



ARBORICULTURAL ASSESSMENT & REPORT

Wye River Fire - Tree Issues

GLENN WATERS | ARBORICULTURE

PO Box 94 | Oakleigh South | Victoria | 3167

E | glenn@gw-arboriculture.com

Arboricultural Assessment & Report

Wye River Fire - Tree Issues

Introduction

Glenn Waters has been engaged to undertake an inspection and report for the trees within the Wye River and Separation Creek township areas.

This report will provide comment on the fire impact to the trees and provide comment on the issues involved and also recommend management options for the areas.

Observations & Discussion

This report is only concerned with those individual sites where tree management has or needs to occur. There are clearly other sites that are in close proximity to cleared sites that also require tree management but do not appear to be considered as yet. This will clearly have issues for the future management of the general areas as many of the individual lots are very close to one another and individual trees can easily impact multiple sites.

Fire Information:

The impact on the existing vegetation by a fire event can often be varied depending upon an interconnected range of factors. Factors such as severity, fire and wind speed, existing fuel loads, localised topography and fire intensity can all determine the impact on individual trees and the general area vegetation.

The fire which occurred in the Wye River and Separation Creek townships clearly impacted individual trees in differing areas in a range of different ways and it would appear that tree damage depended upon the wind/fire speed, the localised topography in the location of the individual tree, the intensity of the fire in different areas, the amount of fuel under individual trees and the species of tree.

The trees remaining across the Wye River and Separation Creek areas have suffered a range of impacts consistent with varied fire behaviour and impacts on individual trees range from low level radiant heat scorch of external canopy leaves to complete burning through the bark and into the trunk to complete tree destruction.

Tree Information:

Most forest Eucalypts are well adapted to fire and with recovery occurring from crown epicormics, stem epicormics or basal and lignotuberous shoots.

The Department of Environment, Land, Water and Planning (DELWP) Biodiversity Map shows the local Otway Ranges Bioregion Ecological Vegetation Classes (EVCs). The area around and between the Wye River and Separation Creek townships are covered by a range of EVC areas. These include the following EVCs.

EVC #22: Grassy dry forest

EVC #18: Riparian forest

EVC #45: Shrubby foothill forest

EVC #30: Wet Forest

EVC #201: Shrubby Wet Forest

These EVC contain a range of Eucalypt species including the following trees:

Manna Gum	<i>(Eucalyptus viminalis)</i>
Tasmanian Blue Gum	<i>(Eucalyptus globulus)</i>
Victorian Blue Gum	<i>(Eucalyptus globulus ssp. globulus)</i>
Messmate	<i>(Eucalyptus obliqua)</i>
Mountain Grey Gum	<i>(Eucalyptus cypellocarpa)</i>
Mountain Ash	<i>(Eucalyptus regnans)</i>

All of these species have the ability to regenerate foliage by epicormic growth, however Mountain Ash appears to be the species with the weakest ability to reshoot from epicormic growth due to a range of factors including bark thickness, etc.

Epicormic Growth (Regrowth) Information:

Under normal conditions epicormic buds lie dormant beneath the bark, with their ability to grow through the bark suppressed by hormones from active shoots higher up in the canopy of the tree. When this hormonal control is lost, these dormant buds can develop into active shoots. This hormonal control can be lost through a range of issues, such as the decline of the upper parts of the canopy or from insect or animal predation or if the canopy is killed or damaged by fire.

The problem arises as these shoots are typically only ever held on by the initial years layer of wood tissue. The way that the shoots grow out of the trunk or branches almost always sees the tree's normal process of laying down tissue around and across a branch or limb union disrupted and the tree unable to lay down the wood tissue layers needed to stabilise the attachment.

The result is that these masses of epicormic regrowth see ongoing failures as they grow. Often the tree optimises the regrowth with only one to two shoots growing away while the remainder fall off or die. As these regrowth branches grow they are still only held on to the trunk, leader or limb by minimal wood tissue growth and are prone to being lost during wind or storm events.

If trees that have been damaged by fire are retained with this massive regrowth of epicormic growth, there are clearly potential risks for the future.

