



Department of
Primary Industries and
Regional Development

Making General Surveillance Work: MyPestGuide™ 'Pantry Blitz'

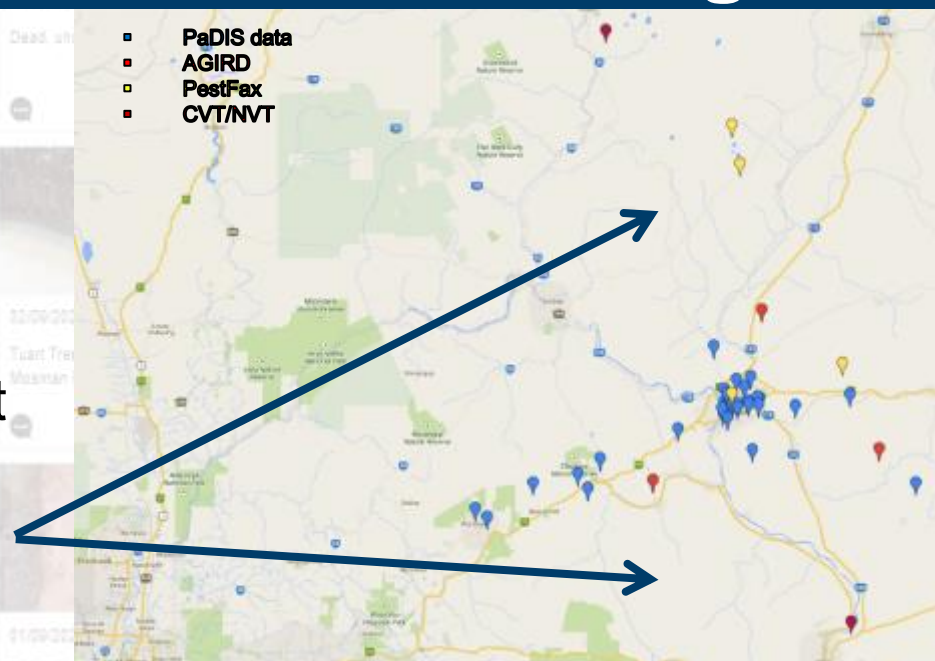
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Making General Surveillance Work, 9-10th Sept 2021

Our surveillance goals

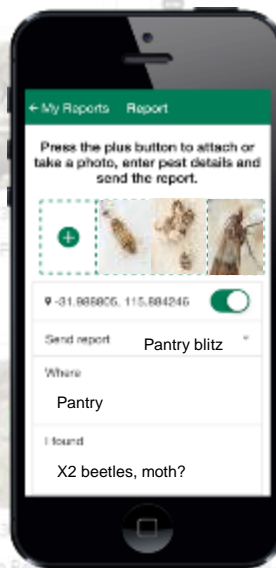
Problem

- Industries are vulnerable to harmful exotic pests & diseases.
- Export of billions of dollars of Australian products is dependent on proof of area freedom from pests.
- Surveillance gaps means less data to support market access.



Solution

- Make biosecurity a shared responsibility
- Provide everyone with an app plus web-based pest ID and reporting tools.



Free MyPestGuide™ reporting tools were designed and tested.

Experts verify incoming data to improve early detection of pests.

Data is analysed to deliver a probability of area freedom from pests.

'Pantry Blitz' surveillance



General Surveillance

Relies heavily on
trained personnel
and technology

Relies heavily on
community and
industry engagement

Expensive

Irregular

Need a mixture of
both



Khapra beetle (*Trogoderma granarium*) by Pia Scanlon

A promotional poster for 'Pantry Blitz!'. The top half features a kitchen pantry background with shelves of food items. A large magnifying glass in the foreground shows a close-up of a brown moth on a piece of cinnamon. A hand holds a smartphone displaying a registration app. A green banner across the middle contains text about the science activity. The bottom section has a black background with a lightbulb icon and the 'national science week 2016' logo.

PANTRY BLITZ!

BE A PART OF THIS EXCITING SCIENCE ACTIVITY!

Get your **FREE TRAP** by registering online at:
www.agric.wa.gov.au/pantryblitz

 **national science week 2016**
13-21 AUGUST 2016

- A community event to discover which pests occur in WA pantries.
- Metro and rural communities were provided with traps.
- Aim was to increase community awareness about our food supply chain and engage across the agricultural sector.

High risk pests in my pantry...really?



Carpet beetles such as *Anthrenocerus australis*, *Anthrenus verbasci*, *Attagenus unicolor*, *Antherenus flavipes*



Khapra beetle larvae (*Trogoderma granarium*)



Khapra beetle (*Trogoderma granarium*) by Pia Scanlon

← My Reports Report

Press the plus button to attach or take a photo, enter pest details and send the report.

+ [Image of a larva] [Image of beetles] [Image of a moth]

📍 -31.988805, 115.884246 ☒

Send report Pantry blitz ▾

Where
Pantry

I found
X2 beetles, moth?



Karnal bunt (*Tilletia indica*)



Indian meal moth (*Plodia interpunctella*)



Rice weevil (*Sitophilus oryzae*)



Department of Agriculture and Food
Department of Regional Development



Welcome to the Pantry Blitz!

