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# What is Citizen Science?

Professional researchers engage the public to collect or analyse data within a cooperative framework of research and education

# 3 examples of citizen science

1. Christmas Bird Count
   27 observers to 70,000+ (LeBaron 2007, 2013 )
2. CoCoRaHS (Community Collaborative Rain, Hail, and Snow Network)
   7,500 precipitation reports a day
   (Cifelli et al. 2005)
3. Galaxy Zoo
   1 million+ participants
   100 million+ galaxies classified
   (Raddick et al. 2009b; Lintott et al. 2010)

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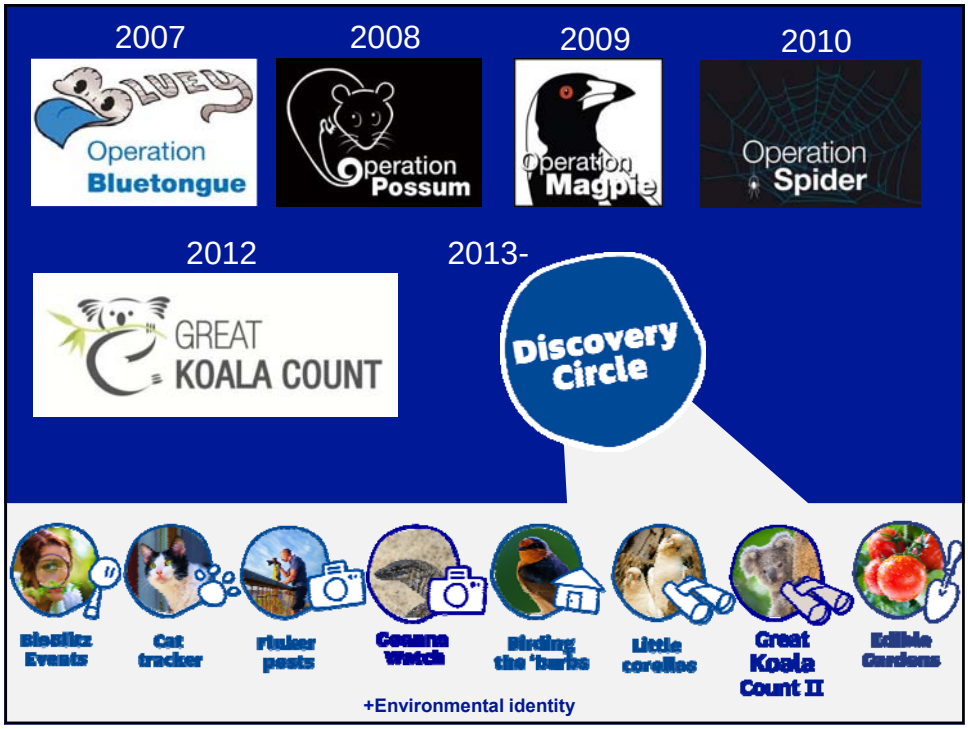