The Wye River and Separation Creek trees are certainly starting to reshoot and produce canopy and stem epicormics and basal shoots and this would appear to show some post-fire recovery. If the Wye River area was a National Park or forest area this would not be an issue as the regrowth epicormic shoots self-optimize over time and when over-extended shoots occur and fall off, there is little to be damaged in a natural forest environment.

The issue here is that all of the existing trees are typically in locations on residential blocks and along access tracks and roadsides. As this massive epicormic growth continues and branches grow, future failures are almost inevitable.

Basal Shoot and Stump Levels

Basal shoots act similar to stem and branch epicormic growth, however the fact that they are occurring at the base of the tree has three advantages. Firstly, these shoots are far less able to cause issues if they fail and secondly, these shoots are able to be easily managed at this level by even untrained operators. Thirdly, if these shoots occur close to the soil level, it is possible for them to almost create their own root system and also take advantage of the existing tree's root system network and can establish into stable shoots that can have reasonable longevity.

However, for these to be promoted and allowed to occur more frequently, the stumps of removed trees need to be cut closer to ground level.

The Current Situation:

Even a cursory inspection will show that there are a range of fire effected trees across the two township areas. As stated above, impacts on individual trees range from low level radiant heat scorch of external canopy leaves to complete burning though the bark and into the trunk to complete tree destruction.

I understand that there have been a number of inspections carried out by several different arborist since the fires. However, it would seem that different arborists were either given differing briefs or were only employed to look at individual areas such as roadside trees, etc.

There does not appear to have been a concerted effort at any real uniformity of inspection and it appears that management outcomes have differed from one inspecting arborist to another. This may stem from the differing briefs for each arborist inspection or just inconsistencies of assessment from one arborist to another.

I do not know if consistent priorities for assessment and methodologies for action items have been formulated but it does not appear that this has been done to any great extent and there is clearly some confusion as to what is being done in any one area.

I noted one site, where in a small area, there were a range of different paint marks on the trunks of trees and trees that had received little if any pruning and still displayed dead canopies, trees that had been removed back to standing trunks ('habitat pruned'?) and trees that had been completely removed to stumps.

It was unclear as to why some trees were being retained with almost no pruning and other nearby trees had been pruned to trunks.



For example, the above image shows a row of trees in close proximity that have sustained a range of damage from trees at the left of view with completely dead canopies with some minor regrowth of epicormics to what appears to be a tree at the right with an almost intact canopy with little heat damage.

Each one of these trees will require a differing management action depending upon the assessed severity of damage and potential ability to be retained.

Retention of Tree Stumps:

Given that the Wye River area was in a slip/erosion control area with the Colac Otway Shire having an Erosion Management Overlay (EMO) covering the Wye River and Separation Creek areas prior to the fires, the concern now is that the removal of existing trees can have a major issue for soil movement across the sites. To this end it is recommended that the stumps and major root systems of the existing trees are left intact when the above-ground portions of trees are removed. This may reduce the occurrence of land slip and should allow time for replanting of new trees to establish new root systems across the sites.

Habitat Pruning:

I understand that trees across the sites have been marketed and pruned for what is being termed a 'habitat prune'. This is where the tree is cut back to heights between 8 to 10 metres and the epicormic growth left on the major limbs and the trunk.

It must be understood that these pruned trees are not actually 'habitat' trees at this time and may not ever establish hollows or become useful sites for local birds and fauna. However, this is a valid management technique and I understand that there is some discussion about providing nest boxes and further natural habitat pruning so that there may be some habitat tree creation in the future.

It is recommended that these trees not just be cut down to the same height all across the area but that individual trees are staggered in heights to attempt a more natural feel.

This pruning can also allow the management of the epicormic growth to be somewhat more easily managed in the future. However, it must be understood that this resultant epicormic growth cannot be left unchecked given the potential risk to persons and property. This regrowth must be managed into the future.

Part of the issue for this area is the public perception of regrowth, tree health and the new epicormic growth. As discussed above, while it appears that individual trees may be recovering from the fire, the resultant regrowth is a considerable management issue and one that can cause significant risk in the future as the epicormic growth increases in length and begins to fail.

