

Hop Nation: The Science of Slowing the Spread

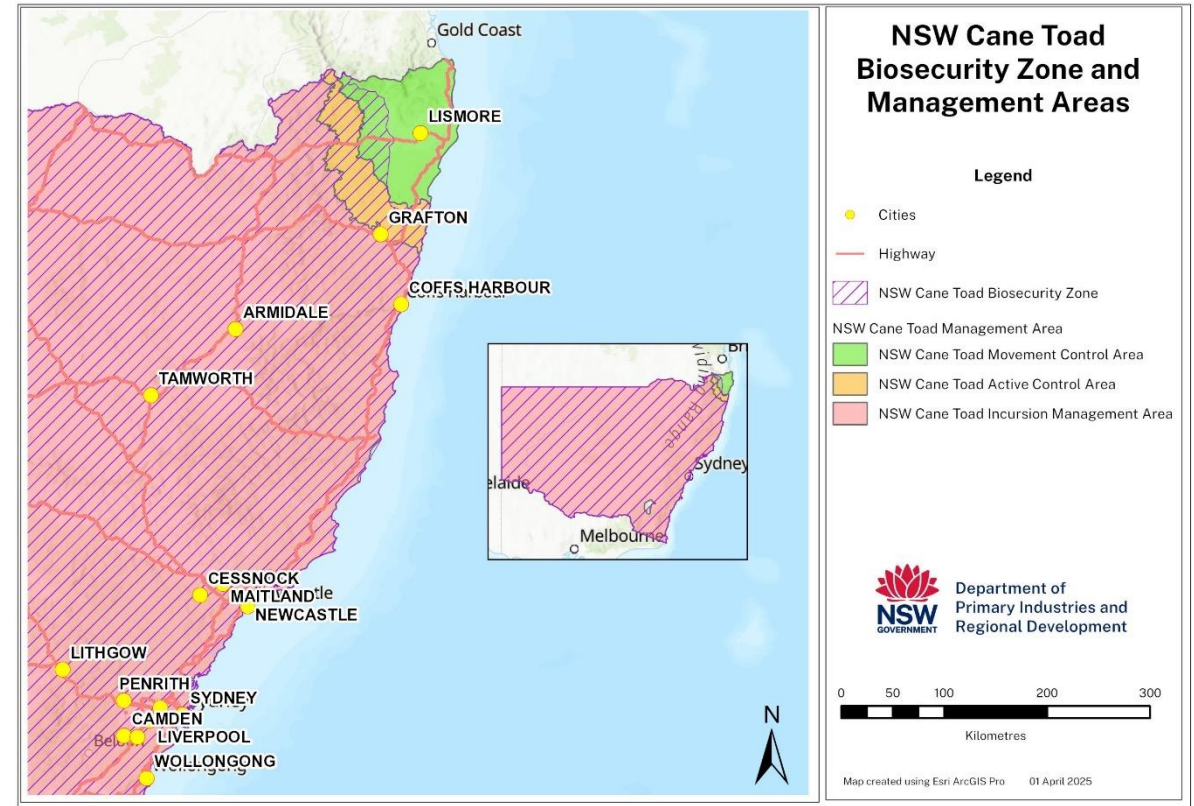


Lisa Wellman Invasive Species Officer NSW DPIRD

NSW Cane Toad Biosecurity Zone

- 2017 - NSW Biosecurity Act
- 2019 - NSW Cane Toad Biosecurity Zone
- Modifications to existing boundaries
- General approach to cane toad management
 - Movement Control Area (green)
 - Active Control Area (amber)
 - Incursion Management Area (shaded red)

Approximately 98% of NSW that currently free of cane toads.



