

# Yellow Crazy Ant Data

## The Journey...



Gareth Humphreys and Desiree Gowell  
Wet Tropics Management Authority



Photo: Jurgen Freund



SHARE CONNECT PROTECT

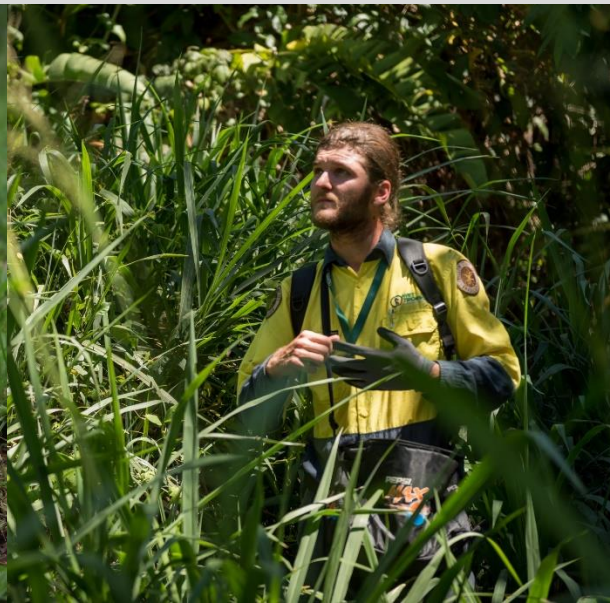


# Who we are and what we do



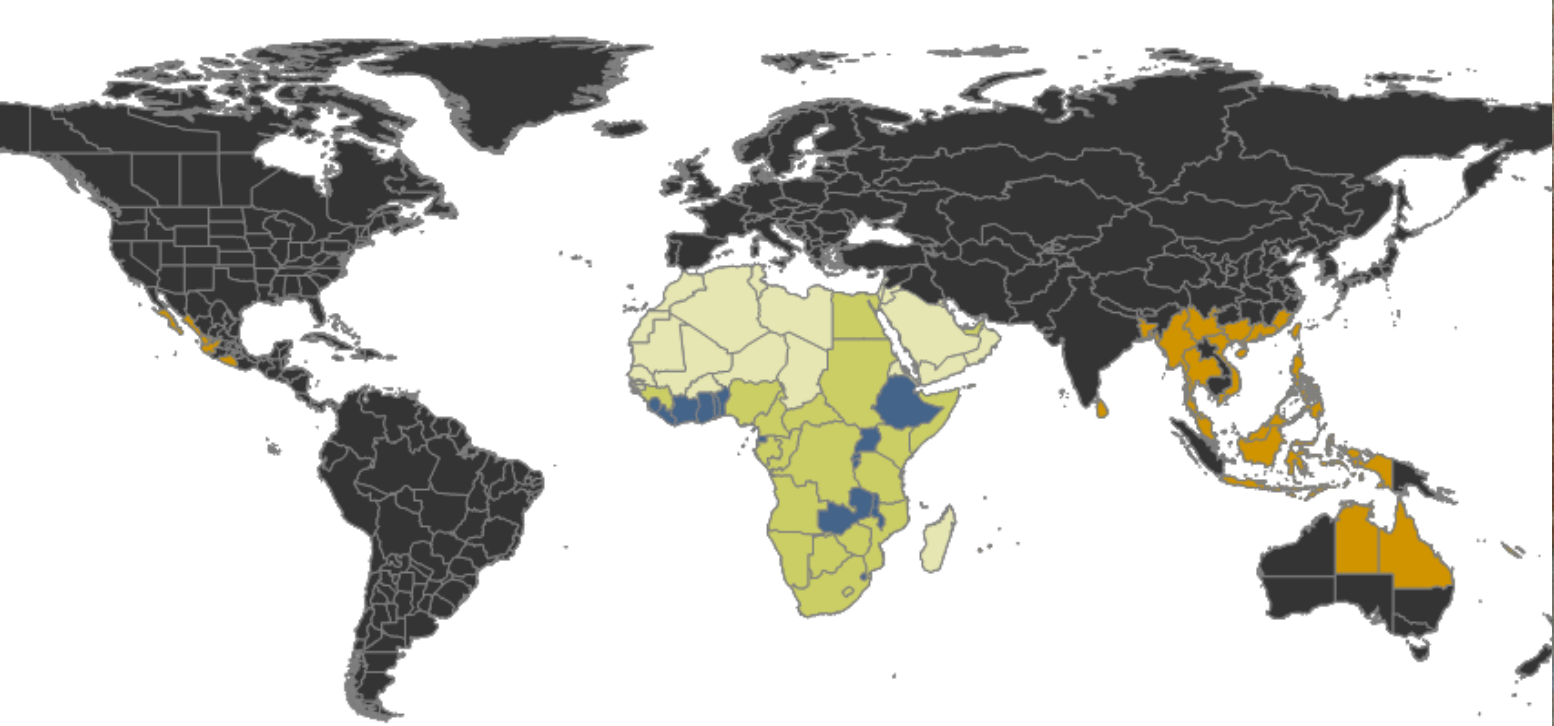
Program goal:

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

After YCA



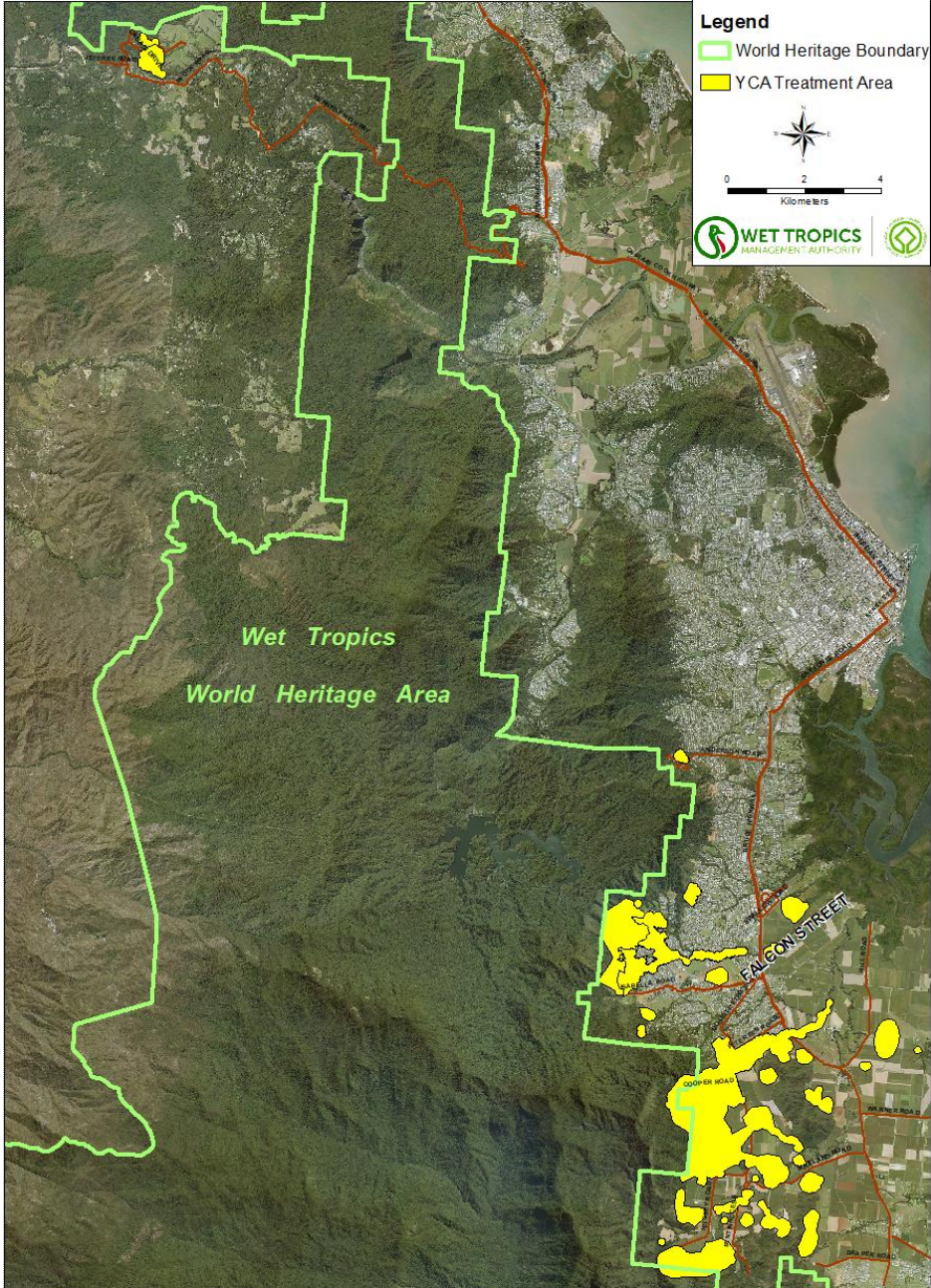
Johnston Atoll



Photos: Sheldon Plentovich/USFWS



# Yellow Crazy Ant locations





# YCAEP GIS Team

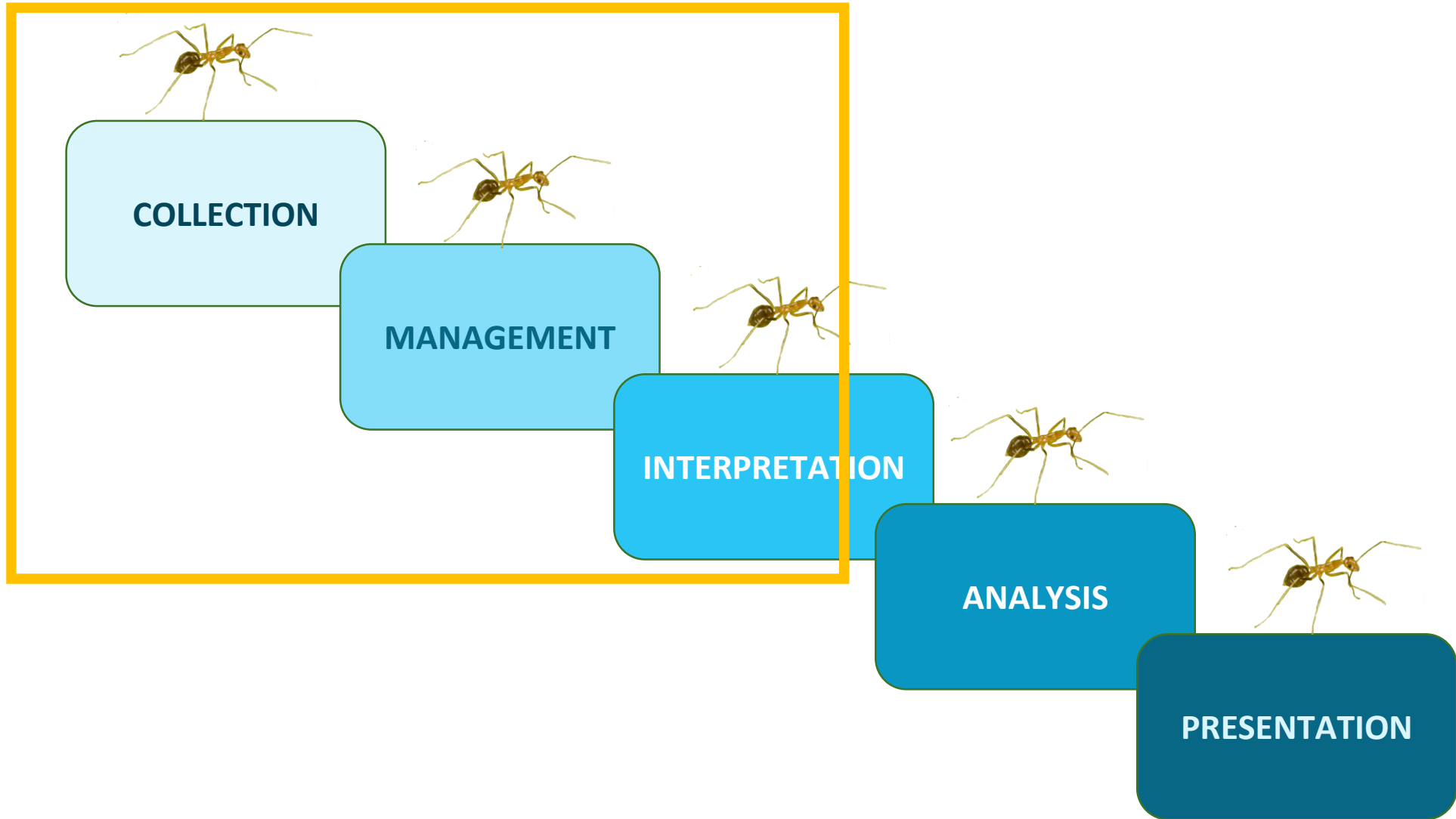
Desiree Gowell  
Jasmine Spring  
Gareth Humphreys

Special mention to  
Mike Stott





# How data moves through the Program





# Basic data collected by the program

## Survey

Point data  
Presence/Absence



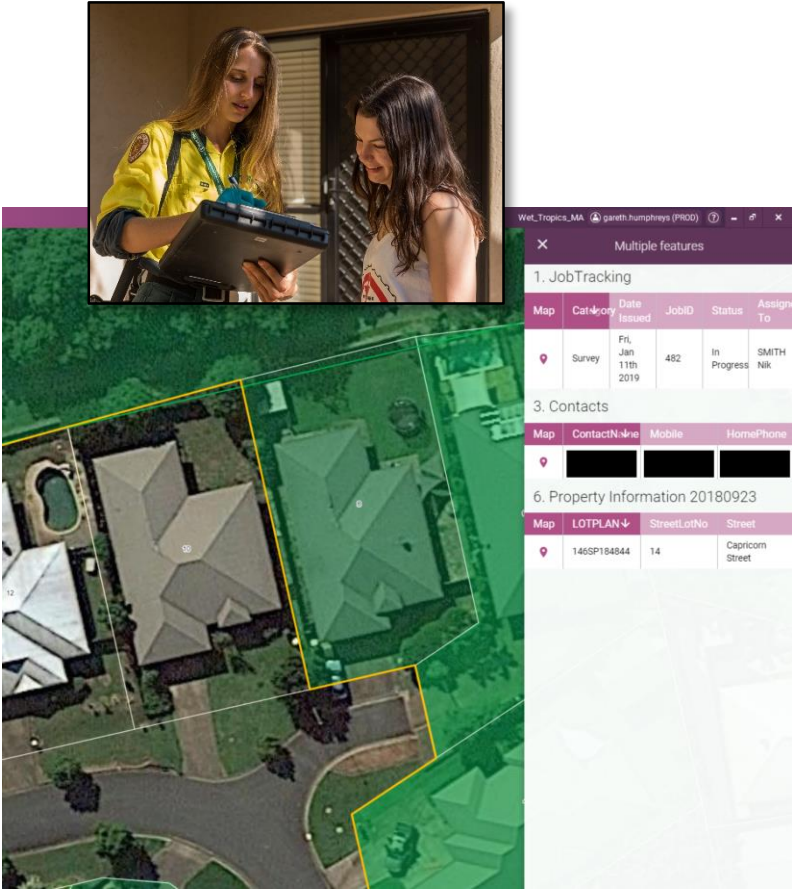
## Treatment

Line data  
Helicopter  
Ground Crews



## Landholder/Property info

Contact data  
Hazards  
Livestock (Affects aerial treatment)



