# Making the most out of a sticky situation – acting of Sticky nightshade

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CENTRAL TABLELANDS
No Space for Weeeeeds

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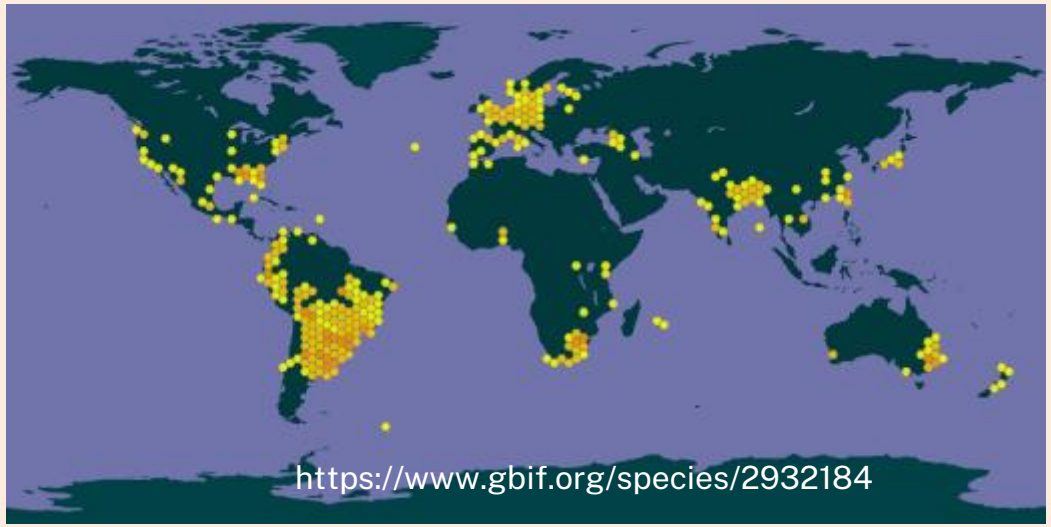
We're in the stickiest situation since Sticky the Stick Insect got stuck on a sticky bun. ...
www.blackadderquotes.com

# Sticky nightshade –*Solanum sisymbriifolium Lam.*

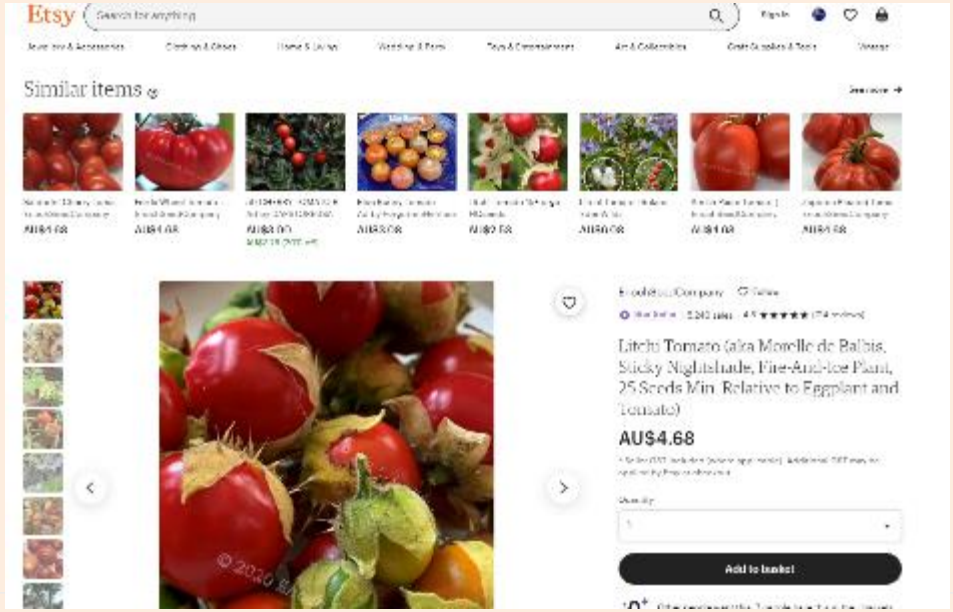
A native to warm temperate South America (Argentina, Bolivia, Chile, Colombia, Ecuador, Paraguay, Peru, Brazil)

Has been introduced and is naturalised in Australia, South Africa, China, India, USA and western Europe (and more)



# Sticky nightshade - uses

Small edible fruits, sold as rare vegetable, reported medicinal uses, hedging plants to keep animals out (prickles), trap crop for potato cyst nematodes




