



## BRACKENRIDGE ESTATE

### ALIEN INVASIVE SPECIES IDENTIFICATION AND REMOVAL METHODS

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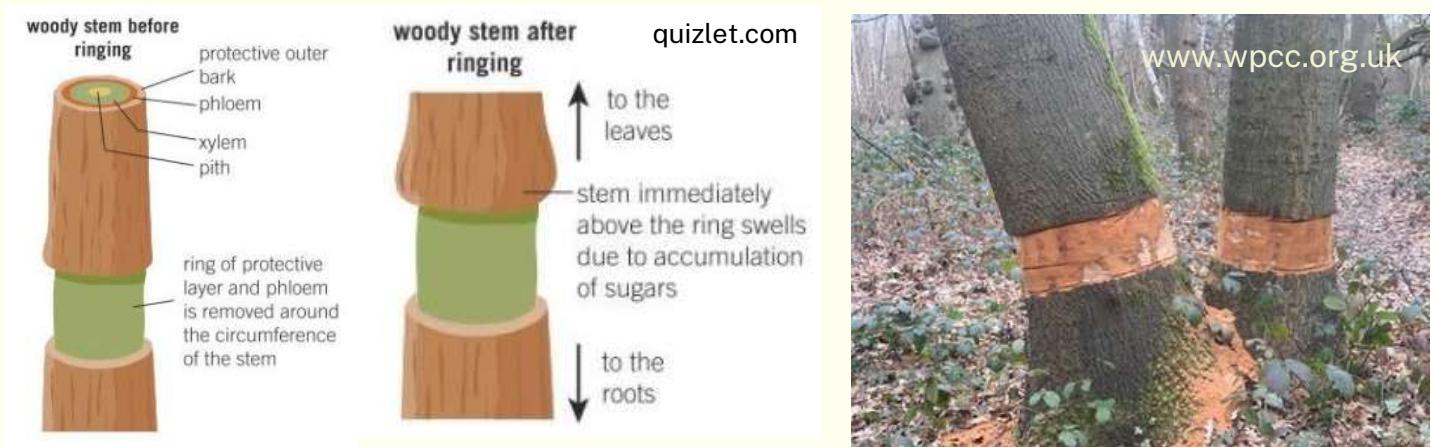
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## Descriptions of removal methods.

### RING-BARKING/GIRDLING

This is the removal of a section of bark around the trunk of a tree. It prevents the movement of water and nutrients from the roots up to the branches and leaves, causing the tree to die.



### FRILLING

This is similar to ring-barking where you remove the layer of bark and phloem. To do this you remove bark in a downward strip, keeping the bottom of the strip still attached to the tree. This method is not as effective as ring-barking.

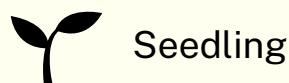


# INVASIVE ALIEN CONTROL

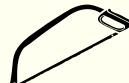
## GRUBBING

This is the removal of all of the root stock of the removed plant left behind in the soil. Some plants can resprout, like sword fern and pampas grass, if any part of the root system is left behind.

### Descriptions of icons.



Seedling



Bow saw



Sapling



Goggles



Tree



Gloves



Tussock



Loppers



Tree popper



Chainsaw



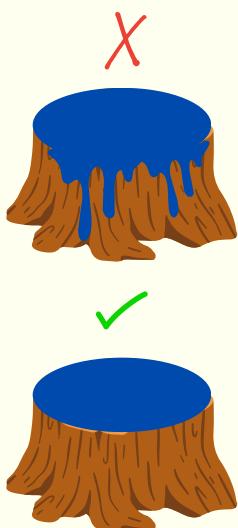
Kaput 100 gel



Garden fork

### Application of Kaput 100 herbicide gel - reminder:

- **WEAR** gloves when working with the Kaput 100 gel.
- Paint the gel on with the paint brushes provided.
- Only place the gel on the cut part of the stump and make sure that the gel doesn't touch any other vegetation or drip onto the soil, as it will kill it the vegetation and damage the soil.
- Do not place gel on the stump if rain is expected within two hours of application.



