

8.4 Tree Health

Tree Health Methodology using a method by Clifton (1988).

1. Crown Size

Crown size considers the depth and the width of the crown and its distribution about the tree trunk. Implicit in this factor is some recognition of the extent to which the tree has lost its limbs or major branches. River Red Gum has a notorious reputation for shedding its large branches, often without warning. Such behaviour often appears to occur irrespective of crown health, although it is possible that it will have some adverse effect on future crown health (*ie.* through creating wounds that allow the entry of fungal and/or insect pathogens; or through increasing the exposure of the remaining parts of the crown to the damaging effects of wind, sun etc.).

5 - Crown is wide, deep and roughly circular in plan. The major limbs are well distributed around the tree trunk. The canopy appears more or less unbroken.

4 - Crown with a number of obvious, but not too severe defects. The defects being largely due to the loss of one or two of the major limbs, which gives the crown a partly lopsided or broken appearance.

3 - Crown with more severe defects, with major limbs irregularly distributed about the trunk. Crown with a markedly broken, irregular distribution about the base of the tree.

2 - Tree obviously missing the majority of its main limbs. Crown very irregular in shape and quite small.

1 - Crown very small, that is very restricted in depth and breadth. The tree may have only a couple of major limbs remaining. Crown likely to be extremely lopsided.

2. Crown Density

Crown density considers the density and distribution of the clumps of foliage that make up the crown. Crown density must be observed from underneath the tree, as viewing the crown from the side is often deceptive.

5 - Foliage in dense clumps and is evenly distributed throughout the crown.

4 - Foliage in clumps of average density, well distributed through the crown; or in clumps with a density that varies either side of the average.

3 - Clumps of leaves fairly sparse, although evenly distributed; or clumps of average density with a slightly irregular distribution.

2 - Clumps sparse to very sparse and poorly distributed through the crown.

1 - Foliage very sparse, in scattered patches, irregularly distributed through the crown.

3. Dead Branches

The loss of the major branches has already been considered as a component of the crown size factor. As stated earlier, the loss of these branches, which often occurs while they carry live foliage, appears to occur regardless of crown health. The degree of small branch and branchlet death may be a better index of crown health. The dead branches score considers the number, size and distribution of dead branches in the crown.

5 - No visible dead branchlets or branches in the crown apart from the thin twigs immediately inside the new leaf development, and a few branches on the lower part of the limbs.

4 - Numerous dead branchlets visible, especially those that are lower in the crown and are more likely to have suffered from grazing by stock or shading by other foliage. No impression of serious branch death.

3 - Many of the smaller branches and their branchlets dead.

2 - A number of major branches with all minor branches and branchlets dead. Many dead branches in other parts of the crown.

1 - Very few branches with live foliage. Only a few remaining limbs with live branches. Dead branchlets, branches or limbs may or may not still be attached to the tree.

4. Crown Epicormic Growth

A perfectly healthy crown has its foliage concentrated at the ends of the branches. Growth occurring further down the branch and growing in an upright position is normally of epicormic origin. Epicormic growth usually occurs after an agent has imposed some stress on the tree that has led to some degree of defoliation; or after a limb has fallen from the tree, opening up the crown. The crown epicormic score primarily considers the percentage of the crown that is epicormic in origin, but also age, and distribution of epicormic growth.

5 - Less than 10 % of the crown of recent epicormic origin. Some of the small branches (5-10 cm diameter) may also be of a less recent epicormic origin.

4 - If the epicormic growth is well distributed through the crown then between 10 % and 25 % of crown is of recent epicormic origin. Up to 40 % of the crown may be epicormic if this is concentrated in one part of the crown.

3 - Between 25 % and 50 % of crown of recent epicormic origin.

2 - Between 50 % and 75 % of crown of recent epicormic origin.

1 - Over 75 % of the crown being recent epicormic growth. If epicormic shoots are in poor health, then the crown need only be 60 % epicormic or more.