Wet\_Tropics\_MA | gareth.humphreys (P900)

Multiple features

1. JobTracking

Map	Category	Date Issued	JobID	Status	Assign To
	Survey	Fri Jan 11th 2019	452	In Progress	SMITH Nik

3. Contacts

Map	Contact Name	Mobile	HomePhone

6. Property Information 20180923

Map	LOTPLAN	Street/LotNo	Street
	146SP184844	14	Capricorn Street



# Program Timeline

2012

YCA Detected inside World Heritage Area

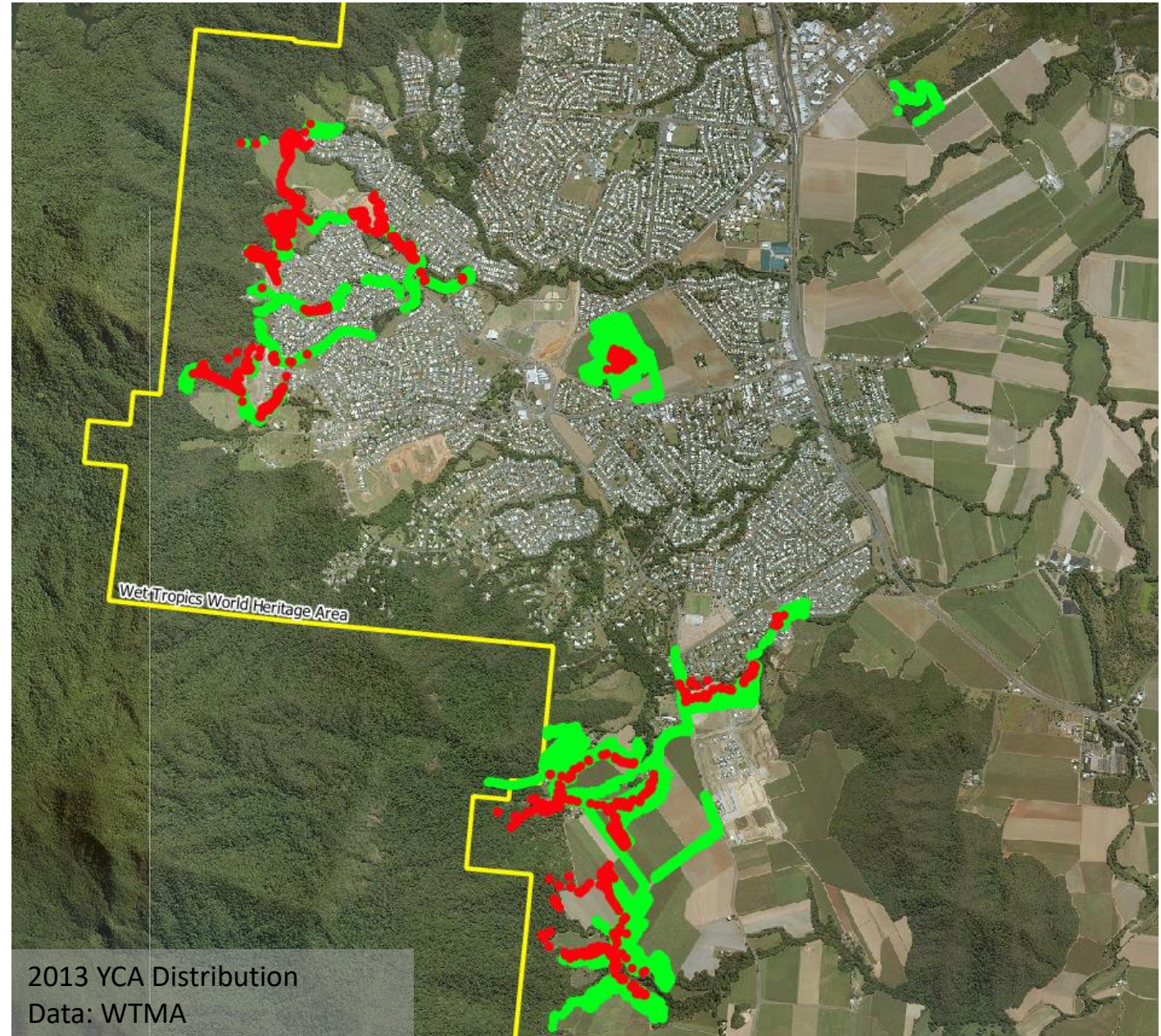
YCA declared ineradicable in Queensland

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

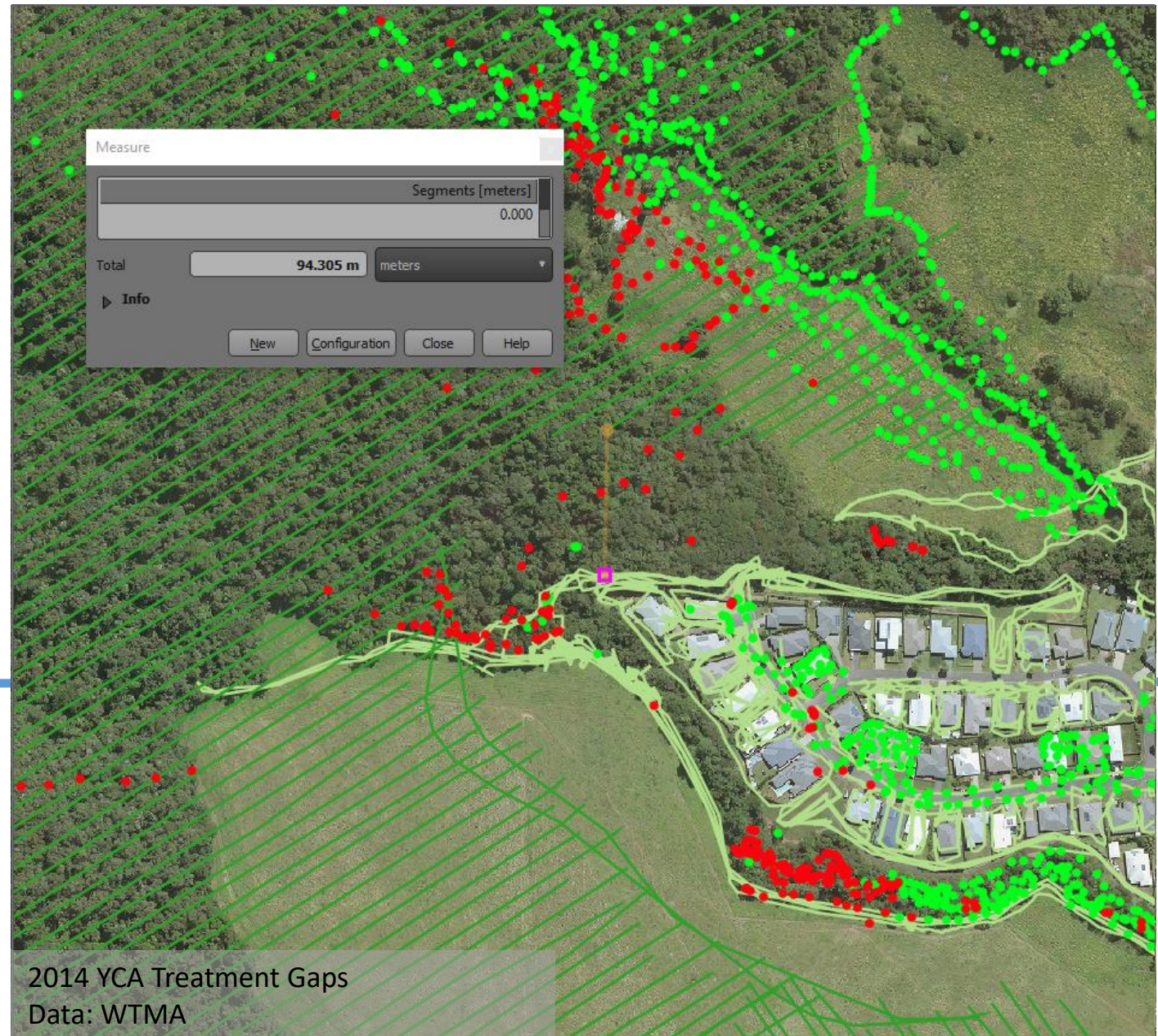
Several previously unknown infestations detected, including Russett Park

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



Main Form

Main Form (View)

Main Form (Edit)

Main Form (Add)

v 24.05.2018.a

## JOB SHEET – Treatment – Round 14

Job# 287



Address Details			
Lot & Plan	1RP711173	Zone ID	Blackfellows 4
Address	72136 Bruce Highway, Bentley Park		Treatment Area
			TA1
Area (ha)	1.28		
Comments			
Contact Details			
Contact Name			Access Granted
			N
Home	Work:	Mobile:	
Is tenant?	N	Owner/Agent	Phone:
Comments			
Risks & Hazards			
Aggressive/uncooperative public		Chemical sensitivity	
Dangerous dog		Cropping	
Fish Pond(s)		Dengue/Mozzies	
Industry		Forest/Dense undergrowth	
Mine		Livestock	
Terrain		Poultry/Caged birds	
		Watercourse/Dam	
		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)
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"/>	% Property Treated (inside infestation)
		Helicopter <input type="checkbox"/>	
Notes about treatment			
Incidents			
Notes of any on-site incident, injury, etc			

Includes riparian ☐

HighRisk Property ☐

ACTIVE

4869

Switch form mode to: Edit View



2014

March 2014 First NAMAC taskforce undertakes delimitation work

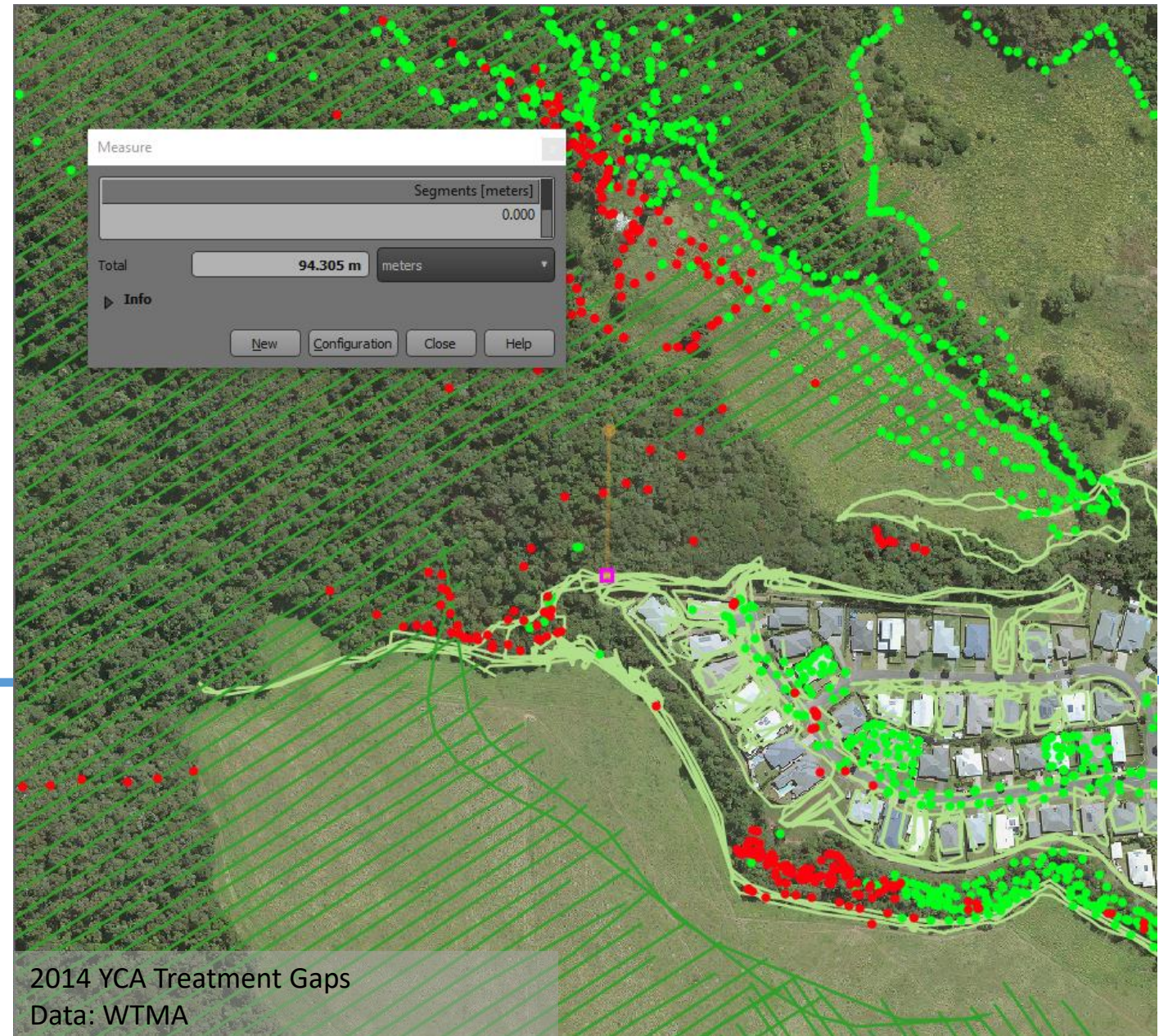
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Total area under treatment is 736 Hectares





