

Arboricultural Risk Assessment – Kennedys Bush Track

A tree risk assessment was carried out on Thursday 23rd March, between 1.30 & 3.00 pm, to view trees at areas 1 & 2 relevant to the recent fires, tree damage and potential risk associated with standing dead / damaged trees. A further site visit, as requested, was carried out on Wednesday 29th March, between 8.00 & 11.30 am, covering areas 3 – 6.

The track use includes pending mountain bike events which will traverse tracks very close to the subject trees, and regular use by pedestrians.

See aerial, page 8, for site locations.

Area 1 –



Trees in this group have sustained varying degrees of damage from the recent fires.

Fuel on the ground, in addition to the intensity and duration of burn time, has left the base and exposed buttress root system severely damaged.

A sounding hammer was used around the entire circumference of 1 tree – tone was consistent indicating that wood density was consistent, with no apparent decay pockets at the height of sounding.

We chipped bark from the base of a tree to gauge damage – although the cambium was still moist to the touch (fire damage limited to outer bark) the intensity of the fire has severely scorched the foliage and buds, which will highly likely lead on to tree mortality, in the following months.

Degradation of trees' structural integrity will continue:

- Branches will dehydrate, become brittle and start to fail
- Standing dead trees will be targeted by bark beetles and other insects which will invade the trees, possibly as vectors for fungal infection. This will further degrade the trees' structural integrity.

Management, Area 1 –

The bike track is within the canopy spread of some of the trees.

Total tree failure is highly unlikely at this point, but with increased wind it is possible that lateral branches may fail due to the increased rate of dehydration and subsequent loss of flexibility.

Risk mitigation at this location needs to consider:

- Frequency of occupation – low
- Likelihood of failure – probable
- Consequences – severe

It is recommended that risk mitigation be initiated as soon as possible, 2 options are presented for consideration:

- Move track (targets) away from the tree line, preferably 1.5 tree lengths, to keep targets outside the potential fall and shatter zone
- Remove hazards, in this instance the standing dead / dying trees.

Risk mitigation should include one of the above options, the most practicable considering time constraints.

Area 2 –





Standing dead trees, some are burnt entirely with no chance of recovery

Trees in this group have sustained varying degrees of damage from the recent fires.

Fuel on the ground, in addition to the intensity and duration of burn time, has left the base and exposed buttress root system severely damaged.

We chipped bark from the base of a tree to gauge damage – although the cambium was still moist to the touch (fire damage limited to outer bark) the intensity of the fire has severely scorched the foliage and buds, which will highly likely lead on to tree mortality, in the following months.

Degradation of trees' structural integrity will continue:

- Branches will dehydrate, become brittle and start to fail
- Standing dead trees will be targeted by bark beetles and other insects which will invade the trees, possibly as vectors for fungal infection. This will further degrade the trees' structural integrity.

Management, Area 2 -

The track is just outside the canopy spread of the trees at the south – eastern corner of the block, but is within the potential fall radius.

Risk in this location is increased due to the occupancy rate – track users will be in the potential fall zone for a longer duration as they stop to open and close the gate.

Total tree failure is highly unlikely at this point, but with increased wind it is possible that lateral branches may fail due to the increased rate of dehydration and subsequent loss of flexibility.

Risk mitigation at this location needs to consider:

- Frequency of occupation – low - medium
- Likelihood of failure – probable
- Consequences – severe

It is recommended that risk mitigation be initiated as soon as possible:

- Removal of trees at the south – eastern corner of the block, so that there is 1.5 tree lengths clearance from the gate.

Area 3 –





Standing burnt trees, internal

Internal trees have been severely affected by the fire, many of the edge trees beside the track are still green – failure potential of burnt trees is still high but foliage from edge trees will slow down the descent of inner trees that fail.

Walking & bike track approximately 9 meters from edge of trees, tree height approximately 12 meters.

Management, Area 3 –

Move the track to at least 12 meters from the trees will move the targets outside the fall radius, lowering the risk rating to low.

Area 4 –



The track is currently located within the fall radius of the inner burnt trees.

Management, Area 4 –

The corridor between fences is approximately 21 meters wide – the track could be moved out to approximately 15 meters from the base of the tress, effectively moving the targets out of the potential fall radius.

Residual risk rating is very low.

Area 5 –



The burnt inner trees start at approximately 20 meters into the group from the edge trees, which will provide some shelter from potential tree failures.

Risk rating is low.

Area 6 –



The track at this point enters a corridor with burnt trees on both sides.

High potential failure risk with targets within the fall radius.

Management, Area 6 –

The only option to mitigate risk in this area is to fell the line of trees to the right in the above photo, and detour track users to the alternative route, shown as 7 on the attached plan for the sites, page 8. There is a clear corridor that will provide clear space for track users, well clear of the trees.

Summary and Limitations:

- No invasive testing was carried out, or core samples taken
- Damage to the root system has not been identified
- Timing of failure events cannot be predicted accurately, therefore the information provided in this memo acknowledges the risks associated with the burnt trees, but cannot put timeframes against possible failures, apart from stating that the longer the hazards are present, the higher the risk of failure and associated consequences.

Alan Parker

Senior Consultant Arborist

Treetech Specialist Treecare

Aerial, Site Locations:



