

# Plant Biosecurity Exotic Plant Pest Responses

BIOSECURITY SA  
**PIRSA**

**Nick Secomb**

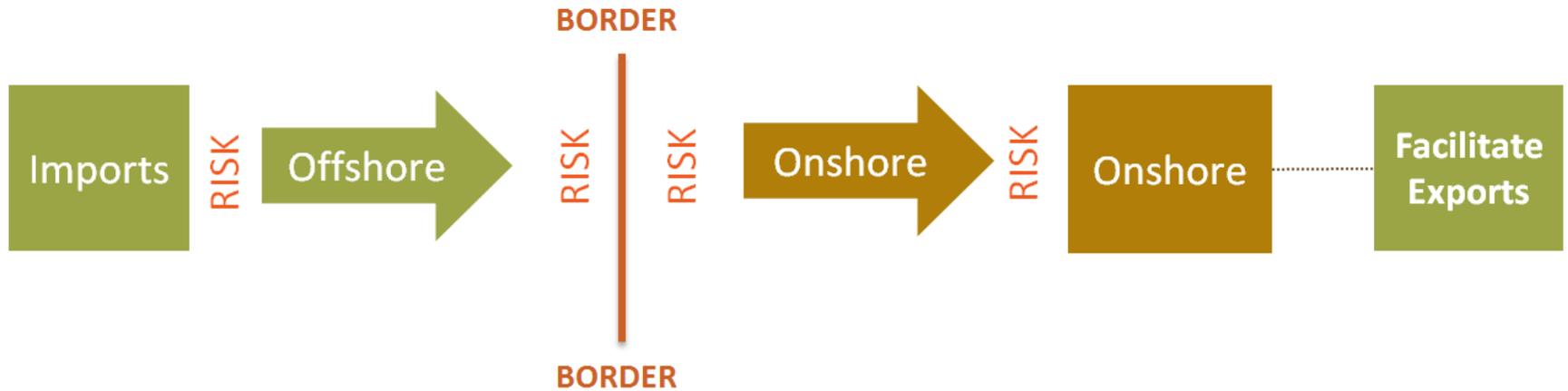
Manager, Plant Health Operations

17 May 2017

**PREMIUM**  
FOOD AND WINE FROM OUR  
**CLEAN**  
ENVIRONMENT



# The Quarantine System



## Imports

- Cargo
- Vessels
- Passengers
- Mail

## Offshore

- International agreements
- Import risk Analyses
- Capacity building
- Offshore treatments
- Permits
- Systems
- Audits

## At the border

- Risk assessment
- Inspection
- Treatment

## Onshore: Surveillance and response

- Surveillance
- Sampling
- Diagnostics
- Emergency response
- Long term planning

## Onshore: Eradication, containment and long-term management

- Asset-based protection

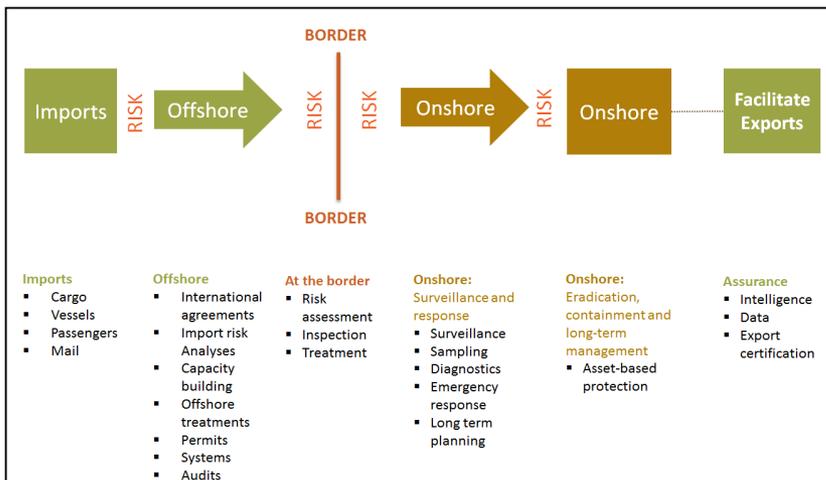
## Assurance

- Intelligence
- Data
- Export certification



# The Quarantine System

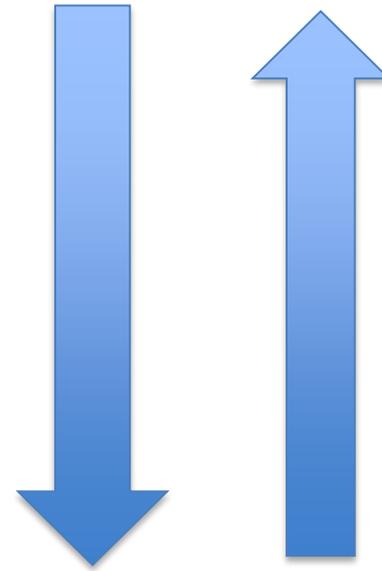
- Integrated effort across Governments, Industry and the Community.
- Australia is one of the few countries in the world to remain free from the world's most severe pests and diseases.
- Geographical isolation has helped
- This is rapidly changing as international travel and trade increases.



# The Quarantine System

## Matrix of effort

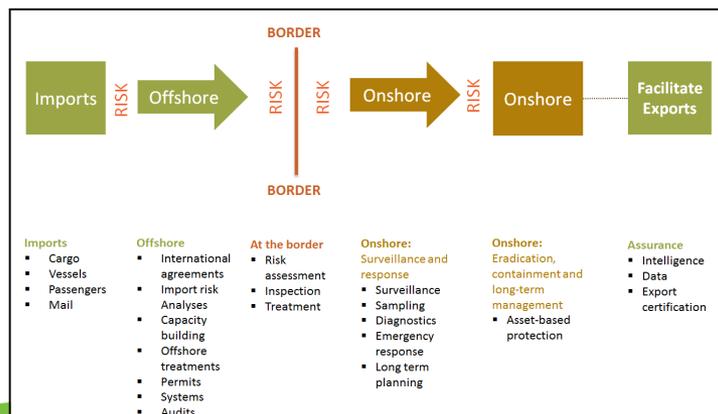
- Prevention
- Surveillance
- Inspection
- Report
- Certification
- Eradication / Response



# The Quarantine System

## Pre-border

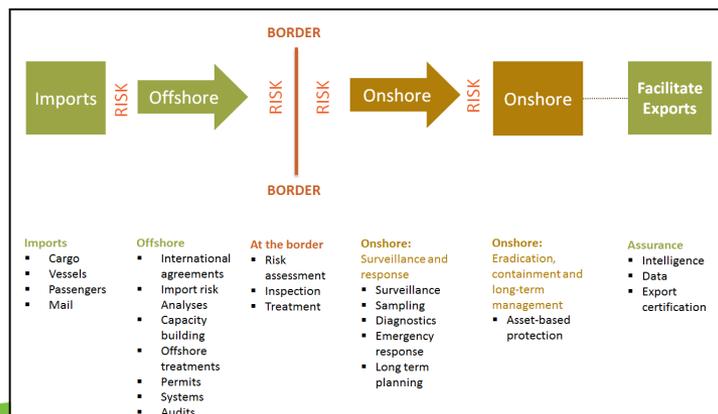
- Reduces the risks of exotic pests and diseases reaching Australia
- Primary responsibility with the Commonwealth Department of Agriculture and Water Resources.
- Involves understanding global risks and emerging threats, working with international trading partners and the private sector, and engaging with travellers about Australia's biosecurity requirements.



# The Quarantine System

## Border

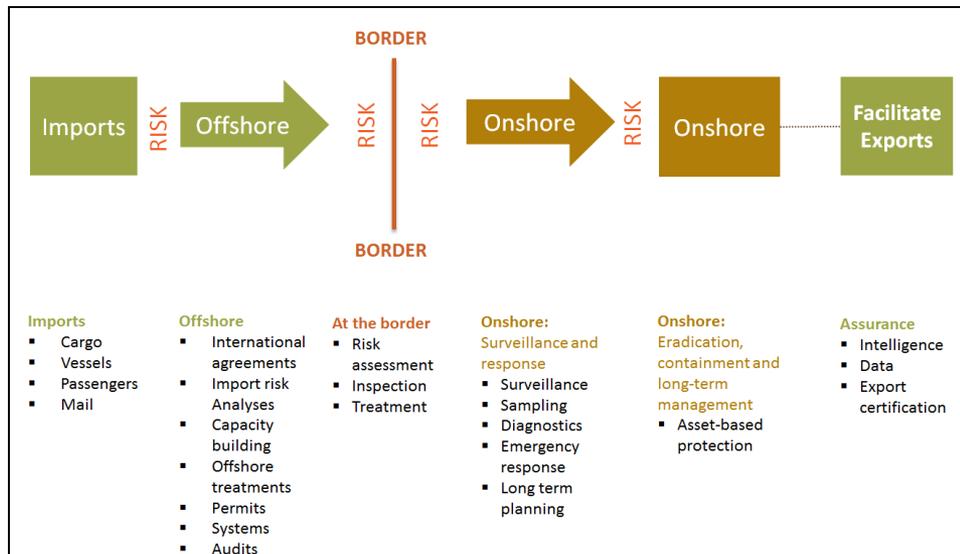
- Primary responsibility sits with DAWR.
- Intercept biosecurity risks at airports, seaports, mail centres and along Australia's coastline.
- Activities include import permit decisions, inspection of passengers, goods, vessels and mail, audit activities and post-entry quarantine.
- Techniques include risk profiling, use of detector dogs, x-ray machines, surveillance and physical inspections.



# The Quarantine System

## Post-border

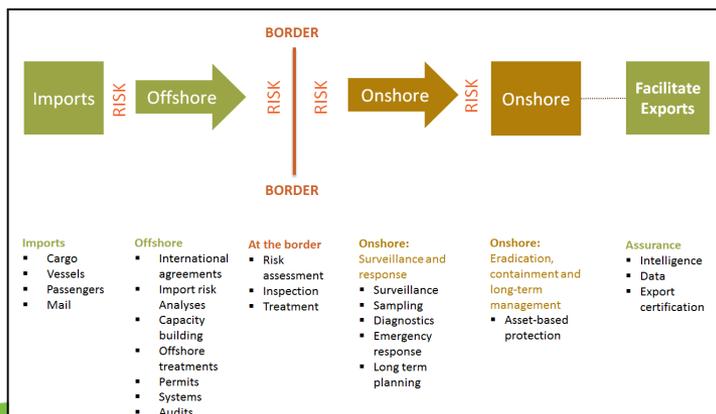
- Involves most of the participants in the national system,
- Partnership between the Governments, Industries, producers and the community.
- The main responsibilities and resourcing is undertaken by state governments.



# The Quarantine System

## Domestic quarantine

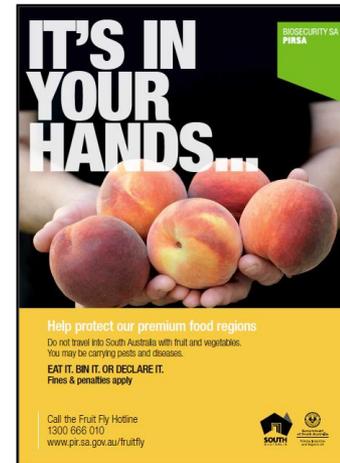
- Aims to minimise the potential spread of pests.
- Interstate certification is issued by state officials, or by accredited businesses.
- Operates to restrict the spread of pests to particular states or to areas within those states.
- Pest free areas (PFA's) supported by a range of control and regulatory measures to ensure that host fruit can be traded between states and to overseas markets.



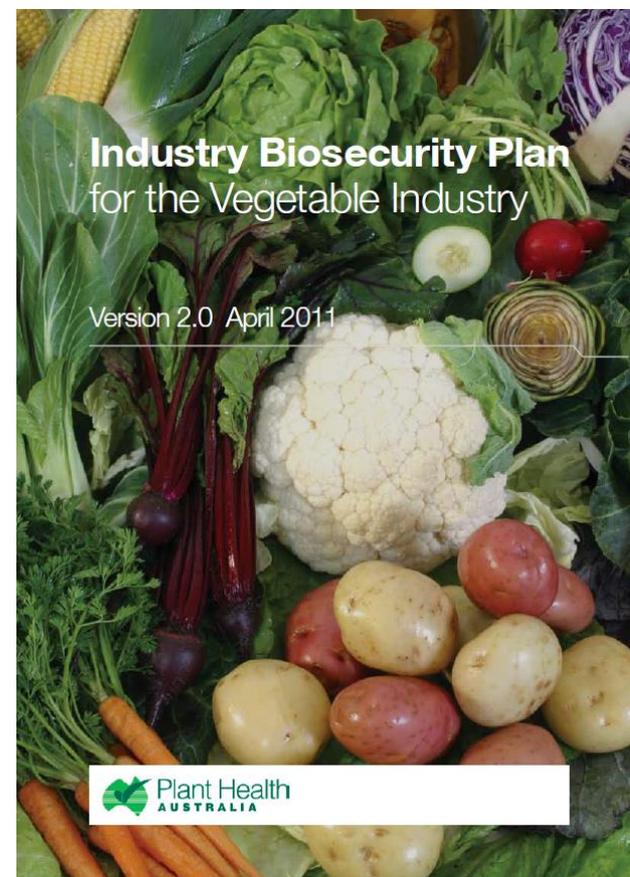
# Exotic Plant Pest Management

## The Horticultural Industry

- Signatories to Exotic Plant Pest Response Deed
  - Assigns responsibilities and cost-share arrangements in the event of a new detection
- Develop Industry Specific Biosecurity Plans
- Undertake Surveillance
- Report suspected Exotic Plant Pests



EPPRD signatory	Date signed
Apple and Pear Australia Limited	28 October 04
Australian Banana Growers' Council <a href="#">Inc</a>	28 October 04
Australian Cane Growers' Council Ltd (CANEGROWERS)	28 October 04
Grains Council of Australia <a href="#">Inc</a> (now Grain Producers Australia Ltd)	28 October 04
Plant Health Australia	28 October 04
The State of South Australia	9 March 05
<a href="#">Ricegrowers' Association of Australia Inc</a>	15 March 05
The State of Victoria	31 March 05
The State of Western Australia	14 April 05
Nursery and Garden Industry Australia Ltd	23 May 05
Avocados Australia Limited	26 May 05
Commonwealth of Australia	26 May 05
<a href="#">Strawberries Australia Inc</a>	26 May 05
<a href="#">Summerfruit Australia Ltd</a>	26 May 05
Queensland Fruit and Vegetable Growers Ltd (GROWCOM) (for pineapples)	26 May 05
The State of Tasmania	27 June 05
Australian Citrus Growers <a href="#">Inc</a> (now Citrus Australia)	9 September 05
Australian Macadamia Society Limited	15 September 05
The State of New South Wales	30 September 05
The State of Queensland	20 October 05
The Australian Capital Territory	21 October 05
The Northern Territory of Australia	26 October 05
Australian Mango Industry Association Limited	23 December 05
Australian Cotton Growers' Research Association <a href="#">Inc</a> (now Cotton Australia)	26 May 06
Almond Board of Australia Inc.	20 November 06
Australian Dried Fruit Association Inc. (now Dried Fruits Australia)	15 December 06
<a href="#">Cherry Growers of Australia Inc</a>	20 December 06
Australian Table Grape Association	14 June 07
Canned Fruits Industry Council of Australia	12 July 07
Australian Honey Bee Industry Council	25 October 07
Onions Australia	11 March 08
Australian Walnut Industry Association	21 April 08
Australian Processing Tomato Research Council <a href="#">Inc</a>	2 May 08
Australian Olive Association	23 May 08
Wine Grape Growers Australia (now Australian Vignerons)	29 May 08
AUSVEG	20 November 08
Pistachio Growers' Association Incorporated	13 July 11
Chestnuts Australia	29 July 12
Australian Forest Products Association	4 December 12
Australian Ginger Industry Association	26 November 14
<a href="#">Raspberries and Blackberries Australia Inc</a>	22 June 15
Hazelnut Growers of Australia	25 November 15



# Exotic Plant Pest Management

## Category 1

- cause major environmental damage and/or
- potentially affect human health and/or
- cause significant damage to amenity flora; and
- have relatively little impact on commercial crops.

## Category 2

- cause significant public losses and
- impose major costs on the affected cropping sectors.

## Category 3

- would primarily harm the affected cropping sectors
- also some significant public costs as well.

## Category 4

- have little or no public cost implications and little or no impacts on natural ecosystems.
- The affected cropping sectors would be adversely affected primarily through additional costs of production, extra control costs or nuisance costs; and
- generally there would be no significant trade issues that would affect national and regional economies.

Category of EPP	Government Funding	Industry Funding
Category 1	100%	0%
Category 2	80%	20%
Category 3	50%	50%
Category 4	20%	80%



# Exotic Plant Pest Management

## Detection



## Incident Definition



## Eradication

- Report
- Confirm\*
- Contain
- Traceback
- Traceforward
- CCEPP consideration
  - Does the detection constitute an exotic plant pest?
  - Is it technically feasible to eradicate?