Short-term Recommendations:

- Review the previous assessments of all arborists and endeavour to map the sites that have been previously assessed and those still yet to be looked at. This review should try to understand the past processes and provide comment on the uniformity of assessment so that better decisions can be made in the future.
- Continue to assess trees on individual sites with regard to undertaking actions which focus on both immediate risk but also taking into account the requirements for future management of epicormic growth.
- Undertake management actions on all fire effected trees to remove both immediate and future risk factors. This is likely to see more trees removed and more pruned back to 'habitat' heights.
- Ensure that the 'habitat' pruned trees are taken down to differing heights so as to avoid an 'un-natural' feel across the township areas.
- Investigate the methods to improve the habitat value of the remaining 'habitat' pruned trees by the use of both nest boxes and hollow creation pruning techniques.
- Review the actions on both 'cleared' sites and those where the dwelling is still standing and trees have yet to be pruned or removed. Understand that trees on 'uncleared' sites will still have risk and impacts for 'cleared' sites.
- Undertake some community education to highlight the current issues and the ongoing management actions and future requirements.
- Engage both DEWLP and the Colac Otway Shire in taking actions on sites other than private property house lots, as these trees will also impact on the safety of roads and nearby private property.
- Ensure the cutting down of the stumps of removed trees closer to ground level to encourage stumps shoots closer to ground level where possible.
- Start to consider some type of holistic replanting plan were possible.

Conclusions:

As stated above, the trees within the Wye River and Separation Creek areas have suffered a range of impacts consistent with varied fire behaviour and impacts on individual trees range from low level radiant heat scorch of external canopy leaves to complete burning through the bark and into the trunk to complete tree destruction.

From my inspection of the sites, it is clear that Surfcoast Tree Services is doing high quality professional work and I do not believe that they are removing too many trees or pruning too many trees.

In fact, I believe that not enough removal and pruning is being done across the sites to address the major problems that are likely to occur with the epicormic regrowth on retained trees.

I would suggest that there needs to be a more cohesive and uniform assessment of tree management needs across the sites and a clear vision of what needs to be achieved both for the immediate clean up and looking to the future management of the trees in both areas.

Glenn Waters

GLENN WATERS | ARBORICULTURE

Site Photographs



← & ↑ View of a pruned and retained tree with dead canopy still evident.



← View of typical 'habitat' pruned trees.
↓ View of a range of trees still to be assessed and pruned.



GLENN WATERS | ARBORICULTURE
P.O. Box 94,
Oakleigh South, VIC. 3167.

Arboricultural Consultancy: Precedent disclaimer and copyright

Copyright notice: © Glenn Waters 2016. All rights reserved, except as expressly provided otherwise in this publication.

Disclaimer: Glenn Waters uses all due experience, care and skill in providing you the information contained in the above report and to the extent permitted by law, Glenn Waters otherwise excludes all warranties of any kind, either expressed or implied.

To the extent permitted by law, you agree that Glenn Waters is not liable to you or any other person or entity for any loss or damage caused or alleged to have been caused (including loss or damage resulting from negligence), either directly or indirectly, by your use of the information (including by way of example, arboricultural advice) made available to you in the above report.

Without limiting this disclaimer, in no event will Glenn Waters be liable to you for any lost revenue or profits, or for special, indirect, consequential or incidental damage (however caused and regardless of the theory of liability) arising out of or related to your use of the information contained in the above report, even if Glenn Waters has been advised of the possibility of such loss or damage.

This disclaimer is governed by the law in force in the State of Victoria, Australia.

The provision of the above report and the information contained herein represent the opinion of Glenn Waters and any fee is in no way conditional upon the reporting of a specified value, a stipulated result, the occurrence of a subsequent event, nor upon any finding to be reported.

Sketches, diagrams, graphs and photographs in the above report are intended as visual aids and are not necessarily to scale and should not be construed as engineering or architectural drawings, reports or surveys.

Unless expressed otherwise; the information contained in this report covers only those items that were covered in the project brief or that were examined during the assessment and reflect the condition of those items at the time of inspection; and the inspection undertaken as part of the preparation for the above report was limited to visual examination of accessible components of any tree without climbing the tree or removal of any parts of the tree or any dissection, excavation or probing unless otherwise stipulated.