



SOUTH AFRICA

BEEES, GUM TREES AND REGULATIONS

A GUIDE FOR LANDOWNERS

THIS REPORT WAS
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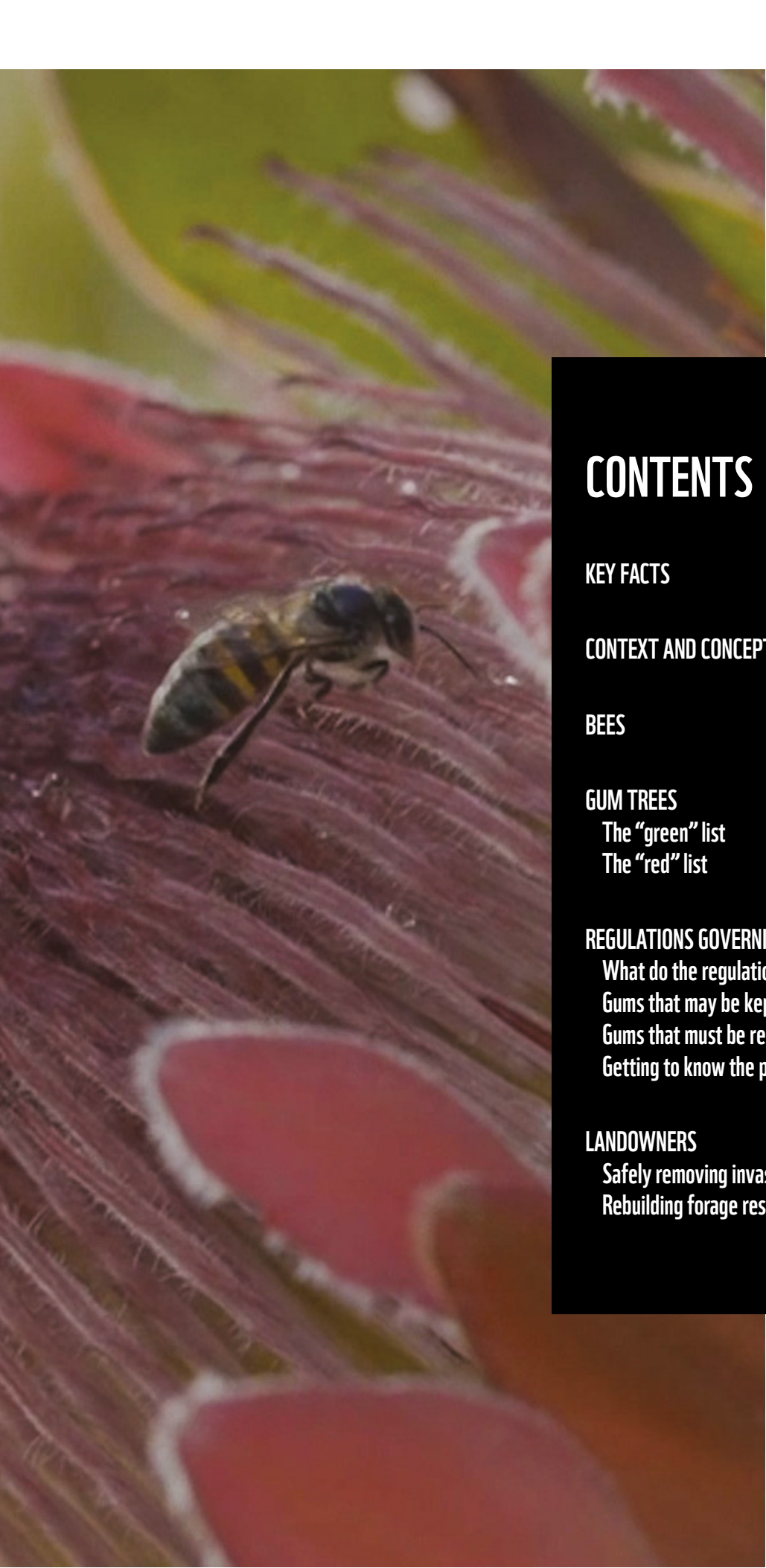
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KEY FACTS

In South Africa, there are over 85 different species of eucalyptus (gum) trees. Gum trees are not indigenous to South Africa and six gum species have been classified as invasive. However, without gum trees, the beekeeping industry cannot survive, and without honey bees, most crops cannot be pollinated.

