

SUMMER 2026

cactus Quarterly

NSW
NORTH WEST REGION

FOR ALL YOUR UP-TO-DATE CACTUS NEWS, EVENTS AND INFORMATION



**NSW Weed
biocontrol
taskforce**
Meet the team

3

**A blast from the
past**
Bicontrol in 1992

9

**A high-tech
solution for weed
management**
The universal flow
tracker

11



**Local Land
Services**



Northern Slopes
Landcare
Association

How invasive is your cactus?

WEED BIOCONTROL

Biological control (biocontrol) involves the introduction of natural enemies (insects, mites and pathogens) of a target weed that will over time reduce the density of the weed to a level that is acceptable (usually below and economic or environmental threshold) maintaining the density at that level. It is an economical, self-sustaining and environmentally friendly management technique.

Biocontrol does not eradicate weeds but rather can be used in an integrated approach with a combination of other methods.

Two main biocontrol techniques are used:

1. Classical biocontrol: This is the most commonly used technique and involves the introduction of natural enemies from their native range into an exotic range where their host plant has become a weed. This approach creates a natural, self-sustaining balance between the weed and its control agent, similar to that found in the weed's native range.
2. Non-classical biocontrol: This includes releasing large numbers (inundative releases) of the agent to control the weed, e.g. mycoherbicides and mass rearing and release of large numbers of an insect biocontrol agent.

When a biocontrol agent's population establishes, control generally becomes self-perpetuating and self-regulating as the agent becomes part of the region's ecology. Monitoring an agent's population dynamics and impact is an important part of a successful biocontrol strategy.

If successfully introduced, biocontrol agents can assist in reducing weed abundance, density and impact. However, successful programs may take 10 or more years to be effective, and results may vary from area to area.

Biocontrol is practical and effective for:

- grazing areas
- inaccessible areas such as timbered, rocky and steep locations
- areas of low priority for other forms of control
- situations where biocontrol is the only option, for example sensitive aquatic or environmental areas
- situations where chemical control may be too expensive or not effective.

For more information about biocontrol visit the [DPI website](#).

Biocontrol agents for public good: Access and international program

Weeds do not recognise international borders. As a result, the search for effective biological control agents often requires research in a weed's country of origin, where its natural enemies occur. Successful biological control therefore depends on strong international partnerships and agreed protocols that ensure access to biological resources is lawful, ethical and cooperative.

All biological control agents are developed for the public good. Any benefits arising from their use must be shared fairly and equitably. To support this, international agreements are in place to govern access to genetic resources and the sharing of benefits. Australia is a signatory to these agreements, including the Convention on Biological Diversity.

The Convention on Biological Diversity, implemented in 1993, is a multilateral treaty that requires countries to develop national strategies for the conservation and sustainable use of biological diversity. It has three key objectives: conserving biodiversity, ensuring the sustainable use of biological resources, and enabling the fair and equitable sharing of benefits arising from the use of genetic resources.

The Nagoya Protocol, implemented in 2014, is a supplementary agreement to the Convention on Biological Diversity. It provides the legal framework for sharing benefits derived from genetic resources, including biological control agents. The protocol sets out clear obligations for users, such as obtaining agreed access conditions and ensuring benefits are shared with provider countries.

The supply and transfer of biological control agents between organisations must be formally agreed through a Material-

Nagoya Protocol



Transfer Agreement (MTA). An MTA is a legal contract that governs the transfer of research materials and defines how they may be used. It sets out the rights and responsibilities of both the provider and the recipient, including any conditions relating to derivatives of the material.

The NSW Department of Primary Industries is a signatory to MTAs with international partners. These agreements permit the use of biological control agents for research, teaching and identification purposes only. They explicitly prohibit commercial use. As a result, biological control agents developed and used in NSW are for public benefit and not for financial gain.

Maintaining sustainable access to current and future biological control agents depends on shared responsibility. We ask for your support in informing and educating others about the importance of complying with international access and benefit-sharing obligations.

How invasive is your cactus?

nsw weed biocontrol TASKFORCE



Photo Image NSW Biocontrol Taskforce members meeting at Grafton, NSW. November 2025

The Taskforce comprise of a voluntary collaboration of members from several like-minded agencies responsible for managing weeds.

The role of the Taskforce includes obtaining and facilitating commitment and investment, coordinating the mass rearing and establishment of biological control agents, and supporting monitoring, training, and communication of research progress.

The Taskforce also prioritises agents for action in New South Wales to ensure resources are directed to the highest-value opportunities.

Biannual meetings provide a forum for progress updates and training, and include field visits and demonstrations to support shared learning and practical implementation.

The Taskforce funds and promotes biological control research alongside rearing, release and monitoring programs through a shared investment commitment.

This approach has enabled the setting of clear priorities and the pooling of resources across local, state and national collaborators. The pilot has proven highly successful and is laying the groundwork for further co-investment in a coordinated and collaborative effort.

To learn more about, or participate in, the NSW Weed Biocontrol Taskforce and its collaborative biocontrol programs request a copy of the prospectus by emailing weed.biocontrol@dpi.nsw.gov.au

How invasive is your cactus?

PRIORITY CACTI NEAR YOU!

Smooth tree pear (*Opuntia monacantha*)

Also known as: prickly pear, drooping prickly pear, Smooth tree pear is an upright cactus with smooth, glossy oval-shaped stems. It forms dense infestations and has sharp spines that can injure people and animals.

Biosecurity duty:

This weed belongs to the group **Prickly pears - Opuntias**
This plant must not be sold anywhere in NSW.

How does this weed affect you?

Smooth tree pear is an invasive spiny cactus. The spines can:

- injure people, livestock, working dogs and pets
- injure and sometimes kill native animals that gets trapped in the spines
- get stuck around the mouth of lambs or calves and stop them feeding
- devalue wool and hides
- prevent shearing

Dense thickets of smooth tree pear restrict the movement of animals and people, so that:

- livestock cannot move to areas with better pasture
- mustering is difficult
- access to watering points is reduced
- recreation such as bushwalking or bird watching becomes difficult.

Smooth tree pear also:

- competes with native plants
- invades native pastures reducing productivity
- harbours pests including foxes, rabbits and fruit fly.

What does it look like?

Smooth tree pear is an upright cactus up to 6 m tall though usually only 2 – 3 m. The stems have an obvious drooping appearance. It sometimes has a short woody trunk with clusters of large spines up to 10 cm long. Smooth pear tree leaves are very small and drop off, so are rarely seen.

Pads (also called stems or cladodes) are:

- light green
- 10–45 cm long and 6–15 cm wide
- 4–6 mm thick
- glossy
- egg to oblong-shaped
- often elongated
- drooping, especially higher on the plant.



Photo: Smooth tree pear has drooping pads and the yellow flowers have red stripes on the outer petals.

Cacti pads have bumps on the surface called areoles. Barbed bristles (glochids), spines, leaves, flowers, fruit, roots and new shoots all grow out of the areoles.

Areoles are:

- widely spaced
- usually have 1–2 spines in each but increasing to 4–5 in older parts of the plant
- have short, brownish woolly hairs and brown barbed bristles

Spines are:

- 1–5 cm long
- off white, yellowish or red-brown



Photo: Smooth tree pear pad with one or two spines growing out of most areoles. Photographer: Jen Schabel

Flowers are

- yellow with outer petals often having red stripes
- up to 6 cm in diameter
- present from October onwards, but peak during summer.

