

## **A Flora and Vegetation Survey for Clearing Permit 1969/1 (Mongers 16)**

### **Introduction**

Clearing Permit 1969/1 was issued to the Yarra Yarra Catchment Management Group (YYCMG) on 15/3/08 for the proposed drain, Mongers16. The Department of Environment & Conservation (DEC) expressed particular concern about two areas, which they identified in their accompanying maps 1969/1b and 1969/1c. In the Decision Report (their Item 3c), they name six threatened plant taxa reported from sites within 20 km of the proposed works, viz. *Acacia lineolata* subsp. *multilineata* (P1), *Acacia nigripilosa* subsp. *latifolia* (P1), *Darwinia* sp. Carnamah (DRF), *Eremophila rostrata* (DRF), *Gnephosis setifolia* (P1), and *Wurmbea murchisoniana* (P4). There was an explicit requirement (Condition 4) that a search for these plants be carried out by a 'flora specialist' prior to any clearing in the two areas of concern.

### **Methods**

Yarra Yarra's in-house botanist, who is familiar with the local flora, carried out a detailed search in the specified areas, as well as a general vegetation survey. After a preliminary desk-top study and examination of herbarium specimens, the field survey took place over the two days 22 & 23 April 2008. At each of the two sites, there were two distinct phases.

Initially, the excavation path was identified exactly using a hand-held GPS and marked with flagging tape. A few small adjustments were made to the mapped route, in order to avoid live trees. The marked route was then rigorously searched during two additional traverses – one concentrating on the area up to 50 m west of the proposed drainline; the other east of the drainline.

### **Results**

No Declared Rare Flora or Priority Flora were found. The original (pre-disturbance) vegetation of both areas was probably a York gum woodland-open woodland. However, the vegetation is now severely degraded, presumably as a result of a rising, saline

watertable, and appears to be transitional towards a lower and more-open, chenopod shrubland.

#### Area 1969/1c (north of Taylor Rd)

The 1969/1c area, north of Taylor Rd, is particularly degraded. There, the proposed drain runs along the margin of a poorly drained claypan, with the remains of a melaleuca forest, where 100% of the trees (probably mostly the paperbark *Melaleuca eleuterostachya*) are now dead (Fig. 1). There is a very simple samphire community, overwhelmingly dominated by the single species *Tecticornia pergranulata*.

The proposed drainline skirts this waterlogged area and passes through a York gum woodland. This woodland too is degraded – although not as severely as the adjacent saline swamp. About half of the canopy gums are dead, and most of the remainder are defoliated to some extent (Fig. 2).

Along the margin of the bush area, i.e. at the paddock edge, is a single row of York gums in apparently excellent condition (Fig. 3) The trees here are taller and more frequently single-stemmed, the trunks are broader, the lowermost canopy tends to be further from the ground, and the foliage is more lush. The canopy cover of this boundary unit may exceed 30%; overall cover for the entire woodland is less than 5%.

There is a sparse midstorey of small trees/tall shrubs – leafless ballart (*Exocarpos aphyllus*), centipede bush (*Templetonia sulcata*), tan wattle (*Acacia hemiteles*), and an unidentified, strap-leafed acacia. An untidy understorey forms uneven clumps beneath some of the canopy and midstorey trees. It generally consists of *Enchylaena tomentosa*, *Rhagodia drummondii*, *Atriplex stipitata* and *Austrostipa elegantissima*. Money-leafed bush tomato (*Solanum nummularium*) and green mulla mulla (*Ptilotus polystachyus*) exist as isolated individuals or in loose clumps.

#### Area 1969/1b (south of Taylor Rd)

The large (approx. 100 ha) bush block south of Taylor Rd is also predominantly a York gum woodland. There are patches of melaleuca scrub throughout. Many of these are roughly circular and coincide with obvious claypans; others are less well-defined, and merge imperceptibly with woodland (Fig. 4). The entire southeastern corner of the block,

where the substrate is a clean white sand (clearly distinguishable from the reddish yellow loamy sands and sandy loams of the northern and western areas) is a dense broombush shrubland of *Melaleuca atroviridis* and *Melaleuca hamata*.

Along the entire length of the proposed drain, the vegetation is in poor condition. At the northern end (near Taylor Rd), only one canopy tree in four retains any foliage at all (Fig. 5). This high degree of degradation declines gradually southwards, so that at the southern edge of the bush block, only one canopy tree in two appears dead (Fig. 6).

Except for a few isolated shrubs and small trees, the midstorey is entirely dead. It is represented now by standing deadwood – probably acacias for the most part (Fig. 7). The live exceptions, encountered only rarely, include *Senna charlesiana*, *Eremophila oppositifolia*, *E. decipiens*, *Dodonaea viscosa*, *Acacia colletioides*, *Scaevola spinescens* and *Exocarpos aphyllus*.

As in the 1969/1c York gum woodland, there is an untidy understorey clustered around the boles of canopy and midstorey trees. This understorey consists almost entirely of the relatively succulent and salt-tolerant chenopods *Enchylaena tomentosa*, *Maireana brevifolia*, *Rhagodia drummondii* and *Sclerolaena* sp. Subshrubs/herbs occasionally present include *Tecticornia indica*, *Ptilotus polystachyus* and *P. obovatus*.

The substrate varies from reddish yellow to yellowish red to reddish brown. It is a loamy sand near the northern margin. Clay content increases unevenly across the block from north to south, so that the soil near the southern boundary is a sandy loam. There are small patches of white salt efflorescence throughout the woodland (Fig. 8).

## **Discussion**

Both woodland remnants are severely degraded. The southern block (on Plan 1969/1b) is in particularly poor condition, and appears to be in transition (at least along its central north-south axis) towards a chenopod shrubland. The 1969/1c patch is unfenced, except along its northern boundary and has been grazed extensively. The 1969/1b block, although fenced on all sides, nevertheless shows signs of recent heavy grazing.

There are very few seedlings of any sclerophyllous woodland plants in either of the remnant patches.

Although an autumn survey can hardly be called optimal for plant identification, I am reasonably confident that the listed DRF and Priority Flora are not present in the survey areas. I have some misgivings, however, about my ability to recognise the annual herb *Gnephosis setifolia* amongst recent germinants on the woodland floor. Of the six species searched for, only this diminutive daisy appears to have the level of salt-tolerance required to inhabit such highly disturbed environments. Accordingly, I will carry out a follow-up search in Spring.

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Fig. 1. Saline claypan, with paperbark forest being replaced by samphire shrubland.



Fig. 2. York gum open woodland.



Fig. 3. Line of 'healthy' York gums at the woodland-paddock boundary.



Fig. 4. Cluster of broombushes (*Melaleuca atroviridis* – indicated by yellow lines).



Fig. 5. Severely degraded York gum woodland near the northern (Taylor Rd) boundary.



Fig. 6. Degraded York gum woodland near the southern boundary. Note that ground now exposed by the decline in foliage cover is being colonised by chenopod subshrubs.



Fig. 7. A dead midstorey tree/shrub – probably an acacia.



Fig. 8. White salt-efflorescence patches are common on the woodland floor.