

# LIBRARY

Department of Biodiversity,  
Conservation and Attractions

This PDF has been created for digital preservation. It may be used for research but is not suitable for other purposes. It may be superseded by a more current version or just be out-of-date and have no relevance to current situations.

# Maintaining the trail



# together!



## Volunteer Trail Maintenance Handbook

Proudly supported by



Department of  
Environment and Conservation

*Our environment, our future*



# Munda Bididi Trail

Volunteer  
Trail Maintenance  
Handbook

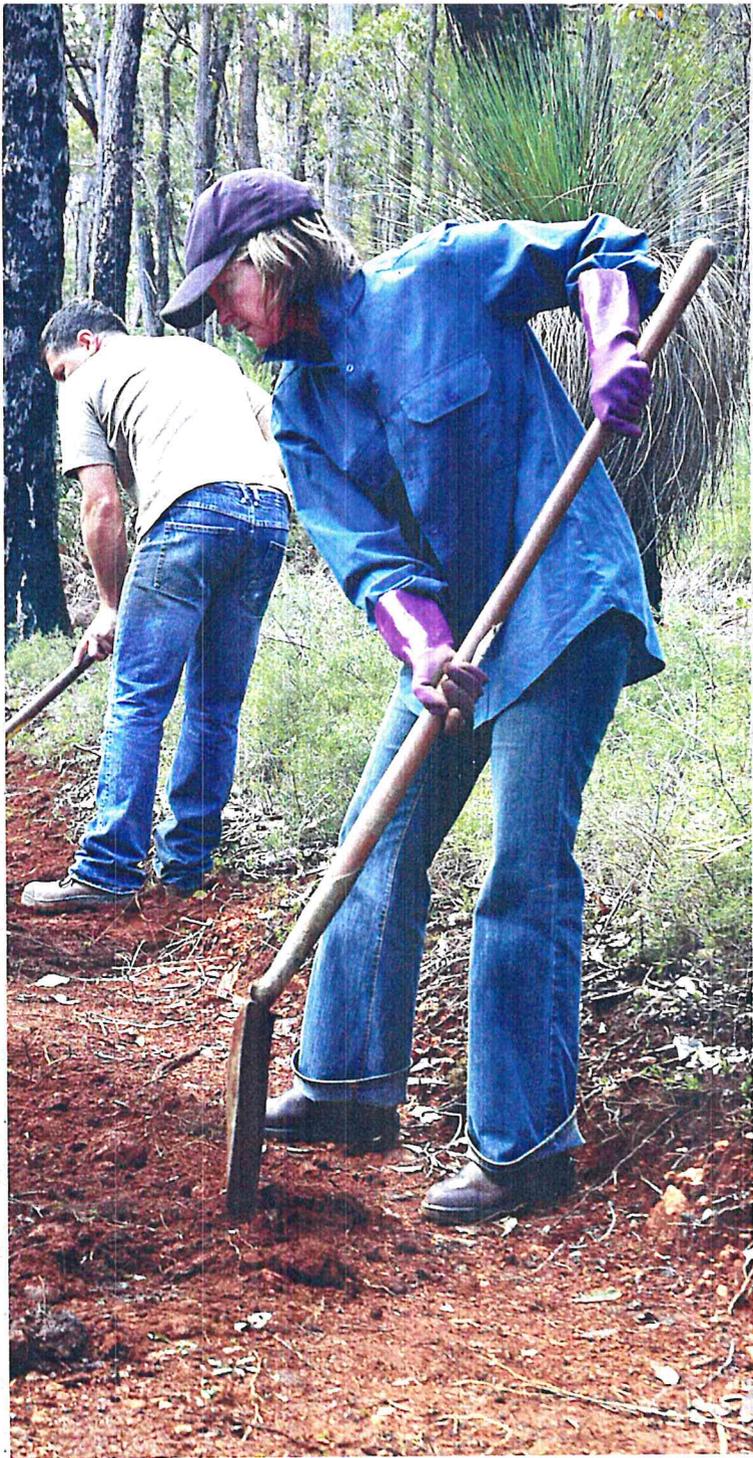


## Acknowledgments

Thank you to all who have contributed and supported the development of this handbook and the Munda Biddi Trail Maintenance Program. In particular, thanks to Alcoa Australia, the major sponsors of this project. Thanks also to all members of the DEC Recreation and Trails Unit; DEC district staff, particularly Elisa Skillen and Leon Price; DEC Corporate Communications Branch; and the Munda Biddi Trail Foundation.

# Contents

<b>1. Munda Biddi Trail Maintenance Program</b>	<b>5</b>
1.1 Thank you	6
1.2 Stay in touch	6
1.3 Nominating for events and projects	7
1.4 Releasing your trail maintenance section	7
<b>2. Trail tools, safety and maintenance</b>	<b>9</b>
2.1 Trail Maintenance Kit	10
2.2 Tool safety and maintenance	11
<b>3. Environmental considerations</b>	<b>13</b>
3.1 Dieback disease	14
3.2 Weeds and seeds	15
3.3 Leave No Trace	16
3.4 Recording and reporting illegal activities and behaviour	17
3.5 Water catchments	17
<b>4. Inspecting, maintaining and reporting</b>	<b>19</b>
4.1 Visiting your maintenance section	20
4.2 Steps to inspecting, maintaining and reporting on your trail section	22
<b>5. Trail maintenance – Standards and techniques</b>	<b>25</b>
5.1 Maintaining the trail corridor	26
5.2 Water crossing maintenance	30
5.3 Trail signage maintenance	33
5.4 Campsite maintenance	34
<b>6. Your safety and well-being in the bush</b>	<b>39</b>
6.1 Safety essentials	40
6.2 Working in the sun and heat	40
6.3 Emergency and incident management	42
6.4 Prescribed burning and wildfires	43
6.5 Mosquitoes	44
6.6 Sandflies	44
6.7 Ticks	45
6.8 Snakes	46
<b>7. Useful contacts</b>	<b>51</b>



**Section one**

**Munda Bididi Trail**

**Maintenance Program**

# 1. Munda Biddi Trail Maintenance Program

## 1.1 Thank you

Thank you for registering as a Munda Biddi Trail Foundation volunteer and taking part in the Trail Maintenance Program. Your commitment to the trail is enormously valued.

This handbook has been written to support all volunteers who have the interest, energy and enthusiasm to help maintain the Munda Biddi Trail.

To get the best out of being a Trail Maintenance Volunteer, please read through this handbook and remember to regularly input your Trail and Campsite Inspection Report forms. We also encourage any feedback you may have that helps us improve the Munda Biddi Trail volunteer program. Finally, we hope your volunteer experience with us is rewarding as you meet new people, learn new skills, enjoy the great outdoors and ultimately leave a better trail for future generations to enjoy.

## 1.2 Stay in touch

Volunteering is a two-way street, which relies on effective communication between the volunteer and the volunteer body. To help us communicate with you effectively and match your skills and interests with the range of opportunities on the trail, please keep your contact details current.

You can notify us of any changes online, by calling us or by sending us an email or fax of your current details.

If you have access to the internet you can do the following online at [www.mundabiddi.org.au](http://www.mundabiddi.org.au):

- nominate for a range of volunteer opportunities (including positions, projects or training);
- input your volunteer hours and Trail and Campsite Inspection Report forms;
- keep track of your volunteer hours and receive rewards; and
- receive regular volunteer, news, updates and feedback.