CCEPP = Consultative Committee on Emergency Plant Pests

- Surveillance
- Containment (may include treatment / destruction)
- Technical feasibility
- Development of Response Plan
- Can take several days (weeks)
- May involve some confidentiality (potential market impacts)
- Usually funded by response State via normal commitments
- Generally a focus on definition (surveillance) and containment (quarantine)

- As per agreed measures in Response Plan
- Includes triggers for formal review
- Can include measures for external audit (Giant Pine Scale, Khapra Beetle)



# Exotic Plant Pest Management

## Khapra beetle Detection in South Australia (courtesy of Judy Bellati - South Australian Grains Biosecurity Officer)



<https://www.agric.wa.gov.au/khapra-beetle-declared-pest>



Photos: courtesy of DAWR



# Khapra beetle Incursion in South Australia (courtesy of Judy Bellati - South Australian Grains Biosecurity Officer)

## Khapra beetle (KB) *Trogoderma granarium*

- Regarded as one of the worlds most feared stored product pests
- Aust: listed as high priority exotic plant pest (Category 2; PHA, 2005)
- WW: Prohibited invasive species: import restrictions for many export trading partners



## Khapra beetle adults, larvae and cast skins in stored grain

Image Courtesy Ministry of Agriculture and Regional Development Archive, Bugwood.org



Government of South Australia  
Primary Industries and Regions SA

# Khapra beetle Incursion in South Australia (courtesy of Judy Bellati - South Australian Grains Biosecurity Officer)

## Khapra beetle (KB) *Trogoderma granarium*

- Adults are small (2-3mm long), brownish in colour with a smooth oval shaped body
- Eggs hatch into small hairy larvae up to 7mm long
- Larvae can survive without food for over 12-months
- Feeds on grains, seeds, spices, herbs, nuts, dried fruits, animal skins etc etc
- Can be confused with warehouse, carpet and hide beetle larvae



# Khapra beetle Incursion in South Australia (courtesy of Judy Bellati - South Australian Grains Biosecurity Officer)

The Department of Agriculture and Water Resources (DAWR) confirmed detection of KB (Kingscote SA, 27 April 2016)

❖ **KB intercepted in imported goods at three premises in SA**

Two in metro Adelaide and one on Kangaroo Island where larvae were found outside the consignment but still inside the building.

❖ **SOURCE:** Consignment of infested cartons with 'food-grade' plastic containers

❖ **ENTRY PATHWAY:** ex New Zealand (low risk); shipping container identified as likely contamination source coming from overseas port where KB is endemic.



Photos: J. Bellati



## The Response

Australian Government has strong confidence there has been **NO opportunity for contact between the consignment and any of the grain supply chain.**<sup>1</sup>

### Pre-Cautionary Measure:

- ❖ **National Response instigated** under the Emergency Plant Pest Response Deed (version 2.1 June , 2016)
- ❖ Category 2 Pest
- Aim: To protect the Australian Agricultural Industry and treat the infected premises
- ❖ PIRSA is the lead agency implementing the response plan (endorsed by National Management Group on recommendation of the Consultative Committee on Emergency Plant Pests).

Affected Party
Commonwealth
New South Wales
Victoria
Queensland
South Australia
Western Australia
Tasmania
Grain Producers Australia
Almond Board of Australia
Ricegrowers' Association of Australia
Cotton Australia
Australian Walnut Industry Association
Pistachio Growers Association

**PRIMARY INDUSTRIES & REGIONS SA  
PIRSA**

### National Response Plan for the Eradication of khapra beetle (*Trogoderma granarium*)



Version 2.1  
June 2016

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1. <http://www.agriculture.gov.au/about/media-centre/media-releases/khapra-beetle-south-australia>



## Response Activities

### Eradication:

- ✓ Consignment was contained and destroyed.
- ✓ Incursion sources have been fumigated, and other interception and extreme risk sites treated (approved treatments and fumigation with methyl bromide).

### Disposal of risk host materials:

- ✓ On farm/property disposal; Sealed biosecurity bags if movement required; Incineration of packaging items; Deep burial; Fumigation; Decontamination (chlorpyrifos -barrier spray).

Host material and environments ~ everything!

e.g. Abalone food, wool, potatoes, pet food, cement, fertilizer, grains, general freight and post.



Photos: J. Bellati

Photo: J. Bellati



Photo: A. Harvey



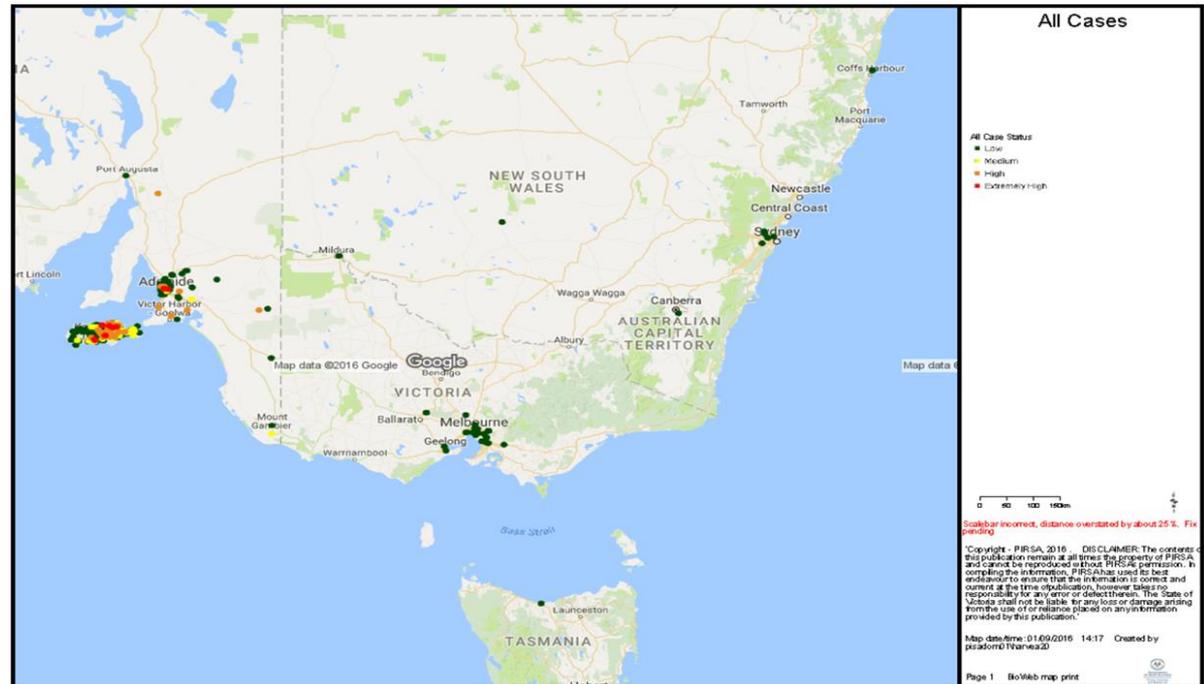
Photo: A. Harvey



# Response Activities

## Tracing and Surveillance:

- ✓ Investigated **7315 traces** (consignments) of host materials (KI 6600; mainland 715) to **695 consignees** (KI 540; mainland 155)
- ✓ Risk pathways categorized (low, med, high, extreme) aimed at preventing movement into bulk handling stream
- **65 sites** (KI 47; mainland 18) undergoing continued surveillance



## Response Activities

### Surveillance:

- ✓ Approx. **315 pheromone traps in deployment** across **65 sites** (KI 47; mainland 18)  
Serviced fortnightly (May to September) and weekly (October to April)
- ✓ Other sampling techniques used (e.g. vacuums, sweepings)
- ✓ Increased sampling effort in two peak periods (Nov/Dec 2016 & Mar/Apr 2017)

### Diagnostics:

- ✓ Over **6785 (as at 1 May 2017) samples collected and analysed** under quarantine conditions by SARDI Entomology
- **NO Khapra beetle detected**

Various community engagement and support activities were undertaken on KI



# Response Summary

## ERADICATED:

The consignment was contained and destroyed; the infected premises and extreme high risk sites successfully treated.

## CURRENT STATUS:

NO Khapra beetle (adult or larva) have been found beyond the affected premises in SA.

## MONITORING:

The Response will continue to **monitor ALL** the identified **risk sites for 2 years** (until May, 2018) as per international protocols to prove area freedom of Khapra beetle.

## TRADE:

There is **NO change to Australia's status** and **Australian grain remains free of Khapra beetle.**

*A great example of how to effectively run an emergency eradication program through early detection and a quick proactive response.*

**Further Information:** <http://www.agriculture.gov.au/about/media-centre/media-releases/khapra-beetle-south-australia>

or contact Adrian Harvey (Incident Controller) [adrian.harvey@sa.gov.au](mailto:adrian.harvey@sa.gov.au)



## SA GENERAL Surveillance and Monitoring Program for stored product pests

- ❖ Joint effort between the National Grains Farm Biosecurity Program and National Plant Health Surveillance Program.
- ❖ AIM: Capture proof of freedom data to support absence of Khapra beetle in regional SA (grain growing regions).
- ❖ **Distinctly separate program to the Khapra beetle EM Response in SA.**
- ❖ Includes a range of target sites and risk groups:
  - e.g. privately-owned farming properties, milling and grain handling establishments, seed distributors, grain /stock feed stores and regional agricultural re-sellers ('ag pantries').
- ❖ Utilises a range of sampling techniques appropriate for host materials and favourable environments.
  - e.g. pheromone traps, vacuums, sweepings, silos and storage sheds.



## Program to date:

### 83 sites / properties surveyed

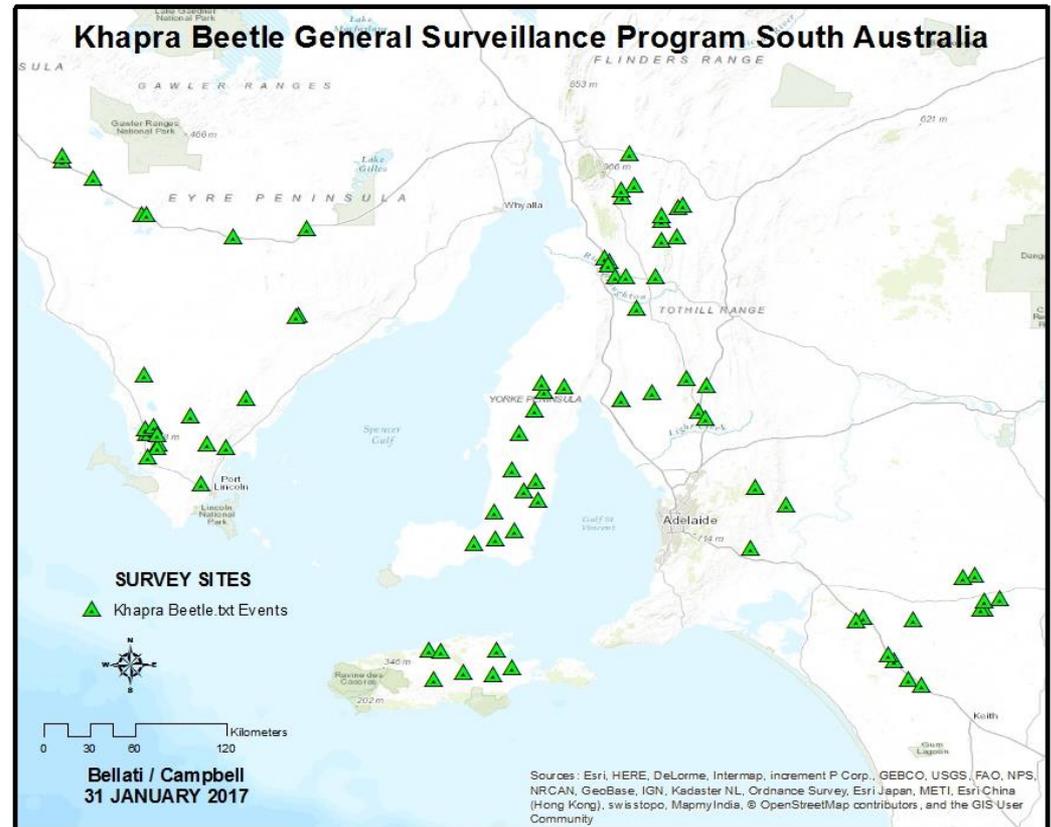
- Producers (65)
- Milling/ processing (2)
- Stock feeder (1)
- Bulk handler/ Seed distributors (4)
- Ag supply / 'Ag pantries' (9)
- Regional area school (1)
- SARDI Research Centre (Minnipa)

### Multiple samples per site

### Total sample size = 796

- Pheromone traps (387)
- Grain sieves (319)
- Vacuums (85)
- Other (5)

Program will continue into this seasons harvest



## Acknowledgments:

### Khapra Beetle (KB) Emergency Response Program:

**Adrian Harvey** (Incident Controller) and KB Response Program staff - including those from PIRSA Biosecurity SA staff, casual surveillance employees and Dept. of Agriculture and Water Resources staff.

All affected parties for their cooperation and the whole community on Kangaroo Island.

### SA General Surveillance and Monitoring Program:

National Grain Farm Biosecurity Program team; Grain Producers Australia; Biosecurity SA (PIRSA);

All those within industry who helped to source participants; All program participants for their willingness to participate and cooperation.

**References:** Plant Health Australia (2005) Industry Biosecurity Plan for the Grains Industry (Version 3.0 – July 2015). Plant Health Australia, Canberra, ACT.



All participants in the grains industry have a role to play in keeping our grain clean, ensuring it meets market requirements and is within physical, chemical and biological tolerance limits.

Grain is a food which will be used for human or animal consumption.

*Clean grain is worth the effort.  
Protect our markets.*

More information at [www.pir.sa.gov.au/cleangrain](http://www.pir.sa.gov.au/cleangrain)

**Our states more than \$2billion grains industry and reputation for exporting premium and clean product is worth protecting!**



Government of South Australia  
Primary Industries and Regions SA

# Exotic Plant Pest Management

## Other recent responses in SA

- Russian Wheat Aphid
- Giant Pine Scale

## Other interstate responses

- *Varroa jacobsonii* in Qld
- Chestnut blight in Vic
- Pine nematode in NSW
- And of course Tomato Potato Psyllid in WA...