Morelle de Balbis

Litchi tomato

Vila-vila

Fire-and-ice plant

Red buffalo-burr

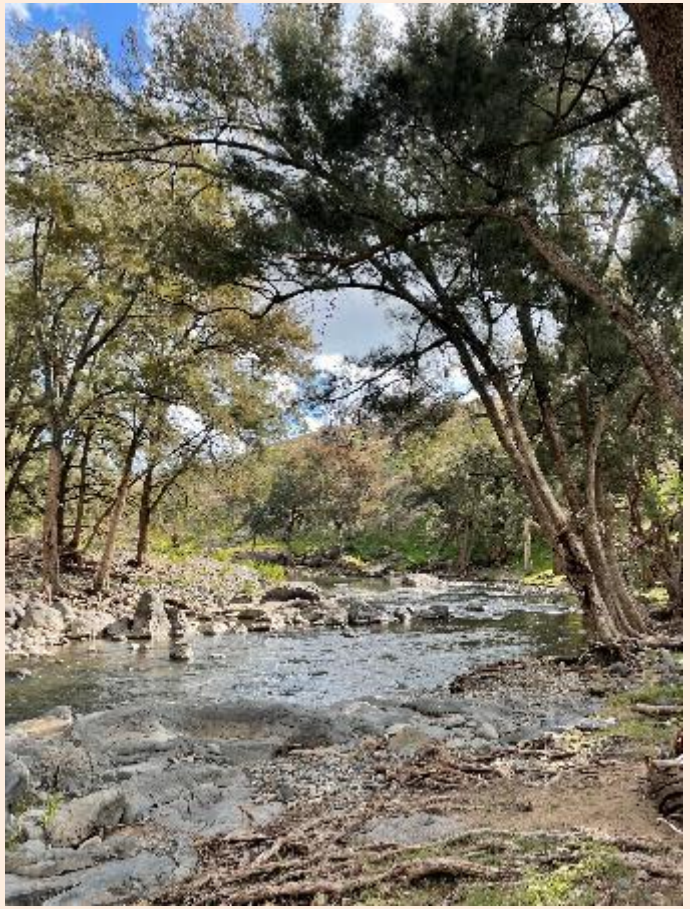
Viscid nightshade

Sticky nightshade

https://www.jeremybartlett.co.uk/2014/10/19/sticky-nightshade-solanum-sisymbriifolium/

# Native habitat of Sticky nightshade

In native areas Sticky nightshade is reported to be associated with localised short term disturbance sites like ploughed fields, roadsides, wastelands, landfills and cultivated crops



# Pattern of spread in Sticky Nightshade

**South Africa** – been present for about 100 years

May have been introduced as seeds in horse feed by British in the South African War around 1900, with first record in 1908

First report of dense infestations in the 1940s (some 40 years later)

Proclaimed a Noxious Weed in 1941

M. Hill 1994 PhD Thesis

Kops et al., J., "Flora Batava", vol. 25: t. 1951

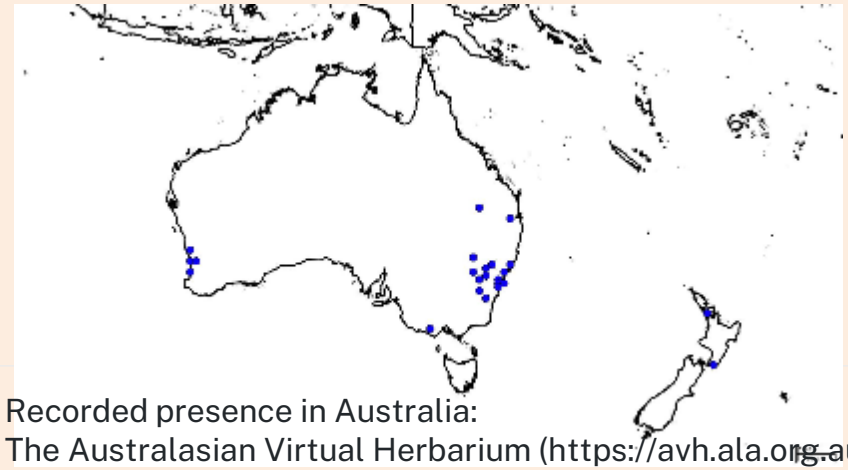
# Sticky nightshade in Australia

**Queensland -** Introduced in the 1920's around Toowoomba in Queensland.

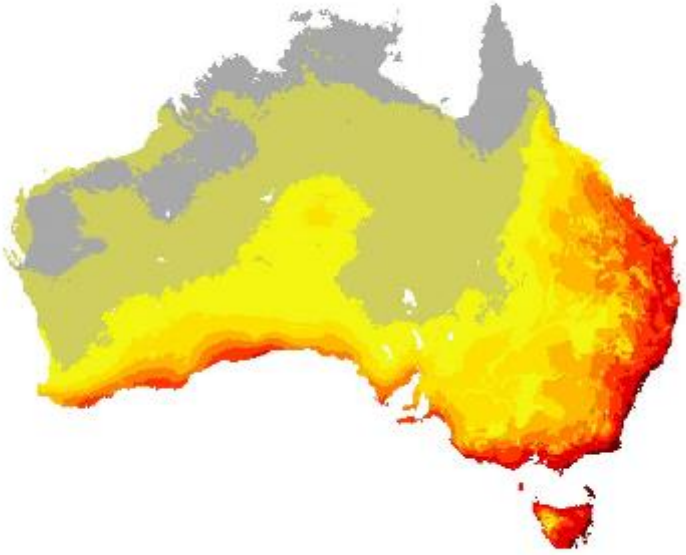
Spreading recorded from 1970s (some 50 years later)

M. Hill 1994 PhD Thesis

Records for sticky nightshade in Western Australia, New South Wales, Victoria, Australian Capital Territory and Queensland



Recorded presence in Australia:
The Australasian Virtual Herbarium (https://avh.ala.org.au/)



