?

- If you have existing paved areas (such as pathways or driveways) observe where the rainwater runs off and where it ends up. If it is not benefiting your garden, redirect it by installing swales (mini-humps) to redirect the water to where you want it to go. If your existing paving has curbing, which results in wasteful water loss, remove some of it to allow rainwater to reach your garden.
- If you are in the process of constructing a paved area, shape the earth-and-sand base on which the tiles or bricks are to be placed so as to direct the water into your garden.
- While paving is initially expensive you will save money and time in the long run as paving is a no maintenance gardening option, which requires no annual planting, weeding, and no watering.

When you have made these water saving changes to your paved areas, you can now make the best use of the areas where the extra water is now available.

- You can make this area a high water zone and plant it with moisture-loving plants. If the area is in the sun, consider planting a *Dianella lomandra callistemos* (little johns) and *Banksia integrifolia*. If it is in a shady spot plant cordylines, native ginger or maidenhair fern.
- You can also create a dry riverbed consisting of pebbles and a few larger rocks. In summer you can plant the riverbed with summer-flowering species.

All that lives depend on water. As your Sustainable Water Management Utility, Ipswich Water is not only committed to pouring life into our community, but also allowing life to flow through our environment.