2015



1<sup>st</sup> 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

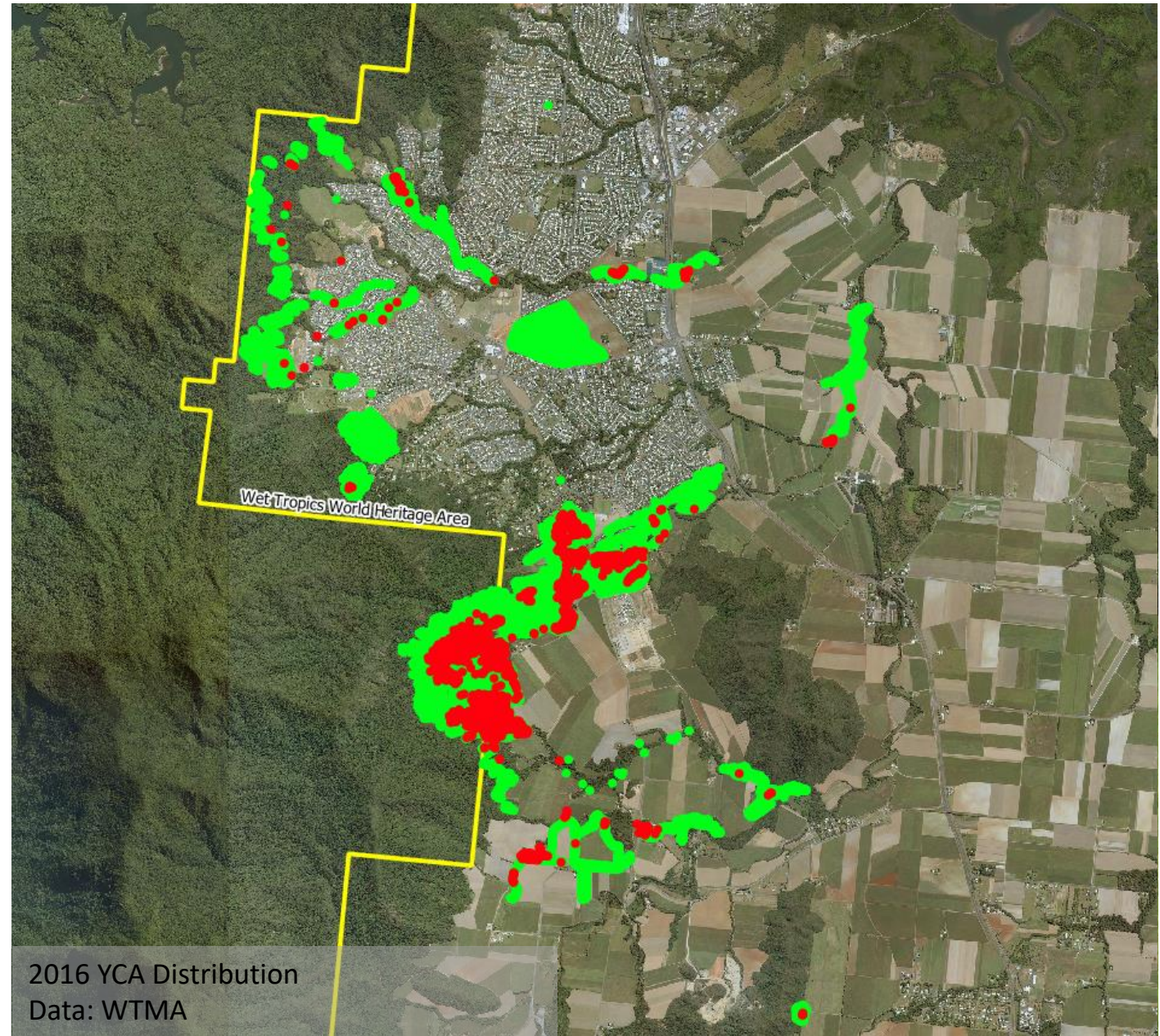
2016

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



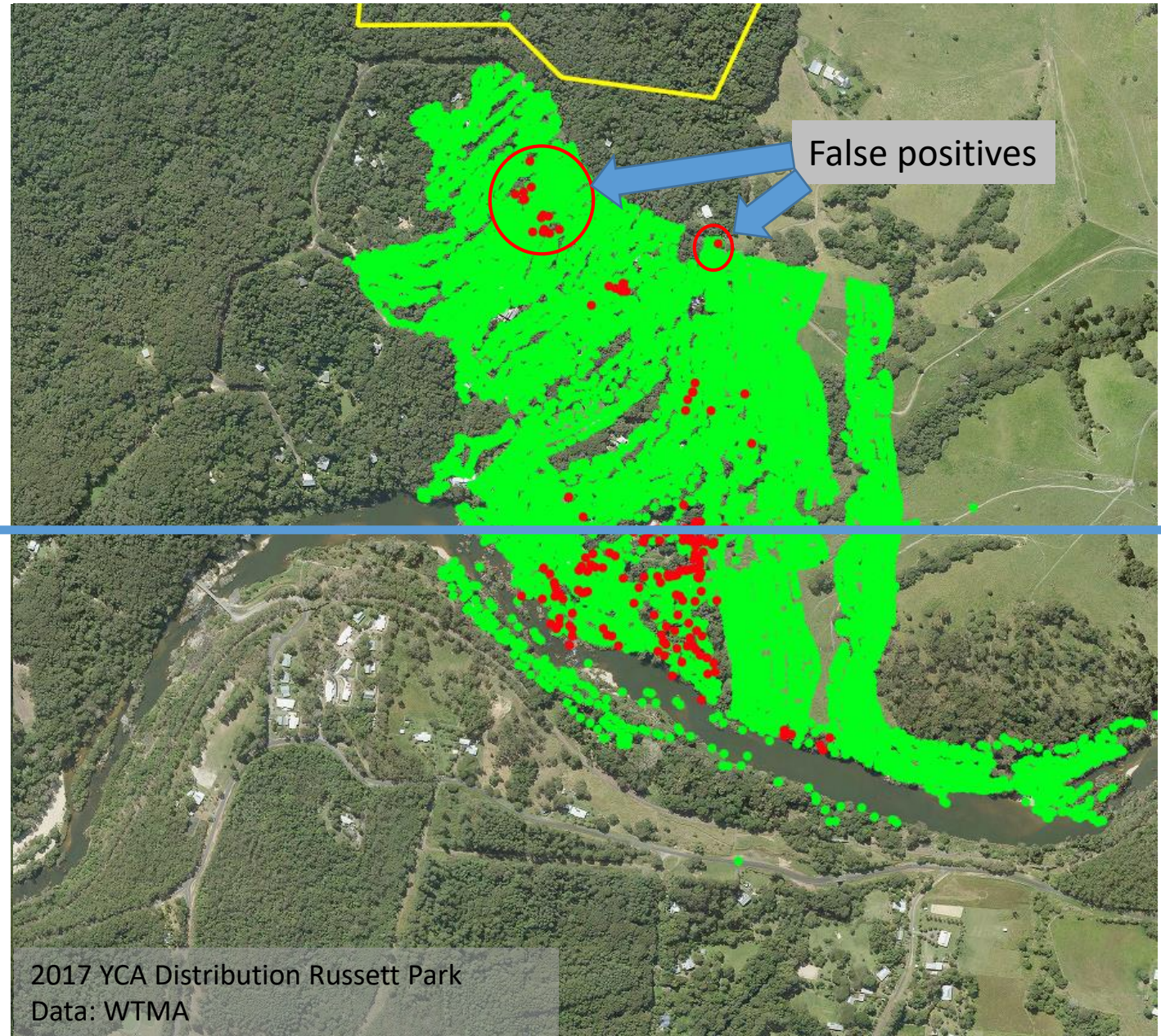


2017

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

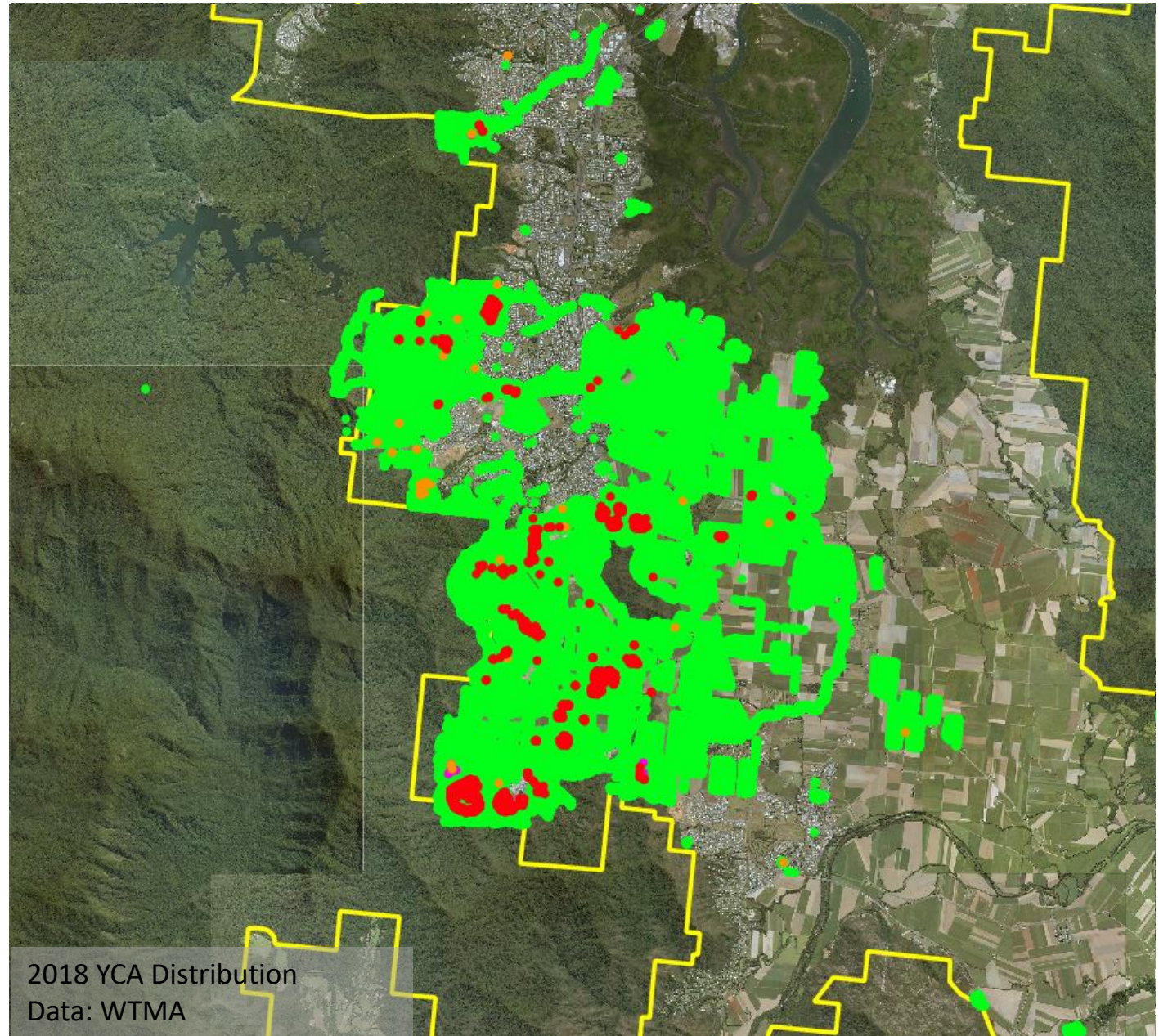
Rapid increase in data collection begins to cause problems with false positives requiring a large change in procedures

