WEED OF NATIONAL SIGNIFICANCE

Field Identification Guide

***Austrocylindropuntia*, *Cylindropuntia* and *Opuntia* species**

2ND EDITION

Contents

SPECIES IDENTIFICATION INDEX

*Not a WoNS listed species

SHAUNA POTTER

Opuntia tomentosa

Invasive cacti *FACTS*

- **Invasive cacti impact on Australia environmentally, agriculturally and aesthetically, as well as posing a risk to animal welfare and human safety.**
- **Invasive cacti are drought resistant and hardy, surviving in low rainfall environments.**
- **They spread easily by seed (in some species only) and by cladodes (stem segments) that root readily to form new plants.**
- **Opuntioid cacti vary significantly in their form and habit, ranging from low-growing shrubs under 50 cm to erect trees up to 8m tall.**
- **Species are found in all Australian states and territories and there is potential for further spread.**
- **Australian rangelands are especially vulnerable to cacti invasion.**
- **The cost of control often exceeds the value of land infested.**
- **All cacti are exotic to Australia.**

The problem

Three types (genera) of opuntioid cacti have naturalised in Australia and are Weeds of National Significance: *Austrocylindropuntia*, *Cylindropuntia* and *Opuntia*.

Dense infestations compete with native vegetation, limiting the growth of small shrubs and groundcover species. The plant's sharp spines or barbs can cause injury to stock and native animals and contaminate wool and hides, reducing or preventing grazing activities and productivity.

HENRY RUTHERFORD

Large stands of cacti provide harbour for pest animals, such as foxes and rabbits and, due to their spiny nature, can limit access for stock mustering and recreational activities. The spines are capable of causing serious injury to animals and humans.

Cladodes kept in sealed containers have been known to survive indoors for three years without soil or water, demonstrating their ability to persist even in severe conditions. Opuntioid cacti are very adaptable, growing in a range of soil types and areas that receive above 150 mm of rainfall annually.

Opuntia robusta

The weed

Opuntioid cacti are a group of plants that belong to a sub-family of Cactaceae. Originally from the Americas, some species were introduced into Australia to support cochineal dye production, while others were planted as garden ornamentals or hedges.

One of the most well-known opuntioid cacti is common prickly pear (*O. stricta*), which covered some 240 000 km^2 before the introduction of the *Cactoblastis* moth, a highly successful biological control agent, in 1926.

There are around 30 species of opuntioid cacti that have naturalised in Australia, with infestations in all states and territories.

Plants have cladodes, also known as stem segments or pads, which can be flat or cylindrical, contain the green tissue of the plant where photosynthesis occurs.

Leaves are small, and typically drop off when plants are young. Opuntioids often have large, colourful flowers that are yellow, orange, pink, red or purple. Most produce fleshy fruit which ripen to red, purple or yellow. Some species produce viable seeds that are bird and animal dispersed.

Opuntia tomentosa

Cylindropuntia pallida

Varying in form and habit, opuntioid cacti range from low growing shrubs under 50 cm to erect trees eight metres tall. They are distinguished from other Cactaceae sub-families by the presence of glochids – small, detachable, barbed bristles. Glochids grow from areoles, the small circular or elongated woolly cushion areas on the surface of cladodes. Areoles are also the points from which flowers, new shoots or spines can grow and are present on cladodes.

Weed identification

The appearance of opuntioid cacti can vary significantly, from the more familiar tall, erect and flat segmented common prickly pear (*O. stricta*), through to small shrubs with narrow, flattened, rope-like segments such as Hudson pear (*C. pallida*, *C. tunicata*).

***O.stricta*, Prickly pear**

***C. tunicata*, Hudson pear**

A. cylindrica
Cane cactus

C. prolifera
Jumping cholla

O. robusta
Wheel cactus

Austrocylindropuntia species originate in South America and are shrubby with cylindrical to club-shaped cladodes. They differ from *Cylindropuntia* species in that their spines lack papery sheaths. Of the 11 species worldwide, two have naturalised in Australia – *Austrocylindropuntia cylindrica* and *A. subulata*. These species are popular in cultivation in other parts of the world.

Cylindropuntia species are native to south western USA, Mexico and the West Indies, have cylindrical cladodes and spines with papery sheaths that separate from the spine in their first year. Many species have easily detachable cladodes, such as *C. prolifera*, commonly known as jumping cholla due to its ability to seemingly 'jump' onto passing animals, humans and vehicles.