Fruit are

- green, ripening to red-purple
- 4–7 cm long
- pear-shaped
- pulpy with reddish flesh
- spineless but have barbed bristles
- mostly grow on the margins of the stems
- often joined, forming chains of fruit.

Seeds are:

- yellow or pale brown
- smooth and round
- 3–4 mm in diameter.

Roots are:

- fibrous
- shallow.

Varieties and forms

Smooth tree pear plants can vary naturally in colour, shape and size. Some of these forms and varieties are intentionally selected and cultivated by collectors, growers and sellers.

How invasive is your cactus?

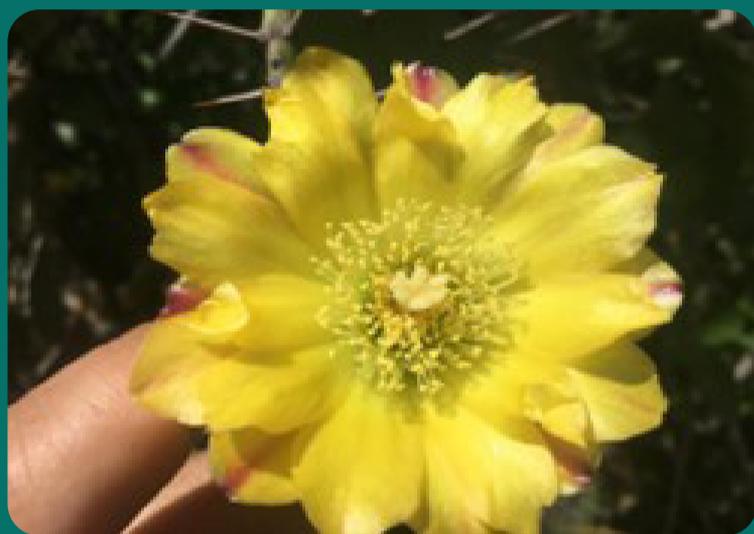
PRIORITY CACTI NEAR YOU!

Smooth tree pear (*Opuntia monacantha*) - Continued



- *Opuntia monacantha* var *variegata* is a variety of smooth tree pear that is marbled with combinations of white, cream, yellow, light green and sometimes pink colours.
- *Opuntia monacantha* f. *monstrosa* is a form of smooth tree pear that has stretched, tortured and distorted looking pads.
- *Opuntia monacantha* f. *monstrosa variegata* "Joseph's Coat" is a form of smooth tree pear that also has variations in colour.

The biosecurity duty applies to all variations and forms. They must not be imported into the state, sold, bartered, exchanged or offered for sale.



Caption: Smooth tree pear has yellow flowers up to 6 cm wide with red tinges on the outer parts. Photographer: Paul Marynissen

Similar looking plants

Smooth tree pear looks similar to the following weed species:

- Common pear (*Opuntia stricta*), which is shorter than smooth tree pear and has thicker, dull, pale green or grey-green stems.
- Indian fig (*Opuntia ficus-indica*), which is usually taller than smooth tree pear and has larger, usually spineless stems. It has larger flowers and the fruit have barbed bristles.
- Velvet tree pear (*Opuntia tomentosa*) which has fine, often velvety, hairs on the stems and fruit and orange-red flowers

Where is it found?

Smooth tree pear grows from coastal NSW to the Western region. It is native to South America.

What type of environment does it grow in?

Smooth tree pear mostly grows in subtropical, semi-arid and warmer temperate climates. It tolerates a wide variety of soil types though it is often found on sandy soils including coastal dunes. It grows in pastures, open woodlands, waterways, roadsides, railways and coastal areas.

How does it spread?

By seed - It is not known how long smooth tree pear seeds can remain viable; however it is thought that some seed may still be viable for 10 to 20 years in Australian conditions.

Birds and other animals eat the fruit and spread the seeds in their droppings.

By plant parts - Stems can break off the plant and be distributed by animals, vehicles or moving water. Immature fruit will also grow into new plants.

Control

Successful weed control requires follow up after the initial efforts. This means looking for and killing regrowth or new seedlings. Using a combination of control methods is usually more successful. To manage smooth tree pear:

- control all plants in small or isolated infestations
- safely dispose of all plant parts
- distribute biological control agents.

Prevention

Do not grow smooth tree pear in gardens or pots. Do not take cuttings of unknown cactus plants to grow out or share with others.

Stop the spread of cactus into new areas by checking clothing, vehicles and equipment for plant parts before leaving an area that has any cactus weeds.

Physical removal

By hand - Dig up small or isolated plants using a mattock or other tools. Wear appropriate protective clothing and gloves to protect against injuries.

By machine - Dense infestations or large isolated plants can be removed with machinery where there is good access to the site, the site is not environmentally sensitive and plant parts can be safely disposed of.

Disposal

Dispose of smooth tree pear plants by burying at least 1 m deep or by burning in a hot fire. Contact your local council for information about other disposal options.

Biological control

The cochineal *Dactylopius ceylonicus* provides good control of smooth tree pear. It takes several years to kill plants. Control is slower in areas with high rainfall.

Felling plants over 2 m tall and stacking the cut segments after the cochineal has established will speed up control.

There are several species and lineages of cochineal insects that look similar, but they each control different cacti. It is important to use the right species of cochineal for each species of cactus.

Contact your local council weeds officer for information about using cochineal to control smooth tree cactus. The cactoblastis moth (*Cactoblastis cactorum*) and soft rot pathogens (e.g. *Phyllosticta concava*) attack smooth tree pear and limit growth but do not control it. - Continued on page 6

Chemical control

Spot spraying - Herbicides are especially useful for sparse, scattered infestations. Spray actively growing plants. Cover all parts of the plant with herbicide to the point of visible wetness. Check treated plants and control new growth.

PRIORITY CACTI NEAR YOU!

Smooth tree pear (Opuntia monacantha) - Continued

Stem injection with capsules - Capsules are injected into the stem's sapwood and then sealed. Use on actively growing plants

More information

- Weed futures: Determining current and future weed threats in Australia, *Opuntia monacantha*. Macquarie University.
- PlantNET NSW FloraOnline, *Opuntia monacantha*. Royal Botanical Gardens and Domain Trust.
- Managing Opuntoid Cacti in Australia
- Biological control of weeds: A practitioner's guide for south-east Australia

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- Harvey, K.J., McConnachie, A.J. Sullivan, P. Holtkamp, R. and Officer, D. (2021). Biological control of weeds: a practitioner's guide for south east Australia. New South Wales Department of Primary Industries, Orange.
- Lim, T. K. (2012). *Opuntia monacantha*. In *Edible Medicinal and Non-medicinal Plants* (pp. 683-686). Springer, Dordrecht.
- Parsons, W. T., & Cuthbertson, E. G. (2001). *Noxious weeds of Australia*. CSIRO publishing.
- PlantNET (The NSW Plant Information Network System). Royal Botanic Gardens and Domain Trust, Sydney. Retrieved 5 May 2021 which can be accessed [here](#).
- Sheehan, M. R., & Potter, S. (2017). *Managing Opuntoid Cacti in Australia: Best Practice Control Manual for Austrocylindropuntia, Cylindropuntia and Opuntia Species*. Department of Primary Industries and Regional Development.