- Register for the Pantry Blitz.** Go online agric.wa.gov.au/pantryblitz
- Install MyPestGuide** on your mobile phone. Go online mypestguide.agric.wa.gov.au
- Register to view your reports online.** Go online mypestguide.agric.wa.gov.au
- Set up your pest trap and report pest observations.**

Week 1

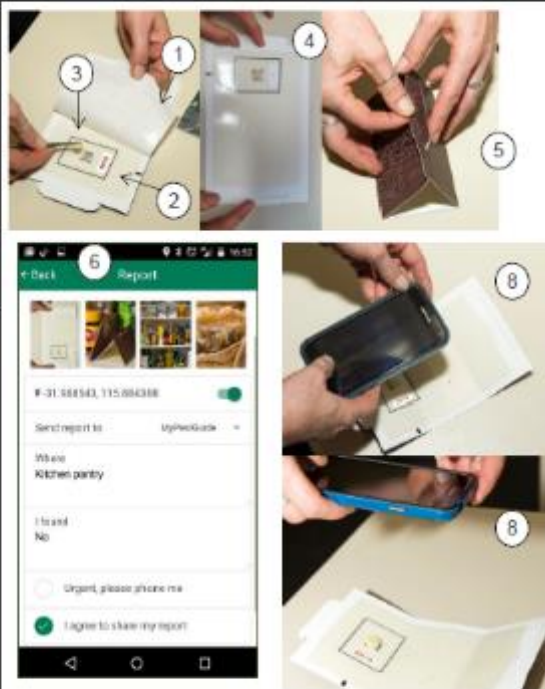
- Peel off cover.
- Cut out the number above and place it next to the lure.
- Stick lure on marked area using tweezers.
- Take a photo using MyPestGuide Reporter of the trap with the number next to the lure.
- Fold trap into a triangular tent and place on shelf at the back of the pantry. Make sure the base is flat so insects can crawl in.
- Take photos and then fill in details.

Take up to four (4) photos for your MyPestGuide report:

- Image 1 = open trap with number
- Image 2 = trap on pantry shelf
- Image 3 = entire pantry
- Image 4 = your choice.

Check these details are filled in:

- ✓ Location – make sure your GPS is turned on
- ✓ Send report to 'MyPestGuide'
- ✓ 'Where' – type 'Kitchen pantry'
- ✓ 'I found' – type 'No' if there is no pest, or 'Yes' when there is a pest, plus any additional information.



Weeks 2, 3 and 4

- Remove trap carefully from shelf and open it flat.
- Make your weekly report by taking photos of the trap:
 - One (1) photo of the entire sticky side of the trap,
 - Three (3) close-up photos of pests, if any.
 - We will contact you if your trap photos show a pest of interest.

Make sure your report details are complete.

Clean lens and touch screen to focus image on the trapped pest.
Return trap to the same place.

Pantry Blitz 2016

- A general surveillance program for the public to take part
- Participants sign up to receive a sticky trap+lure+instructions
- They report findings using the MyPestGuide™ Reporter App
- Provide data on the presence and absence of pests; shows pest-free areas