### 1.3 Nominating for events and projects

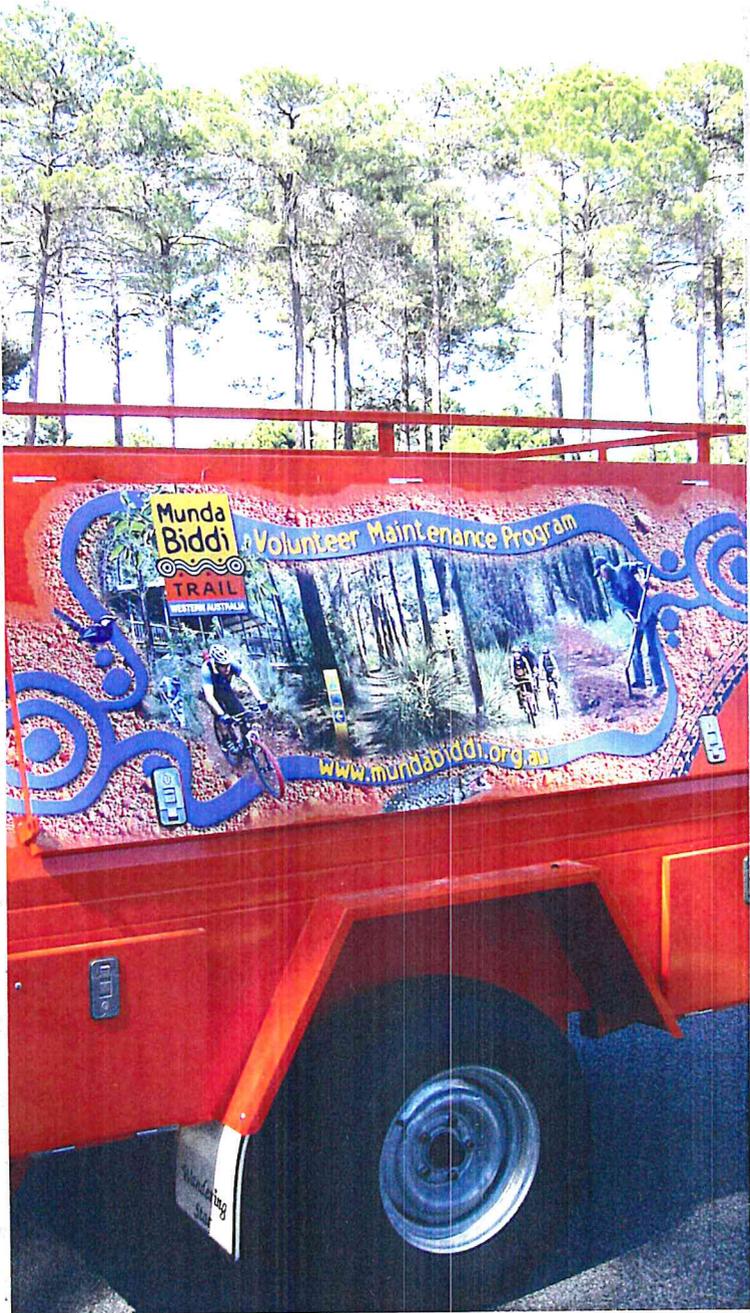
Maintenance sections and projects will be regularly advertised on the 'Volunteers Online' page of the Munda Biddi Trail Foundation's website ([www.mundabiddi.org.au](http://www.mundabiddi.org.au)). You can register online and nominate yourself for any volunteer roles as they arise.

#### **Please note**

The Munda Biddi Trail Foundation encourages all volunteers who have the internet to use the online system as the volunteer management database helps to streamline the registration process and saves valuable resources including paper, postage, data inputting and processing.

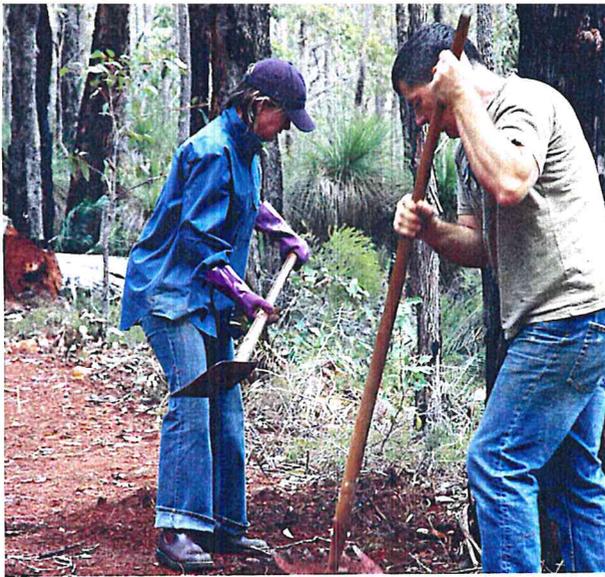
### 1.4 Releasing your trail maintenance section

If you can no longer commit to maintaining your section of trail, please contact the Foundation as soon as possible, so your section can be re-allocated.



**Section two**

**Trail tools, safety  
and maintenance**



## 2. Trail tools, safety and maintenance

### 2.1 Trail Maintenance Kit

Each section leader will be issued a Trail Maintenance Kit consisting of:

- 1x Trail Inspection Report Form
- 1x Campsite Inspection Report Form (if you have a campsite in your section)
- 1x trail maintenance section map
- 1x weed identification pack
- 1x tool kit (volunteers can also use their own hand tools if desired)
- 1x volunteer identity badge per registration

If you choose to use any other light-weight tools such as a rake, it is recommended that you consider how you will safely transport these on your bike.

The Trail Inspection Report Form has two sections:

- a) Trail structures – bridges, culverts, gates and signs
- b) Trail conditions – erosion, vegetation re-growth, evidence of illegal use.

The Campsite Inspection Report Form has a complete list of structures at the campsite including sleeping shelters, water tanks, bike shelters, toilet, tent sites and picnic tables.

## 2.2 Tool safety and maintenance

### Tips for working with tools

- Choose the right tool for the job.
- Use the proper protective equipment to avoid injury.
- Always be aware of others working around you and maintain a safety zone when using tools.
- Cut in a direction away from your body.
- Use well-maintained tools in good condition. Tools in poor condition can be dangerous and require greater exertion to work.

### Tips for handling and transporting tools

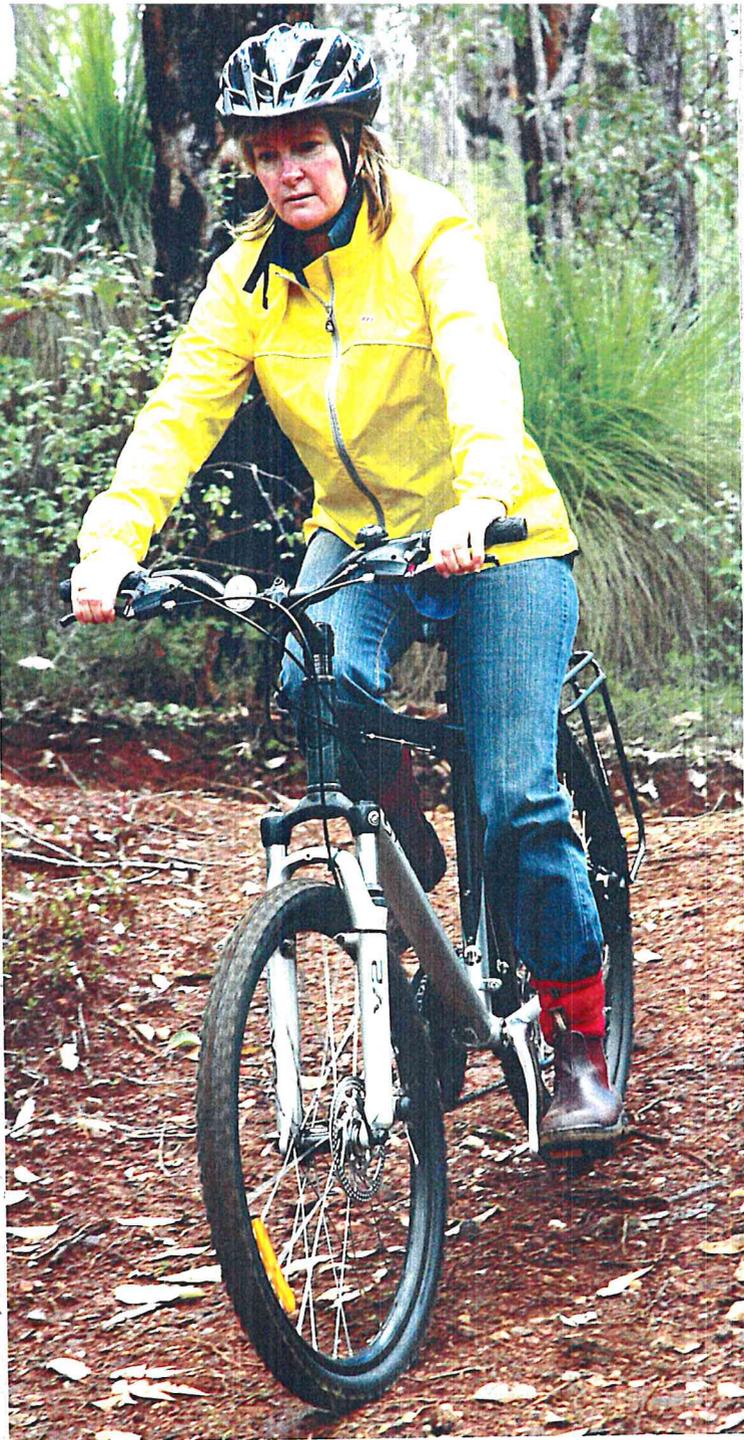
- Pass tools to another person by the handle; never throw them.
- Riding a bike and carrying tools can be a tricky exercise! So if you intend to trim along your section of trail and use your bike as transport, you will need to set up your bike so you can easily and safely access your tools.
- Carry the tools with their blades pointing downwards. Never store them in you pocket.
- Do not place tools in your pockets or clothing when riding.