# Giant Pine Scale Response (SA)



# Giant Pine Scale Response Plan

## Impacts

- Giant Pine Scale was detected on these species in SA:

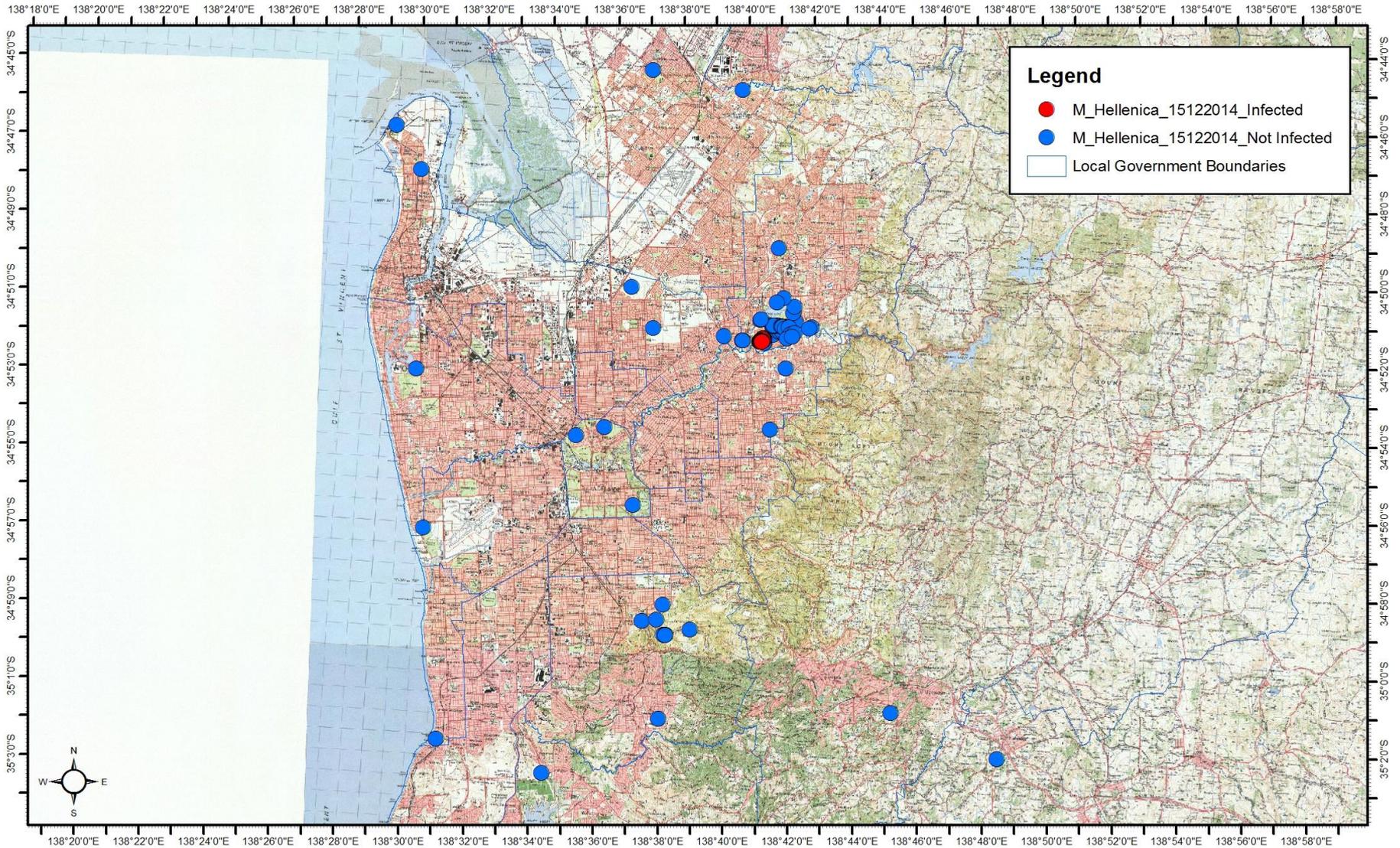
Aleppo pine (*Pinus halepensis*)    Monterey Pine (*Pinus radiata*)    Stone Pine (*Pinus pinea*)

- Giant Pine Scale also affects:

Radiata pine	European black pine	Blue spruce
Corsican pine	Greek fir	White spruce
Caucasian fir	Turkish pine	Oriental spruce
Pinus kochiana		

- Category 3 pest

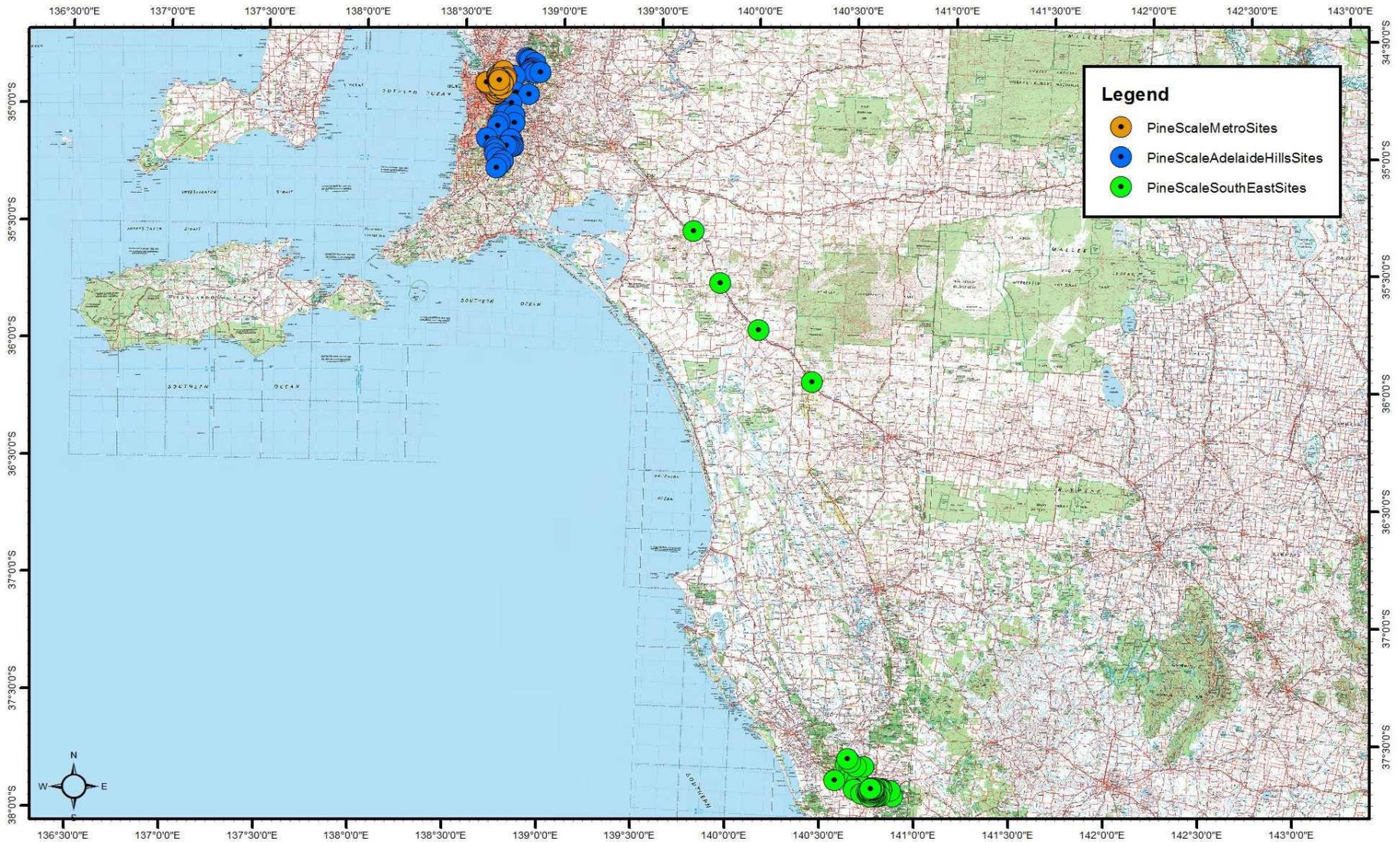
# M. Hellenica Surveys - Metro Adelaide (15/12/2014)



**Legend**

- M\_Hellenica\_15122014\_Infected
- M\_Hellenica\_15122014\_Not Infected
- Local Government Boundaries

# Giant Pine Scale Surveillance Sites - South Australia



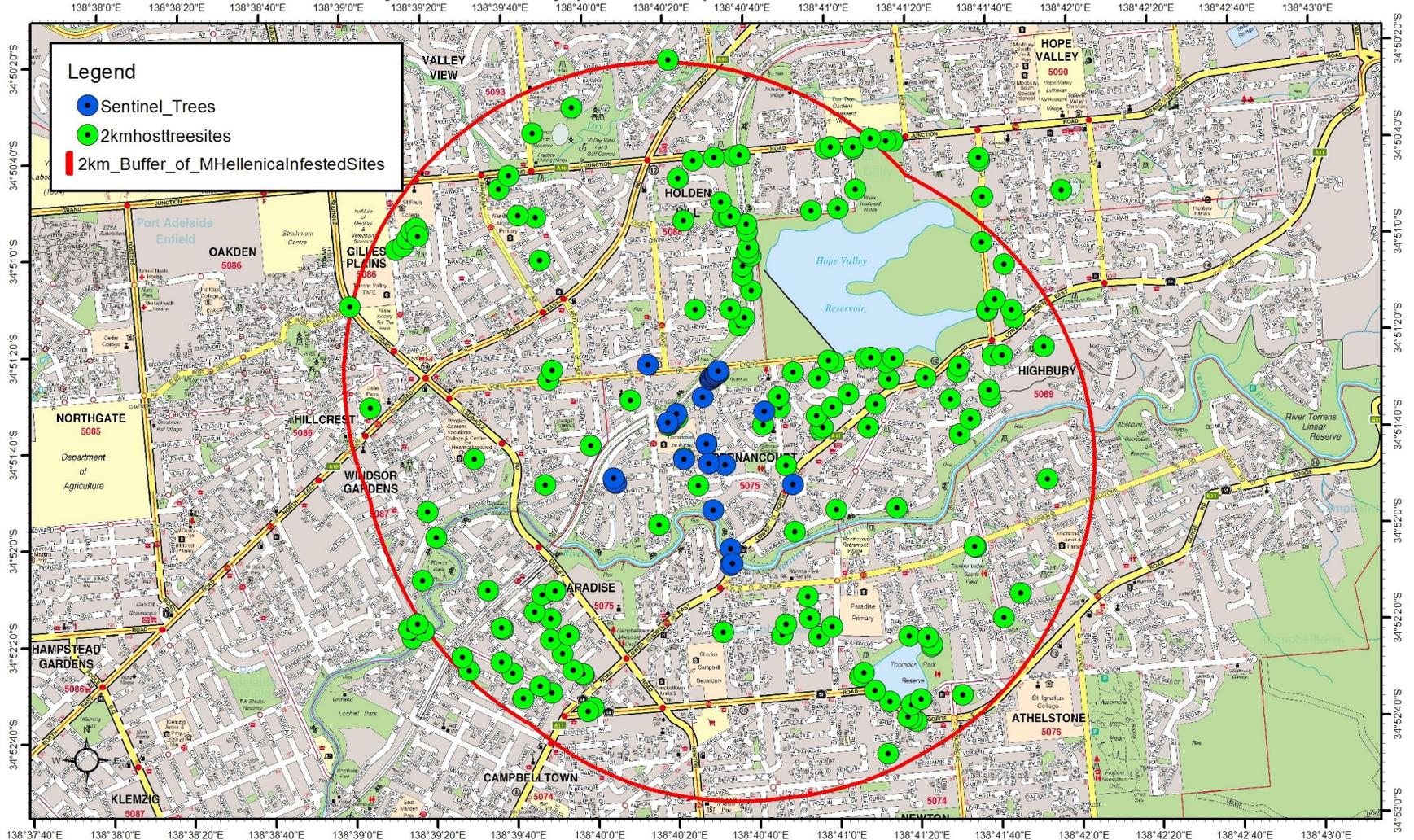
# Giant Pine Scale Surveillance

## Method of surveillance

Delimiting survey work was divided up into 4 zones

- **Zone 1** - 500m from IP point – aim to inspect every host tree every 6 weeks.
- **Zone 2** - 2 Km from IP – inspect every host tree every year
- **Zone 3** - Greater metropolitan / Adelaide Hills - inspect sample host trees every year
- **Zone 4** - Regional (Mt Gambier) - inspect sample host trees every year.

# Marchalina hellenica 2km Survey Site Summary (07/12/2015)

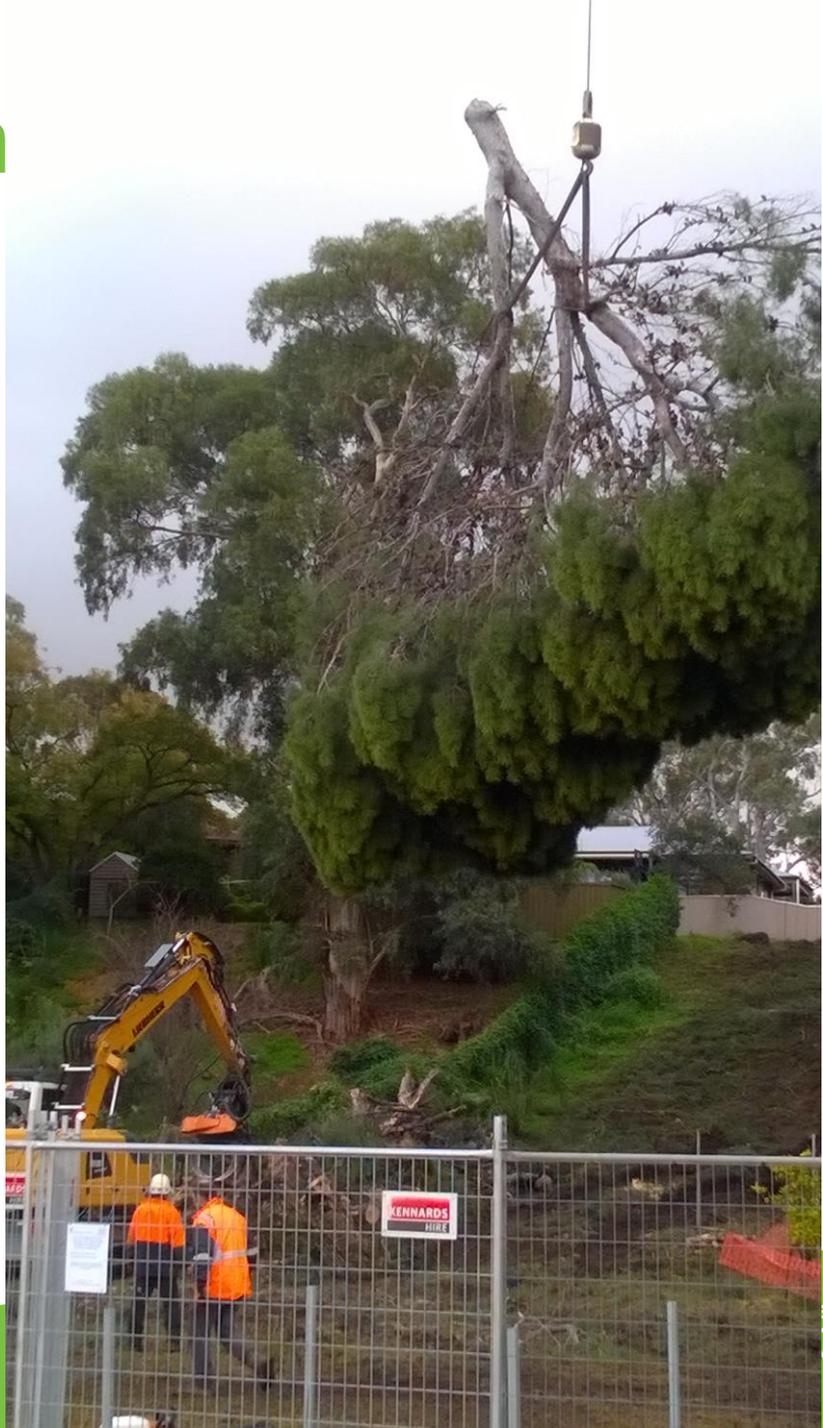


# Dernancourt Primary School Site



C

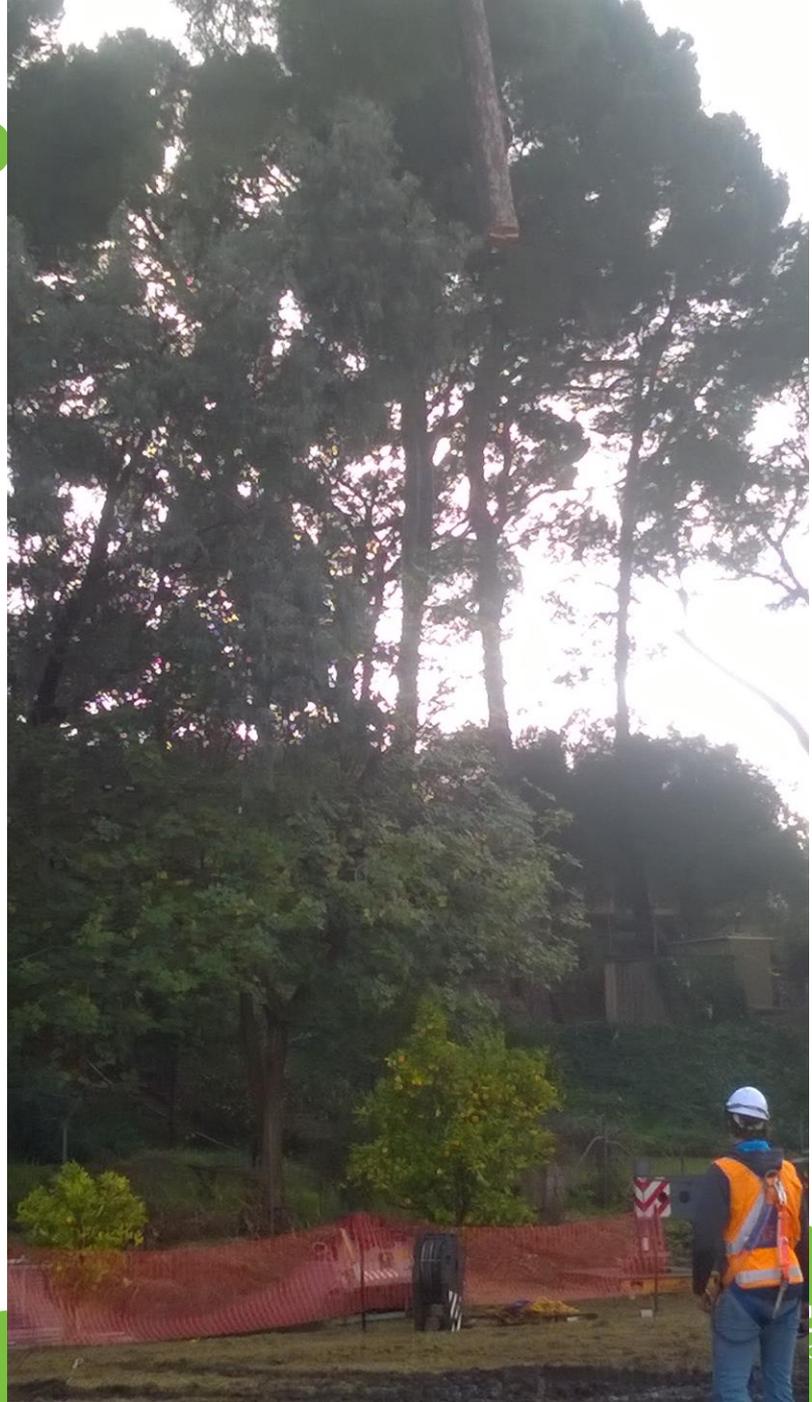
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# Giant Pine Scale Response Plan

