



Opuntoid cacti, including *Austrocylindropuntia*, *Cylindropuntia* and *Opuntia* species



Hudson pear (*Cylindropuntia rosea*) appears as light green patches throughout the landscape at Lightning Ridge, NSW.
Photo: Stephen Johnson, NSW Department of Primary Industries.

Key points

- 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 stem segments (fragments) that root readily to form new plants.
- Opuntoid cacti vary significantly in their form and habit, ranging from low-growing shrubs under 50 cm to erect trees up to 8 m tall.
- Species are found throughout most 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 opuntoid cacti have naturalised in Australia and are now considered 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.

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.

Plant segments 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. Opuntoid cacti are very adaptable, growing in a range of soil types and areas that receive above 150 mm of rainfall annually.

The weed

Opuntoid 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 opuntoid cacti is common prickly pear (*O. stricta*), which covered some 240 000 km² before the introduction of the *Cactoblastis* moth, a highly successful biological control agent, in 1926.

There are around 30 species of opuntoid cacti that have naturalised in Australia, with infestations in all states and territories except the Australian Capital Territory and Tasmania.

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



The duller green wheel cactus (*Opuntia robusta*) and brighter common prickly pear (*O. stricta*) both feature flat, pad-like segments. Photo: Troy Bowman, Rural Solutions SA.



Devil's rope (*Cylindropuntia imbricata*) and other *Cylindropuntia* species feature tubular, rope-like segments. Photo: Adrian Harvey, Rural Solutions SA.



Opuntioid cacti feature glochids—fine, hair-like detachable barbs which are difficult to remove and cause skin irritation. Photo: Greg Patrick, SA Arid Lands Natural Resources Management Board.



Many opuntioid cacti species are covered in spines 1-4 cm long. The spines of *Cylindropuntia* species, such as Hudson pear (*C. rosea*), are contained within papery sheaths and can give the plant a silver or gold appearance. Photo: Stephen Johnson, NSW Department of Primary Industries.

Leaves are small, and typically drop off when segments are young. Opuntioids often have large, colourful flowers that are white, 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.

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 pits or depressions on the surface of segments. Areoles are also the points from which flowers, new segments or spines can grow and are present on both cacti segments and fruit.

Cactus spines provide protection from predators and heat, and on some species funnel moisture towards the plant's shallow root system, enabling growth in low rainfall climates. Cacti

have adapted to arid conditions through an evolved process of photosynthesis (known as Crassulacean Acid Metabolism, or CAM photosynthesis). Their stomata (pores) close during the day, reducing moisture loss and allowing gas exchange to occur during the cooler night period. Rapid growth of cacti often occurs after rainfall.

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. rosea*; *C. tunicata*).

Austrocyllindropuntia originate in South America and are shrubby with cylindrical to club-shaped segments. They differ from *Cylindropuntia* species in that their spines lack papery sheaths. Of the 11 species worldwide, two have naturalised in Australia—*A. cylindrica*

and *A. subulata*. These species are popular in cultivation in other parts of the world.

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

Opuntia originate in North America, the West Indies and South America. They are branched shrubs, typically up to two metres high, though they can grow taller. They have flattened stem segments, commonly referred to as pads, which are usually round or oval-shaped. The most well known *Opuntia* species is common prickly pear, introduced to Australia in the 19th century.

Growth calendar

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Flowering												
Fruiting												
Germination												
Vegetative regrowth												

- General pattern of growth
- Growth pattern in suitable conditions

Growth pattern in suitable conditions

Opuntioid cacti are perennial plants that are generally long-lived. Flowering typically occurs from spring through to summer, with fruits forming in late summer and into autumn. Not all species develop mature fruit, but those that do can produce numerous seeds, with a hard seed coat enabling longevity. 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.

How they spread

Vegetative spread is the most common form of dispersal, and can occur year round when segments, immature fruit or flowers detach and make ground contact. New segments then grow from areoles on the upper surface of the segment. Segments 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 segments or roots can grow.

Most spread in Australia has been by people, either as garden plants and hedges, or through dumping in rubbish tips or bushland. As these plants form dense, impenetrable thickets, they are said to be valued as a cheaper form of fencing.

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. Further spread of Hudson pear across the floodplains in north-western New South Wales could result in movement of the species into rivers that feed into the Darling River.



Opuntioid cacti flowers generally appear in spring and summer, and in the case of wheel cactus (*Opuntia robusta*) are bright yellow. Photo: Troy Bowman, Rural Solutions SA.



Segments of Hudson pear (and other cacti) easily attach to vehicles, animals and people, contributing to long distance dispersal. Photo: NSW Department of Primary Industries.

Table 1: Main features of opuntioideae cacti in Australia

Species	Habit	Flowers & fruit	Segments	Dispersal	Distribution	Legislation
 <p>1 <i>Austrocylindropuntia cylindrica</i></p>	Shrubby/tree-like up to 1.5 m.	Flowers: Pink-red, 2.5 cm. Fruit: To 5 cm long. Yellow to green.	 <p>Segments up to 50 cm long.</p>	Vegetative.	WA, SA, Vic, NSW, Qld.	Declared in SA.
 <p>2 Coral cactus (<i>Cylindropuntia fulgida</i> var. <i>mamillata</i>)</p>	Shrub up to 1 m.	Flowers: deep red. Fruit: oval shaped, grey green.	 <p>Segments distorted and misshapen.</p>	Vegetative.	WA, SA, NT, NSW, Qld.	Declared in SA, NSW, Qld.
 <p>3 Devil's rope (<i>Cylindropuntia imbricata</i>)</p>	Branched shrub up to 3 m. Can develop a trunk.	Flowers: Purple, 3-7.5 cm. Fruit: Egg shaped to 4 cm wide. Green to yellow.	 <p>Cylindrical, rope-like segments.</p>	Vegetative. Seed (less common).	WA, SA, Vic, NT, NSW, Qld.	Declared in SA, NSW, Qld.
 <p>4 White-spined Hudson pear¹ (<i>Cylindropuntia rosea</i>)</p>	Shrub up to 1 m high, 3 m wide.	Flowers: Pink-purple to 5 cm. Fruit: Egg shaped, 2-4.5 cm long.	 <p>Cylindrical, rope-like segments.</p>	Vegetative. Rarely forms seeds (seed appear to be sterile).	WA, SA, NT, Vic, NSW, Qld.	Declared in SA, Qld, NSW.
 <p>5 Brown-spined Hudson pear¹ (<i>Cylindropuntia tunicata</i>)</p>	Shrub to 60 cm high	Flowers: Yellowish-brown to 3 cm. Fruit: club shaped, green.	 <p>Cylindrical, rope-like segments.</p>	Vegetative. Seed (mostly sterile).	WA, SA, Vic, NSW, Qld.	Declared in SA, Qld, NSW.

	6 Tiger pear (<i>Opuntia aurantiaca</i>)	Low, spreading shrub up to 50 cm high.	Flowers: Yellow 2.5-5.5 cm wide. Fruit: Egg shaped with flattened top, 2.5-3.5 cm long. Red-purple when ripe		Partly flattened to round to 20 cm long	Vegetative. No viable seed produced.	SA, Vic, NSW, Qld.	Declared in NT, SA, NSW, Qld.
	7 Smooth tree pear (<i>Opuntia monacantha</i>)	Tree-like up to 2 m high.	Flowers: Yellow, 3-6 cm wide. Fruit: egg shaped, 5-7 cm long. Red-purple when ripe.		Glossy green, flattened segments 10-30 cm long.	Vegetative.	WA, SA, Vic, NSW, Qld.	Declared in WA, NT, SA, Vic, NSW, Qld.
	8 Wheel cactus (<i>Opuntia robusta</i>)	Shrub up to 4 m high (commonly 1-2 m).	Flowers: Yellow, 5-8 cm wide. Fruit: Barrel shaped to 8 cm long. Pink-purple when ripe.		Blue-green flattened segments. Round to 40 cm wide.	Vegetative and seed.	SA, Vic, NSW.	Declared in NT, SA, NSW, Vic, Qld.
	9 Common prickly pear (<i>Opuntia stricta</i>)	Shrub 1-2 m high.	Flowers: Yellow, 6 cm wide. Fruit: Egg shaped with flattened top. Purple when ripe.		Segments flattened 10-25 cm long.	Vegetative and seed.	WA, SA, NT, Vic, Tas, NSW, ACT, Qld.	Declared in WA, NT, SA, Vic, NSW, Qld.
	10 Velvety tree pear (<i>Opuntia tomentosa</i>)	Tree up to 5 m high.	Flowers: Orange, 4-5 cm wide. Fruit: Egg shaped with flattened top. Red when ripe.		Flattened segments to 30 cm long.	Vegetative and seed.	SA, NSW, Qld.	Declared in NT, SA, NSW, Qld.