*Photo: The spines on the trunks are up to 10 cm long.
Photographer: Paul Marynissen*

BE WEEDWISE AND GET THE APP!

Have you visited the Department of Primary Industries WeedWise site lately?

WeedWise helps you identify priority weeds, understand where incursions are occurring, and learn what to look out for in your backyard, paddock or mining claim.

You can check which weeds are emerging in your local area and get help identifying unfamiliar or hard-to-control plants. WeedWise provides practical information on control options and methods that may help manage recurring weed problems. A new mapping feature also allows users to search for known weed incursions across New South Wales.

WeedWise is available as both a [website](#) and a mobile app. App features vary depending on whether you are a landholder, resident or weeds professional.

Landholders and residents can save the contact details of their local council weeds officer and report sightings of state priority weeds directly by email.

Weeds professionals can share detailed weed information with clients, including weed profiles, biosecurity obligations, control advice and herbicide options.

NSW WeedWise includes the full content of the NSW Weed Control Handbook, a free publication from the NSW Department of Primary Industries.

For more information, visit the WeedWise website or download the WeedWise app from the Google Play Store or Apple App Store.



How invasive is your cactus?



Department of
Primary Industries

NSW WeedWise

Got weeds? Get WeedWise!

ONLINE OR IN THE APP STORES



weeds.dpi.nsw.gov.au



Over 300 weed profiles in your pocket!

Close to one million views a year

“brilliant...this app is very, very helpful”

COME CLEAN GO CLEAN

KEEP YOUR BACKYARD CLEAN

Although all cacti and succulents are known for being drought tolerant, all cacti are not native to Australia and can be highly invasive.

If during your travels you see a unique looking cactus specimen, do not be tempted to collect it, even something like the flowers or fruit could lead to it's spread. Instead, take a photo and report its location to your local biosecurity officer or NSW Department of Primary Industries on 1800 680 244.

More Information check out the [Come Clean Go Clean brochure](#) or [Northern Slopes Landcare website](#).

Tourism

Everyone has a role to play in stopping the spread of invasive cacti. Don't let invasive cacti become an unwanted holiday hitchhiker!

Invasive non-native cactus species spread easily and rapidly through the landscape. They are costly to manage and seriously destroy farmland and biodiversity.

They have the potential to not only harm travelers, but also their pet companions. They also displace native flora and cause injury and sometimes death to native animals.

Invasive cactus has been found on tires and shoes kilometers from where they first attached, aiding their spread across the landscape. Please always check your boots, tires and under all your vehicles for any unwanted hitchhikers.

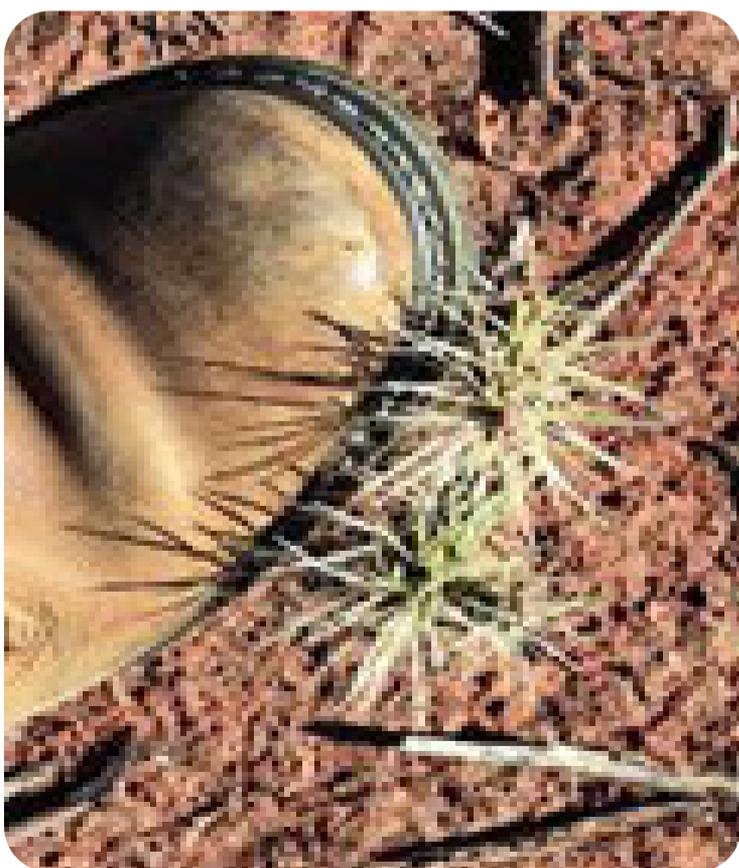


Photo: Debi Bancroft

How invasive is your cactus?



Cacti fact

Australia has more than 30 invasive cactus species, many of which spread rapidly by broken plant fragments.

Even small pieces can take root and form new plants, making activities such as slashing, grading and stock movement a major pathway for their spread if not carefully managed.

BIOLOGICAL CONTROL SUCCESS: HARRISIA MEALY BUG (*HYPOGEOCOCCOS PUNGENS*) IN ACTION

The *Harrisia* mealy bug was initially released within the Twin Rivers area of the Inverell Shire in 2022, there was no mealy bug present at time of initial release.

This site continues to be monitored by DPIRD staff with assistance from Inverell biosecurity officer Geoffery Riley, and continues to show the mealy bug to be active and effective within this climate. Photographic evidence of the mealy Bug (*Hypogeococcus pungens*) as a control agent on *Harrisia* (*Harrisia martinii*) at the Twin Rivers site.

Photos: Left - *Harrisia* (*Harrisia martinii*) along fenceline with some agent present. Photo taken 12 December 2023. Right - *Harrisia* (*Harrisia martinii*) along same fence line as figure 1 Showing evidence of extensive agent damage. Photo taken 20 November 2025. Photo Credit: Debi Bancroft.



A BLAST FROM THE PAST



A blast from the past. Circa 1992, short-sleeved business shirts and leather shoes were the preferred field uniform, a reminder of how much has changed over the years. This photograph shows Prickly Pear staff at Rainbow Reserve near Boggabilla at the completion of a long day releasing biological control agents on *Harrisia* cactus. The image captures an important moment in time in Australia's biological control history, reflecting the dedication of early weed management teams working in challenging field conditions to protect landscapes and agricultural productivity.

While clothing, equipment and safety standards have evolved significantly since then, the commitment to managing invasive cacti through biological control remains just as strong today. Photo supplied by P. Hodge.

MOTHER-OF-MILLIONS (*BRYOPHYLLUM SPECIES*): THE GREAT ESCAPEE

As the name suggests, mother of millions reproduces rapidly, producing hundreds of tiny plantlets which quickly form new colonies.

It is adapted to dry conditions and can survive long periods of drought. This increases the plant's potential to persist and spread. (WEEDWISE)

Mother of Millions came to Australia from Madagascar as a popular, drought-tolerant ornamental garden plant, but quickly became a widespread and a serious invasive weed by escaping cultivation through dumped garden waste.

Now a declared weed, it forms dense mats in bushland, roadsides, and pastures, posing a significant threat as it's highly toxic to livestock and pets, causing rapid heart failure if ingested.



Photos: Mother of Million, the plant first introduced as a garden plant can now be found invading native bushland and pastureland. Images: Debi Bancroft

Rules for selling plants, foliage and flowers in NSW

The sale and movement of plants, foliage and flowers in New South Wales is regulated to help prevent the spread of invasive species.