Current suitable habitat: http://weedfutures.net/

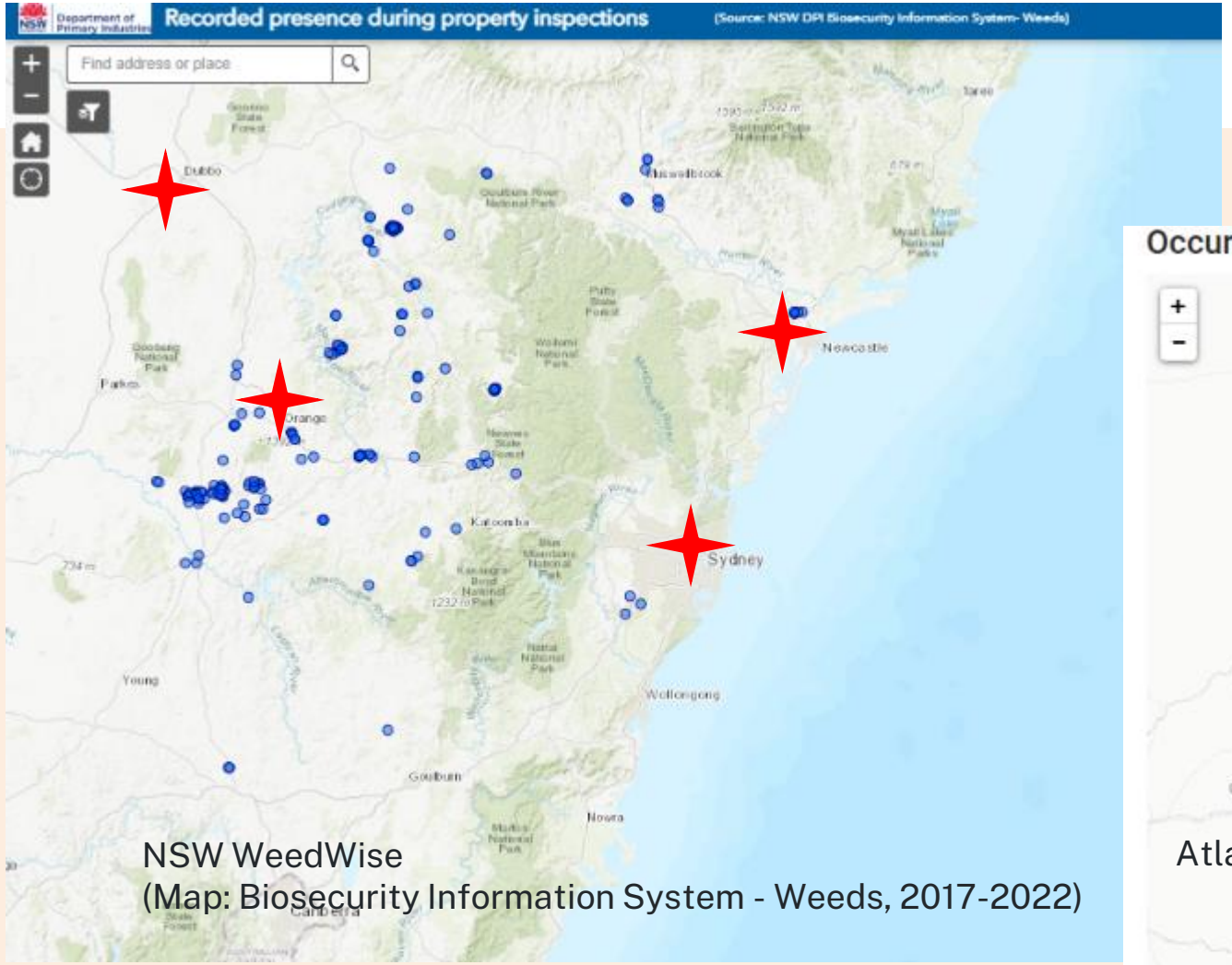
# Sticky nightshade in central tablelands of New South Wales