## 2018

Shows significant reductions in YCA distribution

Largest survey ever undertaken 482729 points  
4026 hectares

More than 180 hectares removed from active treatment







2018

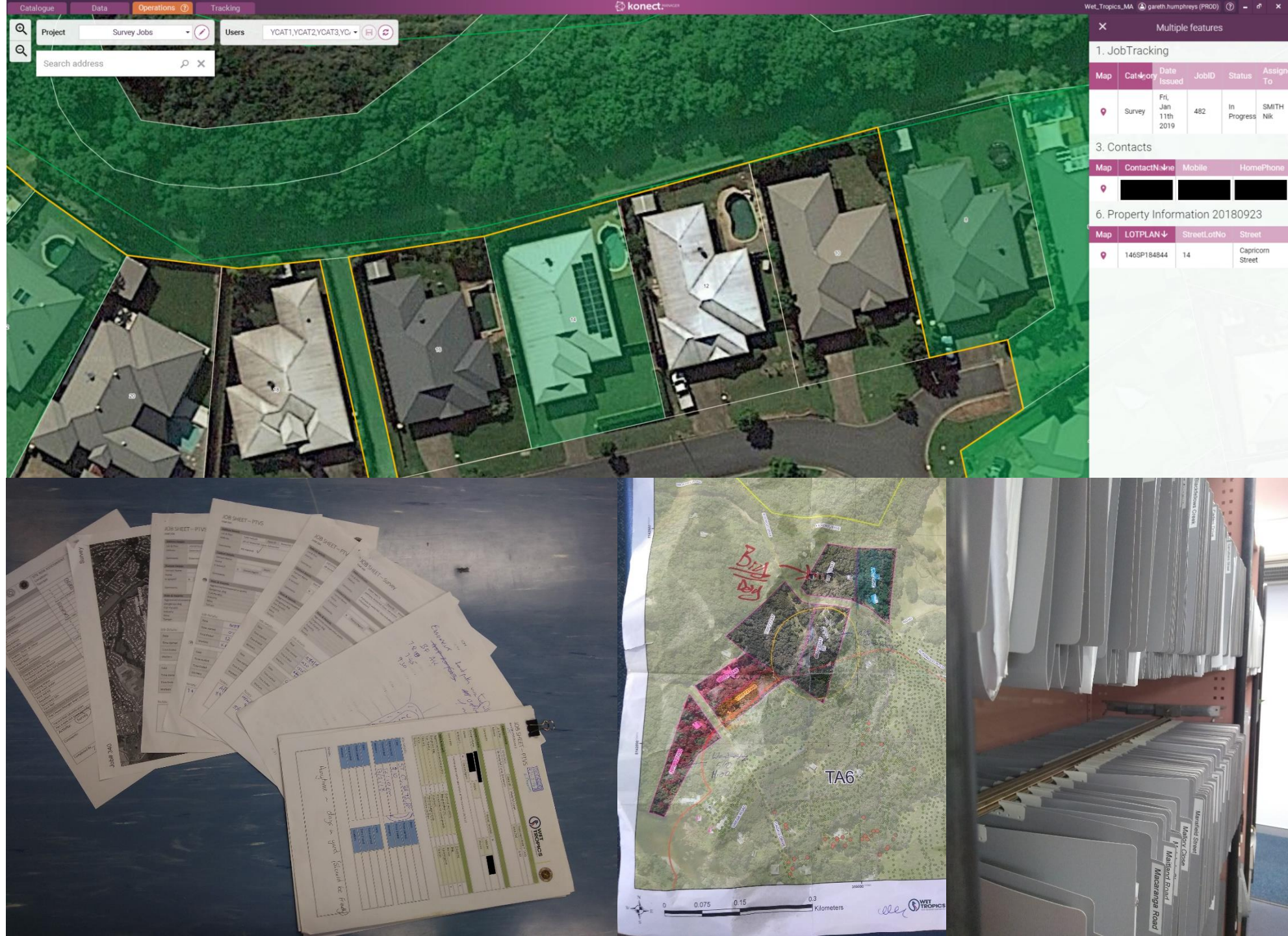
Konect is brought online



# 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

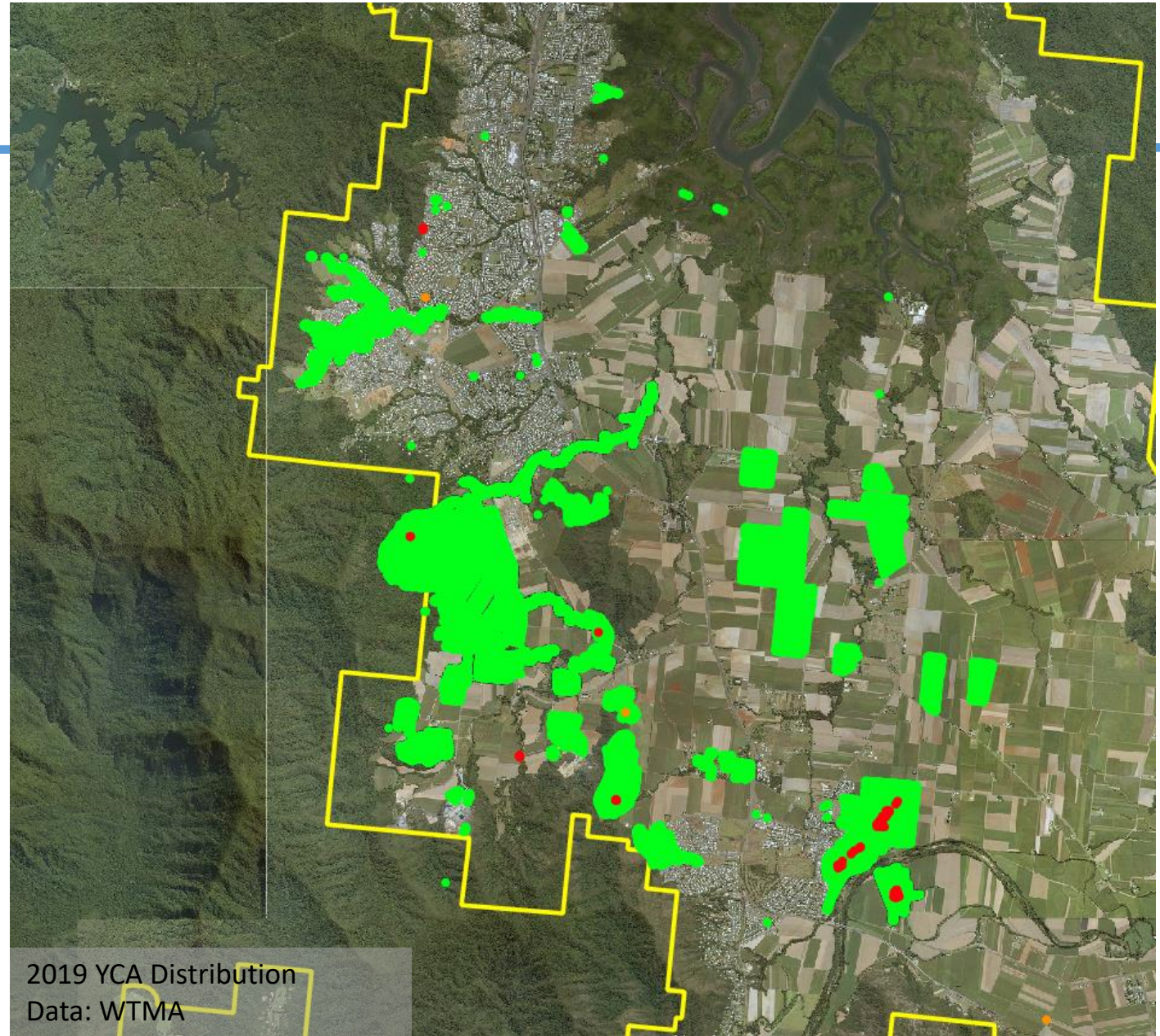
Three new infestations

Eradication is on track

53 Garmin Rino 650

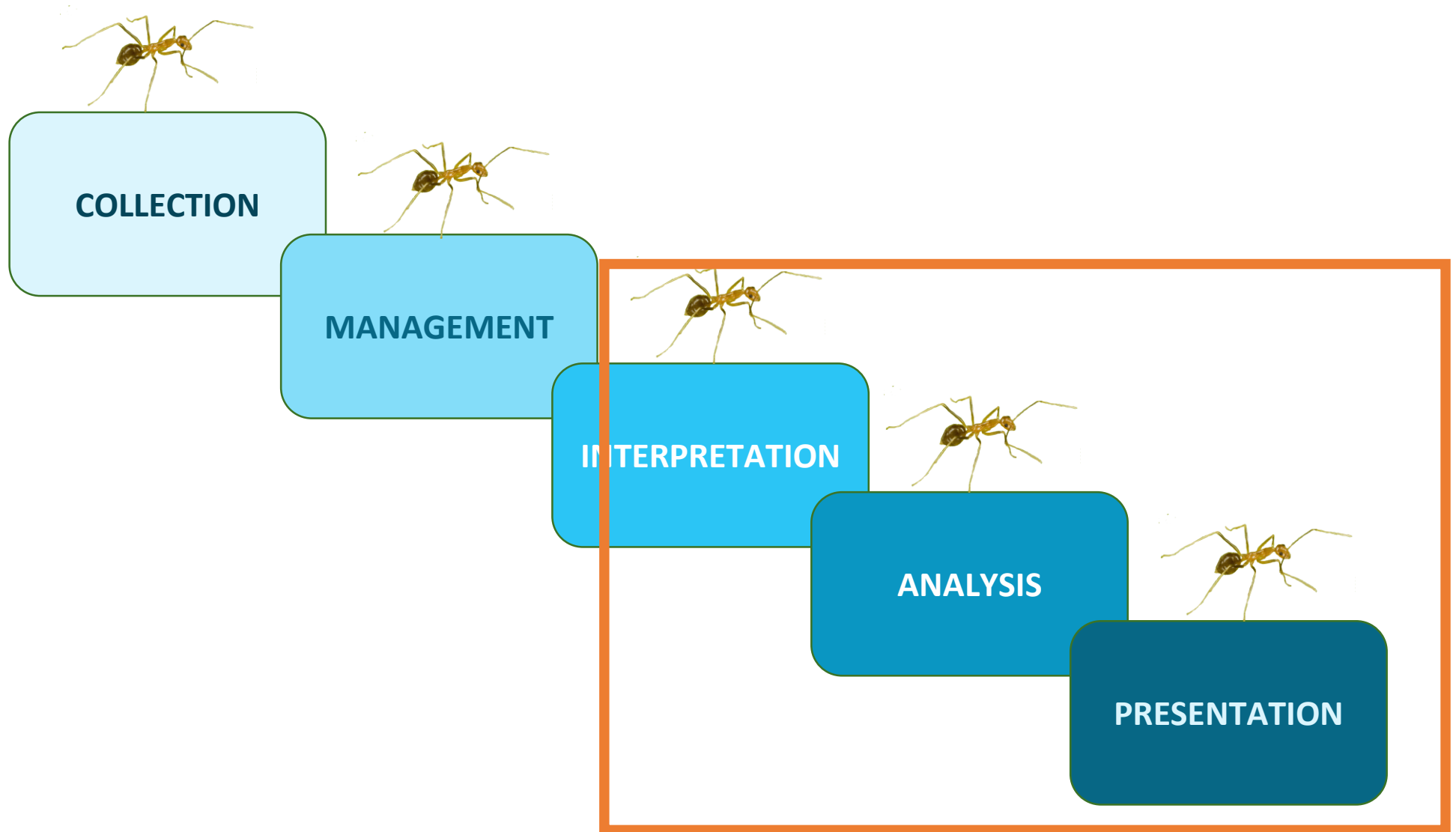
10 Garmin eTrex 10

50+ field staff





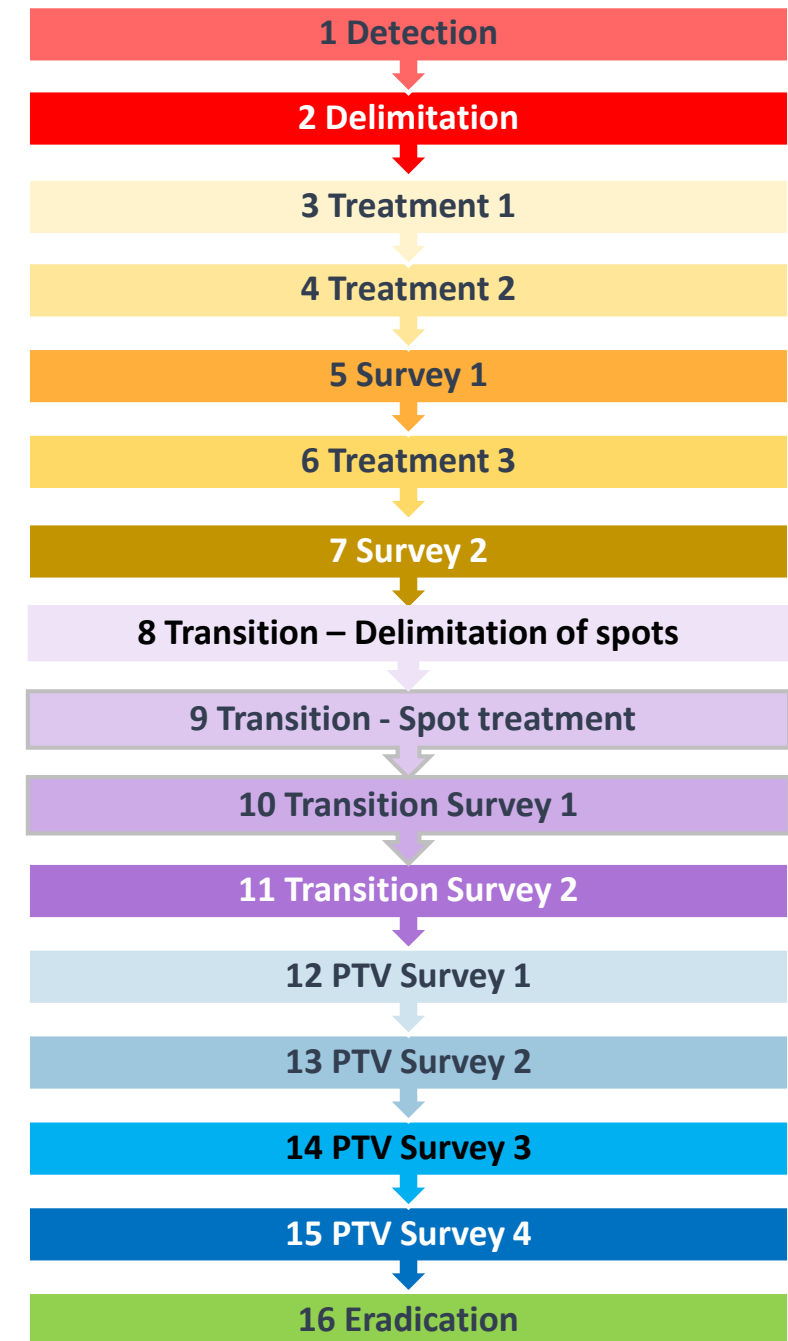
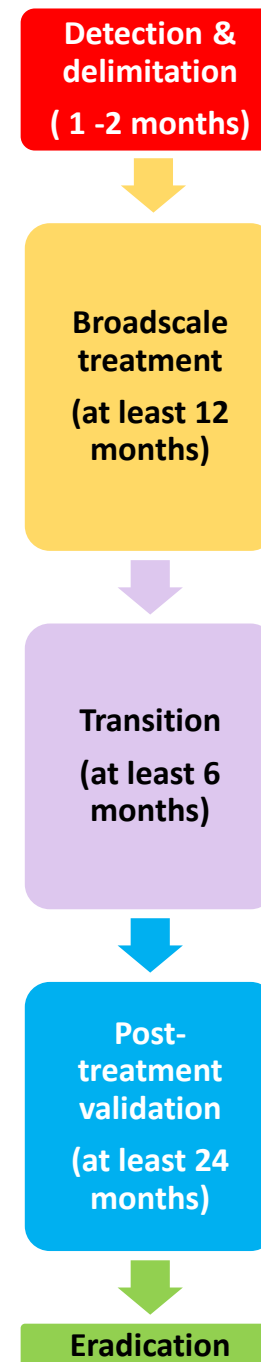
# How data moves through the Program



