NSW NATIONAL PARKS & WILDLIFE SERVICE

# Tree risk management procedures

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# Contents



# List of figures

# Preamble

Trees are part of the natural environment. The National Parks and Wildlife Service (NPWS) manages hazardous trees in parks to keep visitors, workers and park neighbours safe.

Trees are living organisms, and their condition changes over time. Sometimes a tree can become hazardous to people in parks because of its age, health, history, species, location or other factors.

NPWS manages hazardous trees systematically across the wide range of ecosystems in parks. NPWS aims to ensure risks to the safety of park visitors, workers and neighbouring landholders are as low as practicable, keeping in mind the many benefits trees provide people, wildlife and the environment (including their value for habitat, carbon sequestration, natural shade and cooling, air quality filtering and visual amenity).

The *National Parks and Wildlife Act 1974* (section 156C) excludes NPWS staff from personal liability for anything done or omitted to be done in good faith for the purpose of exercising functions under national parks legislation. Consistent implementation of the Tree Risk Management Policy and Procedures will support NPWS meeting its duty of care and the legislative requirements for exclusion of personal liability.

These procedures support the NPWS Tree Risk Management Policy. They provide detailed guidance for NPWS staff on managing tree risks in parks.

# Procedures

## Overview

NPWS manages tree risks through the five-step tree risk management process (summarised in Figure 1). The process covers a broad range of tree risk scenarios. Staff may need to adapt the process to their own situations.

NPWS's approach is based on identifying and responding to the principal components of tree risk – exposure hazard and tree hazard:

1. **Exposure hazard** – whether people are likely to be near (i.e. exposed to) a hazardous tree. Staff should assess the exposure hazard by following Step 1: Determine the exposure hazard.
2. **Tree hazard** – a tree's physical condition, particularly features that make it more likely to fall or drop a limb. Staff should assess the tree hazard by following Step 2: Determine the tree hazard and by using the Tree Hazard Checklist.

Staff may need to assess the exposure and tree hazard for an individual tree, a group of trees or multiple communities of trees across several areas.

The exposure hazard and tree hazard together determine the level of tree risk. Staff should follow a consistent method for determining management responses to tree risks, including:

- systematic identification of both exposure hazard and tree hazard
- realistic assessment of risks
- consideration of the full range of options before determining a management response.

All stages of the process should be documented using the electronic filing system (CM9), Work Safe Online (WSO) and the Asset Management System (AMS). Careful and consistent information management is essential to develop and maintain a record of tree risk management in parks.

### Training in tree hazard assessment

All staff should receive basic training in tree hazard identification on a regular basis, to ensure a common level of tree hazard awareness and understanding. In most circumstances this training will suffice for day-to-day park management, recognising that NPWS can seek expert arborist advice on tree risk as required.

Staff can find current training materials on the Intranet. These materials will be updated over time.

In some locations, there may be a need for some staff to be trained to a higher level of competency. NPWS will consider opportunities to provide additional, more advanced training that is consistent with relevant national or state training standards. Information on available opportunities will be provided to staff.

In the meantime, Branches should consider whether they have specific needs that would warrant targeted staff undertaking relevant training (e.g. via NSW TAFE). NPWS may provide financial and leave support for approved studies.