Follow the Pantry Blitz at: agric.wa.gov.au/pantryblitz

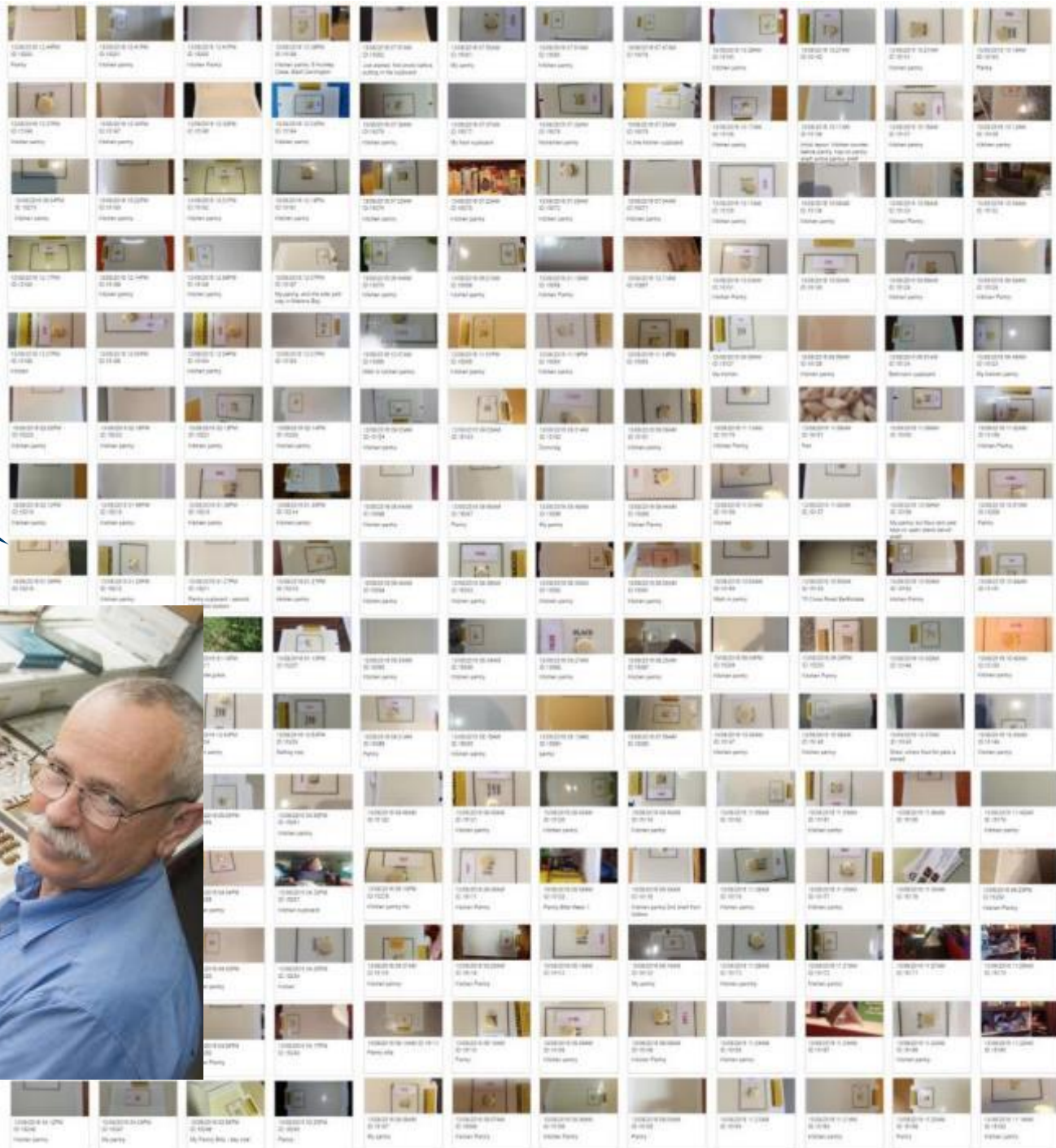
Community response



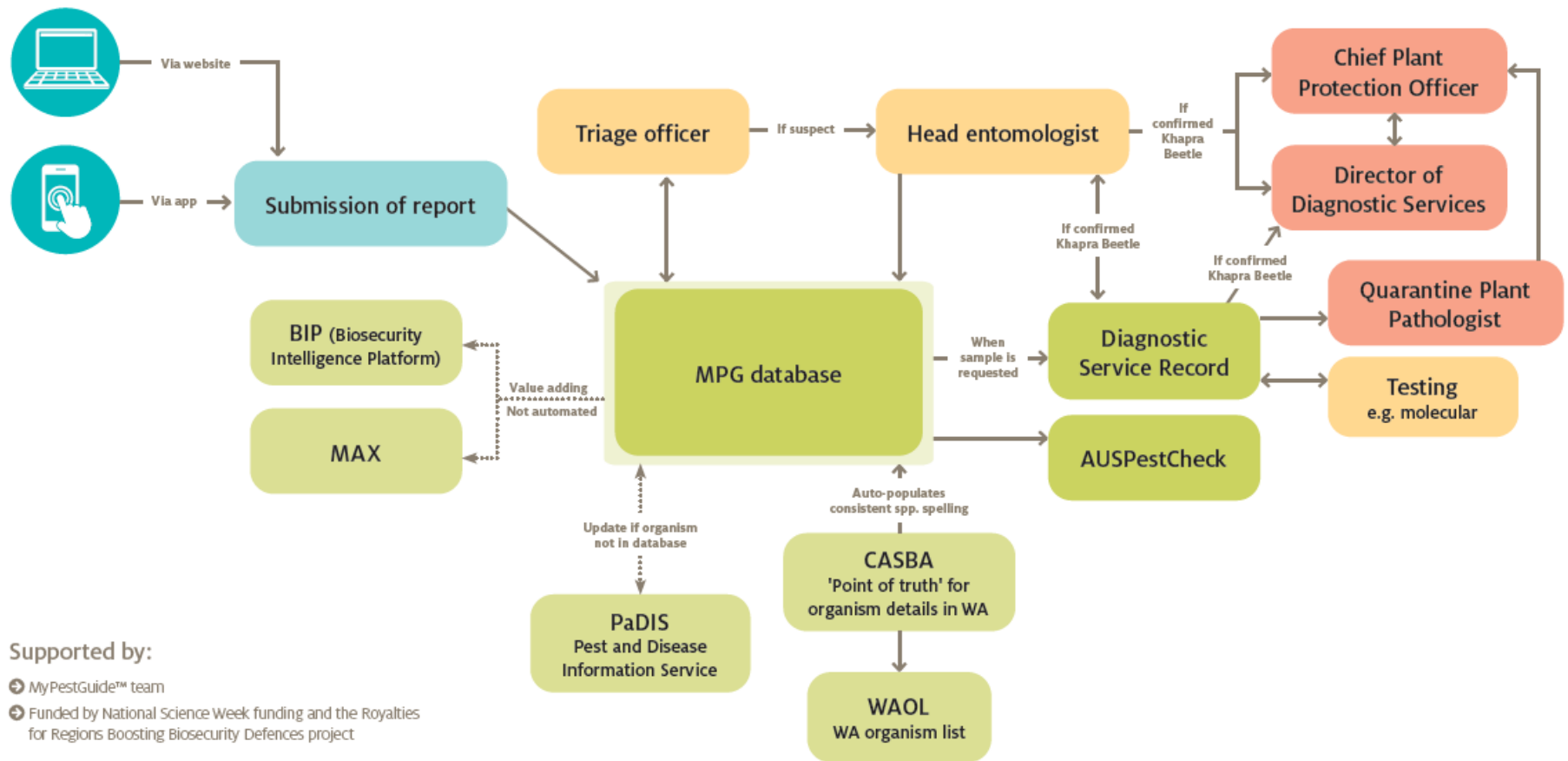
Over 2,252 reports
received on the
Pantry Blitz website

