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SAVE THE MURRAY

Save the Murray

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Native Vegetation

The Murray-Darling Basin represents a large area and many diverse environments. This environmental diversity is reflected by a huge array of native plant types, ranging from truly aquatic plants through to arid species that rarely see a drop of water

What are the benefits of native plants?

Native plants provide important environmental benefits including lowering salinity levels, reducing bank erosion and increasing the abundance of other native flora and fauna. Native plants are often the best environmental stabilizers and repairers because they are naturally adapted to local conditions such as soils, topography and climate and can help maintain a healthy ecosystem balance.

Aquatic (water) Plants

Aquatic plants are also known as "macrophytes" These plants are important in improving water quality and providing habitat and food for other species. Some macrophytes live with their leaves fully submerged in water. Occasionally these plants float to the surface with their roots dangling below but usually their roots are attached to the sediment. Other aquatic plants are known as emergent macrophytes and have their roots in the sediments, but foliage that emerges out of the water. They often are found along the water's edge.

Sedges and rushes are typical emergent macrophytes. These occur frequently in wetlands, floodplains and riparian zones. Common species in the Murray Darling Basin include the common reed (Phagmites australis), Cumbungi, bull rush (Orientalis and Typha domingensis) and Juncus.

Typical submergent plants found throughout the basin include the Water Primrose (Ludwigia pepliodies) and Floating Leafed Pondweed (Potamogeton tricarinatus). These plants grow with their roots in the river sediments while their leaves and stems float in the water. Ribbon weed (Vallisneria spp.) is wide spread and can be found in still and slow flowing aquatic habitats all across the Basin.

All aquatic plants are strongly dependent on the amount of water present. During droughts, these plants can remain dormant as tubers or rhizomes in the mud for several years until water returns.

Terrestrial (land) Plants

There are three dominant tree species found on the Murray-Darling Basin's floodplains. These are the River Red Gum (Eucalyptus camaldulensis), Black Box (Eucalyptus largiflorens) and Coolibah (Eucalyptus coolibah).

River Red Gums are one of the best known and widely used trees in Australia. Red Gums form extensive forests in sections along the Murray and Murrumbidgee Rivers but are generally restricted to a narrow fringe along the main channel where their need for large amounts of water can be met. River Red Gums can tolerate flooding and are an important part of the river ecology as they support a large and varied wildlife population and are an indicator of flood-plain health.

Black Box occur in areas along the river that are flooded less frequently and grow mainly in the southern and western parts of the Basin. Black Box is a small to medium tree with a dark rough trunk and sliver-grey leaves. They are tolerant of dry conditions and, like the

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River Red gum, provide an important habitat for birds, reptiles and mammals.

Coolibah is a tree of medium height that forms open woodlands, usually on heavy clay floodplain soils in the north and western parts of the Basin. The Coolibah woodlands provide habitat for smaller fauna such as bats and rodents. Like the Black Box, Coolibahs are tolerant of relatively long dry conditions as well as periodic flooding.

Some of the undergrowth or shrub-land types of plants that occur in the Murray-Darling Basin include Lignum (Muehlenbeckia florulenta), Nitre bush (Nitraria billardieri) and Old man saltbush (Atriplex nummularia). These are generally associated with drier and more saline floodplains. They provide valuable nesting sites and habitat for small birds and animals (including fish during times of flood).

Spiny mudgrass (Pseudoraphis spinescens) is a common species of grass found in the Murray-Darling Basin. It forms grasslands in open areas of frequent or near annual seasonal flooding. It is mainly found in the southern part of the basin usually in shallow depressions of River Red Gum forests. Water couch (Paspalum distichum) grasslands occur on the floodplains of the Macquarie and Gwydir rivers and can sustain grazing provided it is not water stressed. Canegrass (Eragrostis australasica) which is sometimes called tussock grass, occurs as extensive grasslands in the drier northern and western parts of the Basin.