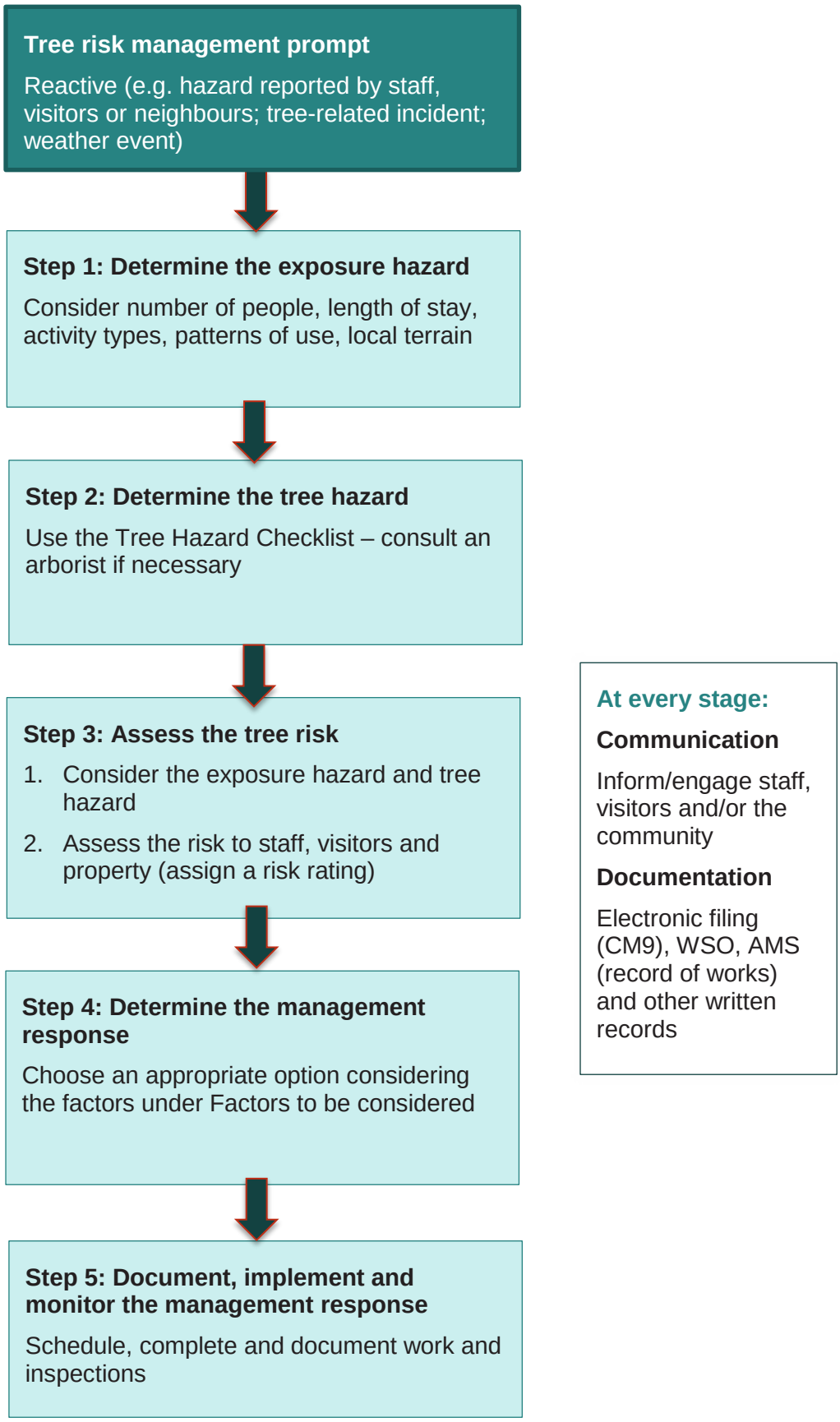


**Figure 1 Tree risk management process**

# Step 1: Determine the exposure hazard

Identifying potential exposure hazard upfront helps to ensure that available resources for assessing and responding to tree hazards are directed to areas of greatest priority.

Exposure hazard is the likelihood that people will enter the vicinity or fall zone of a hazardous tree or group of trees (i.e. whether they are likely to be exposed to danger). A high exposure hazard means there is a high likelihood that somebody will be near a tree when it falls or drops a limb.

Key factors affecting the exposure hazard include:

- number of people exposed in an area
- how long people stay in an area
- types of activities that people might do (e.g. walking, picnicking, camping)
- patterns of use in an area (e.g. places where visitors tend to congregate)
- local terrain (e.g. steep slopes above visitor facilities or work sites).

## 1.1 Assessing visitors' exposure

In general, visitor exposure to hazardous trees will be highest in high-use visitor areas. Staff can identify these areas by considering visitor numbers (using the best available information) and patterns of use. People staying longer in a location (e.g. camping) will have a higher exposure hazard than people staying for a shorter time (e.g. picnicking).

Visitors may also congregate around certain facilities or vantage points, increasing the exposure hazard from trees in those locations.

## 1.2 Assessing workers' exposure

Exposure to hazardous trees is generally inevitable when working in natural areas. It is important for workers (i.e. NPWS employees, contractors or volunteers) to assess their own and others' exposure and to look for ways to reduce the exposure hazard (see section 4.1).