Other species that have naturalised include: *Austrocyllindropuntia subulata*, *Cylindropuntia tunicata*¹, *C. prolifera*, *C. spinosior*, *Opuntia elata*, *O. elatior*, *O. engelmannii*, *O. ficus-indica*, *O. humifusa*, *O. linguiformis*, *O. microdasys*, *O. polycantha*, *O. puberula*. ¹ Both *Cylindropuntia rosea* and *C. tunicata* are commonly referred to as Hudson pear. They are similar in appearance - *C. rosea* has white spines and *C. tunicata* has brown spines.

Where they grow

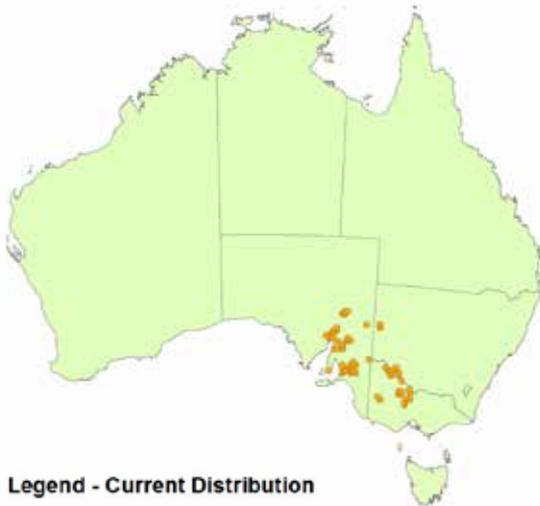
Opuntioid cacti grow throughout a wide climatic range, from arid, semi-arid environments to warm temperate, sub-tropical and tropical areas. They are native to the Americas, from Canada

to southern South America. They have become weedy in Australia, South Africa and Eurasia, where they were introduced as food, fodder, ornamentals and for the former cochineal industry. These cacti are also often considered to be weeds in their native range. 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.

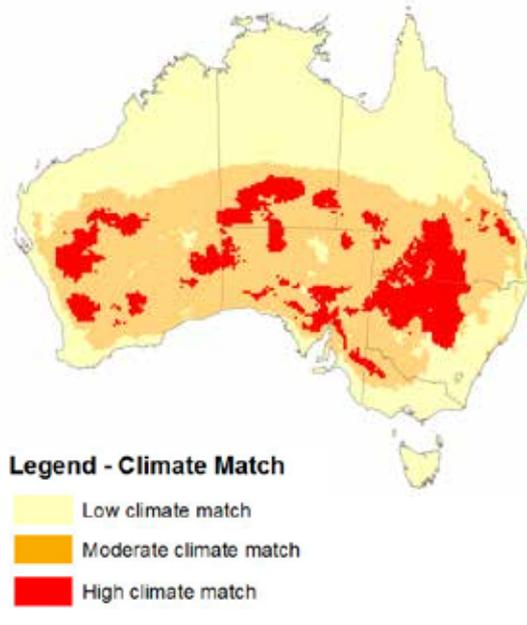
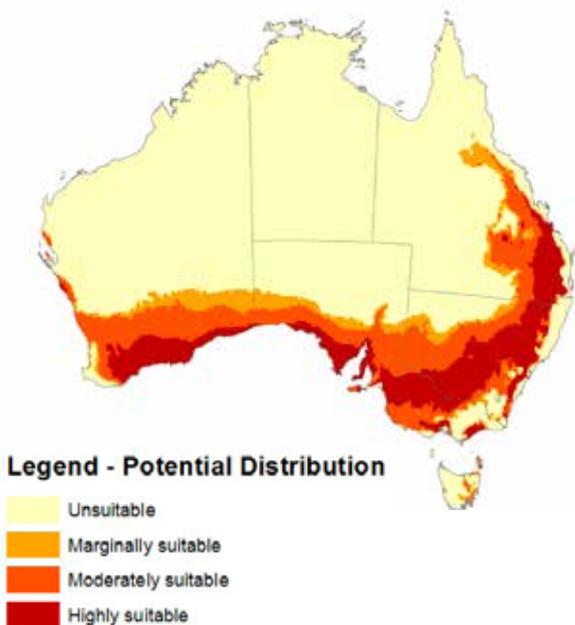
Map 1: Distribution of wheel cactus (*Opuntia robusta*) in Australia

