

CAMPASPE SITES

Site 17 Black Eagle Water Reserve Summary

The site is in environmental decline.

Vegetation Description and Composition

This riparian woodland is dominated by a Red Gum overstorey with scattered Black Wattle and an understorey of sedges, rushes, native and introduced grasses. The native understorey is being replaced by introduced species. More than 60 percent of the total species are introduced compared with 50 percent of total species in 1997 and 1998. The vegetation data indicates slight changes between 1997 and 2002 vegetation surveys with the exception of one salt indicator species instead of two being present.

The continued dry conditions may have led to the increase in abundance of introduced grasses and a decrease in the level of abundance of Spear Thistle. In 2001 the invasive grass *Phalaris* was observed within the Quadrat. This species has the potential to dominate the herb layer of the site if left unchecked. In addition to the 600 new planting's by the Axe Creek Landcare Group and the City of Greater Bendigo, (40 of these planted within the Quadrat) in 1998, seven nest boxes were also erected.

Tree Health

The four Red Gum trees monitored at this site have experienced some decline in health since 1996 with reduced canopy densities and increased level of epicormic growth. They also appear to be suffering moderate amounts of attack from psyllid bugs (lerps). No regeneration of the tree or understorey layer was recorded at the site in 2002.

Birds

Eighteen bird species were recorded at the site in 2002. This is an excellent result given that cleared paddocks surround the site. The understorey planting's completed in 1998 are perhaps one reason for the result as they provide cover and habitat for many bird species.

Groundwater and Salinity

Two bores located at the site fluctuate in response to local seasonal and climatic variation and have fallen in response to dry conditions. Average depth of the groundwater was four metres below natural surface.

Water Quality and Macroinvertebrates

These tests do not apply to this remnant vegetation site.

Site Threats

- Continued weed invasion and the spread of *Phalaris*
- Trampling by people from adjacent picnic facility and people checking nest boxes
- Erosion of adjacent bank only several metres from Quadrat

Surrounding Landuse

Surrounding land use was grazing on annual and perennial pastures.

Site 18 Pilchers Bridge Flora and Fauna Reserve Summary

The site is in a stable environmental condition.

Vegetation Description and Composition

Red Ironbark, Red Stringybark, Red Box, Grey Box and Yellow Gum dominate this intact heathy dry forest site. The understorey contains a range of wattles, heath, pea and native grass species. In 2000 there were a substantial number of wattle seedlings present. They were identified as Gold-dust Wattle in 2001. The 2002 survey indicated that there are four species less than 2001 and the level of abundance is reduced. The reason for the vegetation changes is probably due to the long dry conditions and grazing by kangaroos. No introduced species or salt indicator species have ever been recorded at this site. The total number of species recorded is remaining similar each year. There appears to be more leaf litter than the previous five years of vegetation surveys caused by dry conditions.

Tree Health

Tree health at the site appears fairly low. The four monitored trees contain very small crown sizes and are very spindly. Canopy densities are also quite low partly because of the drought but mainly due to the reserve containing too many stems per hectare. Moderate regeneration has occurred in the understorey layer but no tree regeneration was evident.

Birds

Sixteen bird species were recorded in 2002. This site always records a large number of species due to the large size of the reserve and range of habitats available.

Groundwater and Salinity

A bore was installed in the reserve in 2001 to a depth of 17 metres and has remained dry since installation.

Water Quality and Macroinvertebrates

These tests do not apply to this remnant vegetation site.

Site Threats

- Heavy grazing by kangaroos

Surrounding Landuse

Surrounding land use is rural living (small farms) including grazing of annual and perennial pastures.

Site 19 Yankee Creek Summary

The site appears to be in environmental decline from weed invasion.

