

Yellow Crazy Ant Data The Journey...



Gareth Humphreys and Desiree Gowell
Wet Tropics Management Authority



Photo: Jurgen Freund



SHARE CONNECT PROTECT

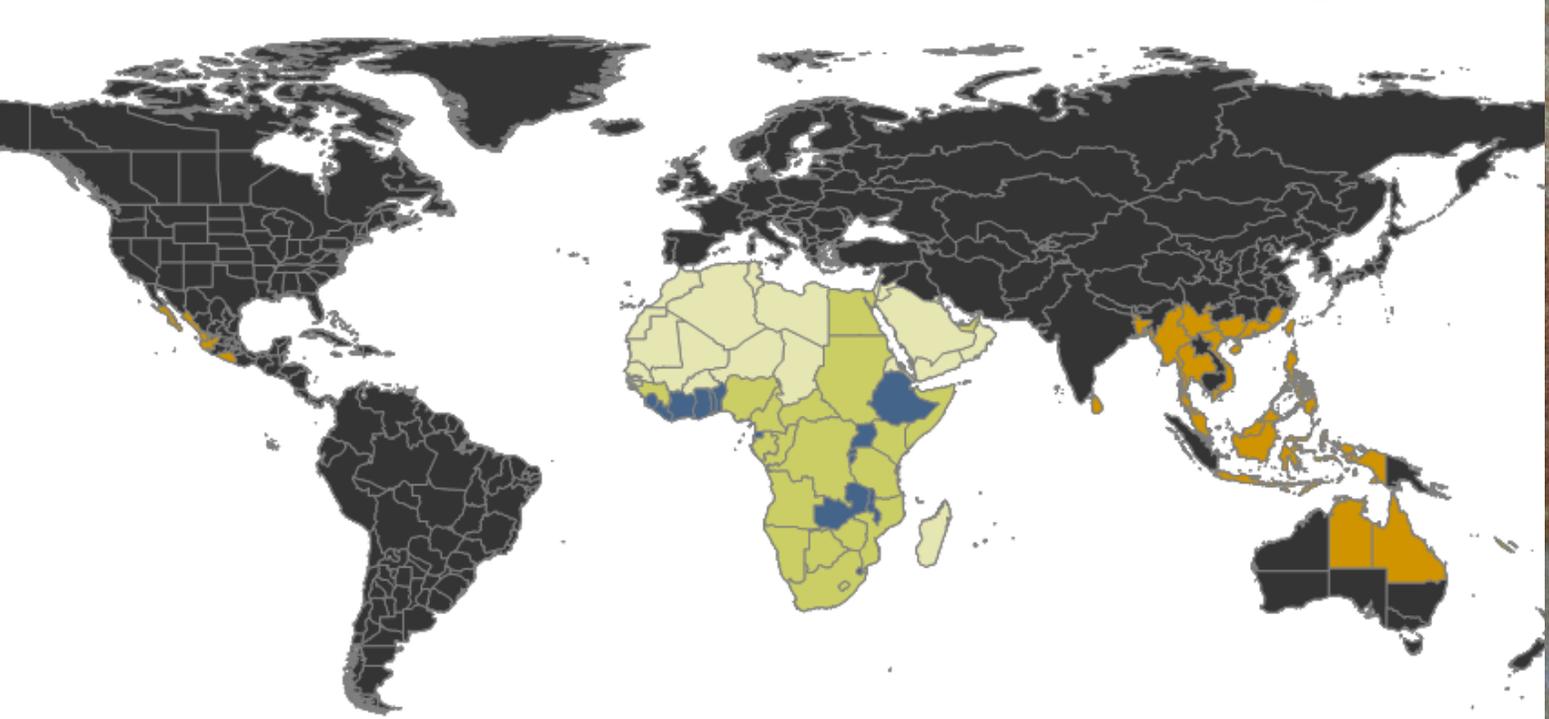
Who we are and what we do



Program goal:
Eradicate Yellow Crazy Ants from areas in and adjacent to the Wet Tropics World Heritage Area



What are Yellow crazy ants and what's the problem with them?



What are Yellow crazy ants and what's the problem with them?



Kuranda tree frog (*Littoria myola*)
Photo: M. Jacoby



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alexanderwild.com



Before YCA



Christmas Island

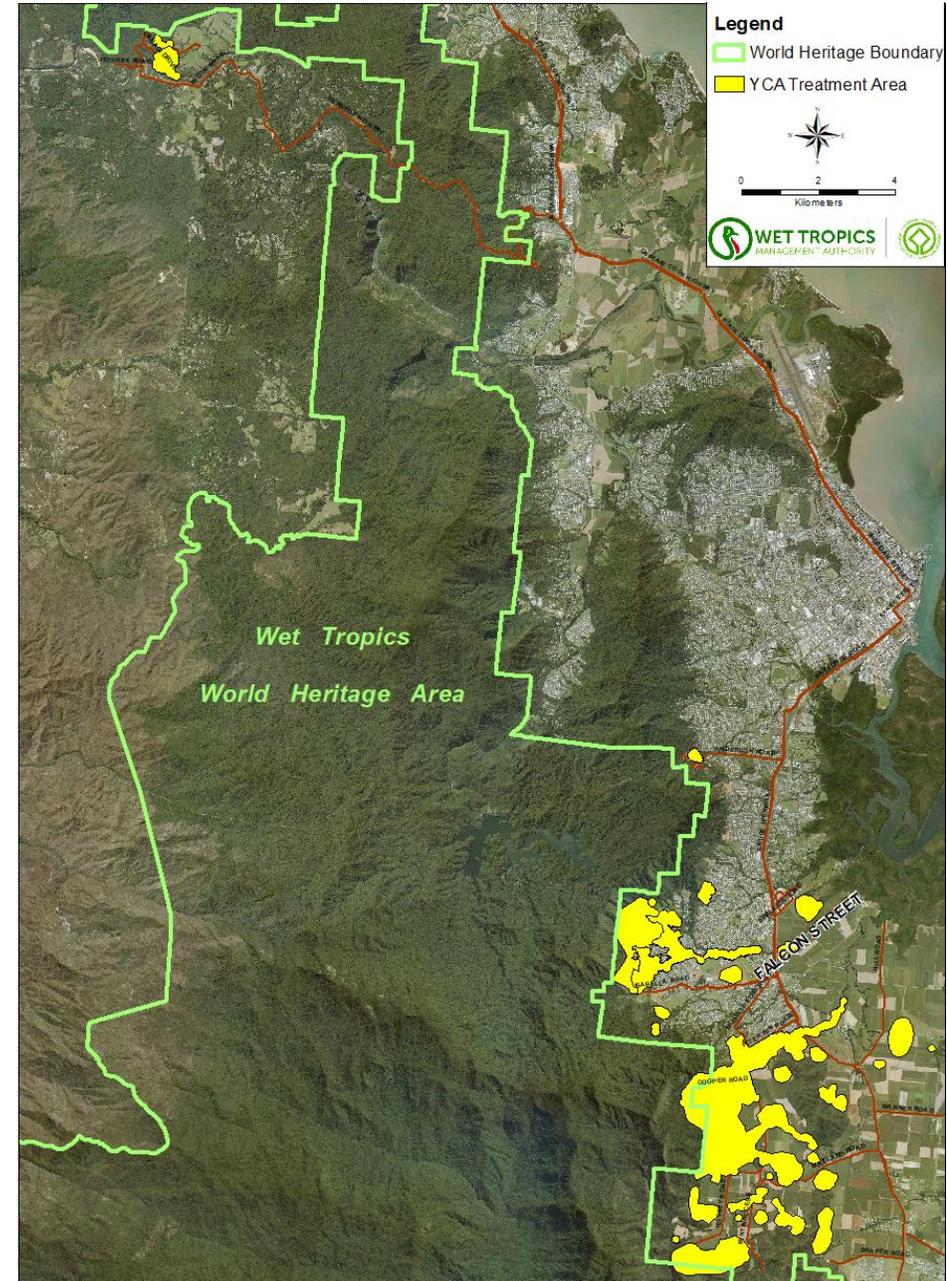


Johnston Atoll



Photos: Sheldon Plentovich/USFWS

Yellow Crazy Ant locations



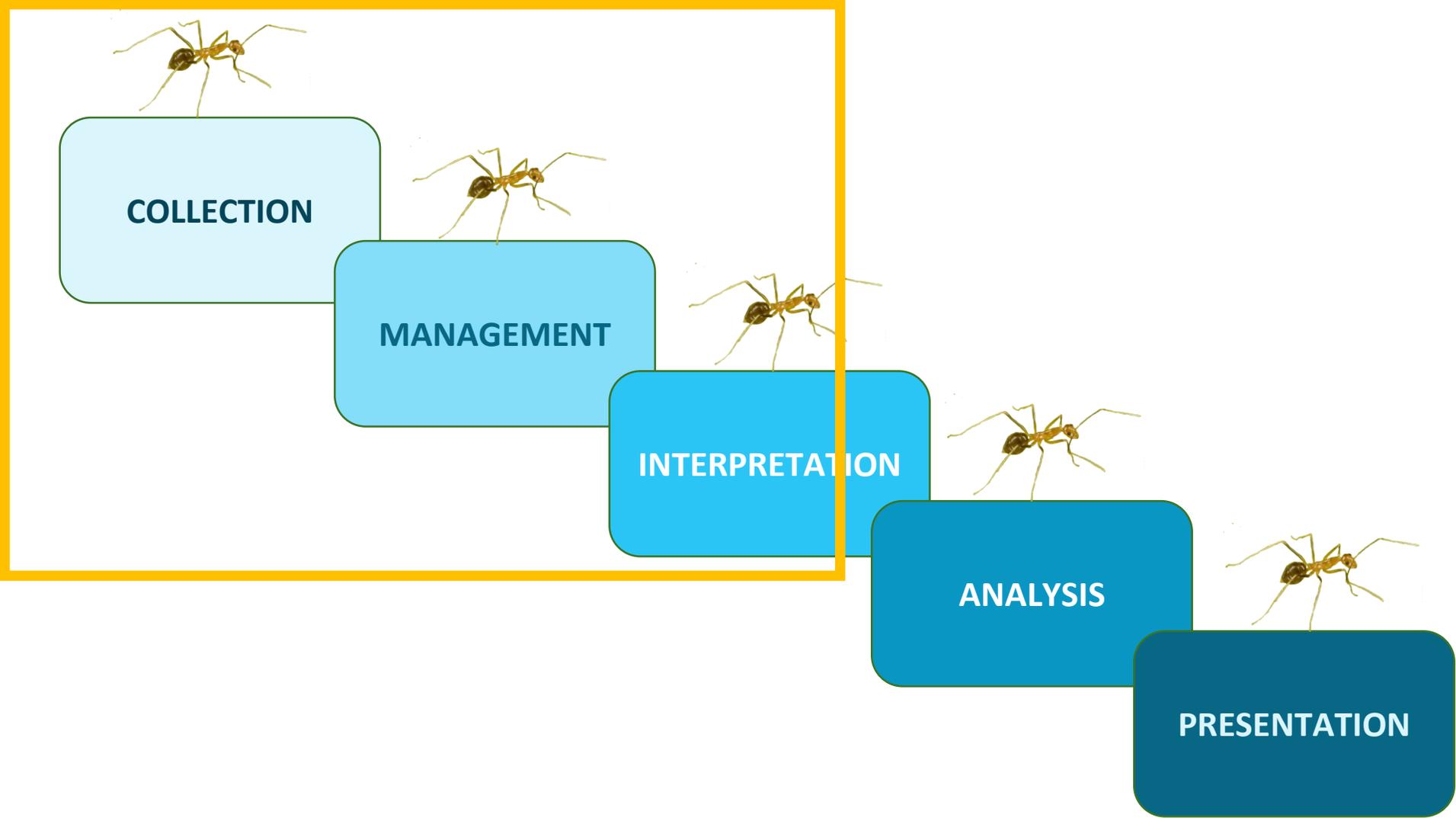
YCAEP GIS Team

Desiree Gowell
Jasmine Spring
Gareth Humphreys

Special mention to
Mike Stott



How data moves through the Program



Basic data collected by the program

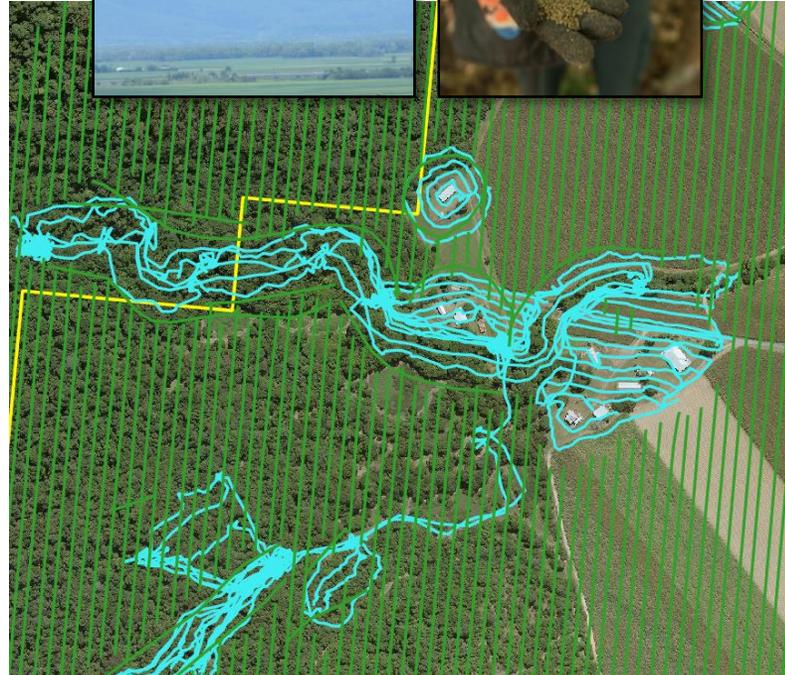
Survey

Point data
Presence/Absence



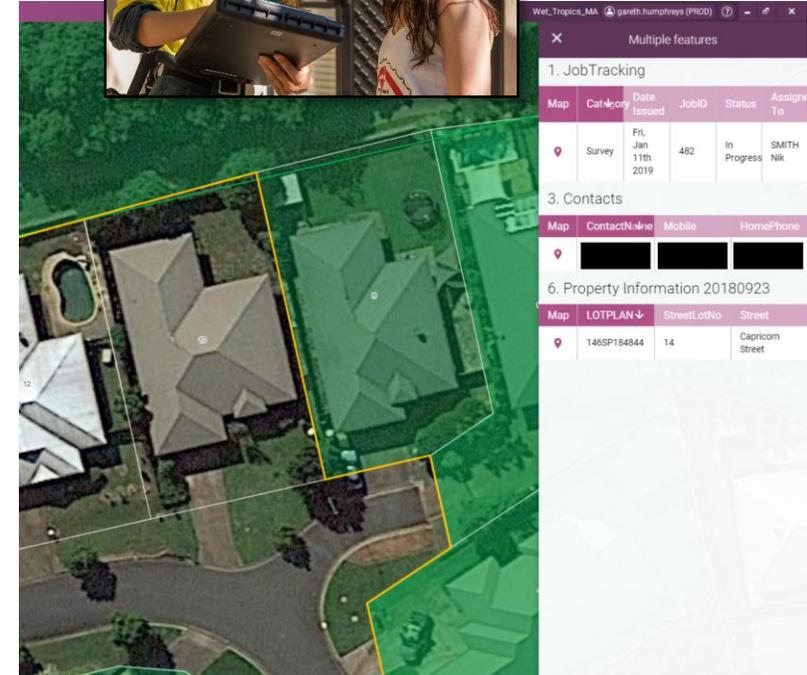
Treatment

Line data
Helicopter
Ground Crews



Landholder/Property info

Contact data
Hazards
Livestock (Affects aerial treatment)



