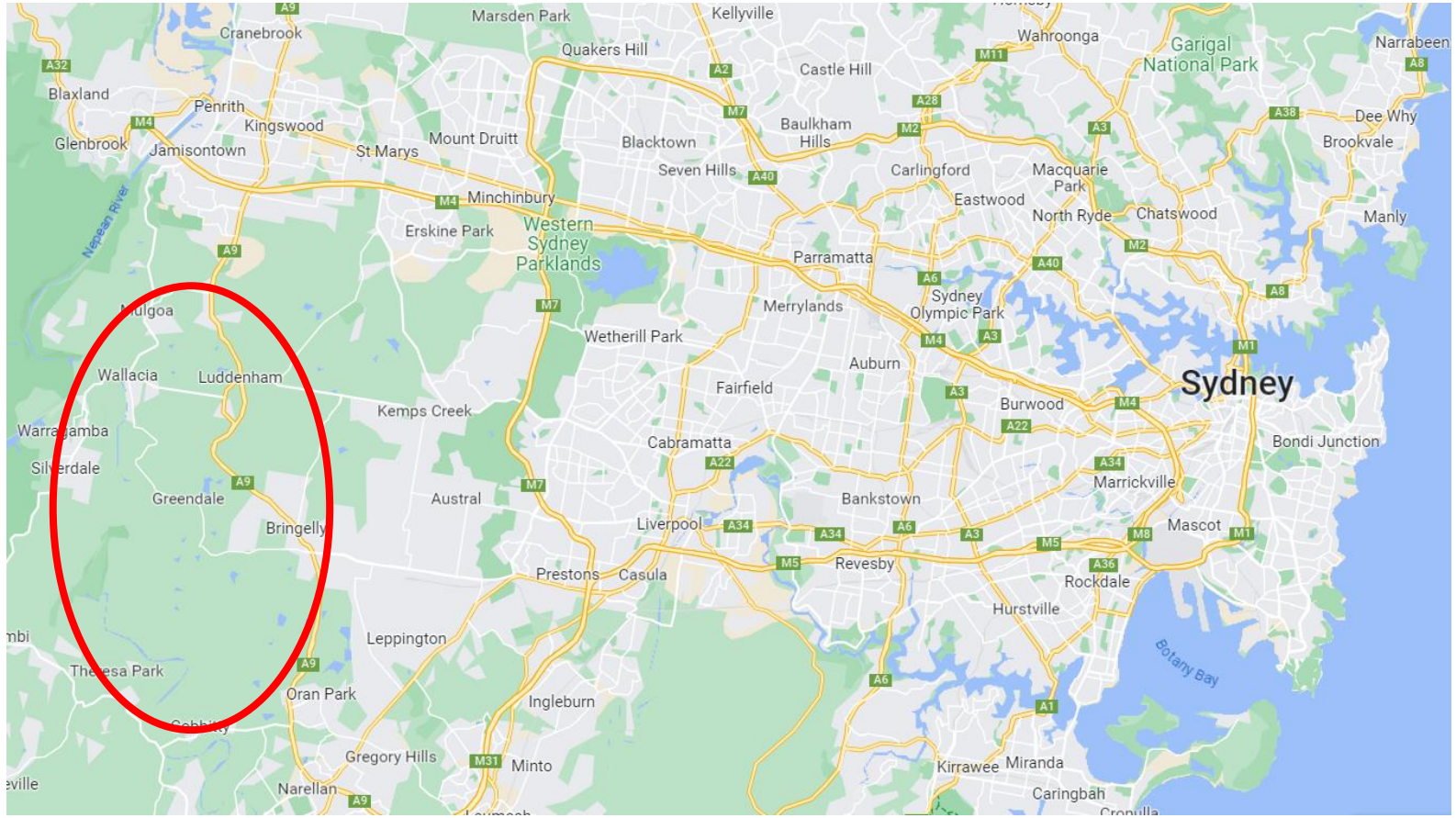
Understanding fallow deer movements to improve control options in peri urban Sydney

Alison Towerton, Lee Parker, Gen Kyi, Andrew Bengsen

Location of the control program



629-653 Mulgoa Road, Mulgoa, NSW 2745

5 3 15 10.93ha Acreage

$4,750,000

offer

tion Guide $4,850,000

Park River Close Mulgoa NSW 2745

5 10 13.76ha Acreage / Semi-Rural

Tim Cutcliffe

Cutcliffe Properties

Call

Location of the program

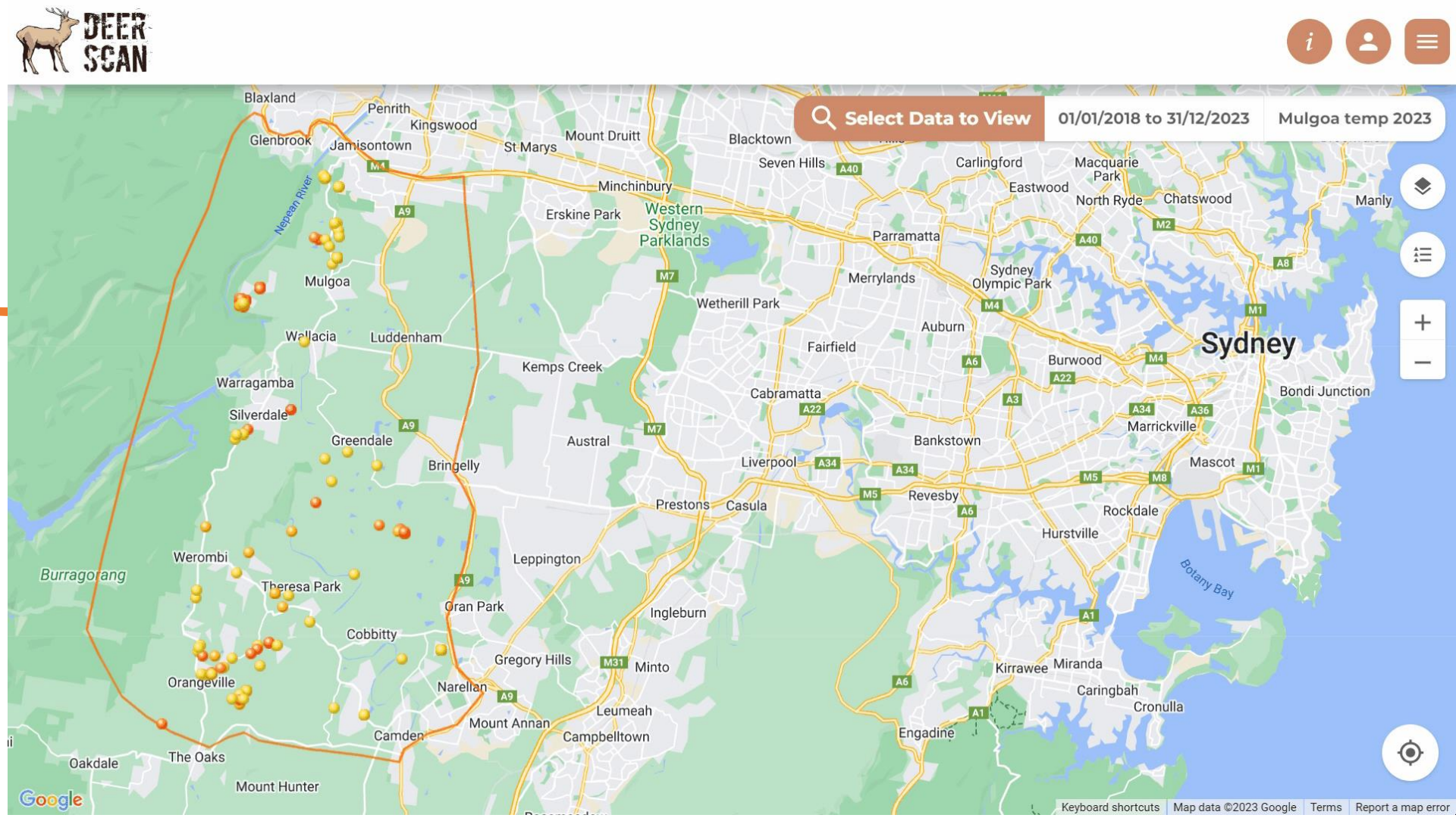
Purpose of the Control Program/Research Project

- Public safety
- Illegal hunting/poaching
- Deer impacts on bushland, agriculture production and residential gardens.
- These activities have negative impacts on the wellbeing of the community and landholders
- Reducing the deer moving into new urban areas where it will be harder to control them.
- Removing deer doesn't solve the problem, it is all about removing the right deer. The deer that are causing the issues.
    - We needed to know more about the deer and how they were behaving