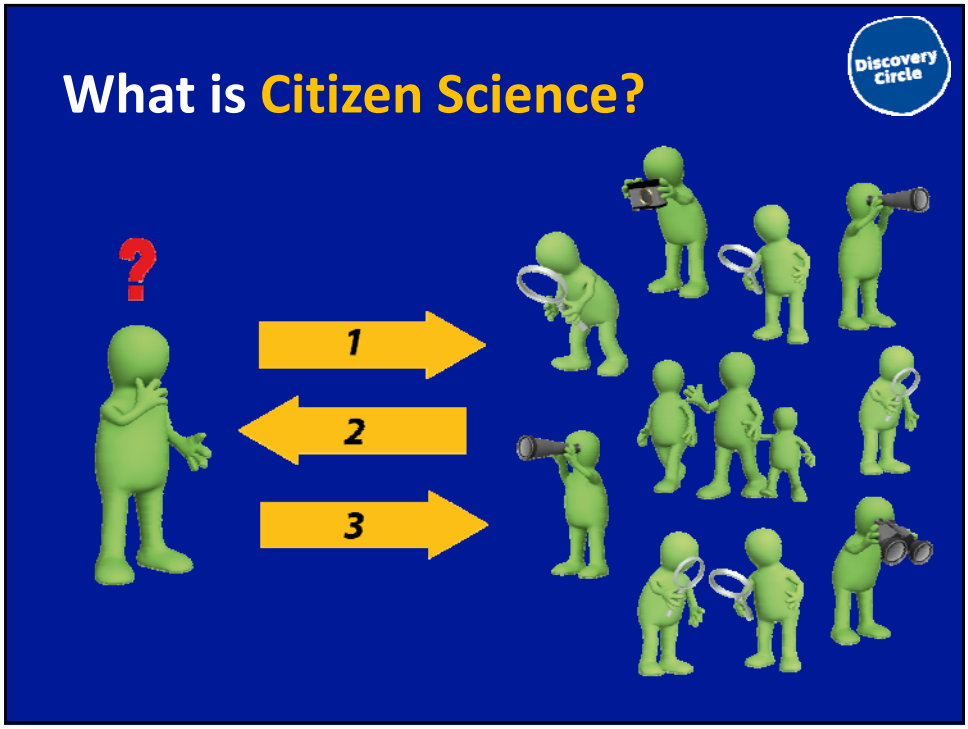


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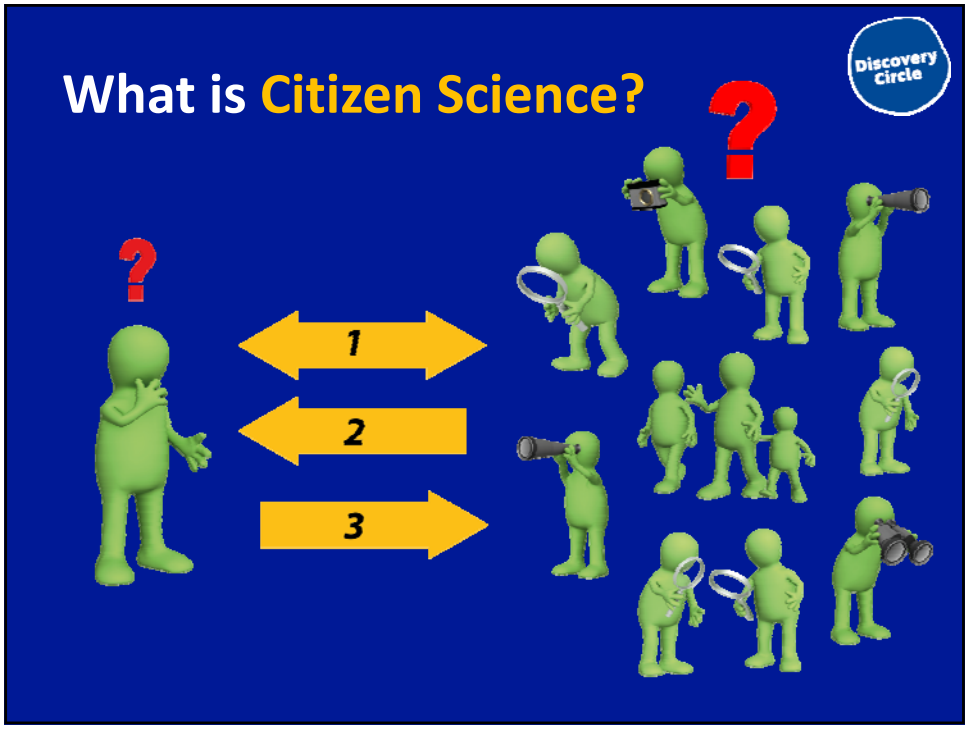


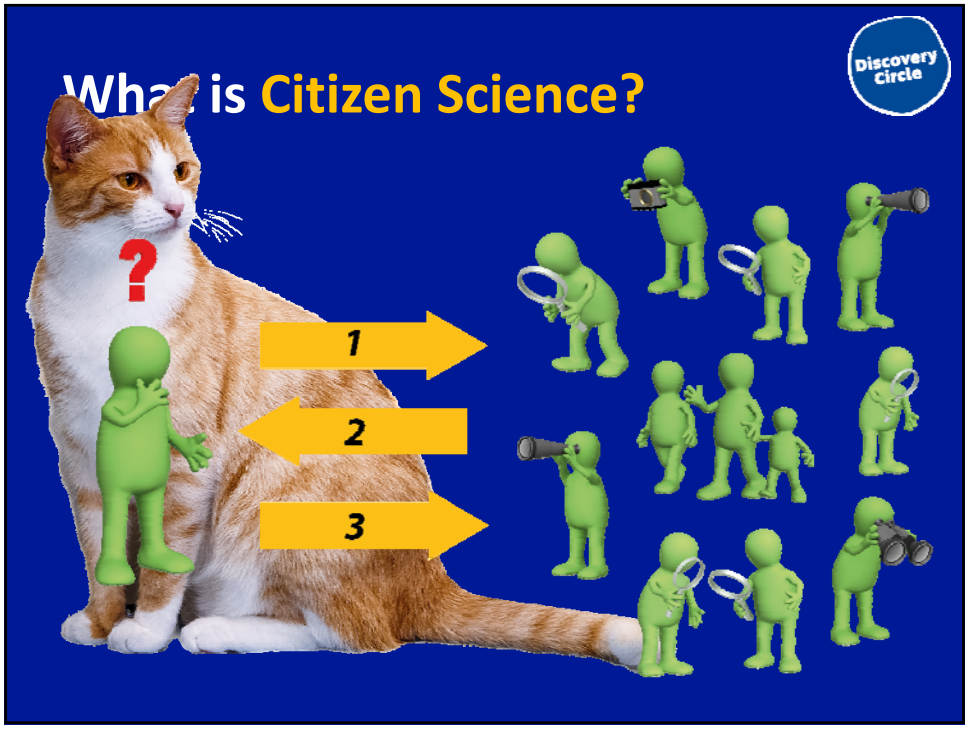


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## Why Cat Tracker?

- **Need large sample:**
  - Cat movement (9% in parks?)
  - Social survey
- **Impact:**
  - Informed management
    - Engaging cat owners
    - Demonstrating cat range

## The Cat Tracker team

**Discovery Circle Partners:**

- University of South Australia
- Department of Environment, Water and Natural Resources
- Adelaide and Mount Lofty Ranges Natural Resources Management Board
- City of Marion
- City of Salisbury

**Local Cat Tracker Project Partners**

- Dog and Cat Management Board
- City of Mitcham

**International Project Partners:**

- North Carolina State University
- North Carolina Natural History Museum
- Victoria University of Wellington

**Project team:**

- Thousands of Citizen Scientists
- Philip Roetman, Carla Litchfield, Hayley Tindle, Gillian Quinton, Belinda Chiera
- Education team: Kathy Paige, David Lloyd, Yvonne Zeegers
- Partner organisation contributors: UniSA marketing team, David Chan

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# Cat Tracker: two areas of research

- **Tracking data**
  - 428 cats tracked
- **Social survey**
  - 3,192 respondents
    - 4,314 cats
    - Cat management actions
    - Cat management views
    - Personality tests
    - Stories