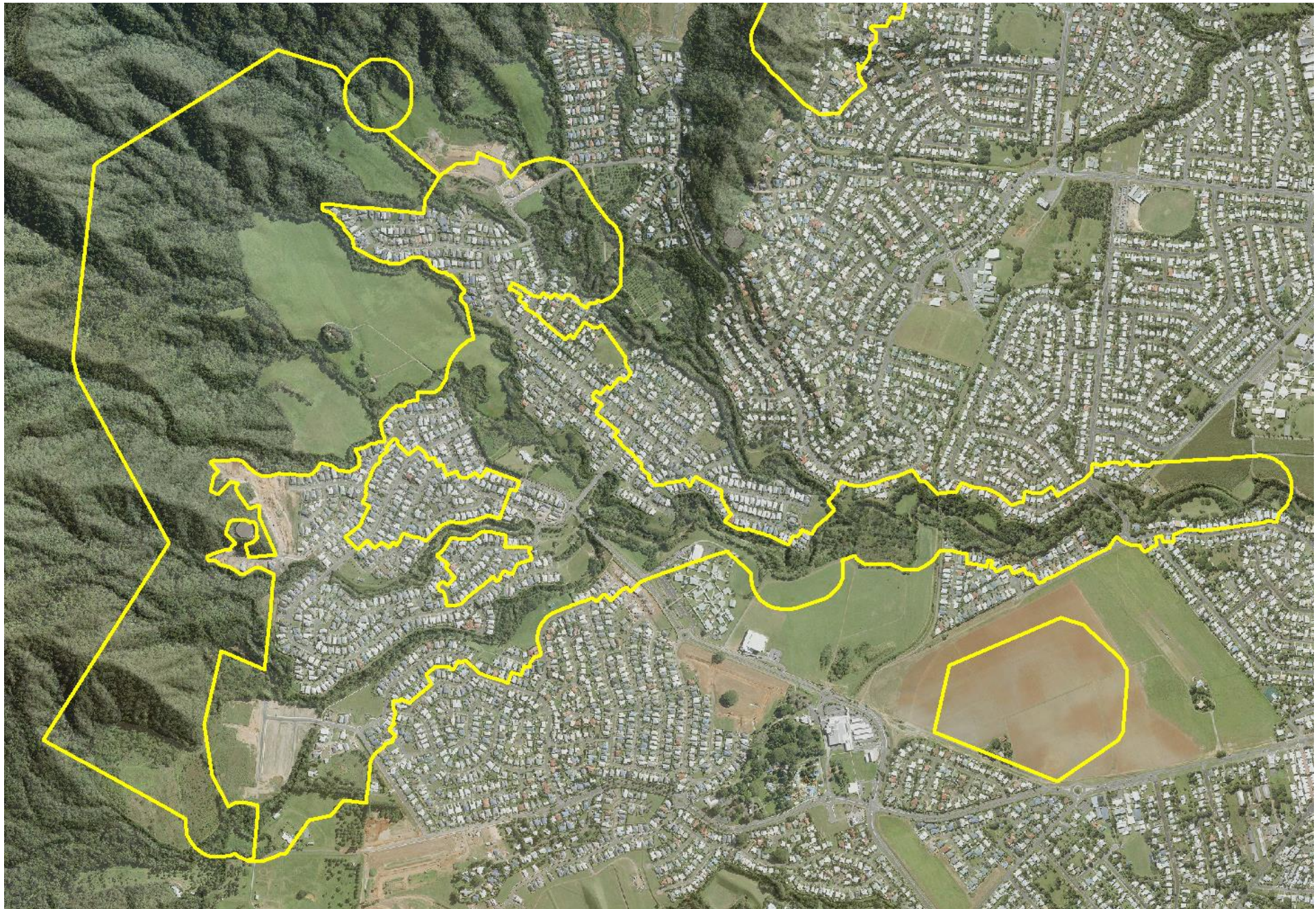


# How we track eradication

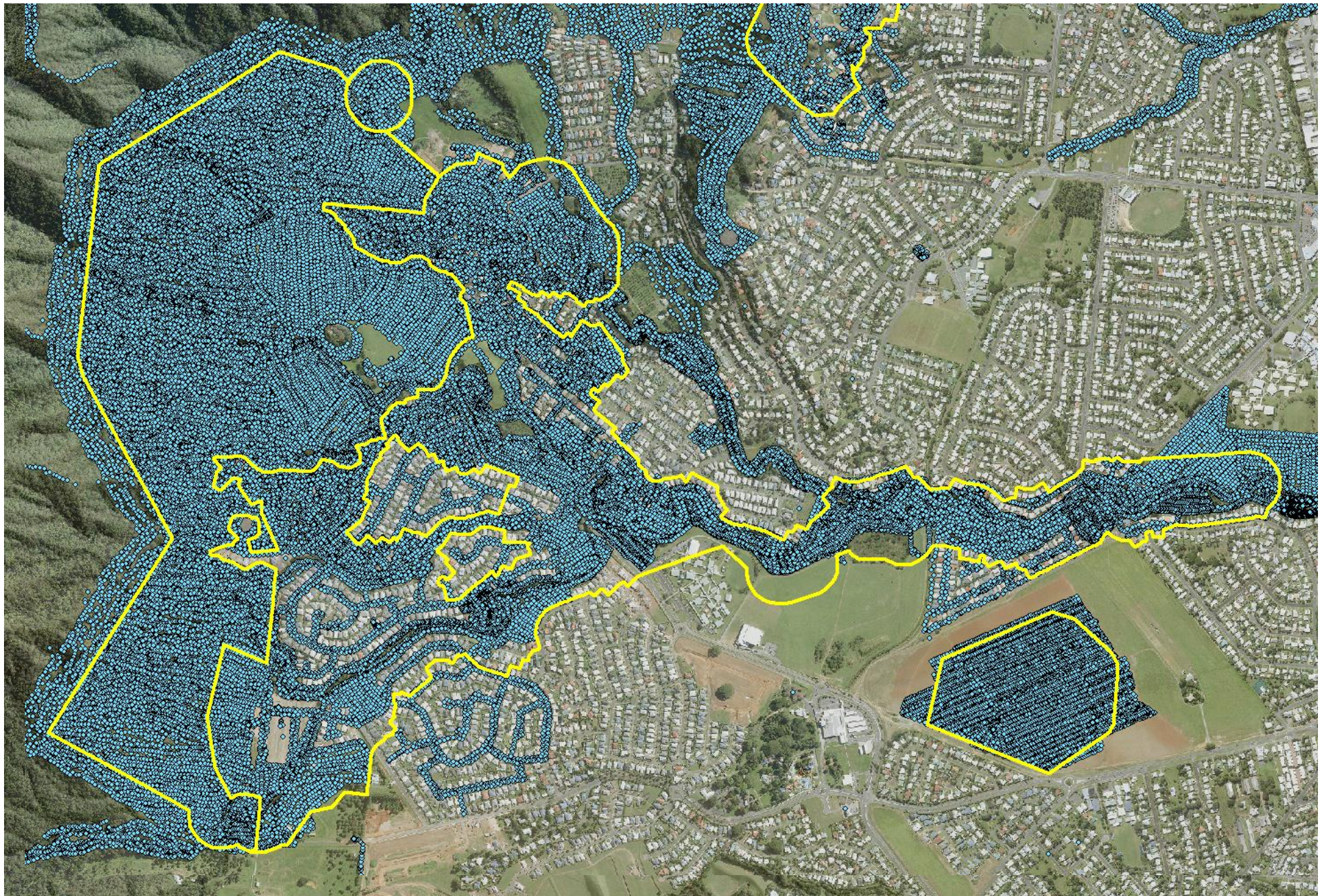
- Four overarching phases
- 16 stages
- Set of criteria must be met before moving to next stage
- Spatial analysis is a tool we use to check criteria has been met





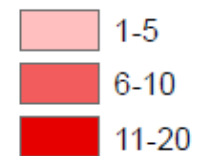




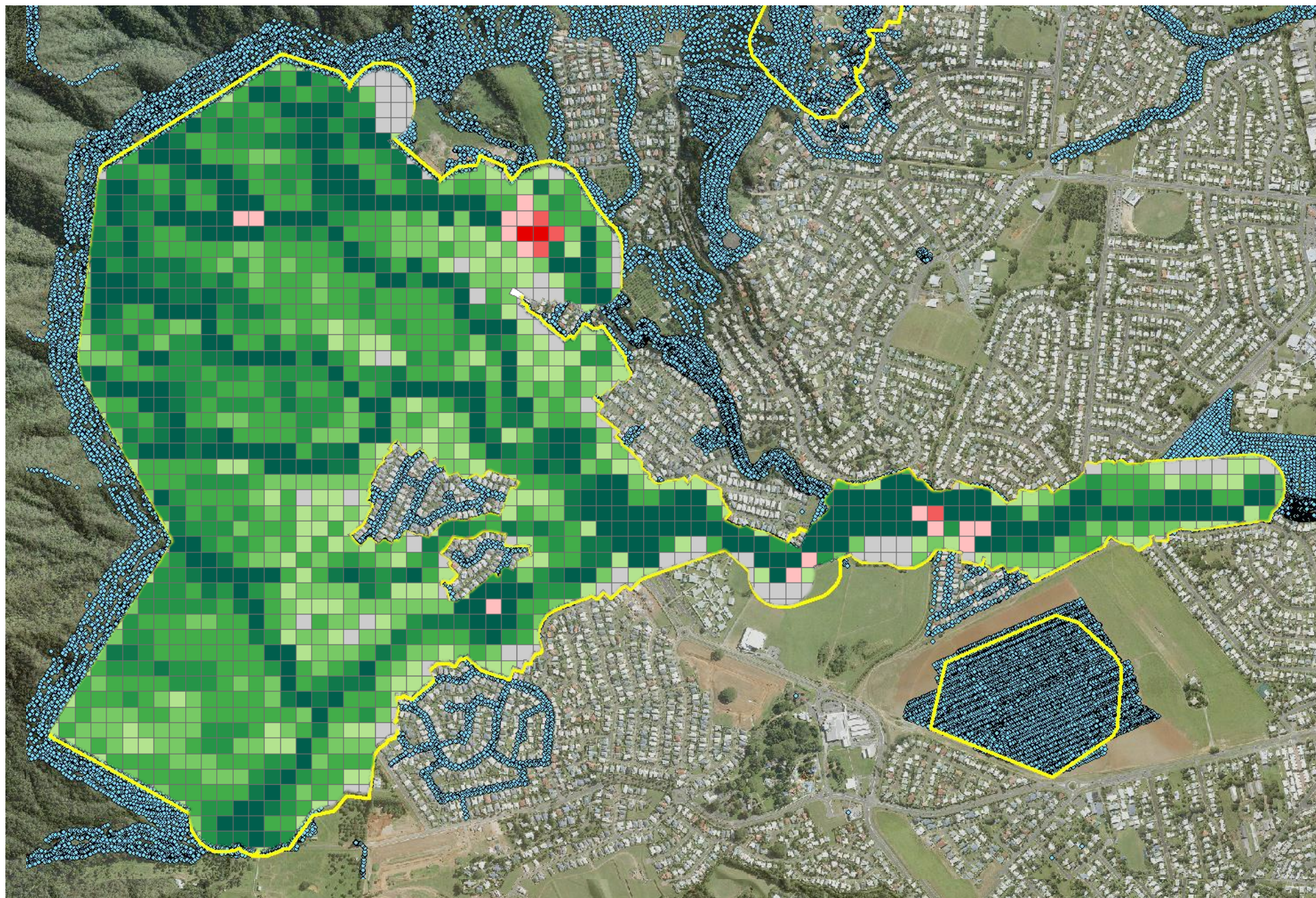
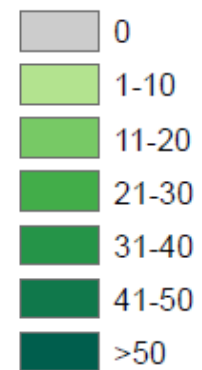




### YCA Presence



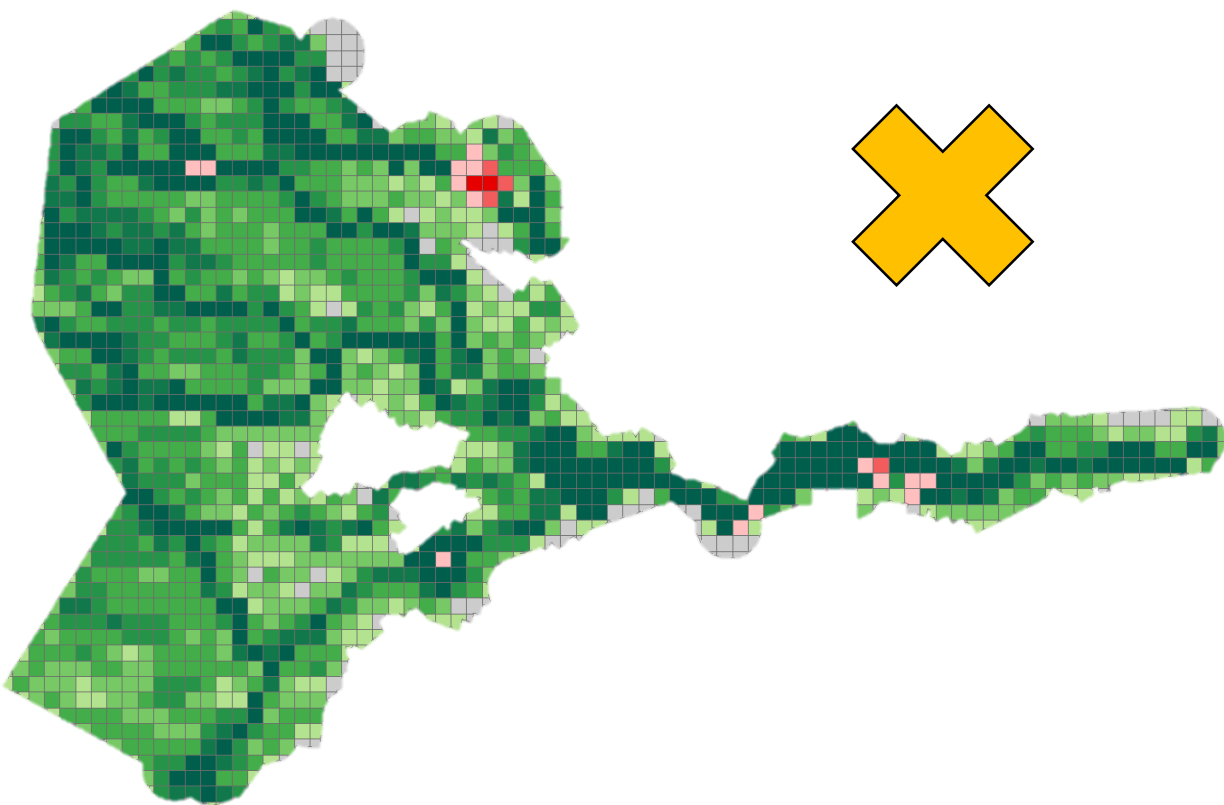
### YCA Absence (points per cell)