2018-2023

- 224 reports

- Landholder meetings
- 606 fallow deer
- 25 red deer
- 6 chital
- 78 unknown species



Video credit: Annaliese Geddes


2020-12-23 09:35:02 M
20°C
HYPERFIRE 2 COVERT
RECONYX

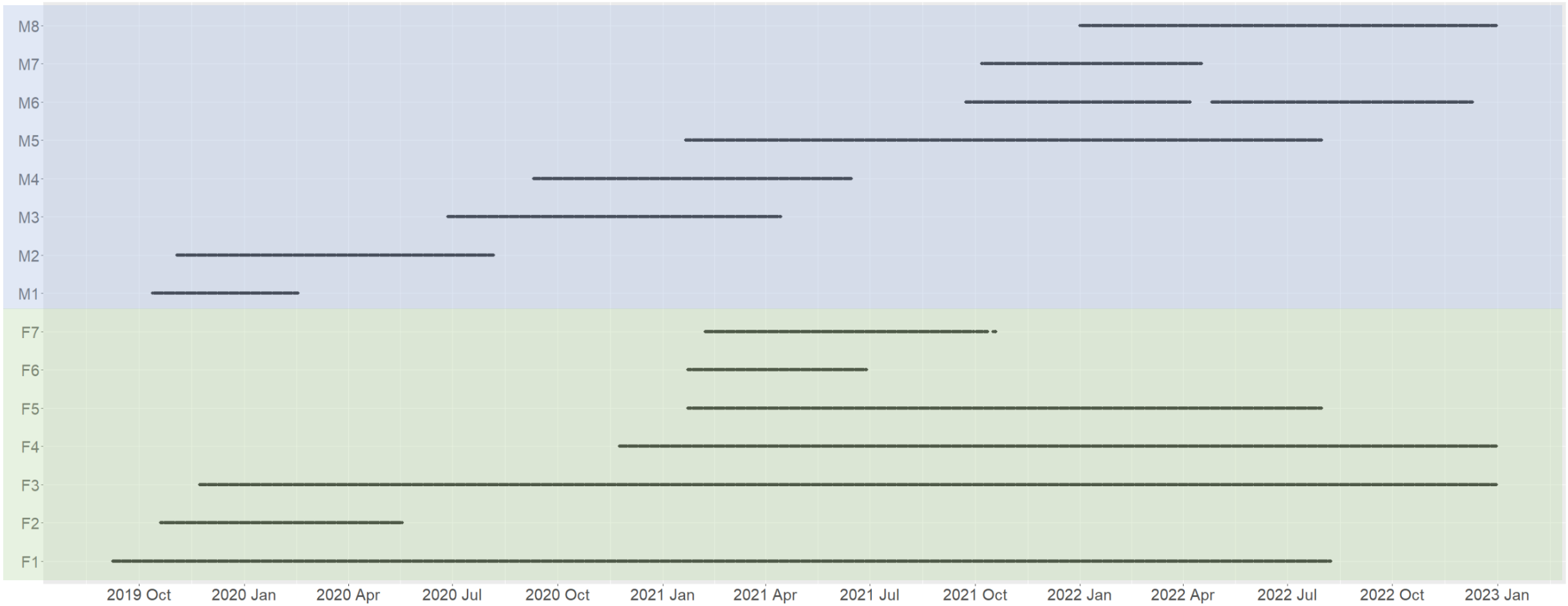
Research Project

- Developed pellet transects to monitor deer activity pre, during and post shooting operation
- Used clover traps to capture and fit GPS collars to deer……..trapping was a slow process, but persistence and commitment does pay off
- Collared 15 Fallow deer (8 males and 7 females)
- We wanted to Identify hotspots in the landscape and movement patterns to prioritise the control efforts and recourses

GPS collars

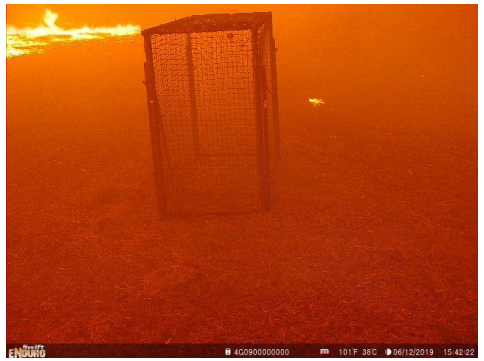
- 8 males | 7 females
- 5 to 43 months

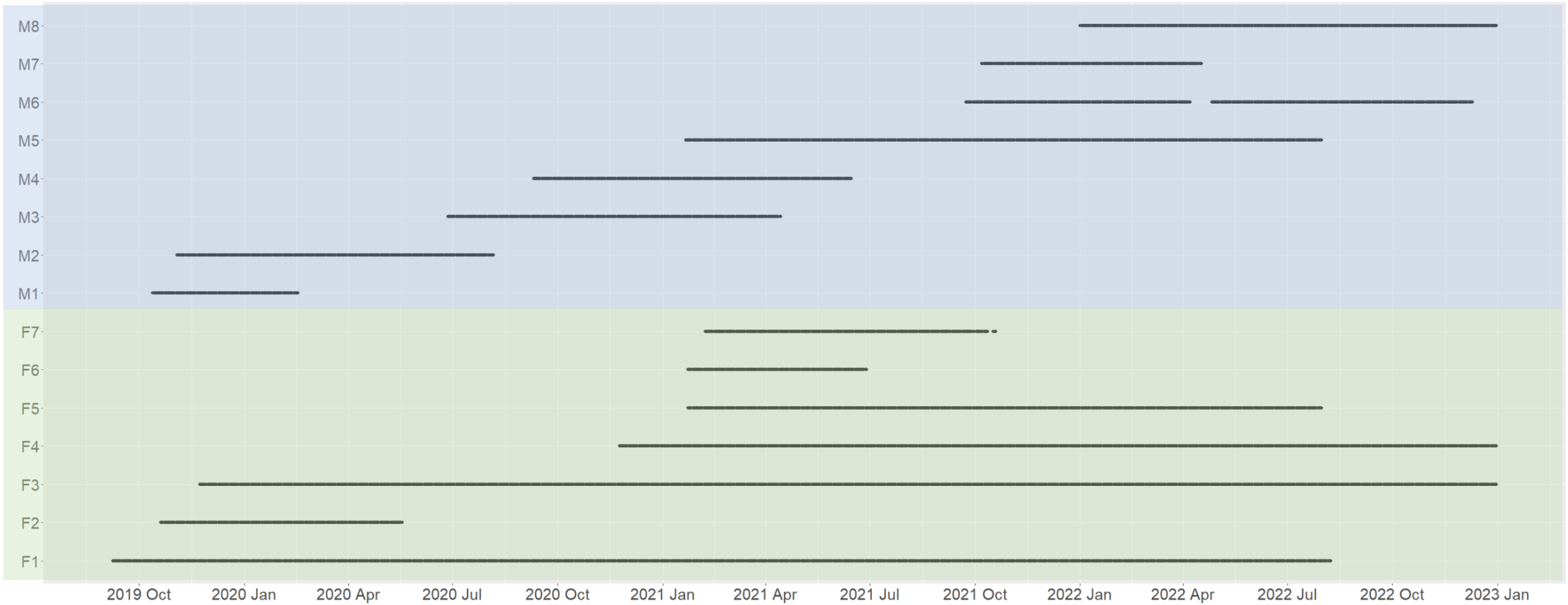
- Short periods – program/hunters
- Trapping - too young