**IDENTIFICATION**

[apps.lucidcentral.org](http://apps.lucidcentral.org)



**Leaves and flowers**



**Seed pods**

## REQUIRED TOOLS



## REMOVAL METHODS



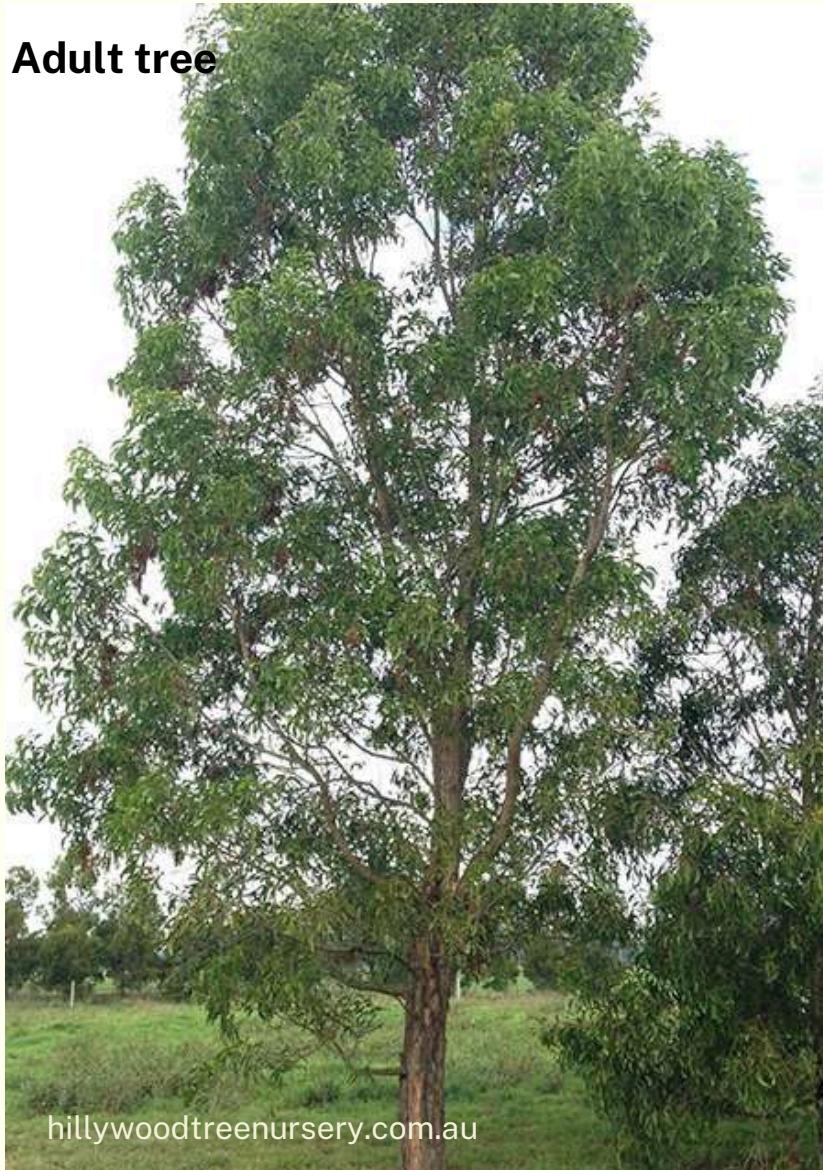
Can be pulled out by hand, use a small gardening fork to loosen soil around the seedling. This makes it easier to remove the seedling with the whole root.



Use a tree popper to pull out with the root. Individuals that can't be removed with tree popper must be cut to a stump. You don't need to stump treat Rooikrans.



Ring-bark large individuals that are not easily cut with a chainsaw. Smaller trees can be cut to a stump. Stump treatment is not necessary.

**IDENTIFICATION****Adult tree**[za.pinterest.com](https://za.pinterest.com)**Leaves and flowers**[www.ouriquesfarm.com](http://www.ouriquesfarm.com)**Seed pods**

**REQUIRED TOOLS****REMOVAL METHODS**

Can be pulled out by hand, use a small gardening fork to loosen soil around the seedling. This makes it easier to remove the seedling with the whole root.



Ring-bark or frill saplings and where necessary, cut to a stump. Blackwood resprouts, apply Kaput 100 gel to stump.



Ring-bark or frill large individuals that are not easily cut with a chainsaw. Smaller trees can be cut to a stump. Treat the stump with Kaput 100 gel.

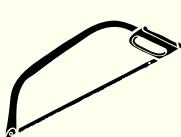
**IDENTIFICATION****Adult tree**

www.cabidigitallibrary.org



tropical.theferns.info

**Leaves and flowers****Seed pods**

**REQUIRED TOOLS****REMOVAL METHODS**

Can be pulled out by hand, use a small gardening fork to loosen soil around the seedling. This makes it easier to remove the seedling with the whole root.



Use a tree popper to pull out with the root. Individuals that can't be removed with tree popper must be cut to a stump. Black wattle resprouts, apply Kaput 100 gel to stump.