### Tips for maintaining your tools

- Examine each tool for damage before use. Be on the lookout for signs of repetitive injury or stress.
- Operate according to the manufacturer's instructions.
- Always check you have all your tools before leaving you trail section.
- Clean your tools to remove any soil or tree/plant sap. Remove the sap lightly with some steel wool or warm soapy water, and then rub the blades with vegetable oil to prevent them from rusting.
- When not in use, store tools in a protected place away from moisture. This prevents them from rusting or getting damaged.

### Please note

- Volunteers are not permitted to use power tools (e.g. chainsaws, hedgers and whipper snippers unless under DEC supervision).
- Your Trail Maintenance Kit will be issued after you complete your introductory training day.



**Section three**  
**Environmental**  
**considerations**



### 3. Environmental considerations

#### 3.1 Dieback disease

*Phytophthora spp.*, commonly known as dieback, is a microbial root fungus that spreads by the movement of water and soil from infested forest, agricultural areas and domestic gardens into clean areas.

The introduction of this fungus into WA has had a huge impact on our native plants. As many as 2,000 of the estimated 9,000 native plant species in the south-west are susceptible to and often killed by dieback. One of the main ways the fungus is spread is through the movement of soil by vehicles (e.g. cars, bikes, horses).

To prevent the further spread of dieback in the forest and along the trail we ask that you:

- Do not enter a designated Disease Risk Area (DRA) (including DRA designated roads) without written permission from DEC.
- Clean down your tools, bike frame and wheels with a sturdy brush to remove traces of soil before entering the forest (your own garden may have dieback infestation, even if it is not obvious).
- Do not veer off the trail.
- Avoid riding through puddles of water or muddy areas.

## 3.2 Weeds and seeds

A weed is a plant that is growing where it is not wanted. There are more than 1,200 identified weeds in WA introduced from other countries. To minimise the spread of exotic plant seeds from domestic gardens to the forest remember to clean your footwear, tools, bikes and equipment before each maintenance visit.

### **Please note**

Volunteers are only asked to manage the weeds they locate within their section on the trail corridor. Due to the huge expanse of forest the trail covers, it is not practicable for volunteers manage more than this.

### **Steps to identifying weeds on the trail**

1. Try to identify the plant – is it a native or a weed? (Refer to your weeds pack provided by DEC)
2. If you cannot identify the plant as a weed or are not sure, take a picture of the plant, preferably one with a flower, and send it to the Foundation for identification.
3. Note the infestation on your Trail or Campsite Inspection Report forms, indicating the extent of the problem if possible.

### **Steps to removing weeds on the trail**

1. If you have identified the plant as a weed, try to remove the whole plant including the roots, keeping soil disturbance to a minimum.
2. Avoid placing the weeds back into the bush. Bag them up, carry them out with you and dispose of them responsibly. If there is too much to carry out, heap them neatly on the edge of the trail (preferably in bags) and record them on your Trail Inspection Report Form for later collection by DEC.



### 3.3 Leave No Trace

Even when you're maintaining the trail you should remember the seven basic Leave No Trace principles:

1. Plan ahead and prepare.
2. Travel and camp on durable surfaces.
3. Dispose of waste properly.
4. Leave what you find.
5. Minimise campfire impacts.
6. Respect wildlife.
7. Be considerate of other trail users.

For more information  
on these principles visit  
[www.lnt.org.au](http://www.lnt.org.au)



### 3.4 Recording and reporting illegal activities and behaviour

Under the CALM Regulations 2002, it is an offence to drive or use any unauthorised vehicles other than a bicycle in an area or track on DEC-managed land designated for bicycle use only. Under the regulations, a vehicle is defined as including:

- a) every conveyance and every object capable of being propelled or drawn on wheels or tracks by any means; and
- b) an animal being driven or ridden, for example a horse.

Many sections of the Munda Biddi Trail are designated for bicycle use only. Such areas will be appropriately signposted to clearly indicate that all unauthorised vehicles are prohibited. If you observe any illegal vehicle access or activities in these areas:

- Note the vehicle registration (most important), make, model and colour of the vehicle; time and specific location seen; the direction they were heading and the direction from which they came.
- Report ALL sightings on your Trail Inspection Report Form, even if registration details are not available.

For your safety, do not approach the possible offender or be obvious when recording the details.

#### Please note

It is also illegal to enter an area designated as a DRA using any unauthorised vehicle, including a bicycle. This includes the use of roads designated as DRA. The Munda Biddi Trail does not pass through DRA. However, if your maintenance section requires you to use any portion of a DRA-designated road to access your maintenance section, contact the Munda Biddi Trail Foundation to obtain the necessary approvals from DEC well before you access the area.

### 3.5 Water catchments

Large sections of the Munda Biddi Trail between Mundaring and Collie come close to Water Corporation water catchment areas. Please observe the catchment protection signs in these areas.





**Section four**  
**Inspecting, maintaining  
and reporting**



## 4. Inspecting, maintaining and reporting

### 4.1 Visiting your maintenance section

Trails change with time and use. Regular routine maintenance not only ensures trail safety, it prolongs the life of the trail. Early detection of problems or minor maintenance can often help prevent a major reconstruction job.

To help us maintain the trail corridor and keep the facilities in good working order you are asked to visit your allocated trail section and/or campsite three to four times a year. You should perform all work in a way that is consistent with protecting the environment, natural resources and the recreational experience.

#### **Maintenance tip**

When you first start to inspect your trail section you may be a little overwhelmed with the tasks that you need to address. Before you tackle any trail maintenance, ride along your section to familiarise yourself with the breadth of trail issues (highlighted on the back of your trail maintenance section map). Making this initial assessment will help you identify problem areas and help you prioritise your maintenance tasks.

## Trail maintenance tasks and frequency

Tasks	Frequency (minimum)
Checking trail head and other facilities for damage	3 to 4 months
Checking all signage and trail marking	3 to 4 months
Checking and clearing all trail surfaces of hazards	3 to 4 months
Pruning trail-side and overhanging vegetation	As required
Checking major trail structures	6 monthly
Checking condition of campsite facilities	3 to 4 months
Inputting inspection data and observations	As soon as possible after each visit to your section

### Please note

It is essential for both insurance and the Trail Maintenance Program that you report your observations and maintenance actions promptly after each visit. Periodic reminders will be sent to you from the Foundation.

If there is something that needs urgent attention please report it as soon as possible.



## 4.2 Steps to inspecting and maintaining your trail section

### Step 1 Identify the issue

Use the Trail and Campsite Inspection Report forms to identify any issues. To help you in the field, a list of potential issues been placed on the back of the trail maintenance section maps. Please promptly report all safety issues that you have observed along the trail clearly and concisely.