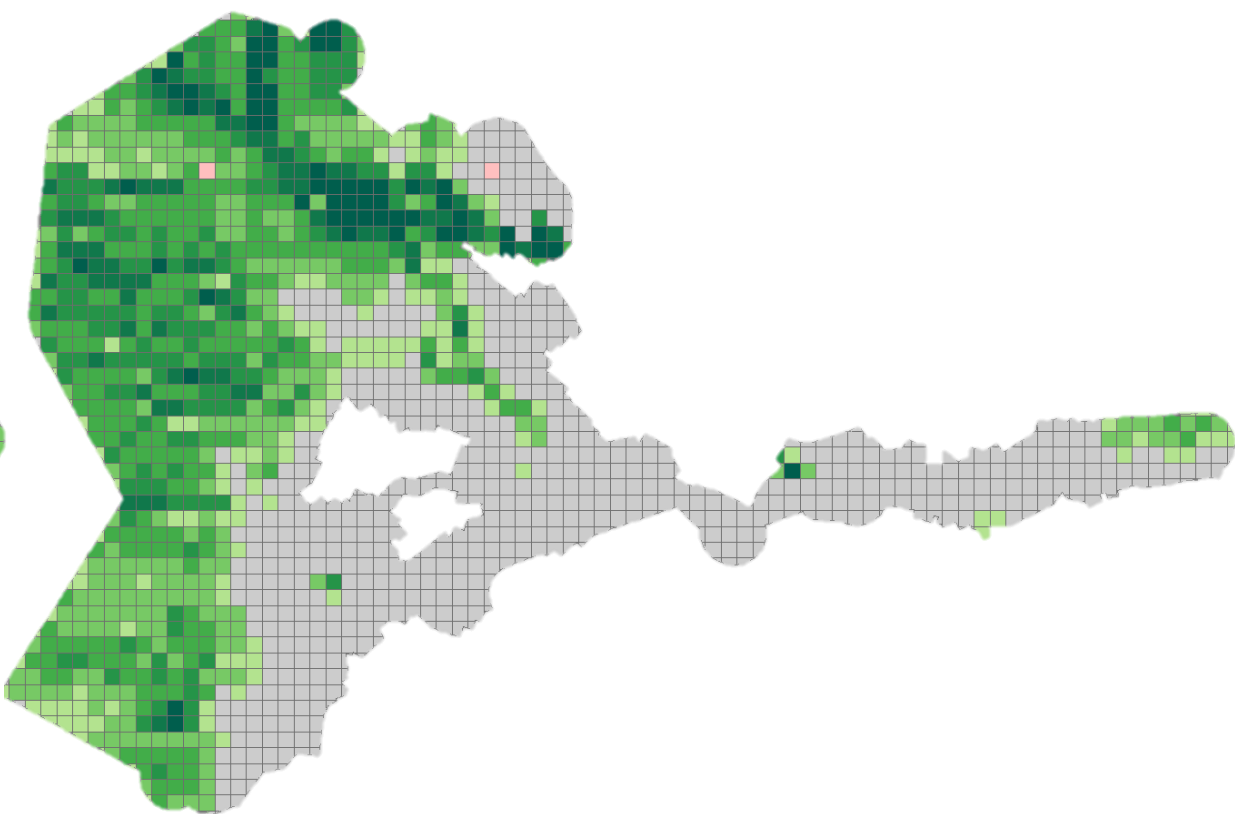


# How we track eradication – comparative survey analysis

Survey 1 – April 2018

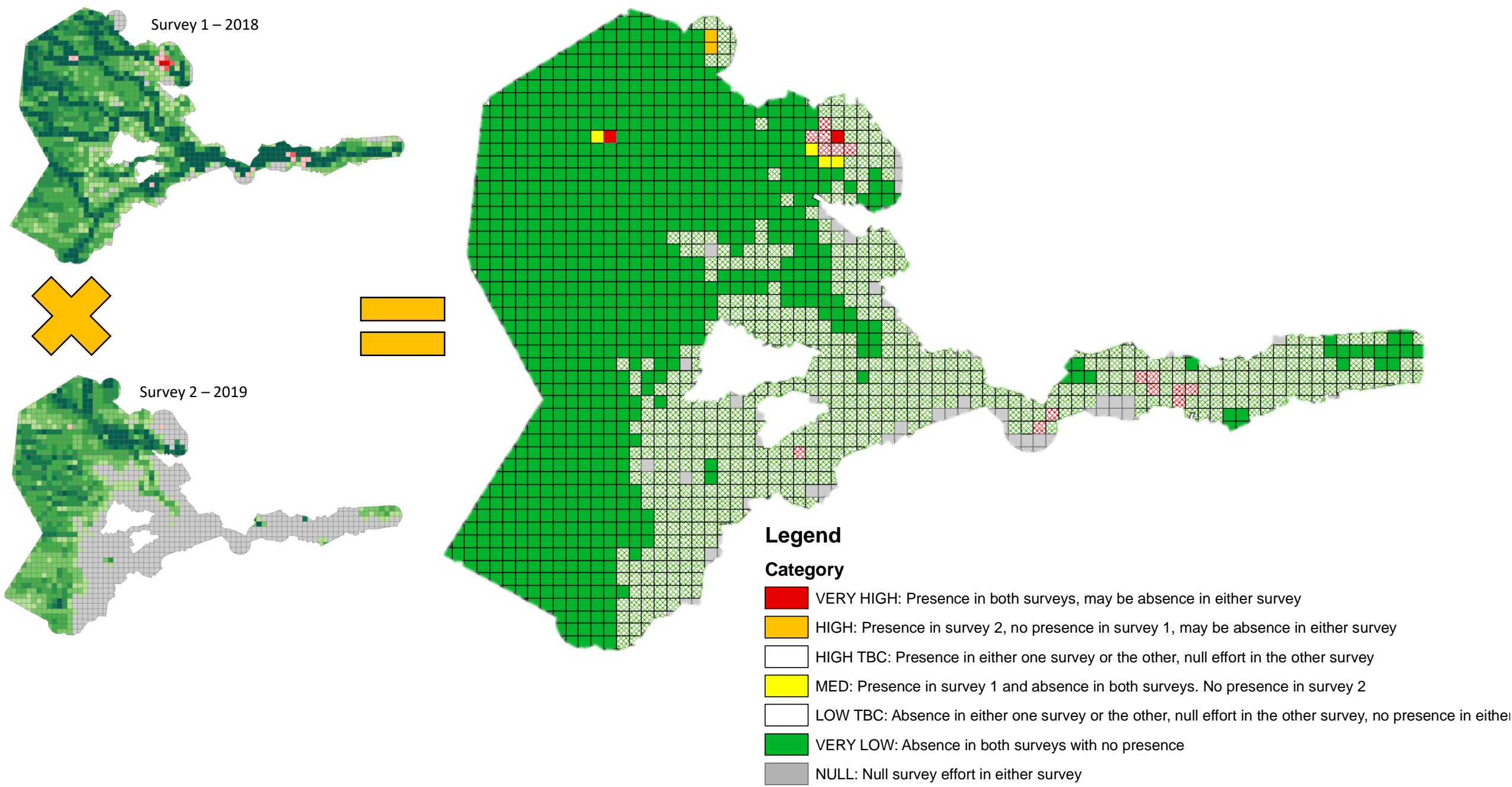


Survey 2 – September 2018





# How we track eradication – comparative survey analysis



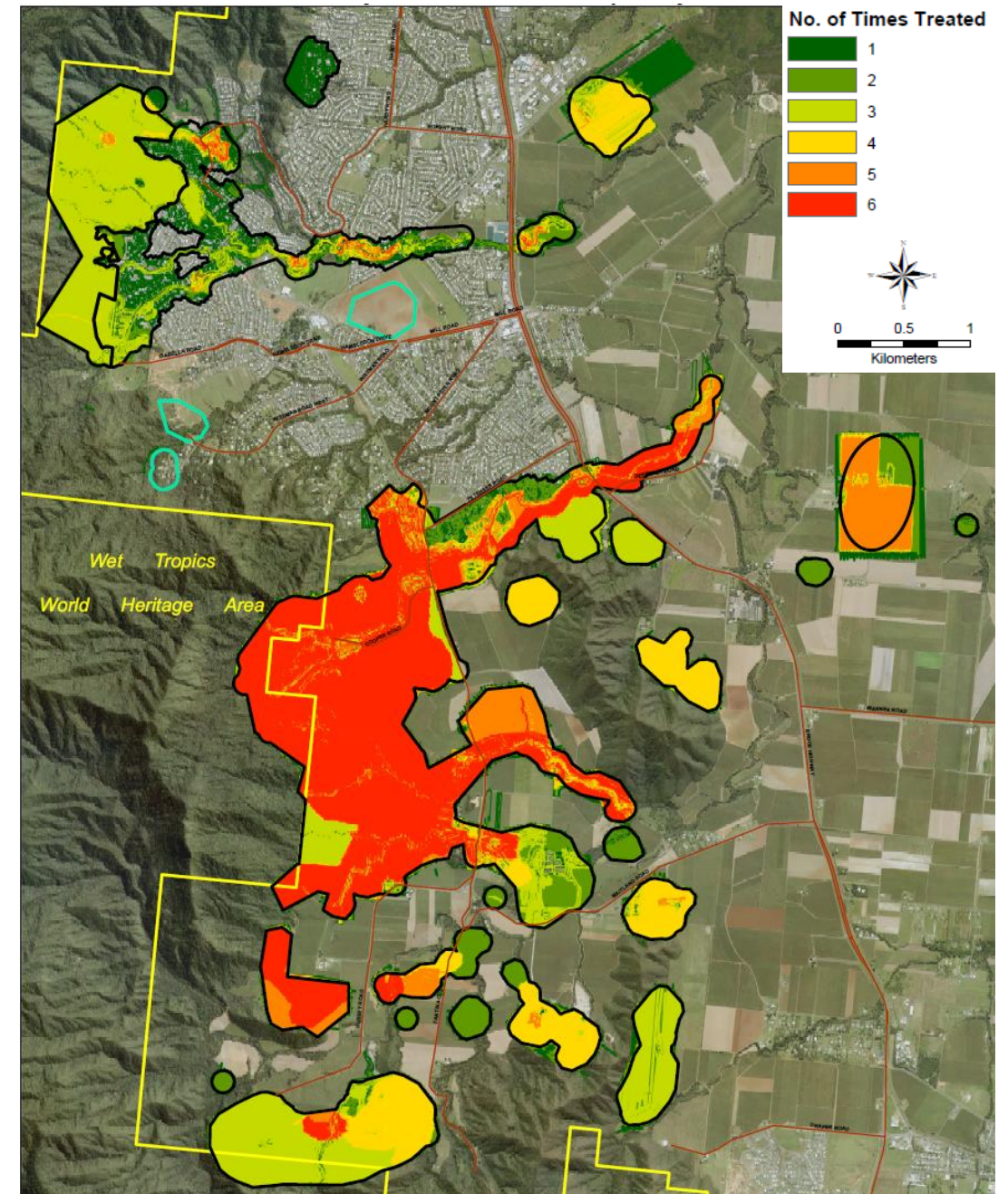


# How we track eradication – treatment frequency analysis

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!





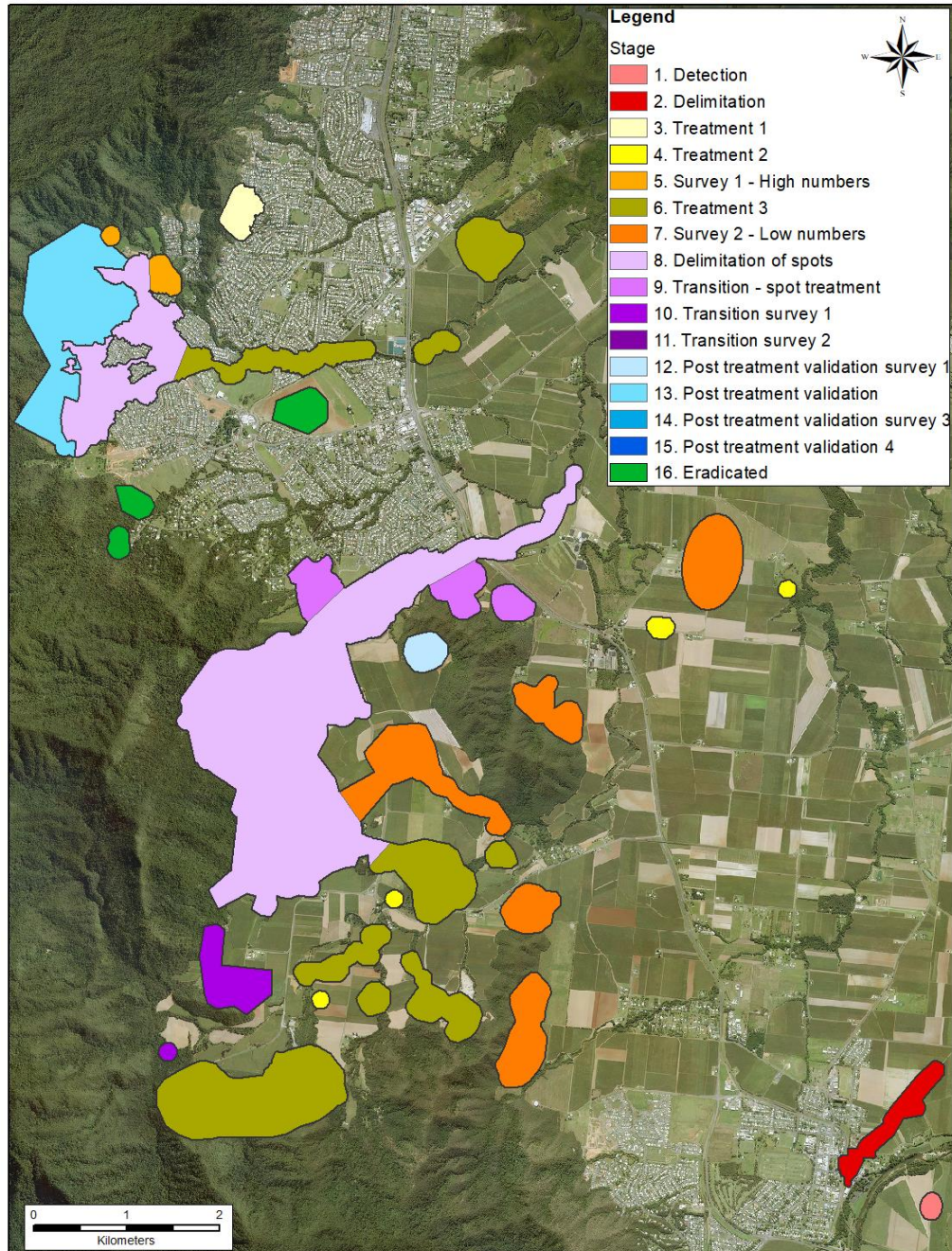
# Data informs decision making

Internal program management, reporting, making decisions





## Yellow crazy ant area stage tracking



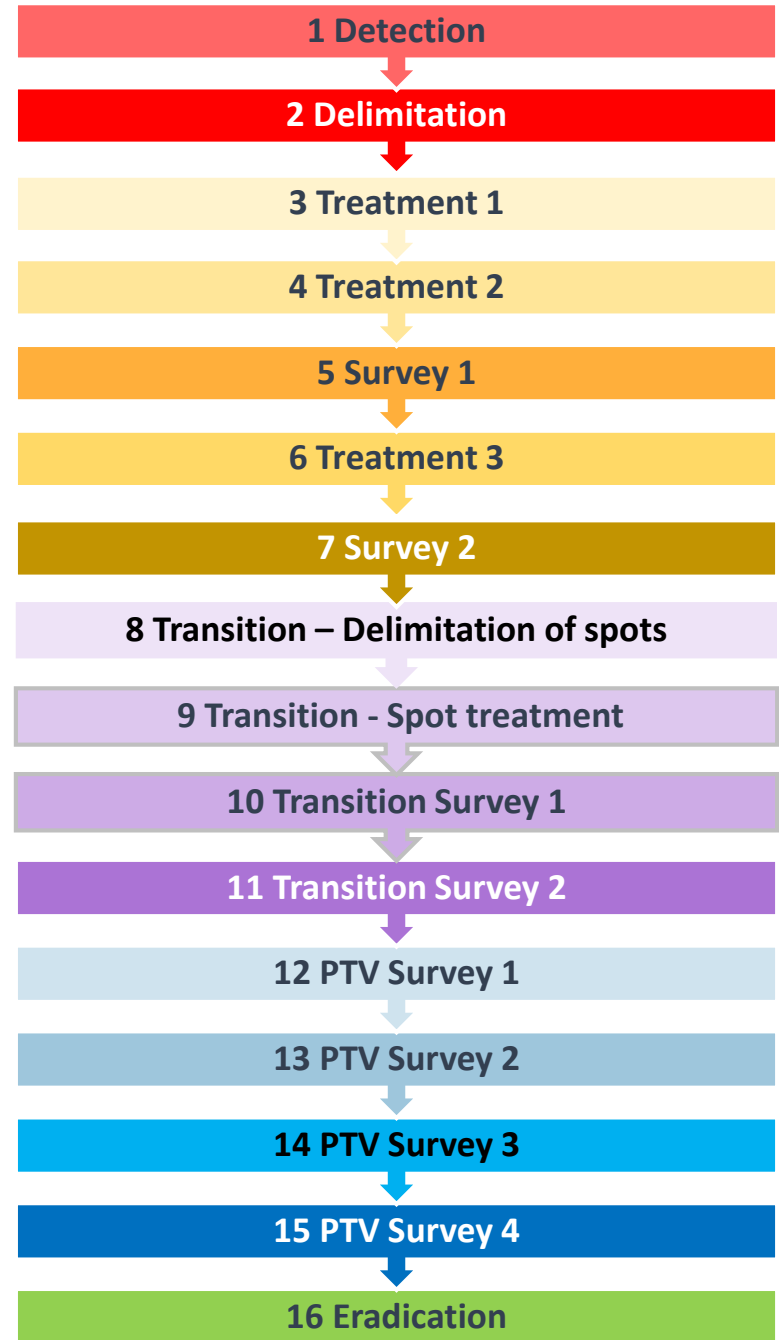
**Detection & delimitation**  
( 1 -2 months)