 <p>12/08/2016 05:42PM ID:15039 Kitchen Pantry</p> <p>...</p>	 <p>12/08/2016 05:13PM ID:15038 Kitchen pantry</p> <p>...</p>	 <p>12/08/2016 05:08PM ID:15037</p> <p>...</p>	 <p>12/08/2016 04:54PM ID:15036 My pantry</p> <p>...</p>
 <p>12/08/2016 03:46PM ID:15035 Kitchen pantry</p> <p>...</p>	 <p>12/08/2016 02:37PM ID:15034 kitchen pantry - 10 Warren Road, Yokine</p> <p>...</p>	 <p>12/08/2016 02:38PM ID:15032 pantry</p> <p>...</p>	 <p>12/08/2016 01:36PM ID:15029 Trap 331 ready for Pantry Blitz to be placed in pantry tomorrow morning</p> <p>...</p>
 <p>12/08/2016 01:16PM ID:15028 Kitchen pantry</p> <p>...</p>	 <p>12/08/2016 11:57AM ID:15011 Kitchen pantry</p> <p>...</p>	 <p>12/08/2016 11:55AM ID:15009 Kalamunda Senior high school home economics department pantry</p> <p>...</p>	 <p>12/08/2016 11:04AM ID:16621</p> <p>...</p>
 <p>12/08/2016 10:26AM ID:14998 My pantry</p> <p>...</p>	 <p>12/08/2016 10:23AM ID:14997 Kitchen Pantry</p> <p>...</p>	 <p>12/08/2016 10:20AM ID:14996 Landcare centre pantry</p> <p>...</p>	 <p>12/08/2016 09:26AM ID:14994</p> <p>...</p>
 <p>12/08/2016 08:06AM ID:14993 Kitchen pantry</p> <p>...</p>	 <p>11/08/2016 09:19PM ID:14992 Kitchen pantry</p> <p>...</p>	 <p>11/08/2016 07:01PM ID:14988 Kitchen Pantry</p> <p>...</p>	 <p>11/08/2016 06:57PM ID:14986 kitchen pantry</p> <p>...</p>
<p>First Previous 101 102 103 104 105 Next Last</p>			

Every single report
acknowledged by our
experts.



The dataflow process



Larvae in your larder?

The 2016 Pantry Blitz activity was a great success with 1877 participants registering for a free trap and the department receiving 2252 biosecurity surveillance reports. Communications reached over 250,000 people and the campaign won the WA Rural Media Best Campaign award for 2016. The department uses the submitted pest reports to support Western Australia's pest free status from Khapra beetle, which ensures WA's ongoing access to international markets.



Particle

Food



BEETLE APOCALYPSE? THE PESTS IN MY PANTRY

I let total strangers see inside my pantry—bugs and all.



CRISTY BURNE

SCIENCE WRITER

FOOD | January 20, 2017



Previously, I'd discovered critters in my pantry only once (I'm looking at you, pappadums).

But in a strangely revolting, can't-look-away type of moment, I felt compelled to participate in [Pantry Blitz](#), a citizen science activity run during National Science Week trapping and snapping household pests.

I decided that if I was hosting many-legged guests, I wanted to know what type, and how many.

I was not alone.

Friday, 20 July 2017

Blitzing your household bugs in the name of biosecurity

Wildlife - Critterh



"We're inspiring wildlife in a lot of the most party-proof, bug-proof ways (properly cleaning, regularly testing for cat or dog ticks, using insect repellent) to protect our wildlife." - Critterh

Image: Melissa Kinn

- Pantry Blitz calls on citizen scientists to collect surveillance data on household bugs.
- People need to set the traps in their pantries and send in photos of any bugs caught or notify of empty traps.
- Researchers are hoping not to find exotic pests that could impact on WA's valuable agriculture industry.

Particle

GET TRAPPING—AND SNAPPING

Even though Pantry Blitz is finished, you can still get involved with monitoring and pest surveillance in your home and around your community.

Just download the free [MyPestGuide Reporter](#) app, send through your best bug shots, and you'll hear back from DAFWA about what they are, and what you can do about it.



REPUBLIC



CRISTY BURNE

SCIENCE WRITER

Perth-based Cristy loves to inspire creativity, curiosity and resilience in her readers. She has worked as a science writer and presenter in Switzerland, the US, UK, Japan and South Africa. Cristy's books are published in three languages and five countries.



Department of
Primary Industries and
Regional Development

Welcome to the Pantry Blitz 2017

Thank you for participating in the Pantry Blitz. By setting up a trap and reporting your findings each week for a month you are joining thousands of citizen scientists helping defend our environment and food production industries.