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# Mon Mon

**Hallett Cove** **25.2** ha home range (95%MCP)

# Mon Mon

**Hallett Cove** **25.2** ha home range (95%MCP)

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# Sheffield

**Mawson Lakes** **0.0** ha home range (95%MCP)

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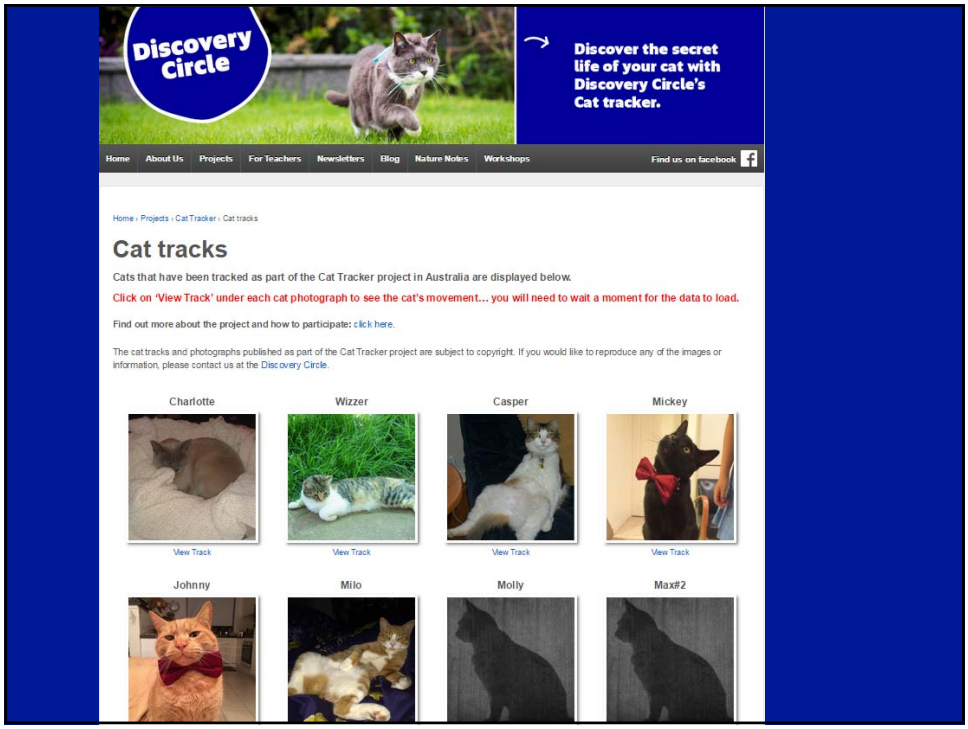


# Cat Tracker: tracking data

- 61,250 location data points
- Median home-range: 1 ha
- Largest home range: 31.1 ha
- Smallest home range: 0.1ha

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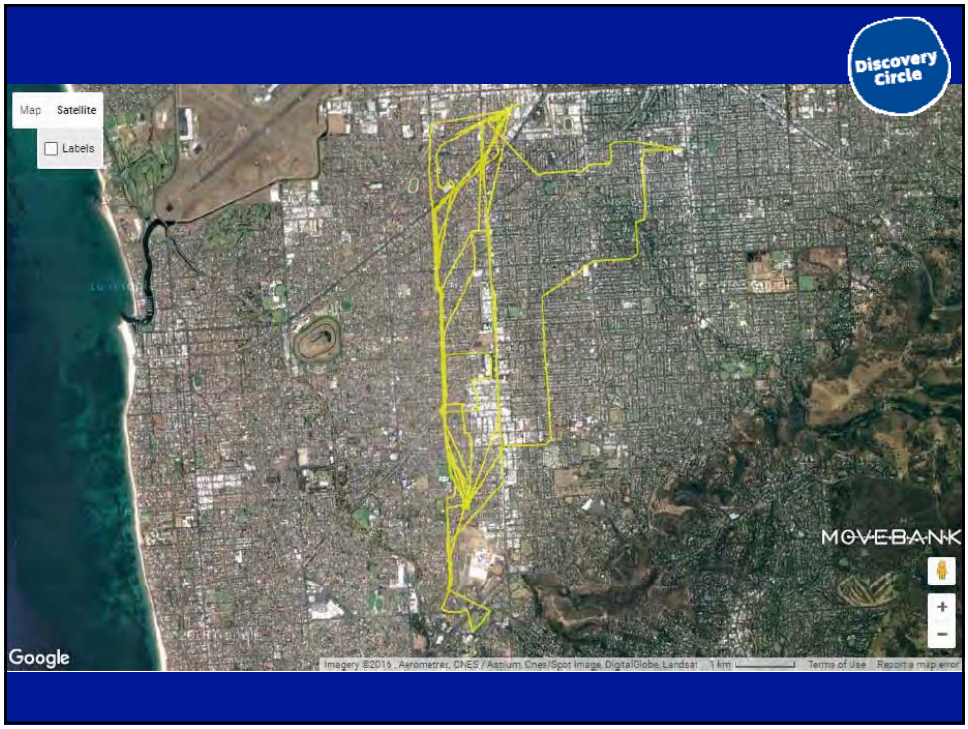


## Cat Tracker: tracking data

- 88% had larger home-ranges at night
- Wandering cats typically:
  - more road crossings
  - more signs of being in fights
  - more seen with prey
  - less time inside
- Clandestine cats (39%!!!!!)