Under the NSW Biosecurity Act 2015, the sale, supply and movement of priority weeds is restricted. These restrictions apply to all parts of a plant, including seeds, cuttings, foliage, cultivars and hybrids. Anyone involved in growing, selling or distributing plants has a responsibility to understand and comply with these requirements.

Priority weeds are plants that pose a serious risk to the environment, agriculture, economy or community. State priority weeds must not be sold anywhere in NSW. Regional priority weeds should not be sold in certain parts of the state where they present a known or emerging risk.

The [NSW WeedWise website](#) is the main tool for identifying plants with sales and movement restrictions. Using the advanced search function, sellers can generate a list of state priority weeds by selecting "Must not be sold in NSW". Regional priority weeds can be identified by selecting "Should not be sold in parts of NSW" and choosing the relevant Local Land Services region. This helps ensure sellers understand restrictions that apply to their location.

If a person is found buying or selling a regional priority weed, they may be given the opportunity to stop the activity or demonstrate that risks have been managed. This may include showing how the risk has been minimised, confirming that customers have been informed about the plant's impacts, or providing evidence that the plant cannot regenerate or reproduce.

If these requirements cannot be met, an authorised officer may issue a biosecurity direction outlining actions that must be taken to reduce risk. Failure to comply may result in seizure of plants and an on-the-spot penalty of \$1,000, with further legal action possible.

For advice and assistance, retailers and businesses can contact their local council weeds officer or call the NSW Biosecurity Helpline on 1800 680 244.

NSW GOVERNMENT **Selling plants? Protect your business**
Don't buy, sell or move plants, flowers or foliage that put NSW at risk

Authorised officers from councils inspect places that sell plants, cut flowers and foliage

Image supplied: Sydney flower markets advertising campaign

How invasive is your cactus?

LRAOR's High-Tech Solution for Weed Management: The Universal Flow Tracker



Photo: Victoria Lugovoy using the UFT in the field while spraying

The Lightning Ridge Area Opal Reserve (LRAOR) has adopted a cutting-edge tool to improve its weed management program: the Rapid Spray Universal Flow Tracker (UFT).

This device has been a game-changer, providing the Reserve with precise, comprehensive data on its spraying operations and enabling a more strategic approach to invasive plant control.

With the UFT, LRAOR can track flow data in real-time, giving the team insight into exactly how much chemical is used per plant and per job. Beyond just numbers, the UFT uses GPS tracking to map each application point, allowing for accurate visualisation of areas and plants that have been treated. This satellite imagery also enables LRAOR to monitor and log up to three different weed species per job, creating a comprehensive record of which plants are targeted and where.

The UFTs reporting capabilities further enhance the Reserve's operations. Once a job is completed, the UFT generates a report that includes essential data points, such as weather conditions, plant locations, and specific chemical usage. These reports are essential for LRAOR's compliance, tracking, and analysis, offering an accurate visual and data-backed summary of their efforts.

LRAOR looks forward to the long-term impact of this technology. Over time, the data will provide insights into how infestations are changing, helping the team understand whether infestations are increasing or decreasing across the Reserve. With tools like the UFT, LRAOR is more equipped than ever to manage the spread of invasive species like Hudson Pear and Harrisia.

See over the page for the Chemical Spray Sheet relating to this article.

The Weed Society of New South Wales Inc

Join to be a member of the Weed Society of New South Wales Inc today and get the following benefits!

- Opportunity to network with others interested in weed management
- Discounted registration for Society seminars and workshops
- Opportunity to apply for Society Travel Awards
- The Society newsletter, A Good Weed, delivered quarterly
- Access to the Society electronic newsletter, the Punnet Tray
- Discounted registration to attend the Australasian Weeds Conference
- Discounted registration to attend the NSW Biennial Weeds Conference
- Additional financial prizes for the winners of the Buerckner and Stephenson Weed Professionals Awards

To join, simply fill out the [membership form](#)
Email to secretary@nswweedsoc.org.au or
Mail to The Secretary, Weed Society of New South Wales Inc, PO Box 6,
MUSWELLBROOK NSW 2333



How invasive is your cactus?

Continued - LRAOR's High-Tech Solution for Weed Management: The Universal Flow Tracker

Chemical Spray Sheet | Job Details

Job Name:	#74 Harrisia Spray		
Application Location:	5R29HX26+57		
Start Time:	Tue Aug 26 2025 07:00:00 (GMT+1000)	End Time:	Tue Aug 26 2025 14:00:00 (GMT+1000)
Job Description:	Continuation of spraying out Harrisia martinii infestation in Hidden Valley		
Total Volume:	591 L	Area Sprayed:	0.23 ha (2335.24 m ²)

Weather Report

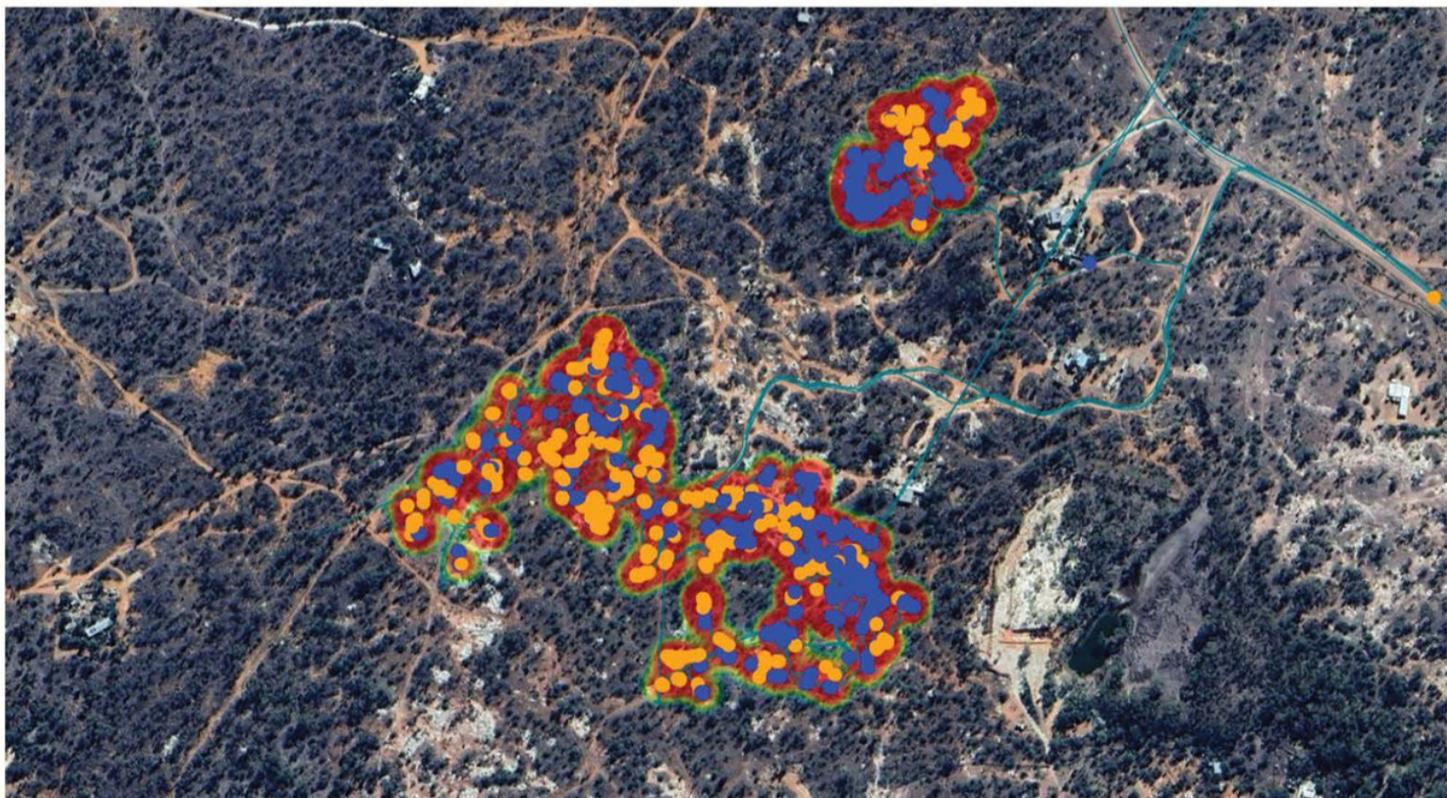
	Delta T (ΔT °C)	Temperature (°C)	Humidity (%)	Wind Speed (m/s)	Wind Direction(°)
Start	3.27	11.88	69.00	4.35	69.00
End	9.72	24.46	33.00	8.01	33.00