Ring-bark or frill large individuals that are not easily cut with a chainsaw. Smaller trees can be cut to a stump. Treat the stump with Kaput 100 gel.

## IDENTIFICATION



Leaves and flowers



Seed pods

## REQUIRED TOOLS



## REMOVAL METHODS



Can be pulled out by hand, use a small gardening fork to loosen soil around the seedling. This makes it easier to remove the seedling with the whole root.



Use a tree popper to pull out with the root. Individuals that can't be removed with tree popper must be cut to a stump. Port Jackson resprouts, apply Kaput 100 gel to stump.

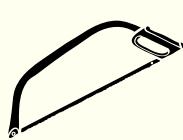


Ring-bark or frill large individuals that are not easily cut with a chainsaw. Smaller trees can be cut to a stump. Treat the stump with Kaput 100 gel.

## **IDENTIFICATION**

**Adult plant**



**REQUIRED TOOLS****REMOVAL METHODS**

Grub out the whole seedling, ensure you get all the roots out.



Grub out the entire tussock, ensure you get all the roots out., You may need to treat with a foliar (leaf) herbicide.

**IDENTIFICATION****Leaves and flowers****Seed casings**

## REQUIRED TOOLS



## REMOVAL METHODS



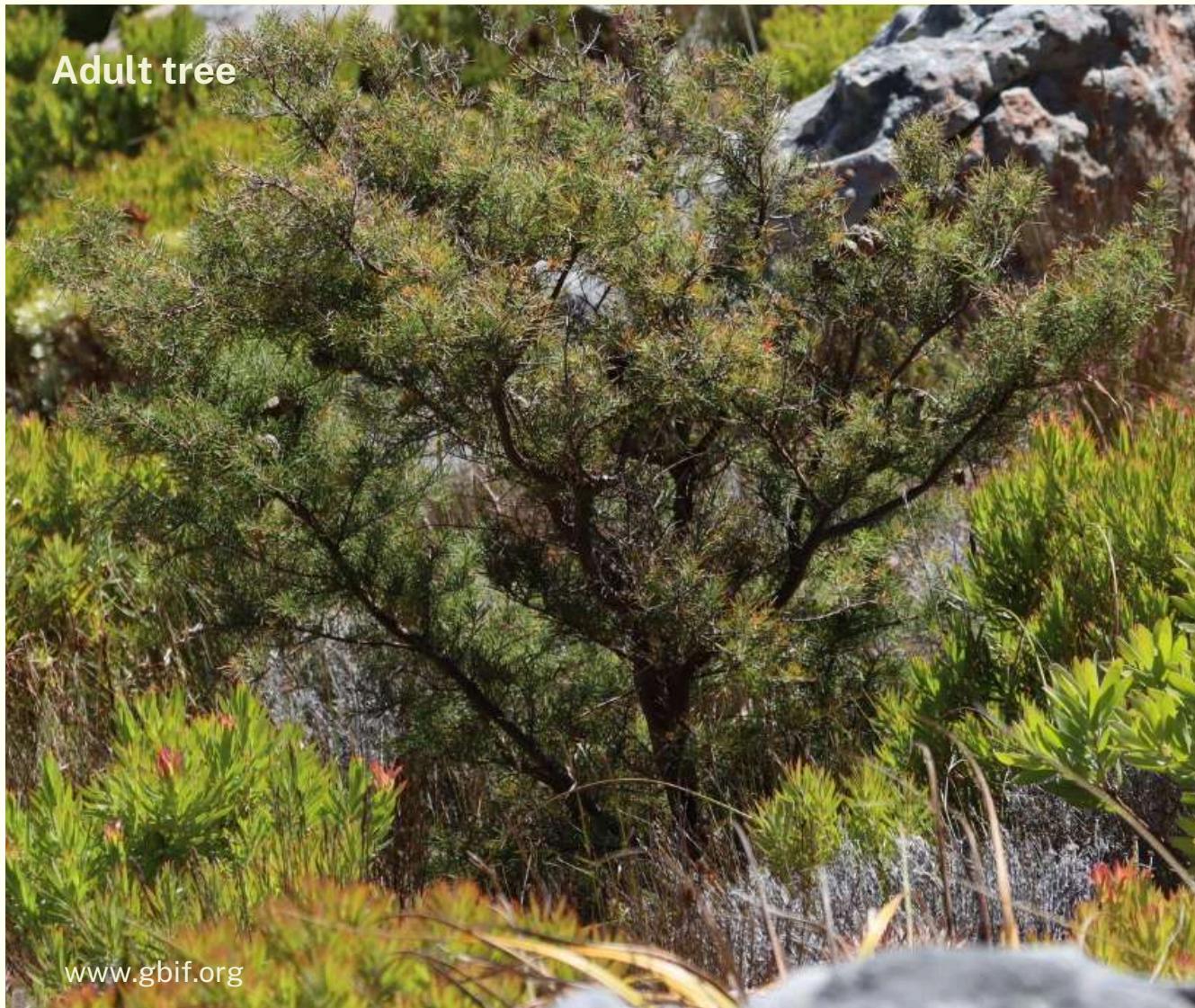
Can be pulled out by hand, use a small gardening fork to loosen soil around the seedling. This makes it easier to remove the seedling with the whole root.