**Central Tablelands –** Said to have been introduced into the region with drought fodder in the 1980's.

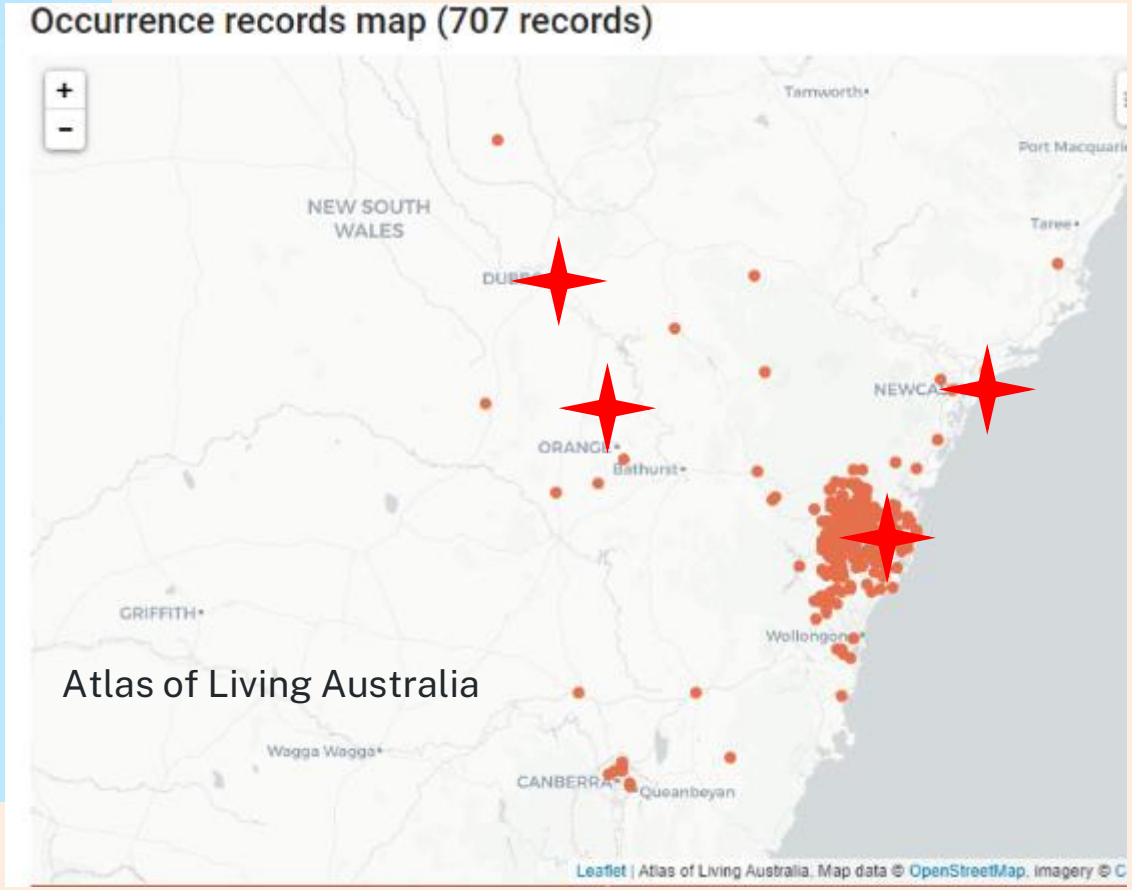
Spreading in the region increased rapidly in recent years (some 40 years later)

Over the last few years there has been a marked increase in records around the region (mainly along roadsides, but also as established sites)

# Records of sticky nightshade in Central Tablelands

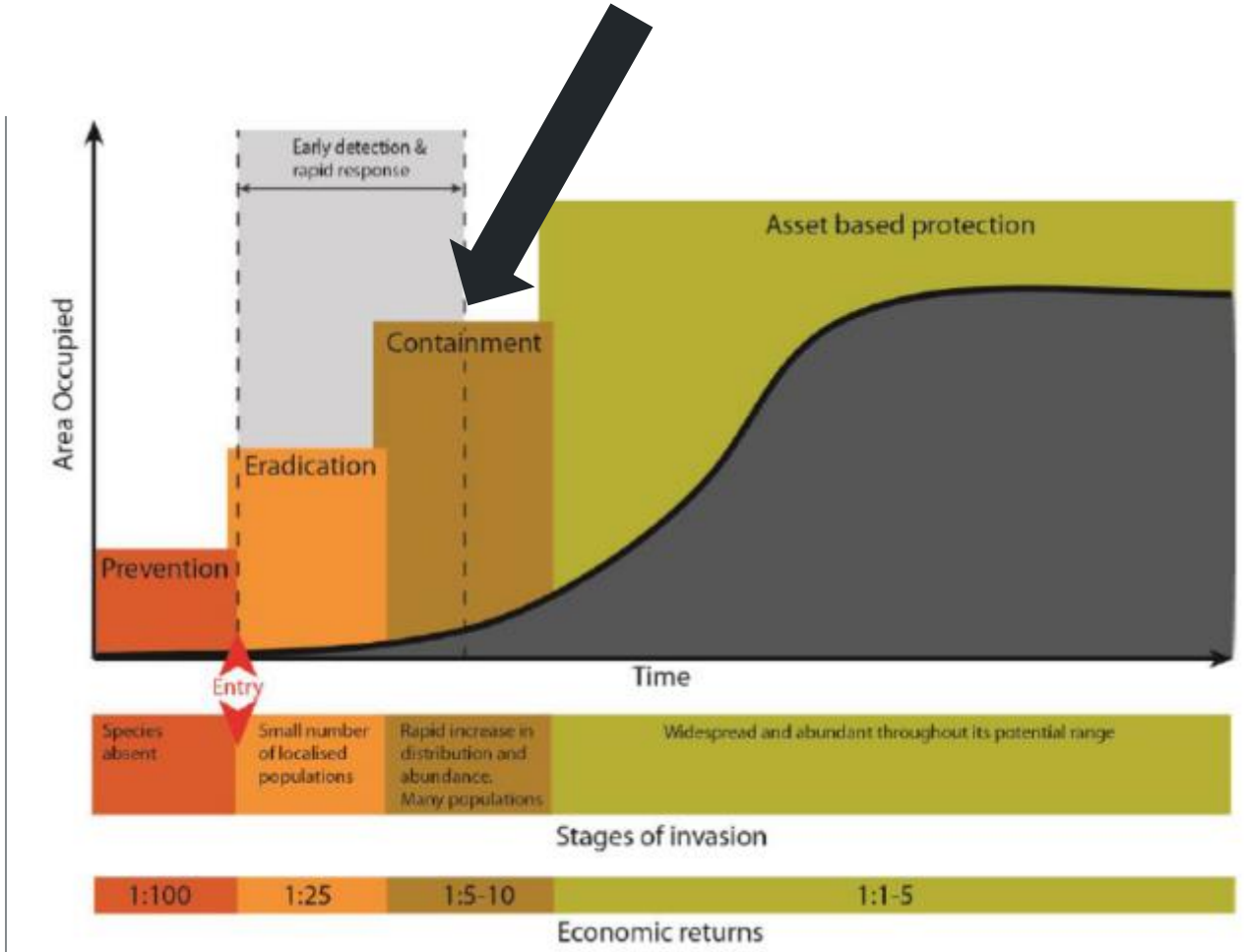



NSW WeedWise
(Map: Biosecurity Information System - Weeds, 2017-2022)