Opuntia species extend from North America through central America, the West Indies and Galapagos Islands to southern South America. They are branched shrubs, typically up to two metres high, though they can grow taller. They have flattened cladodes, commonly referred to as pads, which are usually round or oval shaped. The best known *Opuntia* species is common prickly pear, introduced to Australia in the 19th century.

Growth pattern in suitable conditions

Opuntioid cacti are perennial plants that are generally long-lived (greater than 10 years). Flowering typically occurs from spring through to summer, with fruits forming in late summer and into autumn. Not all opuntioid cacti produce seed (or viable seed) in Australia, however, all species can reproduce and spread vegetatively. Cacti that develop from seed can germinate year round depending on rain, though seedlings are not likely to survive if they are in exposed conditions. Seedlings can be difficult to detect when small.

***Opuntia streptacantha,* Westwood pear**

SHAUNA POTTER

Species identification

Use the following pages as a guide to help you identify opuntioid cacti.

Key to symbols


Cladodes (Stem segments)


Flowers


Fruits


Spines

Opuntia species cladode shapes

Glossary

Areole – small circular or elongated woolly cushion area on the surface of segments.

Cladode (Stem segment) – a modified, swollen, water storing stem segment, often refered to as pads in *Opuntia* species.

Glochids – small, detachable barbed bristles.

Papillate possessing papillae – small, rounded protuberances or nipple-like projections.

Pubescent downy, covered in short, soft, erect hairs.

Sheath – papery outer covering of the spine. Only present in *Cylindropuntia* species.

Tepal the term given to the outer part of flowers when it cannot be easily divided into sepals and petals.

Tubercle/tuberculate – a small raised area or nodule on a plant surface/ having tubercules.

Austrocylindropuntia cylindrica

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Cane cactus

Erect, branching shrub 0.3-1.5m tall.
Often forms patches several metres wide.
Deciduous leaves to 1cm long.

Dark bluish-green, shiny.
Cylindrical, 15-50cm long, 3-4cm diameter.

2-6 spines per areole, approx 1cm long. (Lacks papery sheath).

Pink-red, cup-shaped,
2.5 cm diameter

Egg to urn shaped, to 4.5cm long.
Deep green to green-yellow.
(Can produce chains).

Austrocylindropuntia subulata


BOB CHINNOCK


BOB CHINNOCK

Eve's needle cactus

Branching shrub to 3m tall.
Forms patches to 8m wide.
Leaves to 12 cm long and these may persist for more than one season.

Mid green. Slender, up to 50cm long, 4-5cm diameter.

1-4 spines per areole, up to 7cm long. (Lacks papery sheath).

Pink.

Oblong, egg or club shaped to 10cm long. Green. (Can produce chains).

Cylindropuntia fulgida var. mamillata

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Coral cactus, boxing glove cactus

Erect shrub 0.4-1m tall. Deciduous leaves. Rarely flowers/fruits.

Green-grey green. Often distorted, with a corrugated (tuberculate) surface, 10-22cm long, 2-4.5cm diameter. Often numerous, easily detached small segments.

4-15 spines per areole, 0.7-2cm long (often shorter). Cream to brown (colour variable). (White to tan sheath).

Deep red. Rarely flowers.

Inverse cone or egg-shaped.
Green to grey-green.
Rarely fruits.
Forms long chains.
Usually sterile.

Cylindropuntia imbricata

BOB CHINNOCK

BOB CHINNOCK

Devil's rope, rope pear

Branched shrub or small tree 1-3m tall. Often with short trunks. Deciduous leaves.

Dull grey-green. 15-40cm long, 3.5-5cm diameter. Large, widely spaced tubercles give a woven, rope like appearance.

2-12 spines per areole, 0.8-3cm long. Trunks often covered in spines. Off white-cream. (Off white-cream sheath attached).

Dark pink, magenta.

Fleshy, egg shaped, to 4cm long. Greenish-yellow when ripe. (Can form chains).

Cylindropuntia kleiniae


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Klein's cholla

Straggly shrub to 0.5-2.5m tall. Large plants form a trunk. Deciduous leaves.

Light grey-green. 6-26cm long, 0.6-1.2cm diameter.

1-4 spines per areole, 2-4.5cm long. White to brown. (Tan sheath firmly attached).