Program Timeline

2012

YCA Detected inside World Heritage Area

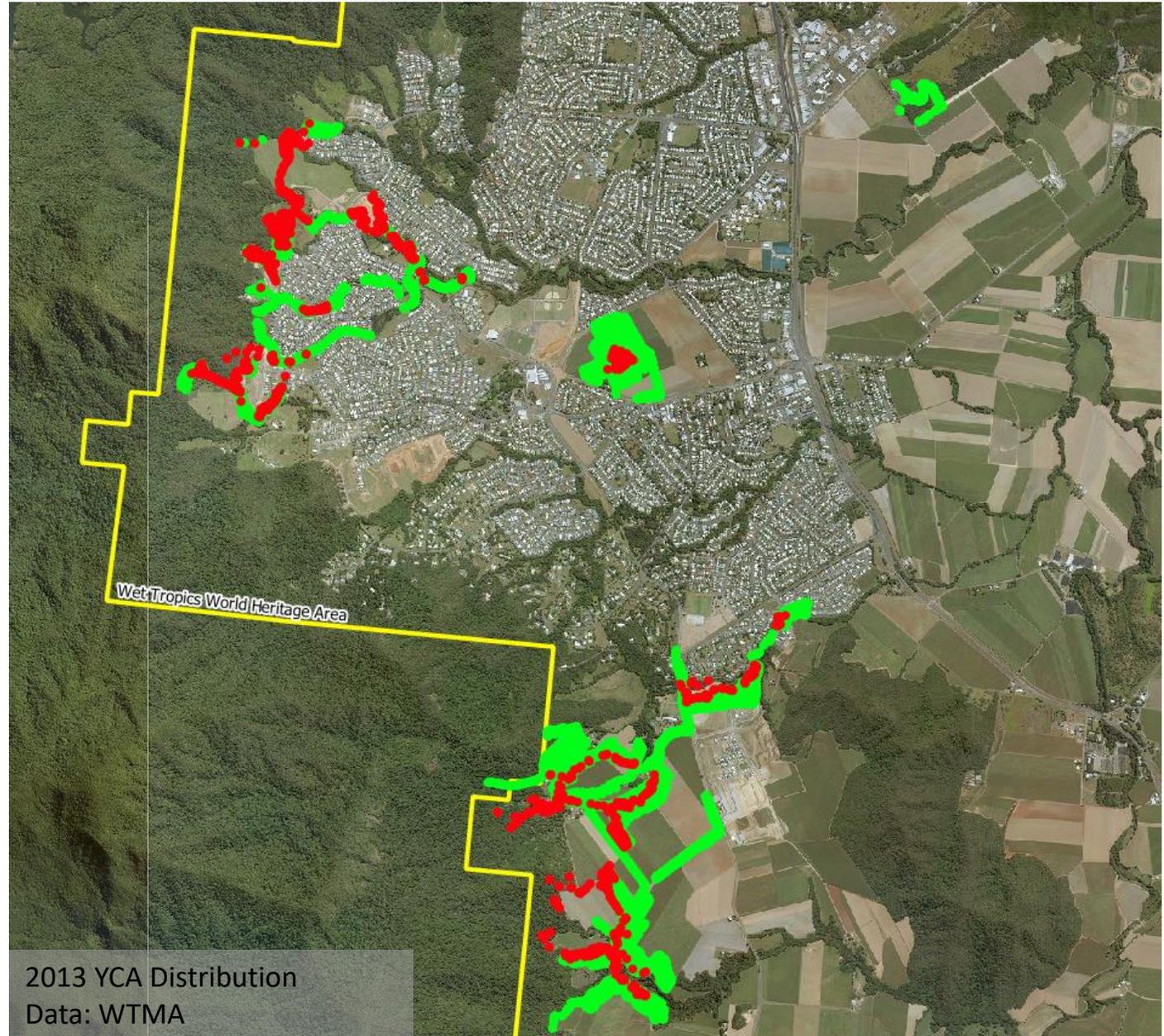
YCA declared ineradicable in Queensland

2013

WTMA applies for funding based on 400 hectares

Initial Delimitation surveys conducted by CVA

WTMA receives \$2 million over 5 years



2014

March 2014 First NAMAC taskforce undertakes delimitation work

Several previously unknown infestations detected, including Russett Park

First Dedicated Field Team – Work for the Dole.

Treatments begin

Access database developed

Total area under treatment is 736 Hectares



YCA Property database

Need to provide field staff with property details as well as document work carried out

Initial database was established as a simple, low cost solution

Access database using mail merge to generate proforma documents to record data in the field



Address Details			
Lot & Plan	1RP711173	Zone ID	Blackfellows 4
Treatment Area	TA1	Address	72136 Bruce Highway, Bentley Park
Area (ha)	1.28	Comments	
Contact Details			
Contact Name		Access Granted	N
Home		Work:	
Mobile:		Phone:	
Is tenant?	N	Owner/Agent	
Comments			
Risks & Hazards			
Aggressive/uncooperative public		Chemical sensitivity	
Dangerous dog		Dengue/Mozzies	
Fish Pond(s)		Forest/Dense undergrowth	
Industry		Livestock	
Mine		Poultry/Caged birds	
Terrain		Watercourse/Dam	
Cropping		Dog	
Horses		Locked gates	
Sharps			

General Details			
Staff			
Date	Time In	Time Out	
Weather Details			
Clear & sunny	<input type="checkbox"/>	Raining	<input type="checkbox"/>
Humid	<input type="checkbox"/>	Windy	<input type="checkbox"/>
Overcast	<input type="checkbox"/>	Hot	<input type="checkbox"/>
Contact Details			
Contact Details	Different to details above	<input type="checkbox"/>	(if yes - then leave a PIF) <input type="checkbox"/>
Notes about property or resident			
Left PIF	<input type="checkbox"/>		
Treatment Details			
Chemical	Autoff <input type="checkbox"/>	Engage <input type="checkbox"/>	Both <input type="checkbox"/>
Other	<input type="checkbox"/> (details)-		
Batch No.	Delivery Mode	Ground crew <input type="checkbox"/>	Helicopter <input type="checkbox"/>
Notes about treatment	% Property Treated (Inside infestation)		
Incidents			
Notes of any on-site incident, injury, etc.			