What do I do?

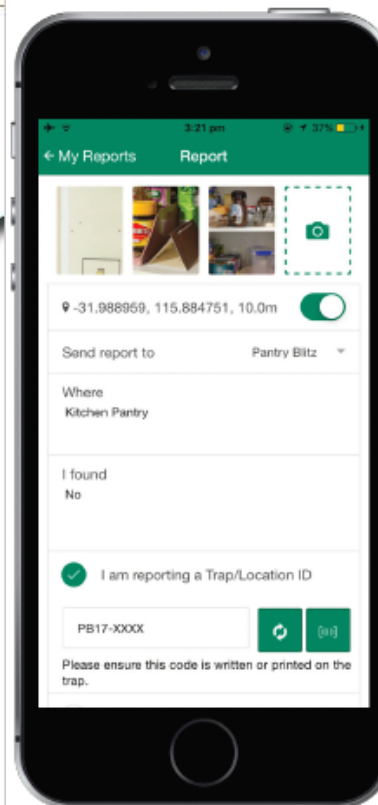
- A. Install MyPestGuide™ Reporter
- B. Set up your trap
- C. Make initial report (report of blank trap)
- D. Send a report each week for a month

A. Installing MyPestGuide™ Reporter

1. Search for my 'MyPestGuide Reporter' on the App store. Press download and install.
2. Allow access to all functions.

B. Set up your trap

1. Peel off protective cover – Be careful, the trap is very sticky!
2. Remove lure from packaging and place it on the marked area using tweezers.
3. Cut out barcode above and place it next to the lure.
4. Fold trap into triangular tent.
5. Place trap on a shelf at the back of your pantry. Make sure the base is flat so insects can crawl in.



Pantry Blitz 2017

C. Make a report

1. Carefully remove trap from cupboard and unfold it.
2. Open MyPestGuide Reporter, click 'I am reporting a Trap/Location ID' and press the [|||||] icon to scan the barcode on the trap or use this sheet.
3. Click the [Camera icon] to take a photo of the unfolded trap. Make sure the whole trap is visible.
4. If an insect is found, take up to 3 more relevant photos.
5. Fill in the following details:
Location – GPS button turned on green
Send report to – 'Pantry Blitz'
Where – 'Kitchen Pantry'
I found – 'No' if no pests were found. 'Yes' plus a description if pests present
6. Press continue, enter your state and email details, then press send to submit your report!

D. Send a report each week

It is just as valuable to report the absence of pests, so please make sure to report every week for a month, even if no insect is present on your trap.

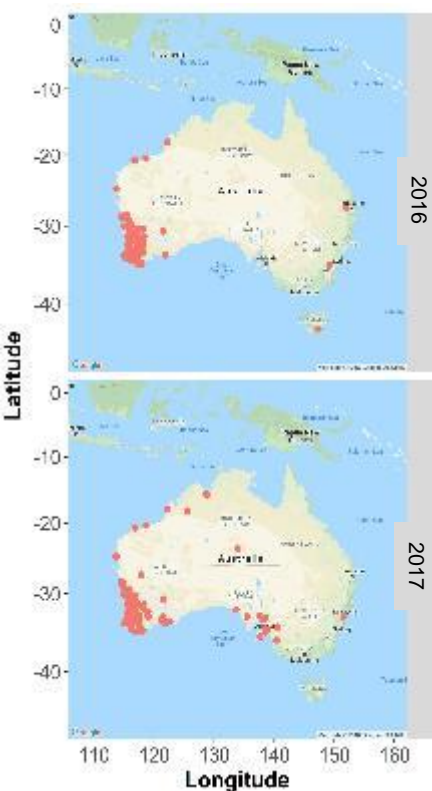
Tips

1. Clean your camera lens before photographing any trapped insects and make sure they are in focus.
2. You can also take photos with a digital camera and make reports using a computer by visiting mypestguide.agric.wa.gov.au
3. For more information about the pantry blitz go to agric.wa.gov.au/pantryblitz