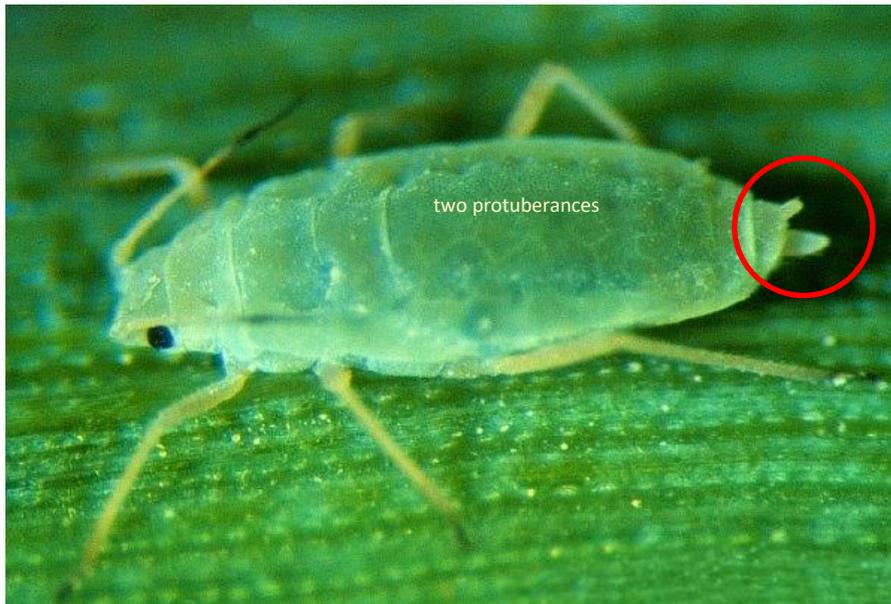
## Current Status

- All known sites eradicated in SA. Surveillance will continue at treated sites to confirm this.
- Not technically feasible of eradicating in Victoria
  - > 4,000 infected trees
  - Chemical treatments shown to not be 100% effective
- National management plan under development aimed at preparing the industry, over the coming 12-months to live with the pest

# Russian Wheat Aphid

## Activity

- On 13 May 2016 a landholder report in Tarlee wheat crop
- On 16-17 May, IP1 was treated with 250mL/ha alpha-cypermethrin with poor rate of control (estimated 50%). This was followed with a treatment of chlorpyrifos (Logran) at 1.2L/Ha with excellent (estimated > 99%) control rate.
- Biosecurity SA placed a quarantine order on IP1.
- Delimiting spread from the infested site initially focussed on a 6 km buffer zone, but also including a suction trap at Kapunda, approximately 15 km from IP1.



# Russian Wheat Aphid

Wednesday, 1 June 2016

For further information contact: Nick Secomb, Manager, Plant Health Operations. Ph: 8207 7833

BIOSECURITY SA  
PIRSA

## Russian wheat aphid – Paddock surveillance

Prevent inadvertent spread of Russian wheat aphid (RWA) by ensuring the pest isn't spread on clothing or footwear. Please see the Russian wheat aphid paddock decontamination protocol on [www.pir.sa.gov.au/russianwheataphid](http://www.pir.sa.gov.au/russianwheataphid) for more information on reducing the risk of spread.

### About Russian wheat aphid (RWA)



Russian wheat aphid (*Diuraphis noxia*) in a wheat leaf. Acknowledgement: Frank Peairs, Colorado State University, Bugwood.org.

- Russian wheat aphid is found in all major cereal production regions around the world however never in Australia before now.
- It is a major pest of cereal crops that injects toxins into the plant during feeding which retards growth and with heavy infestations, kills the plant.
- Affected plants will show whitish, yellow and red/purple leaf markings and rolling leaves.
- Russian wheat aphid is approximately 2mm long, pale yellowish green with a fine waxy coating. The body is elongated compared with other cereal aphid species.

- More information on Russian wheat aphid is also available from [www.planthealthaustralia.com.au](http://www.planthealthaustralia.com.au).

### Measures to increase the likelihood of RWA detection

- Target early sown cereal crops and volunteer cereals (and brome grass if present), particularly along crop edges.
- Follow a repeatable sampling pattern which targets early sown and volunteer plants. A perimeter search and a 'W' shaped search pattern through each paddock will give a consistent sampling effort
- Look for RWA symptomatic plants:
  - Rolling of terminal and sub-terminal leaves (Growth stage 20 and above)
  - Longitudinal whitish to pink-purple streaking of leaves (Growth stage 20 and above)
  - Deformed 'goose-neck' head as result of awn trapped by unrolled flag leaves (Growth stage 50 and above)
- Where to find the RWA
  - Search within:
    - rolled leaves, particularly in the leaf base
    - leaf sheaths
    - in high numbers RWA are being found active on exposed parts at base of plants
    - at low densities plant beating has proven successful for detection

For information on biosecurity decontamination procedures for Russian wheat aphid visit [www.pir.sa.gov.au/russianwheataphid](http://www.pir.sa.gov.au/russianwheataphid)

# Russian Wheat Aphid



Wednesday, 1 June 2016

For further information contact: Nick Secomb: Manager, Plant Health Operations. Ph: 8207 7833

BIOSECURITY SA  
PIRSA

## Russian wheat aphid – Paddock decontamination protocol

Anyone who visits a paddock infested with Russian wheat aphid has the potential to inadvertently spread the pest on footwear or clothing with the pest acting as a 'hitchhiker'.

The most important step to take in preventing spread is to limit access into infested properties and to undertake disinfection on leaving.

The risk can be effectively managed by following a few simple steps.

### Before entering

- Assess what you actually need to take into the paddock with you. If possible, leave the vehicle on the roadside and only take what might be required.
- Check that you have a basic kit to decontaminate your footwear and to protect your clothing and take this with you to the edge of the paddock.

### Disinfecting footwear.

- Remove mud and soil from boots with a screwdriver or similar tool. Scrub boots clean with a scrubbing brush.
- Mix a 1% active chlorine solution in a container. Most commercial products (e.g. White King) use a 4% concentration so dilute 1 part bleach to 4 parts water. Use gloves and avoid splashing onto exposed skin or clothing.
- To ensure that insects are killed, boots must be in the chlorine solution for at least 30-seconds.
- Replace solution daily even if not used as chlorine breaks down rapidly in sunlight.



Image supplied courtesy of [Visebeath Australia](#)

### Tools/clothing.

- Wherever possible, put on disposable overalls before entering an infested or suspect paddock.
- If Russian wheat aphids are collected/suspected, remove overalls before getting back into the car and place in a sealed bag for incineration.
- Scrub any other tools clean and then disinfect as per the process for disinfecting footwear.

For information on how to sample for Russian wheat aphid visit

[www.pir.sa.gov.au/russianwheataphid](http://www.pir.sa.gov.au/russianwheataphid)

# Russian Wheat Aphid

## Category 3 pest

### 7 Trigger points for review

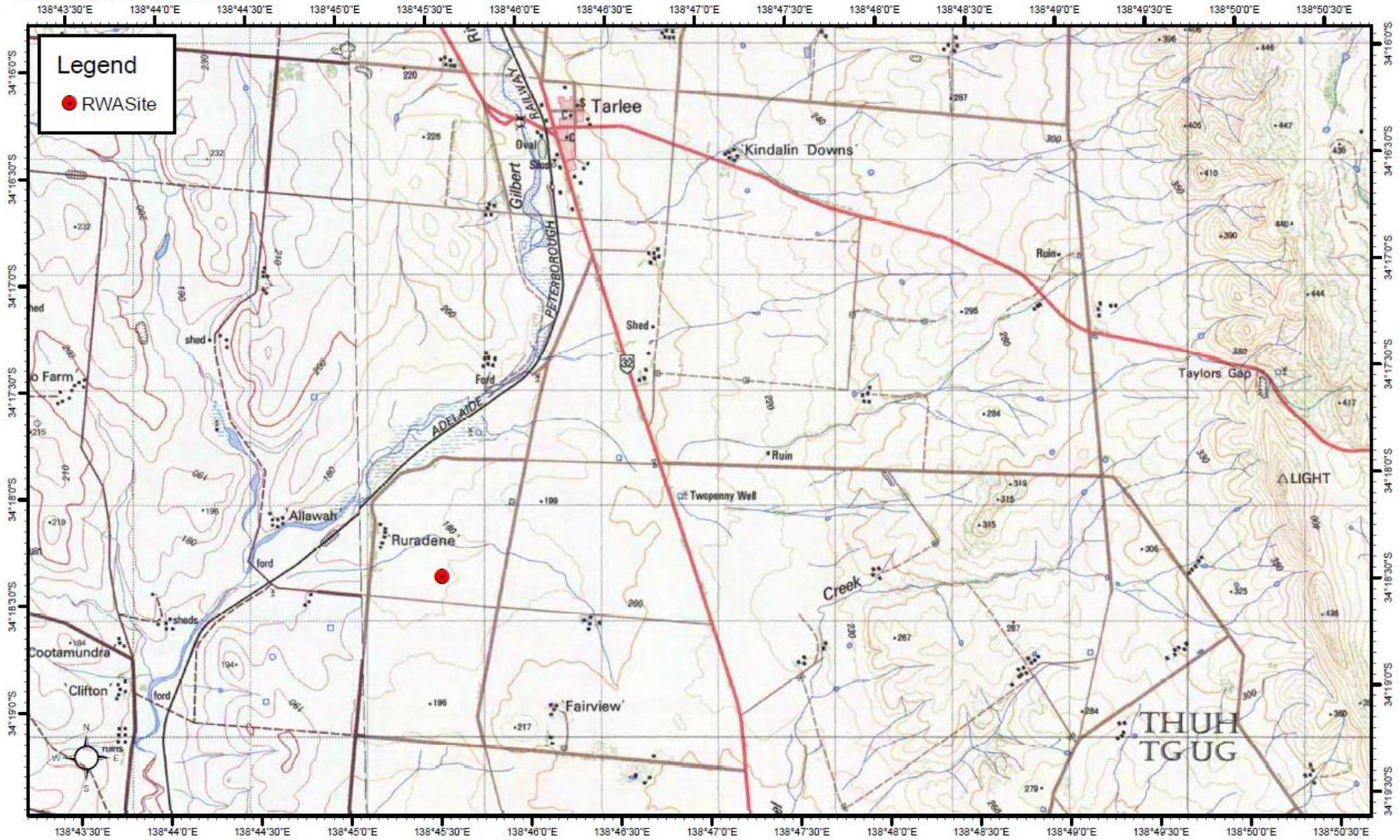
The trigger points that will initiate a review of the response are outlined below.



	Assumptions	Trigger	How it will be monitored
1	Infestations can be treated	<ul style="list-style-type: none"><li>RWA is detected in areas which cannot be effectively treated (i.e. non-arable areas like creek-lines, fence-lines and roadsides)</li></ul>	<ul style="list-style-type: none"><li>Surveillance of volunteer grasses in the buffer zone</li><li></li></ul>
2	The RWA infestation is delimited and contained within a discrete area	<ul style="list-style-type: none"><li>RWA is detected more than 50 kilometres from IP1</li></ul>	<ul style="list-style-type: none"><li>Agronomist network</li><li>Surveillance of early sown crops</li><li>Suction traps</li></ul>
3	Treatment is effective in eradicating RWA	<ul style="list-style-type: none"><li>An effective treatment option is available</li></ul>	<ul style="list-style-type: none"><li>Re-inspection of treated paddocks</li></ul>
4	Surveillance is effective in delimiting RWA infestations	<ul style="list-style-type: none"><li>RWA detected in previously cleared site without identified opportunity for incursion since previous inspection</li></ul>	<ul style="list-style-type: none"><li>Repeat surveillance of sites</li></ul>
5	Response program costs are as budgeted	<ul style="list-style-type: none"><li>Response program costs are projected to exceed the total NMG agreed cost</li></ul>	<ul style="list-style-type: none"><li>Expenditure statement provided to CCEPP quarterly</li></ul>



# RWA Site - 19/05/2016



Government of South Australia  
Primary Industries and Regions SA

Cartography by Biosecurity SA  
Primary Industries and Regions SA

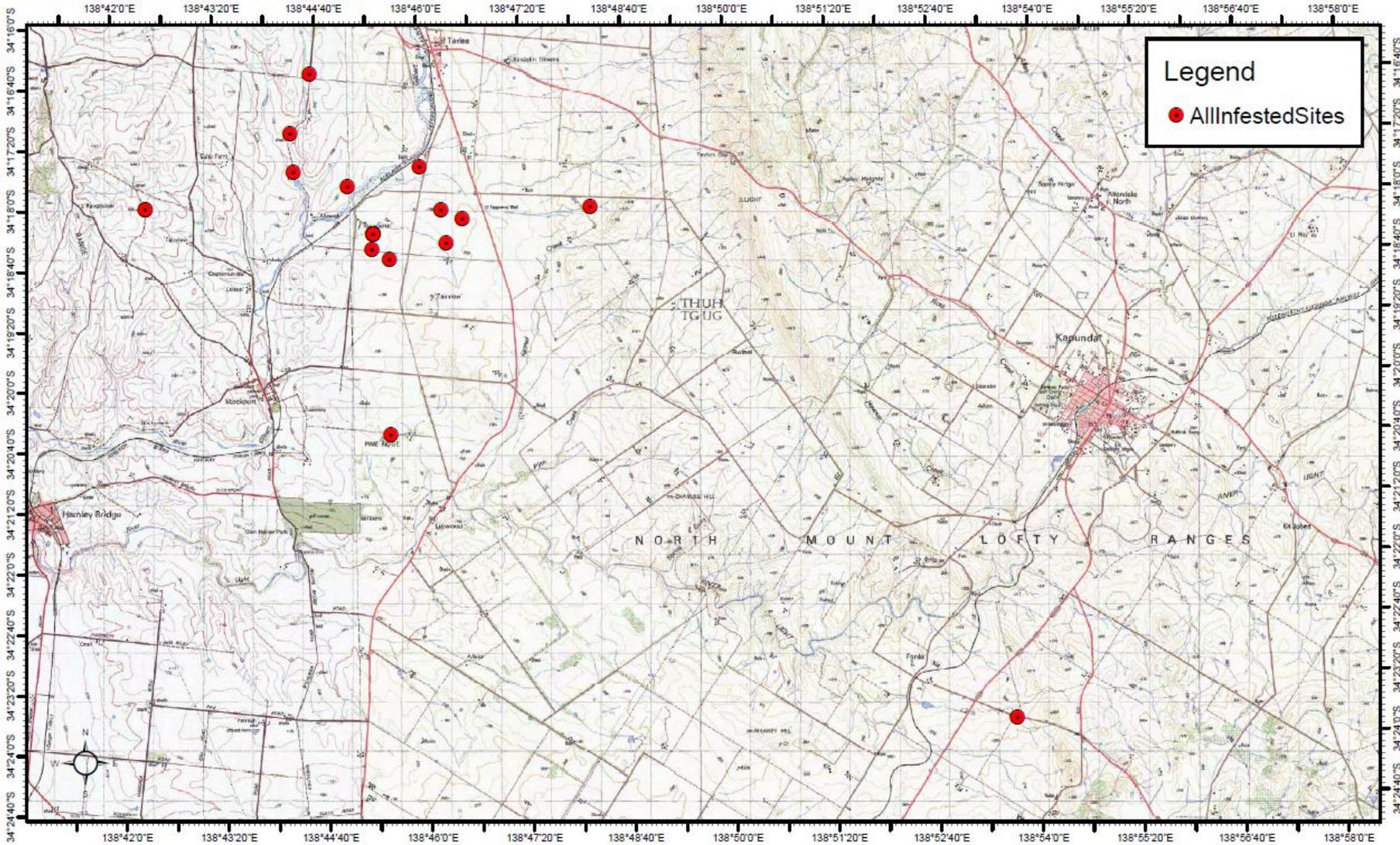


Topographic and Cadastral detail based on information supplied by the Department of Environment, Water and Natural Resources. The relationship between this data and PIRSA data is not guaranteed.