### Step 2 Identifying safety issues

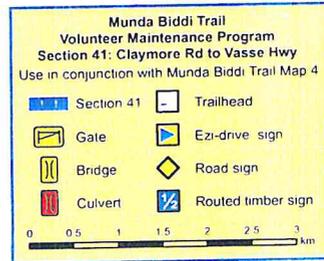
Safety is our single most important trail maintenance concern. When inspecting your section you should give priority to safety issues. These are hazards that pose the greatest risk to trail users and could potentially cause an accident, injury or disorientation. A safety issue checklist is located on the back of your trail maintenance section map.

### Step 3 Locate the issue

Once you have identified a trail-related issue, note its location using the trail maintenance section map.

### Step 4 Trail maintenance section map

The trail maintenance section maps use a simplified grid system similar to a street directory, with letters across the top and numbers down the side. Assets will be marked on the map to help you locate where you are on the trail and identify the location of an issue using the grid.



If you come across any assets that are not recorded on your section map, please report them to DEC so the maps can be updated.

### Step 5 Describe the issue

A list of trail and campsite-related issues appears on the back of the trail maintenance section map. This list will help you to describe the issue and complete your form. Please keep your descriptions brief and concise.

## Conduct trail maintenance

If you fix the issue or problem yourself, please note the actions you've taken on your Trail or Campsite Inspection Report forms. If the issue cannot be resolved then suggest further action required.

Refer to 'Trail maintenance – standards and techniques' (Section 5)

## Record your hours and observations

Record your volunteer time contributions (including your travel time).

Round your time contributions up to the nearest 30 minutes (e.g. 1 hour 20 minutes becomes 1 hour 30 minutes and 45 minutes becomes 1 hour).

- Submit your hours online or send your individual/group DEC volunteer daily sign register form immediately after each volunteer day or, at the very latest, at least two weeks before the end of each quarter – 15 September, 15 December, 15 March and 15 June.
- Electronic reminders will be sent to volunteers submitting hours online. If you do not have any hours to report, you do not have to submit a form.
- Trail maintenance volunteers are required to submit online or send in Campsite and Trail Inspection Report forms immediately after each inspection, particularly when there is a safety issue that needs to be reported urgently.

## How to report your hours and observations

Choose from one of three methods of reporting:

1. Log on to your volunteer account (online 24 hours) on the Munda Bididi Trail Foundation website ([www.mundabiddi.org.au](http://www.mundabiddi.org.au)) and complete the daily sign in register and input your maintenance observations and actions into the electronic trail and campsite forms.
2. Post a copy of all your forms to the Munda Bididi Trail Foundation.
3. Fax your forms to Munda Bididi Trail Foundation on (08) 9481 2484.

## Please note

All information entered online is stored in a secure storage system. The report data is reviewed regularly by the Foundation staff and forwarded to the relevant DEC district for maintenance response. DEC's response is priority based.

For volunteers inputting their hours online please keep your original paperwork for insurance purposes.



**Section five**

**Trail maintenance –**

**Standards and**

**techniques**

## 5.1 Maintaining the trail corridor

A trail corridor is the passage of land that the trail traverses.

A corridor consists of three parts:

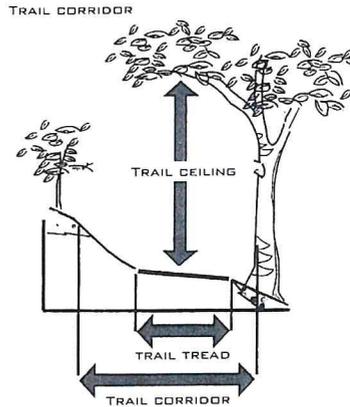
1. Sides
2. Ceiling (overhead clearance)
3. Tread (travel surface)

The qualities of a well-maintained trail corridor include:

- Clear sightlines – straights, corners and curves.
- Stable, well-drained tread.
- Structurally sound bridges and facilities.
- Easy-to-follow signage.
- Obstacle, debris, hazard, weed, vegetation and rubbish free.

The Munda Biddi Trail is made up of a range of different trail corridor types:

- single track;
- old rail formations;
- forest management tracks; and
- country back roads.

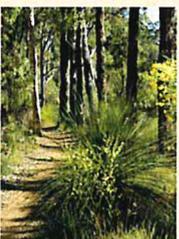


Each trail corridor has a different maintenance standard. By following the trail corridor, water crossing, signage and campsite maintenance standards and techniques you can help us achieve a sustainable trail.

### Maintenance tips

- When maintaining the trail, keep its appearance as natural as possible. The trail does not need to look like it has just been swept.
- Be aware of riders who are using the trail while you are doing maintenance. Ensure your bike and tools are off the trail and consider erecting a make-shift warning sign 100 metres or so from your work area.

## 5.1.1 Trail corridor maintenance standards

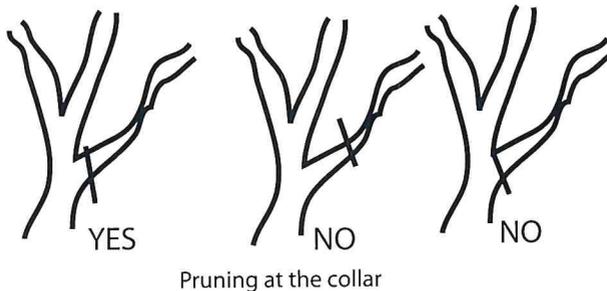
Trail type	Ground level	Shoulder height	Canopy clearance
Single tracks 	1.2m	2.0m	2.5m
Rail formation 	2.0m	2.5m	2.5m
Forest management tracks 	2.5m	3.0m	2.5m
Country back roads 	3.5m	3.5m	3.5m

## 5.1.2 Trail corridor maintenance techniques

### Trimming vegetation and hazard removal

Keeping the trail clear of limbs, brush and re-growth vegetation is essential to the safety of cyclists and life of the trail. Pruning should be done sensitively to make the trail look as natural as possible. You can achieve this in your section by following these pruning techniques:

- Prune limbs back towards the trunk, leaving a collar. Try not to prune flush with the main stem as it can rip the bark and increases the risk of fungal infection to the plant. Pruning to the collar also enables the tree or bush to heal quickly.
- When cutting larger diameter branches, cut from the bottom first and then finish off from the top, hold the limb with the other hand when making the final cuts from the top. This way when a branch falls it won't strip the protective bark.
- If the limbs are more than eight centimetres in diameter, or a branch has fallen onto the trail that is too difficult to cut or remove from the corridor, note this on your Trail Inspection Report Form and staff from the appropriate DEC district will attend to it as soon as possible.



### Maintenance tips

- Do not leave large piles of dead branches and bushes at the edge of trail. It is not only unsightly, it can create a fire hazard.
- In some cases, fallen trees or logs have been left across the trail, which enable cyclists to pass but discourage 4WD and motorbike access. Where this is not obvious please report a fallen tree in your Trail Inspection Report Form.

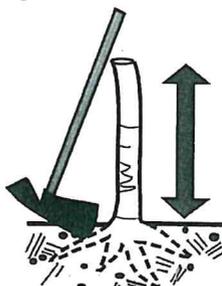
## Removing saplings, stumps, roots, weeds and rocks from the tread (trail surface)

The occurrence of tread obstacles will be greater in areas of the trail where there has been less use or a recent fire. Flushes of new growth stimulated by fire can make the trail undistinguishable from surrounding bush, inhibiting cyclists from riding in a straight line.

Periodic removal of saplings, stumps, roots and weeds will help achieve an even use of the trail surface and reduce trail creep (unplanned widening of the trail). It is not a requirement that the trail surface be raked clean but please remove any light-weight obstacles at ground level.

Native plants or weeds will continually grow, die and regenerate on the trail surface.

- When removing small plants or shrubs from the trail surface, try to dig out the whole plant including the roots, or at least cut it off below ground level, as a lot of native plants can regenerate from the roots.
- Do not leave any short stumps that could puncture a bike tyre.
- Once removed, fill in the ground and compact to the best of your ability to prevent a larger hole forming.
- As the trail surface wears, some rocks may begin to appear in the trail surface. These do not need to be removed unless they pose a tripping or puncture risk to riders.
- If a rock is too large to remove safely, just report the issue on your Trail Inspection Report Form.