The year that was: 2024/25 breeding season

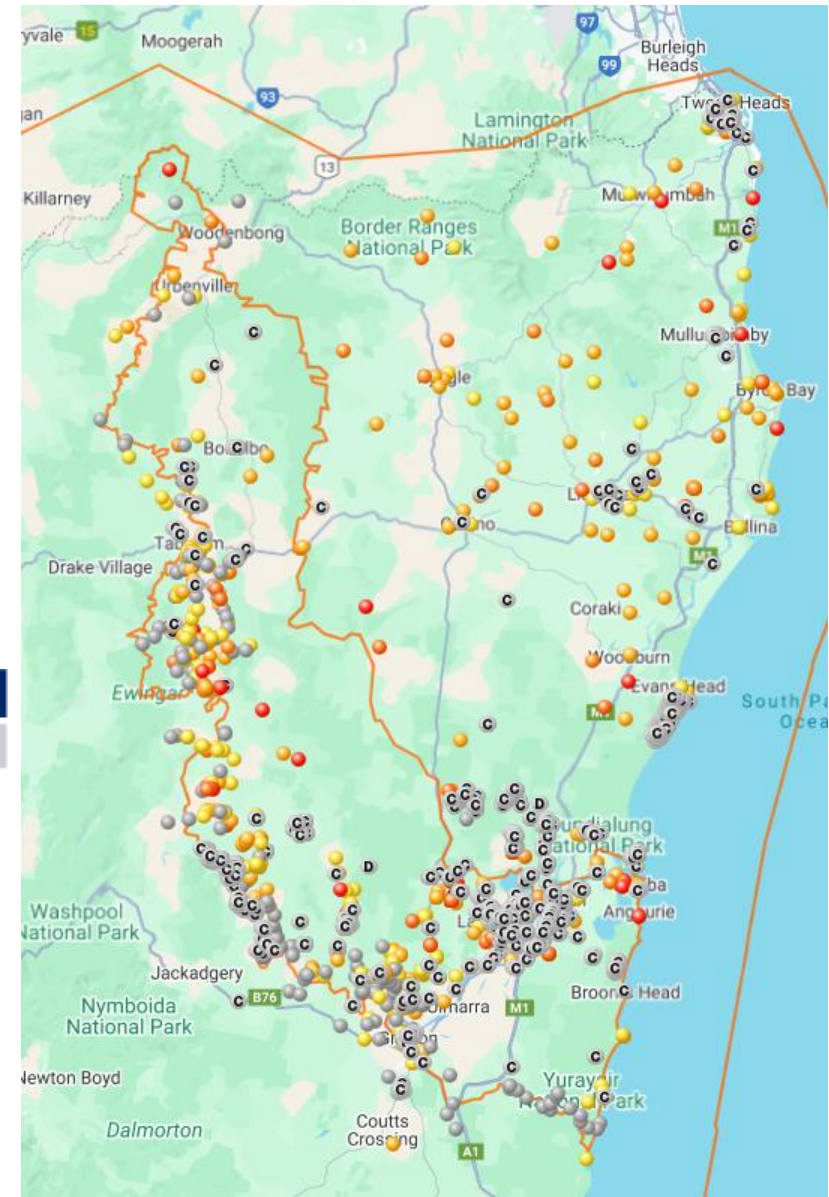


- Commenced on 28 August 2024
- 2025- July breeding on the coast.

NSW	2022/2023	2023/24	2024/25
Total reports	2200	3437	3511

Reports from 16 July 2025

- Grafton Regional Waste Facility.



Challenges and Issues

- Expanding areas of distribution
- Raising awareness of the need to report
- Complacency of landholders to report
- Changing weather conditions
- Westward movement
- Availability of tools