Primary Industries and Regions SA

# RWA Infested Sites - 25/05/2016



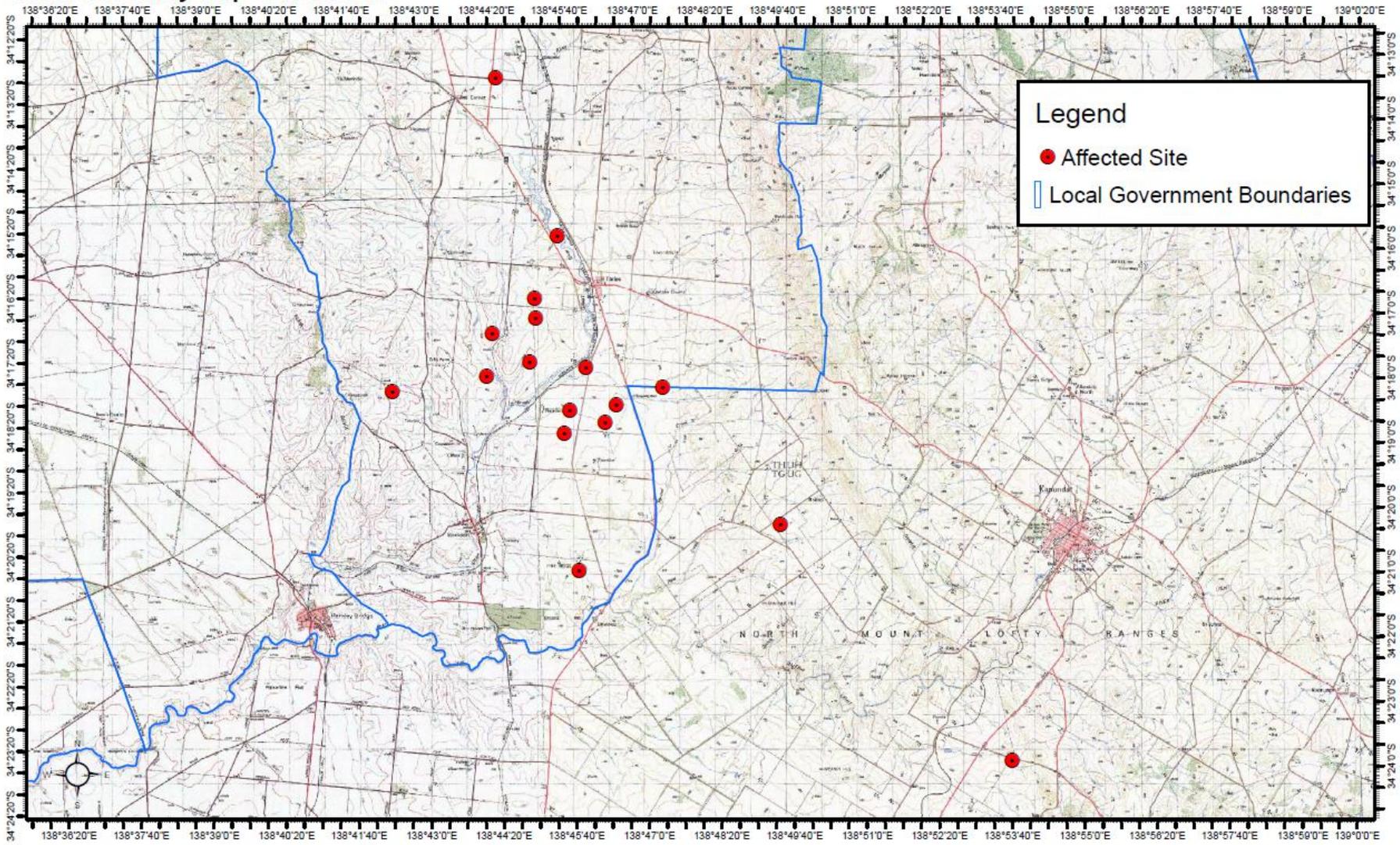
Cartography by Biosecurity SA  
Primary Industries and Regions SA



Topographic and Cadastral detail based on information supplied by the Department of Environment, Water and Natural Resources  
The relationship between this data and PIRSA data is not guaranteed



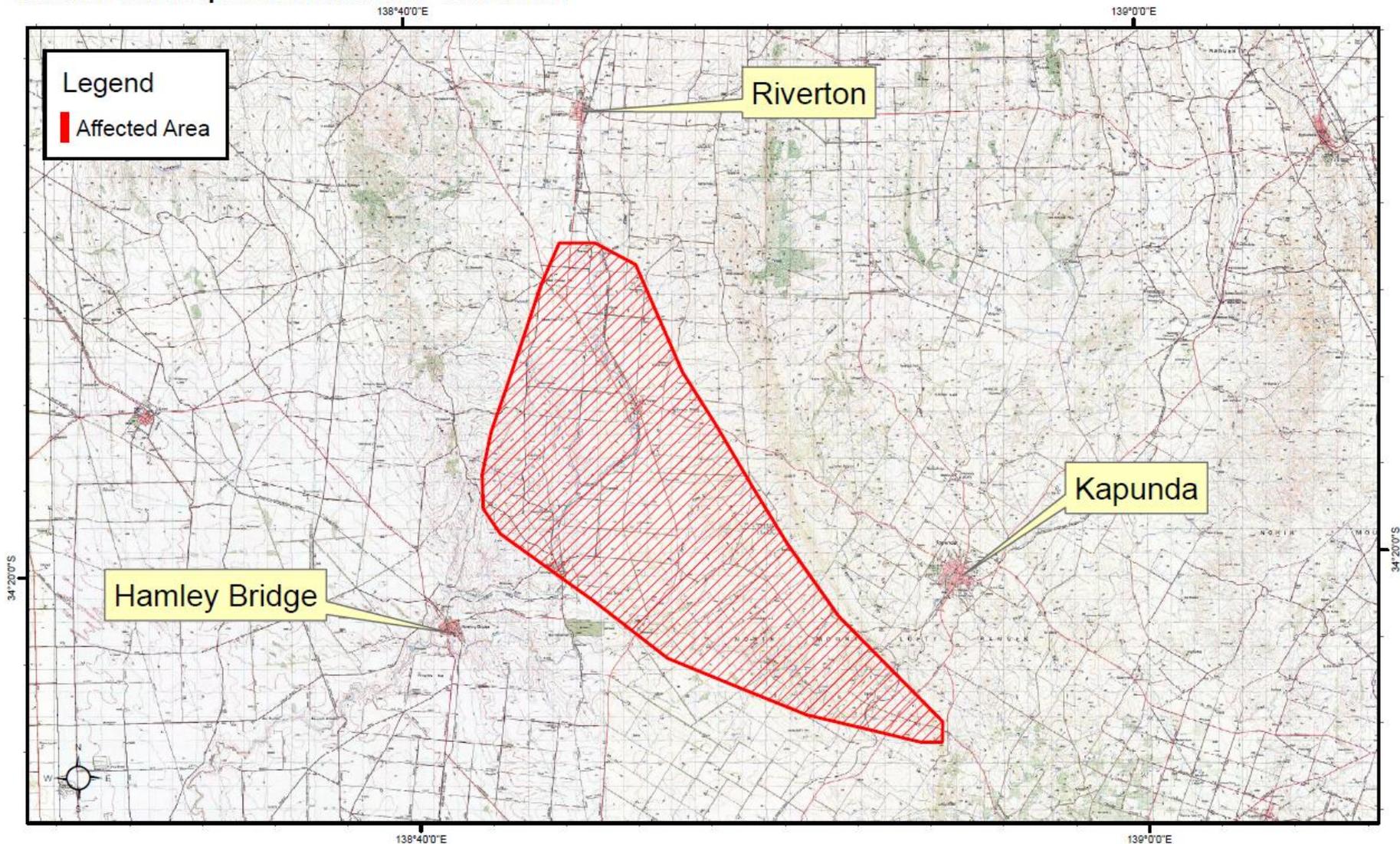
# RWA Summary Map - 27/05/2016



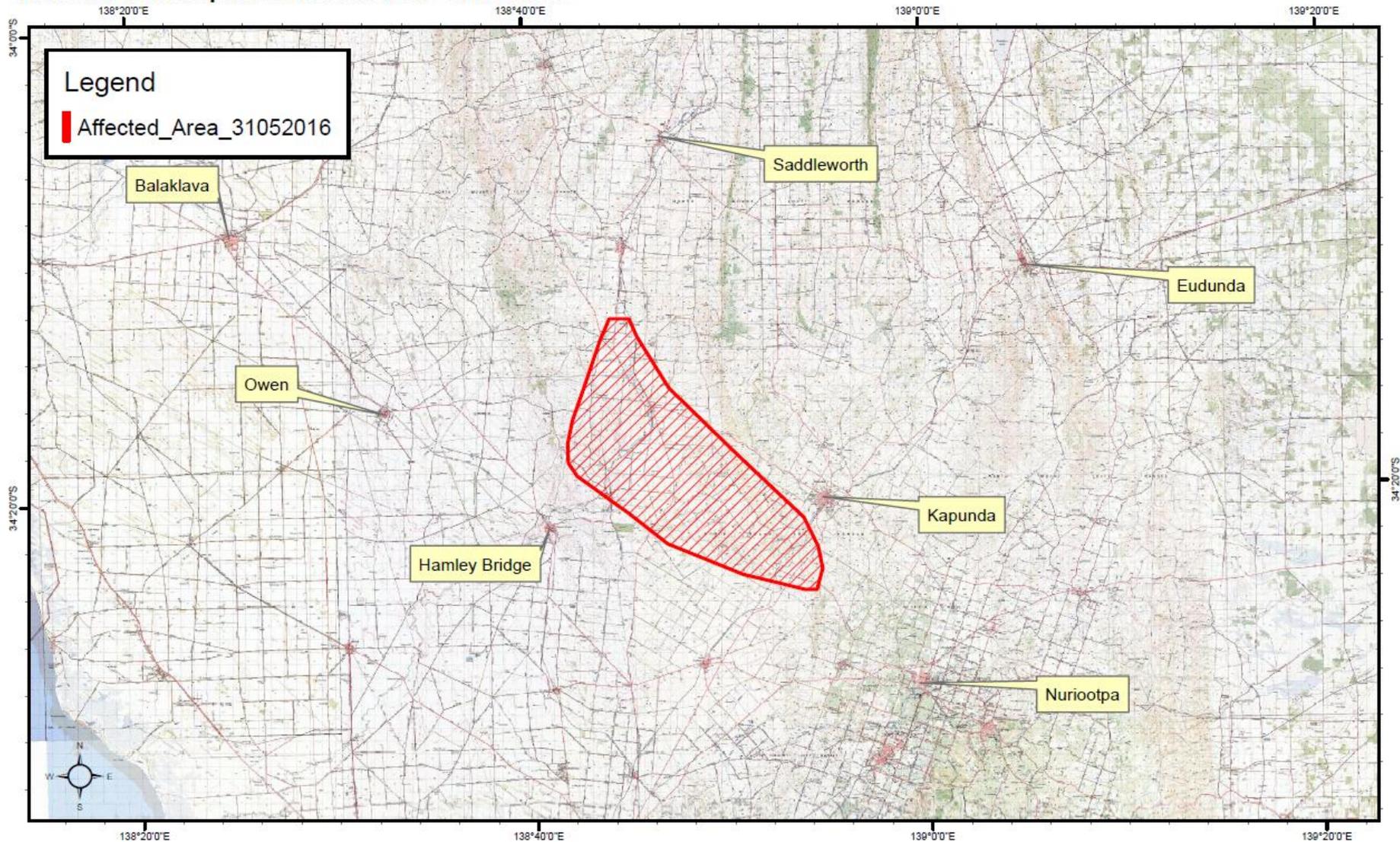
**Legend**

- Affected Site
- ▭ Local Government Boundaries

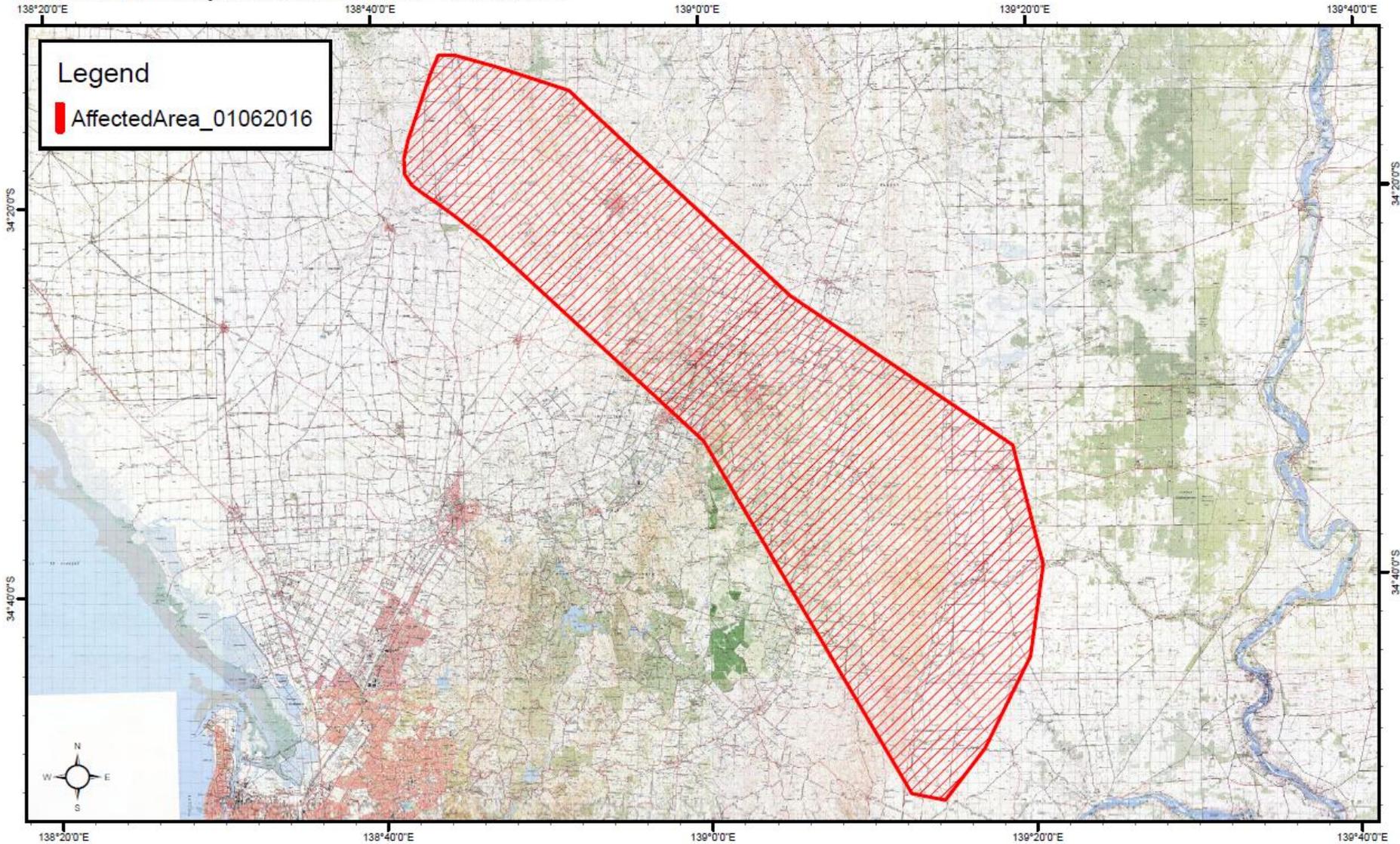
# Russian wheat aphid Affected Area - 31/05/2016