Map 2: Distribution of Hudson pear (*Cylindropuntia rosea*) in Australia.



Map 3: Potential distribution of wheel cactus (*Opuntia robusta*) in Australia

Map 4: Potential distribution of Hudson pear (*Cylindropuntia rosea*) in Australia



Opuntoid species are found throughout most Australian states and territories, with some more widespread than others. Hudson pear (*C. rosea*) is found around Lightning Ridge in New South Wales (60 000 ha infested); south east Queensland; Victoria; South Australia; the Northern Territory; and in the Goldfields region of Western Australia. Wheel cactus (*O. robusta*) occurs in the Flinders Ranges (35 000 ha infested), in the mid-north and along the River Murray in South Australia; north central Victoria; and southern New South Wales. Tiger pear (*O. aurantiaca*) occurs throughout New South Wales (200 000 ha infested); southern Queensland; Victoria; and South Australia.



Ripe fruit of wheel cactus (*O. robusta*). The fruits of opuntoid cacti allow spread by seed, but also vegetatively via the areole.

Photo: Greg Patrick, South Australian Arid Lands Natural Resources Management Board.

Potential distribution

Opuntoid cacti have the potential to expand their range in Australia. Maps 3 and 4 indicate the potential range expansion of wheel cactus and Hudson pear. In the case of wheel cactus, an expansion of the current range could occur in South Australia, Victoria and New South Wales. Spread into new, highly suitable areas such as Western Australia and Queensland is also possible.

The potential range of Hudson pear could also see an expansion from existing infestations in Western Australia, Northern Territory, South Australia, New South Wales and Queensland. Victoria is also highly suitable for further growth of this species.

What to do about them

While there are several options for managing opuntoid 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 segments or fruit.

The cost of control often exceeds the value of the land infested with cacti so it is important to remove small infestations

before they spread. As they tend to grow in isolated areas, including rangelands, there are several challenges associated with their effective management. Remote areas have small populations with limited resources such as equipment and labour. Cacti also grow in areas where land managers have large properties that may be visited infrequently or are difficult to access due to steep terrain. Seedlings and detached segments often blend into the landscape making detection and eradication difficult.

Spread prevention

Opuntoid cacti are spread from the movement of seeds, fruit and segments via birds, animals, water, vehicles, equipment and people. Good hygiene is essential when working in infested areas, including staying on tracks. All segments and fruits should be removed from an area as they are capable of regrowing, even under very harsh conditions.

Chemical control

Four herbicides are registered for the control of opuntoid cacti and include MSMA, triclopyr, picloram+triclopyr, and amitrole, under various trade names. The Australian Pesticides and Veterinary Medicines Authority (APVMA) regulates the use of chemicals in Australia. In some instances off-label permits are issued by the APVMA, to allow for uses

that are not specified on the label.

There are four off-label permits for the control of opuntoid cacti in SA, NSW and Queensland. 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.

Table 2 provides a summary of the registered or permit herbicide options available for the control of opuntoid cacti in Australia.

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

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.**



Volunteers inject individual segments of wheel cactus with a measured dose of herbicide, marking each plant as they go with spray paint.
Photo: Ian Grenda.



Equipment required for stem injection of opuntioid cact.
Photo: A. Linke & K. Haebich.

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.

Mechanical control

Care must be taken when mechanically or physically 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 segments detached in the process can regrow to form new plants. Material must be disposed of appropriately via deep burial.

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.