**Broadscale treatment**  
(at least 12 months)

**Transition**  
(at least 6 months)

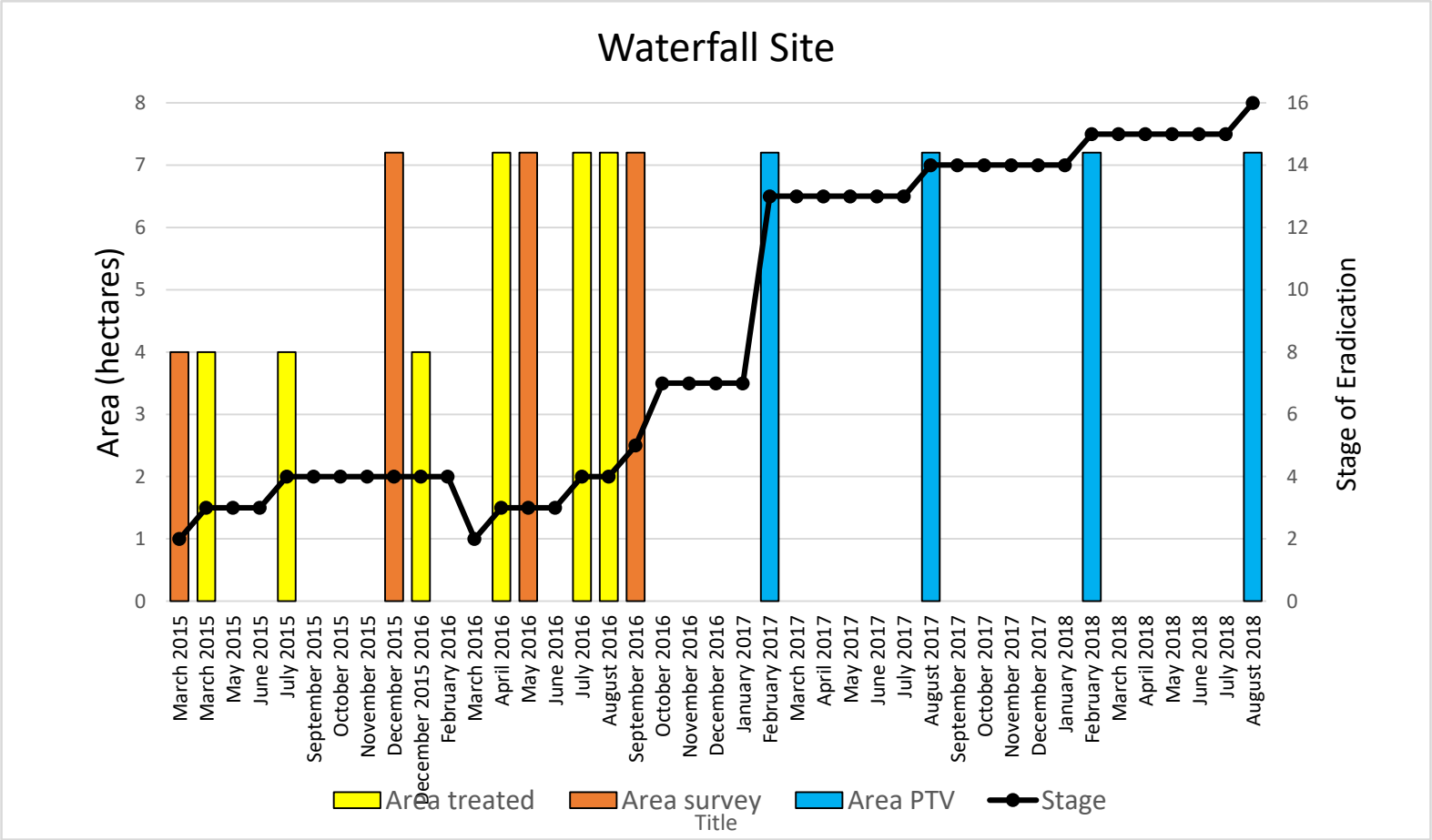
**Post-treatment validation**  
(at least 24 months)