Vegetation Description and Composition

This riparian Red Gum woodland contains an understorey of Tall Sedge, Common Spike Sedge and Sand Rush listed as rare under the FFG (1988) Act. The only salt indicator species Rye Grass remains present. It is questionable whether the presence of this species indicates saline conditions at this site as it is a common weed and no other salt indicator species were recorded. Substantial clearing under the powerlines by Powercor occurred in 2000. The cutting to ground level of several Yellow Box trees outside the quadrat and Red Gums within the quadrat resulted in the site becoming less shaded and therefore drier. During 2001 substantial coppice regrowth had developed on the lopped eucalypts, this has recently been removed. Flood debris from previous heavy rainfall events remains scattered across the site. At the time of the 2002 vegetation survey the site had been dry for almost two years. There have been minimal changes to the vegetation composition at this site when compared to previous years except that Wallaby and Spear grass species were recorded in the 2002 survey.

Tree Health

All four Red Gum trees have experienced slight decline in health with reduced canopy densities in response to drought. Crown sizes were also quite small and epicormic growth and leaf insect damage was quite extensive on many trees at the site. No regeneration of the tree or understorey layer was recorded.

Birds

Fourteen bird species were recorded in 2002. This is a good result given the small size of the site and that it is also surrounded by cleared agricultural land.

Groundwater and Salinity

The one bore near the site had shown a downward trend in water table depth due to dry seasonal conditions until 2003. Average to above average rainfall received in the area has seen this highly responsive bore begin to record an upward movement in groundwater levels. The average depth of the groundwater for 2002-2003 was seven metres below natural surface.

Water Quality and Macroinvertebrates

These tests do not apply to this remnant vegetation site.

Site Threats

- Continued weed invasion particularly *Watsonia* and *Phalaris* species
- Removal of overstorey resulting in a drier site and possible reduction or loss of Sand Rush, a species listed as rare from the site
- Rabbit grazing
- St. John's Wort seen 50 metres south of the site on the roadside reserve
- Continued soil disturbance

Surrounding Landuse

Surrounding land use is the Midland Highway, Bendigo/Echuca railway line and cropping (canola).

Site 20 Bendigo-Echuca Railway Reserve - Goornong Summary

The site is at risk from continued weed invasion.

Vegetation Description and Composition

This railway reserve site, adjacent to the Midland Highway, is plains grassy woodland dominated by scattered Grey Box and a native grassland understorey containing Kangaroo Grass and seasonal native herbs. The recent appearance of Rye Grass may indicate a salt problem but is more likely to be as a result of seasonal conditions. Up to 2001 there had been a steady annual increase of approximately ten percent in the total number of species present when compared to previous vegetation data. However during 2002 there has been a huge decrease in the percentage of introduced species. The overall biomass has reduced and clovers, medics and introduced members of the Fabaceae Family were not recorded. The level of abundance of Wild Oats had also markedly decreased. All of these results are due to the continued dry conditions. Native species have started to appear as they can tolerate arid conditions better than many introduced species and now have a chance to recolonise the quadrats due to the reduced level of competition from weeds. Long Eryngium listed as vulnerable and Dwarf Bluebush listed as rare under the FFG (1988 Act) are still present at the site.

Tree Health

The health of the four Grey Box trees is good with only a slight decrease recorded in 2002 due to the dry conditions and some slight leaf damage caused by insects. Moderate regeneration of the tree and understorey layer was also recorded.

Birds

Five bird species were recorded in 2002. Very few birds are ever recorded at this site because it is open and surrounded by cleared paddocks.

Groundwater and Salinity

Two bores are located at the site, one is dry and the other is showing an underlying long term rising trend with some response to seasonal weather variation. The depth of the water table currently at 13 metres does not pose a salinity risk to this site, however may have negative implications for lower lying areas down the catchment. If the rising trend did continue at its current rate, there is the possibility that high water tables could adversely affect the area in 30-50 years time.

Water Quality and Macroinvertebrates

These tests do not apply to this remnant vegetation site.

Site Threats

- Continued weed invasion from road and rail in particular, Cape Broom and now Paterson's Curse
- Grazing by hares
- Dumping of waste and rubbish in particular used vehicle oil
- Disturbance due to roadworks along highway eg gravel dumping and turning heavy vehicles

Surrounding Landuse

The Midland Highway and Bendigo/Echuca Railway line border the site on both sides. All paddocks in the area contained cereal crops.