GPS collars

- Trapping delays - Fires | Floods | Covid





Data

> 183,000 hourly location fixes

15 fallow

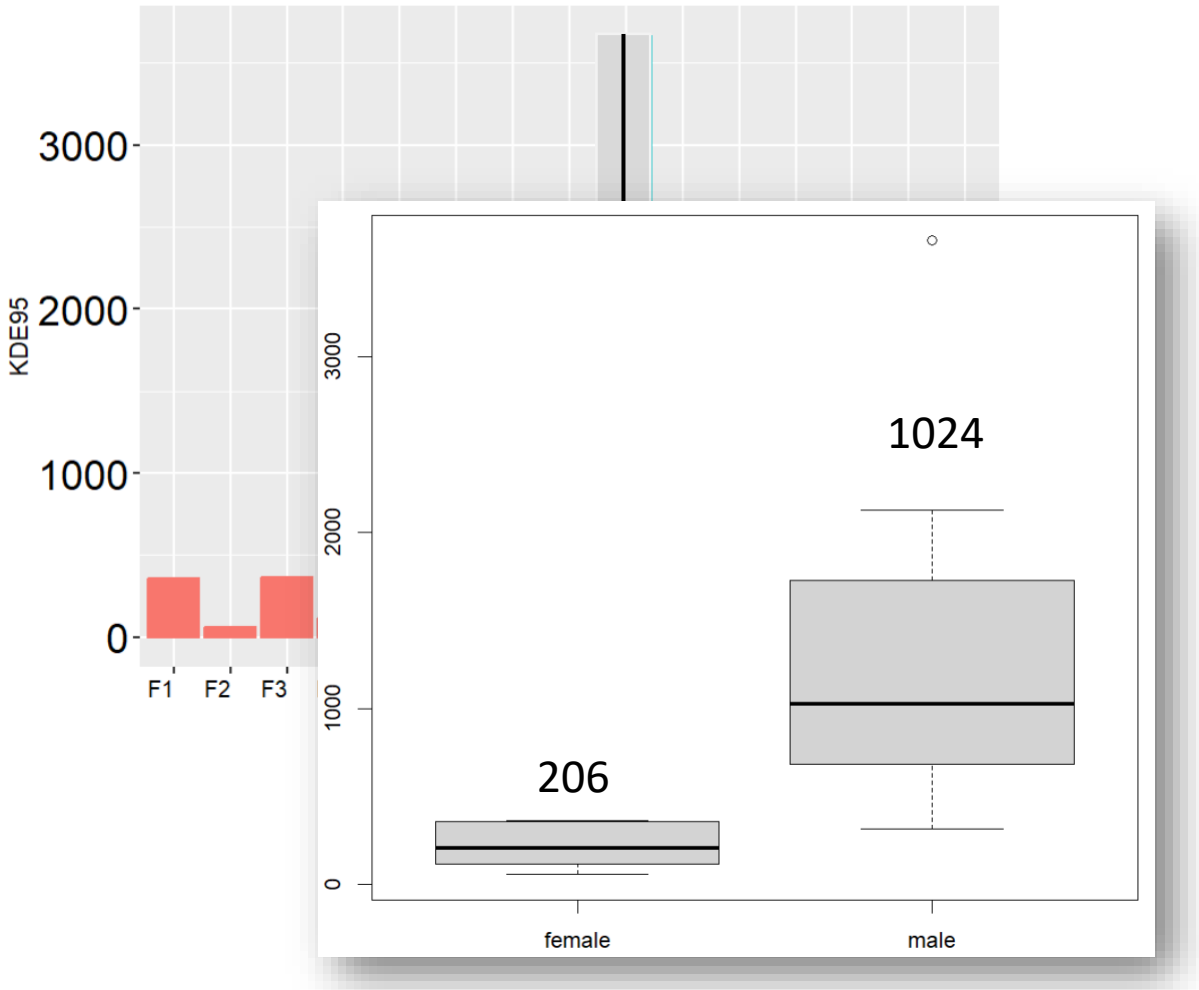
Learnt about trapping

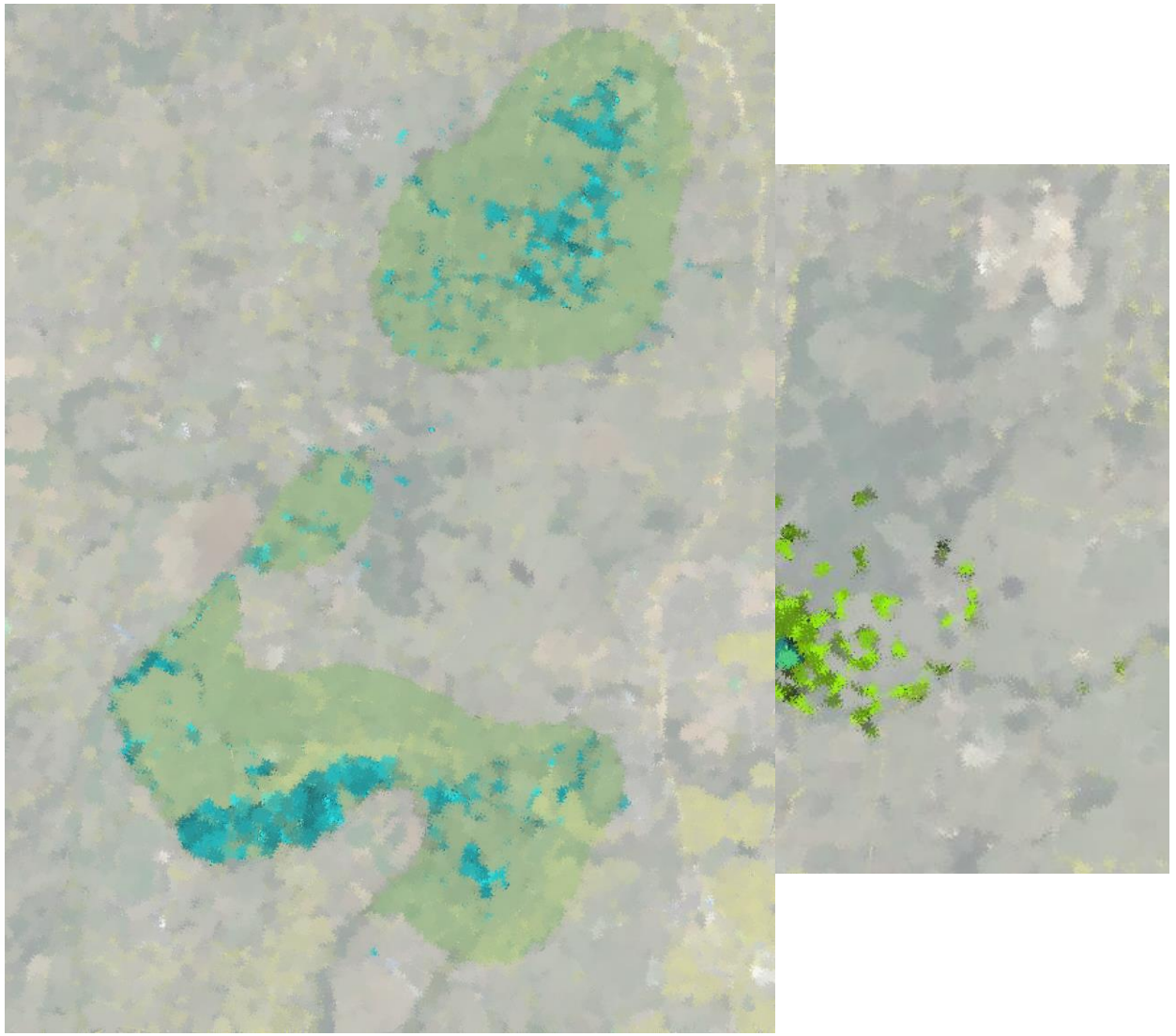
- Open areas where they are less cautious
- Random results – but like lucerne
- Patience and persistence

0 5 10 km

Range area

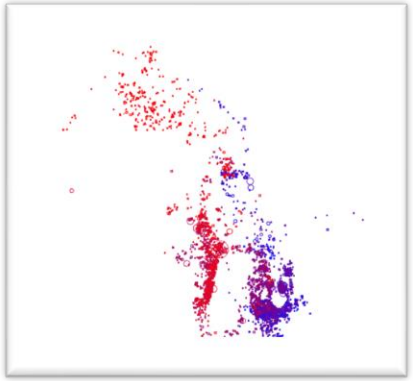
KDE95 (ha)

