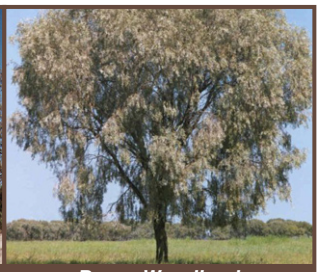
An information guide to the Murrumbidgee Irrigation Area native plant communities

This document is for applicants to use as a guide in preparing their BioTender application. It contains descriptions of vegetation communities to help in identification.

Bimble Box – Pine

This vegetation type is characterised by the dominance of two species, Bimble Box (*Eucalyptus populnea*) and White Cypress Pine (*Callitris glaucophylla*). This vegetation type occurs on areas of slightly to gently undulating plains, sandplains, footslopes and midslopes associated with deep loamy calcareous soils (Eldridge, D. 2002). The extent remaining within the MIA (10,829ha) is deceiving as it has been combined with the well retained Dwyer's Mallee Gum vegetation communities on the rocky hills. The Bimble Box – Pine community is considered regionally endangered with less than 10% remaining of its original extent. The vegetation community both within the MIA and in the surrounding dryland has been predominantly cleared for cropping. Other species that grow in association with the Bimble Box – Pine community commonly include: Kurrajong, Grey Box, Wilga, plus various wattles.

Bimble Box – Pine



Boree Woodland

Boree Woodland

This vegetation type is characterised by the dominance of Boree (*Acacia pendula*). Boree is generally found on either floodplains with gilgai or elevated plains with source-bordering dunes or the levees of prior streams (Eldridge, D. 2002). The soils of this community grade from compacted grey clays to sandy and loamy duplex soils on the prior stream levees (Eldridge, D. 2002). Since European settlement this vegetation type has declined significantly in extent to the point where it has been listed under the NSW Threatened Species Conservation Act 1995 as a Threatened Vegetation Community. Clearing for cropping and for fodder during drought years and heavy grazing pressure have been the main causes of the decline of the community since European settlement. Within the MIA Boree woodlands are largely restricted to public land areas including road and rail reserves. Other species that commonly grow in association with Boree woodlands include; spiny saltbush, ruby saltbush, corregated sida and native forbs.

Belah – Rosewood

This vegetation type is characterised by the dominance of two species Belah (*Casuarina cristata*) and Rosewood (*Alectryon oleifolius*). The structure of this community varies considerably from scattered individuals or small clumps scattered over 1km apart, to dense woodlands with trees spaced 4-5m apart (Cunningham et. al. 1992). The communities occur on level plains and sandplains of calcareous earths (Eldridge, D. 2002). Within the MIA this vegetation type is predominantly found west of Barren Box Swamp. Other species that commonly grow in association with Belah – Rosewood include; Wilga, Warrior Bush, Punty Bush, Desert Cassia and various native forbs.

Black Box

This vegetation type is characterised by the dominance of Black Box (*Eucalyptus largiflorens*). Black Box communities are restricted to floodplains, plains and relict drainage channels on soils that are medium to heavy grey clay sometimes overlain by clay loams and loams (Eldridge, D. 2002). At a regional level Black Box communities are considered depleted with between 30-50% remaining of its original pre-European extent. Within the MIA Black Box communities remain largely intact due to intermittent flooding associated with the soil type and location within the landscape. Other species commonly found in association with Black Box include: Lignum and Spiny Saltbush.

Black Box Woodland

Mallee

This vegetation type is characterised by the dominance of multi-stemmed, stunted Eucalypt species such as Congoo Mallee (*Eucalyptus dumosa*) Grey Box (*Eucalyptus microcarpa*) and Pointed Mallee (*Eucalyptus socialis*) (Eldridge, D. 2002). The Mallee communities are restricted to areas of deep, siliceous, earthy and brownish sands on generally level to slightly undulating plains (Eldridge, D. 2002). At a regional level Mallee vegetation communities are considered depleted with 30-50% of its original pre-European extent remaining. Mallee communities generally support large numbers of shrub species including Broombush, Cactus pea and Flax lilies. Common grass species include Brush Wiregrass, White Top Spear Grass and Porcupine Grass (Eldridge, D. 2002).