Some workers' activities involve increased exposure to hazardous trees. These activities may also increase the likelihood of trees falling or dropping a limb. Tree risk must form part of the safety briefings for these activities. Examples of activities include:

- tree felling or pruning
- excavation
- construction
- storm clean-up
- fire operations (e.g. hazard reduction burning, back-burning, helicopter water bombing, fire trail works, fireground mopping-up)
- helicopter operations around trees.

Workers should be aware that trees up-slope from a work site can have extended fall zones and may move downslope if they fall. Workers should inspect trees up-slope before commencing work.

## 1.3 Other considerations

Staff should keep in mind that not all high-use visitor areas or worksites need to be actively managed for tree risk. The management response must be determined based on factors considered in Step 4, and may only involve risk warnings. Staff can use Branch risk

registers; Branch operations plans and works programs as supporting tools to identify sites with potentially high exposure hazard.

NPWS should also consider the exposure of park assets to tree risk, however protection of property is not the primary driver of tree risk management.

### What happens if a neighbour reports a hazardous tree?

NPWS should assess trees that pose a risk to neighbours' safety in the same way it assesses the risks posed by other trees in parks (i.e. following the Tree Risk Management Policy and these Procedures).

If a neighbour alerts NPWS to a hazardous tree, NPWS must assess the risk and make an appropriate management decision. It is important for NPWS to work collaboratively with neighbours and to document the risk assessment process. If the risk is assessed to be low, NPWS may choose to tolerate the risk. However, if there is doubt about the significance of the risk, it is better for NPWS to take steps to reduce the risk than to do nothing.

Staff can find further information in the fact sheet *Responding to complaints about hazardous or nuisance trees* or can contact the Parks Policy Team for advice.

## 1.4 Document the exposure hazard assessment

It is essential to record the details of the exposure hazard assessment in an appropriate format (e.g. a CM9 file).

Later steps will trigger the recording of confirmed hazards in WSO, however, hazards can be lodged in WSO at any point if considered necessary.

If a tree hazard is identified that requires an immediate management response to ensure people's safety, NPWS should do the work without delay. AMS should be used to record the completed work.

# Step 2: Determine the tree hazard

## 2.1 Deciding where and when to conduct tree hazard assessments

Staff should prioritise tree hazard assessments in areas with high exposure hazard, including:

- high-use visitor areas
- worksites
- park boundaries where trees may be a risk to neighbours' safety or property.

Staff should also prioritise tree hazard assessments during the staff activities listed in Step 1.

In areas with high exposure hazard or during higher-risk work activities, staff should focus their hazard assessments on:

- Trees with characteristics such as those described in the Tree Hazard Checklist – e.g. dead or detached branches, cavities, fungi, root damage.
- Trees of particular species, which will be known to experienced staff in the region (although no tree species is 'safe') e.g.:
    - river red gums (*Eucalyptus camaldulensis*) along inland rivers may shed limbs in hot weather
    - trees with brittle wood such as *Angophora* species may drop large branches
    - coastal paperbark trees (*Melaleuca quinquenervia*) are prone to rot and may fall or drop large branches
    - blackbutts (*Eucalytpus pilularis* and *E. pyrocarpa*) can shed large dead branches at any time.
- Trees that have recently been impacted by extreme weather events (e.g. bushfires, snowfall, storms and heavy rain).
- Old and large remnant trees, in very mature woodland or tall forests, more than 10 metres in height with some of the characteristics in the Tree Hazard Checklist. NPWS workers should be aware that these trees provide increasingly rare and important habitat resources (e.g. hollows) for many threatened species.

## 2.2 How to assess a tree

All NPWS field staff should receive basic training in tree hazard identification every 12 months. Staff can find current training materials on the Intranet. These will be updated over time.

Staff should use the checklist in the Tree Hazard Checklist to identify hazardous characteristics that may lead to serious injury or death. When assessing tree hazard staff should be aware of the tree's fall zone.

In some cases, staff will need to consult a trained arborist to assess the tree hazard accurately and in detail.

### Engaging arborists or other tree specialists

Only people with adequate skills and training should carry out specialist tree assessment or complex maintenance tasks. Appropriate qualifications will generally include:

- A Diploma in Arboriculture (or equivalent) from a recognised tertiary educational institution (such as NSW TAFE).
- A minimum of five years relevant industry experience.

Arborists may also have demonstrated experience in tree hazard assessment. Some tasks may require persons with a higher level of education and/or specialist experience.

Before allowing a contractor to commence a tree assessment or tree works, NPWS must ensure the contractor meets the requirements of the Managing Contractor Safety Procedure.

Companies and individuals (other than NPWS staff) engaged to perform tree hazard assessment or maintenance must also hold appropriate insurances, including workers' compensation, public liability, and professional indemnity – these must be consistent with the Department of Planning, Industry and Environment's procurement and contract requirements.

Arborist reports should:

- Reference the items contained in the Tree Hazard Checklist (as a minimum).
- Identify the species and location of all trees assessed.
- Outline the method used to assess tree risk and the limitations of the inspection e.g. was it a cursory drive-by inspection, a detailed inspection from the ground, an aerial inspection?
- Record the size and specific part of the tree assessed as likely to fail e.g. stem, branch or roots.
- Contain a schedule of the works recommended to correct any defects.
- NPWS staff can use the work schedule provided by the arborist to price and/or prioritise the work and to assess treatment options.

## 2.3 Document the tree hazard assessment

Staff should record the outcome of a tree assessment in AMS, even if no hazardous characteristics are found. When entering information in AMS and in other record management systems (e.g. WSO, CM9 files), staff should use consistent terms that clearly identify that the AMS or other record is about tree risk management. Documenting records in that way will support systematic tree hazard monitoring.

Branches or Areas should also identify specific trees or groups of trees in AMS that require long-term management.

Only individual trees with hazardous characteristics present need to be recorded on the checklist in the Tree Hazard Checklist.

In some situations, e.g. firefighting, workers may do a more rapid tree hazard assessment.

Note: a confirmed hazard should be recorded in WSO after completing the tree hazard assessment.

# Step 3: Assess the risk

To determine the tree risk, staff need to consider both the exposure hazard and *the tree hazard*. The overall risk is a combination of:

- number of people who visit an area
- time they stay in the area
- number, extent and characteristics of hazardous trees located in the area
- the likelihood of the tree or tree part to fail
- the consequence of the failure (influenced by the size of the tree part).

When assessing the risk to staff during planned works, it is important to consider:

- number, extent and characteristics of hazardous trees in the area
- type of works being done
- other factors such as weather that may increase the likelihood of tree failure
- options available to modify the works to reduce the risk.

## 3.1 Assess the risk

Staff must assign a qualitative risk level to the hazardous tree or trees using the Health and Safety Risk Matrix (Appendix: Health and Safety Risk Matrix). This is the matrix used to assign risk ratings in WSO.

## 3.2 Manage *High* or *Extreme* risks immediately

If the risk assessment results in a High or Extreme risk rating, NPWS needs to take immediate action to reduce the risk consistent with the Health and Safety Risk Matrix (Appendix: Health and Safety Risk Matrix).

## 3.3 Document the risk assessment

Staff must record the details of the risk assessment in WSO (by reporting a tree as a hazard). Any immediate risk management actions should be recorded in AMS. As a minimum, the hazard and its risk assessment must be recorded in a CM9 file.

When entering information in record management systems (e.g. AMS, WSO, CM9 files) staff should use clear and consistent terms to identify that the record is about tree risk management. Including standard terms, such as ‘tree risk’ or ‘tree hazard’, can make these records easier to find in the future.

# Step 4: Determine an appropriate management response

An appropriate management response involves one of the following:

- managing the exposure hazard
- managing the tree hazard
- managing both the exposure and the tree hazard, or
- choosing to tolerate the risk.

## Factors to be considered

Staff need to consider these factors to determine an appropriate management response:

1. **Exposure hazard**, i.e. the exposure of visitors and staff to the tree hazard (e.g. tree location, how long people spend in the vicinity).
2. **Tree hazard**, i.e. physical characteristics of the tree (or community of trees)), including the age, species and tree health.
3. **Environmental impact of each management response** (particularly impacts on biodiversity and cultural values).
4. **Available resources**, including funds and trained staff and capacity to manage all risks (e.g. will it divert resources from another risk management activity?).
5. **Impact of response on park management** (e.g. will the response require the removal of a significant number of camping sites?).
6. **Cumulative impacts of management responses** on trees, NPWS resources and park management across visitor areas, parks and geographic regions.
7. **Relevant plans or standards**
8. **Community views and expectations** (particularly where the management response will significantly impact established or high-use visitor areas or change the way an area can be used, or where a tree is particularly significant to the community).

## Communication

Communication and consultation are important risk management tools.

- Alerting people to hazardous trees can reduce the likelihood of an incident occurring. In high-risk areas, NPWS should make visitors aware of tree hazards and suggest ways for visitors to reduce their exposure. There are many avenues for communicating about tree risk, including verbal advice, signage and online alerts.

  It can be challenging to balance risk communication with visitors' enjoyment of a park. It may be enough to remind visitors to be aware of their environment and exercise common sense may be sufficient. NPWS must be more explicit in alerting visitors to high tree risk areas (i.e. where high exposure and high tree hazard occur together). Staff should also be made aware of any identified high tree risk areas.
- When NPWS carries out tree works to reduce risk, staff may need to explain to visitors and the community why those actions are necessary. NPWS's responsibility to manage tree risk will not always be obvious to visitors. Talking to visitors, using temporary or permanent signage and working with interested community groups can help minimise visitor concern with tree pruning or removal. Providing information to local media outlets or advertising planned works can also assist.
- Communication with local Aboriginal groups or communities is essential when managing scarred or other culturally-significant trees. NPWS should engage early with Aboriginal stakeholders and follow normal statutory assessment and approval requirements. NPWS should explore all alternatives to harming a scarred or culturally modified tree.
- If NPWS identifies hazardous trees close to park boundaries, it is important to discuss the potential risks with neighbours. Ideally neighbours should be involved early in the risk assessment process. These discussions will tend to be part of a broader ongoing dialogue with park neighbours (for further details, see the fact sheet on responding to complaints from neighbours and the Neighbour Relations Policy).

## 4.1 Managing the exposure hazard

Managing the exposure hazard involves reducing the exposure of workers, volunteers and visitors to the tree hazard. This type of response can reduce risk without compromising the natural environment.

### Actions to reduce exposure hazard for workers and volunteers

Pre-emptive management actions to reduce the exposure hazard include:

1. Identifying and avoiding especially dangerous areas and extreme weather conditions, when possible.
2. Integrating basic tree risk assessment in all relevant safety measures and messages, for example, Job Safety Analysis (JSA):
   - Tree risk should be included in all relevant JSAs and Job Safety Briefs (JSBs). In most cases this will involve consideration of the work to be performed, the tree community and site characteristics, unless individual hazardous trees have already been identified.

   - Communicating tree risk safety messages should also include annual awareness sessions, use of printed materials (e.g. posters), training videos and safety alerts. This communication might be specific to trees or may integrate tree risk into other safety messages.
3. Carefully considering tree risk assessment for high-risk work activities to ensure work practices minimise staff exposure.
4. Ensuring staff are adequately trained.

On-site, dynamic management actions to reduce the exposure hazard include:

1. Scouting the area to identify tree hazards and communicating safety messages before starting work.
2. Using signs or tree markings (e.g. paint or tape) to alert staff to hazardous trees and to identify a safe distance:
   - Individual trees may be marked with paint or plastic 'caution' tape to quickly identify them as hazardous to other staff. Marking may be useful when undertaking short-term work at a site (e.g. when installing a new information sign). It is important to mark out the potential fall zone of a hazardous tree or limb at a work site. For longer-term work locations, more careful assessment and more durable marking is required as the exposure hazard is greater.
3. Assessing parking areas, rest areas, refuge areas and escape routes for tree hazard:
   - Parking and rest areas should be assessed for tree hazards. A significant number of NPWS vehicles have been damaged by falling trees and limbs. In many of these cases, workers could have been injured or killed had they been in the vehicle at the time.
4. Modifying work practices – actions to reduce staff exposure to tree risk include:
   - Wearing appropriate personal protective equipment (PPE) such as helmets and high-visibility clothing.
   - Driving in dispersed formation in high-risk zones.
   - Avoiding night works where possible, as reduced visibility presents an increased risk to workers' safety. These risks must be balanced with the increased safety of night works in certain circumstances (e.g. hazard reduction burns). Incident management teams should weigh up the risks to staff in determining the appropriate timing of critical activities.
   - Avoiding work activities during extreme weather events such as strong winds or storms.
   - Appointing a lookout to keep watch for falling trees and limbs in high-risk areas or during activities that can increase tree hazards, such as clearing or construction of fire trails during fire operations. Bear in mind that lookouts may have trouble being heard above machinery noise.

### Actions to reduce exposure hazard for visitors

Management actions to reduce exposure hazard for visitors include:

1. Advising visitors of the hazard (e.g. by verbal warnings, signage or by issuing safety alerts on the NPWS visitor website):
   - Advisory signs warning of tree and other natural hazards may be used at key entry points, at hazard locations, or at other suitable information points within a park.
   - Relevant signage must comply with the Park Signage Manual.
   - During times of elevated tree risk (e.g. before and during forecast high winds, and following extreme weather events) staff can consider issuing a visitor safety alert via the NPWS website.

2. Restricting visitor access to the tree hazard (e.g. using physical barriers):
    - There are inexpensive, low key options that can be implemented to change public use of an area and significantly reduce the visitor exposure hazard. It may be appropriate to stop mowing an area or to erect low-key fencing to direct the public away from hazardous trees. These areas may regenerate naturally, making them less attractive for activities such as picnicking or camping.
    - 'No access' areas can be used to minimise exposure to a tree hazard – they should be considered when significant effort is required to change public use in an area. Such areas should be suitably fenced (e.g. with posts and plain wire) to prevent reasonable attempts to enter the area.
    - If areas are closed and physically blocked off due to high tree hazard, they need to be monitored and managed to ensure compliance.
3. Redesigning the patterns of visitor use at the hazard location (e.g. by moving visitor facilities):
    - Redesign of visitor areas is a way of reducing exposure without the need to treat the tree hazard. However, in some instances it may be necessary to treat both the tree hazard and exposure hazard to achieve a satisfactory reduction in risk.
    - The primary goal of redesign – i.e. placing facilities in open areas away from hazardous trees – is to ensure that the trees' fall zones will not impact on areas where people congregate or spend extended periods of time.
    - Longer residence time increases the exposure hazard and the risk that a tree fall event will result in serious injury or death. Redesign should therefore focus on minimising risk at locations where people spend the most time. For example, a camper who spends more than 12 hours a day at a campsite will experience a higher risk than a picnicker who may spend fewer than four hours in a location, or a walker or a person at a carpark who may stay only a few minutes.
    - Redesign to reduce the exposure hazard may involve changing the type of activity permitted in a location or the way the area is used by visitors. For example, if there are many hazardous trees in a camping area, changing the use to a picnic and parking area will reduce the time people spend in the area. Conversely, a picnic area with very few hazardous trees could be a good candidate for a new camping area.
    - Multiple hazardous trees in a location may increase the risk of serious injury or death from a tree fall – that should be factored into the redesign of visitor areas.
4. Relocating or closing the visitor area:
    - This may be necessary when other options are exhausted and the residual risk is considered unacceptable. Relocation or closure can be contentious. Careful consultation with local stakeholders should occur prior to proceeding with this option.
    - Short-term temporary closures can occur with the Area Manager's approval and should be notified to the public via the NPWS website.
    - Long-term temporary and permanent closures require the Branch Director's approval and must be notified to the public via the NPWS website. Significant permanent closures or relocations may need to be included in the park's plan of management when it is amended (e.g. moving camping away from the foreshore of the lakes and reorganising it as dedicated campsites in Myall Lakes NP).

## 4.2 Managing the tree hazard

Managing the tree hazard involves tree maintenance or removal to reduce or eliminate the risk. Staff need to review the Factors to be considered and develop options for reducing the tree risk.

Corrective pruning is generally preferable to tree removal and should be done consistent with the Australian standard (AS 4373—2007 Pruning of amenity trees).

To help evaluate the Factors to be considered, staff should ask:

- Will pruning result in the loss of a significant portion of the crown?
- Will the tree be severely disfigured?
- Will the tree be significantly affected by wind and other external factors following pruning?

If the answer to any of these questions is 'Yes', staff may need to consider removing the tree.

Trees are integral features of the natural and cultural environment. NPWS does not decide to remove trees lightly. When contemplating tree removal, NPWS must consider:

- What are the heritage values of the tree and its setting (both Aboriginal and historic)?
- What are the environmental values of the tree? Does it provide habitat for breeding wildlife?
- How significant is the tree and the area in which it stands in the eyes of park visitors and staff?
- If the tree were to be retained, what ongoing maintenance would be required?

The decision to remove a tree must account for these factors as well as those listed under Factors to be considered.

Staff must conduct appropriate environmental assessment before beginning work on a tree. Works should preferably be scheduled outside wildlife breeding seasons. Works involving cables, props or other tree supports require advice from a qualified arborist with suitable experience.

Staff should consult the NPWS Fire Management Manual for guidance on treating tree hazards where fire is involved.

## 4.3 Approval of tree risk management actions

In general, the Area Manager is responsible for approving tree risk management actions. Higher risk or very contentious actions (e.g. removal of trees that are threatened species or the management of tree hazards in critically endangered ecological communities or wilderness areas) may require Branch Director or higher approvals, e.g. for approval of a Review of Environmental Factors (REF).

## 4.4 Documentation

Staff must document the management decision process in a CM9 file. These records will assist future management. If an incident occurs, documentation can demonstrate that NPWS has applied a systematic approach to tree risk management.

Staff must document:

- details of the alternative management responses that were considered and the likely consequences of the alternatives
- any required environmental assessment of the proposed management response.

# Step 5: Implement and monitor the management response

## 5.1 Conducting tree works

Staff should follow normal job safety procedures when conducting tree works. This includes completing a JSA/JSB, Safe Work Method Statements (SWMS) and/or Take 5 as appropriate.

Tree pruning or removal work is a high-risk activity and must only be performed by adequately trained staff or qualified contractors. Staff should also ensure that arborists or other tree professionals conducting tree works are appropriately qualified (see 2.2 How to assess a tree).

## 5.2 Inspections

Where possible, tree risk monitoring should be integrated into business-as-usual operations. Staff should report potentially hazardous trees or damaged/missing tree management infrastructure (including signs) if they become aware of them during their normal duties.

There is no statewide requirement regarding formal tree inspection frequency. Local resourcing will significantly influence inspection schedules. When deciding how often to inspect hazardous trees, staff should consider:

- assessing tree hazard ahead of seasonal or holiday-related visitation peaks, to maximise the opportunity to manage those risks before the exposure hazard increases
- re-assessing tree hazard following severe environmental conditions (e.g. fire, prolonged rainfall, high winds, intense lightning activity, flooding and rain after prolonged dry periods) as these conditions can significantly change tree hazard.

Staff also need to inspect tree risk management infrastructure (e.g. fencing, warning notices) at appropriate intervals. Failure to maintain this infrastructure increases the tree risk and may increase NPWS liability for any injury or death that occurs.

## 5.3 Documenting tree risk management actions

Staff should use CM9 (or AMS if preferred) to:

- record the details of individual tree inspections, including ad-hoc, post-event inspections
- record tree risk management plans for high-risk precincts
- keep a spatial record of known hazardous trees or tree communities.

AMS should be used to:

- schedule cyclic tree inspections (particularly where regular monitoring is part of an agreed management response).

Documenting tree risk management actions in this way will allow NPWS to develop a record of tree risk management which can provide an evidence base for future management decisions.

# About the procedures

Procedures first adopted **April 2007**

Procedures last updated **October 2019**

## Scope and application

These procedures apply to all lands acquired or reserved under the *National Parks and Wildlife Act 1974* (NPW Act) except for lands reserved under Part 4A of the Act (unless the Board of Management for those lands has adopted the policy). However, NPWS staff can use the policy as guidance in their dealings with Boards of Management.

These procedures must be read and applied in the context of the NPWS Tree Risk Management Policy.