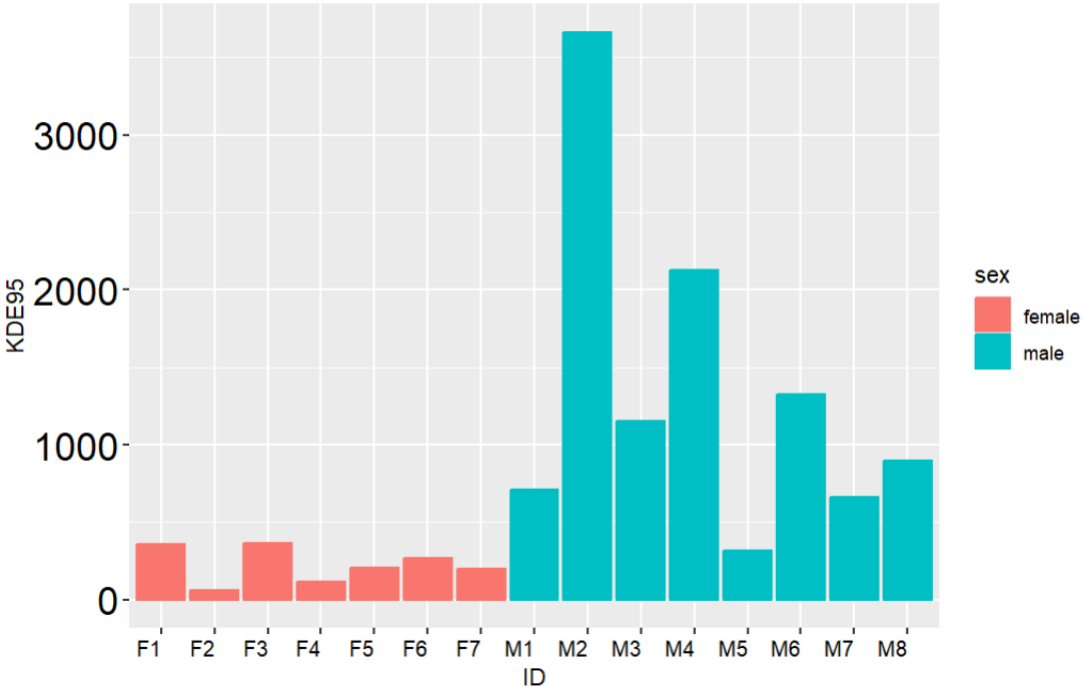


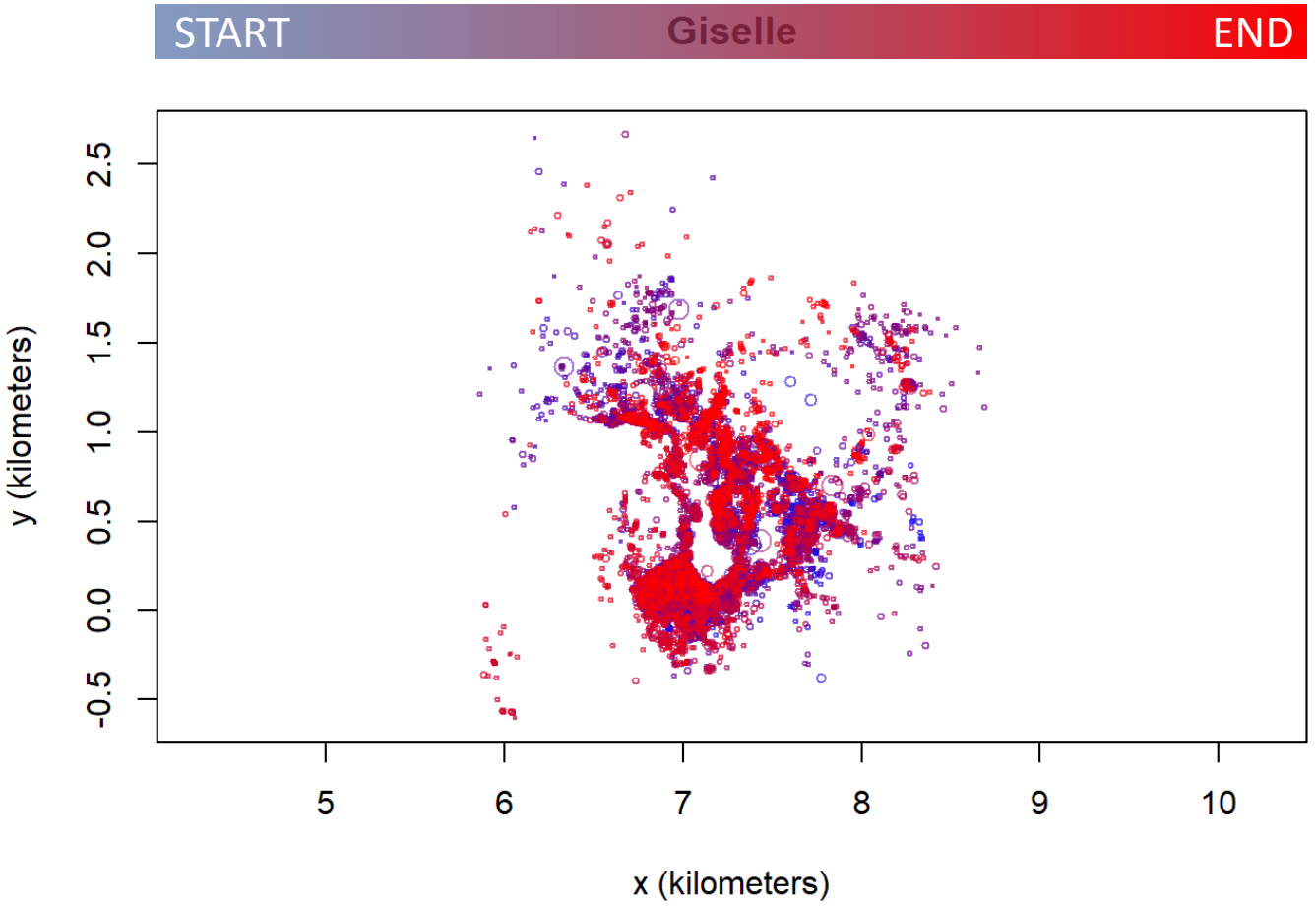


Range area

KDE95

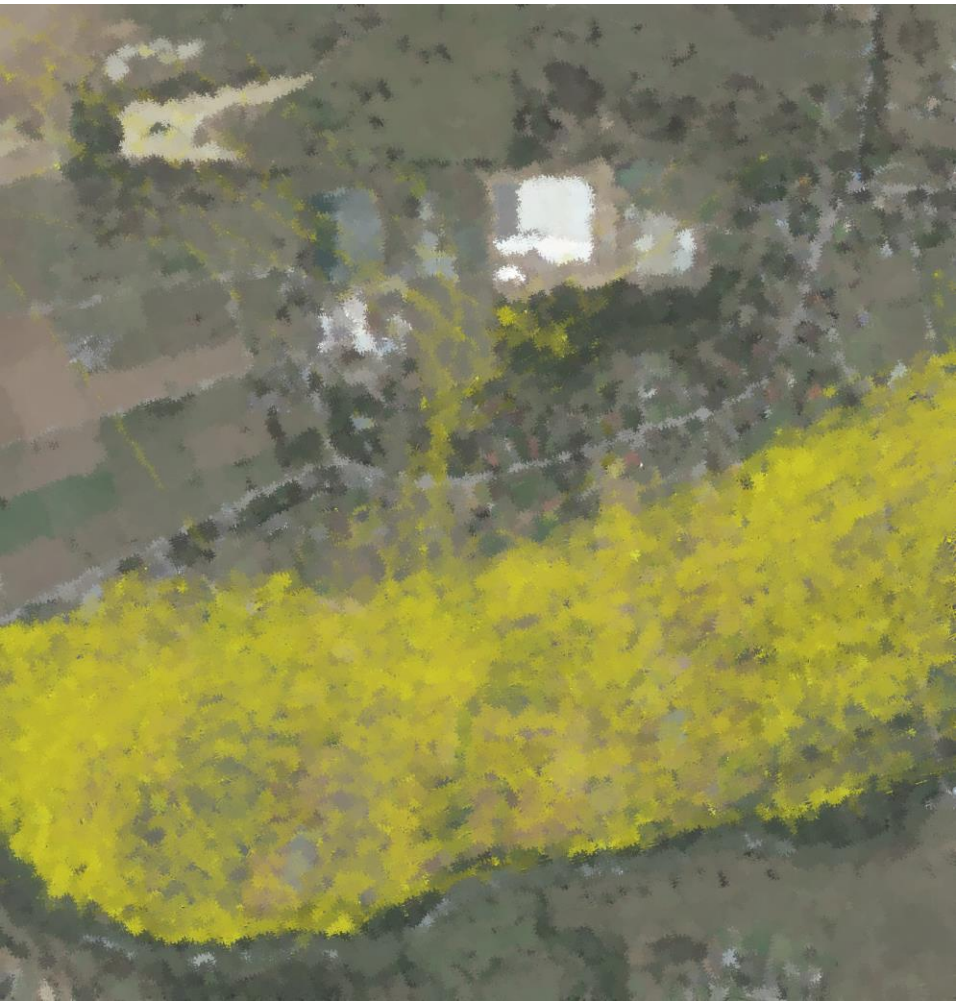