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2015



1st of 6 Green Army field teams begin. Take on survey and treatment duties

First signs of progress with two sites entering Post treatment surveillance

Kuranda Community Taskforce established

Total area under treatment 853.22 hectares

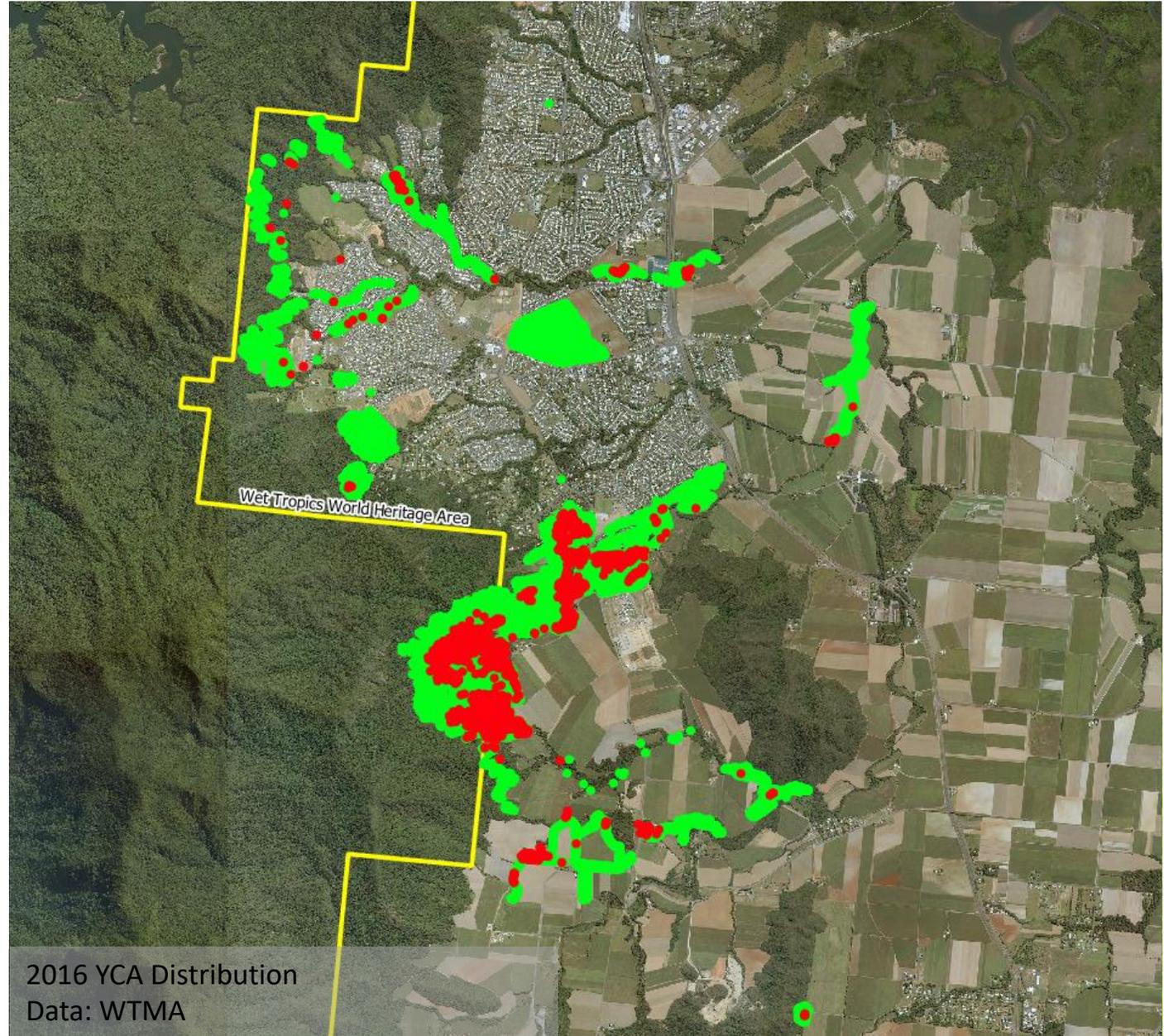
2016

Combined State and Federal funding of \$10.5M over three years announced

First dedicated WTMA field team assembled

Program recruits a full time GIS officer

Total area under treatment 902.85 hectares

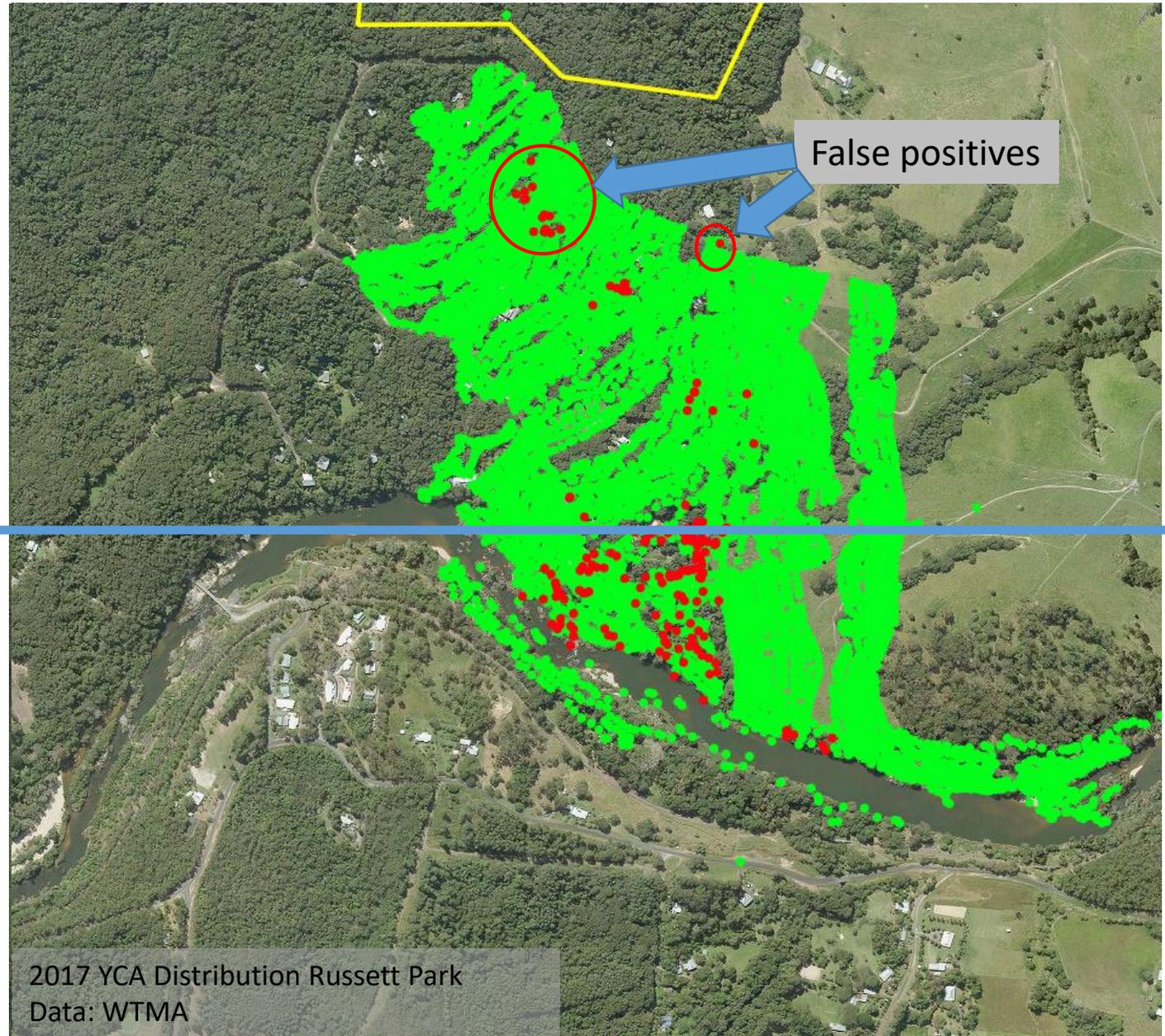


2017

Recruitment continues through 2017

Increased numbers of staff on the ground enables first complete survey of known infestations

Rapid increase in data collection begins to cause problems with false positives requiring a large change in procedures



Challenge - Data Integrity

With increasing quantities of data , there is a greater chance for error

In late 2017 a series of incorrect identifications resulted in 11.5ha being included for treatment

Established rules around where and when a visual record is acceptable or when a sample needs to be collected

Implemented a multiple stage check procedure for sample identification



2017

Recruitment continues through 2017

Increased numbers of staff on the ground enables first complete survey of known infestations

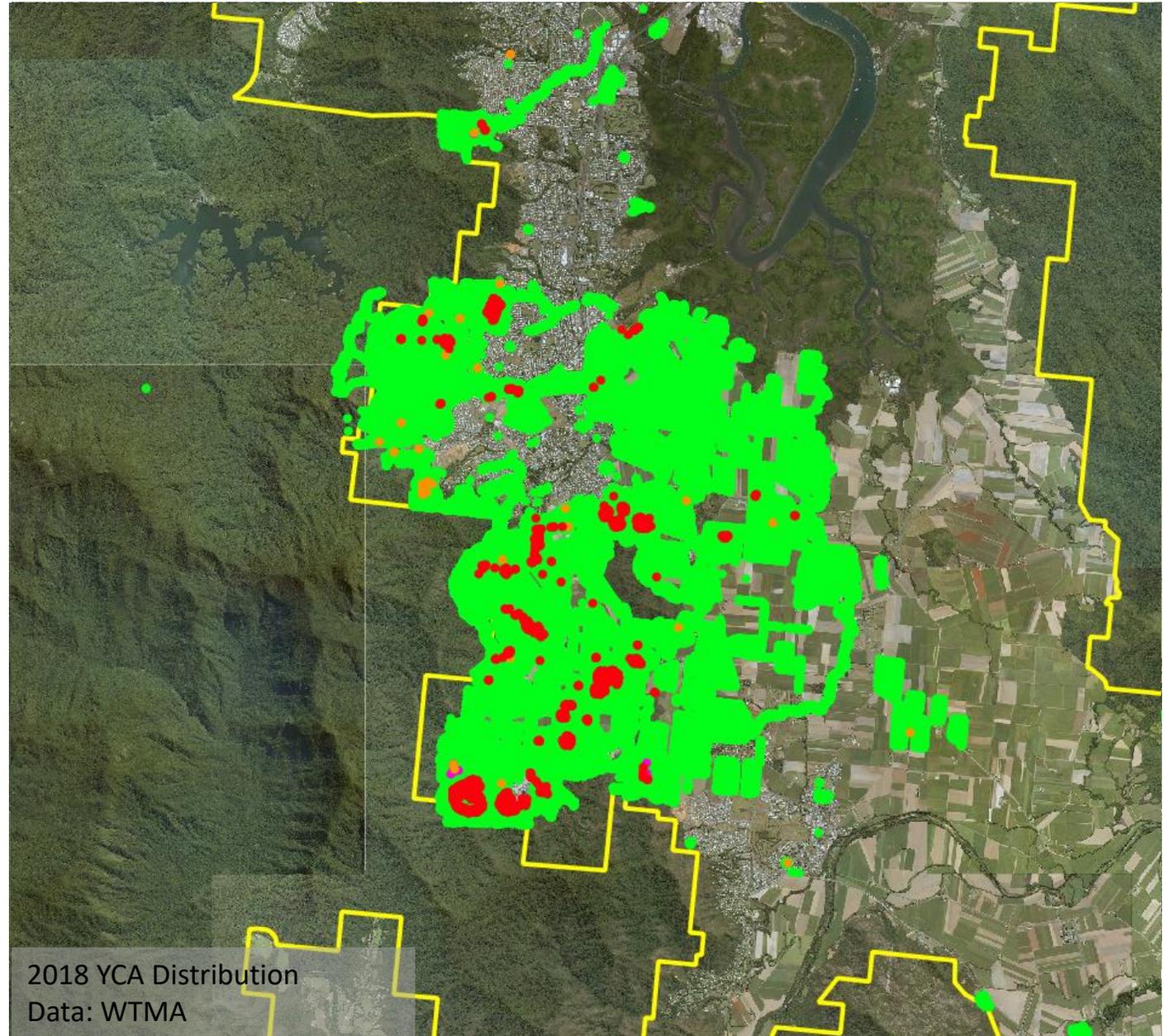
Rapid increase in data collection begins to cause problems with false positives requiring a large change in procedures

2018

Shows significant reductions in YCA distribution

Largest survey ever undertaken 482729 points
4026 hectares

More than 180 hectares removed from active treatment





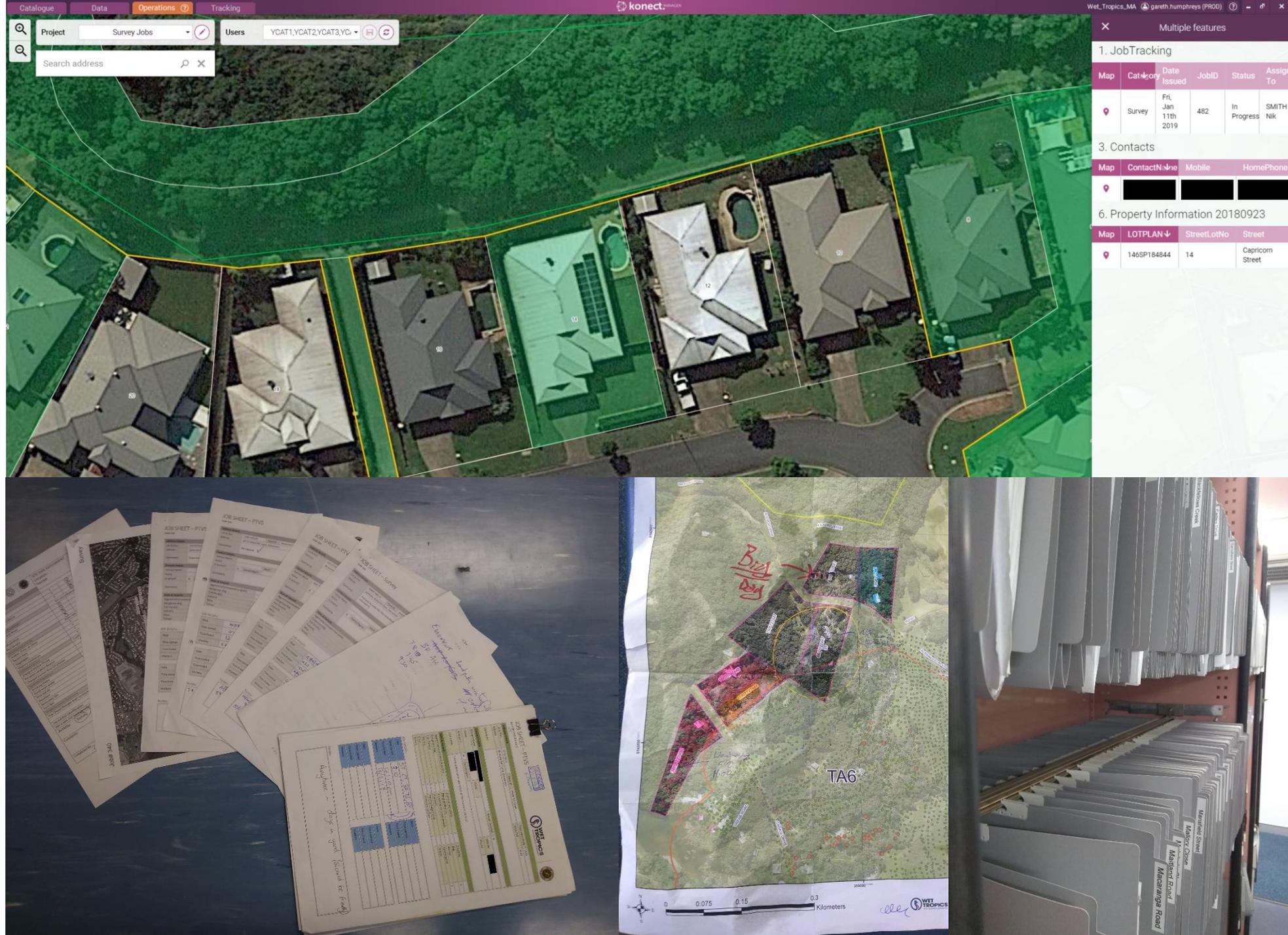
2018

Konect is brought online

Konect

Mobile data acquisition app

- Platform independent
- Allows real time data collection and sharing
- Allows teams working in residential areas the ability to view completed properties
- Stand alone system but can import and export all major GIS file types
- Biggest problems are around dealing with very large or very small land parcels