Pink-red.

Egg or cylinder shaped. Ripens to orange.

Cylindropuntia leptocaulis


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Pencil cactus

Spreading shrub 0.4-1.8m tall.
Deciduous leaves.

Green-grey to green. Very slender, 2-8cm long, 0.3-0.5cm diameter.

0-4 spines per areole,
0.5-1.5cm long.
Cream to pale yellow.

Pale to greenish yellow.

Fleshy, egg shaped.
Yellow to red when ripe.
Spineless. Often sterile.

Cylindropuntia pallida syn. *C. rosea*

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Hudson pear (White-spined)

Low, spreading shrub, 0.5-2m tall. Up to 3m wide. Old plants can develop trunks, but not commonly seen. Deciduous leaves.

Grey-pale green. 4.5-26cm long, 1.5-3.5cm diameter. Easily detached. Prominent tubercles.

7-14 spines per areole, 1-4cm long. White to light brown. (White sheath loosely attached).

Pink to purple.

Oblong to egg shaped, to 3cm long. Green to yellow-green. Sterile hybrid.

Cylindropuntia prolifera


BOB CHINNOCK


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Jumping cholla

Low shrub 0.4-1m tall.
Deciduous leaves.

Greenish grey. 4-15cm long, 4-5cm diameter. Easily detached. Prominent tubercles.

7-11 spines per areole, 1-2cm long.
Light to dark brown, interlacing. (White to tan sheath firmly attached).

Rose to magenta.

Top shaped, 2-5cm long. Green. Can form chains. Usually sterile.

Cylindropuntia spinosior

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Snake cactus

Erect shrub 1-3m tall. Often forming patches several metres wide. Similar to *C. prolifera*, but different spine and fruit colour. Deciduous leaves. May develop a trunk.

Mid grey-green. 10-24cm long, 1.5-3cm diameter. Firmly attached. Prominent tubercles.

6-24 spines per areole, 0.8-1.5cm long, interlacing. White to grey. (White sheath firmly attached).

Rose-purple. 3-7.5cm diameter

Fleshy, cylindrical to egg-shaped, 4cm long. Yellow, sometimes green.

Cylindropuntia tunicata

BOB CHINNOCK

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Hudson pear (Brown-spined)

Low, densely branched shrub 0.3 to 0.6m tall. Deciduous leaves.

Pale grey-green. 10-20cm long, 1.5-3cm diameter. Easily detached. Prominent tubercles.

4-7 spines per areole, 3-7cm long. Red-brown to pale brown. (Brownish sheath loosely attached).

Yellowish-brown.

Club to top shaped. Greenish-yellowish to red. Spineless. Usually sterile.

Opuntia aurantiaca

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BOB CHINNOCK

Tiger pear

Low spreading shrub to 0.5m tall.
Branches prostrate to somewhat erect.

Dark green to dark purple.
Cylindrical to flattened.
Up to 20cm long.
Easily detached.
No tubercles.

Usually 2-3 spines per areole, 1-3cm long. Brown-yellowish.

Yellow to orange-yellow.

Fleshy, globular shaped, to 3cm long. Red-purple. Sterile.

Opuntia elata syn. *O. paraguayensis*

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Riverina pear

Shrubby plant with erect branches to 2m tall.

Glossy green, sometimes with a purple tinge (especially around areoles and margins). Obovate. Often more than 2cm thick, 5-25cm long.

Spines absent, or 1-3 short spines present at some areoles. Whitish yellow.

Orange.

Club shaped, to 6cm long. Purplish red.

Opuntia elatior

Red-flowered prickly pear

Dense, branched shrub up to 5m tall.

Olive green. Elliptic to obovate, 10-40cm long.

2-8 spines per areole, 2-4cm long. Needle like. Dark brown.

Orange-red.

Egg shaped.
Reddish when ripe.
May be strongly ribbed.

Opuntia engelmannii


BOB CHINNOCK


TROY BOWMAN

Engelmann's prickly pear

Low shrub to 1.5m tall. Forms dense patches. Can be confused with *O. robusta*, but has a low, creeping habit and the pads do not have the milky blue green appearance.

Green.
Flattened, round to egg shaped, 15-20cm long. 1.5-2.5cm thick.

1-6 spines per areole, 1-4cm long. Yellowish.

Yellow.

Egg- to top-shaped, fleshy, to 7cm long. Purple. Glochids present but often spineless.