Table 2: Herbicide options for opuntioid management

Method	Herbicide	Comments	Advantages	Cautions
Foliar spray	MSMA e.g. Daconate® Triclopyr e.g. Garlon™ Picloram+triclopyr e.g. Grazon™ Extra	Used mixed with water and spray oil; or diesel. Follow permit/label instructions.	Complete coverage No specialised equipment needed Suits large infestations and roadsides Relatively cost effective	Potential for off-target damage Usually relies on vehicle access Do not spray when plants are stressed Use of MSMA requires accreditation ¹
Stem injection	Amitrole e.g. Amitrole T Glyphosate MSMA e.g. Daconate®	Injection of measured dose of neat chemical applied to segments or trunks of cacti. Follow permit/label instructions.	Suits isolated, small infestations or difficult to access sites Can be used year round Low volumes of herbicide required Glyphosate suitable for volunteers with appropriate training	Requires specialised equipment - e.g. injector gun, drills etc. Use of MSMA requires accreditation ¹ Not suitable for large, dense infestations
Basal bark/cut stump	Picloram+Triclopyr e.g. Access™ Triclopyr e.g. Garlon™	Used neat or with diesel (depending on herbicide). Follow permit/label instructions.	Effective for isolated plants Minimal off-target damage	Need to apply to all branches All cut material must be disposed of in deep burial to prevent spread

¹ MSMA is a schedule 7 herbicide and its use is restricted to qualified persons (eg Chemcert accredited).

Biological control

There are two main agents used in the biological control of opuntoid cacti—*Cactoblastis cactorum*, a stem-boring moth, 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 segments, resulting in the collapse of plants. They can feed on a range of opuntoid 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. However, successful control is possible for tiger pear, common prickly pear, drooping tree pear, devil's rope and velvety tree pear.

It is relatively easy to infect vulnerable cacti species with *Cactoblastis* and cochineal by re-distributing the



Female cochineal insects are small bugs that spend their life feeding on plants. They are covered in a white, waxy secretion and turn bright red when crushed.
Photo: Shauna Potter, Biosecurity SA.

agents either as eggs (in the case of *Cactoblastis*) or by placing infected segments on unaffected plants (in the case of *Cactoblastis* larvae or cochineal).

Researchers are investigating potential cochineal strains for the control of Hudson pear and trials are underway for the use of cochineal on wheel cactus.

Legislation

Several opuntoid cacti are declared weeds in Australia (refer to Table 1 for more details).

Opuntia ficus-indica (Indian or Barbary fig) is generally excluded from declaration (except in Western Australia) as it is a commercial food crop in parts of Australia.

Weed control contacts

State / Territory	Department	Phone	Email	Website
ACT	Dept of the Environment, Climate Change, Energy and Water	13 22 81	environment@act.gov.au	www.environment.act.gov.au/environment
NSW	Dept of Primary Industries	1800 680 244	weeds@dpi.nsw.gov.au	www.dpi.nsw.gov.au/agriculture/pests-weeds/weeds
NT	Dept of Land Resource Management	08 8999 4567	weedinfo@nt.gov.au	www.lrm.nt.gov.au/weeds
QLD	Department of Agriculture, Fisheries and Forestry	13 25 23	callweb@daff.qld.gov.au	www.daff.qld.gov.au
SA	Biosecurity SA, Dept of Primary Industries and Regions SA	08 8303 9620	nrmbiosecurity@sa.gov.au	www.pir.sa.gov.au/biosecuritysa/nrm_biosecurity/weeds
TAS	Dept of Primary Industries, Parks, Water and Environment	1300 368 550	See contacts at www.dpipwe.tas.gov.au/weeds	www.dpipwe.tas.gov.au/weeds
VIC	Dept of Primary Industries	13 61 86	customer.service@dpi.vic.gov.au	www.new.dpi.vic.gov.au/agriculture/pests-diseases-and-weeds
WA	Dept of Agriculture and Food	08 9368 3333	enquiries@agric.wa.gov.au	www.agric.wa.gov.au
Australia wide	Australian Pesticides and Veterinary Medicines Authority	02 6210 4701	contact@apvma.gov.au	www.apvma.gov.au

Acknowledgements

Compiled by Shauna Potter, Biosecurity SA, November 2011.