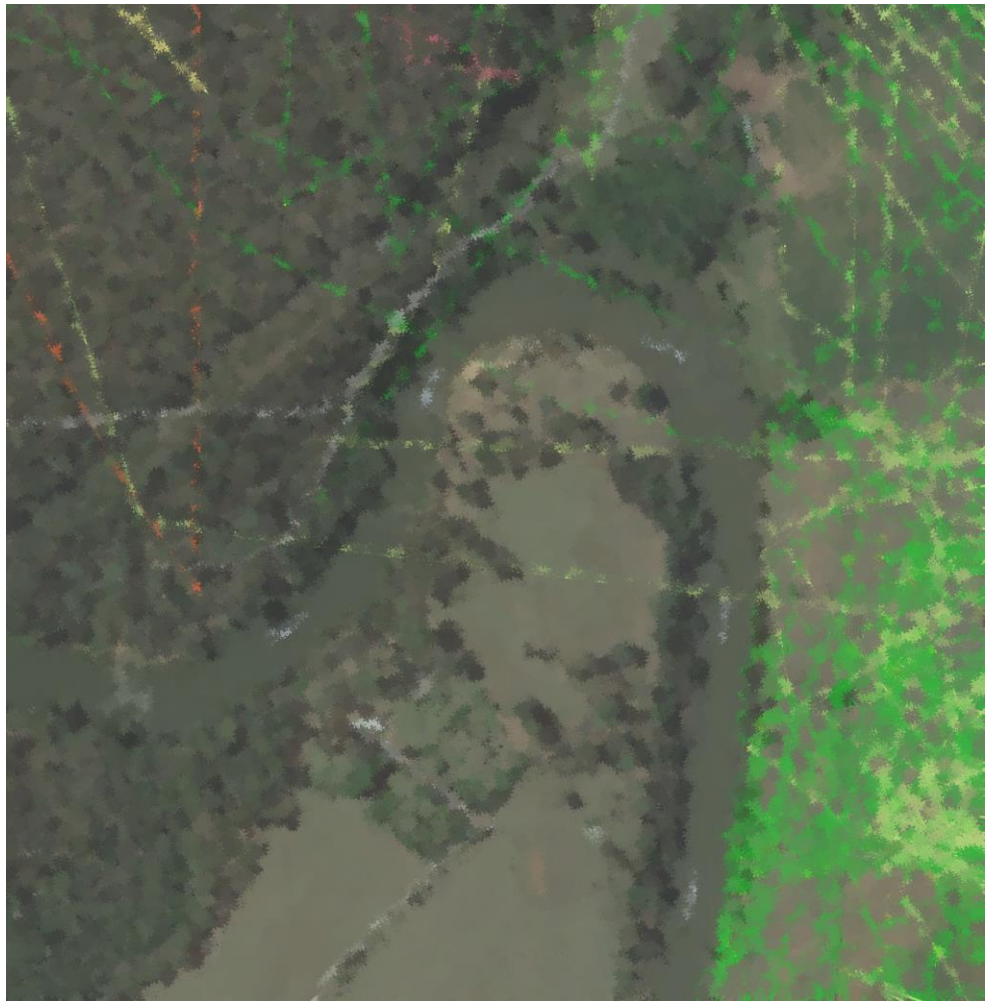




Movement patterns

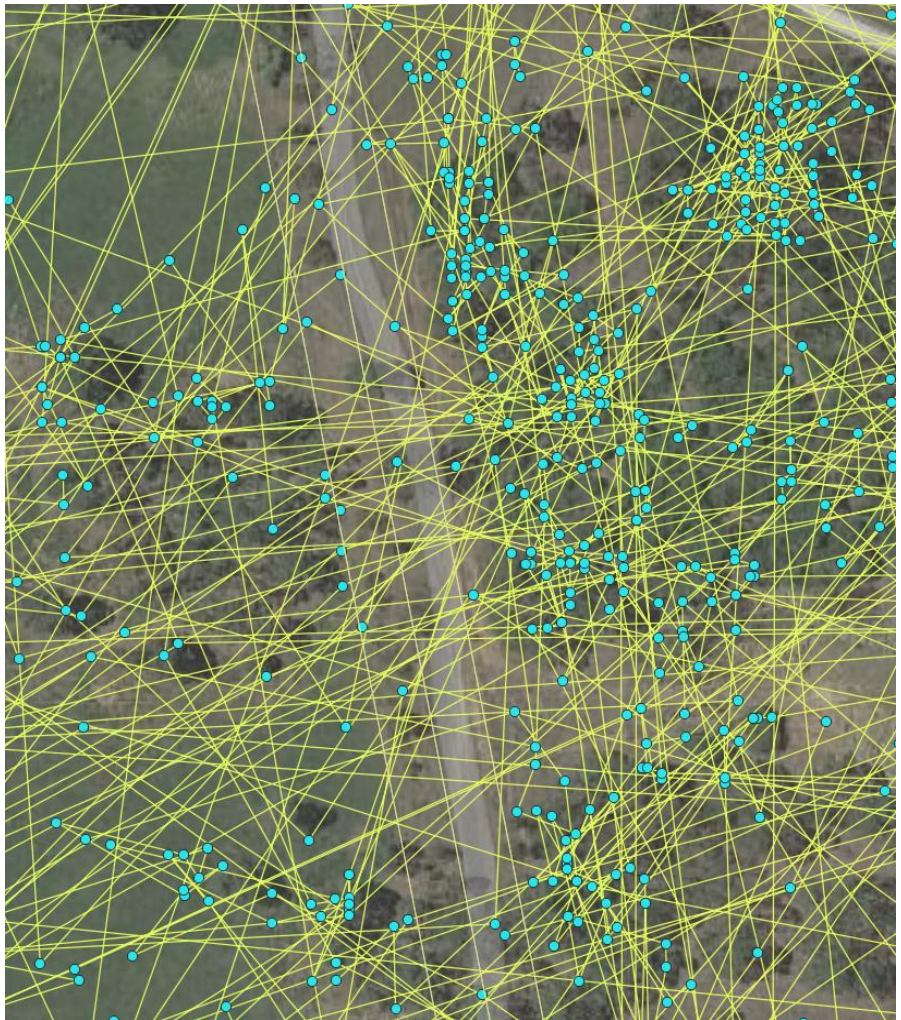
- Boundaries





Movement patterns

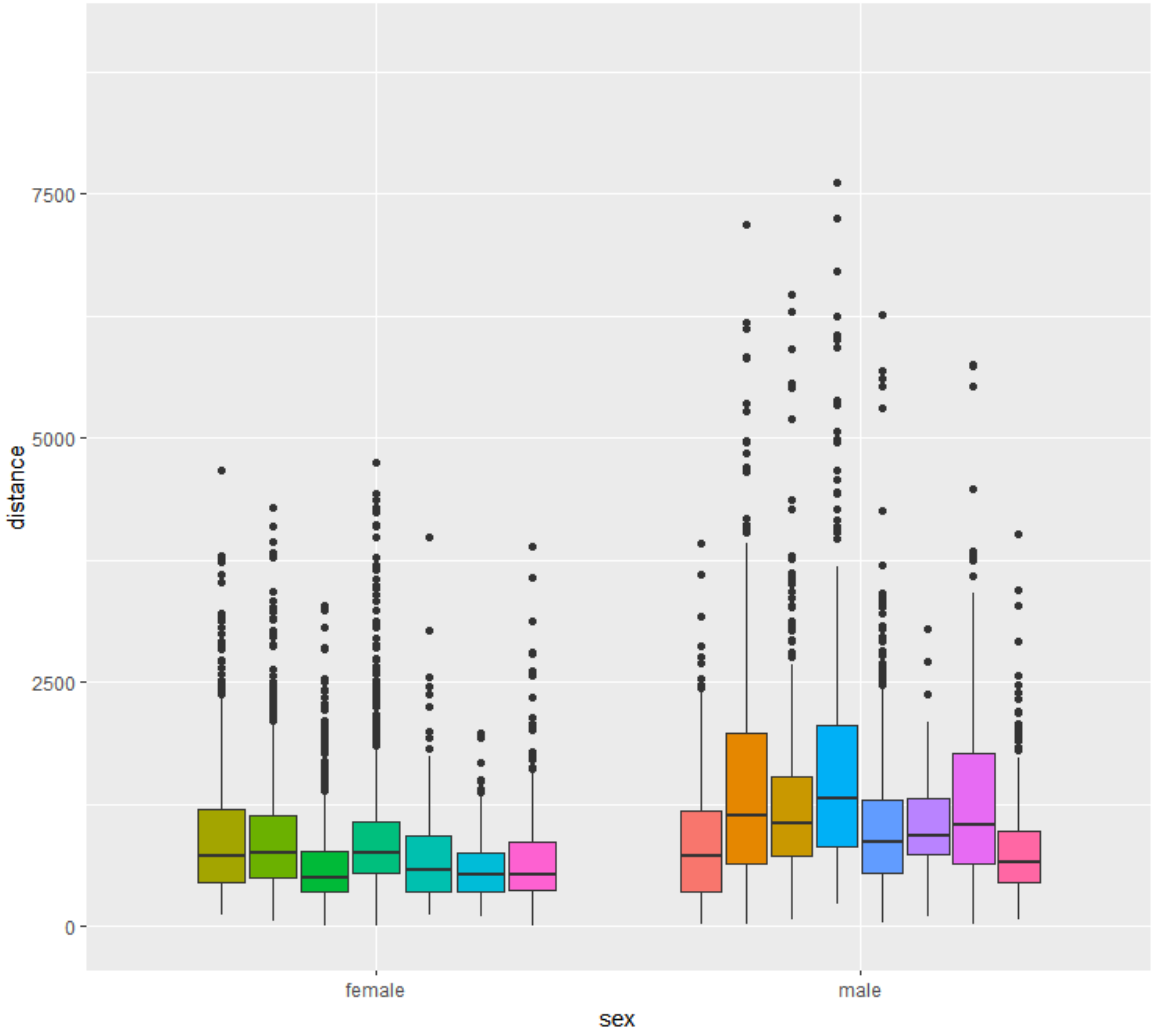