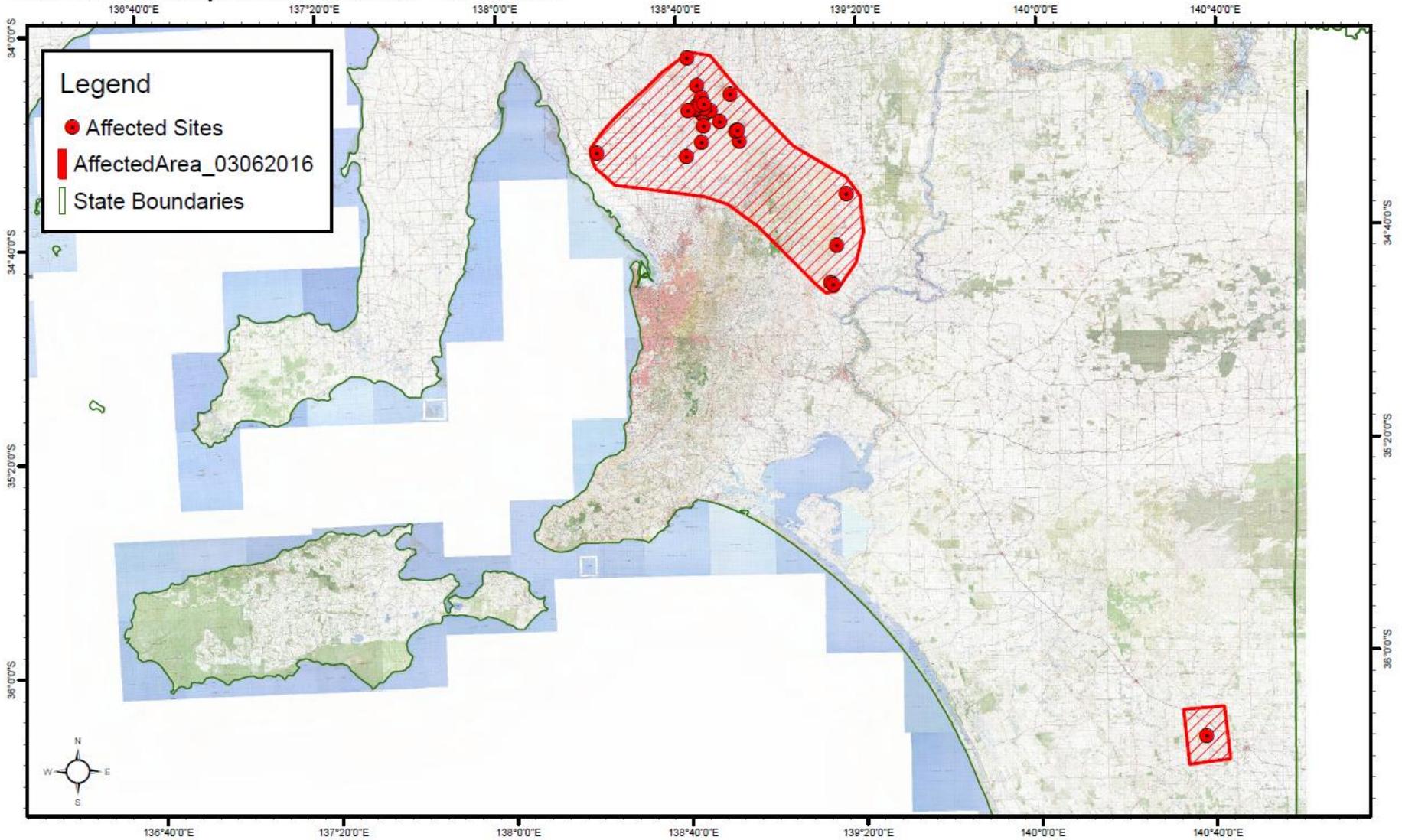
# Russian wheat aphid Affected Area - 31/05/2016



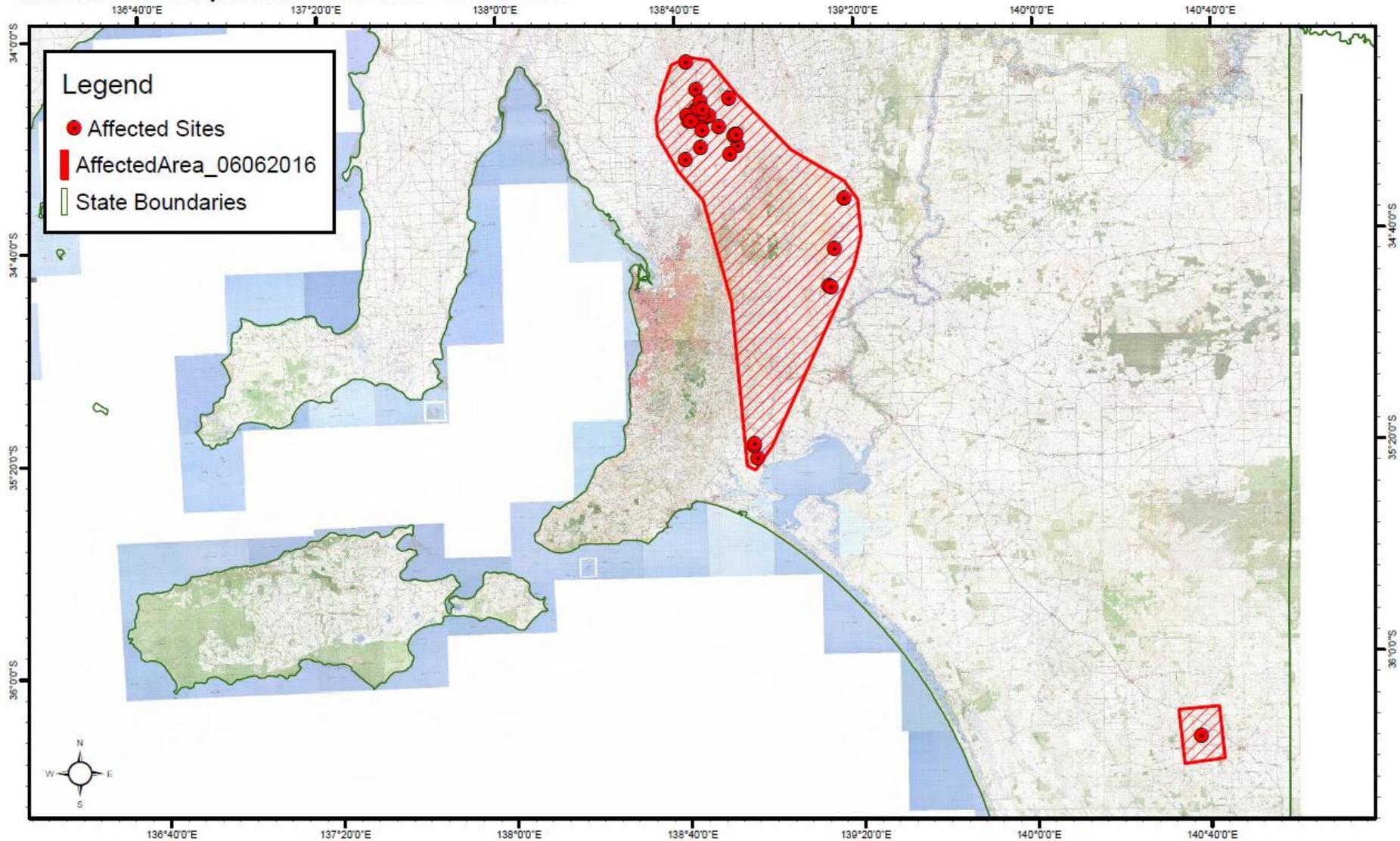
# Russian wheat aphid Affected Area - 01/06/2016



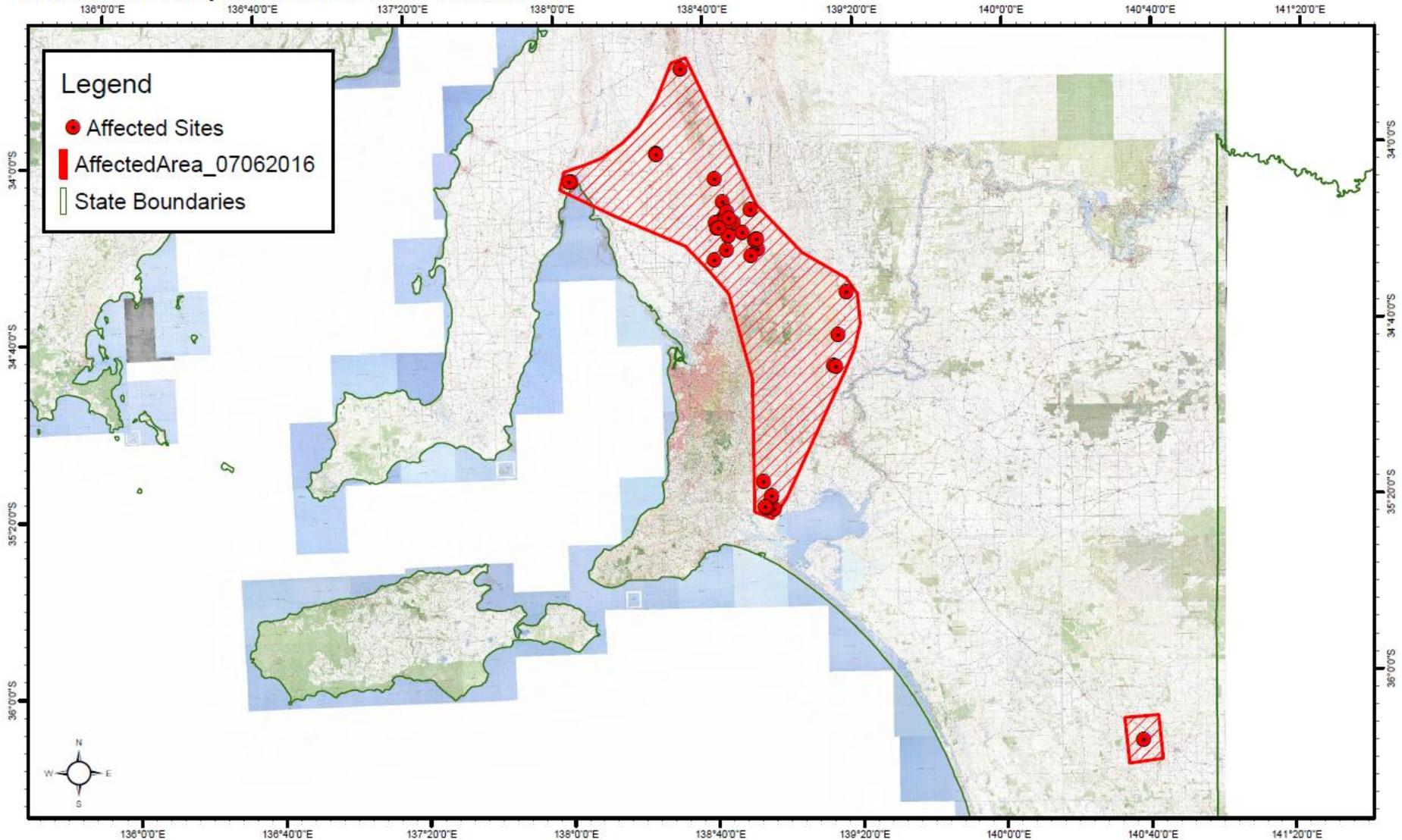
# Russian wheat aphid affected sites - 03/06/2016



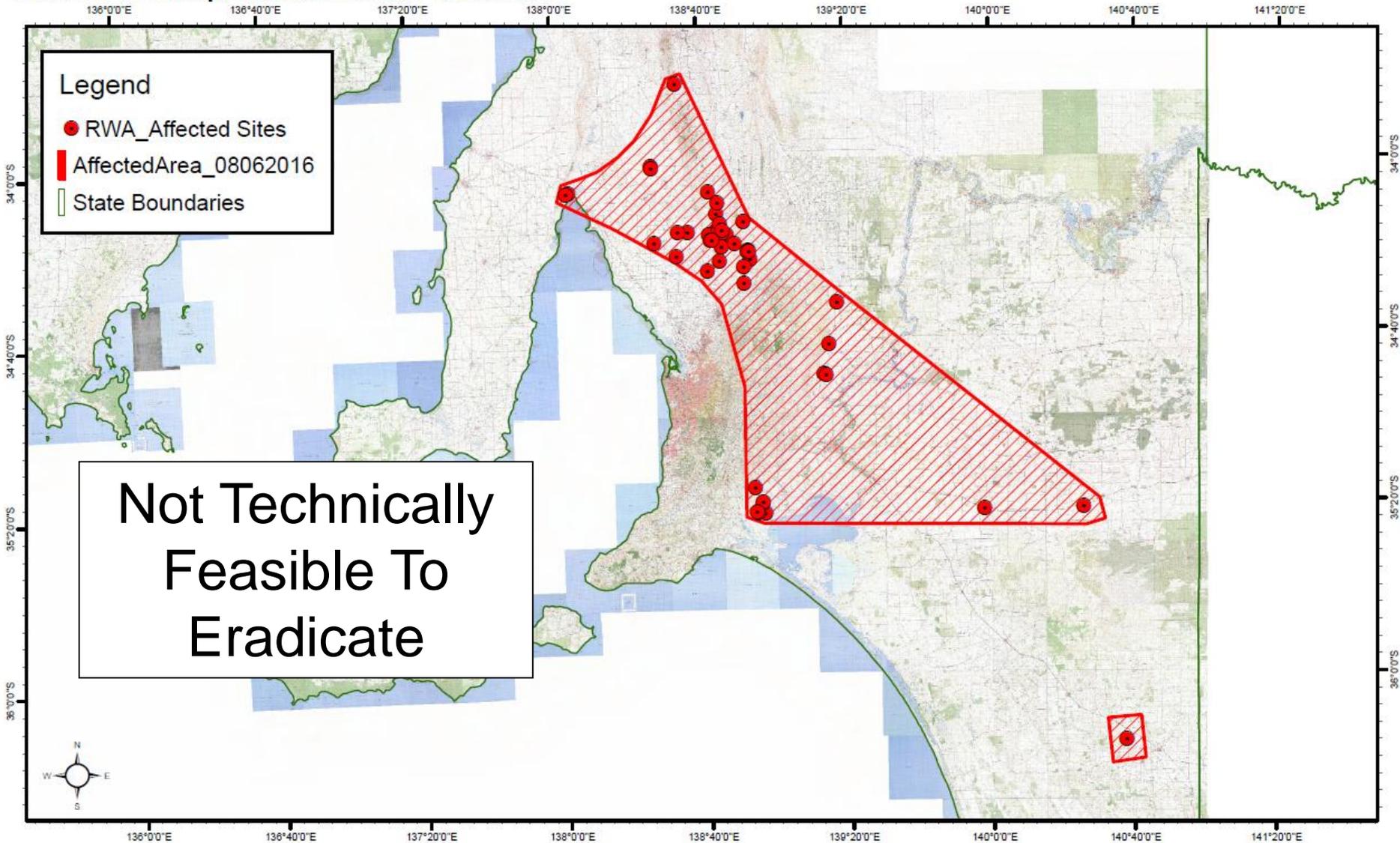
# Russian wheat aphid affected sites - 06/06/2016



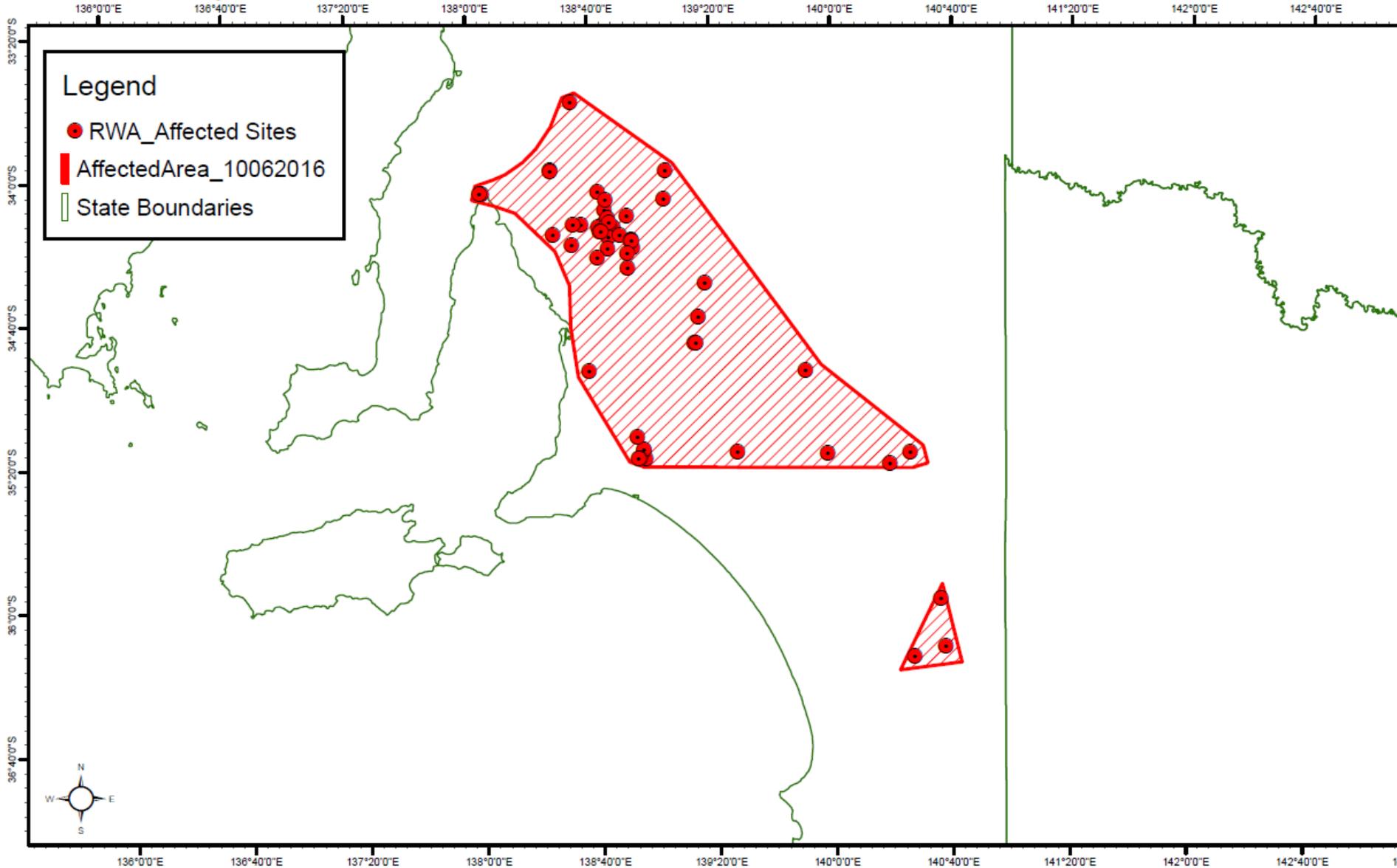
# Russian wheat aphid affected sites - 07/06/2016