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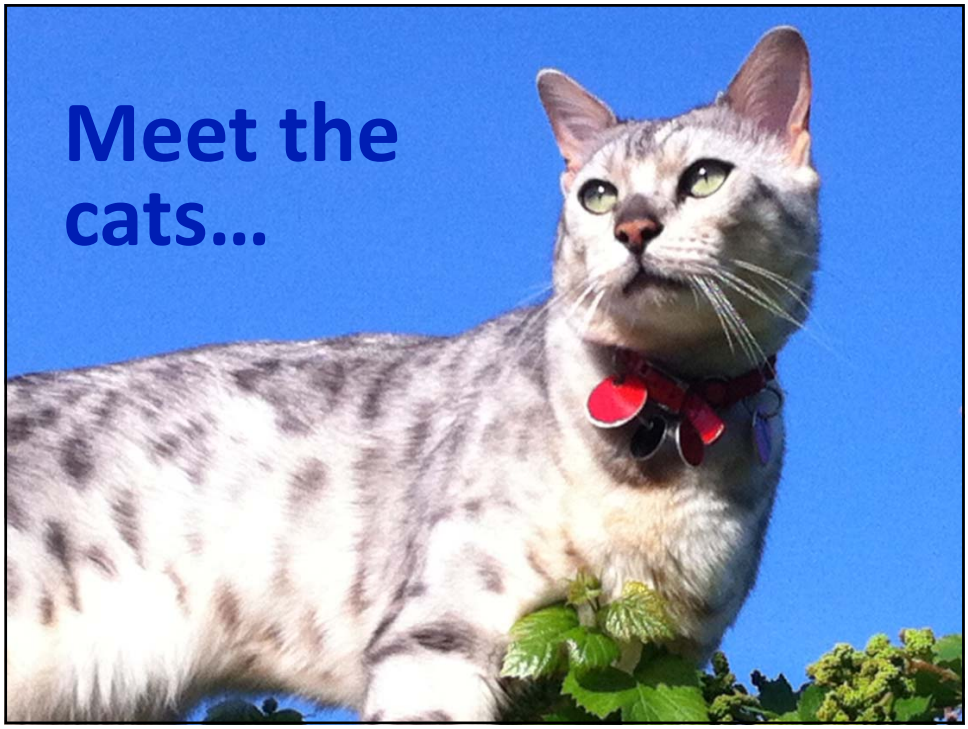


## Cat Tracker: social survey data

Discovery Circle

| Top 25 male cat names | | |
|---|---|---|
| | Cat name | Frequency (number of cats) |
| 1. | Charlie | 31 |
| 2. | Max | 29 |
| 3. | Harry | 24 |
| 4. | Oscar | 23 |
| 5. | Toby | 21 |
| 6. | Jasper | 20 |
| 7. | Milo | 20 |
| 8. | Leo | 17 |
| 9. | Tiger | 17 |
| 10. | Basil | 15 |
| 11. | George | 15 |
| 12. | Simba | 14 |
| 13. | Oliver | 13 |
| 14. | Archie | 12 |
| 15. | Felix | 11 |
| 16. | Henry | 11 |
| 17. | Ollie | 11 |
| 18. | Jack | 10 |
| 19. | Sylvester | 10 |
| 20. | Tigger | 10 |
| 21. | Tom | 10 |
| 22. | Billy | 9 |
| 23. | Merlin | 9 |
| 24. | Alfie | 8 |
| 25. | Cooper | 8 |

| Top 25 female cat names | | |
|---|---|---|
| | Cat name | Frequency (number of cats) |
| 1. | Bella | 39 |
| 2. | Lucy | 27 |
| 3. | Missy | 22 |
| 4. | Molly | 22 |
| 5. | Lily | 21 |
| 6. | Coco | 20 |
| 7. | Luna | 19 |
| 8. | Daisy | 16 |
| 9. | Millie | 15 |
| 10. | Misty | 15 |
| 11. | Poppy | 15 |
| 12. | Lola | 14 |
| 13. | Kitty | 13 |
| 14. | Mia | 13 |
| 15. | Milly | 13 |
| 16. | Ruby | 13 |
| 17. | Bonnie | 12 |
| 18. | Holly | 12 |
| 19. | Lilly | 12 |
| 20. | Lulu | 12 |
| 21. | Maggie | 12 |
| 22. | Tilly | 12 |
| 23. | Rosie | 11 |
| 24. | Cleo | 10 |
| 25. | Willow | 10 |

**Less common names**: Asteroid, Bruce Willis Pussington, Harry Barry White Pants, Mr Hamish the Extraordinary Puss, Smallbum, Velcro George

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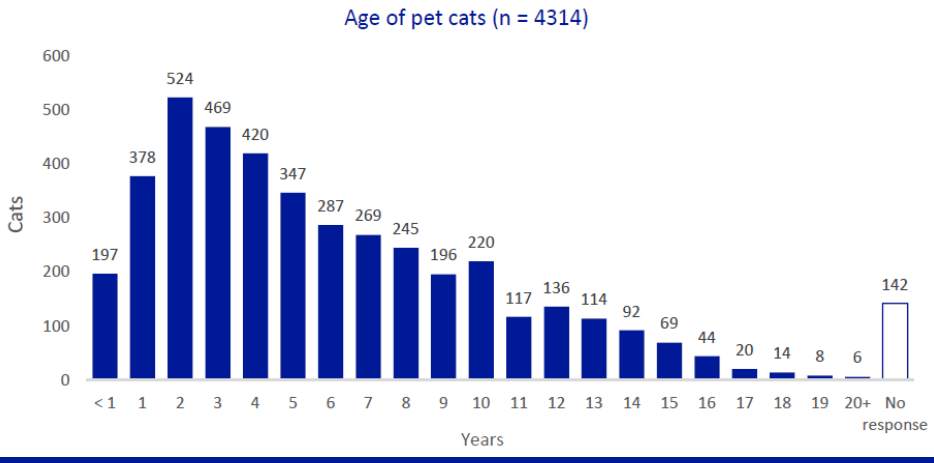
# Cat Tracker: social survey data




# Cat Tracker: social survey data

**79% of cats allowed outdoors**

**20% indoor only cats**

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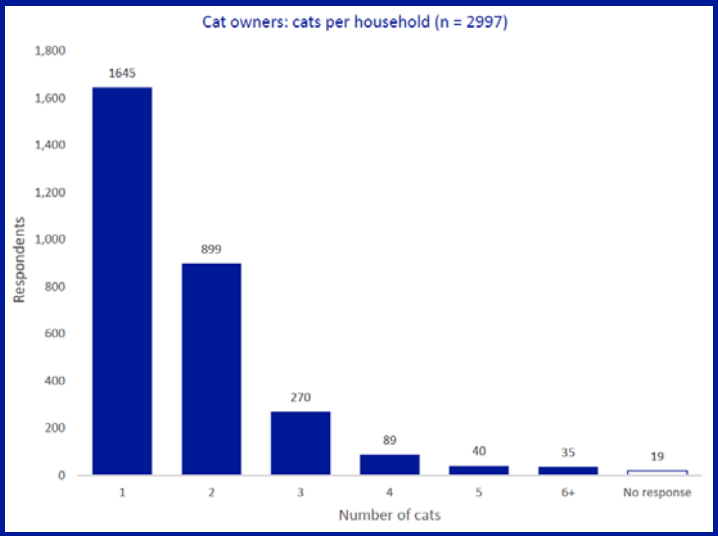
# Cat Tracker: social survey data