- Because of their mass flowering at various times of the year, gum trees provide a constant and reliable flow of nectar and a source of pollen, making them essential to the beekeeping industry.
- Bees pollinate over 50 crops in South Africa, making them vital to the agricultural industry.
- It is estimated that about 50% of South Africa's total honey crop comes from gum trees.
- Gums are also excellent sources of timber, function as windbreaks, provide shade and have medicinal properties.
- Six gum species have been listed as invaders in South Africa. They not only spread easily but also increase fire risk and use up to 12 times more water than indigenous trees. These trees must be removed if they grow in a sensitive area on your land.
- There are unscrupulous contractors who claim that all gums must be removed from all areas. That is not true.
- According to legislation, only the invasive species must be removed, **but in riparian areas, all gum species must be removed.**



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CONTEXT AND CONCEPTS

The aim of this booklet is to assist and guide landowners to protect or grow forage resources for honey bees. These resources also support other insect pollinators and natural predators.

Worldwide, and also in South Africa, insect pollinator populations are declining. Losing natural areas to mono-cropping, the use of pesticides and a shortage of nectar and pollen sources at certain times of the year are just some threats reducing the numbers of honey bees. Without the pollination services honey bees provide, over 50 crops in South Africa will fail.

To support the health of honey bees and other pollinators, the focus needs to be on providing diverse forage sources – from indigenous flowers and trees growing wild in the veld,

flowering fruit trees in orchards, flowers and trees growing in gardens and, also, from gum trees.

Over the last decade or so, there has been much conflict, confusion and debate about the regulations that apply to the removal of eucalyptus species based on their level of invasiveness and intensive water usage.

Because gum trees are critical to the survival of managed bee hives, there was a loud outcry from the beekeeping industry. Studies were commissioned and some of the regulations were revised.

Not all gum trees are bad, and the regulations do not demand that all gum trees be removed from all areas in South Africa. Of the over 85 species growing in South Africa, only six have been classified as Category 1b Listed Invasive Species that must be removed from “sensitive areas”.¹

This guide will help landowners to understand why gum trees are vital to both the beekeeping and the agricultural industry in South Africa. Useful links are given to the relevant legislation, and to other references and organisations that can support landowners in following bee-friendly practices.²



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¹ dffe.gov.za/sites/default/files/gazetted_notices/nemba_invasivespecieslist_g43726gon1003.pdf

² Also see Gums & Bees: A roadmap for landowners in South Africa at sanbi.org/wp-content/uploads/2018/04/gumsbees-web-version-hyperlinks.pdf

WHICH REGULATIONS GOVERN THE REMOVAL OF GUM TREES?

The removal of gum trees is governed by the Alien and Invasive Species regulations that were passed in terms of section 97(1) of the National Environmental Management: Biodiversity Act 10 of 2004³ (published as Government Notice R1020 in *Government Gazette* 43735 of 25 September 2020). These regulations are amended from time to time. The latest amendments came into effect on 25 October 2020.

IMPORTANT CONCEPTS

What is a “sensitive area”?

Sensitive areas include riparian habitats, rivers, dams, wetlands, estuaries and conservation areas. These could be formally proclaimed, such as nature reserves, or informally protected, such as conservancies or private land.

What are “riparian areas” or “riparian zones”?

The Alien and Invasive Species regulations define a riparian area as the area “within 32 metres of the edge of a river, lake, dam, wetland or estuary, or within the 1:100-year floodline, whichever is the greater”.⁴

A riparian habitat or zone is a type of wildlife habitat found along the banks of a river, stream or other actively moving source of water, such as a spring or waterfall. The term generally refers only to freshwater or mildly brackish habitats surrounded by vegetation and may include marshes, swamps or bogs next to rivers. Barren areas, such as a river moving through bare rock, are not considered being riparian zones.⁵

3 The Biodiversity Act can be accessed at gov.za/documents/national-environmental-management-biodiversity-act-0

4 gov.za/sites/default/files/gcis_document/202009/43735rg11176gon1020.pdf

5 thespruce.com/riparian-habitat-characteristics-386910





Eucalyptus is a diverse genus of flowering trees and shrubs belonging to the myrtle family, Myrtaceae. *Eucalyptus* is one of three similar genera that are commonly referred to as “eucalypts”, the others being *Corymbia* and *Angophora*. Many of the 700 species are known as “gum trees” because they exude a copious sap from any break in the bark. There are no indigenous eucalypts in South Africa.