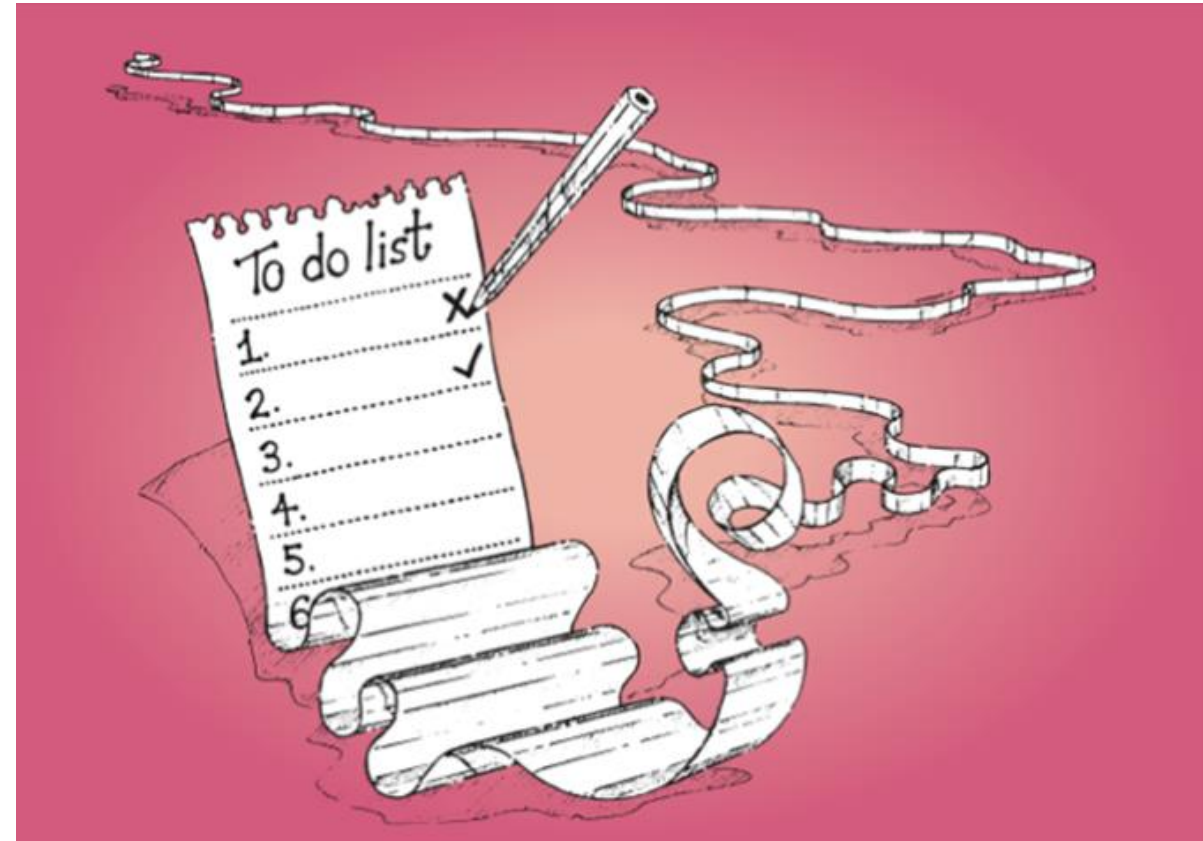
AND THE BIGGEST ISSUE

- **Resourcing challenges**



Same issues as for widespread pests

- Ageing landholders
- Absentee landholders
- Perceptions
- Time poor and competing priorities
- No broad application control tool
- Financial constraints



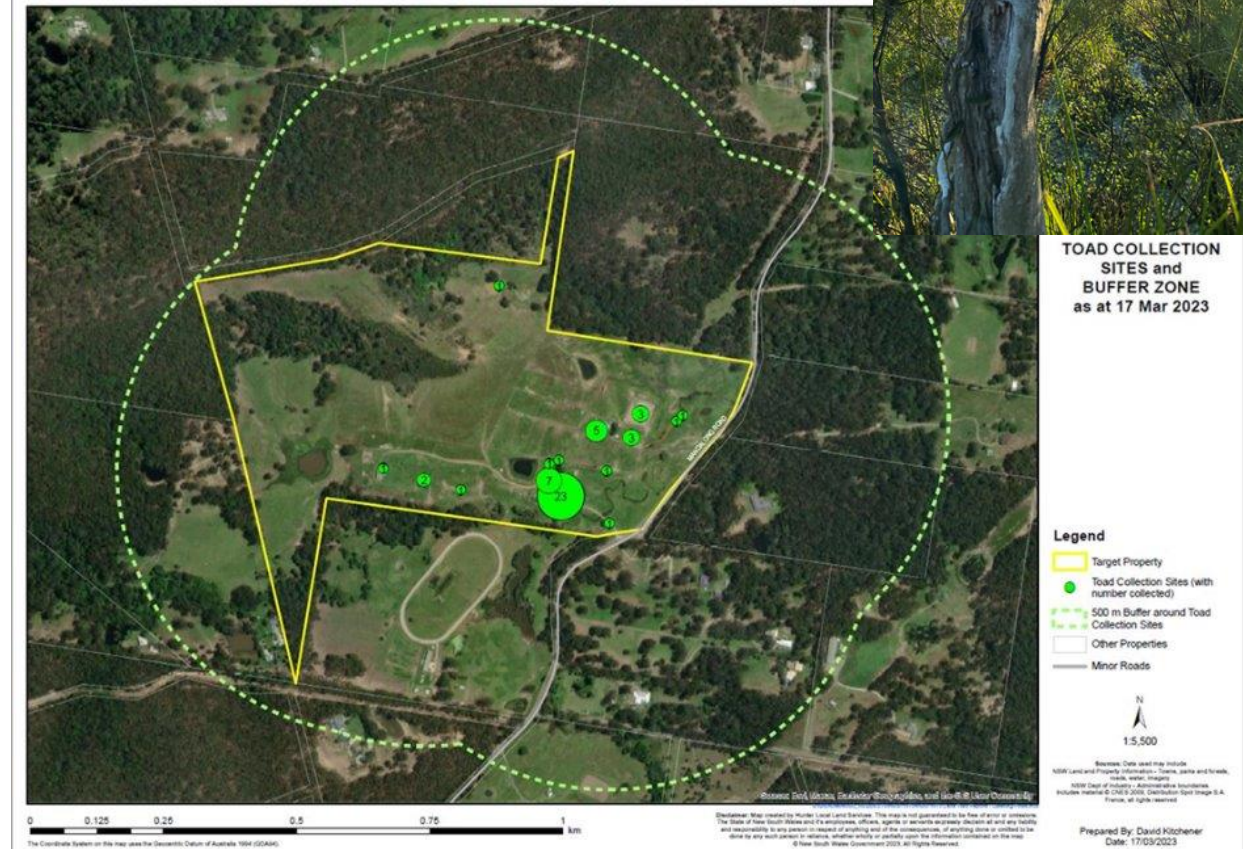
What are we trying to do?