| | Wormed (n = 4,269) | Flea treated (n = 4,262) | Vaccinated (n = 4,251) | Checked by a vet (n = 4,243) |
|---|---|---|---|---|
| Yes | 76.8% | 77.3% | 71.4% | 72.1% |
| No | 19.6% | 20.0% | 23.6% | 24.2% |
| Unsure | 2.6% | 1.6% | 3.5% | 2.1% |
| No response | 1.0% | 1.2% | 1.5% | 1.6% |

≈ ¾ provided regular health treatments

# Cat Tracker: social survey data




Average = 1.5

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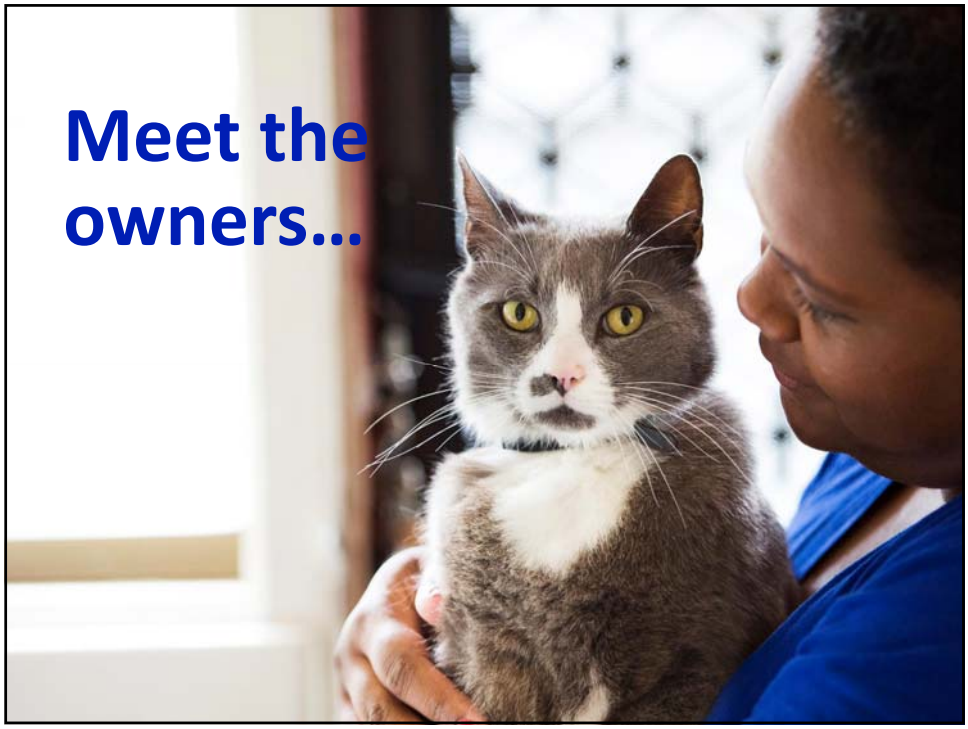
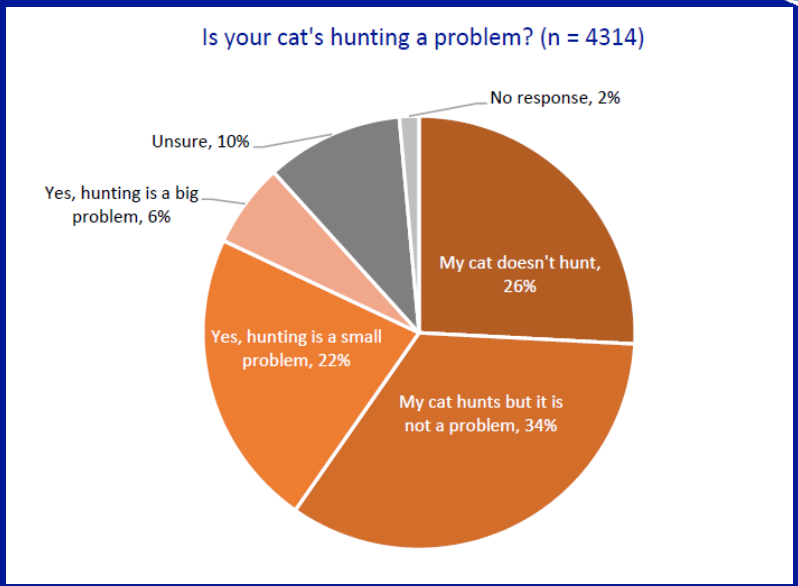



## Cat Tracker: social survey data

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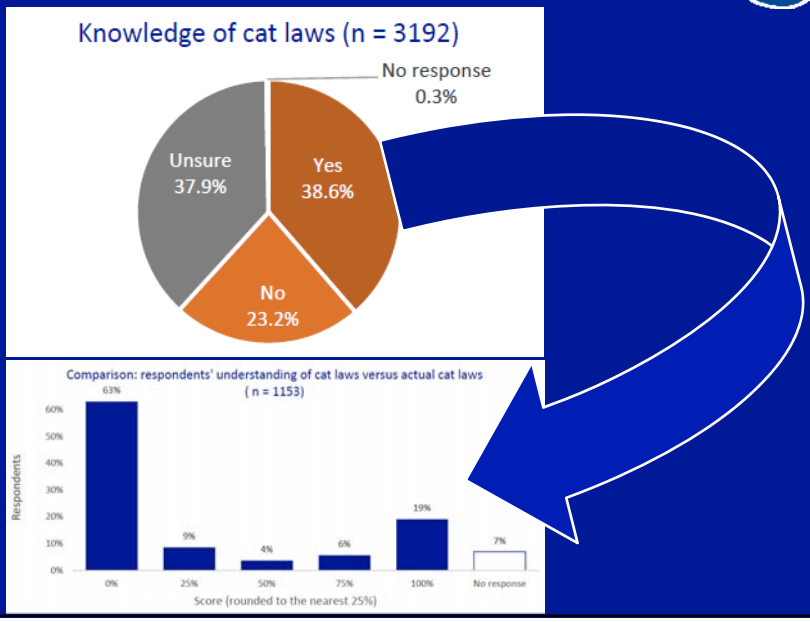