- Boundaries



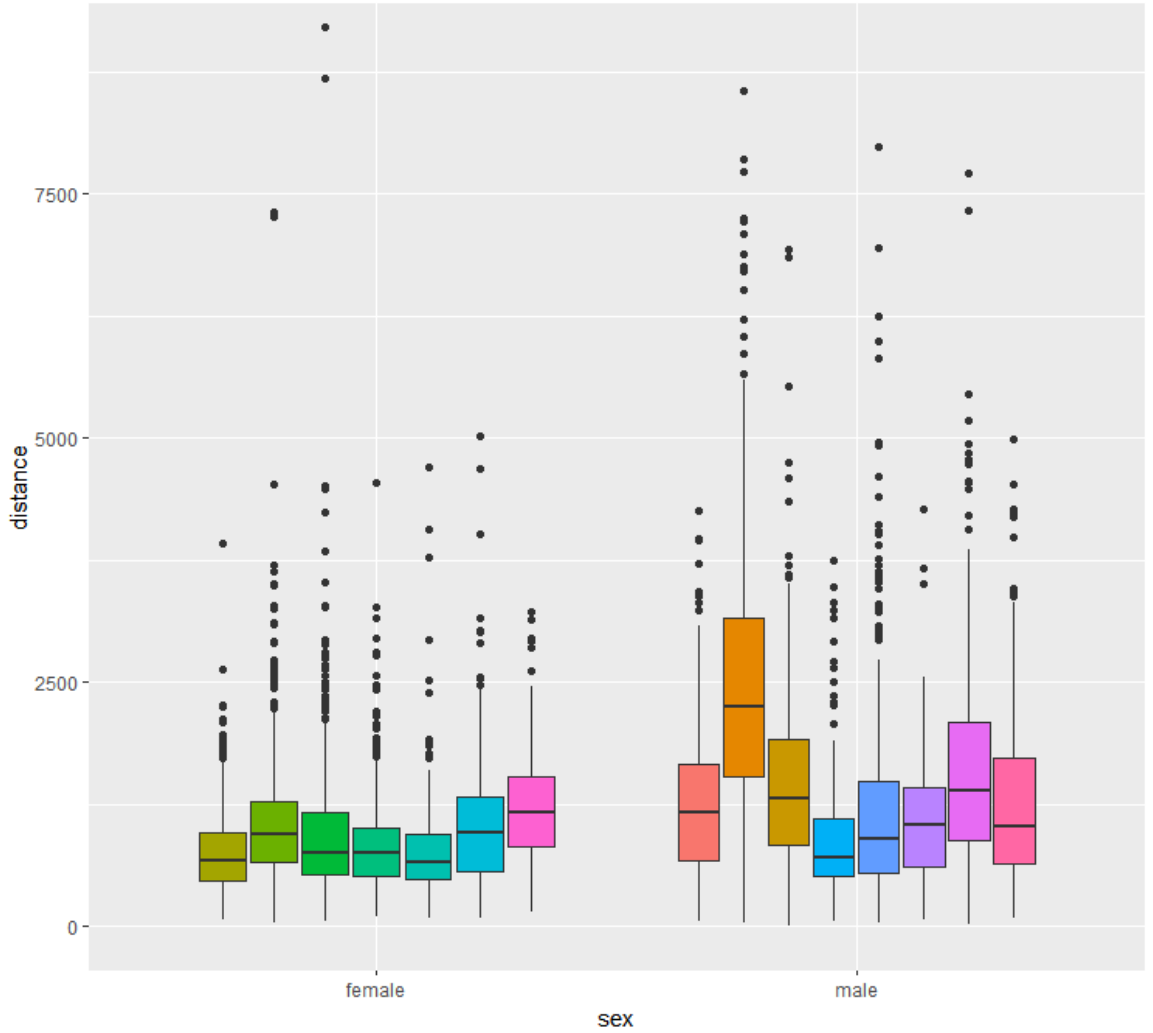
Movement patterns

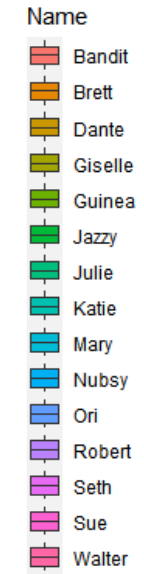
- Daily distances (metres)