BEEES



Caring for honey bees supports South Africa's food security.

The more than 50 agricultural crops pollinated by honey bees are worth over R10,3 billion per year to the South African economy.

Honey bees thrive on a diverse, healthy diet to sustain and expand their population.

Viable and healthy hives are needed so that there can be enough bees to pollinate crops and make honey.

Declining honey bee populations and a shortage of beehives mean poor pollination of crops, which translates into poor harvests, fewer food choices, less food and job security and more threats in the agricultural industry.

South Africa imports more honey than it produces. Increasing honey bee populations means more opportunities to grow the local honey industry and provide more jobs in agriculture.

By providing a sufficient and constant source of forage for honey bees and managing other threats to their survival (e.g. by not spraying insecticide, especially not when crops are flowering and bees are active), landowners can do much to maintain and increase healthy hive numbers.



GUM TREES

To identify the gum trees on your land, you need the full-grown flower buds and a mature dry fruit, most likely found on the ground beneath the tree.

THE “GREEN” LIST

Over 80 gum tree species are not invasive and are not considered a threat to biodiversity (unless they grow in riparian zones). Below are four examples.



THE “RED” LIST

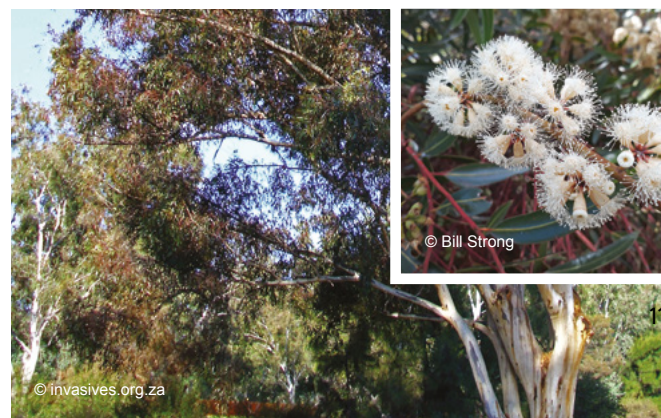
Six gum tree species have been declared invasive because of their negative impact on water resources, biodiversity and erosion, and an increased fire risk. These trees must be removed.

However, if gum trees fulfil a particular function in a sensitive landscape, landowners can apply for a permit to

retain them by emailing the Alien Invasive Species permit issuing office at the Department of Forestry, Fisheries and the Environment (DEFF) (AISpermits@environment.gov.za). Local governments can assist in pointing landowners in the right direction (dffe.gov.za/legislation/permitapplication_invasivespeciesactivities).



River red gum (*Eucalyptus camaldulensis* and hybrids with *E. tereticornis*)



Sugar gum (*Eucalyptus cladocalyx*)



Spider gum (*Eucalyptus conferruminata*)



Karri (*Eucalyptus diversicolor*)



Saligna gum, rose gum (*Eucalyptus grandis* and hybrids)



Forest red gum (*Eucalyptus tereticornis*)

REGULATIONS GOVERNING THE REMOVAL OF GUM TREES

The regulations classify invasive alien plants into four categories and prescribe specific actions that landowners must or may take. If certain criteria are met, gum species need not be removed, unless they occur in riparian or protected areas.

WHAT DO THE REGULATIONS SAY?

The Alien and Invasive Species regulations classify invasive alien plants into four categories and stipulate which action should be taken by landowners.