2018

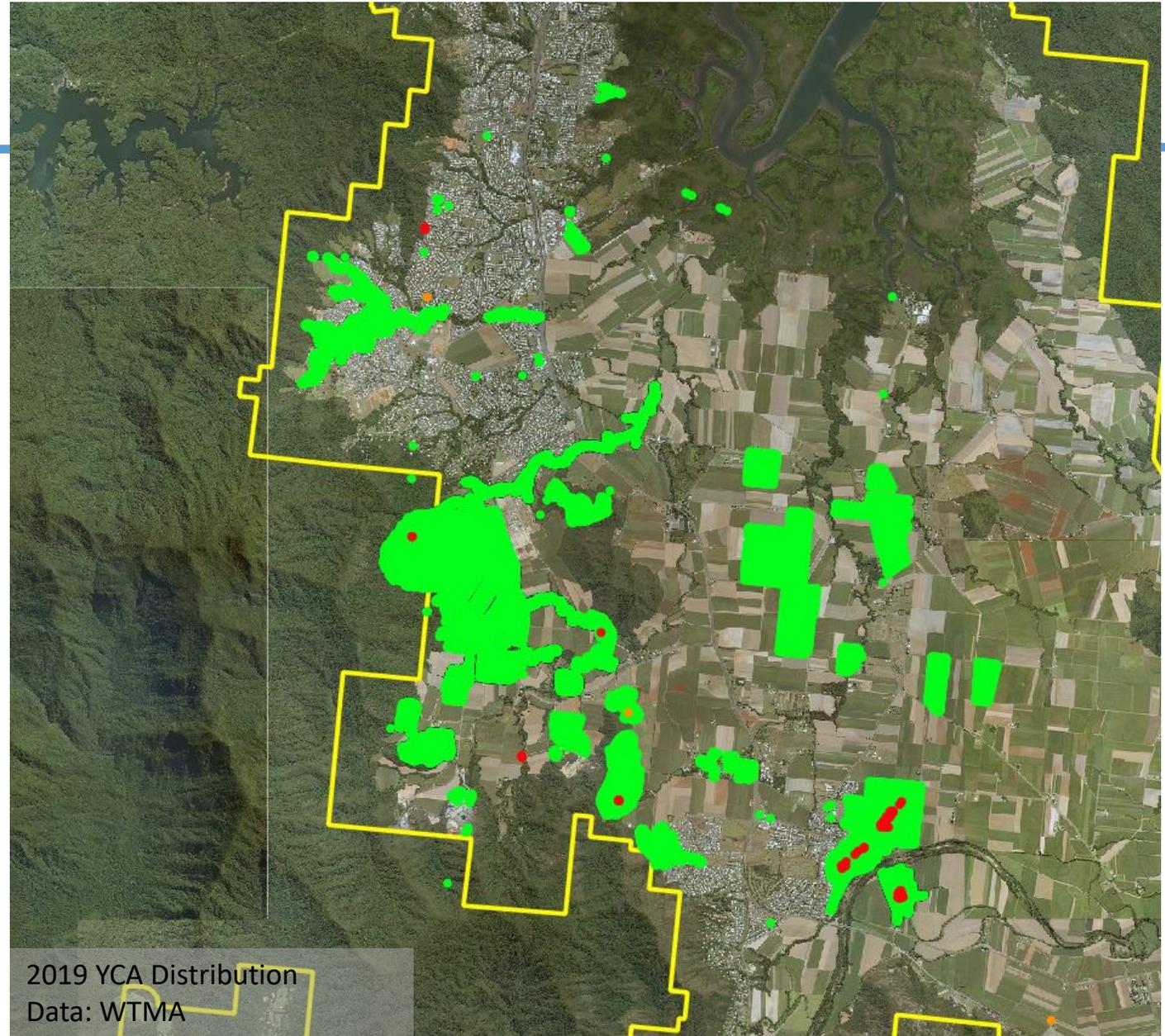
2019

Three new infestations

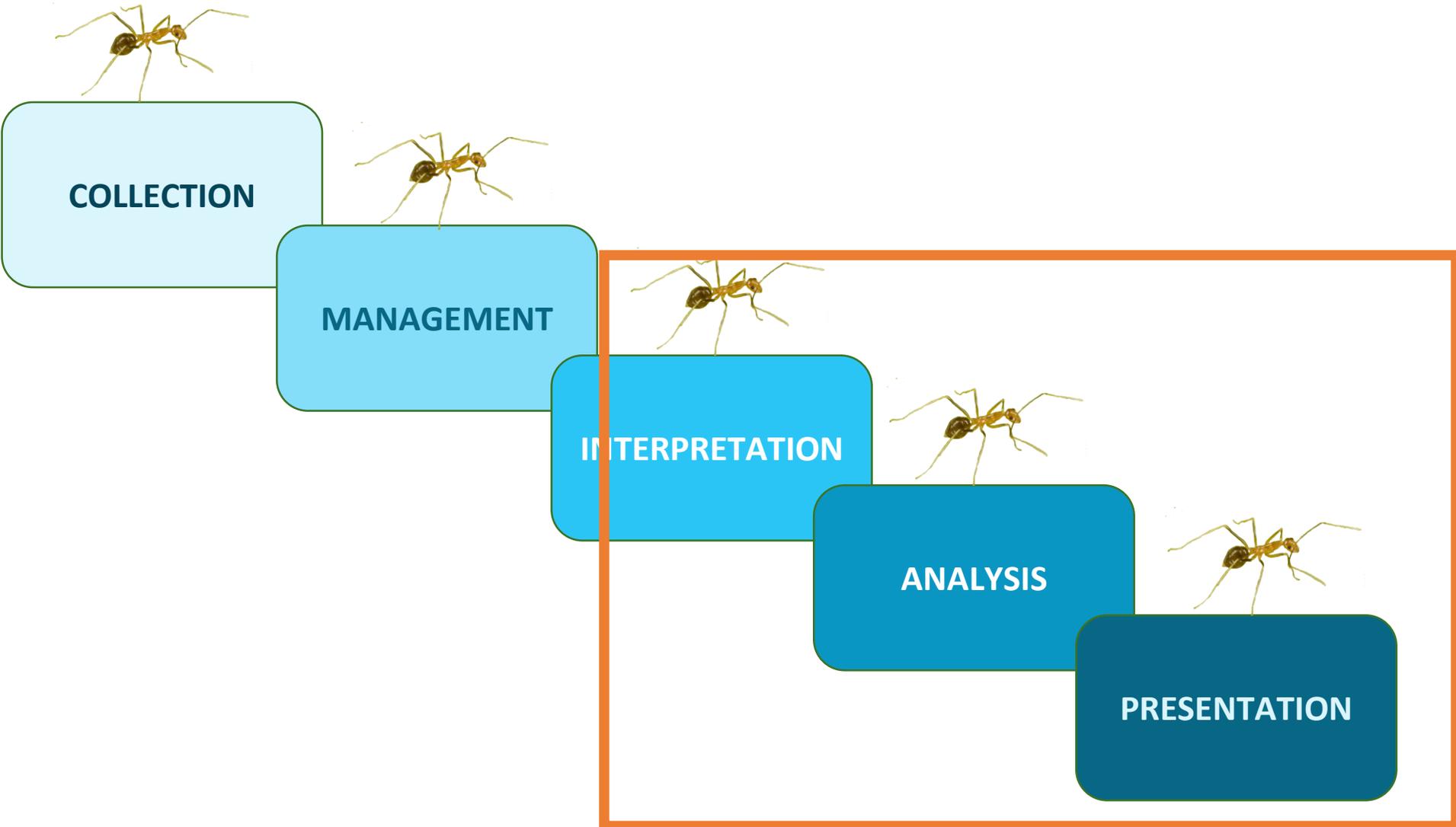
Eradication is on track

53 Garmin Rino 650
10 Garmin eTrex 10

50+ field staff

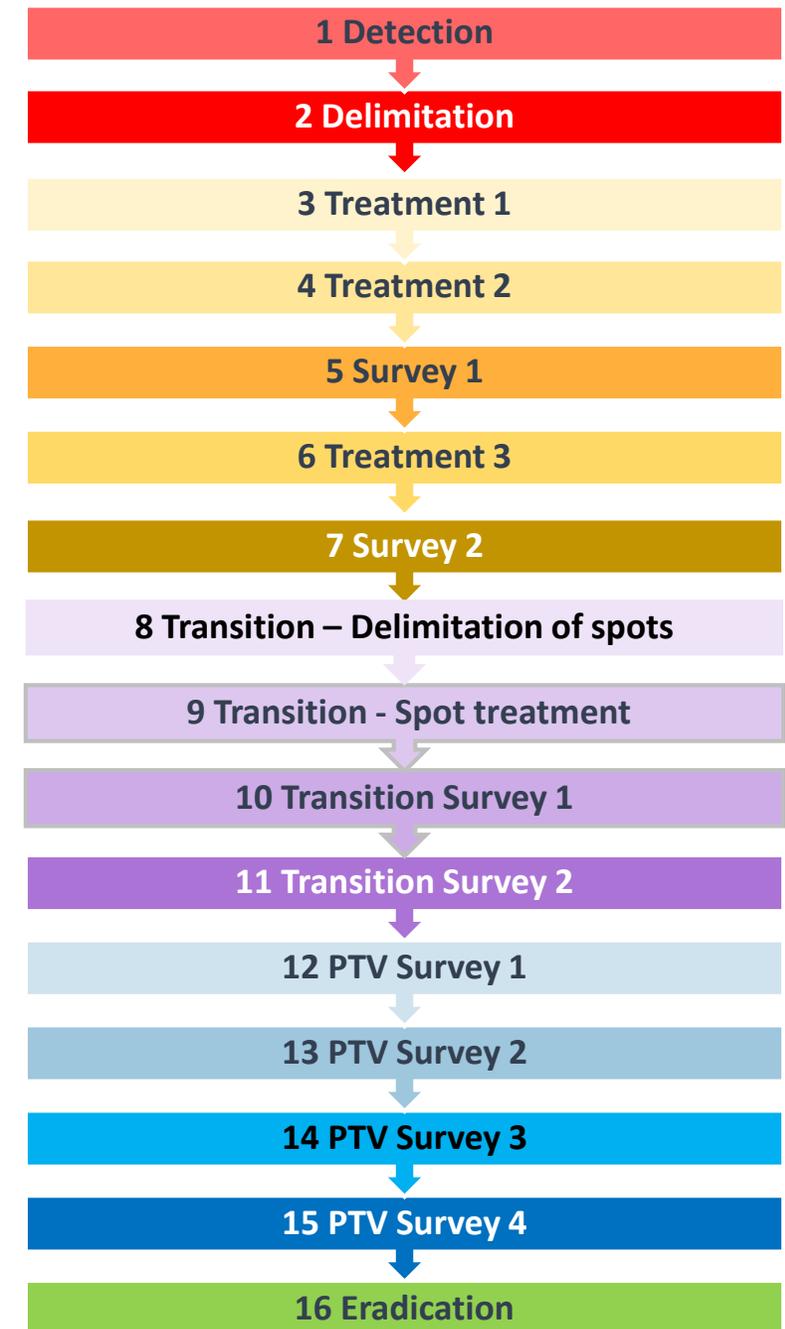


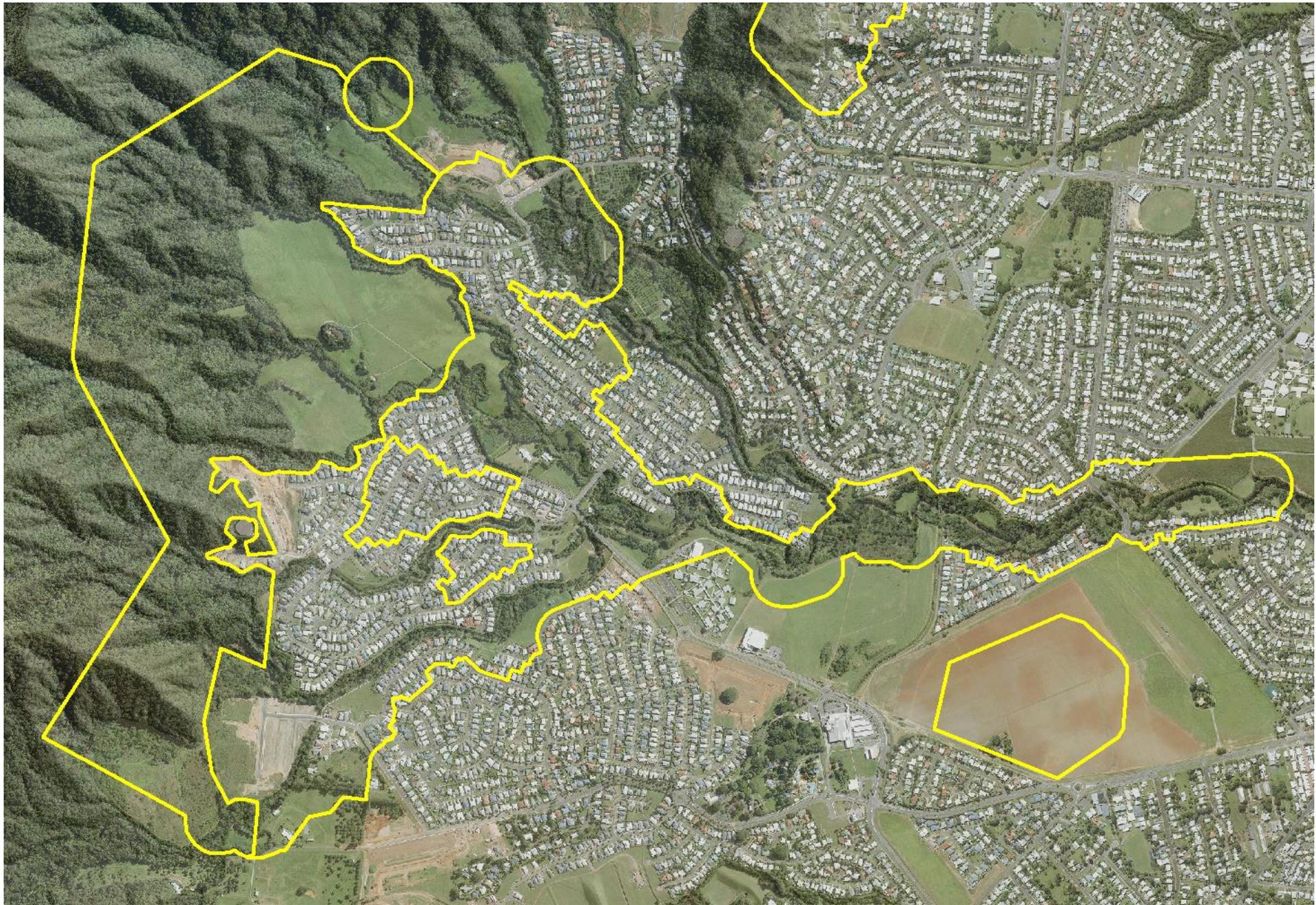
How data moves through the Program

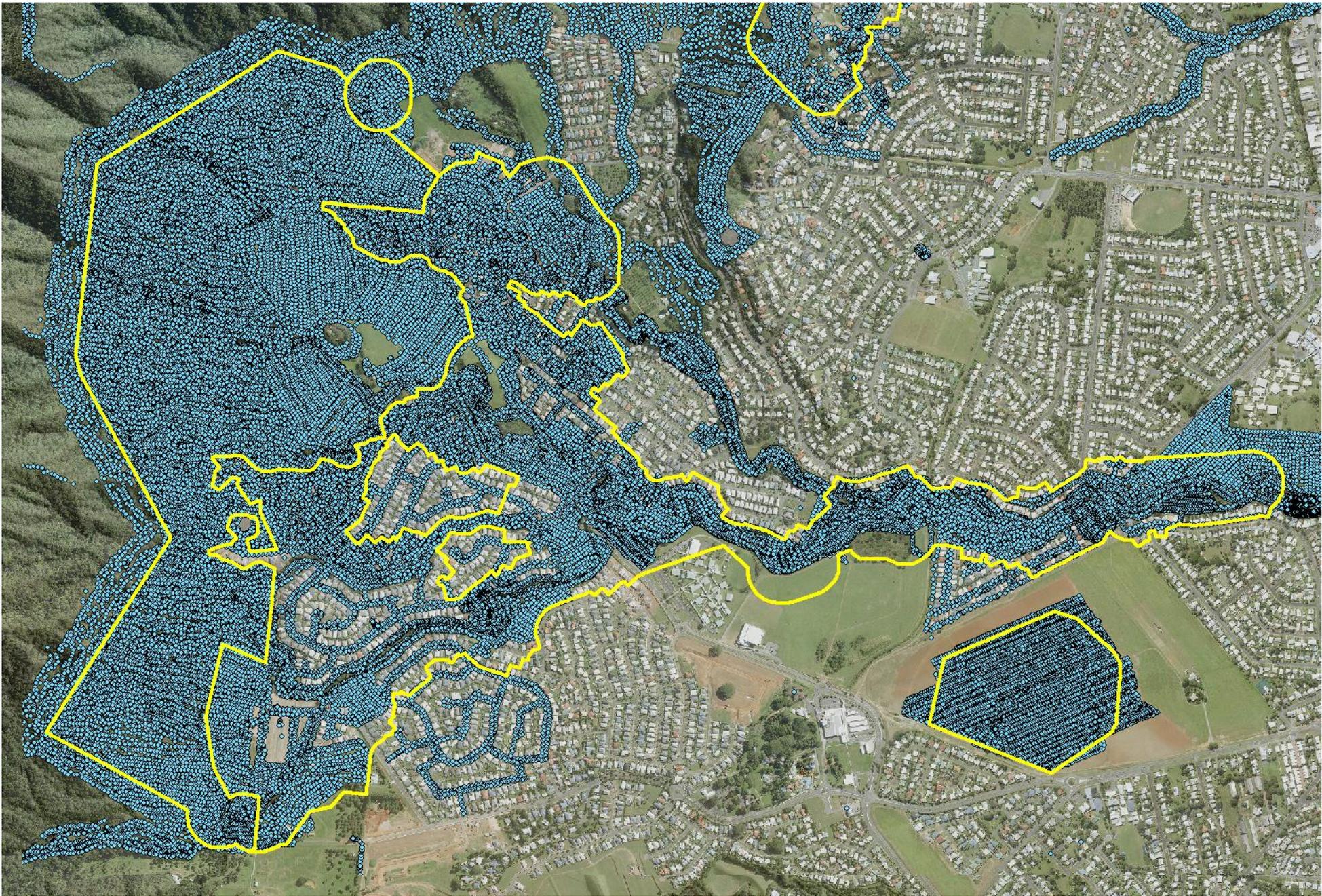


