

PRACTICALITIES

TRANSFORMING FARM DAMS INTO WETLANDS FOR WILDLIFE

Steve Newbey

Farm dams can be transformed into valuable wetlands that not only provide a reliable source of stock water but also provide safe shelter and an important source of food for many species of fauna.

Design considerations

- Varying depth of water in wetlands is important because it creates different habitats as water temperature and light infiltration decreases with depth.

- Plants in wetlands are important as they oxygenate the water, protect banks, use nutrients and shade the water reducing the risk of algal blooms. They also provide food for fauna.

- Water depth is very important when selecting species to plant, as different species prefer to grow in different water depths. The water depth can also vary throughout the year and some sites may remain dry for many years before filling and then may remain full for 12 months or more. Some plant species can cope with fluctuating water levels, others can not.

- It is also very important to have an area of open water where birds can land safely without having the navigation hazard of surface vegetation and an area free of fringing trees that make taking off and landing less hazardous.

- If stock water is important, the best option is to pump to a trough outside the dam. Alternatively, the revegetation can be fenced off from the area used for stock watering.

It is therefore important to plant the most suitable plants into the niche that they prefer. Below are a series of recognised wetland zones together with some attractive and useful species that prefer to grow in each zone. (Note, these notes apply to fresh water wetlands.)

Submergent zone (always covered with water)

Native water plants such as *Ottelia ovalifolia* (swamp lily) and *Marsilea* species (nardoos) have leaves that float on the surface of the water. *Triglochin huegelii* and *T.*

lineare (water ribbons) also have long linear leaves that trail through the water. Some *Marsilea* and *Triglochin* species are not native to the southwest and non-local species should be avoided as they may become weeds.



Swamp lily

Typha domingensis, a native bulrush (Noongyar people called it yanget), will grow in water up to 3 metres deep and will produce leaves and flower stems that emerge 1.5-3 metres above the water level. Do not plant *Typha orientalis*, also called bulrush, which has wider leaves and larger seed heads, it is an introduced weed that quickly takes over wetlands.

All of these plants can be planted as seedlings and propagated by division.

Emergent zone (shallow water most of the year)

Various rushes and sedges will grow in this zone and are important in reducing the impact of waves, lessening bank erosion. Some attractive species are *Lepidosperma effusum* (spreading sword sedge), *L. tetraquetrum* (four-angled sedge) and *Baumea articulata* (jointed rush).

Myriophyllum crispatum (milfoil) is an attractive fern-like plant that grows in shallow water. Do not plant *M. aquaticum* (Brazilian water-milfoil) a common aquarium plant that is a serious weed in creeks and wetlands, or any of the Kimberley species, as they too could become weedy.

Riparian zone (may be inundated temporarily following heavy rainfall)

Some larger trees such as *Eucalyptus rudis* (flooded gum), *Melaleuca rhaphiophylla* (freshwater paperbark) and *M. preissiana* (modong) grow on banks and also in the ephemeral zone. These trees provide shade over the water, roosting places and nesting hollows when mature. *Agonis flexuosa* (W.A. peppermint) and *E. patens* (W.A. blackbutt) will also grow in this zone, but prefer better drained soil.

Taxandria linearifolia (swamp peppermint), *T.*

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Creating wetlands

parviceps and *Astartea fascicularis* form dense thickets fringing wetlands that provide excellent habitat for waterbirds, frogs, small mammals, reptiles and smaller terrestrial birds.

Rushes and sedges also thrive in this zone and help to hold the soil together in times of flood. *Mesomelaena tetragona* (semaphore sedge) and *Leptocarpus diffusus* are interesting sedges and rushes that prefer this zone.

Ephemeral zone (in water sometimes)

Astartea fascicularis is a shrub that fringes the very edge of watercourses, flooded gum, freshwater paperbark and modong are trees that will grow in areas that are inundated seasonally and for extended periods of time. Many rushes and sedges thrive in this zone.

Seepage areas (permanently wet)

Villarsia species and *Centella asiatica* are ground covering plants that grow on seepage areas, as do many rushes and sedges.

Dead trees, logs and rocks

Dead trees may look unsightly to some people but provide very important habitat in the form of nesting hollows and roosting sites, especially when they stand in water as then they provide protection from cats. Logs and rocks in, and around the edge of, water provide nesting, roosting and hiding places for most aquatic animals and safer places for birds to land and drink.

Rushes and sedges

Most rushes and sedges occur in monocultures at their preferred water depth and permanency. Provenance is generally not an issue but watch you don't spread dieback and the frog virus in soil and on plant material. Take care not to use the severe weed *Juncus acutus*, sharp rush. (see WW 10/4)

Rushes and sedges have two growth habitats, clumpers and spreaders. Clumpers radiate outward slowly from the original plant spreading a few centimetres each year, whereas spreaders send out rhizomes and can spread rapidly popping up some distance from the parent plant and can rapidly colonise all suitable habitat. Clumpers are therefore easier to control and keep where you want them to grow. Some species such as *Juncus pallidus* (pale rush) germinate readily from seed and can become weedy, not only around wetlands but on dry land as well. As mentioned previously it is important to have open water, so be careful not to plant species that spread by rhizome in shallower dams, as they may colonise the entire area.

Steve Newbey is Field Officer for the National Trust covenant programme. Contact him by email: stephen.newbey@ntwa.com.au for a more detailed list of wetland species (including rushes and sedges) that occur in the wetter south-west.

Illustration previous page: Helen Aston.