Improve biosecurity awareness by explaining why it's important to report zeros

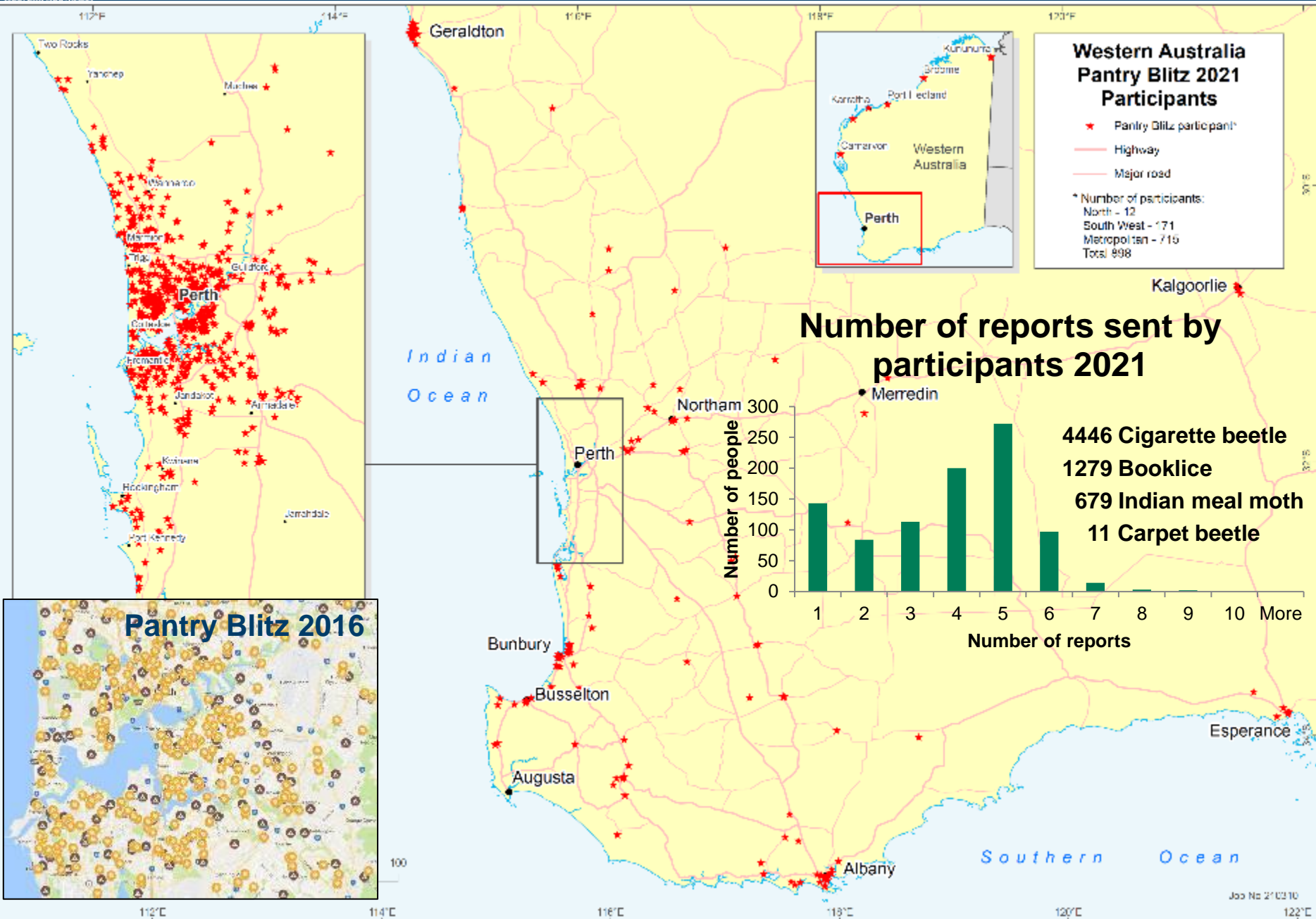
Inference adds value to every report



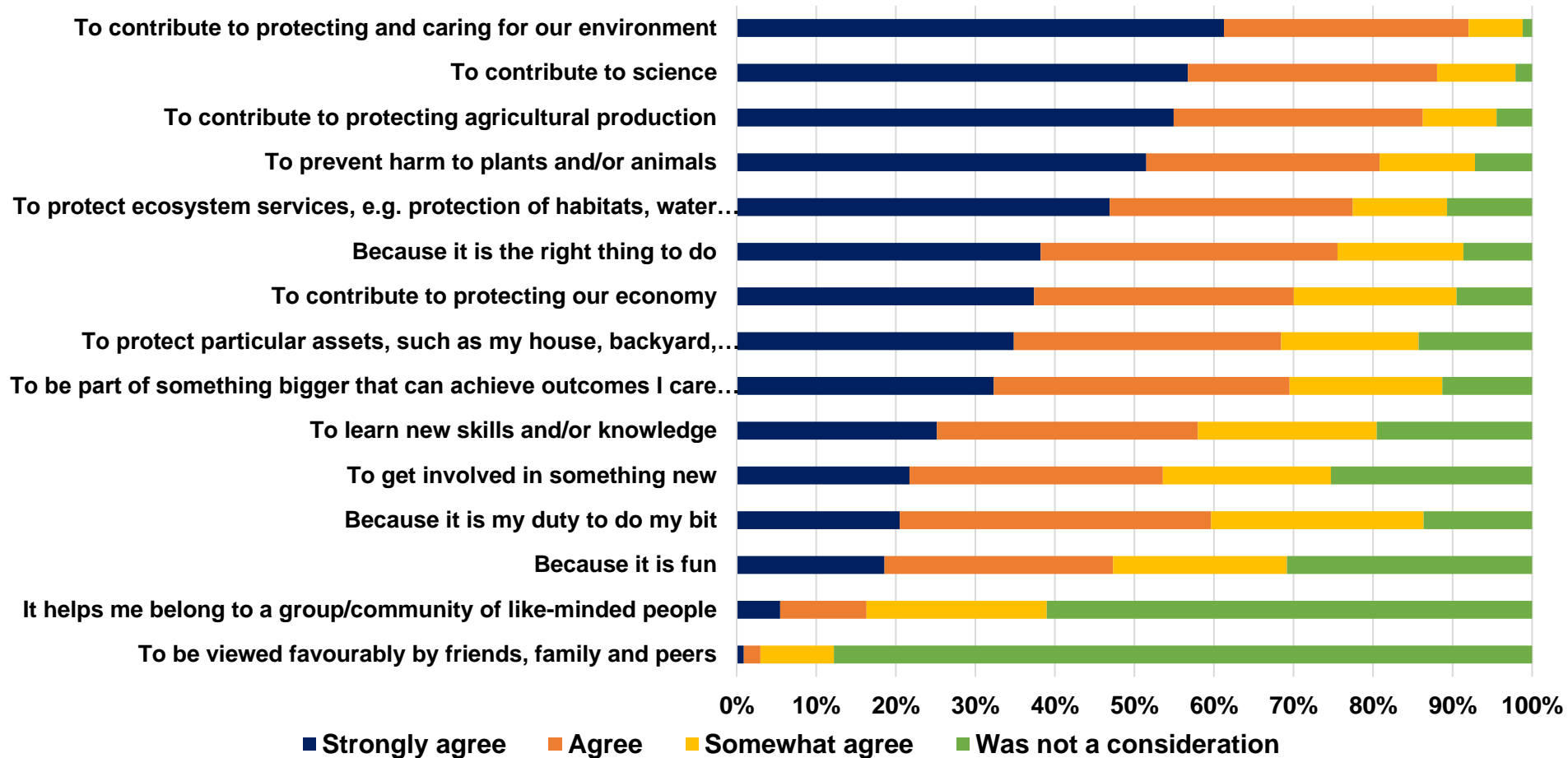
Photos by Pia Scanlon

Carpet beetle reports infer we don't have khapra beetle. So, reporting all species is important data!

Pantry Blitz 2021



Reasons for participating in the Pantry Blitz



1380 Participants signed up and 338 responded to the survey

‘Other’ reasons for participating:

- Curiosity about insects in their pantry (10%)
- Contribute to research and biosecurity efforts (6%)
- Contribute to other’s education e.g. own children (3%)
- Controlling pests in their households (2%)



What worked well for participants?