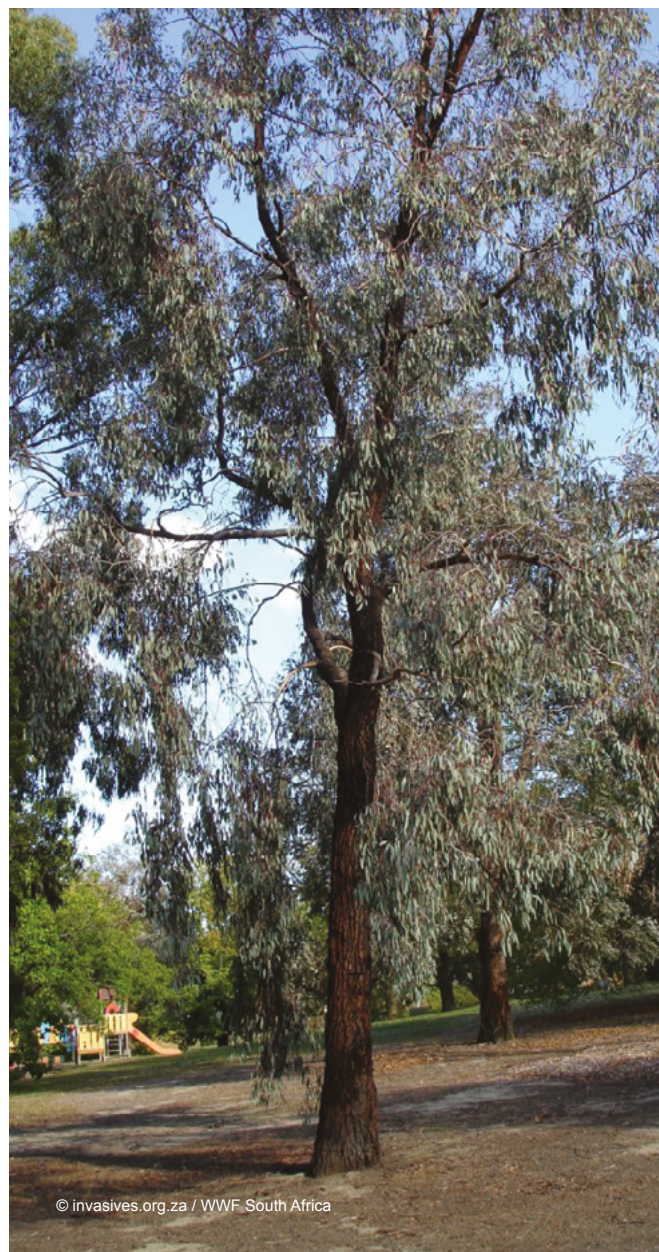
Category	Action to be taken	Regulation number
Category 1a	Species must be eradicated	2
Category 1b	Species must be controlled	3
Category 2	A permit is required to carry out a restricted activity and the species must be contained within the area specified in the permit.	4
Category 3	These species are subject to exemptions and prohibitions, but if they occur in riparian areas, they must be treated as Category 1b species.	5



One of the **restricted activities** (regulation 6) is “spreading or allowing the spread of, any specimen of a listed invasive species”.

Of all the gum species in South Africa, only six species are listed under Category 1b as species that must be controlled. The others are not listed.⁶

⁶ Originally published for comment as National Environmental Management: Biodiversity Act (10/2004): Draft Alien and Invasive Species Lists, 2014 (General Notice 78 of 2014 in Government Gazette 37320 of 12 February 2014). The latest version, National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) Alien and Invasive Species Lists, 2020 (Notice 1003 in *Government Gazette* 43726 of 18 September 2020) is available at dffe.gov.za/sites/default/files/gazetted_notices/nemba_invasivespecieslist_g43726gon1003.pdf



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The Alien and Invasive Species regulations are available at gov.za/sites/default/files/gcis_document/202009/43735rg11176gon1020.pdf

The National Environmental Management: Biodiversity Act 10 of 2004 can be accessed at gov.za/documents/national-environmental-management-biodiversity-act-o

The Alien and Invasive Species Lists, 2020, based on Notice 78 of 2014, are available at dffe.gov.za/sites/default/files/gazetted_notices/nemba_invasivespecieslist_g43726gon1003.pdf

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GUMS THAT MAY BE KEPT

Landowners may keep all gum species, even the species on the “red list”, provided that these species are managed to control any risk of invasion in other areas. The following criteria must be met:



If the land is in the Nama Karoo, Succulent Karoo or desert biomes, gum trees need not be removed. Note that this includes all six invasive species.



If the gums are within cultivated land and are at least 50 metres away from untransformed or natural land (natural land may not be cleared to achieve this) they do not need to be removed.



If the gums are within 50 metres of the main house on a farm, they do not need to be removed.



Gums in urban areas need not be removed if their trunk diameter was over 400 mm (at a height of 1 000 mm) at the time of publishing of the regulations (1 October 2014).



If the gums are in an existing formal plantation, no intervention is required.

GUMS THAT MUST BE REMOVED

Landowners must remove all gum species if the following criteria are met:



Eucalyptus trees growing within a riparian area (i.e. within 32 metres of the edge of a river, lake, dam, wetland or estuary, or within the 1:100-year floodline, whichever is the greater).