- Respond to reports
- Collaborate with Industry groups, government and community to report detections and identify high risk pathways
- Strategic approach
- Prioritise management actions

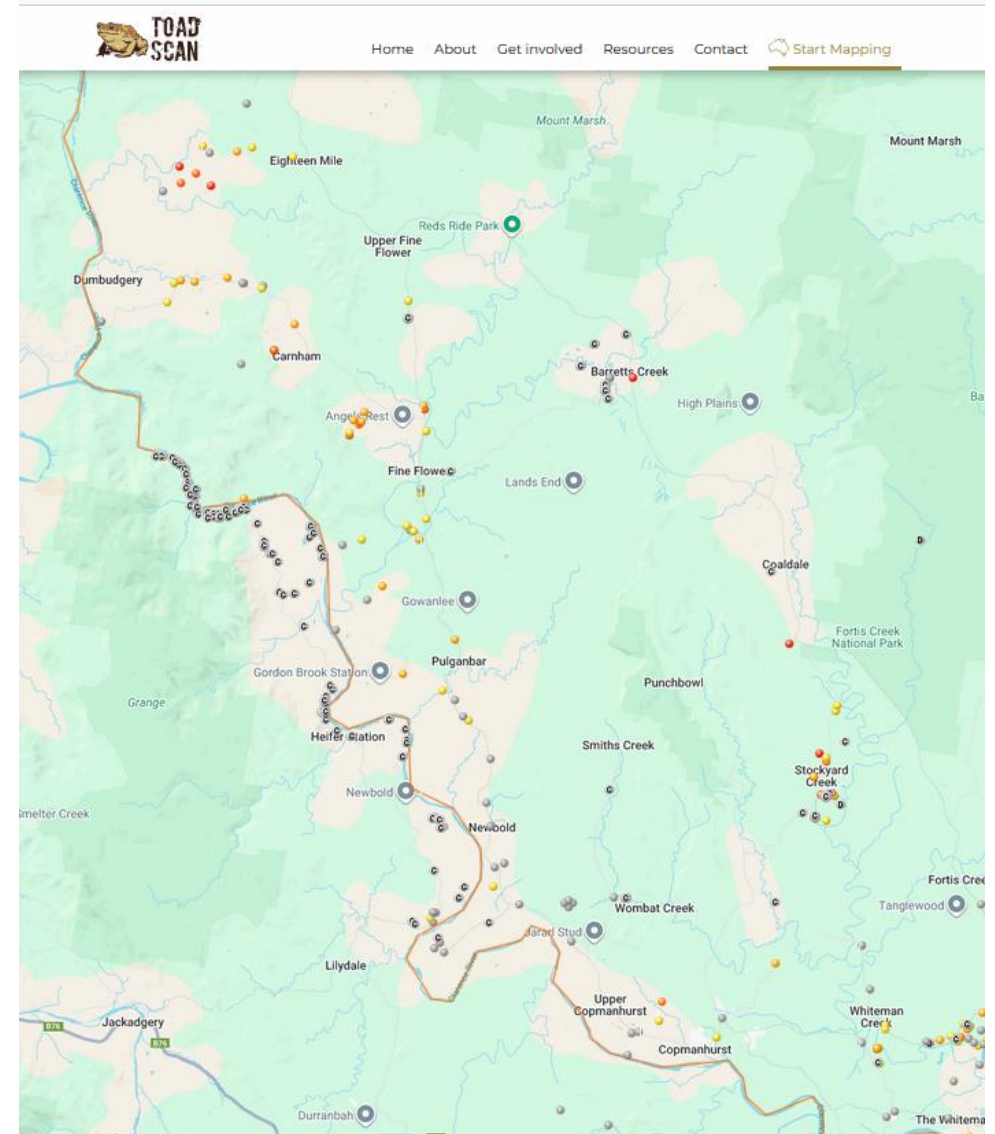


Management Response Program - Mandalong

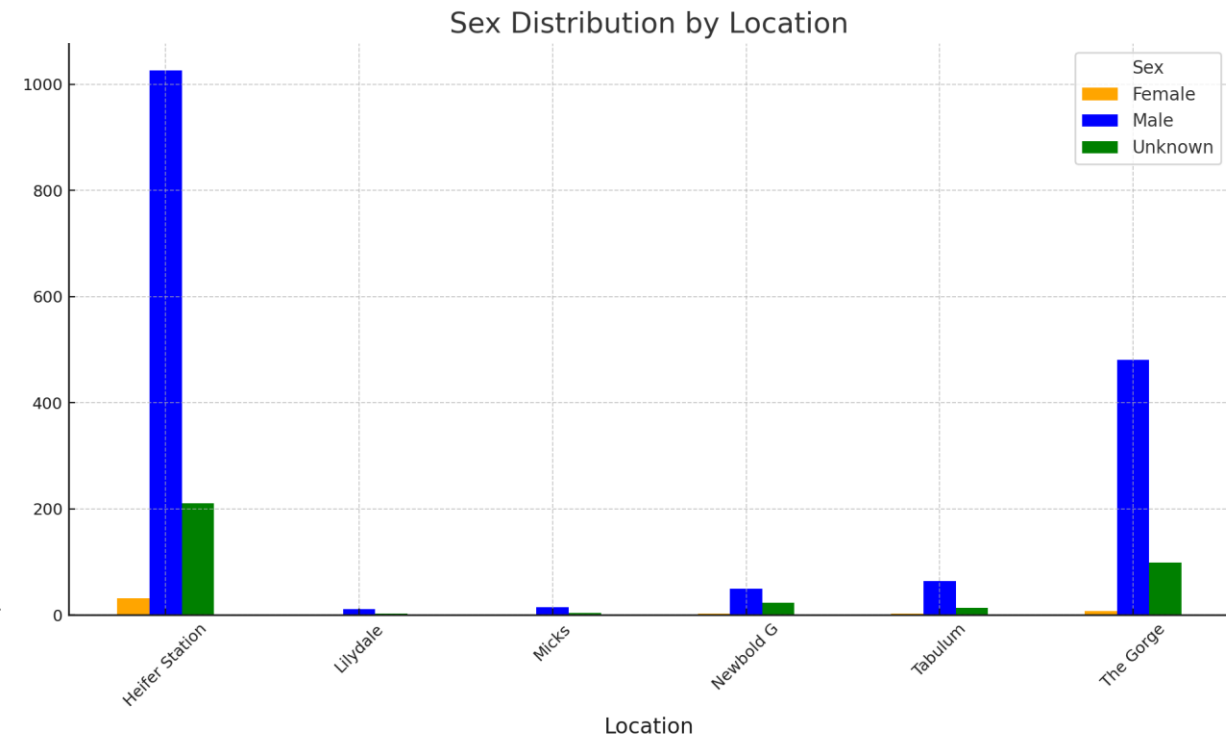
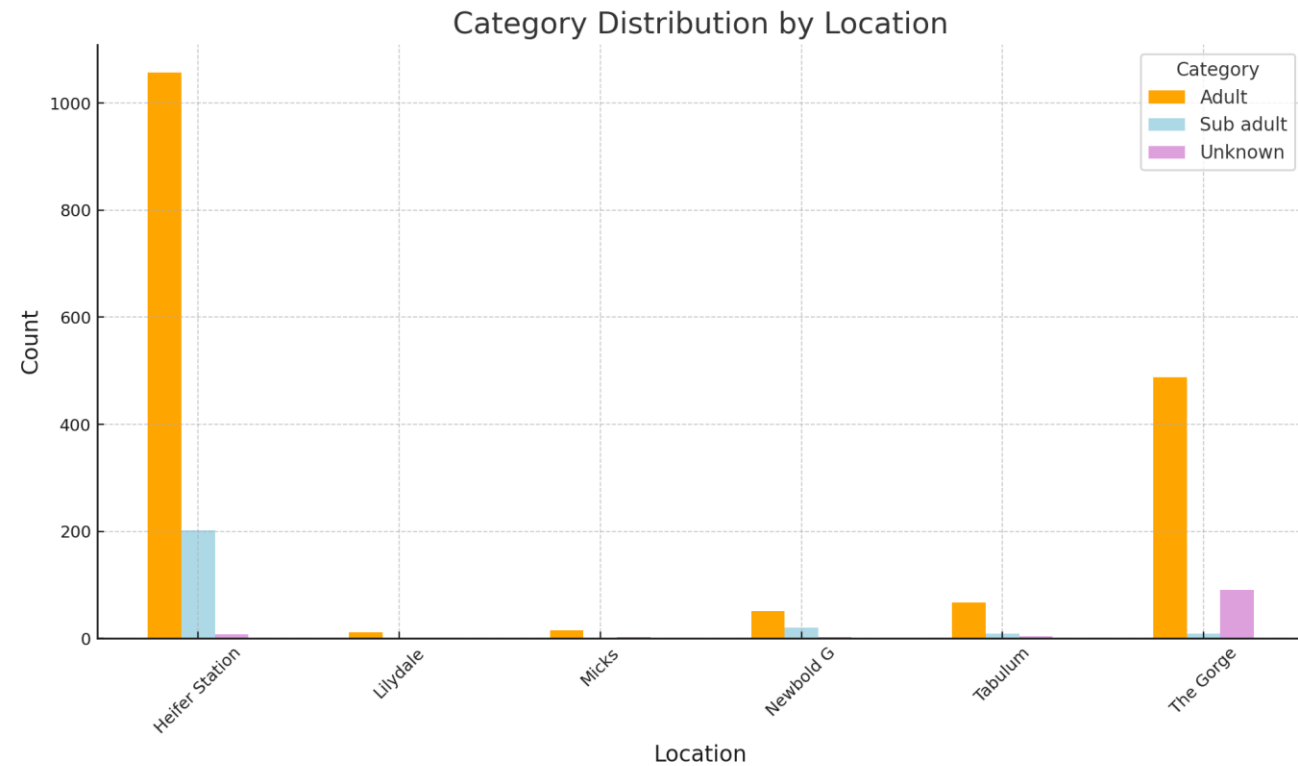
- Year 4 or season 4 of surveillance
- 53 individual toads
- Last toad caught: 15 May 2024 female
- Song meters deployed
- James Cook University recogniser
- 2 detections last season: 15 February, 14 April 2025
- Surveillance duration and frequency
- DNA of toads revealed most likely a single incursion event and undetected