Day time



Night time

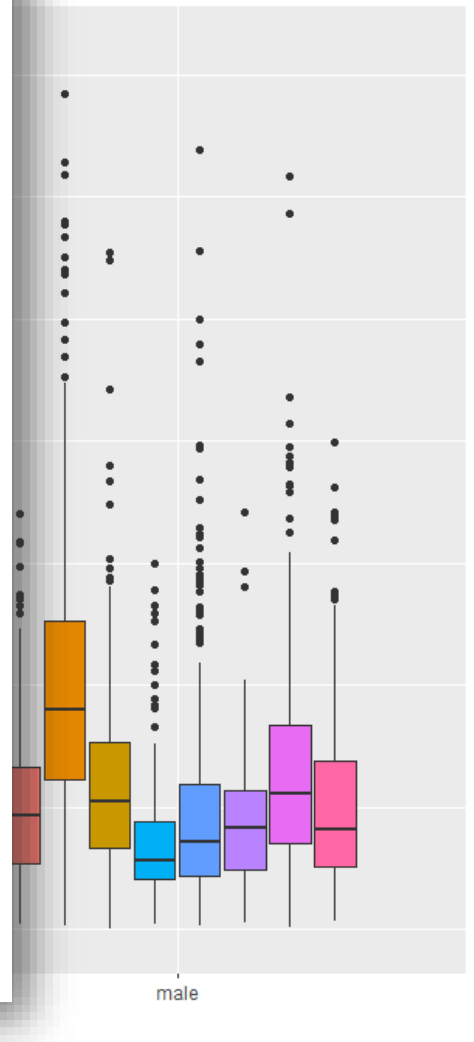




Movement patterns

- Daily dist

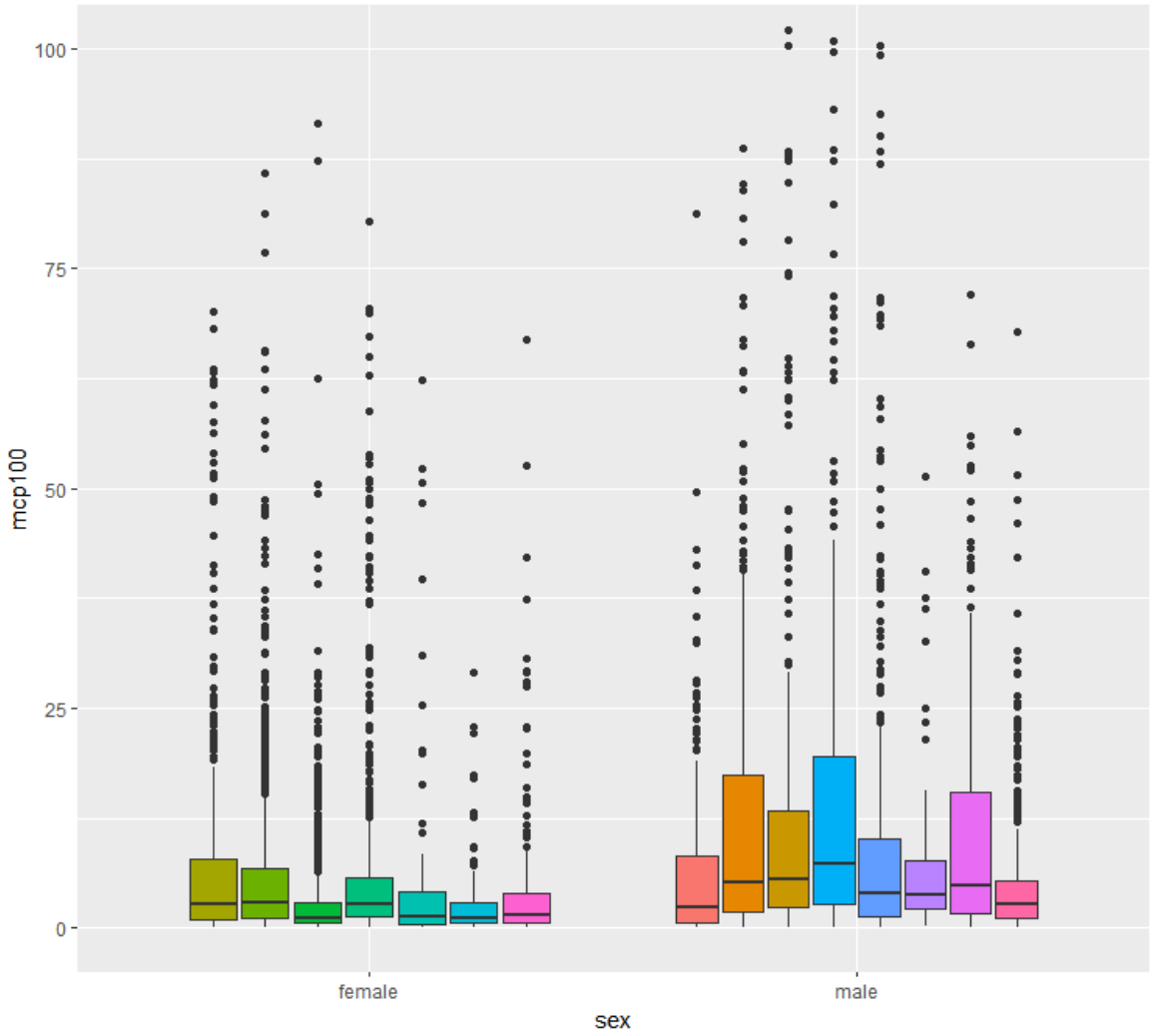
Day time



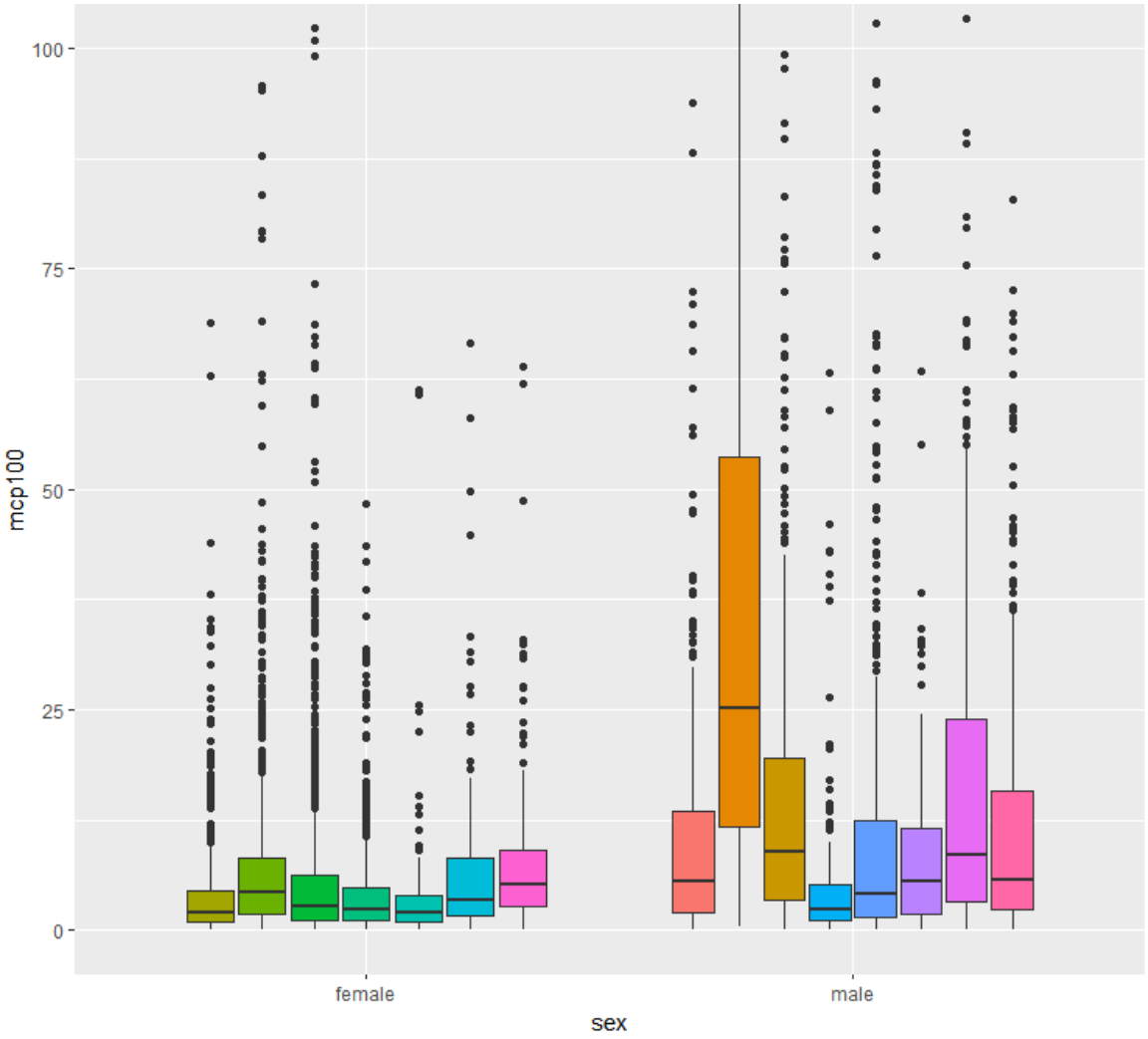
Movement patterns

- Daily area used (ha) – 100% minimum convex polygon

Day time



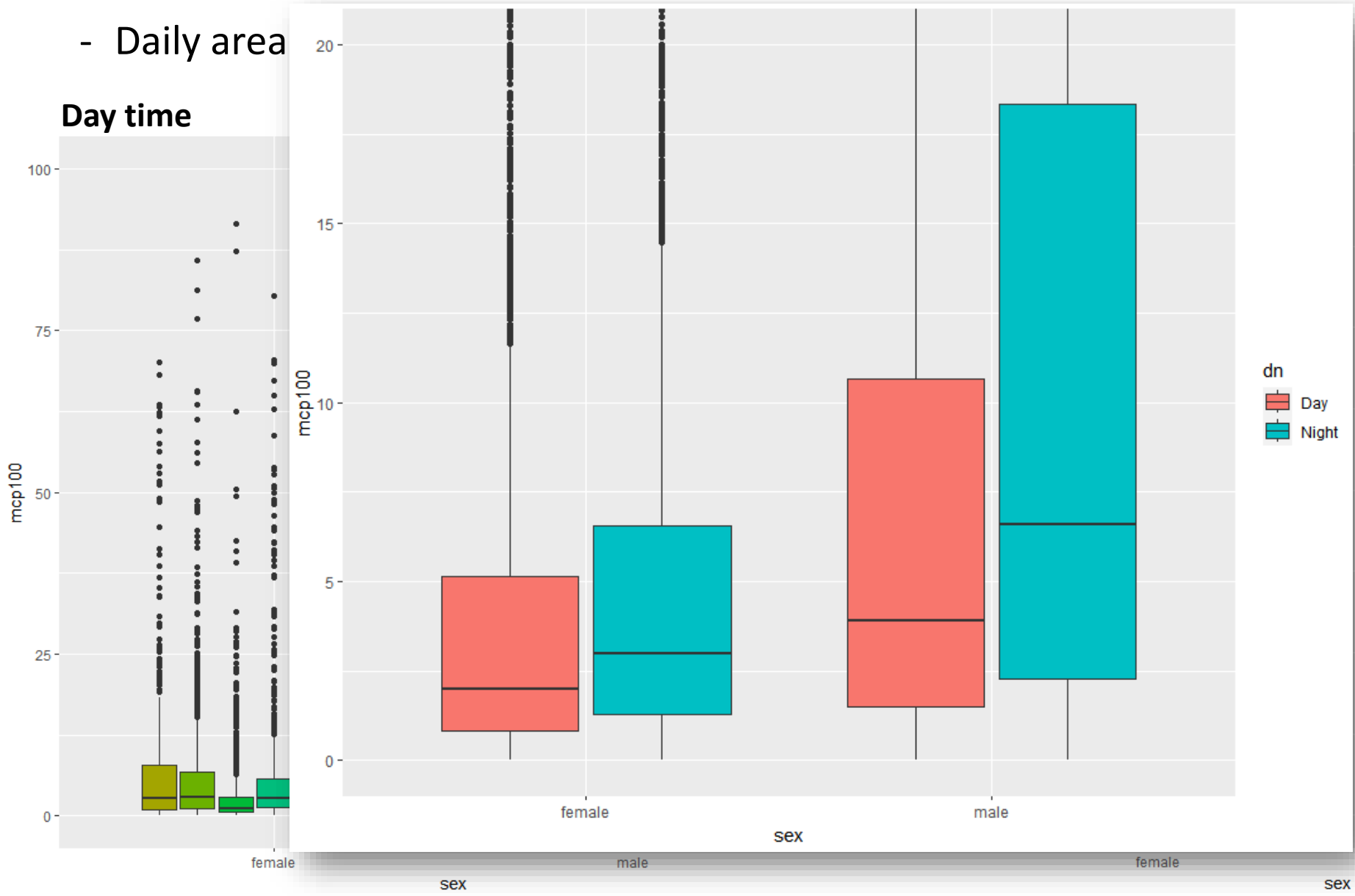