## Debris disposal (except weeds)

- When removing vegetation (except weeds) from the trail corridor, place the debris out of view at least four metres from the edge of the trail.
- Do not toss the debris into the bush. Walk into the bush and evenly distribute the debris among other plants help to prevent fire hazard mounds and give the trail a more natural look.
- If there are large limbs, place the sawn end away from the trail.

## Surface water control – erosion and drainage

Correct trail construction techniques help to minimise the effects of erosion; the instability of the gravel and pooling of water. A range of trail construction compaction and drainage techniques (culverts, dips etc) have been applied to ensure a well-drained, stable riding surface on the Munda Biddi Trail.

- Water is one of the most difficult trail issues to manage. Poor drainage, steep slopes and high trail use can lead to a range of problems including pooling and erosion channels.
- If major water damage or erosion is evident on your section, report these problems on your Trail Inspection Report Form, giving a brief description of the issue. DEC staff and the Foundation volunteer work crews will attend to these issues as required.

## Weeds and seeds

Refer to (Environmental considerations – Section 3.2)

## Rubbish

- Where possible, pick up and remove any rubbish that has been dropped on the trail.
- If there is a large pile of domestic or industrial rubbish, record it on your Trail Inspection Report Form and DEC will arrange to remove it as soon as practicable.

## 5.2 Water crossing maintenance

The Munda Biddi Trail has a range of water crossings – bridges, boardwalks and culverts – depending on the span and the depth of the wetland, creek, stream or river crossing. Cyclists should never be riding through streams or creek beds. If there is a major issue i.e. missing handrail or decking, please do not try to fix these issues yourself but note it on your Trail Inspection Report Form and DEC will attend to them.

### Culverts

A culvert is primarily used to pass water under and across a trail. They are most effective where the stream bed is shallow. On the Munda Biddi Trail, a concrete pipe is placed just below the trail surface to allow the free flow of the stream or creek, while maintaining the natural trail surface. Culverts often become clogged with leaves and debris which must be removed to prevent flooding and undercutting of trail surfaces.



What to look for?	Maintenance tasks
Culvert blocked by debris leaves, rubbish or silt restricting water flow.	Unblock culvert of debris.
Erosion of culvert surface or pooling of water.	Snake warning – beware of snakes when cleaning out culverts!
Rock walls surrounding culvert are stable.	

### Boardwalks and kit bridges

Boardwalks are water crossings that sit low in the profile. They are located in areas with low water flow, including wetland or boggy areas and are made out of timber, steel or a combination of the two.

Many of these bridges will not have handrails as these are only required if the height of the bridge above the river bed exceeds one metre.

What to look for?	Maintenance tasks
Loose decking or fixings.	Clear side drains (where installed).
Slippery surface caused by algae growth or soil on deck surface.	Sweep or rake excess soil off top of decking and ensure drainage between decking boards is clear.
Bridge approaches eroded or channelled.	
Signs of termite activity, wood rot or rusting.	



*Example of a kit bridge.*

### Major bridges

Major trail bridges are generally built in areas where the trail route is interrupted by a passage of high volume water.

#### What to look for?

Loose handrails, fixings such as nails or bolts.

Slippery surface caused by soil, algae growth etc.

Bridge approaches eroded or channelled.

Signs of termite activity, wood rot or rusting.

#### Maintenance tasks

Clear side drains (where installed).

Sweep or rake excess soil off top of decking and ensure drainage between decking boards is clear.

## 5.3 Trail signage maintenance

Having the right balance of signage is fundamental to the success of any trail. The Munda Biddi Trail has a range of signage styles that perform different tasks. They include:

<p><b>Directional markers</b></p>	<p>Yellow posts with the Munda Biddi Trail logo and arrow.</p>	
<p><b>Cautionary</b></p>	<p>Indicate an oncoming hazard or obstacle.</p>	
<p><b>Trailheads</b></p>	<p>Provide key navigation and trail user information.</p>	
<p><b>Routed timber</b></p>	<p>Located at major road intersections.</p>	
<p><b>Interpretative</b></p>	<p>Highlight the conservation and cultural messages along the trail.</p>	
<p><b>Campsite</b></p>	<p>Provide key messages about using the campsites.</p>	
<p><b>Symbol</b></p>	<p>Pictorial signs that indicate appropriate or inappropriate entry or use on the trail.</p>	

### Maintenance tip

Please do not try to fix major sign issues yourself but note the problem or issue on your Campsite and Trail Inspection Report forms and DEC will attend to them. Under no circumstances should you modify the location of directional markers.

### What to look for?

Signs are visible, easy to find and follow.

Missing signs, vandalised, damaged or faded.

Check confirmation marker posts when there is a major turn in direction.

Temporary diversion maps and signs in place.

### Maintenance tasks

Straighten ezi-drive signage posts if bent or knocked down (if possible).

Wipe off dust/dirt from signs with water or cloth (do not use solvent-based cleaners).

Remove vegetation that might be reducing visibility.

## 5.4 Campsite maintenance

Not all trail maintenance sections will include a campsite. However, if one is in your section use the Campsite Inspection Report Form as a checklist to ensure the facilities listed below are present and in good working order. All the Munda Bididi Trail campsites have a similar layout and design and are constructed out of galvanised steel, corrugated iron cladding and roof, with polyurethane water tanks.

- Water tanks (one or two)
- Bike shelters (one or two)
- Tent sites (up to five)
- 'Code of the Campsite' signs
- Picnic tables (up to three)
- Toilets (one) – unisex
- Sleeping shelter (one)
- Comments book (blue) and log book (green)

### Maintenance tip

Under no circumstances should you make adjustments, additions or major repairs to trail structures and campsite facilities without prior permission from DEC.

If you have a campsite in your section please use the following tables as guide to the maintenance tasks required.

### Bike shelter

What to look for?	Maintenance tasks
Bike stands damaged.	Sweep leaves/debris from roof if able from ground level. Do not use a ladder or climb shelter.
Leaves/debris on roof of shelter and around shelter.	Rake away leaves and debris around shelter to leave a good firebreak.

### Water tanks

What to look for?	Maintenance tasks
Tap damaged or leaking	If tap is leaking, turn it off as far as possible.
Tank or pipes damaged or leaking	Check water levels by tapping side of tank.
Diverter blocked	Check the freshness of water.
Water level – tank empty or getting low	Check that 'Treat the water before drinking' stickers are present.
Water – foul taste, smell, cloudy, or discoloured	

## Sleeping shelter

### What to look for?

Gutters full of leaves, gutter guard damaged.

Leaves/debris around and in shelter.

Bunk ladders or sleeping platforms, broken or splintered.

Tables: fixings secure, timber splintered or loose.

Evidence of a illegal fire rings.

Inspect for rats, mice, wasps and bees.

### Maintenance tasks

Sweep leaves and debris off sleeping platforms and off decking and away from shelter to leave a good firebreak.

Remove rubbish and left-over food, books, adverts and magazines.

Remove any evidence of candle wax.

Disperse evidence of fire (e.g. ashes, rocks and logs) into bush away from campsite. Wear gloves for this job and ensure fire remnants are stone cold before dispersing.

Report wasp or bee hives, do not attempt to remove them.

## Tent sites

### What to look for?

Check paths and tent pads for overhanging branches and trip hazards.

Check for water pooling on tent pad.

### Interpretative signs

#### What to look for?

Damaged or vandalised.

### Maintenance tasks

Clear paths and tent sites of limbs and weeds.

### Maintenance tasks

Clean dirt or dust from sign.