## Definitions

**Exposure hazard** means the exposure of visitors, workers, volunteers and neighbours to hazardous trees, which contributes to the consequences of an event.

**Hazard** means anything that has the potential to cause harm to visitors, workers, volunteers or park neighbours.

**Job Safety Analysis (JSA)** means the written health and safety risk assessment NPWS staff are required to complete before beginning work tasks.

**Job Safety Brief (JSB)** means the risk management discussion NPWS staff have before beginning work tasks with identified risks.

**Park** means a reserve gazetted under the *National Parks and Wildlife Act 1974*, including a national park, nature reserve, historic site, Aboriginal area, state conservation area, karst conservation reserve, regional park or any land acquired by the Minister under Part 11 of the Act.

**Personal protective equipment (PPE)** means clothing or equipment designed to protect a worker from the risk of injury or illness – e.g. gloves, high-visibility vests, hard hats, safety glasses, hearing protection, earmuffs, chaps

**Review of environmental factors (REF)** means an environmental assessment undertaken to assist in meeting the requirements of Part 5 of the *Environmental Planning and Assessment Act 1979*. It is completed before NPWS undertakes an activity, or grants approval allowing an external party to undertake an activity. The REF examines the significance of likely environmental impacts of a proposal and measures required to mitigate adverse impacts on the environment.

**Risk** is a measure of the probability and severity of an adverse effect on health, property or the environment

**Safe Work Method Statement (SWMS)** means the written risk assessment NPWS staff are legally obliged to complete prior to construction works (this obligation is usually fulfilled by completing a JSA).

**Take 5** means the risk assessment checklist NPWS staff complete on-site to identify and address any site-specific risks before commencing work in the field.

**Tree hazard** means the physical condition and characteristics of a tree or part of a tree which contribute to the likelihood of an event (injury or death), including age, species and tree health.

## Accountabilities

| Paragraph | Position accountable |
|---|---|
| 4.3 Approval of tree risk management actions | Area Manager<br>Branch Director |

# Contact us

If you have any questions about the Tree Risk Management Policy or these Procedures, please contact the NPWS Parks Policy Team:
npws.parkspolicy@environment.nsw.gov.au

# Appendix: Health and Safety Risk Matrix

Use this matrix to assign a qualitative risk rating to a hazardous tree or community of trees.

The consequence rating and the likelihood rating should each be determined by considering both the exposure hazard and the tree hazard, as well as staff experience.

**Health and Safety Risk Matrix**

Multiply Likelihood x Consequence to achieve risk score

| Consequence → | Insignificant 2 | Minor 3 | Moderate 6 | Major 10 | Catastrophic 20 |
|---|---|---|---|---|---|
| **Likelihood** ↓ | May have little or no impact on health and safety | May have some impact on health and safety, but will be able to recover from or repair the damage within a relatively short term | A moderate permanent disability or long term impairment | A single fatality or severe permanent disability | Multiple fatalities or significant irreversible effects on the health of a large number of people |
| **Likely 5** There is a very good chance this event will occur in the near future | M 10 | M 15 | H 30 | E 50 | E 100 |
| **Probable 4** This event has occurred several times or more in corporate experience | L 8 | M 12 | H 24 | E 40 | E 80 |
| **Possible 3** This event might occur once or twice in corporate experience | L 6 | L 9 | M 18 | H 30 | E 60 |
| **Unlikely 2** This event does occur somewhere from time to time, but, very seldom | L 4 | L 6 | M 12 | M 20 | E 40 |
| **Rare 1** It is theoretically possible for this even to occur, but extremely unlikely that it will | L 2 | L 3 | L 6 | M 10 | M 20 |

**Risk tolerance guide - all risks must be eliminated or controlled as soon as practical**

| | | |
|---|---|---|
| **2-9** | **Low** | Risk may be tolerated based on cost and practicality, otherwise complete actions within 6 months of approval |
| **10-20** | **Med** | Actions must be completed within 3 months of approval |
| **24-30** | **High** | Seek urgent approval to implement controls within 1 week or sooner |
| **40-100** | **Extreme** | Stop at risk activity immediately and make it safe |

**Note: Impact/Risks rated 10 and above (Medium to Extreme) are deemed significant**

**Figure 2 Health and safety risk matrix**