*Opuntia ficus-indica**

BOB CHINNOCK

SHAUNA POTTER

Indian fig

Large shrub/small tree to 5m tall. Usually with a trunk.

Dull blue-green. Flattened, oblong to obovate, 20-60cm long.

Mostly spineless cultivars in Australia.

Yellow.

Barrel-shaped to 10cm long. Yellow, orange, red or purple.

*Note that while *O. ficus-indica* can be invasive, it is not a Weed of National Significance (WoNS) or a declared weeds in all states and territories. Be sure to check the declaration status in your area.

Opuntia humifusa


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R HOLTCAMP

Erect shrub up to 0.4-1m tall. Deciduous leaves. Rarely flowers/fruits.

Deep green, often reddish-brown around margins and areloes. Nearly circular to obovate, often wrinkled, 5.5-16cm long, 5-12cm wide.

1-2 spines per areloe. Up to 3.5cm long on margins. Glochids orange-brown.

Yellow, with basal parts of the inner tepals turning orange in older flowers. 6-8cm in diameter.

Egg-shaped (narrower at base), tapering towards base, 3-5cm long. Red purple.

Opuntia leucotricha

BOB CHINNOCK

KAY BAILEY

A multi-stemmed shrub growing up to 2.5m tall. Often developing a small trunk up to 15cm diameter.

Light green to grey-green, minutely pubescent. Obovate to nearly circular, 16-30cm diameter.

1-6 spines per areloe, 10-18 on older cladodes. Irregular curving, 1.5-4cm long, white. Areloes a brown, wooly, with brown glochids.

Yellow, 5-7 cm diameter. Outer tepals can be reddish.

Barrel-shaped, 2.5-3cm long, minutely pubescent. Pale yellow.

Opuntia microdasys

Bunny ears or Golden bristle cactus

Branched shrub, forming thickets to 1m tall.

Green to pale green and velvety. Circular to oblong shaped, 6-15cm long. Distinctive clusters of yellow glochids.

Spines usually absent, rarely one.

Yellow. 6-8cm diameter.

Fleshy, globular shaped, to 3cm long. Red-purple. Sterile.

Opuntia monacantha


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Drooping tree pear

Erect shrub to 2m tall, sometimes with a short trunk. Plant has an obvious drooping appearance.

Glossy green. Linear to elliptic, tapering towards base, thin profile. 20-50cm long. 12-18cm wide.

Pear-shaped, tapering to a stalk-like base, 5-7 cm long. Green to reddish, spineless, often forming chains.

Yellow, outermost tepals red. 5.5-7cm diameter.

Pear shaped, to 7cm long. Red. Spineless.

Opuntia aff. *polyacantha*

BOB CHINNOCK

ADRIAN HARVEY

Erect branching shrub 0.5-2m tall.

Light to mid green.
Elliptic to obovate, 12-22cm long, 9.5-16cm wide.

6-14 spines per areole, variable in length, 1-5cm long.
Straw-coloured to very pale brown.

Yellow, 6-8cm diameter.

2.5-4cm long. Deep red, sometimes forming chains of fruit.

Opuntia puberula

ROB RICHARDSON

MICHAEL MOERKERK

BOB CHINNOCK

Erect, spreading shrub 0.6-2m tall, sometimes developing a small trunk up to 10cm diameter.

Dull light to mid green, covered with minute papillae (protuberances).
Elliptic to obovate, 9-22cm long, (3.5-)5-10cm wide.
Areoles numerous.

1–3 spines per areole, 0.5-1.7cm long, usually bent, 0.5-0.7mm wide near base, pale yellow ageing white. Glochids yellow, red-purple.

Bright yellow, shiny, outer tepals reddish, old flowers sometimes aging to orangish, 5-7cm diameter.

Solitary or forming small erect chains of 2-3 fruit. Egg-shaped (wider at base), tuberculate, 5-7cm long, 2-2.5cm diameter, minutely papillate. Red-purple.

Opuntia robusta

GREG PATRICK

SHAUNA POTTER

Wheel cactus

Shrub with multiple stems up to 4m tall (commonly 1-2m).

Blue-green. Flattened, circular, up to 40cm wide.

2-12 spines per areole, up to 5cm long. White to pale brown or yellow.

Yellow, 5-8cm diameter.

Fleshy, globular shaped, to 8cm long. Deep red. Numerous fertile seeds.