Atlas of Living Australia

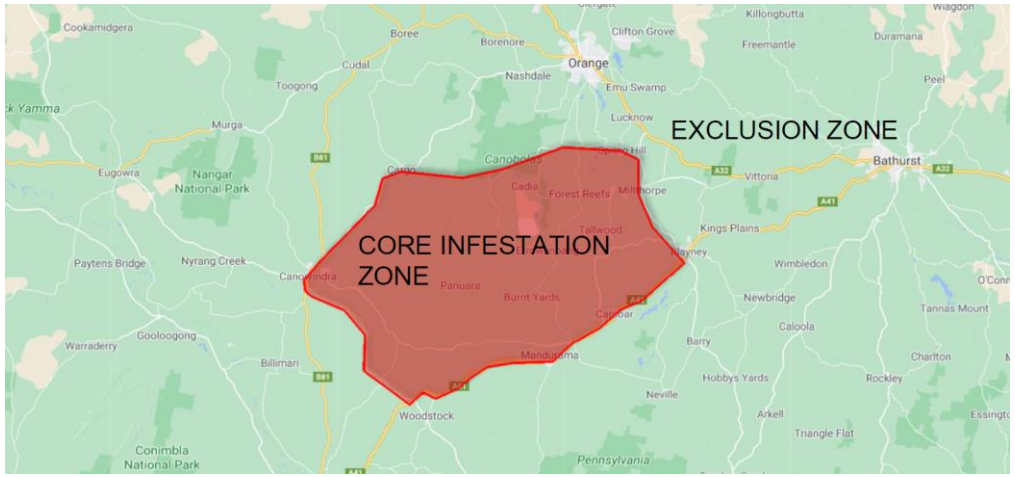
# Opportunity to be at the front of the invasion curve




Todd Saxelby and Neil Boyd Cabonne Council with Sticky Nightshade on river flat – 2020

# Listed as a “Containment” regional priority species in the central tablelands

- Weed Risk Assessment undertaken (Local Councils, Local Land Services, Department of Primary Industries, landholders)




**REGIONAL PRIORITY WEEDS OBJECTIVE FOR STICKY NIGHTSHADE – CONTAINMENT**

**Whole of the Central Tablelands Local Land Services region**

Sticky nightshade plants or parts of the plant are not to be traded, carried, grown or released into the environment.

**Sticky Nightshade Exclusion Zone**

An exclusion zone for Sticky Nightshade is established for all lands in the Central Tablelands Local Land Services region except the area identified as the core infestation area. Within the exclusion zone sticky nightshade is to be eradicated from land, land is to be kept free of the plant and land managers are required to mitigate the risk of the plant being introduced to their lands.