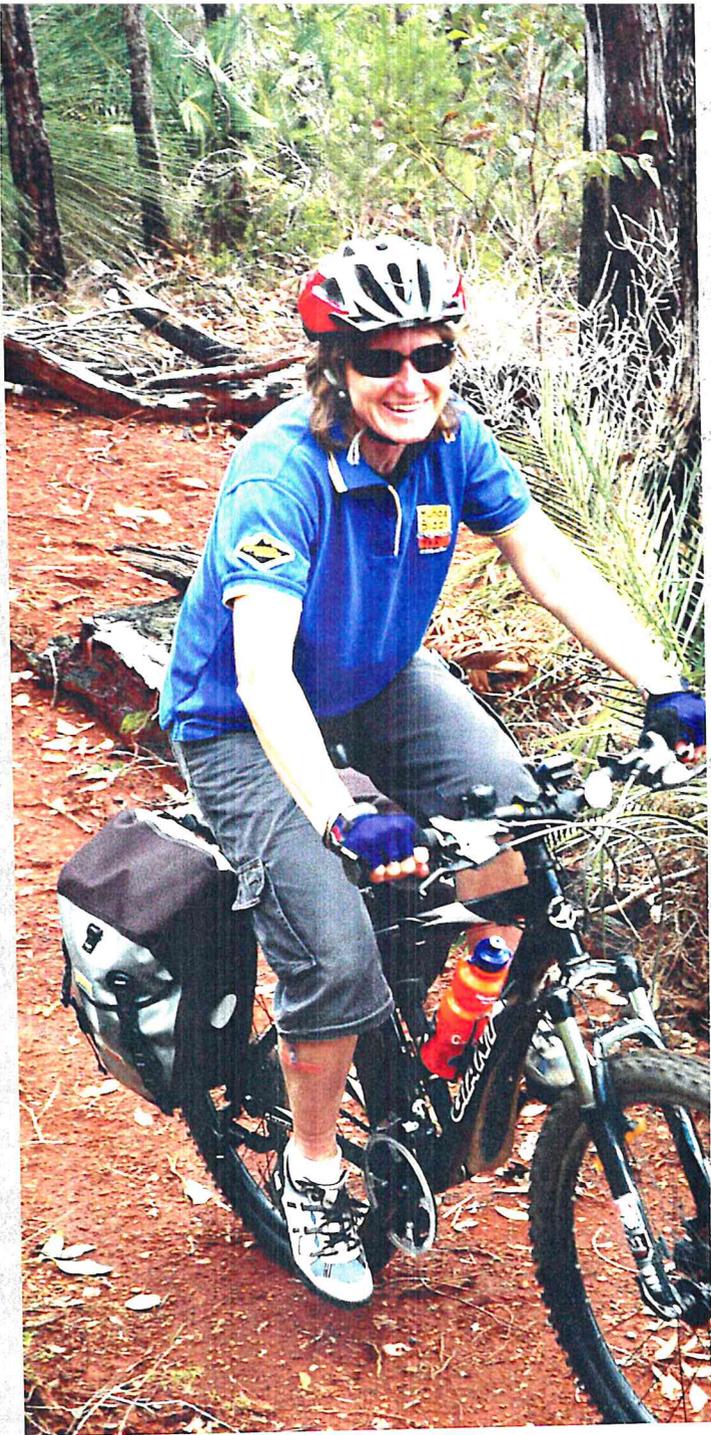


## Toilets

What to look for?	Maintenance tasks
Damaged or leaking tank or pipes.	Scrub toilet pan with water only. Do not use disinfectants as these can kill the bacteria in the toilet that enables the system to work.
Toilet full or approaching full.	Sweep toilet clean of leaves, debris, spiderwebs and other mess.
Toilet dirty.	Sweep leaves and debris from roof if you are able to from ground level. Do not use a ladder or climb up the shelter.
Leaves and debris on roof and around building.	Rake away leaves and debris around shelter to leave a good firebreak.

## Comments book and log book

What to look for?	Maintenance tasks
Check books are present, undamaged and still have space available for comments.	Assess if books need to be replaced. If so report to the Foundation.



**Section six**  
**Your safety**  
**and well-being**  
**in the bush**



While your safety is our concern, it is your responsibility. You should take ownership of your own health and safety and avoid adversely affecting that of others at all times.

### 6.1 Safety essentials

- Wear protective clothing to shield yourself from the sun, insect bites and scratches. Safety boots and gloves are optional depending on the task you are carrying out.
- Carry sufficient drinking water (at least two litres per person per day) and food for the duration of your trip.
- Protect yourself from the sun and heat by wearing 30+ sunscreen, a hat and sunglasses.
- Avoid cycling and working alone – take a trail buddy.
- Leave a detailed trip planning itinerary with a responsible friend or family member.
- Take a First Aid course – you never know when you will need to use it.

### 6.2 Working in the sun and heat

#### UV, hydration and heat stress – the hidden hazards

All volunteers (regardless of skin type) should protect themselves from the sun, even on cloudy days. Heat stress is a life-threatening condition and, in most cases, is caused by dehydration. To prevent heat stress or dehydration always remain hydrated while conducting volunteer maintenance and riding along the trail.

#### Symptoms of heat stress:

- skin pale, clammy or slightly flushed;
- dizziness, headaches with possible fainting;
- nausea and/or vomiting;
- muscle cramping;
- blurred vision and possibly slurred speech; and/or
- thirsty with decreased urine output.

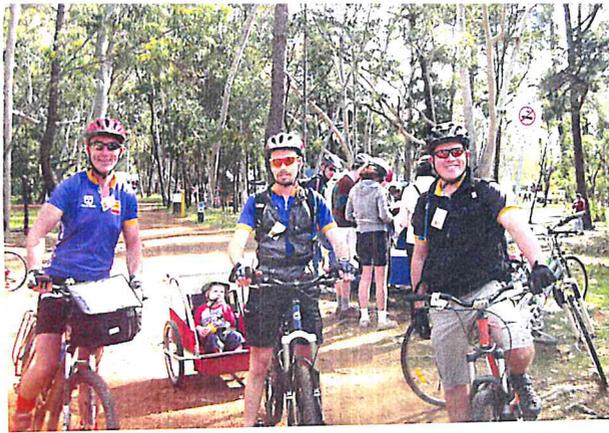


## Prevention

- Stay hydrated – each person should drink at least two litres of water per day. This may increase depending on the weather, your expected level of physical exertion and the distance of trail you are intending to cover. Always plan a backup water supply or identify a known water point in case of an emergency.
- Build up your fitness levels before embarking on long days of maintenance or riding.
- Wear well-ventilated, open weave clothing (long pants and long sleeve shirt) made out of a lightweight natural fibres that breathes easily such as cotton or hemp.
- Cover your head with a broad-brimmed hat and sunglasses.
- Avoid doing maintenance in the hotter months – November to March.
- Schedule highly strenuous maintenance tasks before 10am and after 3pm.
- Seek a shady area for rest periods.
- Re-apply high UV sunscreen (30+) at least every two hours (more regularly if you're perspiring) to maintain protection.

## First Aid treatment

- Rest in a shady spot.
- Cool the skin regularly with a damp sponge and by fanning the air.
- Sip cool water little and often and/or a diluted sports drink. Avoid using salty water.
- If symptoms do not improve, seek urgent medical assistance.



## 6.3 Emergency and incident management

### First Aid provisions

Whether it is a snake bite, graze, cut or broken bone; having basic First Aid training and a comprehensive First Aid kit can help you recognise and possibly treat a range of conditions and injuries.

### In the event of an accident, injury or illness:

- remain calm;
- stay on the trail – it will be easier for you to be located;
- administer First Aid;
- identify your position on the map and send someone for help if necessary. Select and agree on a route to be taken;
- a competent person with First Aid skills should stay with the injured person; and
- consider the need for warmth, shelter and water.

### If you suspect you are lost:

- stop;
- remain calm and stay together;
- look for surrounding features such as streams, tracks, roads or contours and try to identify them on the map; and
- retrace your route until you find a marker or recognise a feature.

If you are still lost, stay on a defined track. Consider the need for warmth, shelter and water.

## 6.4 Prescribed burning and wildfires

### Prescribed burning

DEC undertakes a program of prescribed burns throughout the year to reduce the fuel loading in the forest; minimising the risk of wildfires and protecting habitats.

Before you visit your maintenance section, check the 'Parks and recreation (Tracks and Trails)' section of DEC's website at [www.dec.wa.gov.au](http://www.dec.wa.gov.au) for notifications of future prescribed burns. If there is a burn planned for your area, ring DEC before going out for safety advice.

### Wildfire emergency

Wildfires occur every year in the Western Australian bush. To minimise risk it is recommended that cyclists do not use the trail or do maintenance on days of high or extreme fire danger.