Opuntia schickendantzii

KATE DETCHON

BOB CHINNOCK

Chicken dance cactus

Erect shrub 0.7-1.8m high, trunk often well-developed, up to about 1m high.

Dull green with minute papillae (protuberances). Narrowly linear-elliptic to oblong, thin, 20-35cm long, 3.5-6cm wide. Areoles close-set, woolly. Glochids yellowish brown.

1-3 spines per areole, straight, rigid, 4-10mm long, spreading.

Yellow, outermost tepals sometimes tinged pink aging to orange-yellow, 4-5cm diameter.

Narrowly egg-shaped (wider at base), 2.5-3.5cm long, to 1.5cm diameter tuberculate.

Opuntia streptacantha


BOB CHINNOCK


BOB CHINNOCK

Westwood pear, Cardona pear

Shrub to small tree up to 4.5m tall, often forming a trunk to 20cm diameter.

Mid green to greyish-green. Broadly obovate to nearly circular, thick, 21-48cm long, 13-34cm wide.

2-8 spines per areole on terminal branches, radiating, 5-20mm long. Whitish sometimes tipped pale yellow. Glochids not obvious.

Orange-yellow, 12cm diameter.

Solitary, egg-shaped to oblong. Up to 4.5cm long, 3.5cm diameter. Deep red.

Opuntia stricta

Common prickly pear

Sprawling/ erect shrub, up to 2m tall. Forms thickets.

Green to grey green. Eliptic to obovate, 10-25cm long.

In *O. stricta* var. *stricta*, spines are absent or the occational one may be present on a pad. In *O. stricta* var. *dillenii*, there are up to 11 spines per areloe, 1.5-4cm long.

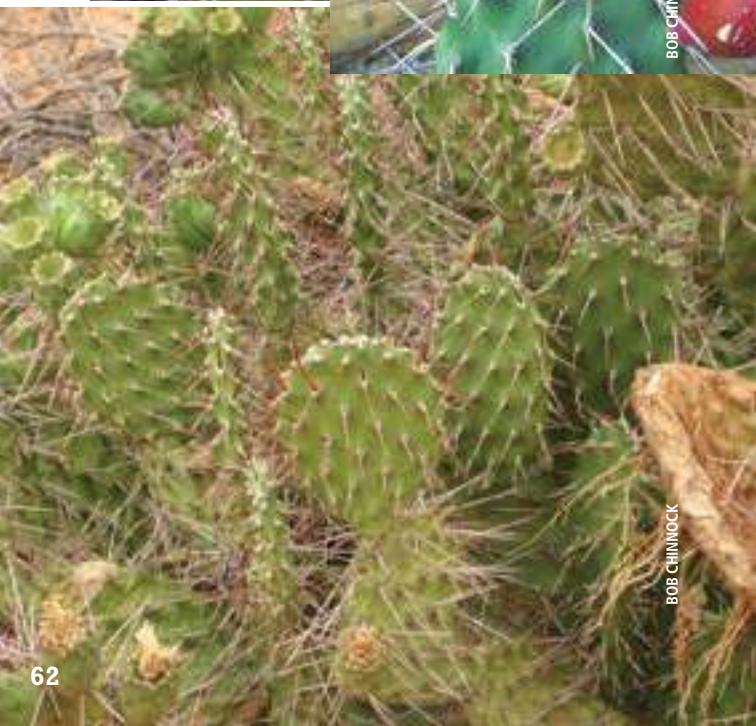
Yellow, 6cm diameter.

Fleshy, globular to pear shaped, to 6cm long. Purplish red. Numerous fertile seeds.

Opuntia sulphurea


BOB CHINNOCK

BOB CHINNOCK


BOB CHINNOCK

Low spreading shrub, 30-70cm high, forming patches 1-2m across.

Green to greyish-green, sometimes tinged purplish. Elliptic to widely obovate, 8-32cm long, 5-13.5cm wide, thick. Glochids yellowish-red to brown.'

1-8 spines per areole, needle-shaped, stiff, thick, occasionally curved/twisted, 6-45mm long. Yellowish, brownish, red or grey, but sometimes quite pale.

Yellow, 4-7cm diameter.

Egg-shaped, 3-4.5cm long, 2-2.5cm diameter, tapering to base, with a deep umbilicus (depression), often a few rigid spines in areoles around apex. Red-purple.