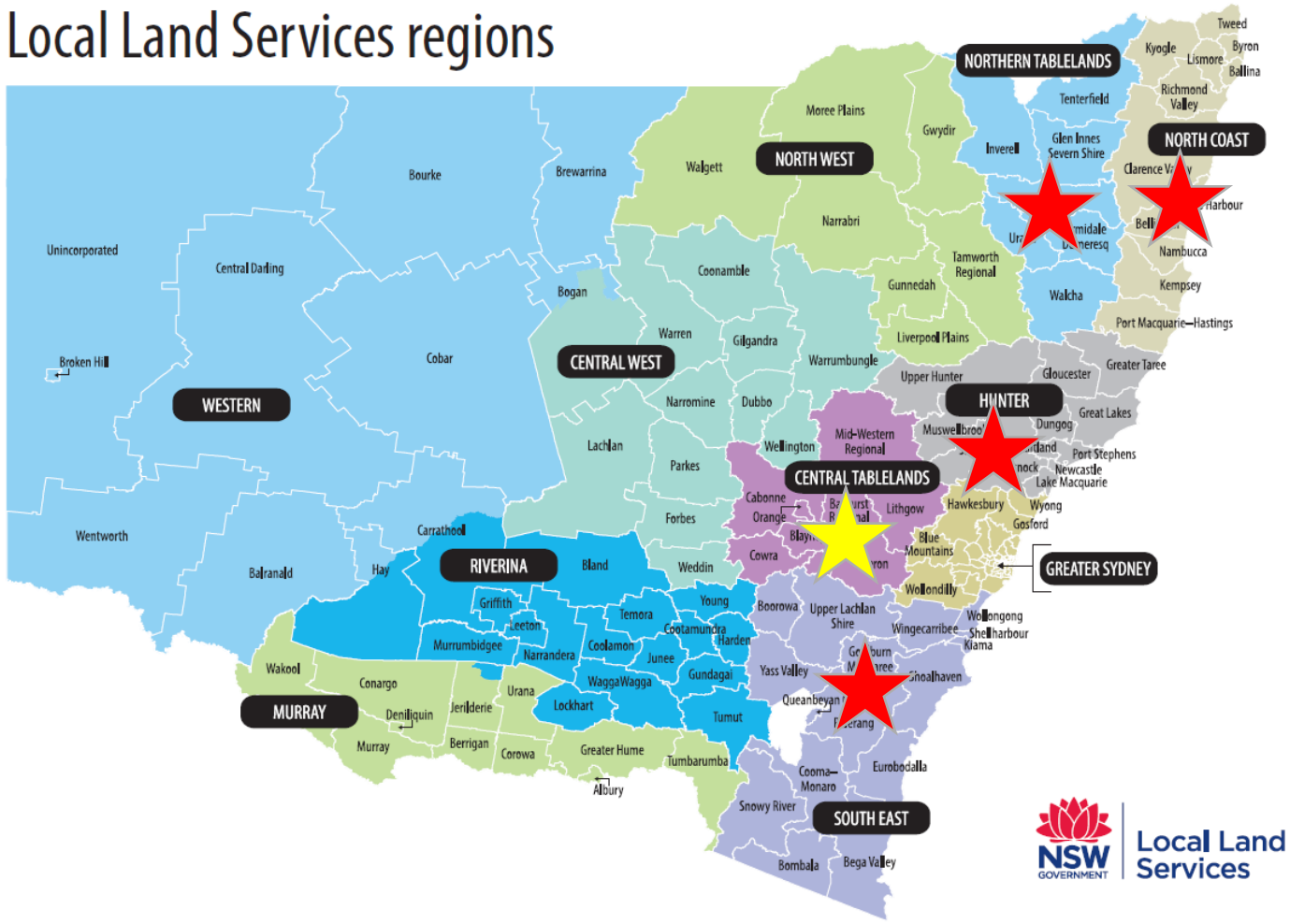
**Sticky Nightshade Core Infestation Zone**

The core infestation zone is an area where it was identified that it was not reasonable to expect land managers to eliminate sticky nightshade from their lands as the plant is widely distributed in this zone.

While broadscale elimination is not practicable in this core infestation zone, minimisation of the biosecurity risk posed by this weed is reasonably practicable. In this core infestation zone land managers are required to reduce the impacts from sticky nightshade on priority assets and to mitigate the risk of spread of sticky nightshade from their land.

The core infestation area for Sticky Nightshade is shown in red on the map below.

# Regional priority weed listing in new regions




Already listed

★ Central Tablelands

New listings (2023)

★ Hunter

★ South East

★ Northern Tablelands

★ North Coast

# Observations in the central tablelands

- Majority of new infestations are in disturbed areas, for eg roadsides, construction sites, riparian corridors
- Can invade native grasslands and woodlands, sometimes in relatively in accessible areas
- Reproduction and dispersal by seed (birds, foxes & sheep) and root/ rhizome fragments
- Seeds germinate readily under parent plant and along fences or under trees etc where by birds
- Seed can stick to machinery, for example to vehicle tyres
- Having difficulty getting on top of control of established infestations

# Community consultation – barriers to control

- High cost of control, mainly hours of labour input required
- Some landholders reported to be spending $80,000 - $300,000 per summer in control activities
- Quick growth cycle – 6 weeks from germination to flowering – so need repeat control activities at the one spot over the spring-autumn period
- Need to develop treatment options horticulture enterprises like vineyards, including organic vineyards
- Accessibility of some site an issue (steep rocky riparian sites)