- All aspects of the process e.g. registration, guidelines, receiving a trap, communication with the program, use of the app and learning about pests in the pantry (44%)
- Communication from the program (16%)
- Feedback received and associated learning about pests in the pantry (13%)
- The mobile app, including friendliness (10%)

What limits participation in the Pantry Blitz?



- Lack of awareness about the existence of the program (38%); including importance of reporting zeros.
- Lack of time or life's priorities (14%)
- Technical issues related to app, trap, barcode (14%)
- Difficulty following instructions (6%)
- Apathy or lack of interest (4%)
- Privacy (1%)

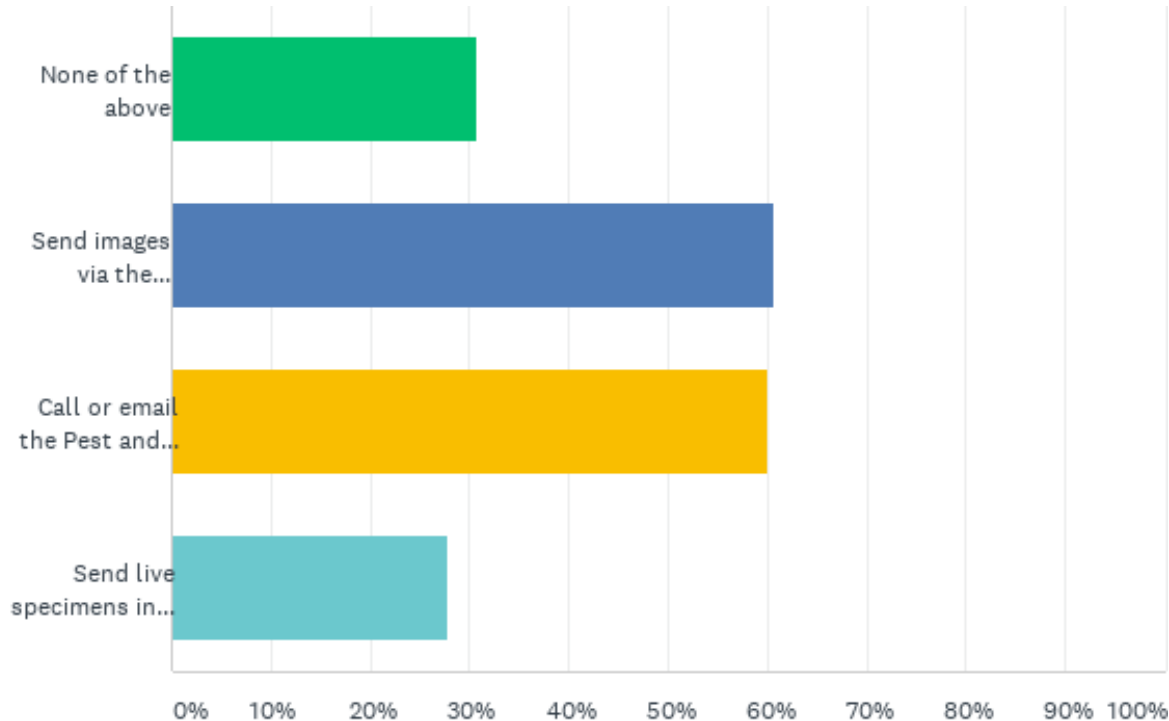
What could be improved for next time?