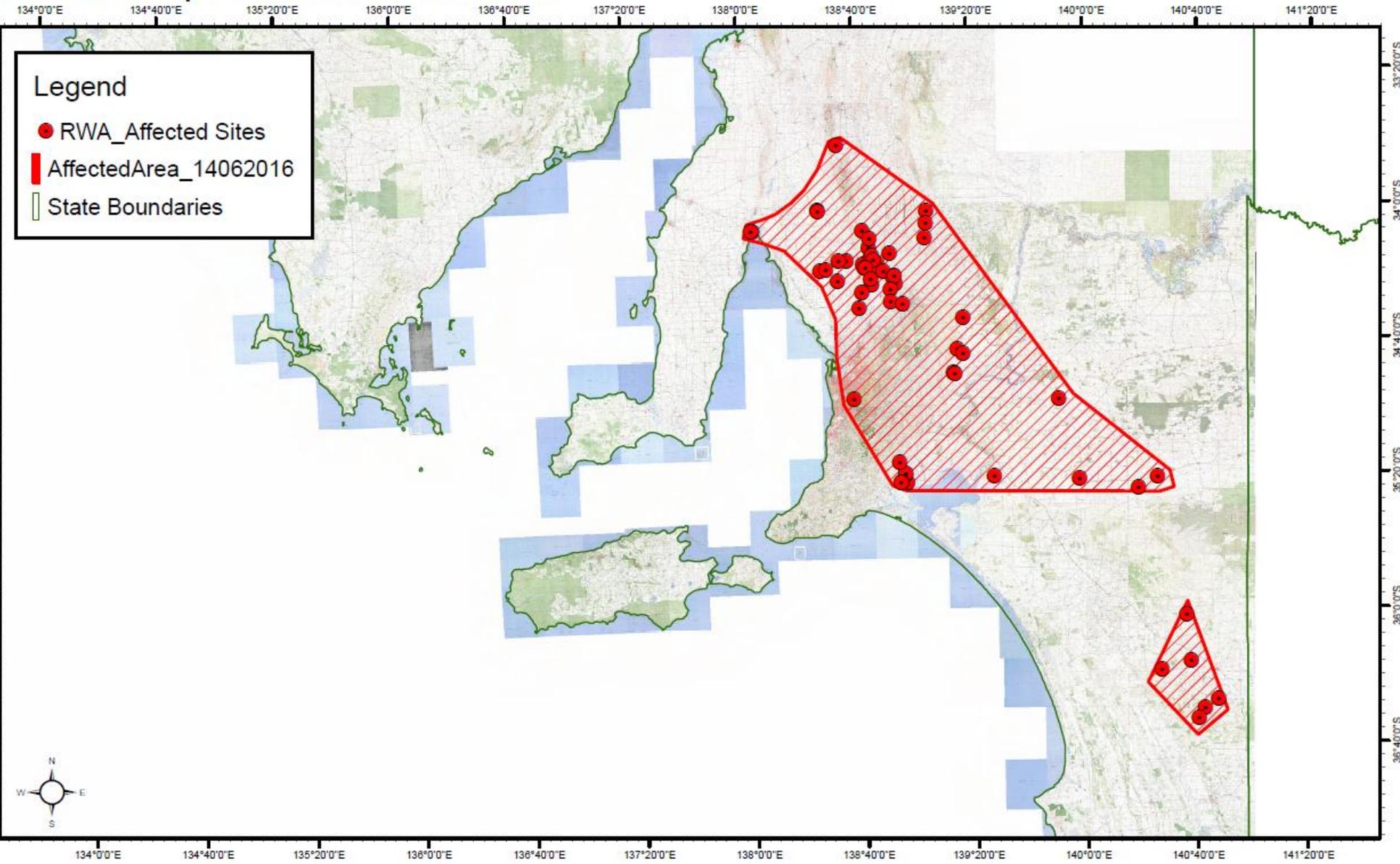
# Russian wheat aphid affected sites - 08/06/2016



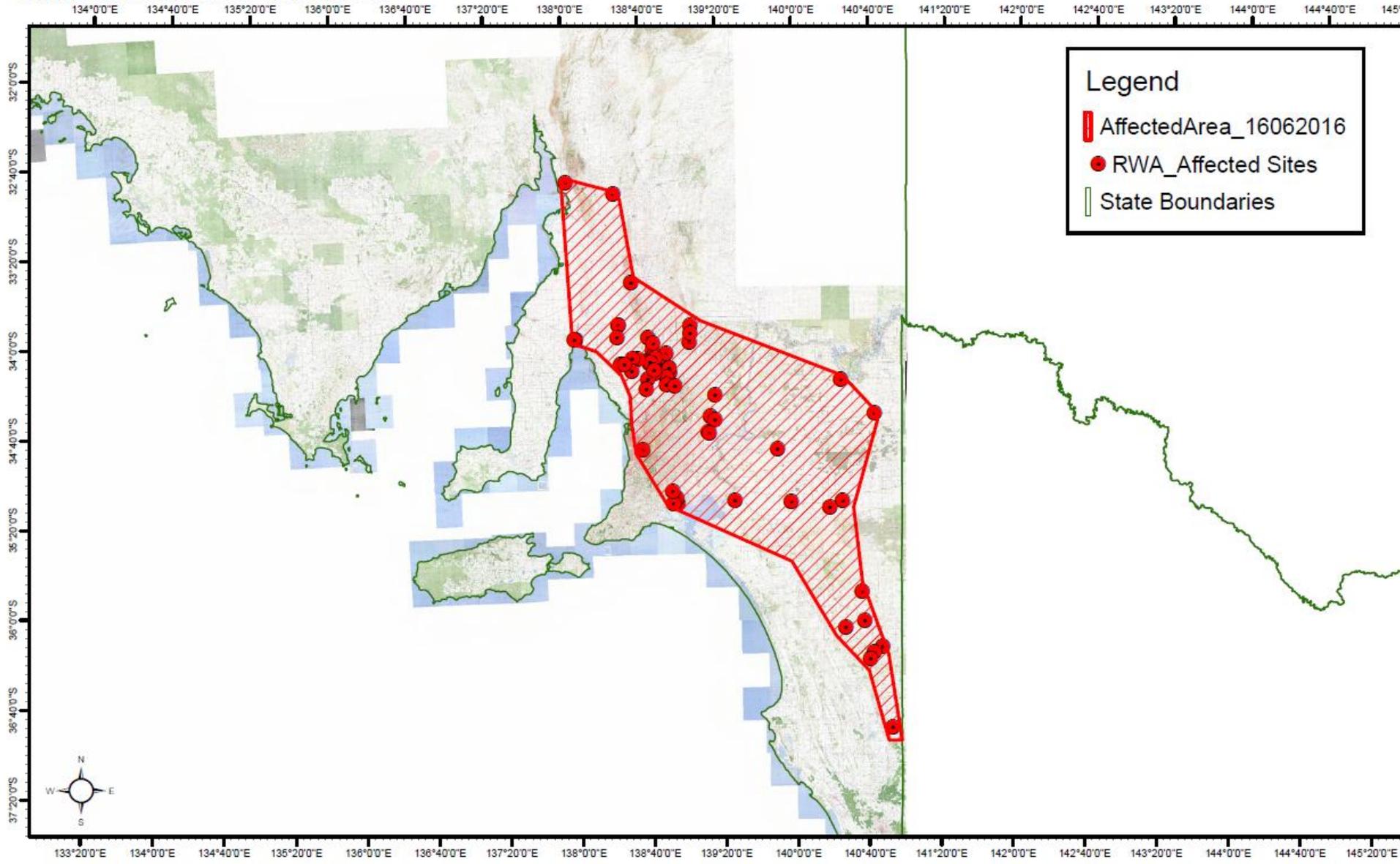
# Russian wheat aphid affected sites - 10/06/2016



# Russian wheat aphid affected sites - 14/06/2016



# RWA Affected Area - 16/06/2016



**Legend**

-  AffectedArea\_16062016
-  RWA\_Affected Sites
-  State Boundaries

# Russian Wheat A

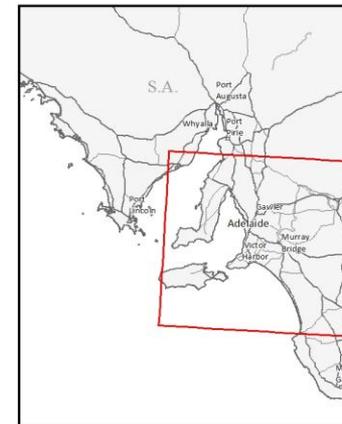
## Area Affected with

### South Australia

**23/06/2016**

 Area Affected

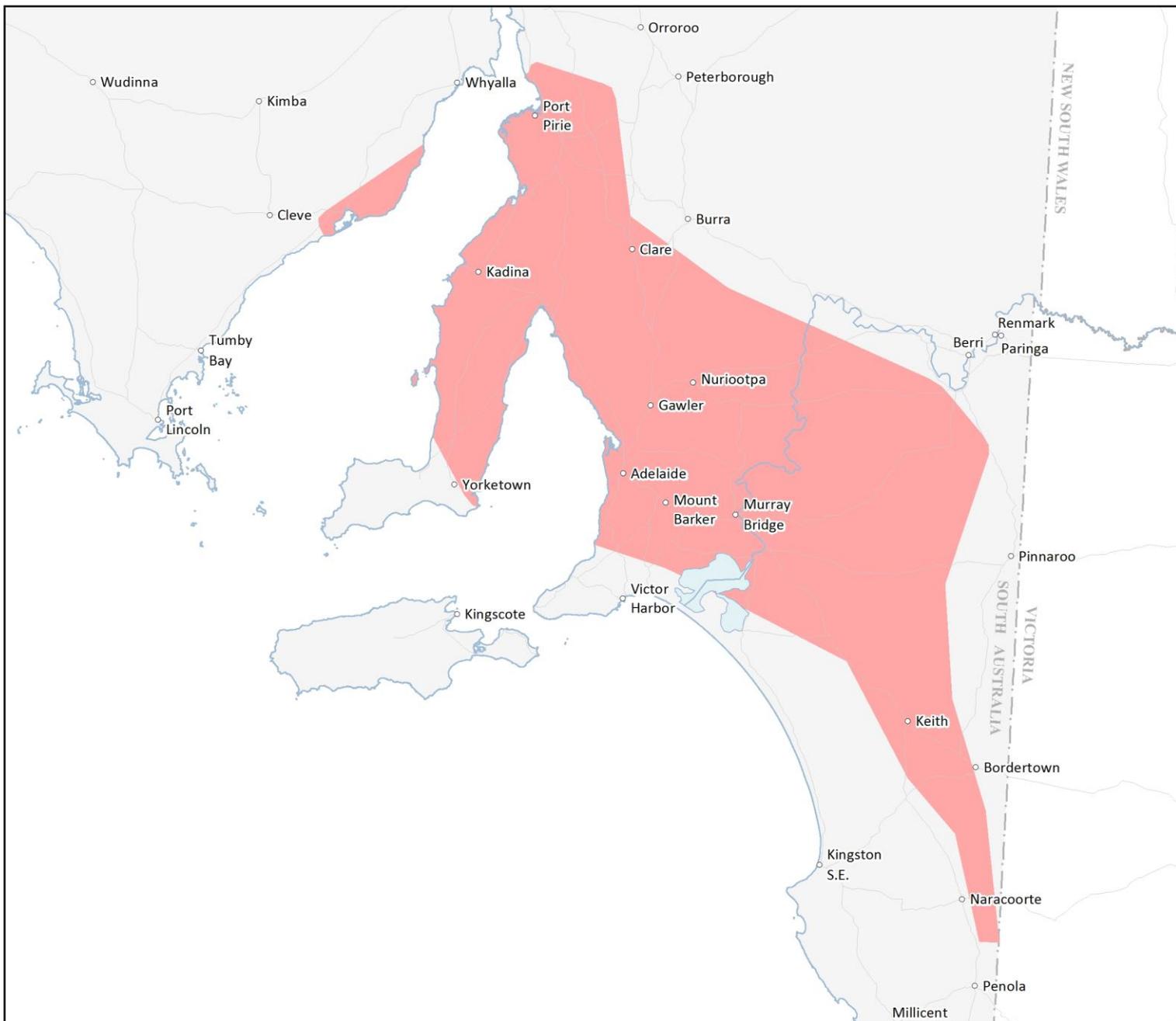
0 20 40 60 80  
Kilometres

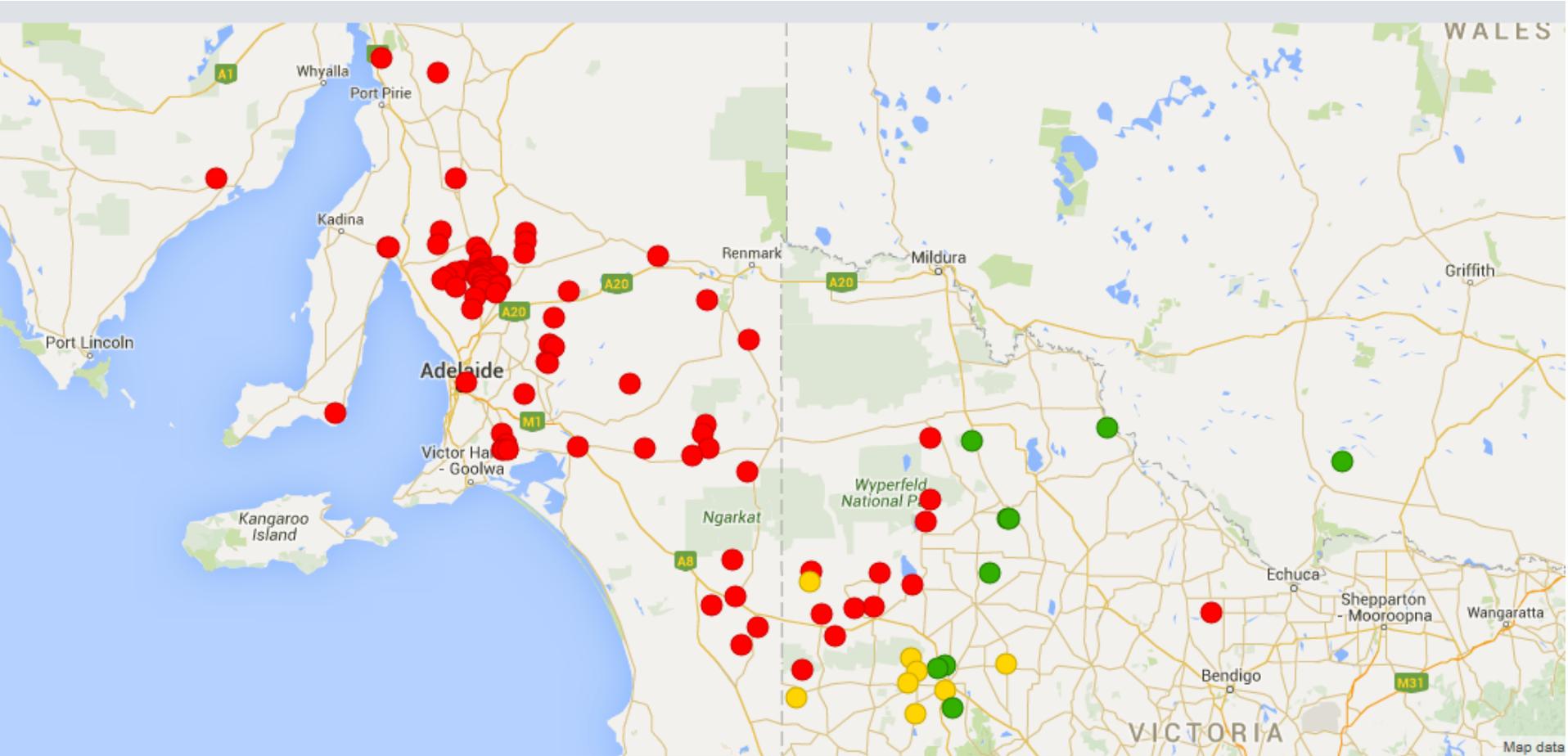


Area Affected data provided by PIRSA Biosciences

Projection Universal Transverse Mercator  
Datum Geocentric Datum of Australia  
Grid Map Grid of Australia, Zone 50