Opuntia tomentosa


SHAUNA POTTER


SHAUNA POTTER

Velvet pear, Velvety tree pear

Shrubby to treelike, up to 5m tall. Often with a trunk. Cladodes and fruits covered in fine hairs, giving a velvety appearance.

Grey-green. Flattened, elliptic to obovate, 15-30cm long.

Often spineless, but can have 0-4 spines, 0.5-1.5cm long. Whitish-yellow.

Orange, 4-5cm diameter.

Globular to egg-shaped, with flattened top, up to 5cm long. Red.

How they spread

Vegetative spread is the most common form of dispersal, and can occur year round when cladodes, immature fruit or flowers detach and make ground contact. New shoots then grow from areoles on the upper surface of the cladode. Cladodes of many opuntioids will attach easily to clothing, footwear and the fur and limbs of animals, aiding their spread. New growth (and spread) can also occur from flowers, from which new shoots or roots can grow.

Seeds are a less common form of spread as not all opuntioid cacti produce viable seed. Species such as wheel cactus (*O. robusta*) and common prickly pear (*O. stricta*) produce bright, large fruit that are attractive to birds, aiding dispersal. Other animals, such as foxes, also spread the seed.

The spread of cacti is aided by the movement of water, hence distribution often occurs along watercourses, drainage lines and across flood plains.

Where they grow

Opuntioid cacti grow throughout a wide climatic range, from arid, semiarid environments to warm temperate, sub-tropical and tropical areas.

In Australia they appear to have no preference for soil types and are found growing in calcareous loam, shallow granite, red earths and clay soils. Cacti flourish around old homesteads, dumps and mine sites.

What to do about them

While there are several options for managing opuntioid cacti, the most appropriate method will depend on the size and age of the infestation, site access, resources and the species being managed. For large infestations, integrated weed management approaches will be necessary, using a combination of biological control (if available), herbicides and or/ manual removal. Follow-up is essential in any control program, particularly given the ability of cacti to reproduce from cladodes or fruit.

Spread prevention

Opuntioid cacti are spread from the movement of seeds, fruit and cladodes via birds, animals, water, vehicles, equipment and people. Good hygiene is essential when working in infested areas, including staying on tracks. All cladodes and fruits are capable of regrowing, even under very harsh conditions.

Chemical control

The Australian Pesticides and Veterinary Medicines Authority (APVMA) regulates the use of chemicals in Australia. For more details on herbicide registration and permits visit the APVMA website, www.apvma.gov.au.

Registration of herbicides varies across states and territories. You should always check the product label and seek advice from your local council or state/territory weed management agency for information on spray rates and adjuvants.

Opuntia species respond well to stem/ pad injection, while many *Cylindropuntia* species require overall spraying. When using herbicides,

Cylindropuntia prolifera

ANDY VINTER

care must be taken to ensure adequate coverage of the plant (all sides of the segments) to prevent regrowth. In the case of foliar spraying, the addition of a marker dye will assist with identifying any missed plants or cladodes.

Plants should be actively growing and not under stress from heat/drought or cold conditions. Plants may die quicker as a result of warm weather spraying, as cooler conditions can slow the uptake of herbicides. Herbicides may not result in a complete kill.

Control sites should therefore be monitored for regrowth and follow-up activities applied if necessary.

Fire

Hot fires can kill plants, although regrowth may occur. Burning can also assist in providing access to sites so that other control activities can take place. Removing the bulk of the plant through burning can also reduce the amount of herbicide required for follow up control. Advice should be sought and permission may be required in areas of native vegetation. Check with your local council or state/ territory weed management agency.

Opuntia stricta

KAY BAILEY

Grazing

The spines on opuntioid cacti prevent grazing in most instances, however, stock and other animals sometimes feed on less spiny species in times of drought. In most instances the presence of opuntioid cacti limits or prevents grazing activities, and grazing activities can sometimes inadvertently accelerate spread.

Opuntia ficus-indica

KAY BAILEY

Physical control

Care must be taken when mechanically or manually removing opuntioid cacti due to their spiny nature. Small, isolated plants are easier to remove than large, dense infestations and some species, such as Hudson pear and devil's rope, can pose significant risk of injury when handled. Physical removal can be difficult as any cladodes detached in the process can regrow to form new plants. Material must be disposed of appropriately via deep burial.