Changes to Native Vegetation

The native plants of the Murray-Darling Basin play an important role in supporting native animals and maintaining the structural stability of the River (amongst other aspects). At least half of the pre-European vegetation cover of the River Murray-Darling Basin has been removed and replaced by new plants. Significant environmental degradation has resulted.

The land's vegetation cover is never static, especially over the longer term. The Australian continent has been subject to various climatic changes, not least those associated with the most recent Ice Age, all of which resulted in significant changes to the vegetation. To such evolutionary changes must be added those resulting from the thousands of years of Aboriginal occupation.

The European impacts over most of the Basin, have been both intensive and extensive. Land clearing on a massive scale has taken place replacing diverse native vegetation with agricultural landscapes, non-native forests and urban areas, leaving fragmented and isolated pockets of native vegetation. Studies have indicated that over 52 per cent of the native vegetation in Australia's 'intensive land use zone' which includes much of the Murray-Darling Basin has been cleared for agricultural and other purposes. Many native plants and animal communities have been replaced by introduced species. Some species have suffered severely by European land clearing practices and are now rare or extinct. Due to extensive settlement and development in the Basin, there is little wilderness of high quality remaining.

Why is native vegetation threatened?

Native vegetation is under threat from a number of directions, including:

- Rising salinity levels in the river and saline seepage from water tables on or near the floodplain. This is partly due to clearance practices in the Murray-Darling Basin and grazing on the river edge in the past
- Changes to the historically important flooding and drying regimes necessary for natural regeneration events (this is a result of the construction of locks and weirs)
- Increases in human impacts associated with recreational activities along the river including:
  - Camping and associated soil compaction
  - Firewood collection
  - Boating and associated bank erosion;

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undercutting vegetation along the banks
- Clearance of reed-banks to provide access to the river and;
- Unsympathetic development of land adjacent to the river

- Spread of weeds and willow trees

Is native vegetation being protected?

All states have in place laws that provide legal protection for native vegetation within their boundaries. The relevant authorities make decisions on applications to clear native vegetation. When an application is not in conflict with the provisions of the legislation, the authority will allow clearance but may attach certain conditions. These conditions may include a requirement of the land owner to protect other areas of existing native vegetation, and for revegetation work to be undertaken to offset any losses associated with the clearance.

Native vegetation may also be placed under Heritage Agreement pursuant to the Native Vegetation Act 1991. The Heritage Agreement Scheme provides incentives for retaining and managing native vegetation.

Is there much re-vegetation being done?

There is re-vegetation occurring all over the Basin by Local action planning groups, including Landcare groups, Greening Australia and other community groups and individuals. It is important when planning areas to be re-vegetated that you attempt to get plants that are not just native but indigenous to that area.

Why are there dead trees in the River Murray?

The construction of locks along the river caused many trees which were previously subject to periodic flooding on the flood plain to become permanently inundated with water. Whilst River Red Gums are able to withstand some flooding of their roots, they also need periods where their roots are free from flooding.

Dead and dying trees along the river may be the result of similar changes in water regimes and increased salinity levels within the river and associated water tables. The impact of human activities such as the compaction of soils by vehicles and loss of supporting understory vegetation may also be a contributing factor.

Can I collect wood when I am camping?

Firewood, if collected should be collected from dry fallen timber lying on the ground NOT from living vegetation. It is important to remember that many fallen logs provide homes for animals and it is better to bring your own wood from a sustainable source. Firewood should never be collected in National Parks

What is being done?

There are several things being done to protect and enhance our Native Vegetation. New legislation and the introduction of fines for removal of native vegetation has helped create public awareness and encouraged people to become more aware of the economic uses of native vegetation such as bush tucker, native flowers, timber, oils and the much overlooked benefits to the environment.

What can I do?

You can help by taking part in re-vegetation programs with local community groups and by protecting and respecting native vegetation both on public land and on your own property.