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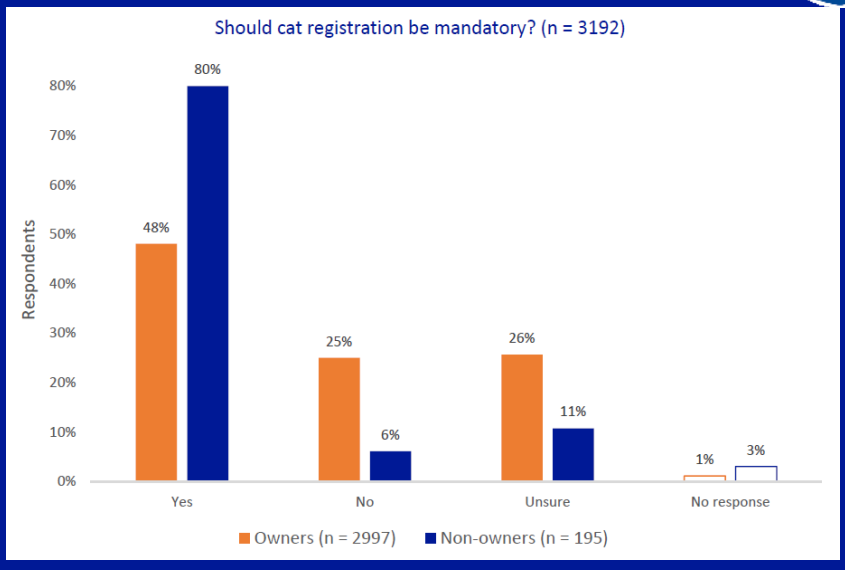


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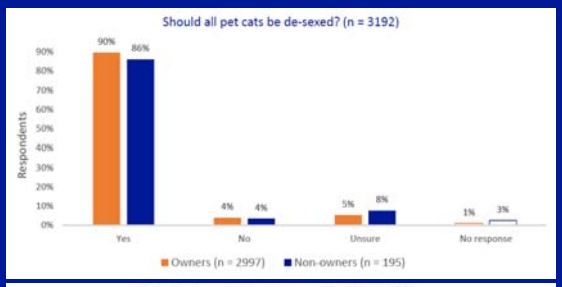
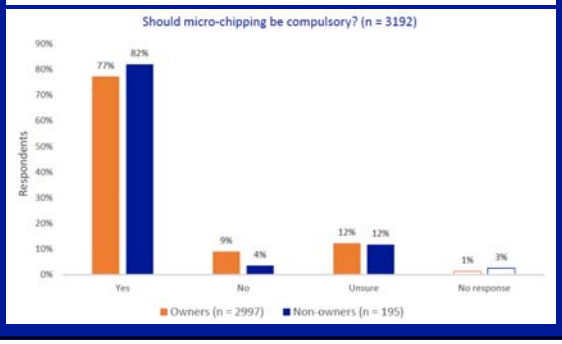
# Cat Tracker: social survey data

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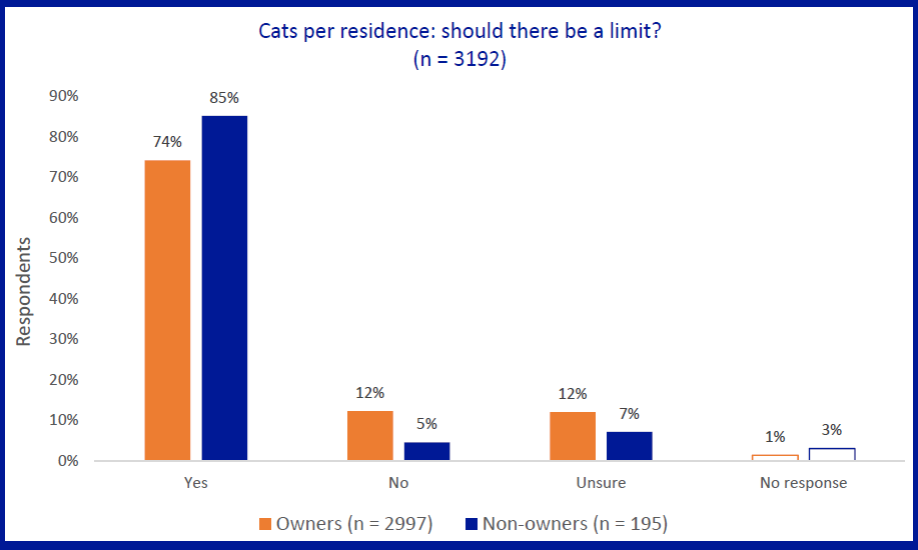