Key references:

Chuk, M. (2010) Invasive cacti - a threat to the rangeland of Australia. *Proceedings of the 16th Biennial Conference of the Australian Rangeland Society*, Burke (Eds D.J. Eldridge and C. Waters)

Edmunds, L.J. (2006) A community approach to pest plant control in South Australia's rangelands. . In C. Preston, J.H. Watts and N.D. Crossman (eds). *Proceedings of the 15th Australian Weeds Conference*. Weed Management Society of South Australia, Adelaide, pp. 203-206.

Harvey, A. (2009) Draft state opuntioid cacti management plan (2009). Primary Industries and Regions South Australia.

Holtkamp, R.H. (2006) Hudson pear. Primefact 240. NSW DPI.

Hosking, J.R., McFadyen, R.E., Murray, N.D. (1988). Distribution and biological control of cactus species in eastern Australia. *Plant Protection Quarterly* 3(3): 115-123.

Johnson, S.B., Hosking, J.R., Chinnock, R.J. and Holtkamp, R.H. (2009) The biology of Australian weeds 53. *Cylindropuntia rosea* (DC.) Backeb. and *Cylindropuntia tunicata* (Lehm.) F.M. Knuth. *Plant Protection Quarterly* 24 (2), 42- 49.

Parsons, W.T. and Cuthbertson, E.G. (2001). *Noxious Weeds of Australia* (2nd ed.) CSIRO Publishing, Collingwood.

Prickly pear (*Opuntia*, *Nopalea* and *Acanthocereus* spp.) fact sheet (2009). Queensland Government

Information and guide revision:

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

Maps: Data provided by state and territory weed management agencies. Production by Chris Auricht. Potential distribution Climex modelling by CSIRO.

Photo Acknowledgments (Table 1):

- 1 Sheldon Navie; Bob Chinnock
- 2 Mike Chuk
- 3 Adrian Harvey, Rural Solutions SA
- 4 Royce Holtcamp, NSW Department of Primary Industries
- 5 Biosecurity SA
- 6 Bob Chinnock
- 7 Adrian Harvey, Rural Solutions SA
- 8 Greg Patrick, South Australian Arid Lands Natural Resources Management Board
- 9 Mike Chuk; Troy Bowman, Rural Solutions SA
- 10 Sheldon Navie; Bob Chinnock

Case Study

Managing Hudson pear: a whole of community approach - Maxine O'Brien

Hudson pear (*Cylindropuntia rosea*) has naturalised in the semi-arid climate of Lightning Ridge, and neighbouring areas of New South Wales, following introduction as a garden plant in the late 1960s. It now covers an area of approximately 60 000 ha.

The Lightning Ridge Miners' Association Ltd (LRMA) and Glengarry, Grawin, Sheepyards Miners Association (GGSMA) have been controlling Hudson pear on public lands in the opal fields around their communities since 2003, with assistance from Envirofund and the Western Catchment Management Authority. The local weed

authority, Castlereagh Macquarie County Council, assists landholders control scattered infestations on their properties and controls the weed along main roads and in public reserves.

A whole-of-community approach is the key to the success of the program to date. The Hudson Pear Task Force coordinates the activities of all the stakeholders, whose objectives include mapping the infestations, suppressing and eradicating scattered infestations, and containing the core infestations within their current areas. In 2006, the Hudson Pear Task Force undertook a comprehensive and successful awareness campaign aimed at residents, landholders, tourists and miners.

Chemical control with an uptake oil and vegetable dye is being used to create a buffer zone around the core infestations, working inwards to heavier infestations. It is sprayed primarily on foot by contractors and Work-for-the-Dole participants. Community members also participate in the program, controlling Hudson pear around their homes using spray packs pre-mixed by the LRMA and GGSMA.

The fear is that, unchecked, Hudson pear could spread throughout the Murray-Darling Basin system. Scattered infestations were inundated by floodwaters during 2011. Hudson pear continues to grow prolifically; however, with a whole-of-community approach and biological control prospects, the community is hopeful the infestation will be even further contained and reduced.



Lightning Ridge community members use dye when spraying Hudson pear to mark their progress.
Photo: Maxine O'Brien.