Gums growing in protected areas (declared national parks, provincial reserves, mountain catchment areas, private nature reserves and conservation areas). Discretion can be applied for non-invading species that add value to a protected area, such as shade for parking or historical value. In that case, the landowner can apply for a permit to keep or demarcate the trees, under Category 2 of the regulations.

THESE GUMS MUST ALWAYS BE REMOVED

All gums in riparian areas must be removed.

This is not because they are all invasive or have the potential to be invasive, but because they use so much water. If gums are left in riparian areas, they will have a negative impact on downstream landscapes and ecosystems and their functions.

Listed gums in protected and conservation areas must be removed. This applies to protected areas (nature reserves, national parks and mountain catchment areas), listed ecosystems and natural areas that have been identified for conservation in terms of Bioregional or Biodiversity Management Plans.

GETTING TO KNOW THE PERMIT REQUIREMENTS

If the gum species on a landowner's property is one of the six listed invasive gum trees (or hybrids of them), it needs to be removed. However, if it is used as part of a plantation, woodlot, **bee-forage area**, wind-row or to line avenues, it is possible to keep these trees by applying for a permit. The purpose of the permit is to rank the gums as a Category 2 Invasive Listed Species under the Alien and Invasive Species regulations, giving the landowner permission to keep the trees if certain provisions are met.

Although the permit will allow landowners to keep the listed gum trees in the demarcated area, the trees will have to be cleared outside that area. The landowner will also be accountable if the gum trees spread to a neighbouring property.

What is a Category 2 permit?

Category 2 Listed Invasive Species require a permit to carry out a restricted activity. The restricted activities most relevant to landowners include "having in possession", "growing, breeding, propagating", and "spreading or allowing the spread of". The species must be contained within the area specified in the permit.

How does one apply for a permit?

Landowners can send their queries or permit applications to AISpermits@environment.gov.za.

The permit application form to classify invasive gum trees as Category 2 Listed Invasive Species is available at environment.gov.za/documents/forms or invasives.org.za.

Besides the Category 2 permit application form, landowners also need to compile an Environmental Risk Assessment report. The Risk Assessment report is carried out at the landowner's cost by a consultant or a registered Risk Assessment specialist.⁷ The Risk Assessment report must accompany the permit application.

SELLING LAND POPULATED WITH LISTED GUMS

Selling a property populated by invasive gums means passing on a liability to the new owner.

Invasive gums need to be listed on the compulsory Declaration of Invasive Species form filled out by any seller of a property. It should be handed as notification to the buyer before any sale of property can be concluded in South Africa.

A copy of this form needs to be sent to AIScompliance@environment.gov.za.



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⁷ dffe.gov.za/legislation/actsregulations

LANDOWNERS

Once invasive gum species have been safely removed from sensitive areas, landowners can grow new plants that are sources of nectar and pollen for honey bees and other wild pollinators in these cleared areas.

SAFELY REMOVING INVASIVE GUMS

Identify the trees correctly and assess the context

Once the gum species have been correctly identified as invasive according to the Alien and Invasive Species regulations, they need to be safely removed from sensitive areas.

It is important to assess the context of these gum trees in the landscape. If an important functional aspect of the farm (e.g. providing shade for livestock or windbreaks for crops) will be compromised by the removal of the listed gum trees, it is advisable to apply for a Category 2 permit.

USING PERMITTING TO SUPPORT HONEY BEES

In the Western Cape, with its long, dry summers, mono-cropping and frequent spraying of vineyards and orchards, healthy forage for bees is often in short supply for long periods. Two gums on the invasive species list, namely the sugar gum (*Eucalyptus cladocalyx*) and the saligna gum (*Eucalyptus grandis*) are vitally important for the survival of hives. The sugar gum is a top-quality source of nectar and pollen over dry seasons when forage is in short supply. The nectar and pollen flows of the saligna gum are used for queen rearing and produces copious amounts of honey.

Since a “bee-forage area” qualifies for a permit, landowners in all parts of South Africa can get Category 2 permits for these gum species to support the survival of honey bees.

In addition, research is required to find alternative indigenous species that can be established in cleared sensitive areas to replace the high forage value of sugar gums.

Find the right contractor

Gum trees can reach a height of between 40 and 90 metres (depending on the region) and could contain tonnes of biomass (branches and leaves). It is important to select a contractor who has a sound safety record and uses the proper equipment for tree removal.

Try to find a contractor who uses the wood (and possibly also the biomass) for something positive in the community. For advice and more information, email info@invasives.org.za.