#### If you are in the vicinity of a wildfire:

Use your map to locate the nearest road leading away from the direction of the fire. If it is safe, cycle at your usual pace towards the road. Fire rarely travels at more than walking pace in the forests.

#### If you are directly threatened by a wildfire:

- Conserve energy. Don't panic and avoid exhaustion.
- Seek refuge and try and stay on bare burnt ground, e.g. Munda Biddi Trail shelters, gravel pits, clearing or roads.
- Move across the slope and out of the path of the fire; if on foot, do not run or go uphill from the fire unless you are certain a safe refuge is near.
- Use every means to shield yourself from radiated heat. Cover all exposed skin with natural fibres (wool or cotton).
- Have a barrier between yourself and fire e.g. large rocks or logs or find refuge in deep wheel ruts, culverts, ponds, running streams or holes made by fallen trees.
- If conditions become severe cover yourself with dirt or sand or take refuge as above.
- Breathe air close to the ground, away from combustion gases

## 6.5 Mosquitoes

A mosquito bite usually results in redness and minor local swelling around the bite site. Itching is also very common and tends to last longer than the swelling, which subsides after a few hours.

### Prevention

To avoid being bitten by mosquitoes you should:

- wear light coloured long sleeved shirts and pants (particularly in the evening when they are active);
- apply a natural repellent such as lavender, tea tree, thyme and eucalyptus oils to susceptible skin areas such as the ankles, legs, arms and neck;
- burn a citronella oil candle or mozzie coil as a deterrent; and
- avoid sitting close to areas with pooling, still water such as streams, dams, creeks, rivers and billabongs.

### First Aid treatment for mosquito bites

A mosquito bite treatment involves washing the affected areas with soap and water to ensure no infections develop and to help reduce the itch. Applying soap directly to the bite may reduce the itching. Use a cold compress on the bite site to help alleviate the itch, swelling, and redness. Other treatments include anti-histamines, anti-inflammatory gel, calamine lotion and aloe vera gel.

## 6.6 Sandflies

Sandfly bites may leave large, red itchy bumps that can turn into a rash.

### Prevention

To avoid prevent bitten by sandflies you should:

- wear long sleeved shirts and pants during evening hours when they are most active;
- apply a natural repellent such as lavender, tea tree, thyme and eucalyptus oils to susceptible skin areas such as the ankles, legs, arms and neck;
- burn a citronella oil candle or mozzie coil as a deterrent;
- avoid sitting close to areas with pooling, still water such as streams, dams, creeks and rivers; and
- avoid sitting on the ground or sandy areas.

## First Aid treatment for sandfly bites

Initially, you may think you have a very itchy mosquito bite, but in a couple of days a blistered-type lesion may occur. To minimise the infection, apply Betadine or antibacterial ointment with cotton wool. Repeat this process every couple days and minimise the exposure of the bite to dirt, dust and infection.

## 6.7 Ticks

Ticks are parasites that feed on animal or human blood. Ticks are generally picked up on your clothing as you brush through vegetation. They seek warm crevices and skin folds and commonly lodge around the scalp, arm pits, upper thigh, groin, abdominal area and back of the knees. They range in size depending on where they are in their life cycle.

### Allergic reactions and irritations

Ticks, like any foreign body in the skin, can cause local irritation or a mild allergic reaction. However, most tick bites cause little or no symptoms.

### Prevention

To prevent being bitten by ticks you should:

- put a few drops of lavender, eucalyptus or tea tree oil into some body oil and apply to body before getting dressed;
- wear long-sleeved shirts and pants with your pants tucked into your socks;
- spray your clothes with insect repellent focusing on the ankle, leg, arm and neck areas;
- avoid sitting in areas where native animals, such as kangaroos, might congregate, particularly in open clearings under or near native grass trees. Sit on a log and avoid contact with the ground; and
- always remove your clothes before entering the house and wash them in warm to hot water, using some eucalyptus oil.

### First Aid treatment for ticks

- If you locate one, it is likely there will be more, so you should conduct a thorough search particularly in body crevices.
- Removing the tick early, with as little manipulation of the tick's body or the surrounding skin as possible, will minimise the chance of infection. If the tick is not removed carefully, its mouthpart may break off and remain in the skin.

- In some cases it's necessary to kill the tick before removing it to ensure it withdraws its mouthpart. This can be done by:
  - using a small application of methylated spirits, turpentine or Vaseline and then simply brushing it off once it releases;
  - having a hot shower or bath before attempting to remove the tick may also help, especially if there are a number of ticks that need to be removed. They sometimes dislodge themselves because of the heat.
- Removal may be achieved using tweezers, open scissors or a tick hook as a lever. Position the aid beneath the swollen body of the tick. Gently push the tick, parallel to the skin, using the opposite hand to keep the skin in front of the tick gently tensioned. The tick should be levered out, not pulled or squeezed.
- Any implement being used for tick removal should be sterilised or cleaned well before and after use. After removal, the wound should be washed and the area kept clean.

#### **Please note**

If the mouth parts remain in the skin they may need to be removed by a medical practitioner.

## **6.8 Snakes**

### **Dugites**

The dugite is usually olive green to brown, often with dark spots or flecks. As a juvenile they can also have a black head and abdomen may also be dark.

### **Tiger snakes**

The western tiger snake is generally black with yellow bands. It can grow up to 1.2 metres and usually resides in wet areas, coastal heath and open grasslands.

They feed on small mammals, birds and frogs.

### **Signs and symptoms of being bitten**

- Check for puncture marks, local swelling, redness, sweating, bruising or pain.
- Signs of paralysis – drooping eyelids, visual changes (blurred vision), slurred speech, loss of facial expression (usually two to four hours after being bitten).
- Loss of consciousness or bleeding.
- Muscle damage – weakness or cramping.
- Generalised pain, disturbed breathing, sweating, nausea and/or vomiting.

## **WARNING**

- Do not wash venom off the skin as retained venom will assist identification.
- Do not cut bitten area or try to suck venom out of the wound.
- Do not try to catch the snake. Poisonous snakes can bite reflexively even after they are dead. Just make observations if possible (colour, size, markings and behaviour).

### **First Aid treatment for snake bites**

Bites from a poisonous snake should be treated as a medical emergency. While awaiting emergency support follow these First Aid measures:

#### **1. Safety**

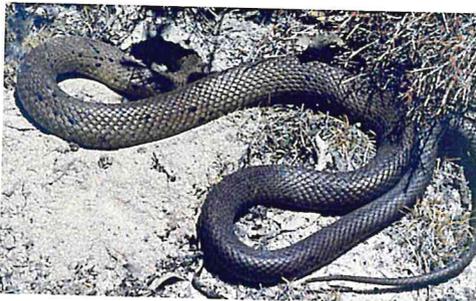
- Ensure there is no further risk to the patient or yourself.

#### **2. Check for signs of life**

- If casualty is unconscious, follow DRABC (Danger, Response, Airway, Breathing, CPR).
- Check the person's airway, breathing and circulation.
- If the person is having breathing problems, help them to get in the position that is most naturally comfortable to breathe.



*Tiger snake.*



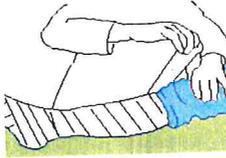
*Dugite.*

### 3. Immobilise and apply pressure

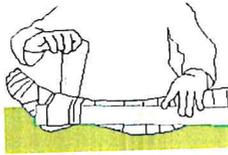
1. Apply a broad pressure bandage over the bite site as soon as possible. Crepe bandages are ideal, but any flexible material may be used. Fabrics, such as clothing and towels, can be torn into strips and used. Panty hose can also be used. Do not take off the patient's clothing, as the movement of doing so will promote the movement of venom into the blood stream. Keep the bitten limb and the patient still.



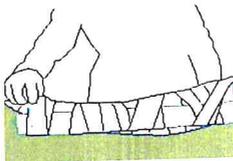
2. Bandage from the distal portion of the bitten limb, towards the body. Doing so will mean that the bandage will be more comfortable, and therefore can be left in place for longer if required. The bandage should be as tight as you would apply to a sprained ankle. Extend the bandage as far as possible up the limb.