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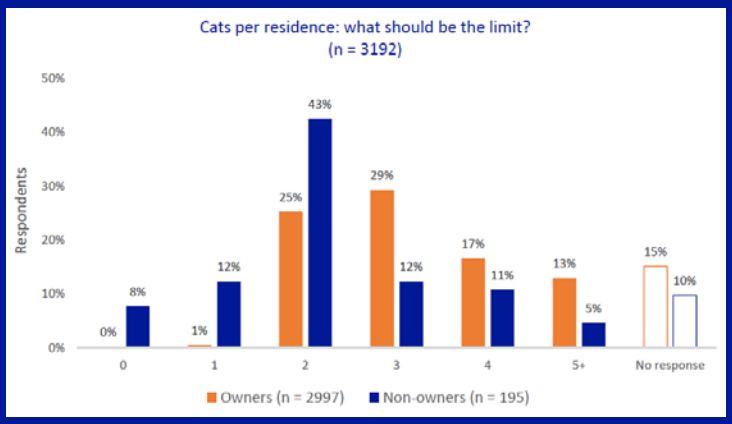
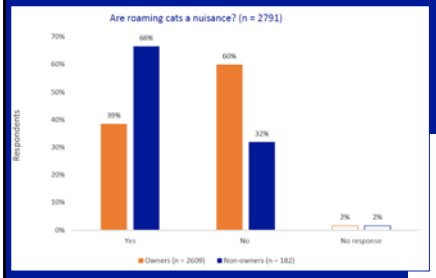
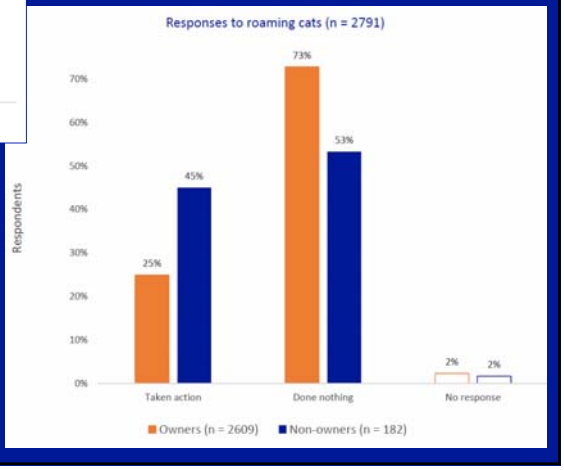



Cat owner median = 3*
Non-owners median = 2*

# Cat Tracker: social survey data

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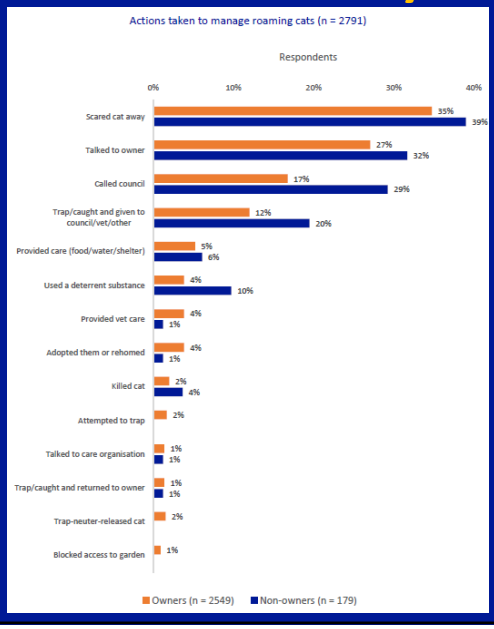


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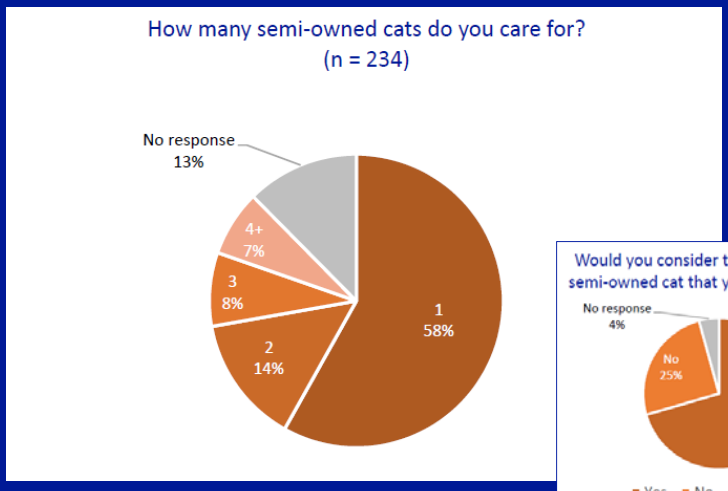


