

How can we 'Leave no Trace' when bushwalking?

Sharon Fulcher

A scenic landscape featuring a river in the foreground, a dense forest of green trees in the middle ground, and a range of mountains in the background under a blue sky with light clouds. The text is overlaid on the image in a bright yellow color.

Do we have an impact?

What old practices are changing?

What guides walkers' behaviour now?

What needs to be reviewed?

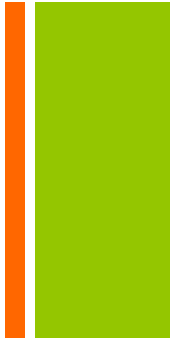
How can we make a difference?

Resources available

Photo
S.Fulcher

+ Improving our practices

- Car sharing
- Not digging trenches around tents
- No camping in sensitive areas (eg KNP)
- Removal of rubbish instead of burying or burning plastics, cans and foil packaging
- A move to using stoves instead of fires
- Belonging to a club
- Using hard surfaces or track improvements esp in muddy areas
- Connecting a duty of care to each other and the environment
- Using boot stations where provided
- Developing Minimum Impact Code and strategies

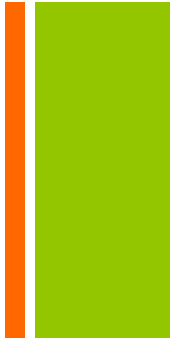


+ Guiding principles: Minimal Impact Policy



1. Campsites and huts
2. Campfires and stoves
3. Sanitation
4. Rubbish
5. Tracks and Routes
6. Flora and Fauna
7. Dieback Disease
8. Noise

www.bushwalkingaustralia.org/



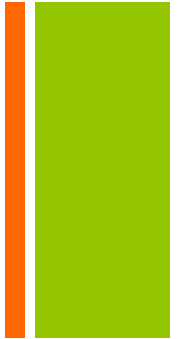
Minimal Impact Bushwalking – Bushwalking NSW

- Do nothing that shows where you have been
- Take nothing but happy memories and photographs
- Leave nothing but footprints

Bushwalking NSW (Revised March 2017)

www.bushwalkingnsw.org.au/bushwalkers-code/

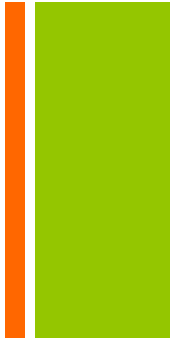
Bushwalker's Code



- Be self-reliant
- Tread softly
- Keep your gear clean
- Pack it in, pack it out
- Respect
- Protect Plants and Animals
- Hygiene
- Choose campsites carefully
- When in camp
- Fire safety
- Before you leave
- Safety



Leave no trace 7 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 your hosts and other visitors

www.lnt.org.au/programs/7-principles.html

minimal impact camping means **caring**

Minimal impact

Minimal impact (n). Caring activities designed to decrease the negative effects that users have, especially on the environment.



IT'S ALL ABOUT CARING!



Washing up



Toilets in the bush



Fires and stoves



Toilets in the bush



Fires and stoves



Pack it in – pack it out!