Targets

- Hudson Pear (white)
- Harrisia
- Hudson Pear (brown)

Application Type

Spot Treatment



Chemical Mixing / Usage: Recipe Name

Chemical Name	Concentrations	Product Type	Chemical Usage
Grazon Extra	550.00 ml/100L	LIQUID	3251.28 ml
Deluge 1000	550.00 ml/100L	LIQUID	3251.28 ml
Envirodye Red	250.00 ml/100L	LIQUID	1477.86 ml
Ammonium Sulphate	330.00 g/100L	SOLID	1950.77 g
Total Sprayed	591 L		

Operator Signature:

Applicator Name:

Victoria Lugovoy, David Sullivan



NORTH WEST

No Space for Weeds



COME CLEAN GO CLEAN

Help prevent the spread of invasive cacti



Driving

AVOID FLAT TYRES AND DAMAGE TO EQUIPMENT

The spines of cacti may cause flat tyres and damage to camping equipment. Avoid these by staying on designated routes.



Camping

AVOID INJURY TO PETS, PEOPLE AND DAMAGE TO EQUIPMENT

Stay in designated or cleared campsites, so it is easier to check for cactus plants – it will reduce your risk of injury or damage.



Checking

Before you leave a campsite or known infested area, check your vehicle's undercarriage, including the inside and outside of your tyres, for attached cactus segments.



Removing

If you find an attached cactus segment on your vehicle or equipment, ensure you remove with care using a pair of pliers or multi-tool.



Cleaning

Cactus spines can penetrate even the toughest of boots. Check your boots and remove cactus segments and spines using pliers or a multi-tool.



Disposing

Place removed segments in a red-lidded bin if available. Otherwise, place it in the middle of another cactus of the same species or seal it in a suitable container until you can dispose of it in a red-lidded bin.



Keep your backyard clean

Cacti and most succulents are not native to Australia and can be highly invasive if not managed appropriately due to being drought tolerant and highly adaptable.

If you see a unique looking cactus specimen, do not be tempted to collect it as even small segments can lead to invasive spread with associated costs and impacts.

Take a photo instead and report its location to your local Biosecurity Officer or NSW Department of Primary Industries on **1800 680 244**.

Disclaimer: The information contained in this publication is based on knowledge and understanding at the time of writing (June 2020). However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with the appropriate NSW Government department.



For more information, download the NSW WeedWise App



How invasive is your cactus?

Resources to download



NORTH WEST
No Space for Weeds

Seen this plant? Tiger pear

Opuntia aurantiaca

Tiger pear is an invasive cactus species from South America that has naturalised in a variety of habitats in North West, Central West and Hunter regions. Tiger pear was likely to have been introduced to Australia in the late 1800's.

How does this weed affect us?

Tiger pear has sharp, barbed spines up to 5 cm long that:

- cause painful injuries to people, livestock, working dogs and pets
- injure and sometimes kill wildlife that get trapped in the spines
- devalue wool and hides and prevent shearing
- get stuck around the mouth of lambs or calves and prevent them from feeding.

Tiger pear forms dense thickets that prevent movement of animals and people. This means that:

- livestock may not be able to access feed
- mustering is difficult
- access to watering points is reduced
- recreational activities such as bushwalking and camping are restricted.

Seen it? Call us:

Help protect our land, plants and wildlife.

If you spot any infestations of tiger pear, please contact your **BIOSECURITY WEEDS OFFICER** by calling the **NSW BIOSECURITY HELPLINE 1800 680 244**

North West Regional Priority Weeds Objective - ASSET PROTECTION



NORTH WEST
No Space for Weeds

Seen this plant? Harrisia cactus

Harrisia martinii

Harrisia cacti is an invasive cactus species from South America that has naturalised in a variety of habitats in northern NSW and southern Queensland. Harrisia cactus was originally introduced to Australia as an ornamental plant. It has white funnel shaped flowers, long spines and forms large tangled mats.

How does this weed affect us?

Harrisia cactus is difficult to control as it produces thousands of viable seeds and has fleshy storage tubers.

It forms impenetrable thickets which:

- out-compete grasses and reduce productivity of grazing land
- prevent movement of livestock
- make mustering difficult
- restrict access to watering points
- provide habitat for feral animals such as rabbits
- compete with native plants especially in acacia-wooded grasslands.

The sharp spines on Harrisia cactus can:

- cause painful injuries to people, livestock, working dogs and pets
- injure and sometimes kill wildlife that get trapped in the spines
- devalue wool and hides and prevent shearing.

Seen it? Call us:

Help protect our land, plants and wildlife.

If you spot any infestations of Harrisia cactus, please contact your **BIOSECURITY WEEDS OFFICER** by calling the **NSW BIOSECURITY HELPLINE 1800 680 244**

North West Regional Priority Weeds Objective - CONTAINMENT



NORTH WEST
No Space for Weeds

Seen this plant? Hudson pear

Cylindropuntia pallida

Hudson pear is an invasive cactus species of Mexican origin that has naturalised in a variety of habitats in north-western NSW. It has pink to purple coloured flowers, large spines and grows up to 1.5 m high and 3 m wide.

It spreads easily and rapidly and is hard to manage, seriously degrading invaded land and ecosystems.

How does this weed affect us?

Hudson pear has serious consequences and the potential to:

- injure people, stock and pets
- reduce land value
- displace native flora
- kill native fauna including koalas
- make mustering difficult
- penetrate skin, shoes and tyres with its vicious spines.