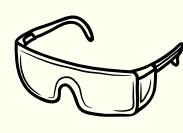
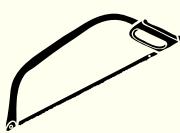
Use a tree popper to pull out with the root. Individuals that can't be removed with tree popper must be cut to a stump. Bluegum resprouts, apply Kaput 100 gel to stump.



Ring-bark or frill large individuals that are not easily cut with a chainsaw. Smaller trees can be cut to a stump. Treat the stump with Kaput 100 gel.

**IDENTIFICATION****Leaves and flowers****Seed pods**

## REQUIRED TOOLS



## REMOVAL METHODS



Can be pulled out by hand, use a small gardening fork to loosen soil around the seedling. This makes it easier to remove the seedling with the whole root.



Use a tree popper to pull out with the root. Individuals that can't be removed with tree popper must be cut to a stump. **Ensure you lay a plastic sheet down to catch the cones and seeds.** Please wear goggles to protect your eyes from the needles.



Larger individuals can be removed using the same methods as the sapling stage. No stump treatment is required.



Please note that *Hakea sericea* will drop its cones and seeds while you are removing it. Please ensure that you have a plastic sheet big enough to cover the ground around the shrub to catch any cones and seeds.

**IDENTIFICATION****Leaf and stem****Fruit**

## REQUIRED TOOLS



## REMOVAL METHODS



Can be pulled out by hand, use a small gardening fork to loosen soil around the seedling. This makes it easier to remove the seedling with the whole root. **Be careful of the thorns.**



Use a tree popper to pull out with the root. Some individuals may not come out with the root, grub out the roots.



Cut the adult shrub low and then grub out what you can. Apply Kaput 100 gel to any stump remaining after grubbing.



Please note that *Lantana camara* is poison and can cause skin irritation. Please make sure you wear gloves and a long sleeve top to limit skin contact with the leaves and thorns.

# CLUSTER PINE

*Pinus pinaster*

CATEGORY

1

## IDENTIFICATION



Needles



Cones

## REQUIRED TOOLS



## REMOVAL METHODS



Can be pulled out by hand, use a small gardening fork to loosen soil around the seedling. This makes it easier to remove the seedling with the whole root.



Use a tree popper to pull out with the root. Individuals that can't be removed with tree popper must be cut to a stump. Make sure you wear goggles to protect your eyes from the needles.



Ring-bark all the way down to the roots or cut down to a stump. If you are cutting with a chainsaw, ensure you cut below any regrowth, as it can resprout.

# MONTEREY PINE

*Pinus radiata*

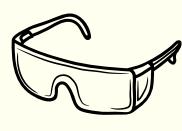
CATEGORY

1

## IDENTIFICATION



## REQUIRED TOOLS



## REMOVAL METHODS



Can be pulled out by hand, use a small gardening fork to loosen soil around the seedling. This makes it easier to remove the seedling with the whole root.



Use a tree popper to pull out with the root. Individuals that can't be removed with tree popper must be cut to a stump. Make sure you wear goggles to protect your eyes from the needles.



Ring-bark all the way down to the roots or cut down to a stump. If you are cutting with a chainsaw, ensure you cut below any regrowth, as it can resprout.

**IDENTIFICATION**

**REQUIRED TOOLS****REMOVAL METHODS**

Can be pulled out by hand, use a small gardening fork to loosen soil around the seedling. This makes it easier to remove the seedling with the whole root.



Use a tree popper to pull out with the root. Individuals that can't be removed with tree popper must be cut to a stump. Bugweed resprouts, apply Kaput 100 gel to stump.



Ring-bark large individuals that are not easily cut with a chainsaw. Smaller trees can be cut to a stump. Treat the stump with Kaput 100 gel.