**Eradication**



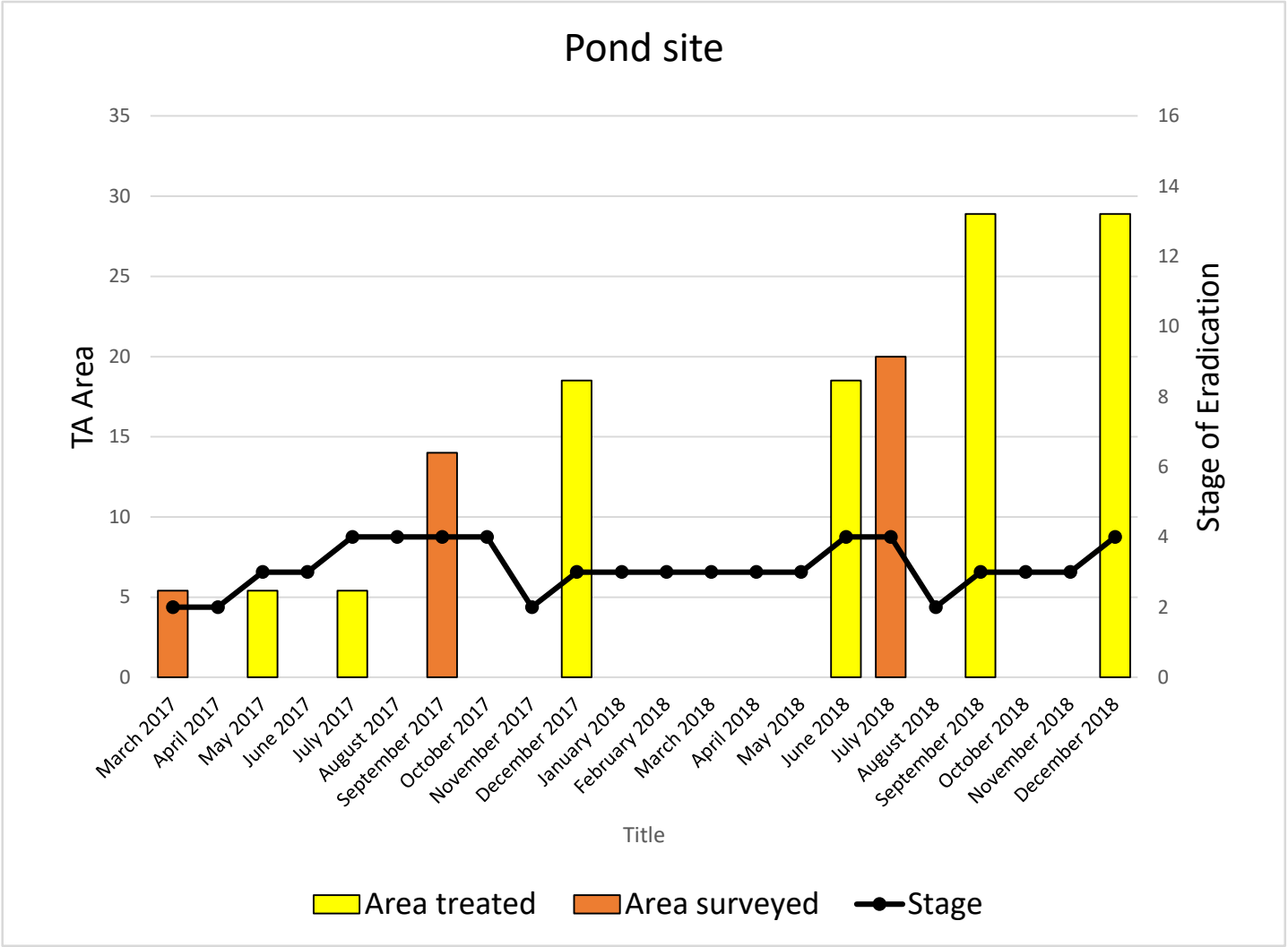


# How we track eradication- Example; Waterfall Site



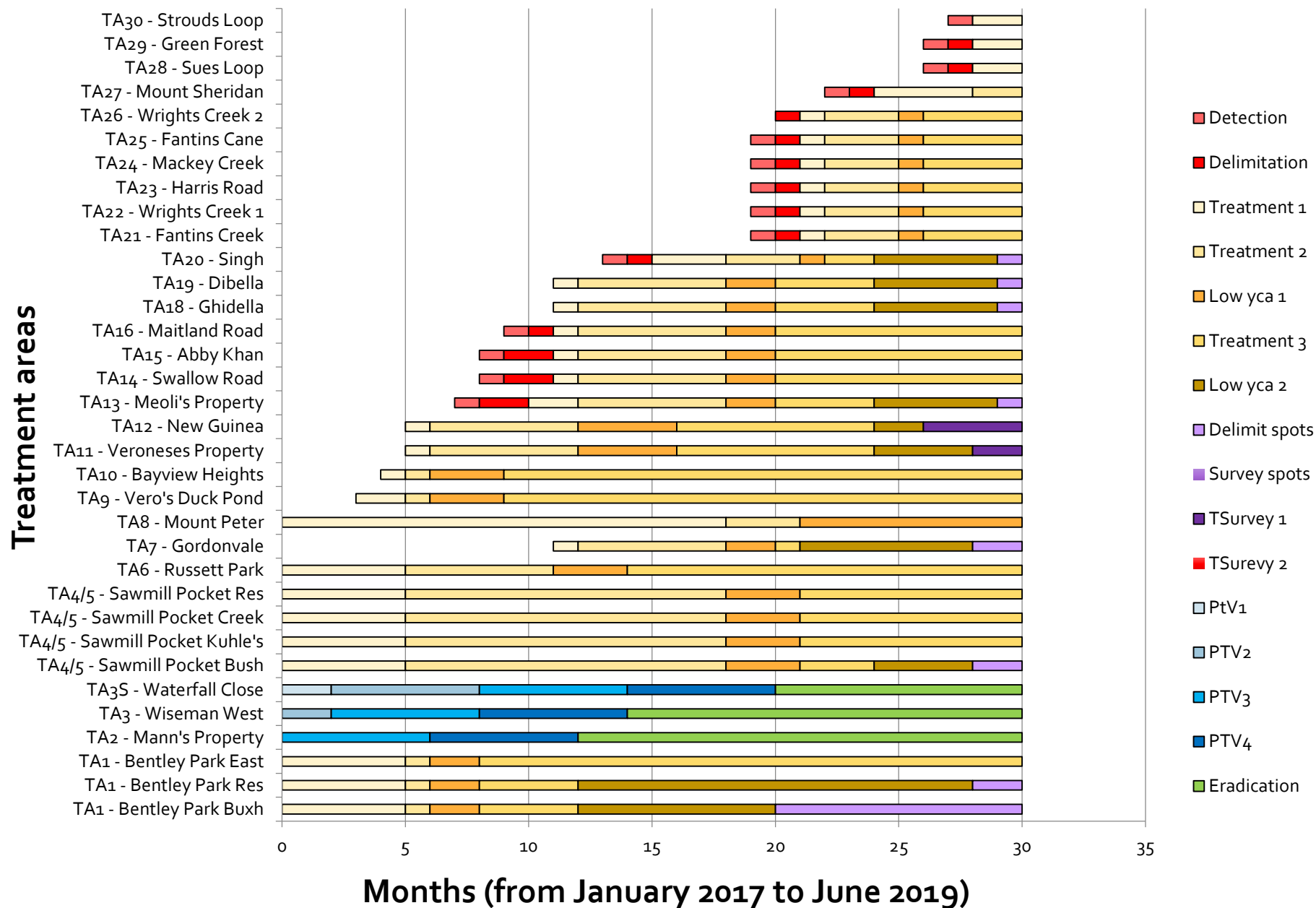


# How we track eradication- Example; Pond site





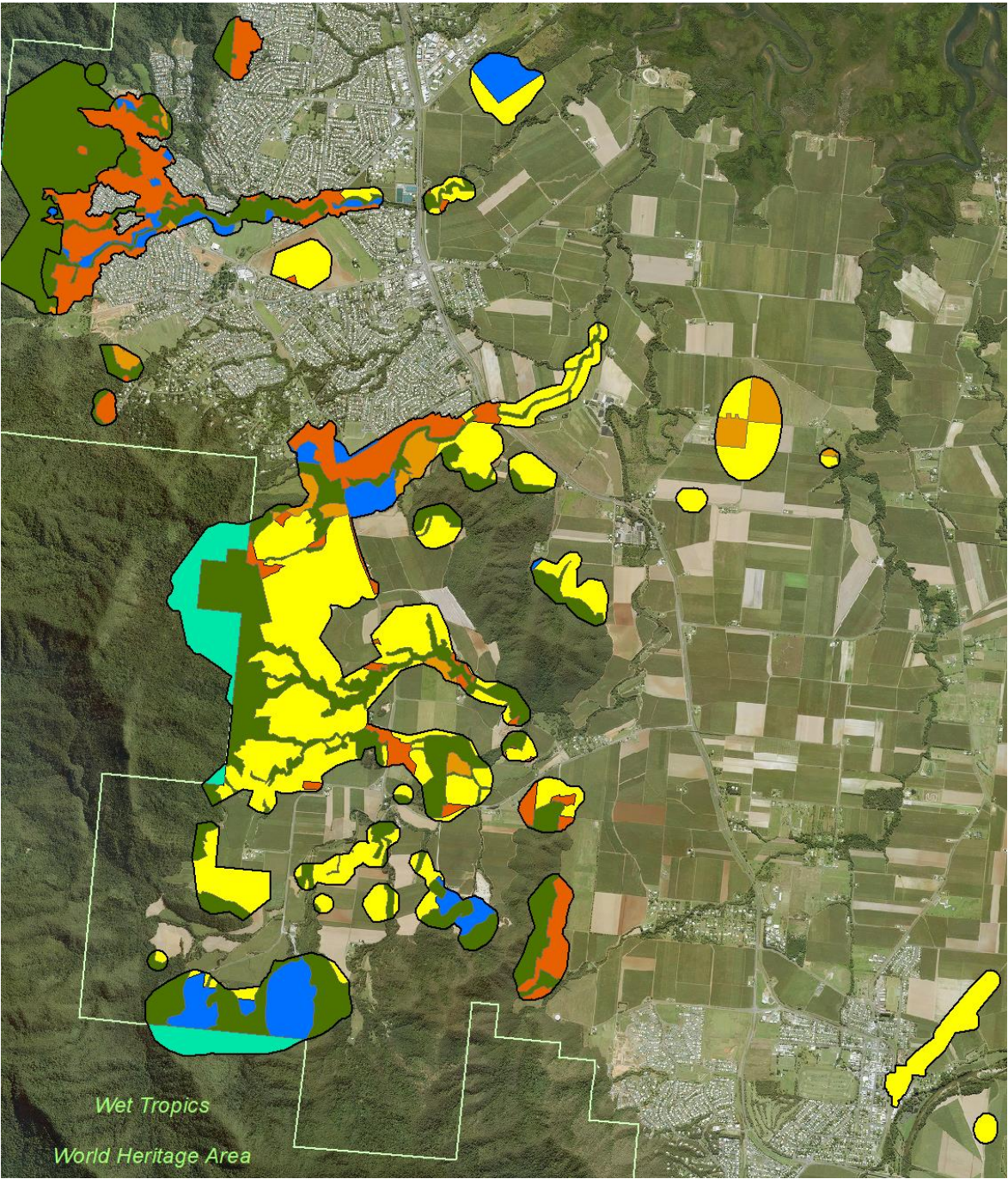
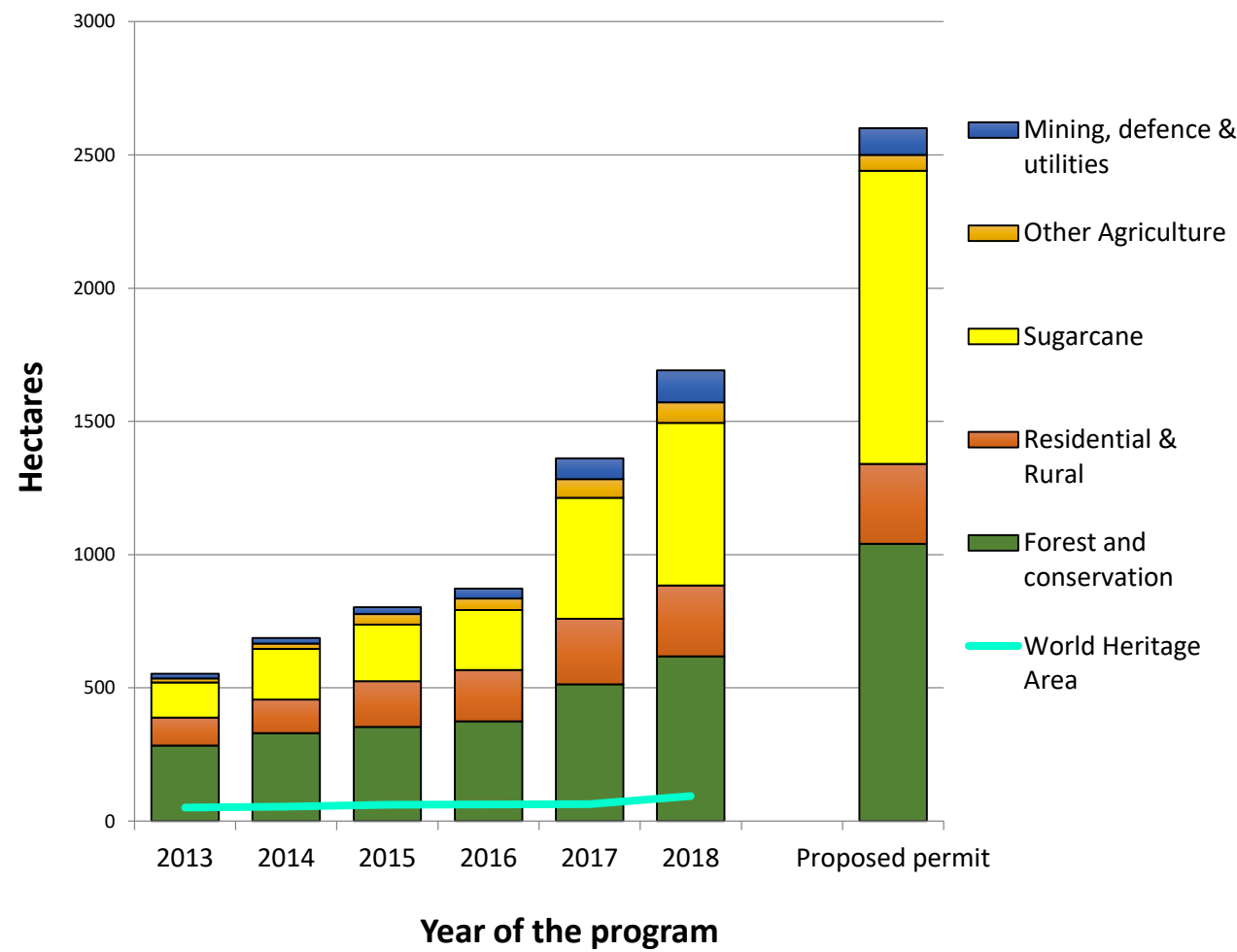
# Detection to eradication. Keeping track





# Challenge – yellow crazies in cane

Major land cover types within the treatment area



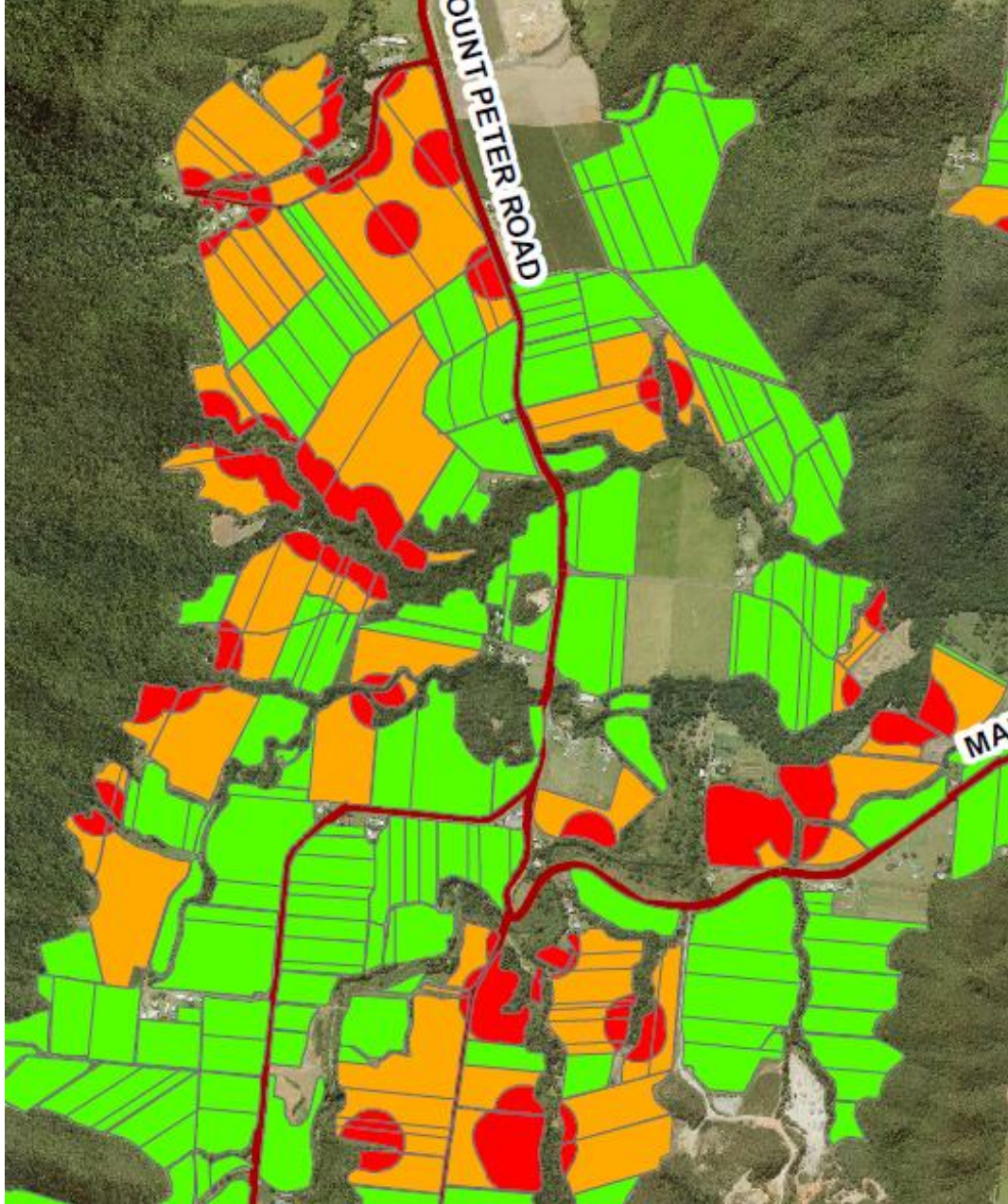


# Challenge – yellow crazies in cane

Collaboration and data sharing  
with sugar industry

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

Developed risk management too  
together.





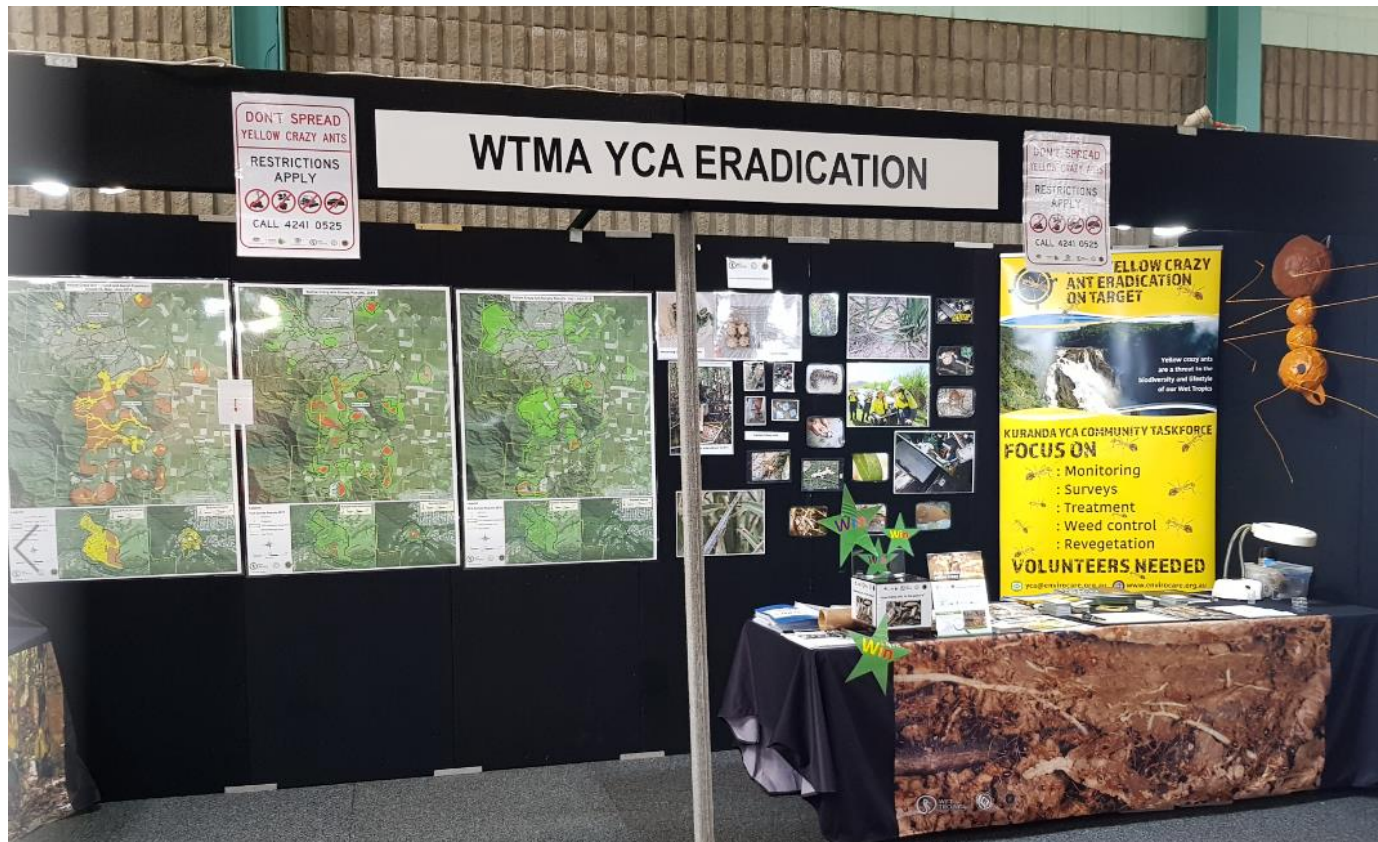
# Data presentation

Getting the data products out there to the community



Queensland Government

Queensland Spatial Catalogue - QSpatial





# Questions



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