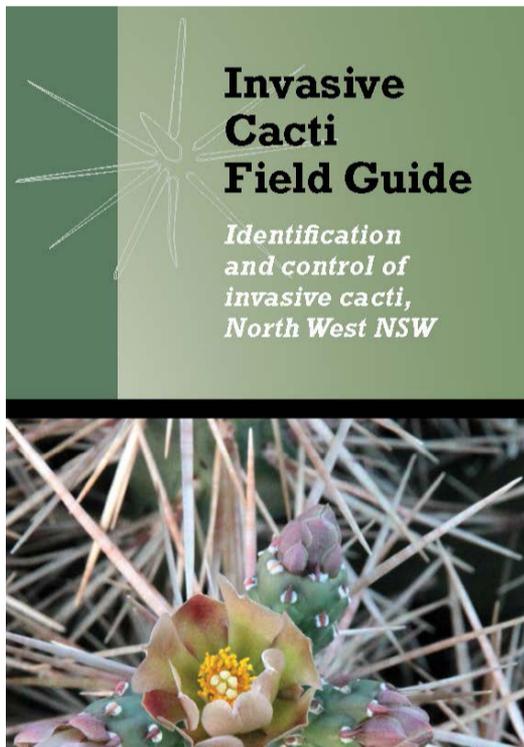
The spines have a sheath which can stay in a wound after the spine is taken out. This can cause more pain and inflammation.

Seen it? Call us:

Help protect our land, plants and wildlife. If you spot any infestations of Hudson pear, please contact:

BIOSECURITY WEEDS OFFICER
WALGETT SHIRE COUNCIL
0428 462 060
0497 013 066

NSW BIOSECURITY HELPLINE
1800 680 244



Invasive Cacti Field Guide
Identification and control of invasive cacti, North West NSW



NORTH WEST
No Space for Weeds

Biocontrol of Hudson pear using the Cochineal

Cylindropuntia pallida

Dactylopus tomentosus
(californica var. parteri)

What are cochineal?

Cochineal are soft-bodied scale insects that feed solely on plants in the cactus family, especially species in the genera *Opuntia* and *Cylindropuntia*.

Four cochineal species have been released and established as biocontrol agents in Australia, some of which have different lineages that specifically target different *Opuntia* and *Cylindropuntia* species.

The various lineages differ significantly in their impact so it is important to match the correct lineage to each target species.

What do cochineal look like?

Cochineal are easily identifiable on cacti when females have attached themselves to the plant, and have covered themselves with a white, wax-like covering.

Adult females are:

- soft bodied
- oval shaped
- deep red-coloured
- wingless
- 2 - 2.7 mm long
- sessile (i.e. once they start feeding, they do not move).

Adult males are:

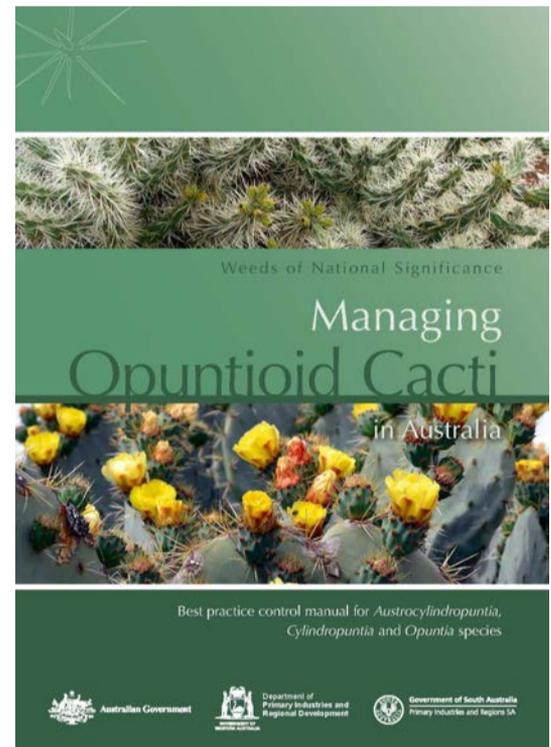
- winged and able to disperse
- difficult to see
- 1.55 mm long.

Eggs are:

- red in colour
- oval shaped
- 0.3 mm wide and 0.5 mm long
- able to hatch in approximately 17 days.

Nymphs are:

- a deep red-colour
- 1 mm long
- wind dispersed
- male nymphs are able to spin a white, silky cocoon.



Weeds of National Significance

Managing Opuntoid Cacti in Australia

Best practice control manual for *Austrocylindropuntia*, *Cylindropuntia* and *Opuntia* species

Australian Government, Department of Primary Industries and Regional Development, Government of South Australia Primary Industries and Regions SA

Hardcopies are available from Northern Slopes Landcare Bingara cacti@nsla.net.au

Hudson pear (*Cylindropuntia pallida*) Playlist

Check out our videos at Northern Slopes Landcare
The playlist includes videos on:

- what is Hudson pear
- what cochineal look like;
- where to collect cochineal;
- how to collect, transport and collect cladodes;
- how to release cochineal and
- further integrated control option.

Visit: northernslopeslandcare.com.au/cacti/cacti-news-media/cactus-news

They are also available on a handy, credit card sized data stick, available at various locations around Lightning Ridge, Grawin and Cumborah or email weeds@dpi.nsw.gov.au

How invasive is your cactus?