How we track eradication

- Four overarching phases
- 16 stages
- Set of criteria must be met before moving to next stage
- Spatial analysis is a tool we use to check criteria has been met



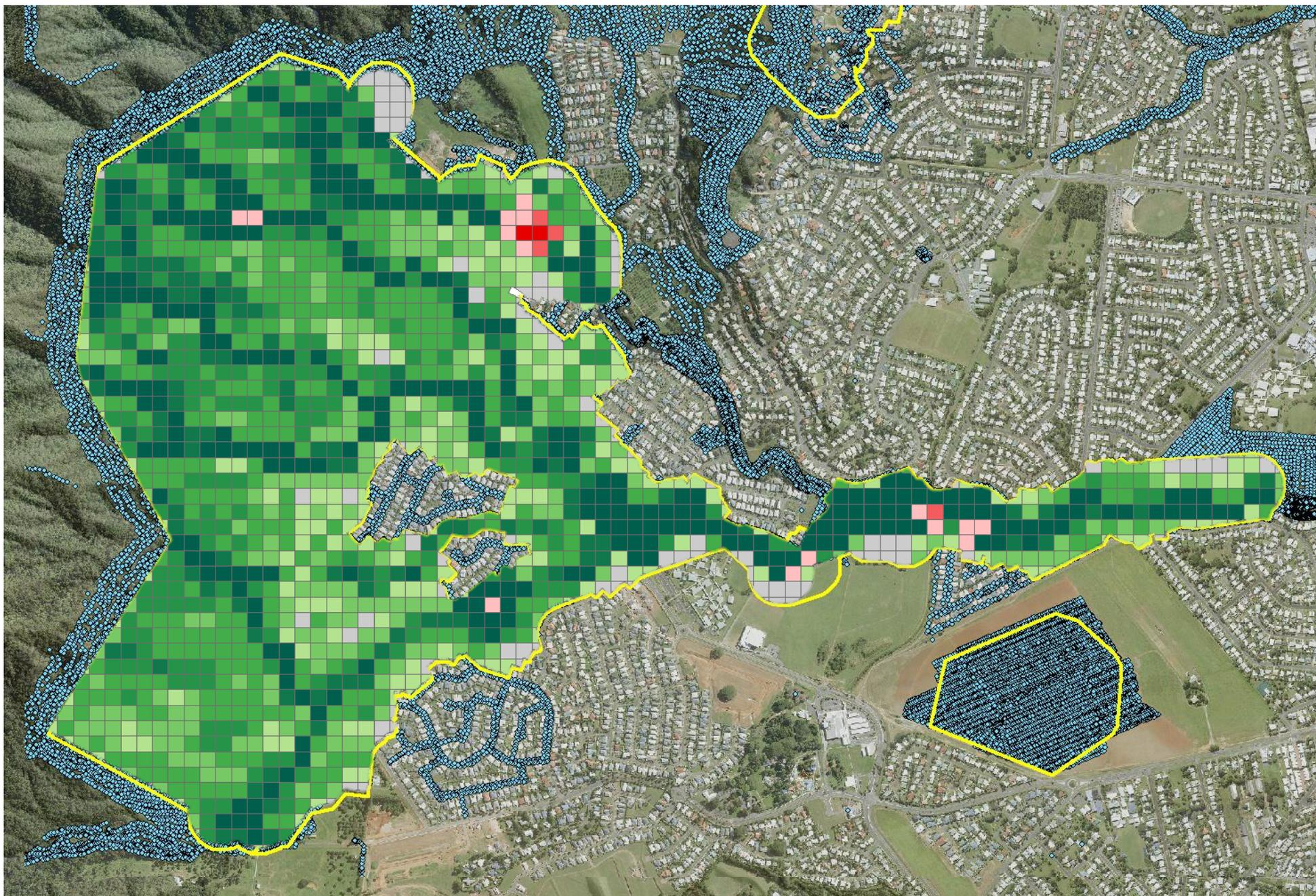
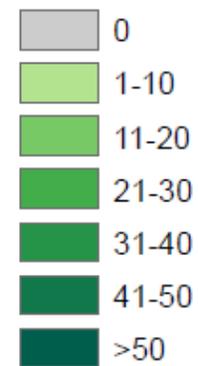




YCA Presence

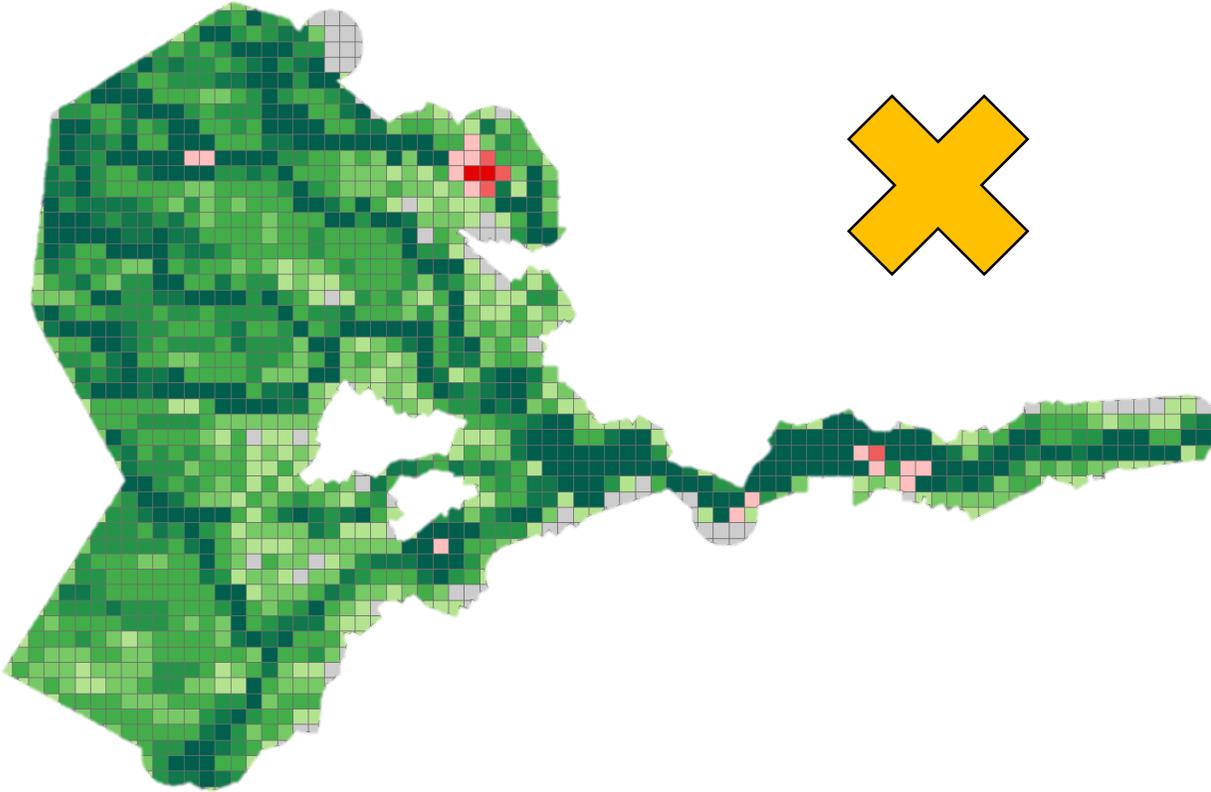


YCA Absence (points per cell)