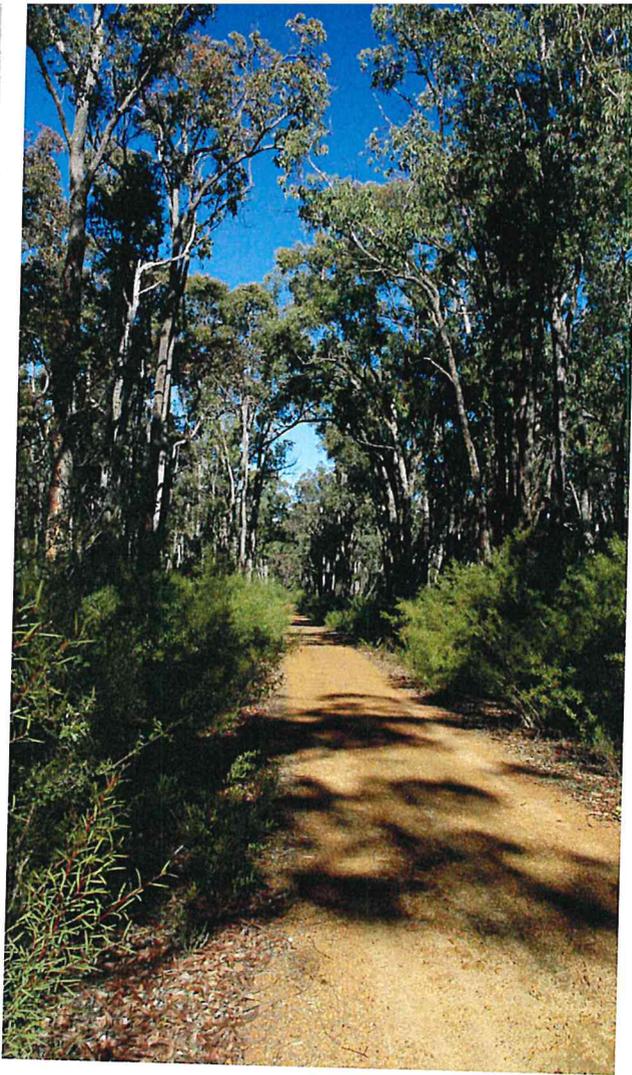


3. Apply a splint to the leg. Any rigid object may be used as a splint, e.g. spade, piece of wood or tree branch, rolled up newspapers, etc.



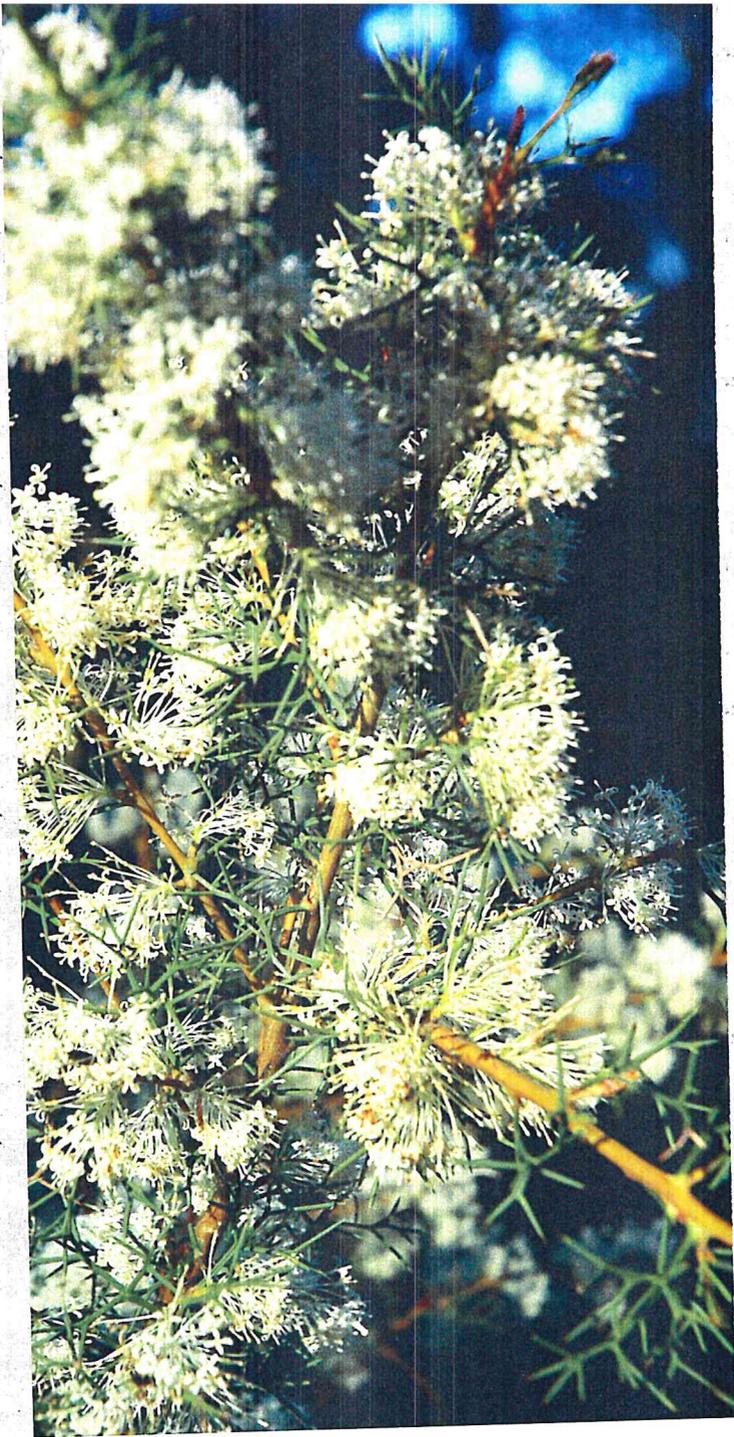
4. Bind it firmly to as much of the leg as possible. Keep the patient still. Lie the patient down to prevent walking or moving around





### **5. Call Emergency Services (call 000 or 106 for texting from a mobile phone)**

- If possible, let the emergency operator know what kind of snake has caused the bite.
- Reassure the patient and treat for shock.
- Evacuate the patient to the nearest hospital – bring transport to the patient if possible.
- Monitor for shock, cardiac arrest and respiratory depression.



## Section seven

# Useful contacts

## Police and Emergency Services

Should be contacted first in all emergency situations.  
For emergencies dial 000  
(or 106 for texting from a mobile phone)

## Munda Biddi Trail Foundation

(Postal Address)

PO Box 7445

Cloisters Square WA 6850

(Office location)

1st Floor Mountain Designs Building

862 Hay Street Perth WA 6000

Ph: (08) 9481 2483

Fax (08) 9481 2484

[www.mundabiddi.org.au](http://www.mundabiddi.org.au)

## Department of Environment and Conservation

Recreation and Trails Unit

17 Dick Perry Kensington, WA 6151

[tracksandtrails@dec.wa.gov.au](mailto:tracksandtrails@dec.wa.gov.au)

Ph: (08) 9334 0265

Current trail conditions

[www.dec.wa.gov.au](http://www.dec.wa.gov.au) (under Parks and Recreation)



## DEC District offices

Perth Hills District  
(Mundaring and Dwellingup)

Mundaring to Willowdale Road

Maps 1-3a

51 Mundaring Weir Rd, MUNDARING

Ph: 9295 9100

Fax: 9295 9101

Wellington District (Collie)

Willowdale Road to Joshua Creek Road

Map 3b and 4a

147 Wittenoom St, COLLIE

Ph: 9734 1988

Fax: 9734 4539

Blackwood District (Kirup)

Joshua Creek Road to Nannup

Map 4b and Sidings Rail Trail

14 Queen Street, BUSSELTON

Ph: 9752 6232

Fax: 9752 1432

## Further contact numbers

-----  
-----  
-----  
-----  
-----  
-----  
-----  
-----  
-----  
-----  
-----



## Notes

A series of 25 horizontal dashed lines, evenly spaced, intended for writing notes. The lines are contained within a rectangular frame.