Congoo Mallee

Dwyer's Mallee Gum

Dwyer's Mallee Gum

This vegetation type is characterised by the dominance of Dwyer's Mallee Gum (*Eucalyptus dwyeri*). However, species such as Black Cypress Pine, Currawang and Hill Oak are also very common. This vegetation type is restricted to the steep rocky hills bordering the MIA in the North-East including the Cocoparra Range. The soils associated with this vegetation type are invariably skeletal with exposed rock (Cunningham et. al. 1992). The inaccessible nature and poor soils associated with this vegetation type have excluded it from clearing activity associated with agricultural development. As a consequence large areas of this vegetation type remain and are classified as being well retained with greater than 50% of its original pre-European extent remaining. Other species commonly found within the vegetation type include Mintbushes, Wax Flowers, Cough Bush, Daisy Bushes, Spear Grass, Wallaby Grass, Sticky Everlasting and bluebells (Cunningham et. al. 1992).

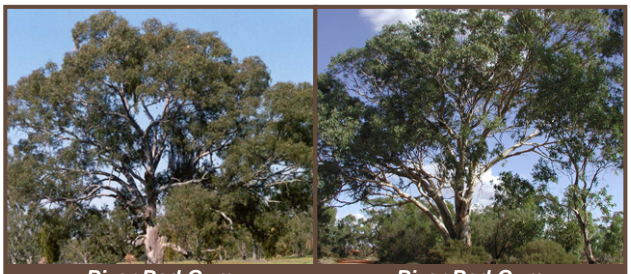
Sandhill communities

These communities are usually associated with thick stands of White Cypress Pine (*Callitris glaucophylla*). The soil type is generally deep, sandy and well drained. Within the MIA this vegetation type has been predominantly cleared for horticultural development. At a regional level, however, the vegetation type is categorised as being well retained with greater than 50% remaining of its pre-European extent. In the dryland areas, this vegetation type has very limited agricultural or cropping value which has prevented its broad scale clearing. However, during the 1800's and early 1900's the timber of the White Cypress Pine was extensively harvested, as a consequence much of the White Cypress Pine stands have regenerated since this time. Other species commonly found in sandhill communities include Yellow Box, Bimble Box, Deanes Wattle, Wire Grass and forbs.

Sandhills - White Cypress Pine

River Red Gum

This vegetation type is characterised by the dominance of River Red Gum (*Eucalyptus camaldulensis*). Stands of River Red Gum vegetation occur along major rivers, watercourses and wetland areas. Near the major watercourses the soils of River Red Gum communities are usually grey clays (Cunningham et. al. 1992). River Red Gum communities are closely associated with areas that are prone to frequent or prolonged flooding. As a consequence River Red Gum areas have limited value for cropping and remain well retained with greater than 50% of its original extent. Whilst its value for cropping is limited the River Red Gum communities, with its close proximity to water has historically been heavily utilised for grazing by both sheep and cattle. As a result of this heavy grazing pressure many of the River Red Gum vegetation communities are considered to be highly degraded with very little understorey or ground cover species remaining. Other species commonly found in association with River Red Gum communities include River Cooba, Lignum and wetland sedges and rushes.



River Red Gum *River Red Gum*

Chenopod Shrublands

This vegetation type is characterised by the dominance of Chenopod shrubs, usually Bladder Saltbush (*Atriplex vesicara*). This vegetation type is usually found on alluvial plains with grey and brown clays and shallow-surfaced red brown earths (Cunningham et. al. 1992). Within the MIA this vegetation type is most likely to occur in the districts west of Barren Box Swamp. The vegetation in this area has yet to be mapped, hence the extent of this vegetation type within the MIA is unknown at this point. At a regional level, the extent of this vegetation type is also unknown. It is possible that heavy grazing pressure has resulted in the loss of Bladder Saltbush and the areas remaining contain only native grassland species. Other species commonly found in Chenopod shrublands include Boree, Black Box, Blue Bush, Belah, Bottlewasher grasses, spear grass and annual forbs.