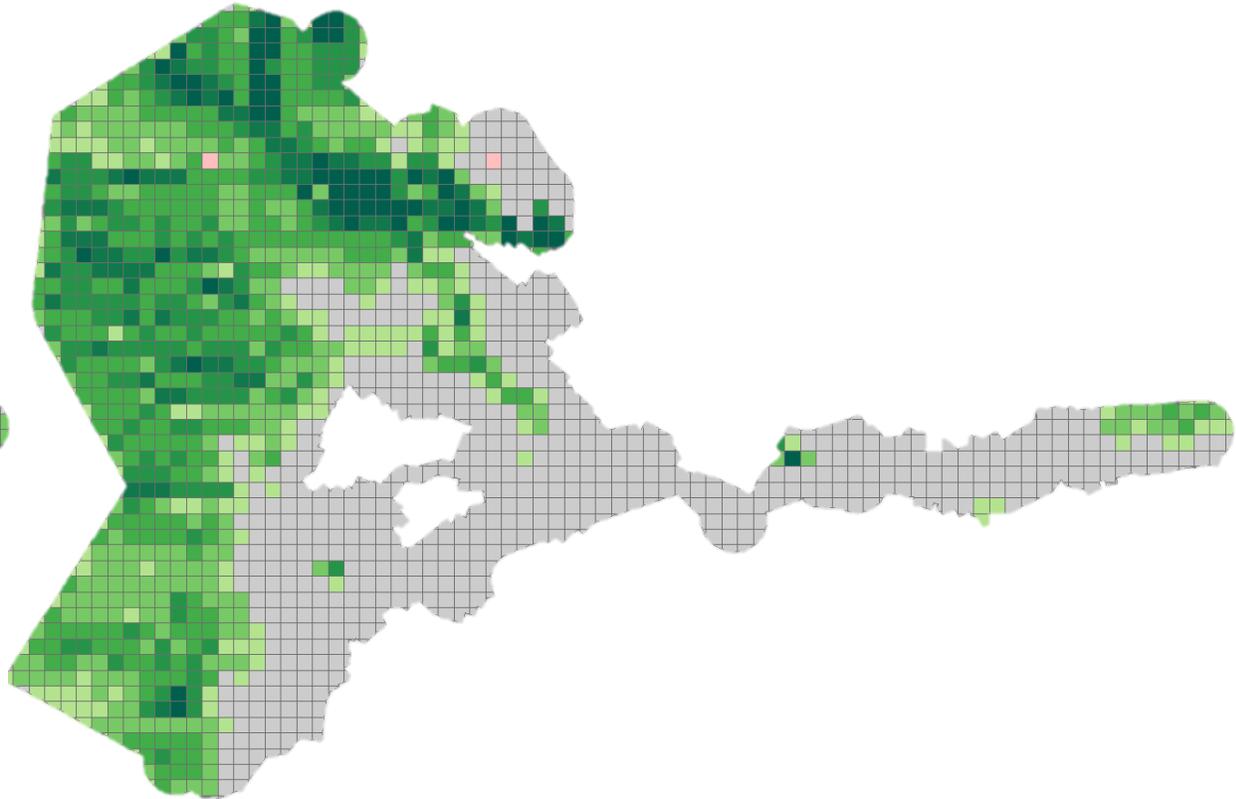


How we track eradication – comparative survey analysis

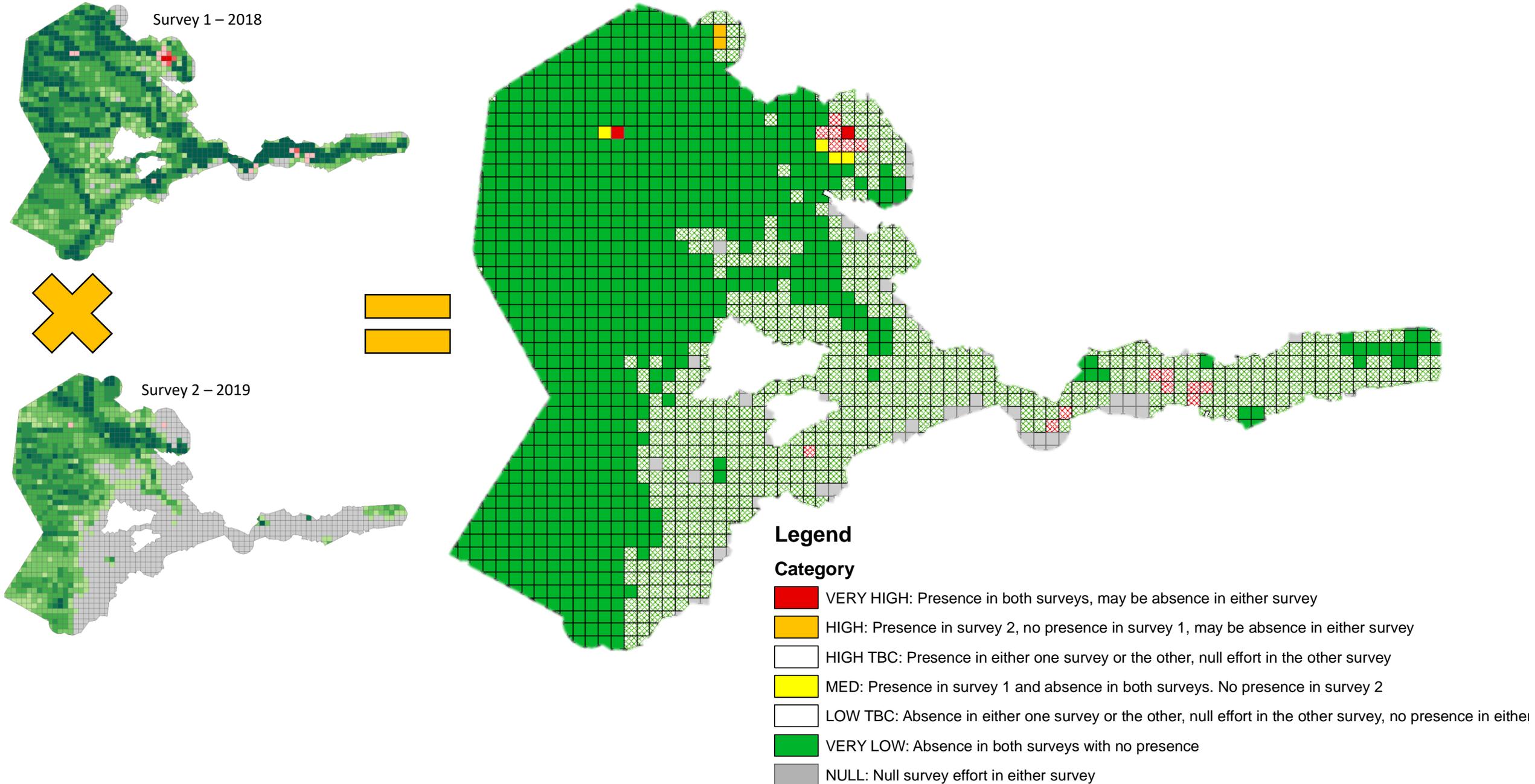
Survey 1 – April 2018



Survey 2 – September 2018



How we track eradication – comparative survey analysis

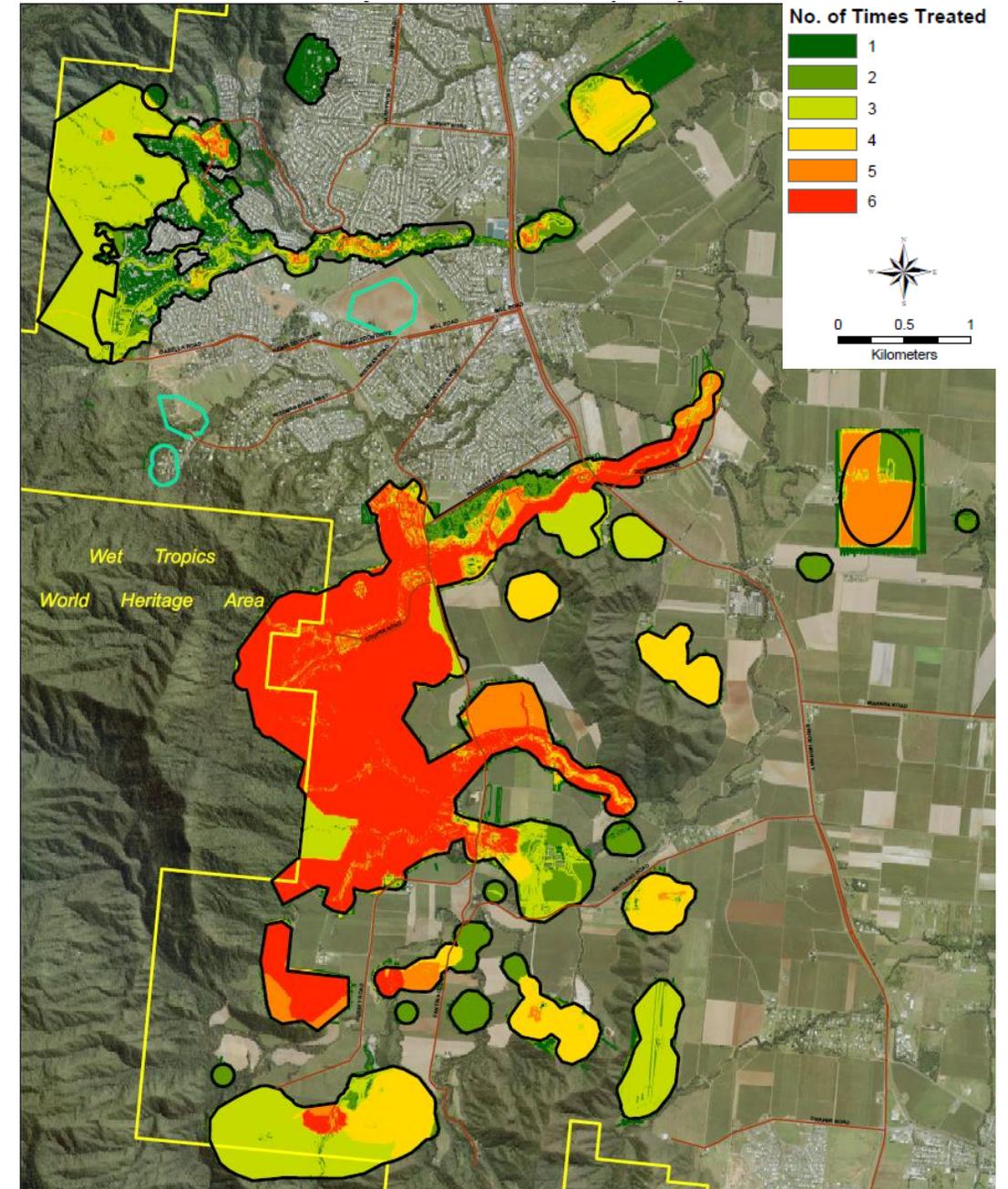


How we track eradication – treatment frequency analysis

Shows number of times an area has been treated - some interesting patterns around creeks

Accompanies the comparative survey analysis to answer questions about survey gaps or persistent spots of YCA

Demonstrates that treatment is working!

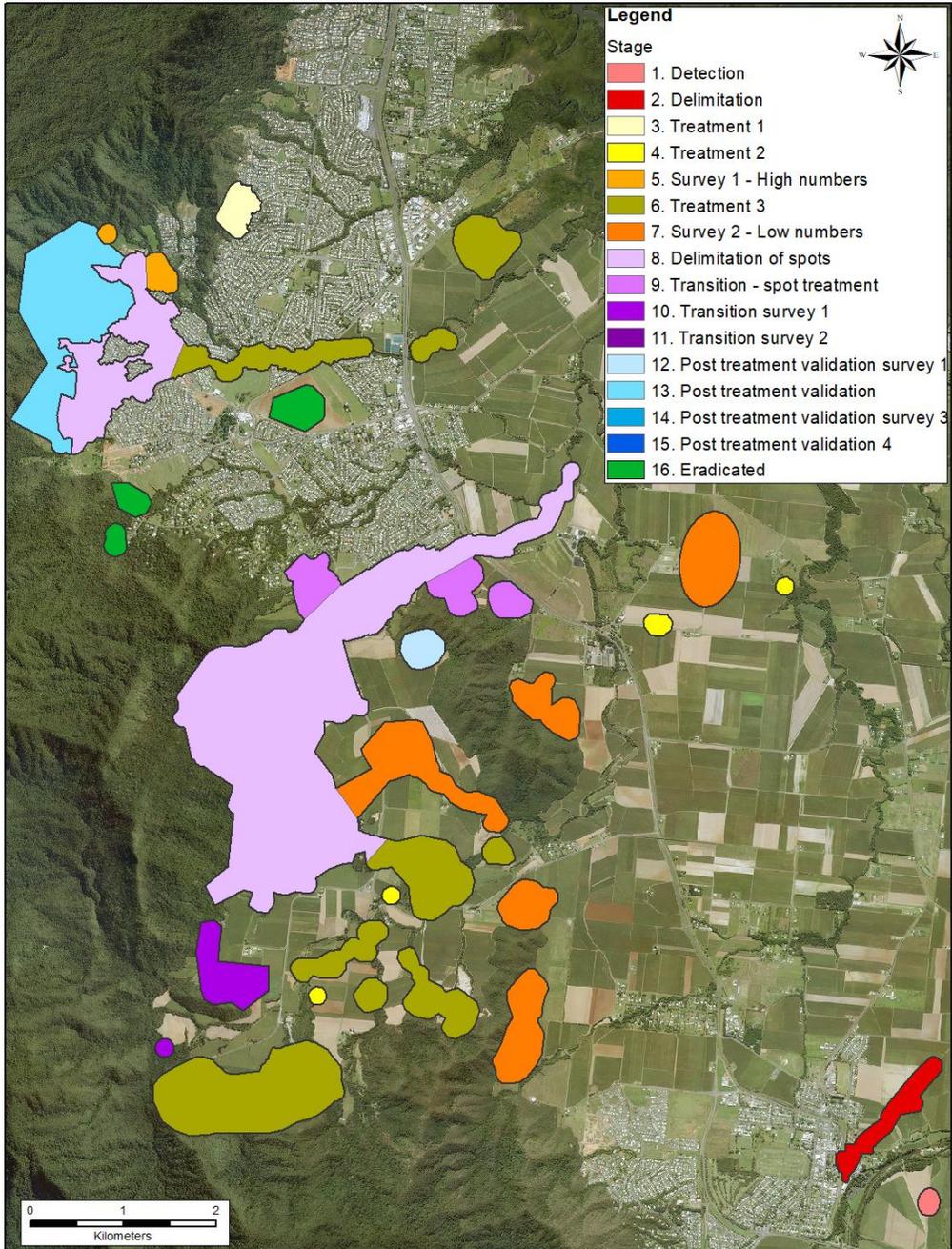


Data informs decision making

Internal program management, reporting, making decisions



Yellow crazy ant area stage tracking



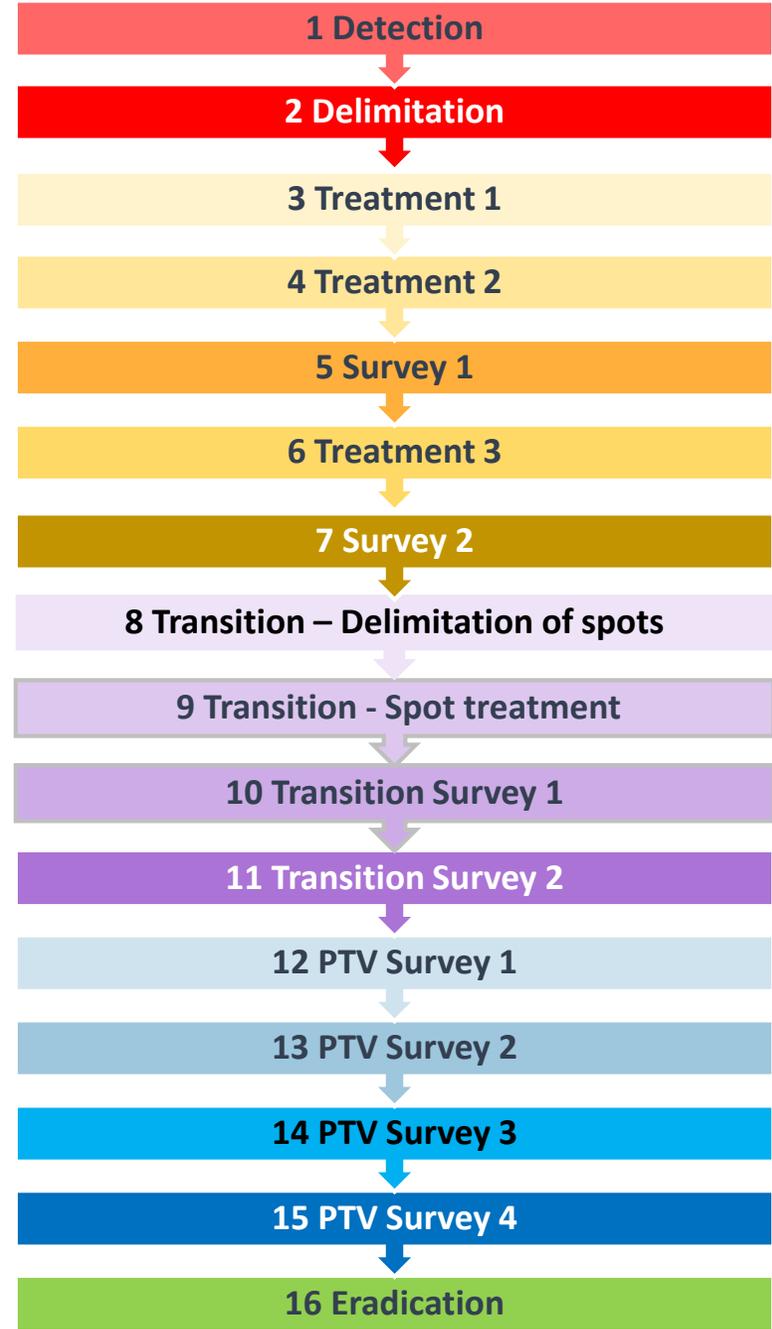
Detection & delimitation
(1 -2 months)