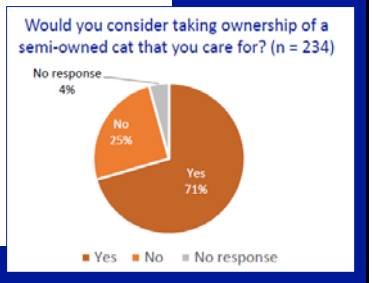


**234 people (7.5%) provided some care for semi-owned cats**

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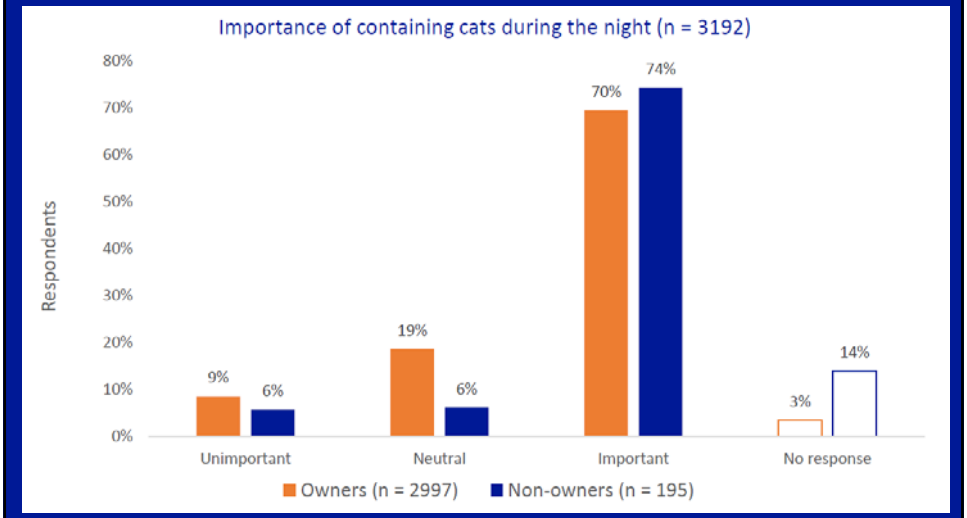
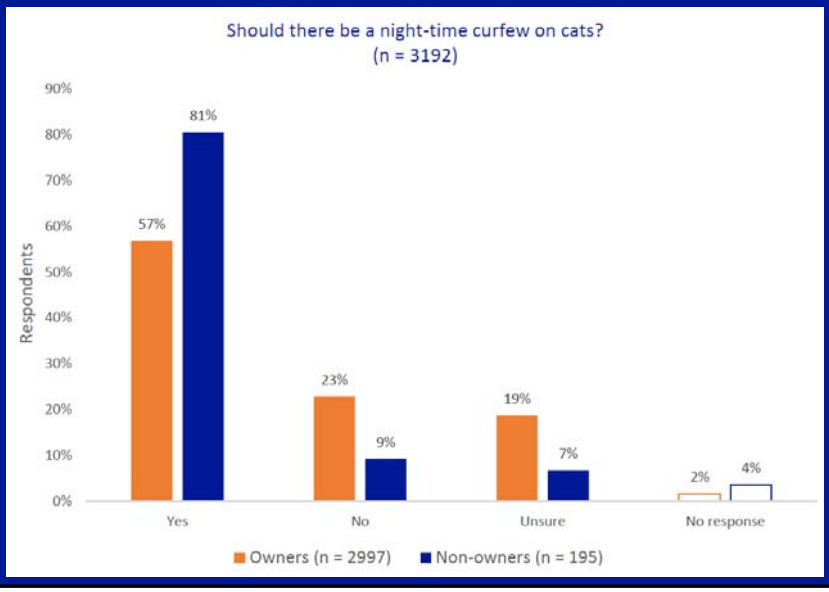
# Cat Tracker: social survey data




# Cat Tracker: social survey data

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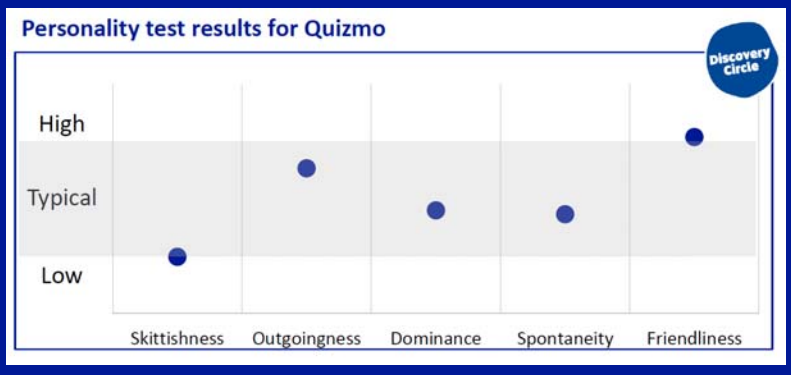
## Cat Tracker: social survey data

Discovery Circle

### The feline five:




- Similarity of indoor and outdoor cats
- Only significant difference = indoor slightly more *friendly*

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## Cat Tracker: evaluation survey

Discovery Circle

### Learning:

- 71% reported learning
- For respondents whose cats were tracked:
  - 46% - cats went further than expected
  - 71% - something surprising or interesting
    - 31% location
    - 24% distance
    - 16% roads or railways
    - 13% travel (e.g. routes)

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## Cat Tracker: evaluation survey

### Learning:

"*How far the range actually is. It was good to see how they actually cross roads and get into paddocks/etc. How much danger they're actually exposed to.*"

"*The surprising distance travelled on the odd occasion but also the regularity of his tracks*"

"*That people have crazy names for their cats!*"

## Cat Tracker: evaluation survey

### Attitude change:

- **Importance of keeping cats indoors during the day** (n = 332 same people)

  Pre: 24% ⇨ Post: 56% (131% increase)

- **Just people with tracked cats** (n = 114 same people)

  Pre: 9% ⇨ Post: 45% (410% increase)

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## Cat Tracker: evaluation survey

### Attitude change:

- **Importance of keeping cats indoors at night** (n = 351 same people)

  Pre: 74% ⇨ Post: 86% (17% increase)

"…I also spoke to our neighbours about trying to keep their cats in at night and they are doing the same thing."

## Cat Tracker: evaluation survey

### Behaviour change:

- Tracked cats: 27%
- Non-tracked cats: 12%
- 69% - cat indoors more:
  - Earlier at night 21%
  - Inside more 19%
  - Contained at night 16%
  - Now completely contained 12%

"*We ensure that he is confined inside at night now and only allow him outside during the day*."

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## Cat Tracker: evaluation survey

### Behaviour change:

- What if you got a new cat?
- 36% would manage the cat differently:
  - 79% indoors more (29% indoors only)
  - 11% wouldn't get another cat
  - 10% other

*"Would not get a cat in future (because of the results)"*

## Cat Tracker: evaluation survey

*"I hope to see further tests of this nature able to be funded. Understanding the cats instead of just 'fist shaking' at them is to everyone's benefit."*

*"This study has provided some real evidence on the movements of pet cats, something which has been lacking in any discussion of the domestic cat population."*

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## Where to next?

- **National project?**
  - Sign up!
  - Nation-wide tracking and social survey
  - Analysis of cat diet?
    - Diet diaries
    - Isotope analysis of cat hair
- **Tracking semi-owned cats?**
  - Utilising current participants
  - New technology

Philip.Roetman@unisa.edu.au

Download the full report from Cat Tracker at:
http://www.discoverycircle.org.au/projects/cat-tracker/results/
Interested in getting involved?
Contact Dr Philip Roetman: philip.roetman@unisa.edu.au

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