Resources to download

Invasive cacti in North West NSW

Identification and biological control options

<p><i>Austrocylindropuntia cylindrica</i> Cane cactus</p>  <p>Erect, branching shrub 0.3-1.5 m tall. Often forms patches several metres wide. Deciduous leaves to 1 cm long.</p> <ul style="list-style-type: none"> Dark bluish-green, shiny. Cylindrical, 15-50 cm long, 3-4 cm diameter. 2-6 spines per areole, approx 1 cm long. (Lacks papery sheath) Pink-red, cup-shaped, 2.5 cm diameter. Egg to urn shaped, to 4.5 cm long. Deep green to green-yellow. (Can produce chains) <p>Biocontrol Dactylopus tomentosus ('cholla' lineage)</p> <p>See p. 37 of the Invasive Cacti Field Guide for more information</p>	<p><i>Cylindropuntia fulgida</i> var. <i>mammillata</i> Coral cactus, boxing glove cactus</p>  <p>Erect shrub 0.4-1 m tall. Deciduous leaves. Rarely flowers/fruits.</p> <ul style="list-style-type: none"> Green to grey-green. Often distorted, with a corrugated (tuberculate) surface, 10-22 cm long, 2-4.5 cm diameter. Often numerous, easily detached small segments. 4-15 spines per areole, 0.7-2 cm 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. Forms long chains. Usually sterile. <p>Biocontrol Dactylopus tomentosus ('cholla' lineage)</p> <p>See p. 39 of the Invasive Cacti Field Guide for more information</p>	<p><i>Cylindropuntia imbricata</i> Devil's rope, rope pear</p>  <p>Branched shrub or small tree 1-3 m tall. Often with short trunks. Deciduous leaves.</p> <ul style="list-style-type: none"> Dull grey-green. 15-40 cm long, 3.5-5 cm diameter. Large, widely spaced tubercles give a woven, rope like appearance. 2-12 spines per areole, 0.8-3 cm long. Trunks often covered in spines. Off white-cream. (Off white-cream sheath attached) Dark pink, magenta. Fleshy, egg shaped, to 4 cm long. Greenish-yellow when ripe. (Can form chains) <p>Biocontrol Dactylopus tomentosus ('Cylindropuntia' lineage)</p> <p>See p. 41 of the Invasive Cacti Field Guide for more information</p>	<p><i>Cylindropuntia pallida</i> Hudson pear (White-spined)</p>  <p>Low, spreading shrub, 0.5-2 m tall. Up to 3 m wide. Old plants can develop trunks, but not commonly seen. Deciduous leaves.</p> <ul style="list-style-type: none"> Grey-pale green. 4.5-26 cm long, 1.5-3.5 cm diameter. Easily detached. Prominent tubercles. 7-14 spines per areole, 1-4 cm long. White to light brown. (White sheath loosely attached) Pink to purple. Oblong to egg shaped, to 3 cm long. Green to yellow-green. Sterile hybrid. <p>Biocontrol Dactylopus tomentosus ('californica var. parker' lineage)</p> <p>* Formerly known in Australia as <i>C. rosea</i></p> <p>See p. 43 of the Invasive Cacti Field Guide for more information</p>																																																
<p><i>Cylindropuntia prolifera</i> Jumping cholla</p>  <p>Low shrub 0.4-1 m tall. Deciduous leaves.</p> <ul style="list-style-type: none"> Greenish grey. 4-15 cm long, 4-5 cm diameter. Easily detached. Prominent tubercles. 7-11 spines per areole, 1-2 cm long. Light to dark brown, interlacing. (White to tan sheath firmly attached) Rose to magenta. Top shaped, 2-5 cm long. Green. Can form chains. Usually sterile. <p>Biocontrol Dactylopus tomentosus ('californica var. parker' lineage)</p> <p>See p. 45 of the Invasive Cacti Field Guide for more information</p>	<p><i>Cylindropuntia spinosior</i> Snake cactus</p>  <p>Erect shrub 1-3 m tall. Often forming patches several metres wide. Similar to <i>C. prolifera</i>, but different spine and fruit colour. Deciduous leaves. May develop a trunk.</p> <ul style="list-style-type: none"> Mid grey-green. 10-24 cm long, 1.5-3 cm diameter. Firmly attached. Prominent tubercles. 6-24 spines per areole, 0.8-1.5 cm long, interlacing. White to grey. (White sheath firmly attached) Rose-purple. 3-7.5 cm diameter. Fleshy, cylindrical to egg-shaped, 4 cm long. Yellow, sometimes green. <p>Biocontrol Dactylopus tomentosus ('bigelovii' lineage)</p> <p>See p. 47 of the Invasive Cacti Field Guide for more information</p>	<p><i>Cylindropuntia tunicata</i> Hudson pear (Brown-spined)</p>  <p>Low, densely branched shrub 0.3-0.6 m tall. Deciduous leaves.</p> <ul style="list-style-type: none"> Pale grey-green. 10-20 cm long, 1.5-3 cm diameter. Easily detached. Prominent tubercles. 4-7 spines per areole, 3-7 cm long. Red-brown to pale brown. (Brownish sheath loosely attached) Yellowish-brown. Club to top shaped. Greenish-yellowish to red. Spineless. Usually sterile. <p>Biocontrol Dactylopus tomentosus ('acanthocarpa x echinocarpa' lineage)</p> <p>See p. 49 of the Invasive Cacti Field Guide for more information</p>	<p><i>Opuntia aurantiaca</i> Tiger pear</p>  <p>Low spreading shrub to 0.5 m tall. Branches prostrate to somewhat erect.</p> <ul style="list-style-type: none"> Dark green to dark purple. Cylindrical to flattened. Up to 20 cm long. Easily detached. No tubercles. Usually 2-3 spines per areole, 1-3 cm long. Brown-yellowish. Yellow to orange-yellow. Fleshy, globular shaped, to 3 cm long. Red-purple. Sterile. <p>Biocontrol Dactylopus austrinus and <i>Cactoblastis cactorum</i></p> <p>See p. 51 of the Invasive Cacti Field Guide for more information</p>																																																
<p><i>Opuntia monacantha</i> Drooping tree pear</p>  <p>Erect shrub to 2 m tall, sometimes with a short trunk. Plant has an obvious drooping appearance.</p> <ul style="list-style-type: none"> Glossy green. Linear to elliptic, tapering towards base, thin profile. 20-50 cm long, 12-18 cm wide. 1-2 spines per areole (but increasing to 4-5 in older parts of the plant), 2-4 cm long. Brown to off-white. Yellow, outermost tepals red, 5.5-7 cm diameter. Pear-shaped tapering to a stalk-like base, 5-7 cm long. Green to reddish, spineless, often forming chains of fruit. <p>Biocontrol Dactylopus ceylonicus</p> <p>See p. 53 of the Invasive Cacti Field Guide for more information</p>	<p><i>Opuntia robusta</i> Wheel cactus</p>  <p>Shrub with multiple stems up to 4 m tall (commonly 1-2 m).</p> <ul style="list-style-type: none"> Blue-green. Flattened, circular, up to 40 cm wide. 2-12 spines per areole, up to 5 cm long. White to pale brown or yellow. Yellow, 5-8 cm diameter. Fleshy, globular shaped, to 8 cm long. Deep red. Numerous fertile seeds. <p>Biocontrol Dactylopus opuntiae</p> <p>See p. 55 of the Invasive Cacti Field Guide for more information</p>	<p><i>Opuntia stricta</i> Common prickly pear</p>  <p>Spreading/erect shrub, up to 2 m tall. Forms thickets.</p> <ul style="list-style-type: none"> Green to grey green. Elliptic to obovate. 10-25 cm long. In <i>O. stricta</i> var. <i>stricta</i>, spines are absent or the occasional one may be present on a pad. In <i>O. stricta</i> var. <i>dillenii</i>, there are up to 11 spines per areole, 1.5-4 cm long. Yellow, 6 cm diameter. Fleshy, globular to pear-shaped, to 6 cm long. Purplish red. Numerous fertile seeds. <p>Biocontrol Dactylopus opuntiae and <i>Cactoblastis cactorum</i></p> <p>See p. 57 of the Invasive Cacti Field Guide for more information</p>	<p><i>Opuntia tomentosa</i> Velvet pear, Velvety tree pear</p>  <p>Shrubby to tree-like, up to 5 m tall. Often with a trunk. Cladodes and fruits covered in fine hairs, giving a velvety appearance.</p> <ul style="list-style-type: none"> Grey-green. Flattened, elliptic to obovate, 15-30 cm long. Often spineless, but can have 0-4 spines, 0.5-1.5 cm long. Whitish-yellow. Orange, 4-5 cm diameter. Globular to egg-shaped, with flattened top, up to 5 cm long. Red. <p>Biocontrol Dactylopus opuntiae</p> <p>See p. 59 of the Invasive Cacti Field Guide for more information</p>																																																
<p><i>Harrisia martinii</i></p>  <p>Perennial herb, forming large tangled mats, 30-60 cm high. Can climb up existing shrubs and trees.</p> <ul style="list-style-type: none"> Bright green fleshy, multi-branched, succulent stems 2.5 cm thick with 5-6 ribs running lengthways, each bearing spines in areoles. 1-3 central spines per areole, 1-3.5 cm long and 5-7 radial spines 1-6 mm long. White, large, funnel-shaped, 15-20 cm long, opening at night and withering in early morning. Red, almost spherical, spiny 3.5-5 cm diameter. Fruit splits down side when ripe, exposing 400-1000 black seeds embedded in white pulp. <p>Biocontrol Hypogococcus fersesianus (Mealybug)</p> <p>See p. 61 of the Invasive Cacti Field Guide for more information</p>	<p>Key to symbols</p> <table border="1"> <tr> <td></td> <td>Circular</td> <td></td> <td>Cladodes (Stem segments)</td> <td></td> <td>Areole – small circular or elongated woolly cushion area on the surface of segments.</td> </tr> <tr> <td></td> <td>Elliptical</td> <td></td> <td>Flowers</td> <td></td> <td>Cladode (Stem segment) – a modified, swollen, water storing stem segment, often referred to as pads in <i>Opuntia</i> species.</td> </tr> <tr> <td></td> <td>Linear</td> <td></td> <td>Fruits</td> <td></td> <td>Glochids – small, detachable barbed bristles.</td> </tr> <tr> <td></td> <td>Oblong</td> <td></td> <td>Spines</td> <td></td> <td>Sheath – papery outer covering of the spine. Only present in <i>Cylindropuntia</i> species.</td> </tr> <tr> <td></td> <td>Obovate</td> <td></td> <td>Biocontrol</td> <td></td> <td>Tepal – the term given to the outer part of flowers when it cannot be easily divided into sepals and petals.</td> </tr> <tr> <td></td> <td></td> <td></td> <td>Cochineal</td> <td></td> <td>Tubercle/tuberculate – a small raised area or nodule on a plant surface/having tubercles.</td> </tr> <tr> <td></td> <td></td> <td></td> <td>Mealybug</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>Cactoblastis</td> <td></td> <td></td> </tr> </table> <p>Glossary</p> <p>Biological Control (biocontrol) is one of many ways to reduce the impact of invasive cacti. Biocontrol is best used on large areas of weeds, where there are lots of plants growing closely together. It can also be combined with other control methods such as chemical control or physical removal.</p> <p>Refer to the <i>Invasive Cacti Field Guide, North West NSW</i> for more information on controlling cacti for your situation.</p> <p>www.northernslopeslandcare.com.au www.northwest.lhs.nsw.gov.au</p> 				Circular		Cladodes (Stem segments)		Areole – small circular or elongated woolly cushion area on the surface of segments.		Elliptical		Flowers		Cladode (Stem segment) – a modified, swollen, water storing stem segment, often referred to as pads in <i>Opuntia</i> species.		Linear		Fruits		Glochids – small, detachable barbed bristles.		Oblong		Spines		Sheath – papery outer covering of the spine. Only present in <i>Cylindropuntia</i> species.		Obovate		Biocontrol		Tepal – the term given to the outer part of flowers when it cannot be easily divided into sepals and petals.				Cochineal		Tubercle/tuberculate – a small raised area or nodule on a plant surface/having tubercles.				Mealybug						Cactoblastis		
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Hardcopies are available from Northern Slopes Landcare or [download a copy](#)