Campsite etiquette

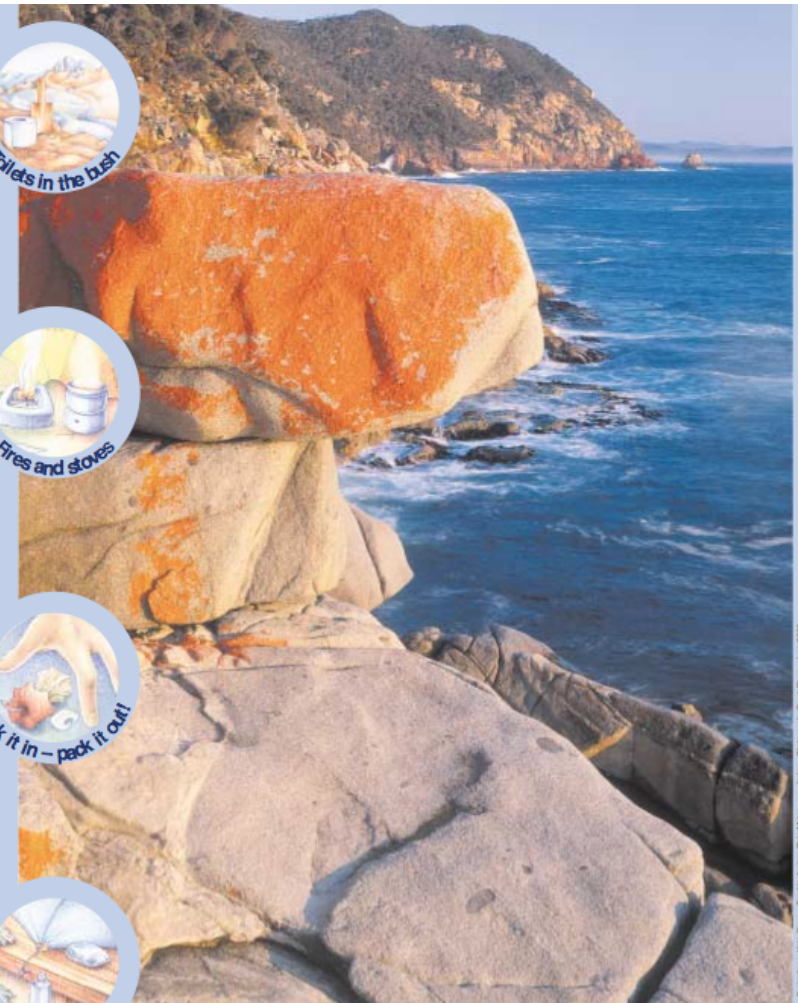


Illustration: Neil Green. Original design: Ulmer Mann, U.S. Design. Photograph: Geoff Dicker. June 2000

For further information, questions and comments contact the Parks and Wildlife Service
Ph: (03) 6233 2669 Fax: (03) 6223 8308
Email: tracks@dpw.tas.gov.au

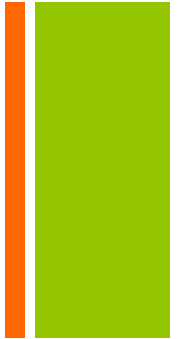


Walk softly - QLD - Department of National Parks, Sports and Racing
www.npsr.qld.gov.au/experiences/bushwalking/walk_softly.html

walksafe
means equipped to be able to enjoy bushwalking



Department of
Primary Industries



BIOSECURITY ACT 2015

A shared responsibility.....

'Government, industry and the people of NSW working together to protect the economy, environment and community from the negative impacts of animal and plant pests and diseases, weeds and contaminants for the benefit of all people in NSW.' ?



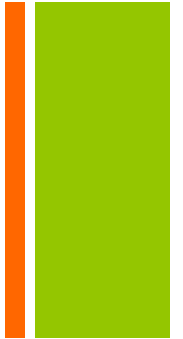
Department of
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BIOSECURITY ACT 2015

Discussion Paper: Recreation in natural areas



+ Biosecurity outcomes



- Prevention
- Elimination
- Minimisation strategies including containment
- Protection

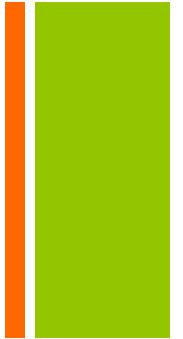
The first step to prevention is awareness raising, reviewing the Minimum Impact Code and how it relates to Biosecurity measures.



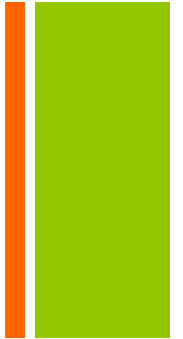
Do we really need to think biosecurity?

- Of 63% of visitors in D'Anguilar National Park near Brisbane who found seeds on their clothing, 41% brushed them off in the park
- Review of papers worldwide found clothing played a large part in spreading weeds
- Uncovered shoes, socks and legs contained more seeds than covered legs protected with trousers
- Wearing trousers could reduce the number of seeds collected on socks by 94%, and by 55% on laces
- Sports socks that were of a cotton/nylon blend attracted more seeds than hiking socks which were about 50% wool.
- Mountain huts showed compacted soil, less vegetation, bare ground – all conditions ripe for weed infestation.
- Latest suggestion of mouse-ear hawkweed infestation near Mt Twynam (KNP) from walkers' gear, probably after returning from NZ.

References of studies available in Resources



+ Relating bushwalking to biosecurity

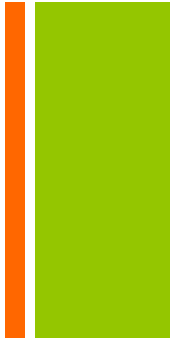


- Bringing weed seeds, insect pests, or aquatic pests like waterweeds into new areas on their shoes, gear, boats or vehicles.
- Damaging vegetation and soil, exposing new ground where seeds can establish
- Damaging native wildlife habitat and creating conditions that encourage non-native species
- Transporting fungus spores, plant diseases or wildlife diseases into previously un-affected natural areas or adjacent farmlands



Can walkers spread weed seeds?

