6. LAND USE

Historical background

Major Sir Thomas Mitchell and the members of his 1836 expedition were the first Europeans to pass through the study area. He named the Campaspe River and Barnard River (now known as the Coliban River), and his favourable report on the pastoral qualities of the land resulted in a rapid influx of squatters. Each squatter attempted to take up large tracts of land, and during the 1840s the pastoral industry began to develop.

When the gold rush began in 1851, many farm workers left to seek their fortunes in gold. The expanding mining population required food, and many pastoral runs diversified into crops, fruit and market-gardening. The projects also required large quantities of timer for mine timbers and firewood for the boilers. Initially the forests close to the mines were stripped to meet this demand, but later a railway line was constructed to exploit valuable timer stands near Trentham.

The scarcity of water in the goldfields prompted the building of a reservoir in 1865 on the Coliban River south of Malmsbury, and the construction of a number of tunnels and several hundred kilometres of open channels and ditches to carry water by gravitational flow to the Bendigo-Castlemaine region. These channels are still in use today. Over the years increasing demands for domestic, irrigation and stock water have resulted in the construction of two more reservoirs on the Coliban River south of the original one: the Upper Coliban in 1902, and the Lauriston in 1941.

Evidence of gold-mining days can still be found throughout the catchment, such as this poppet hear and chimney stack at Bendigo

After the initial fervour of the gold rush had waned and easily won surface deposits had dwindled, many of the gold-miners south to become land-owners. The government offered extensive areas of land for selection, but in many cases the offering were too small and the country too poor to be economically viable, causing a number of holdings to be amalgamated.

Overclearing of the land for firewood and mine timbers followed by overcultivation and overgrazing of areas not suitable for intensive agriculture caused widespread soil deterioration. The uncontrolled spread of rabbits during the late 1800s aggravated this situation.

Agriculture has become well established in most of the catchment since these early pioneering days, but relict mullock heaps, mine shafts, pit and ruins can still be found, serving as memorials to the determination and perseverance of the early Australian fortune seekers.

Present forms of land use

Forestry

Substantial quantities of hardwood timber are extracted from the Wombat State Forest in the south. The most desirable species is messmate stringybark and along with narrow-leaf peppermint and candlebark is air-dried for general-purpose scantling or kiln-dried for dressed timbers. Smaller quantities of messmate stringybark and manna gum are available from the Cobaw State Forest.

Box-ironbark forests in the Bendigo-Heathcote area supply limited quantities of timber for fence posts, railway sleepers and firewood. These forests are selectively logged, allowing repressed understorey regeneration to grow into healthy trees suitable for future felling. A network of existing tracks reduces the need for new logging tracks and hence minimises any further disturbance to the environment. In areas where native regeneration is too dense, thinning allows a smaller number of trees to grow to merchantable size.

The mallee scrub in the whipstick area has, since World War I, been cut on a 2-year rotation for eucalyptus oil production, but competition from overseas eucalypt plantations has steadily increased. Local production now tends to be restricted to specialised grades of oil, usually from the preferred species – Blue mallee.

A timber mill near Woodend, which processes mainly native hardwoods from the adjacent State Forest.

Radiata pine is the only commercial softwood species extensively planted in the catchment. It generally requires a rainfall in excess of 700 mm a year, so plantations are usually restricted to the south – for example, in the Wombat State Forest. These softwood plantations supply thinnings for pulpwood, and sawn timber for a variety of purposes.

Agriculture

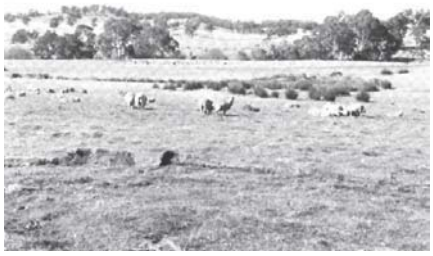
Agricultural land use follows a general trend from grazing in the south to cropping in the north. Sheep-raising for wool, breeding or fat-lamb production is the main grazing enterprise, whereas cereals, usually wheat, oats or barley, comprise the main cropping use.

Pasture improvement usually results in a three- to five-fold increase in stock-carrying capacity over the poorer native pastures. Commonly sown introduced pastures include subterranean clover, cocksfoot, phalaris and, in the moister south, perennial ryegrass. Pastures are usually sown with superphosphate, lime and molybdenum, with subsequent dressings of superphosphate only. In areas with deeper well-drained non-acidic soils lucerne is grown for pasture, and cut for hay production. Pastures in steeper, rocky and other inaccessible areas are frequently unimproved.

Grazing

Wool production, usually from Merino sheep, mainly exploits native pastures – for example, in the hills on Ordovician sediments or granitic rocks in the lower-rainfall areas.

Crossbred ewes, usually Border Leicester X Merino, are commonly mated with British breed shortwool rams, usually Dorset Horn, to produce fat lambs on improved pastures in areas of higher rainfall. The wool from these flocks also provides a substantial proportion of farm income.



Grazing of sheep for wool or fat-lab production is a major agricultural enterprise in the catchment.

Grazing of beef cattle for beef and veal production is common, especially in the higher-rainfall southern areas. Therefore is the main breed, and cattle are usually grazed in conjunction with sheep. Low-intensity grazing of forested public land by beef cattle also occurs in some areas.

Dairying is restricted to irrigated land adjacent to the Campaspe River near Goornong and to small areas on basaltic plains in the south.

Cropping

Cropping occurs mainly on the gentle slopes and plains in the northern half of the catchment. Wheat is the dominant crop on the northern plains with annual rainfall below about 500 mm. Oats and barley are grown in most areas, and the oat crops are frequently cut for hay.