Site 21 Runnymede Flora and Fauna Reserve Summary

The site is of uncertain environmental stability.

Vegetation Description and Composition

This grassy woodland site is dominated by White Box, Grey Box, Drooping Cassinia and contains an understorey of native species from the Asteraceae, Liliaceae (lily), and Poaceae (grass) Families. The percentage of introduced species had steadily increased until 2001. Some variations are likely to be due to changes in seasonal conditions and the timing of vegetation surveys. The 2002 survey revealed a 30 percent drop in species numbers, mostly from introduced grasses and weeds from the Fabaceae Family. The only salt indicator species Rye Grass remains present. In the absence of other indicator species, it is questionable whether its presence at the site is indicating saline conditions.

Tree Health

The health of the four White Box trees is quite low and all have declined significantly during 2002. Many trees at the site contain low canopy densities, large numbers of dead branches and epicormic growth. Extensive regeneration of Drooping Cassinia is occurring across the site, however no regeneration of the tree layer has been recorded for several years.

Birds

Eleven bird species were recorded in 2002. There is a large population of Noisy Miners at this site, an aggressive species that may explain the absence of other small birds at the site.

Groundwater and Salinity

One bore located at the site has recorded a large drop in the water table due to the extended dry seasonal conditions and was 13.8 metres below natural surface in 2002-2003.

Water Quality and Macroinvertebrates

These tests do not apply to this remnant vegetation site.

Site Threats

- Gravel dumping
- Continued weed invasion

Surrounding Landuse

Surrounding landuse was grazing and many paddocks did not contain very much pasture cover because of the drought. There is a large saline discharge site due south from the site in a depression that has had some tree and saline pasture planting works completed around its edges.

Site 22 Runnymede Recreation Reserve Summary

The site appears to be in a stable environmental condition.

Vegetation Description and Composition

This site contains mature Red Gum riparian woodland with an understorey of sedges, Common Tussock Grass and introduced grass species. During 2000 the site was flooded to a depth of approximately two metres, which deposited large amounts of debris across the vegetation quadrat. However the site has remained dry ever since. The only salt indicator species, Rye Grass remains present. It is questionable whether the presence of this species indicates saline conditions, as it is a common agricultural weed. The level of abundance of Wild Oats was greatly reduced in 2002, possibly due to the continued dry seasonal conditions. The level of introduced species has reduced to 50 percent of the total species present. Previous weeds of the Asteraceae Family were not recorded in the 2002 survey. Sand Rush listed as rare under the FFG (1998) Act was recorded at the site. Platypuses have been seen in the Campaspe River next to the vegetation quadrat. This is a clear indication that the water quality in the river is very good. Recent heavy rains in November 2002 have resulted in red soil moving from the higher area of the car park down the slope onto the quadrat.

Tree Health

Tree health is generally quite high, except for one tree that has a reduced canopy density and a large number of dead branches. During 2002 many trees have shed their lower branches in response to dry conditions. This has also been a factor in reducing tree scores. Leaf insect damage could not be assessed, as branches on the trees were too high for the pole pruners. No regeneration was recorded within the vegetation quadrat.

Birds

Twenty-two bird species were recorded in 2002. The riparian corridor and large old trees provide a diversity of habitat and cover for many bird species.

Groundwater and Salinity

The groundwater levels are very responsive to river volume and rise and fall in a similar pattern to the surface water flows in the Campaspe River. Groundwater has fallen, as the Campaspe River has not had any new flows for a considerable amount of time.

Water Quality and Macroinvertebrates

These tests do not apply to this remnant vegetation site.

Site Threats

- Weed invasion particularly *Phalaris* and Soursob
- Continued trampling by walkers
- Possible fire escaping from adjacent picnic area

Surrounding Landuse

Landuse on the other side of the Campaspe River was a fallowed paddock. Upslope from the site is the carpark and picnic area, where many new trees and shrubs have been planted.