- Acknowledge each submission, include a phone line to respond to doubts and provide information on what the blitz finds (9%)
- Increase awareness across schools (7%)
- Trap suggestions like increasing the numbers, variety of trap forms and placement in the household (6%)
- Provide personalised information on what is found during the program and eventual treatments (6%)
- Provide a macro lens to take better pictures of small insects and provide comparative images to identify common pests.

Where to now... MyPestGuide™ Pantry Blitz 2022!

How do you report a pest bug in your garden or orchard?



ANSWER CHOICES

RESPONSES

None of the above

30.83% 201

Send images via the MyPestGuide™ Reporter app

60.74% 396

Call or email the Pest and Disease Information Service (08) 9368 -03080

59.97% 391

Send live specimens in the mail to DPIRD's Diagnostic Lab Services.

27.91% 182

Total Respondents: 652

Delivering a probability of area freedom from pests...



Ongoing Challenges

- People, people, people...especially skilled diagnosticians.
- Maintaining standardised datasets to provide credible evidence for the absence of exotic pests.
- Data sharing, privacy policy and updating dull procedures.
- Methodology to claim pest 'area freedom' for trade and market access.
- Maintaining existing apps while developing areas to future proof our diagnostic & surveillance system.
- Communicating how important everyone's role is in biosecurity....without boring them to death! The public is always seeking NEW activities.

MyPestGuide™ - WA's first Pantry Blitz 2016

Members of the public place sticky traps with a combined Khapra beetle lure in their pantries. They make weekly reports for one month by submitting photos through the MyPestGuide™ Reporter app (MPG-RA). The Department of Primary Industries and Regional Development, Western Australia (DPIRD) developed the app. The data collected can provide supporting evidence of pest freedom if trading partners enquire about the status of Khapra beetle in WA.

DPIRD received 2252 reports in 2016 and over 2600 reports in 2017

Data quality is maintained by using a combined Khapra beetle lure and the appropriate skilled triage officer and entomologist confirming each report



CONSIDERABLE INTERNAL LIAISON AND ADJUSTMENT NEEDED

- ➔ Faced initial scepticism
- ➔ Limited existing guidance, e.g. privacy matters
- ➔ Needed to establish clear roles and responsibilities across various areas in DPIRD
- ➔ Needed to establish clear pathways, e.g. for samples to reach entomologist via post
- ➔ Most effective community engagement communication style did not match existing Department's communication style
- ➔ The need for urgency was not always understood



EFFECTIVE APP DEVELOPMENT REQUIRES MUCH EFFORT, WIDE INPUT AND ON-GOING UPDATES

- ➔ Wide engagement of scientists, taxonomists, statisticians, community, etc. is needed
- ➔ Must be intuitive and simple for users, no more than 4 clicks
- ➔ Consider back-end design, e.g. how data will be used, best format, avoid double data handling
- ➔ Test with various users and mobile phones
- ➔ Keep updated, have prototypes for testing, including for app updates
- ➔ Account for privacy concerns, e.g. can switch GPS off



IDENTIFICATION CAPACITY CRUCIAL

- ➔ Vital to maintaining data quality
- ➔ Additional load on triage officer and entomologists is easily underestimated or overlooked
- ➔ Identification staff usually very busy, cannot rely on their goodwill only
- ➔ Quick ID response to participants crucial to maintain their engagement
- ➔ ID staff may need to learn to interact with community
- ➔ May need to pay for ID staff's service

2000

Pantry Survey – participants sent trap back, 15% response



2009/10

The department faces resource cuts, incl. to surveillance



2014

The department develops MPG-RA for the community



2016

First Pantry Blitz – first Blitz that 'ticks all targeted surveillance boxes'



2017

Second Pantry Blitz with lessons incorporated from first Pantry Blitz



2021

Third Pantry Blitz in March



2007

Biosecurity and Agriculture Management Act facilitates community involvement in biosecurity



2014

The department develops new pest ID app for industry



2015

First Biosecurity Blitz



2016/17

Updates to MPG-RA based on lessons learned



2019

Plant Health Committee agreed to have MPG-RA as the preferred general surveillance app across Australia



Thank you

Visit dpird.wa.gov.au

Important disclaimer

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ABARES Case studies - Overview

Day 1

1. Northern Australia Biosecurity Surveillance (NABS) Net
2. Weed Spotters Network Queensland
3. Weed Spotters Victoria
4. NZ General Surveillance Program – Plant health component

Day 2

1. FishWatch SA
2. **MyPestGuide™ Pantry Blitz – Khapra beetle**
3. Rural Practitioner Enhanced Disease Surveillance, South Australia
4. State Wide Array Surveillance Program (SWASP)

MyPestGuide™ surveillance system

a. MyPestGuide™ Reporter app works alongside the online community reporting system which links to additional field guides for educating and informing people about pests.

d. Social media is used to extend messaging to individuals.

e. Messaging is easily adapted to new campaigns and pushed out to individuals making reports.

b. Reports can be responded to by experts. Project administrators can follow up to request a sample, track field operations and respond to users requests .

c. Public reports are verified by experts across jurisdictions and mapped.