- First detected 24 December 2024
- 7 properties covering approx. 30 km of Clarence River frontage
- Over 3000 individuals (February to May 2025)
- 605 at Clarence Gorge, 2392 at Heifer Station, Newbold Grange 165, Lilydale 28 (3 properties)
- Most likely swimming across river
- Wet conditions assisted with the spread
- Higher proportion of males to females across all locations
- Recommended late September, 813 toads caught



Management Response Program - Clarence Gorge

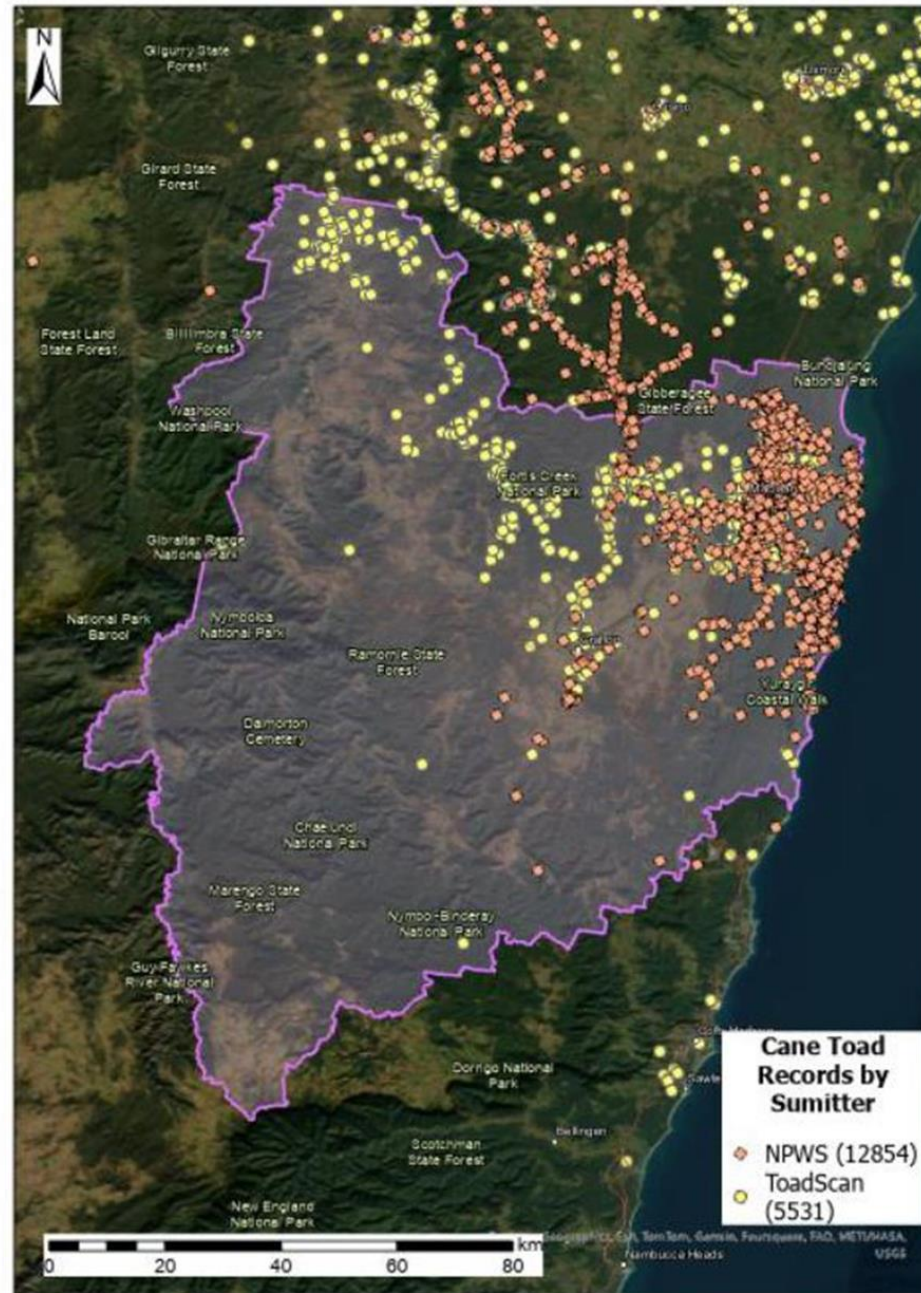


Management Program - Grafton Regional Waste Facility



- Opened 2015
- Owned and managed by Clarence Valley Council
- Approx. 130 animals removed
- Includes a green waste, metal and recyclables
- Clarence Valley LGA approx. 10,441 square km
- Key location of waste facility
- Ongoing incursions
- Draft Site Management Plan
- Expansion of toads across LGA





Cane toad DNA work

- Genetic fingerprinting of individual toads using single nucleotide polymorphisms (SNPs).
- Technique generates tens of thousands of independent genetic markers from across the genome of the toad.
- Useful for determining parentage, relatedness, and putative source populations.
- Valuable in monitoring the spread of toads across the landscape and distinguishing between natural and human assisted dispersal.