Biological control

There are two main agents used in the biological control of opuntioid cacti – *Cactoblastis cactorum*, a moth with stem boring larvae, and several *Dactylopius* species, cochineal scale insects. Cactoblastis has been extremely successful in controlling common prickly pear (*O. stricta*) in most situations, although it is less effective in cooler, wetter areas or very dry locations. Cactoblastis larvae feed on cladodes, resulting in the collapse of plants. They can feed on a range of opuntioid cacti, but are only effective at controlling common prickly pear.

There are several *Dactylopius* species (cochineal) present in Australia. The species look similar to the naked eye so **it is important to use the correct cochineal**. For example, cochineal that is effective on tiger pear will not work on common prickly pear. Heavy rain and cold weather can inhibit the effectiveness of cochineal.

It is relatively easy to infect vulnerable cacti species with cactoblastis and cochineal by re-distributing the agents either as eggs (in the case of cactoblastis) or by placing infected cladodes on unaffected plants (in the case of cactoblastis larvae or cochineal).

Refer to the best practice manual for a list of opuntioid cacti species that can be managed through biocontrol.

Opuntia robusta

Legislation

Opuntioid cacti are declared weeds in Australia. *Opuntia ficus-indica* (Indian fig) is generally excluded from declaration (except in Western Australia and the Northern Territory).

Opuntia tomentosa

SHAUNA POTTER

Weed control contacts

FEDERAL
DEPARTMENT OF THE ENVIRONMENT AND ENERGY
1800 803 772 (general enquiries)
Submit enquiry at:
www.environment.gov.au/about-us/contact-us
www.environment. gov.au/biodiversity/ invasive/weeds/

ACT
ENVIRONMENT, PLANNING AND SUSTAINABLE DEVELOPMENT DIRECTORATE
13 22 81
environment@act.gov.au
www.environment.act.gov.au/parks-conservation/plants-and-animals/Biosecurity/invasive-plants

NSW
BIOSECURITY NSW, DEPARTMENT OF PRIMARY INDUSTRIES
1800 680 244
invasive.species@dpi.nsw.gov.au
www.dpi.nsw.gov.au/biosecurity/weeds

NT
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES (WEED MANAGEMENT BRANCH)
Alice Springs
(08) 8951 9210
Darwin (08) 8999 4567
Katherine and the Gulf
(08) 8973 8857
Tennant Creek
(08) 8962 4314
weedinfo@nt.gov.au
nt.gov.au/environment/weeds/weed-management-branch-contacts

QLD
BIOSECURITY QUEENSLAND, DEPARTMENT OF AGRICULTURE AND FISHERIES
13 25 23
callweb@daff.qld.gov.au
www.daf.qld.gov.au/plants/weeds-pest-animals-ants/weeds

SA
BIOSECURITY SA, DEPARTMENT OF PRIMARY INDUSTRIES AND REGIONS SA
(08) 8303 9620
nrmbiosecurity@sa.gov.au
www.pir.sa.gov.au/biosecuritysa/nrm_biosecurity/weeds

TAS
DEPARTMENT OF PRIMARY INDUSTRIES, PARKS, WATER AND ENVIRONMENT
(03) 6165 3777
Weed.Enquiries@dpipwe.tas.gov.au
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ACKNOWLEDGEMENTS

1st Edition: Compiled by Shauna Potter and Henry Rutherford, Biosecurity SA, April 2013.

Valued contributions by: Julie Dean, David Cooke, Adrian Harvey & Kenn Pearce (PIRSA); Mike Chuk, (DCQ); Royce Holtkamp, John Hosking and Stephen Johnson (DPI NSW); Bill Palmer (DAFF QLD); Bob Chinnock; Ruth Myers (DPI Vic); Kym Haebich (SA MDB NRM Board); Karen Stewart (DPIPWE).

This edition: Compiled by Matt Sheehan, Wild Matters Pty. Ltd. Additional information used in this edition was sourced from 'Managing Opuntioid Cacti in Australia: Best practice control manual'

This publication should be cited as: Sheehan, M.R., Potter, S. and Rutherford, H. (2017). Field Identification Guide: *Austrocylindropuntia*, *Cylindropuntia* and *Opuntia* species, second Edition. Department of Primary Industries and Regional Development (WA), Perth.

ISBN: 978-0-6482627-1-8

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Cylindropuntia fulgida var. mamillata

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