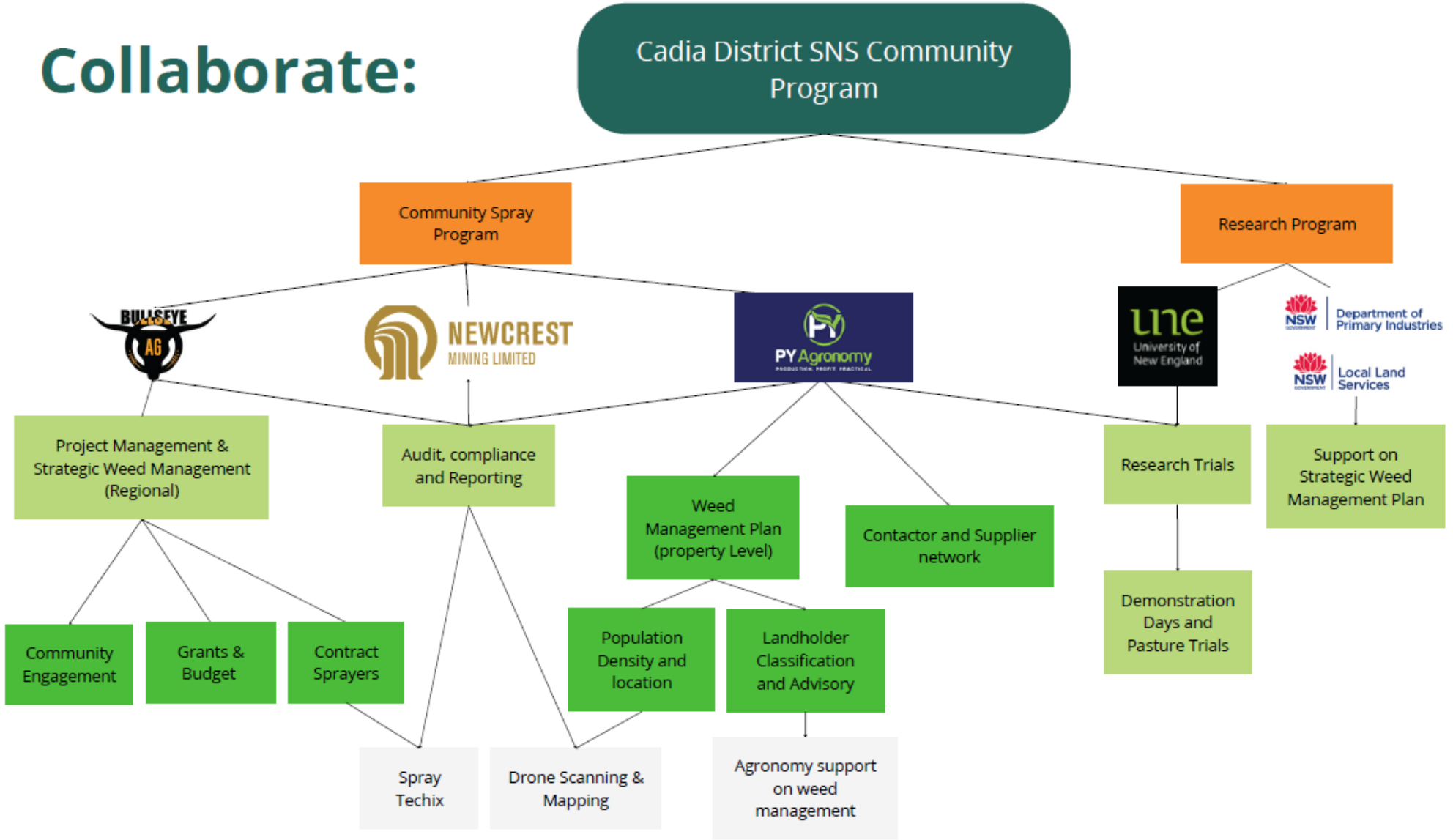
# What we are doing .....

At the beginning of 2023 we secured a $3.7M Cadia District Community Sticky Nightshade Program, through Newcrest's new $10M Sustainability Fund (3 year).

Support for:

- Community Spray Program
- Research Program

# Collaborate:



# Propose

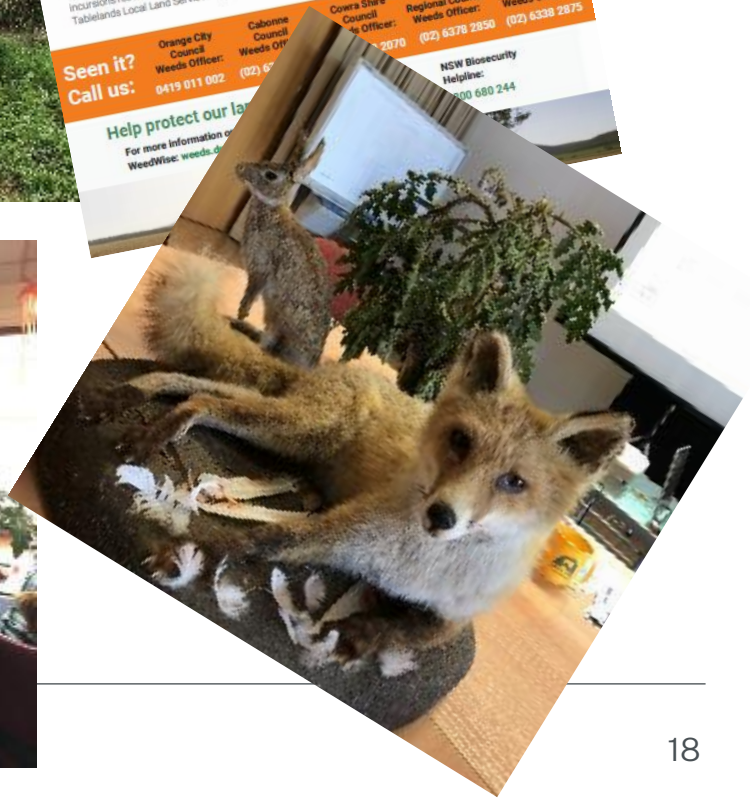
Regional Containment strategy -

- improved weed management.
- Enabling landholders to contain to manageable infestation level

To assist landholders who are affected by SNS infestations and require financial support.

Support the Research Program of SNS through DPI, CT LLS and UNE.
Develop fit-for-purpose chemical and biological controls.