Broadscale treatment
(at least 12 months)

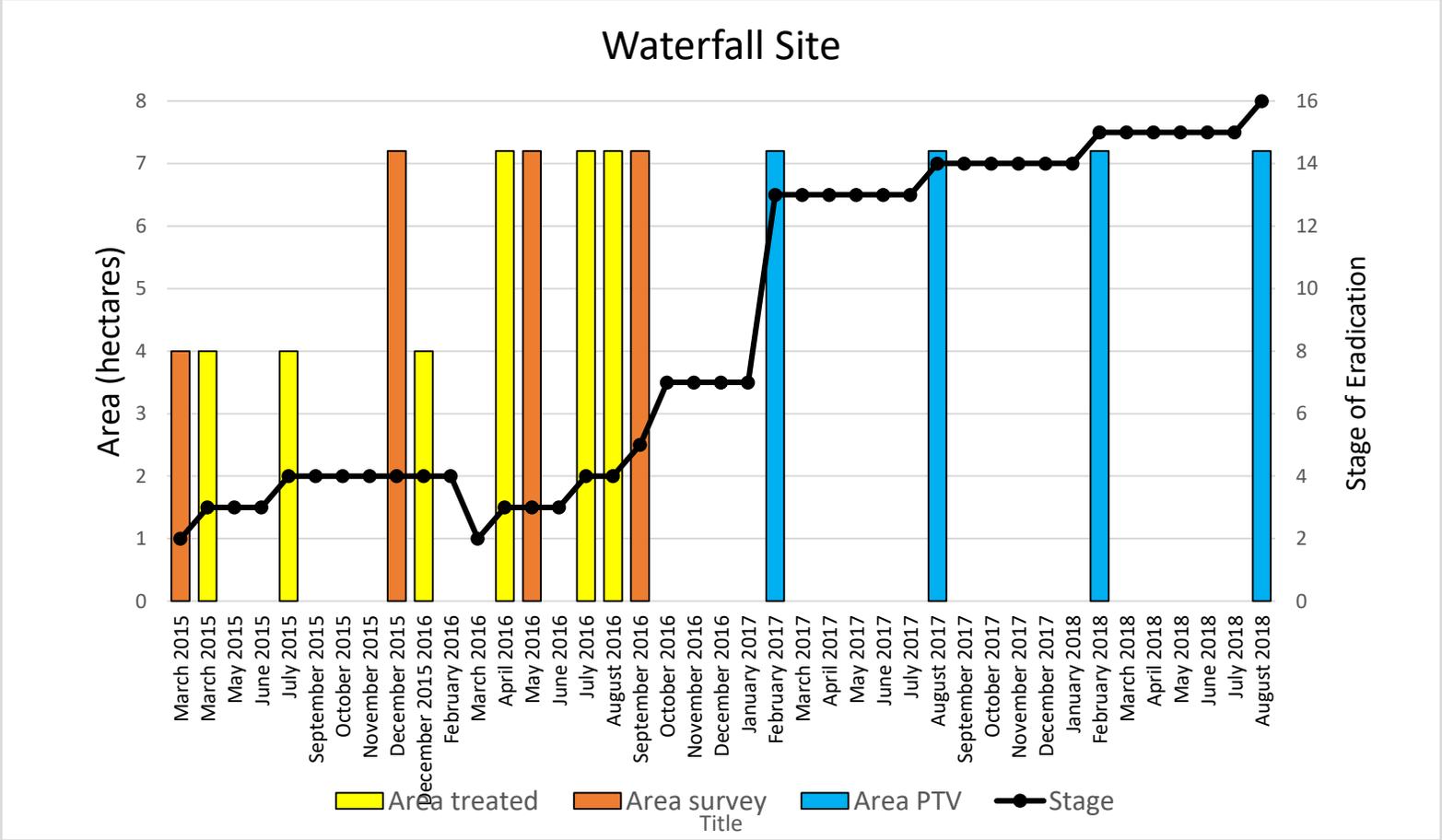
Transition
(at least 6 months)

Post-treatment validation
(at least 24 months)

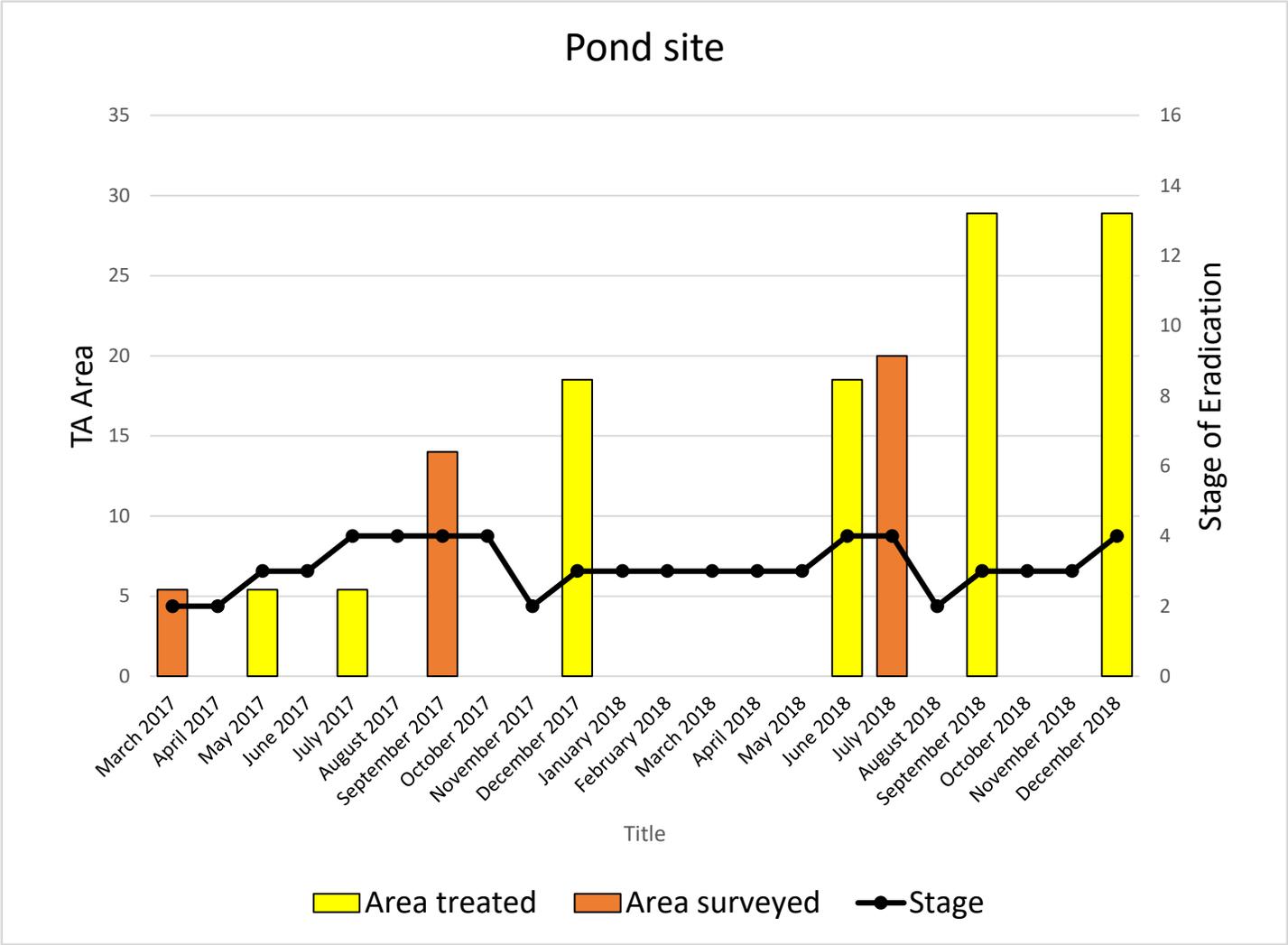
Eradication



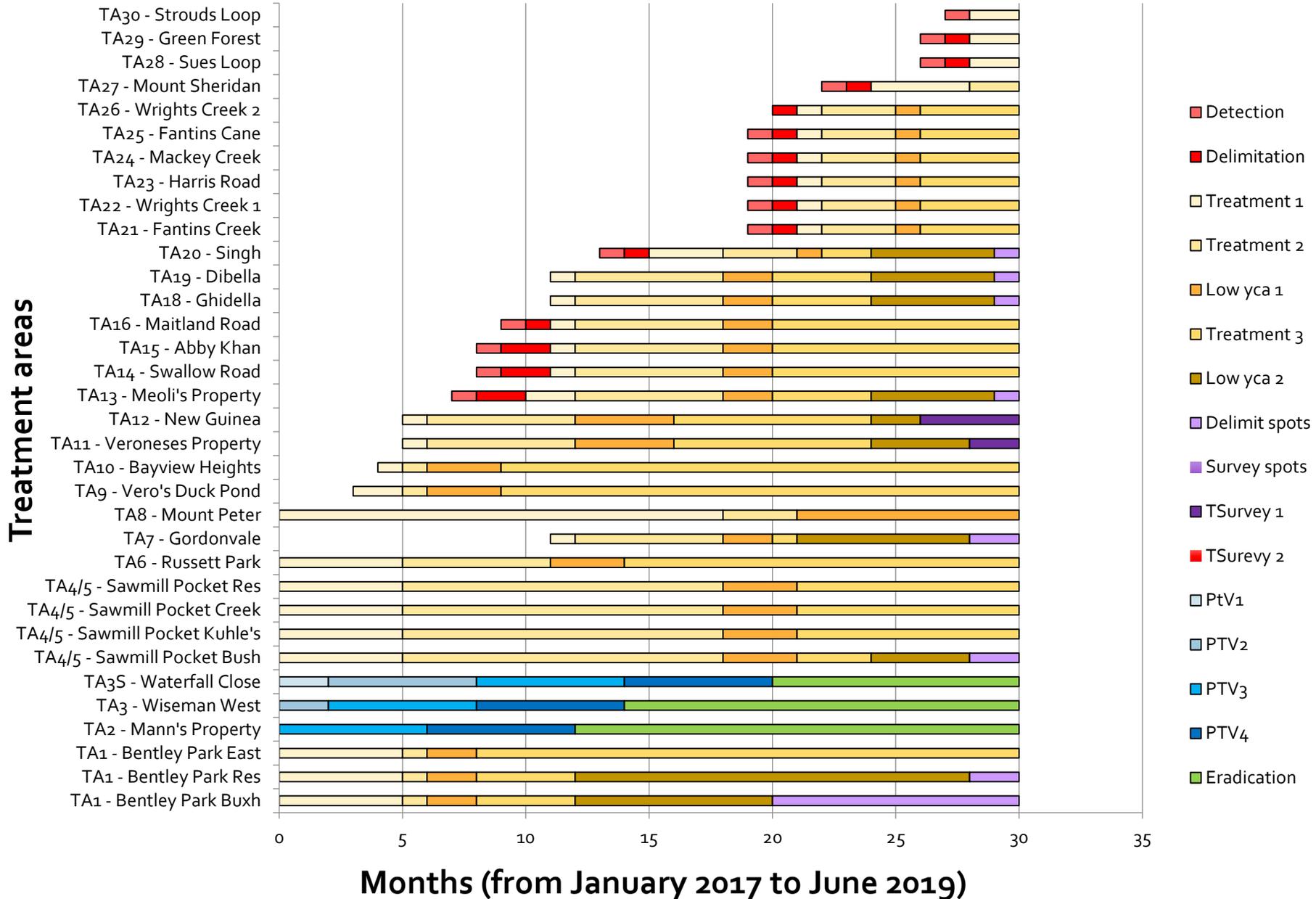
How we track eradication- Example; Waterfall Site