Grasslands

Within the MIA native grasslands are more likely to occur in the districts west of Barren Box Swamp. Many of the now grassland areas may have been formerly Chenopod shrublands, with stock grazing removing the perennial Chenopod shrubs. The grasslands remaining are dominated by Common Bottlewashers and Variable Speargrass with annual forbs such as Cannon-ball and Copperburrs being common (Cunningham et. al. 1992). The Common Bottle Washers and Variable Speargrass alternate in dominance depending on rainfall incidence. Summer rainfall favours Common Bottlewashers whilst winter rainfall promotes Variable Speargrass (Cunningham et. al. 1992). In areas subject to heavy stock pressure the grasslands are usually dominated by spiny, less palatable plant species, whilst in areas subject to less grazing pressure the grasslands are usually more diverse and include plant species with few or no spines. Common Bottlewasher – Variable Speargrass communities are found mainly on solonised brown soils or calcareous red earths (Cunningham et. al. 1992). These grasslands can be regarded as being part of Belah – Rosewood or Bladder Saltbush communities or the link between them (Cunningham et. al. 1992). Within the MIA the native grassland communities have yet to be mapped. At the regional level the extent of this vegetation type is also unknown.

Remnant Vegetation – Wetlands

Wetlands are areas that hold water for periods of time that allow aquatic plants to germinate, grow and complete their reproductive cycles. There are many types of wetlands that are usually categorised according to the most dominant plant species present. The types of plants found within a wetland are largely determined by the amount of water and depth held by the wetland.

Riverine Wetlands

These wetlands occur along the floodplains of major rivers and creeks. In an unregulated system these wetlands fill regularly following high river flows and floods in late Winter–Spring and dry out over the Summer–Autumn. Following filling, the water held within the wetland slowly draws down over the Spring–Summer period with evaporation. It is during this slow draw down period that aquatic plants are able to grow and complete their reproductive cycles. It is also during this plant growth period that animal species dependant upon wetlands for breeding and feeding utilise these wetlands. In recent years it has been found that the Riverine wetlands play a vital role in maintaining river health. The wetlands provide vital nutrients and breeding grounds for aquatic plants and animals, including micro-organisms, that are in turn important for the healthy function of river systems. River regulation and the manipulation of water within wetland areas has resulted in the degradation of many riverine wetlands, it has changed the timing and frequency of filling events. On private land many wetlands are used for water storage and pumping, artificially maintaining wetlands at high water levels restricts aquatic plant growth to the edges of the wetland, whilst pumping water from the wetland reduces the ability of the aquatic plants to complete their growth and reproductive cycles. In many instances wetlands are kept permanently inundated with water which prevents the wetland from functioning as a natural system and contributing to the health of the river system.

Plains Wetlands

These wetlands occur in the low areas of the landscape and fill following heavy rainfall events. In most cases these wetlands only link back to a river system during major flood events. Plains wetlands vary considerably in size ranging from small areas on farms to large areas such as Barren Box Swamp. Depending on the size of the wetland and its location within the landscape, the wetland may remain wet for a number of years following successive wet years and alternatively remain dry for a large number of years. The dry phase of these wetlands is often just as important as the wet cycle for the plants and animals that rely on the habitats provided by the wetland. Since European settlement and agricultural development, many of the plains wetlands have been filled, drained or dams built along the associated drainage lines reducing flooding events. These activities have had a detrimental impact upon the plants and animals that rely on these intermittent wetlands for habitat.

Dated: Feb 2011