# Community engagement



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# Research priorities

## Ecology and biology

- Socio – economic impacts
- Seed biology, germination ecology, seed persistence and seed dispersal
- Growth morphology, phenology, competition with native / pasture species
- Current spread and future spread modelling
- Integrated management through chemicals and improved pasture, crop competition, etc

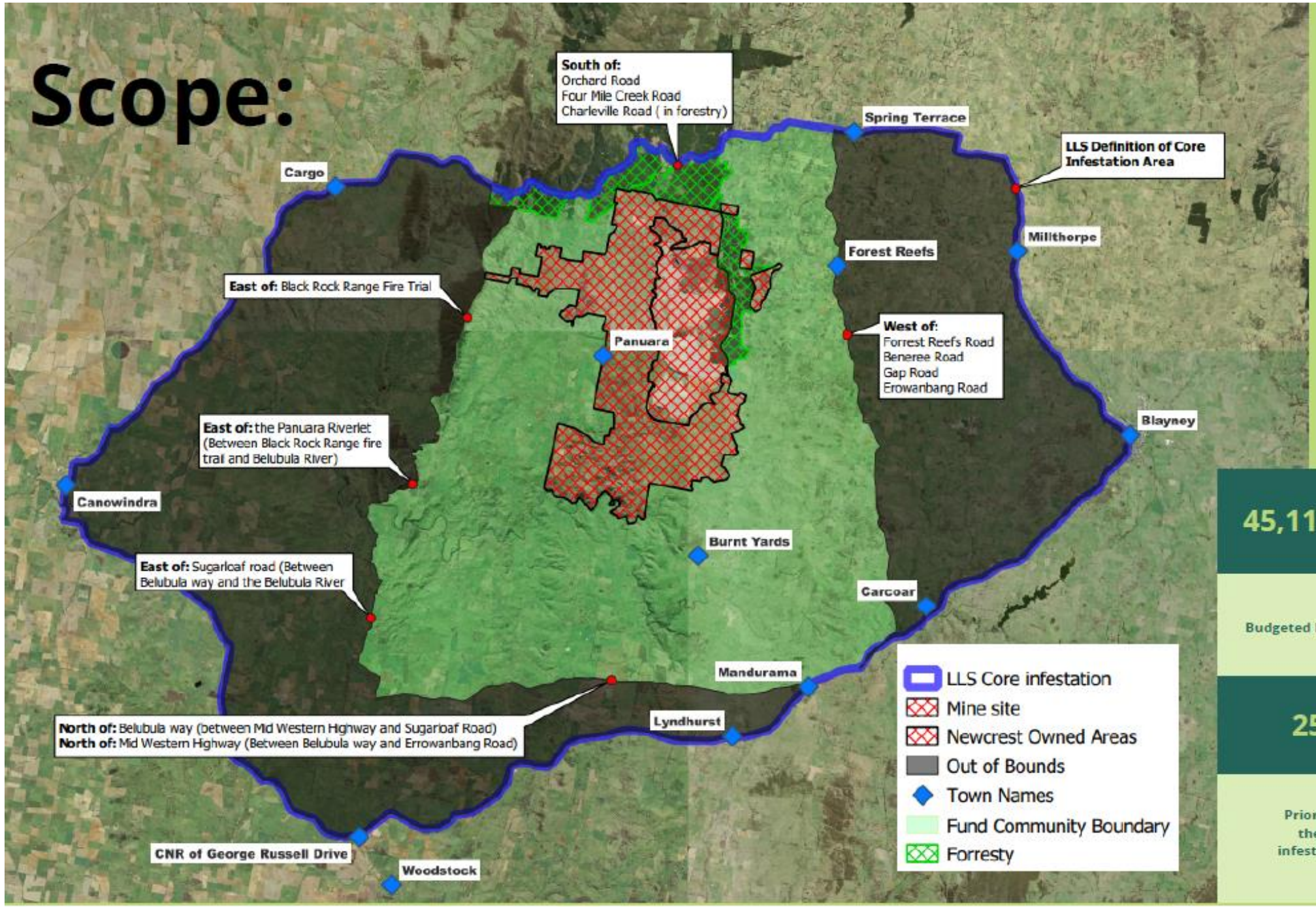
## Control options

- Screen and optimise herbicides for chemical control
- Identify and test biological control agents

# On ground works

- Coordinated inspection programs by local council weed officers
  - High risk pathways (roads, areas of roadwork, riparian)
  - In the core infestation areas (across council boundaries) – work with landholders to reduce infestation and limit spread from the land
  - In the eradication zone – working with landholders to eradicate from land
  - Localised inspections and awareness programs undertaken around new incursions identified
  - Follow up inspections to monitor how control works are progressing
- Supporting landholders by providing best management advice available
- Undertaking rapid control actions for new plants reported along high risk pathways like roads
- Supported control activities for landholders in the core infestation area with aim to get to a manageable level

# Scope:




BULLSEYE AG

| | |
|---|---|
| 45,110 Ha. | Total Project designated Area |
| Budgeted land Cover | ~29,000 Ha. |
| 250 | Possible Landowner Participants |

Prioritised investment: Participants within the program ranked and on severity of infestation and proximity to assets & funded accordingly

PY Agronomy

PRODUCTION, PROFIT, PRACTICAL

- SNS Management Plans
- Drone Scanning/ Mapping
- R & D Trialwork
- Agronomic Support
- Chemical Company Relationships
- Field Days & Demonstration Days

STEVTECH

www.stevtech.com.au | 0468707523 | contact@stevtech.com.au

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# Project partners

Local Land Services

Mid-Western Regional Council

Australia's Food Basket
CABONNE COUNCIL

ORANGE CITY COUNCIL

NSW GOVERNMENT

Cowra Council

UPPER MACQUARIE COUNTY COUNCIL

NEWCREST MINING LIMITED
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