- Seeds can be picked up on footwear, socks, laces and trousers and open weave sections of backpacks
- Open-weave cotton T-shirts
- Velcro fastenings on jackets and gaiters
- Open pockets
- Seeds caught in muddy boots
- Picked up by vehicles in 'weedy' carpark or on car mats
- Emptied out of tents and picked off socks
- Greater number of weed species around mountain huts
- From interstate or overseas



+ Hunting Hawkweed Volunteer Program



The Hawkweed Eradication program currently under way is focused on removing this invasive weed permanently from the park and bushwalkers are helping by reporting sightings and volunteering for the 'Hunting Hawkweed Volunteer Program'

Volunteer and hawkweed information: www.nationalparks.nsw.gov.au/things-to-do/volunteer-activities/hunting-hawkweed

<http://www.environment.nsw.gov.au/pestsweeds/OrangeHawkweed.htm>

+ Connecting bushwalkers and weeds

- Reporting sightings, take a GPS and photo
- Volunteering for the 'Hunting Hawkweed program
- Ph number on sign or email:
biosecurity@industry.nsw.gov.au



Photos
J.Caldwell

+Fungal diseases

Phytophthora cinnamomi

- Spreads through soil, water and organic matter
- It can remain dormant for long periods during dry weather
- Is impossible in most situations to eradicate from infested areas which means limiting further spread is critical.
- Any activity that moves soil, water or plant material can spread the disease. This includes soil on tools, footwear and vehicles
- Key threatening process

www.environment.nsw.gov.au/determinations/PhytophthoraKTPListing.htm



+ *Fungal diseases*

Myrtle rust

- Is a disease caused by the fungus *Puccinia psidii*
- It affects trees and shrubs in the Myrtaceae plant family—
- Attacks young, soft, actively-growing leaves, shoot tips and young stems, as well as fruits and flower parts.
- The first signs of rust infection are tiny raised spots or pustules on infected leaves.
- Pustules erupt into distinctive bright yellow spore masses.
- Can cause deformed leaves, heavy defoliation of branches, dieback, stunted growth and plant death.



+ *Fungal diseases*
Myrtle rust



A Looming Threat – ABC Gardening Australia - SERIES 23 Episode 27
<http://www.abc.net.au/gardening/stories/s3606794.htm>

+ Other resources available

Arrive Clean, Leave Clean

Guidelines to help prevent the spread of invasive plant diseases and weeds threatening our native plants, animals and ecosystems



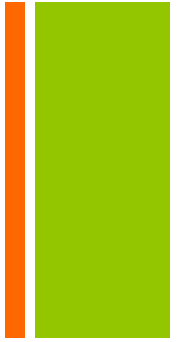
<http://www.environment.gov.au/biodiversity/invasive-species/publications/arrive-clean-leave-clean>

KEEP YOUR GEAR CLEAN IN THE WILD

Make it second nature



Incorporating good
weed behaviour
into Minimal Impact



invasives.org.au/project/keep-gear-clean-wild/

KEEP YOUR GEAR CLEAN IN THE WILD

Make it second nature

Nothing beats getting out and exploring Australia's wild places – camping, bushwalking, boating or fishing.

And what a place we have to explore! Australia is home to some of the most remote, pristine and beautiful places on the planet.

But while we have a strong ethos of 'treading lightly' when out in the bush, it's all-too-easy to unwittingly spread weeds and diseases that can kill wildlife and destroy wild places.

Leave hitch-hikers behind!

Weeds, pests and diseases are major threats to Australia's native plants and animals.

They can hitch a ride on muddy hiking boots, in wet fishing gear or even hidden on the dirty rims of your car.

- **Chytrid** is a fungal disease blamed for frog extinctions both here and overseas.
- **Phytophthora** is a root rot that destroys native plants. It is spread in mud and soil on walkers' boots, bikes and vehicles.
- **Didymo**, also known as 'rock snot', has not yet made it to Australia but can be transported on wet fishing gear. It has devastated riverbeds in New Zealand.
- **Weeds** radically alter natural ecosystems, smothering and outcompeting native plants, robbing wildlife of food and shelter.



Photo credit: Creative Commons Library, JJ Harrison

What you can do

Here are some simple techniques you can use to keep your gear clean and our national parks and other wild places free of deadly pests and diseases:

- **Thoroughly check** footwear, waders, equipment, bikes, boats and vehicles for mud, soil, algae and plant material before arriving at or leaving each location.
- **Clean your boots, socks, waders, equipment, bikes, boats and vehicles** by scrubbing in local or town water before arriving at and leaving each location. Ensure all mud, soil and debris is removed and left on site.
- **Disinfect** the soles of your footwear using a spray bottle filled with disinfectant before entering and leaving a location. Use methylated spirits (70-100%), bleach (dilute to 25%) or F10 solution. Wait for one minute then step forward to avoid recontaminating footwear.
- **Before use at another location**, completely dry all waders, footwear, equipment, boats and vehicles.
- **Avoid clothes or footwear that capture weed seed.**

By keeping your bushwalking gear clean you can do your bit to help keep diseases out of wild places like Mt Anne, part of Tasmania's stunning Wilderness World Heritage.