Other crops, including rape, peas and lupins, are frequently produced in rotation with cereals and pastures, while the well-drained red basaltic soils near Trentham support potatoes.

Cropping is a common land use on the gentler lands – an oat crop near Elphinstone.

Irrigated agriculture

The availability of water from the Coliban system has enabled successful irrigation of vegetables near Bendigo and fruits such as applies and pears near Elphinstone. The water allocations are also used to irrigate pastures, including summer fodder crops such as sorghum and Sudan grass.

Apiculture

The forested lands are important sources of nectar and pollen for honey production. Bee-keepers place their hives in, or adjacent to, the forests in search of good nectar flows, especially from the preferred species yellow box, river red gum, yellow gum, red ironbark (summer-flowering form) and grey box. Honey production is supplemented by flowering pasture species such as capeweed and clover.

Mining

Gold-mining, once so prevalent, has almost ceased in the catchment, although mines could re-open in response to improving gold prices and technology. Prospecting with metal detectors is a common leisure activity.

Road gravels are obtained from a number of quarries within the catchment, notably from deposits of quartz river gravels to the east of Bendigo and from Cambrian cherts that are crushed at the northern end of the Colbinabbin Range. Basalts at Axedale, Kyneton and Tylden are quarried and crushed to obtain 'blue metal'.

Monumental stone is quarried from Mount Alexander and sand is stripped from deposits on private land in various granitic areas.

Nature conservation

Reference areas in or near their original condition are needed to preserve flora, fauna, sols and other landscape features of the major land types. Such areas allow us to measure the changes brought about by settlement.

In general the gentler lands and steeper areas with fertile soils have been almost totally cleared. For example, the Colbinabbin Range, the alluvial plains of the Campaspe River, the slopes on tillites and plains on basalt are poorly represented in the reserves.

On the other hand the designation of many areas as State Forest or forest reserves help to preserve the natural communities. Extensive forests and woodlands remain on gentle to hilly terrain on Ordovician sediments, mainly because of the shallow, stony nature of the soils and their low nutrient status. The winter-flowering ironbark forests near Bendigo are important sources of winter food for many bird species, including the swift parrot (*Lathamus dicolor*), which emigrates from Tasmania to over-winter in central Victoria. The box-ironbark forests and mallee scrub of the central goldfields are floristically very rich and provide colourful winter and spring displays of understorey species such as wattles and grevilleas, as well as a number of orchids.

Water supply

Two major water storage systems are located within the catchment. Lake Eppalock, with a capacity of 311 900 ML is situated on the Campaspe River south of Axedale. This storage supplies irrigation and domestic water north along the Campaspe River, and supplemented the Bendigo domestic water supply via an underground pipeline. The Coliban water storage system comprises three reservoirs with a total capacity of 70 000 ML along the Coliban River between Trentham and Malmsbury. It supplies domestic, stock and irrigation water by gravitational feed along channels and ditches to towns and farms north of the reservoirs, and is the major source of domestic water for Bendigo and Castlemaine regions.

Some towns – for example, Axedale and Rochester – obtain water directly from the Campaspe River. Others use small reservoirs; for example, Heathcote and Tooborac are fed from small reservoirs on tributaries of McIvor Creek, Kyneton from small reservoirs on the Little Coliban River, Woodend from dams on the slopes of Mount Macedon, and Trentham from small reservoirs south of the town.

Many hundreds of kilometres of open channels and ditches supply domestic, stock and irrigation water to the Bendigo-Castlemaine region.

Recreation

The forested areas cater for many recreational activities such as picnicking, sightseeing, bushwalking, fossicking, hunting, horse-riding, trail-bike-riding and orienteering. The rivers and reservoirs provide areas for fishing and swimming, and Lake Eppalock is a popular resort for power-boating and sailing.

Many areas of scenic or special interest are popular with sightseers, walkers and picnickers. Trentham Falls, on the Coliban River near Trentham, is particularly popular. The river cascades about 20 m over a cliff of columnar jointed basalt, below which the river has dissected a steep-sided gorge. A similar, but less spectacular waterfall over basalt is Turpin's Falls, located on the Campaspe River south of Barfold.

Trentham Falls, the Coliban River cascading over basalt.

Other popular destinations include Mount Alexander – a ridge of granodiorite near Harcourt – and Mount Macedon – a massif of rhyodacite near Woodend. Both mountains provide excellent scenic views of the Campaspe catchment.

Camel's Hump on Mount Macedon and Hanging Rock (Mount Diogenes) are small hills that have resulted from the extrusion of viscous lavas. Subsequent weathering of these features along fracture lines have formed caves and other recesses in and around the large boulders. Hanging Rock is a particularly popular destination. Two areas on private property are of special interest. Coliban Falls, located on the Coliban River north of Metcalfe, comprises a series of rapids over well-jointed granodiorite with a total drop of about 35 m. Barfold Gorge, on the Campaspe River near Barfold, is a rugged steep gorge approximately 80 m deep and 4 km long. The gorge exposes a sequence of three separate lava flows and the underlying river gravels of the ancestral Campaspe River. Specific features include: two waterfalls, a tessellated pavements, cliffs of basalt columns, palaeosols, a lava cave, and spectacular scenery. Permission from the landholders is required for access to these areas.

Residential use

Bendigo, with a population of some 60,000, is the largest centre, followed by the towns of Kyneton (7,270), Rochester (2,700) and Heathcote (1,400). Smaller towns include Elmore, Goornong, Malmsbury, Redesdale, Tooborac, Trentham and Woodend. Residential development on rural subdivisions, usually near the major population centres, has become common over recent years.

Barfold Gorge

Bendigo is the largest population centre. Mining has now ceased, but Bendigo's origin relates to the discovery of gold in August 1851, which transformed the bush into a thriving, bustling community.