How invasive is your cactus?

Key Contacts

North West Regional Weeds Officers

Gunnedah Shire Council

Senior Weeds Officer

Lee Amidy - 0427 254 188

Address

63 Elgin Street Gunnedah
NSW 2380

Postal Address

PO Box 63
Gunnedah NSW 2380

Phone - 02 6740 2100

Email - council@infogunnedah.com.au

Liverpool Plains Shire Council

Authorised Officer - Weeds

Mike Whitney - 0427 961 980

Address

60 Station Street
Quirindi NSW 2343

Postal Address

PO Box 152
Quirindi NSW 2343

Phone - 02 6746 1755

Email - lpsec@lpsec.nsw.gov.au

Narrabri Shire Council

Bio-security Coordinator

Clare Felton-Taylor - 0427 294 771

Bio-security Officer - Weeds
Address

46-48 Maitland Street
Narrabri NSW 2390

Postal Address

PO Box 261
Narrabri NSW 2390

Phone - 02 6799 6866

Email - council@narrabri.nsw.gov.au

Gwydir Shire Council

Weeds Officer Warialda

Luke Creighton - 0417 793 144

Weeds Officer Bingara

Scott Revell - 0476 490 026

Bingara Office

33 Maitland Street
Bingara NSW 2404

Warialda Office

52 Hope Street
Warialda NSW 2402

Phone - 02 6724 2000

Email - mail@gwydir.nsw.gov.au

Moree Plains Shire Council

Bio-security Officer

Lachlan Biddle - 0408 204 577

Weeds Officer

Damien Sykes - 0461 372 877

Address

Level 2, Max Centre
30 Heber Street
Moree NSW 2400

Postal Address

PO Box 420
Moree NSW 2400

Phone - 02 6757 3222

Email - council@mpsc.nsw.gov.au

Tamworth Regional Council

Weeds Officer
Address

Ray Walsh House
437 Peel Street
Tamworth NSW 2340

Postal Address

PO Box 555
Tamworth NSW 2340

Phone - 02 6767 5555

Email - trc@tamworth.nsw.gov.au

Castlereagh Macquarie County Council

Senior Weeds Officer

Andrea Fletcher-Dawson - 0428 462 060

Weeds Officer

Mat Savage - 0427 253 463

Harrisia Cactus Project Officer

Jason Williams - 0497 013 086

Address

55 Fox Street
Walgett NSW 2832

Postal Address

PO Box 31
Walgett NSW 2832

Phone - 02 6828 6100

Email - admin@walgett.nsw.gov.au

Cactus Quarterly Contact

Debi Bancroft

Phone - 0438 353 519

Email - cacti@nsla.net.au

Hudson pear control program

Bio-security Officer

Rachel Turner - 0417 753 170

Hudson Pear Project Officer

Todd Pallister - 0457 939 055

Sign up to Cactus Quarterly by
scanning the QR code or sign up
via our website.



How invasive is your cactus?

Further information

Websites

- Atlas of Living Australia
- Australian Pesticides and Veterinary Medicinal Authority (APVMA)
- Biological Control DPI
- Department of Primary Industries (DPI)
- DPI Weeds
- NSW Biocontrol Weeds Taskforce
- NSW WeedWise
- North West Local Land Services (NW LLS)
- Weeds Australia
- PlantNET
- Weed Control and Identification

Resources

- Australian Weed Strategy
- New South Wales Weed Control Handbook
- Invasive Cacti Field Guide Identification and control of invasive cacti, North West NSW
- Opuntiod Cacti Best Practice Control Manual
- Biological control of weeds

NSW acts & regulations

- Biodiversity Conservation Act 2016
- Bio-security Act 2015
- EPA Pesticide Act 1999
- EPA Pesticide Regulation 2017
- Local Land Services Act 2013

NSW Local Land Services

- Moree Office** - 02 6750 9000
- Warialda Office** - 02 6729 1529
- Narrabri Office** - 1300 795 299
- Tamworth Office** - 02 6764 5900
- Walgett Office** - 02 6828 6400
- Gunnedah Office** - 02 6742 9220
- Goondiwindi Office** - 0428 432 784

Call 1300 795 299 to contact your Local Land Service office from Monday to Friday during business hours

Or online at lls.nsw.gov.au/ourregions/north-west/contact-us

Department of Primary Industries

Biosecurity Helpline - 1800 680 244
Primary Industries
Weed Biocontrol
(Weed Research Unit)
weed.biocontrol@dpi.nsw.gov.au

Invasive Plants and Animals enquiries - 1800 084 881

Vertebrate pest related matters
invasive.species@dpi.nsw.gov.au

Weeds related matters
weeds@dpi.nsw.gov.au

Tell us what you think!

The North West Local Land Services loves getting feedback!

Scan the QR code or online here