Map produced by PIRSA  
Spatial Information Services at:  
**23/06/2016 8:43:32 AM**





# Russian Wheat Aphid

## National Management Plan

- Deemed not technically feasible to eradicate
- Management Plan developed for industry to self-manage
- Focus on
  - Mapping the spread
  - Developing strategies to minimize yield loss including mapping biotype, addressing insecticide resistance and looking at resistance genes in field crops
  - National communication activities

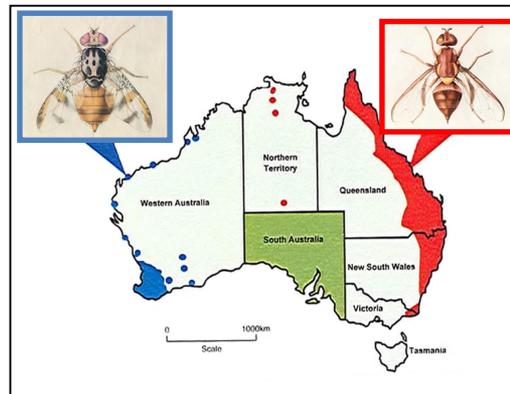


**Russian Wheat Aphid  
National Management Plan**

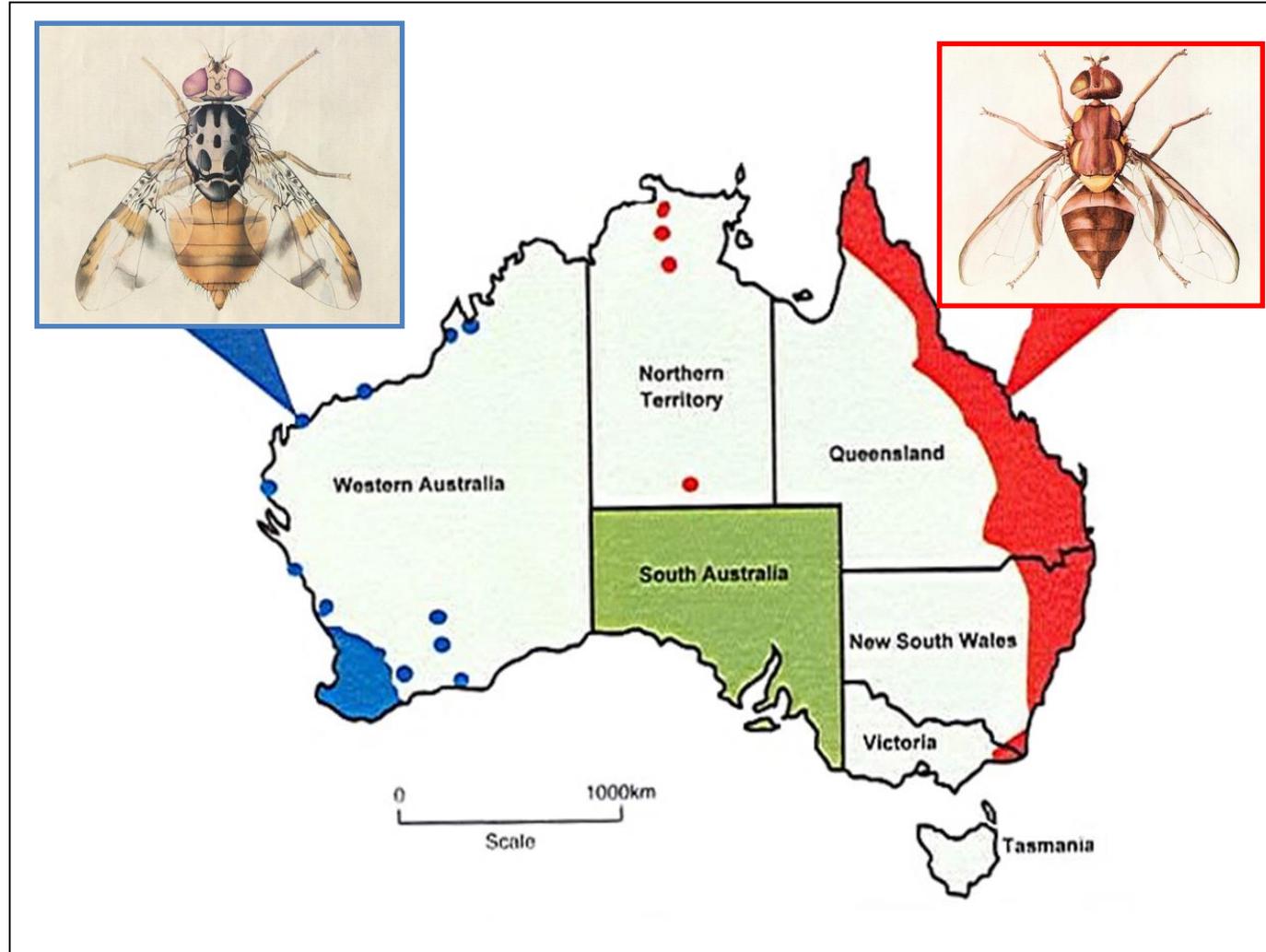
# Domestic Plant Pest Management

## Queensland and Mediterranean Fruit Fly

- Not managed under Deed arrangements
- Endemic in interstate areas
- Domestic management for interstate and export trade



# South Australia is Free of Fruit Fly



# South Australia is Fruit Fly Free

## Fruit Fly Freedom achieved by:

- Geographic isolation
- Regulatory arrangements
- Trapping grid
- Border controls
- Community awareness



Budget of \$5M per annum in SA

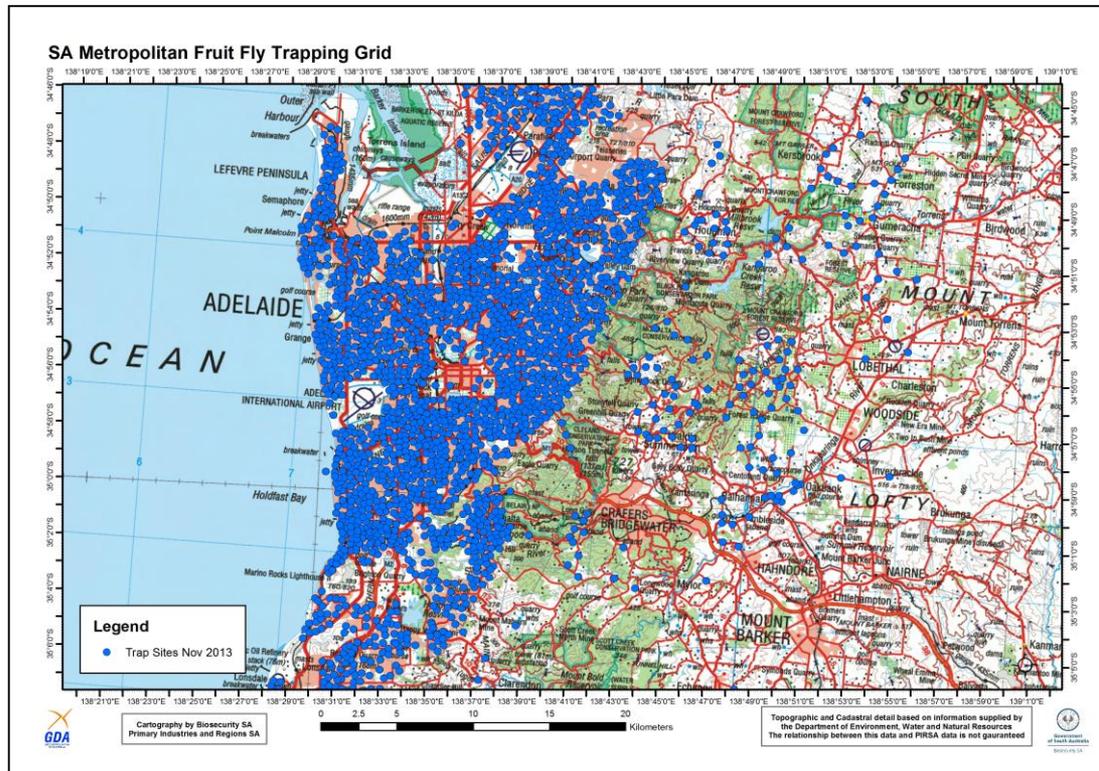




# South Australia is Fruit Fly Free

## Fruit Fly Trapping Grid

- Over 3,500 fruit fly trap sites in South Australia
- Traps serviced every week during the high-risk season and fortnightly during winter.



# Border Controls - Roadblocks

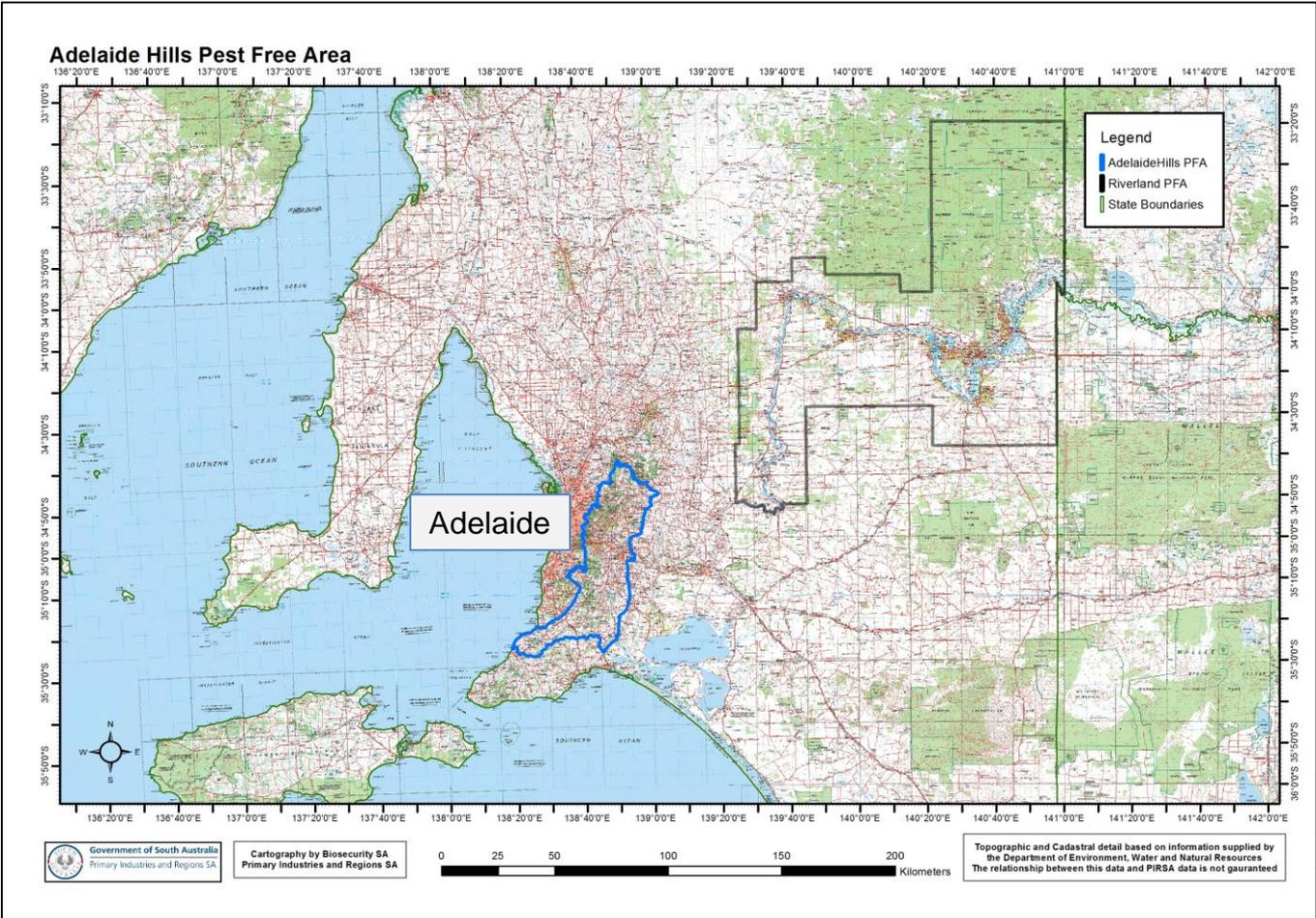


- Permanent Quarantine Stations at Yamba, Pinnaroo, Oodla Wirra and Ceduna
- Random roadblocks held at any location at high risk times
- Targeting interstate traffic and travelers from Adelaide
- Random roadblocks held at Morgan, Swan Reach, Blanchetown, Bordertown and Eudunda etc.

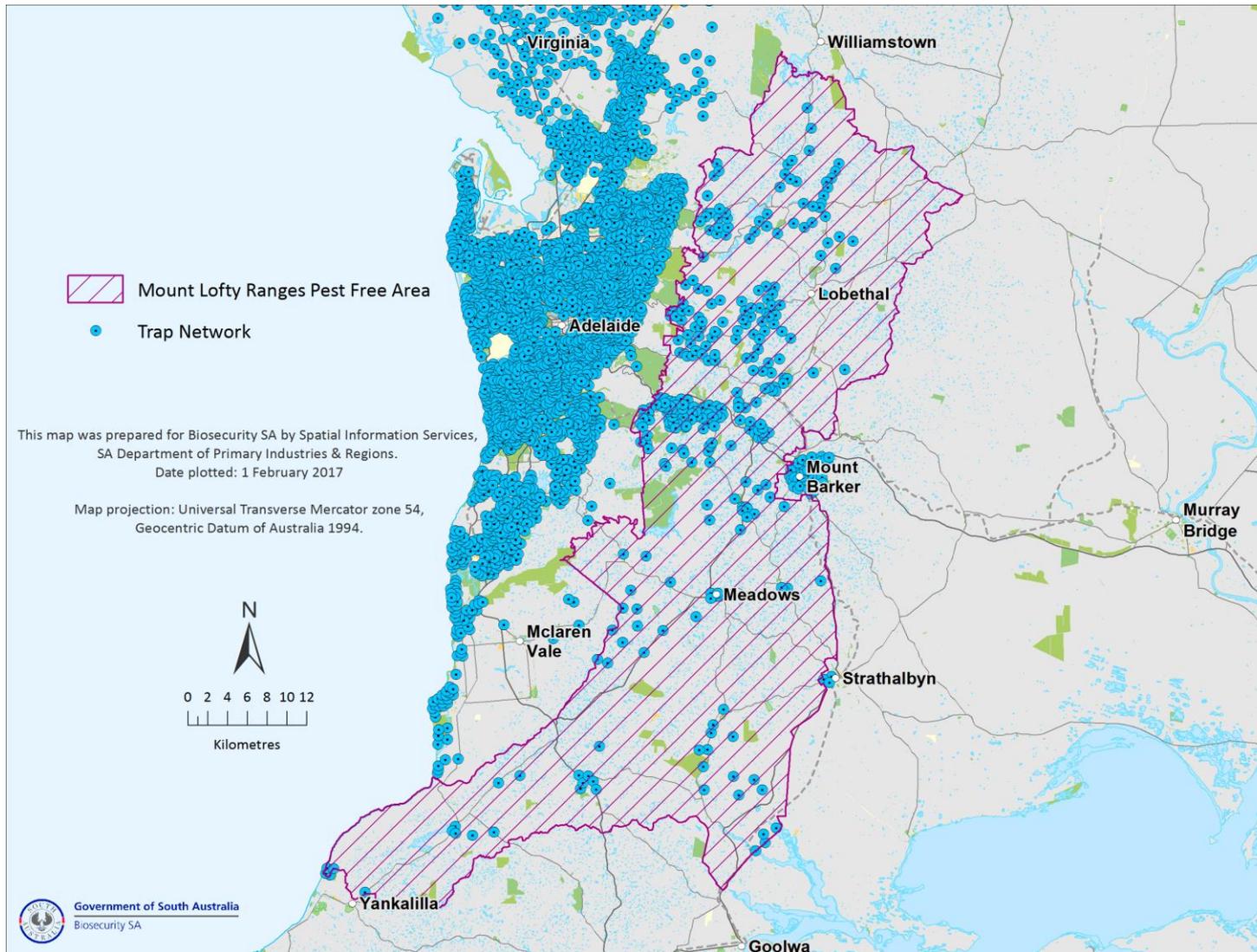


# South Australia is Fruit Fly Free

The SA Riverland is a recognized Pest Free Area for export and the Mount Lofty Ranges offers similar credentials.



# Mt Lofty PFA Trapping Network



# Mt Lofty PFA Prioritisation Value Case

## Challenges

- International recognition as uninfested part of a Country
  - *South Australia acts as buffer zone*
  - *Specific measures required between Adelaide metro (where isolated outbreaks do occur) and the PFA.*



Thank you