Avoid contractors who incorrectly insist that all gum trees must be removed (at all costs). They often plan to profit from the wood harvested and frequently leave a damaged landscape behind.

Use best practice when removing gums

Because biological control is not an option for the control of gum trees, these trees have to be removed manually.

If a contractor is engaged to do the work, make sure that they perform the work according to standard best practice.

- Uproot young gums with a basal stem of less than 45 mm in diameter.
- Ringbark large trees by removing a ring of bark 25 cm wide. Peel off the bark to just below ground level.
- When the ringbarked trees have died, remove them before they can fall over and cause damage.
- If trees have to be taken down, each tree must be assessed and handled based on its height, growth form, biomass, etc. to ensure safe felling.
- In the case of resprouts, remove any regrowth buds that appear on stumps before they shoot.
- Use herbicides circumspectly so as not to contaminate sizeable areas beyond the stumps that are being treated. For a list of active ingredients in herbicides that are bad for bees, visit bee-effect.co.za/the-bee-effect-program/standards4bees/bad4bees.



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REBUILDING FORAGE RESOURCES FOR HONEY BEES IN SENSITIVE AREAS

Landowners play an important role in providing habitat and forage for honey bees and other pollinators. Removing gum trees in sensitive areas will leave an enormous gap in the availability of bee forage, so a conscious effort should be made to replenish this resource in other ways.

- **Promote bee-foraging sites.** Protect natural vegetation on your land and avoid the unnecessary clearing of virgin land. When applying for land-clearing authorisation, incorporate pollinator habitat or forage concerns in the application. Follow environmental impact assessment processes, land-use planning policies and use agricultural best practice.
- **Plant indigenous pollinator- and bee-friendly plants.** When gardening, growing windbreaks or rehabilitating land, choose pollinator- and specifically bee-friendly plants that will allow pollinator habitats to thrive. For a handy list by province of good bee forage, visit the Good Bee Food section of The Bee Effect website at bee-effect.co.za/beekeepers-choice.

When planting indigenous plants, it is important to use species that are appropriate to your area and flower at different times of the year. Focus on plants that flower during “off-peak” flowering times, when the crops in your area (e.g. fruit trees) are no longer flowering and honey bees might need more support.

Ask your local nursery for subspecies or varieties that occur in your area to avoid invasive problems or hybridisations with veld species in the vicinity. Search for pollinator- and bee-friendly plants on sanbi.org.

- **Use complementary planting, crop rotation and go gently on weeds.** Consider planting complementary crops (e.g. lavender and basil) or fodder

crops (clover and vetch) in between the rows of existing orchards or on field edges or margins. Alternatively, rotate your usual crops with legumes, as these provide important pollinator and honey bee forage (and also enrich the soil for the next crop). Do not remove weeds that are attractive to bees, such as wild radish and cosmos. For a list of weeds that bees use for forage, visit the Bees Weeds section of The Bee Effect website at bee-effect.co.za/good-bee-food/bees-weeds.

- **Support beekeepers.** Registered beekeepers are serious about their honey bees. Visit sabio.org.za for a list of associations that can assist you with finding beekeepers in your area.
- **Protect hives.** Work with beekeepers to ensure that beehive sites are secure and inaccessible to vandals. One of the enormous challenges for beekeepers in South Africa is that their hives are vandalised or stolen.
- **Use chemicals responsibly.** Honey bees will visit any flowering crop (especially the very attractive ones like canola, lucerne, sunflowers and citrus) as well as other flowers and weeds. Take this into account when spraying chemicals. Read the label and follow the instructions. **Never spray chemicals close to any plants, weeds or crops when they are in flower.** Find out more about active ingredients in pesticides that are bad for honey bees by visiting the Standards 4 Bees section of The Bee Effect website at bee-effect.co.za/the-bee-effect-program/standards4bees.
- **Farm using best practice for honey bees.** The Standards 4 Bees section of The Bee Effect website (see bee-effect.co.za/the-bee-effect-program/standards4bees) provides a guide to support landowners and beekeepers on the best practices to follow to ensure honey bee sustainability.

NOTES

NOTES



**CAREFULLY CONSIDERING
THE CONTEXT OF THE
LANDSCAPE
WILL ENSURE THAT
FORAGE SOURCES
FOR HONEY BEES AND OTHER
INSECT POLLINATORS ARE
SUSTAINABLY MANAGED.**

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