How we track eradication- Example; Pond site

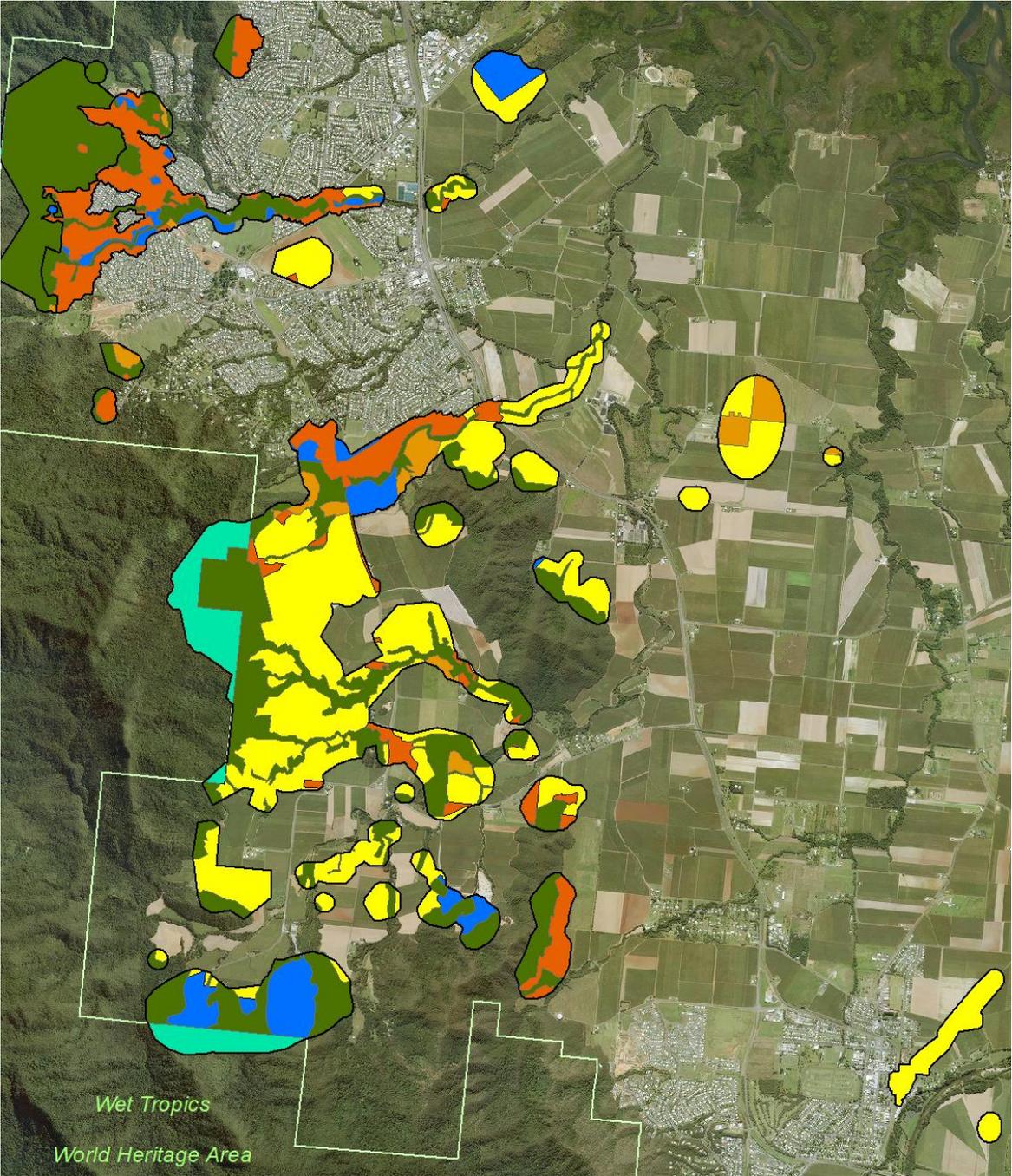
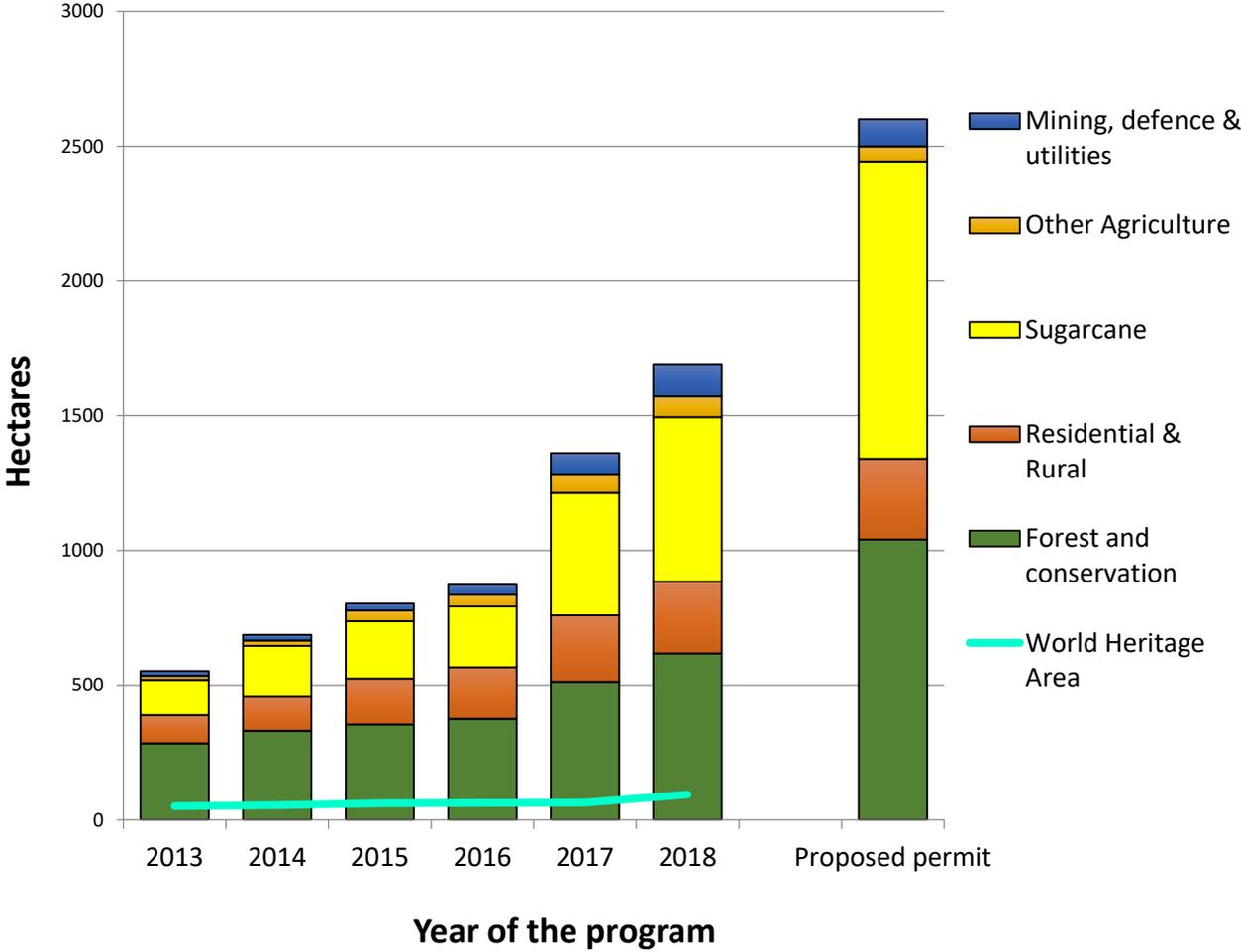


Detection to eradication. Keeping track



Challenge – yellow crazies in cane

Major land cover types within the treatment area

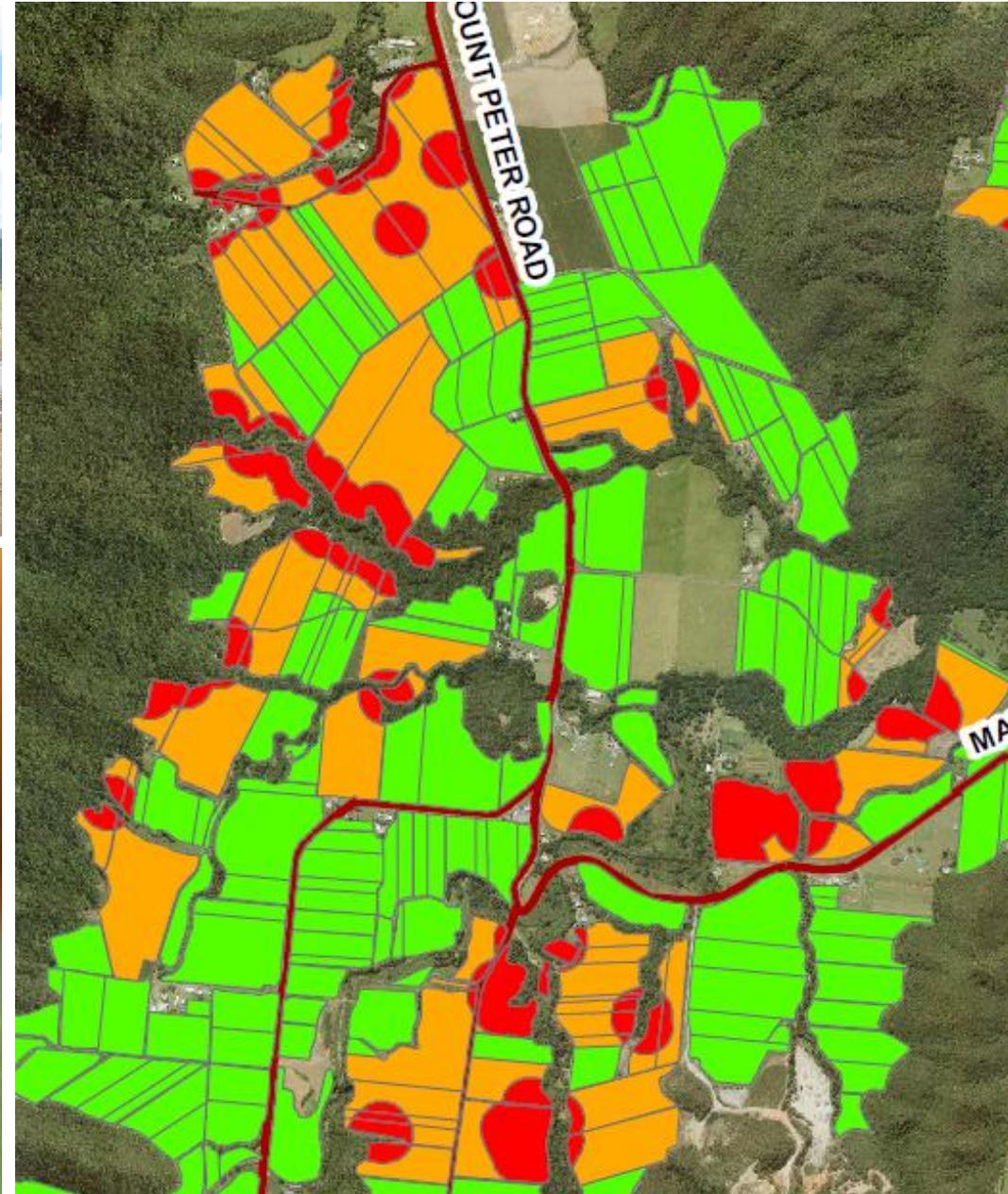


Challenge – yellow crazies in cane

Collaboration and data sharing with sugar industry

Exchange of survey and treatment maps for seasonal harvest data and farm layers

Developed risk management tool together.

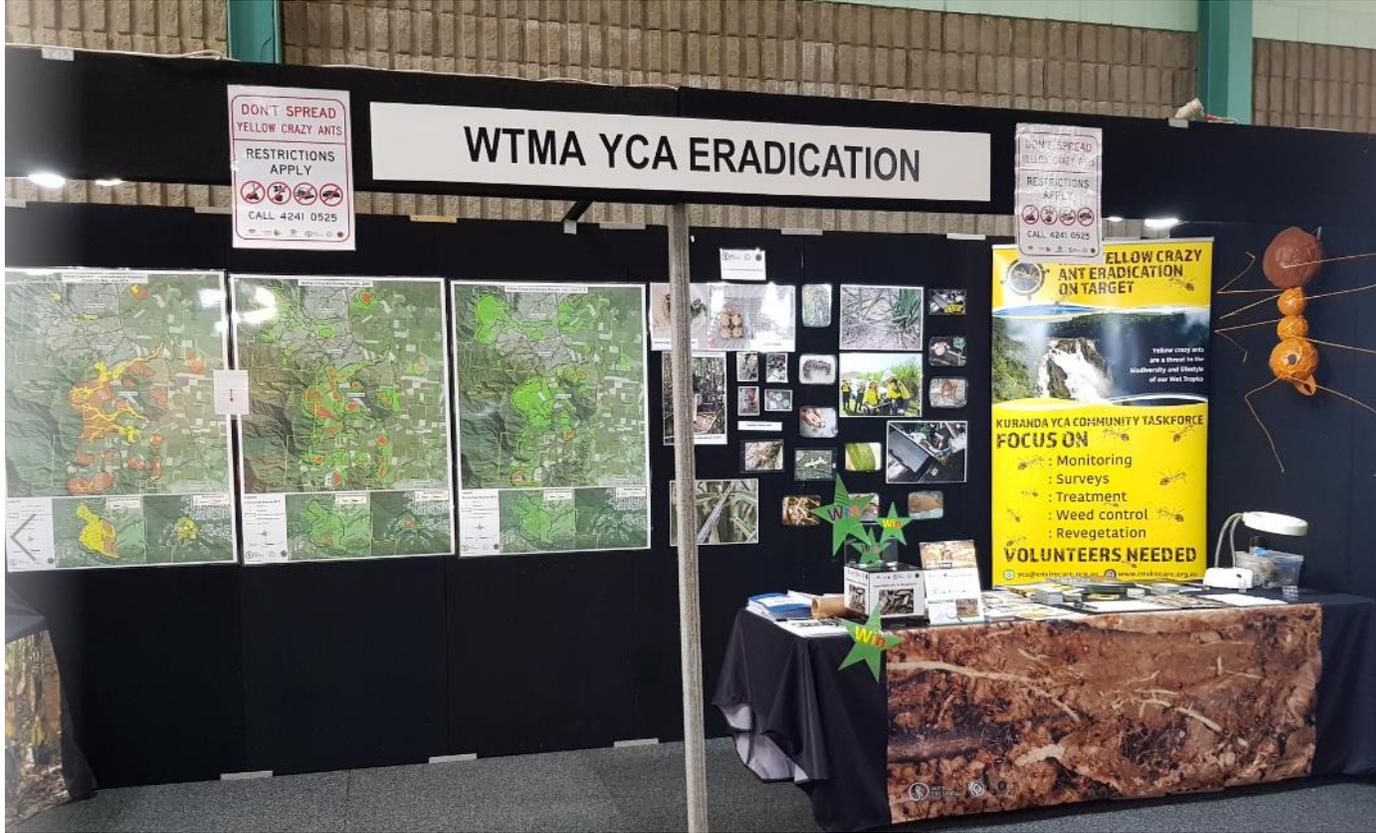


Data presentation

Getting the data products out there to the community



Queensland Government
Queensland Spatial Catalogue - QSpatial



Questions



National
Landcare
Program



MSF Sugar



kuranda.
envirocare inc.



SHARE CONNECT PROTECT