'Sock protectors' are widely available these days.

- **Keep to walking tracks** to avoid spreading diseases into untracked areas, especially on wet ground.
- **Pick off seeds from shoes and clothes**, and check your gear to make sure seeds are not hiding in pockets or on Velcro straps.

Support us

The Invasive Species Council campaigns to protect Australia's native plants and animals from the growing threats of weeds, feral animals and diseases.

With your help we can educate more Australians about these dangers and protect the wild places we all love.

To donate online visit invasives.org.au



<https://invasives.org.au/project/keep-gear-clean-wild/>

+ Some things that you can do?

- Clothing

- Choose 'no weave' or 'close weave' clothing like outdoor shirts to stop seeds sticking
- Wear knee length gaiters or long pants and sock protectors
- Carry a small brush/toothbrush for removing seeds
- Carry a zip lock bag to dispose of seeds picked off clothing and socks and carry it out
- Making sure pockets are closed especially when accessing road verges or carparks where ground disturbance is more prevalent or when proceeding through disturbed areas or thick bush
- Ensure your boots have been scrubbed clean and sprayed with a solution of 70% metho to 30% water. (Be careful using bleach on your clothes)

+ Some things that you can do?

- Gear

Before you go into a natural area, ensure your gear is thoroughly clean

- Ensure you have washed or sprayed your tent pegs, walking poles, bottom of gaiters, and packs
- Ensure your vehicle is clean.



Boot cleaning station – Nadgee Nature Reserve. Photos S.Fulcher

+ Some things that you can do?

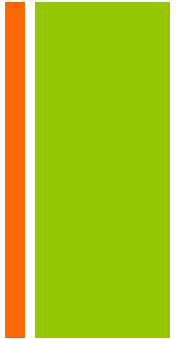
- Gear

When you are out in the bush

- Use a boot cleaning station if available or spray your boots before you start with metho
- Stay on a track when you can
- Empty tent of debris where you are camped - don't carry the seeds many kms
- Thoroughly clean and remove all dirt and plant material on backpacks, boots and other gear before you leave and go to another site especially in wet conditions
- When parking your car, avoid weedy areas near carparks
- Keep a spray bottle of 70% metho to water and a brush to clean tyres, and boots before you leave a site (esp if going to another site)
- **Afterwards** - Think about where you will empty the 'stuff' on your car's floor mats and wash your car



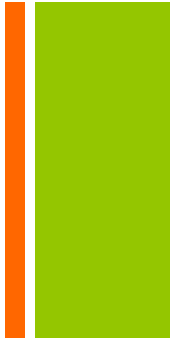
Resources and actions to help your club



- Make a leaders box with spray bottles and brushes
- Organise an information night to raise awareness
- Review your club's Minimum Impact or Bushwalker's Code
- Add a section on the walks proposal to include Biosecurity measures
- Use this PowerPoint and notes
- Series of biosecurity measures In Tasmania including great videos at Bookend Trust website: www.bookendtrust.com/projects-tab/biosecurity
- Arrive clean/Leave clean
- 'Keep your gear clean in the wild' brochure
- Further references in the notes text document



Resources and actions to help your club



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Bushwalkers and Preventing the spread of Orange Hawkweed



Office of Environment & Heritage



- Orange Hawkweed is a Class 1 Noxious weed in NSW and has the potential to cause serious environmental damage if it's spread is not controlled.
- Currently the *NSW Orange Hawkweed Strategy* coordinates the control and monitoring of existing infestations, as well as investigating potential new infestations within Kosciuszko NP. These works are carried out by a team of Field Officers assisted by dedicated volunteers – who are often also keen bushwalkers!
- Now we are looking to continue the involvement bushwalkers and other parks users by investigating strategies to increase awareness of the importance of boot hygiene.



Seed spread and brushing your boots



Office of
Environment
& Heritage



- Unfortunately, humans can play a big part in seed dispersal. Seeds can stick into socks, laces and can be carried in soil on the soles of your shoes.

- Luckily, brushing down your boots is a very effective way of stopping weeds spreading!

- We are hoping to cultivate a practice of brushing down boots to remove soil and seeds before entering a walking trail and when exiting a trail.

- Our end objective is to install brush-down bays at trailheads, starting with key trails in Kosciuszko NP.



How can you Help?



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& Heritage



- By doing what you are doing RIGHT NOW!!
- Educating yourself on the potential environmental impacts you might have within a park and discussing the issues and the ways you can moderate your impact helps to make minimum impact bushwalking strategies more commonplace.

■ Volunteer!

- Join the Hawkweed team and help us survey in the spectacular Jagungal Wilderness.

- [www.environment.gov.au/NationalParks/p...ering](http://www.environment.gov.au/NationalParks/p...)





+Most of all have a conversation about Minimum Impact and Biosecurity



Photo-S.Fulcher