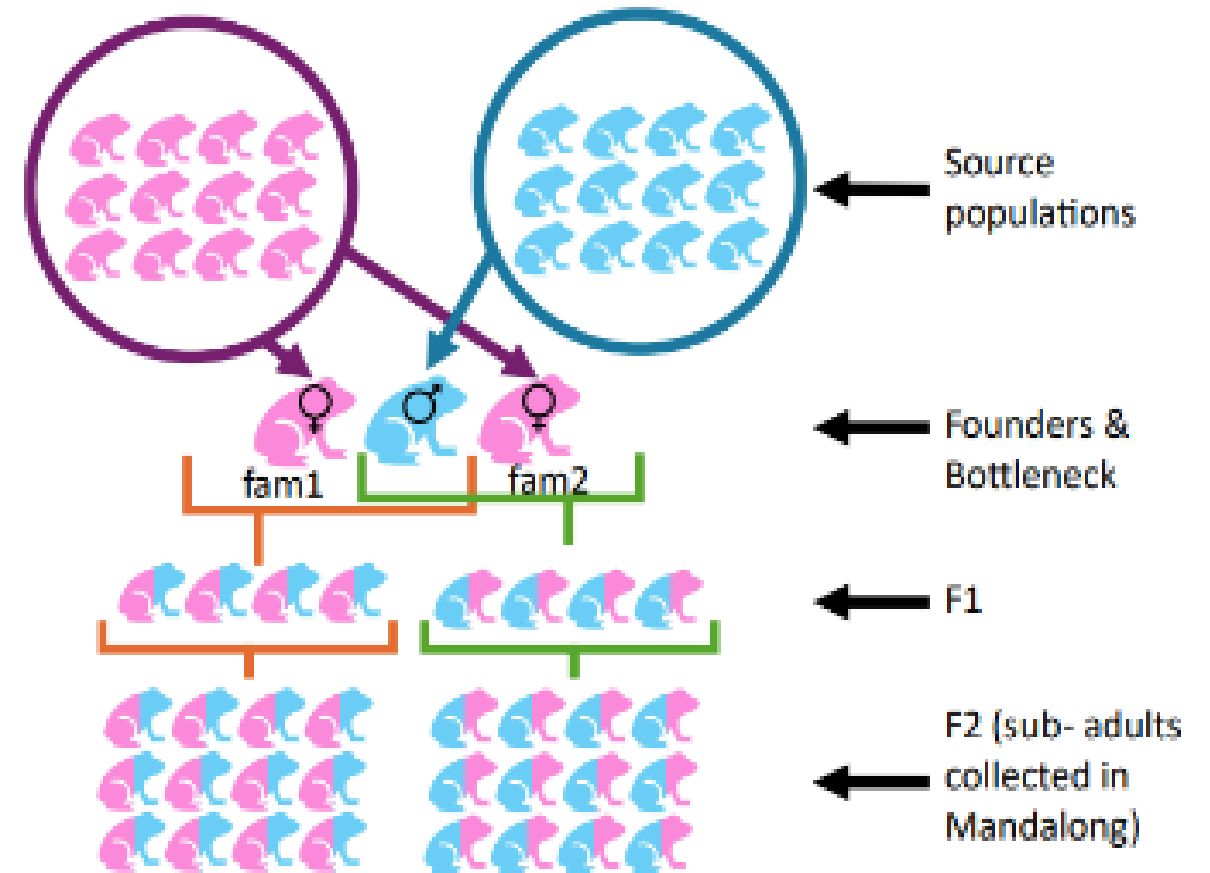


Figure 1 | Diagram illustrating the possible demographic history of the Mandalong population.

Challenges and Opportunities - Tools and techniques

Toadinator ® Traps

- Used by landholders
- Sound and light attractant
- Capturing both males and females
- Requires daily checking
- Placement away from lighting
- Protection from livestock
- Can be placed at water's edge
- Females lay eggs in traps
- Issues with caller units
- Cost prohibitive to landholders



Photo credit: Terry Moody Upper Clarence Combined Landcare

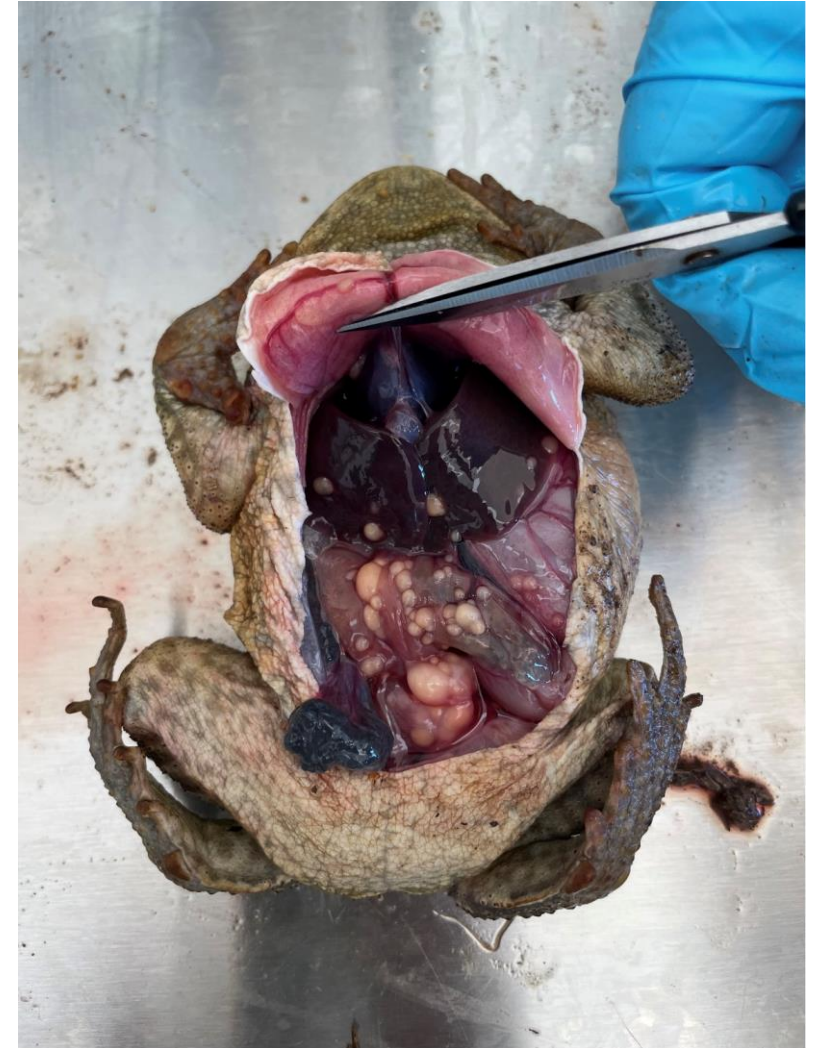
Lessons learned: Dissect toads with care



Prepared by Dr Matt Greenless 2023
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Cane toads suffer from sparganosis

- Caused from tapeworms
- Eggs are passed in faeces and hatch when contacting water.
- Non fish vertebrate hosts can be reptiles, amphibians, birds or mammals.
- Humans can become infected if ingested, or through open wounds.



cysts and lesions

Help keep NSW 98% cane toad free

A Call to Action

- Commitment from all levels of government and collaboration to ensure a strategic coordinated approach.
- Adequate funding and resources
- Greater community engagement and participation



Acknowledgements and thank you

Thanks go to -

- The Feral Scan team!
- Various LLS Regions!
- Our experts Australian Museum and Matt Greenlees
- Landholders who actively engage and participate
- Councils and other agencies NPWS/Dept of Defence
- Committed contractors
- Landcare for continuing to support the education and awareness of toads

- Last but not least the NIA team!



Look out, CANE TOADS may be about

Protect what we love... Prevent the spread of cane toads

Suspected cane toads should be photographed, carefully contained and reported.

- Check your vehicles when travelling from a known cane toad area
- Protect our native wildlife from invasive species
- If you think you have seen a cane toad:

- Contain it - don't harm it
- Take photos to assist with identification. If handling a toad, wear rubber gloves

REPORT IT

Keep suspected toads in a well-ventilated container with a little water in a cool location while we determine the species

Download the FeralScan app from Google Play or the Apple App Store or alternatively report sightings via the FeralScan website by scanning the QR code.

Report online or via the FeralScan App

NSW GOVERNMENT

Scan the QR code for more information or visit dpi.nsw.gov.au/cane-toad

Identifying features:

- HORIZONTAL SHAPED PUPIL
- EAR DRUM
- PAROTID GLAND
- RELATIVELY DRY, SLIMY SKIN, CREAM, YELLOW, REDDISH BROWN TO NEARLY BLACK
- MOTTLED CREAM BELLY
- HARD RIDGES ABOVE EYES JOINING AT SNOUT
- UNWEBBED HANDS
- NO TOE PADS, WITH LEATHERY HALF WEBBING BETWEEN TOES