Night time

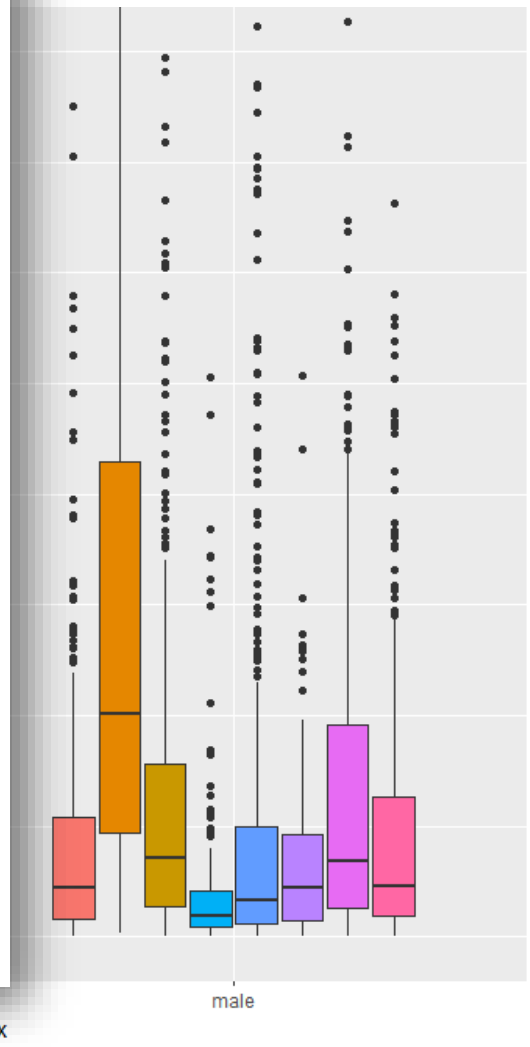


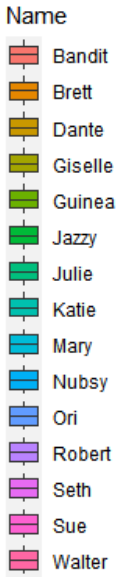
Movement patterns

- Daily area

Day time

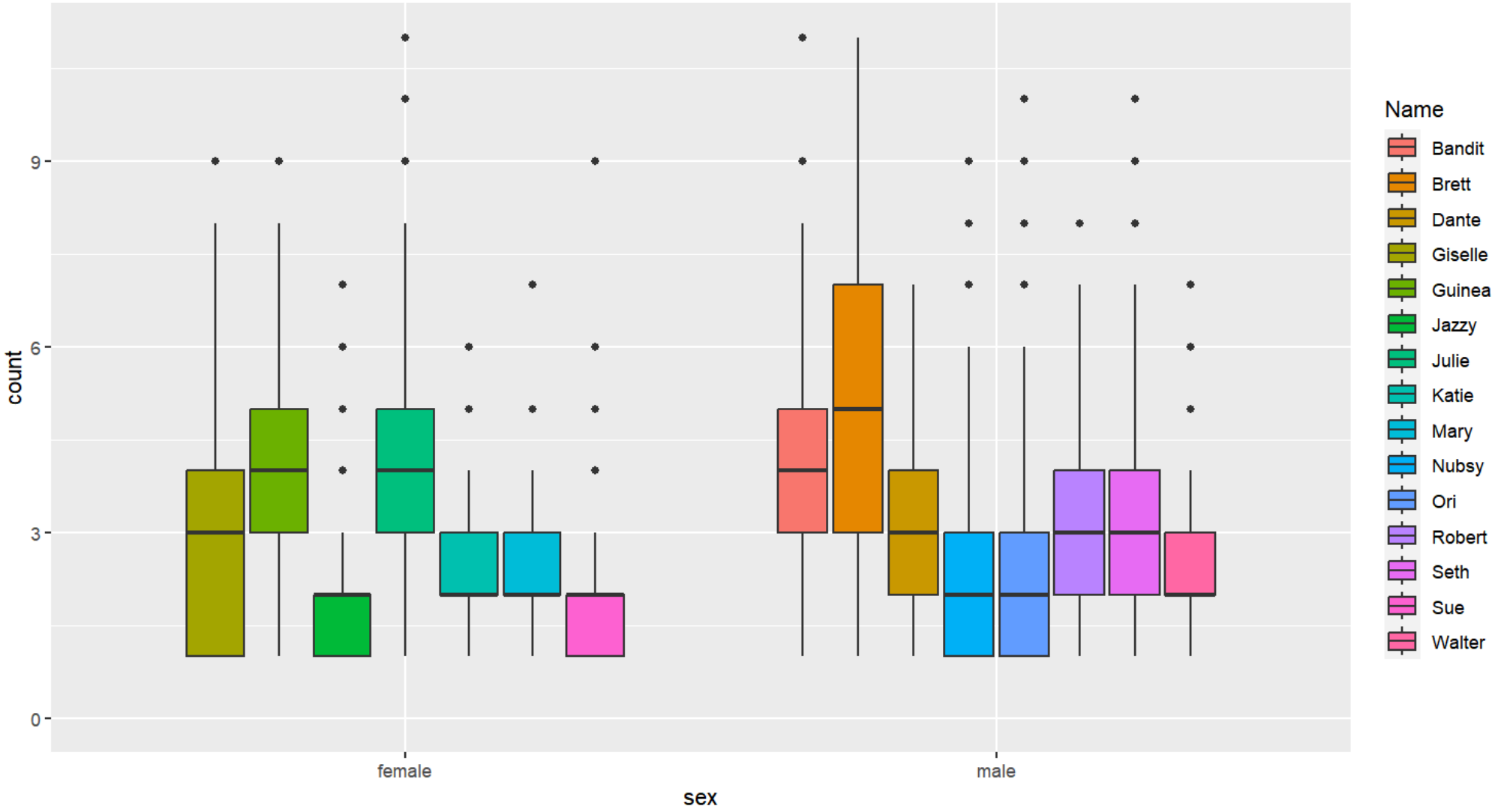






Properties (Holdings or Lots)

- Number of properties visited each day



Properties

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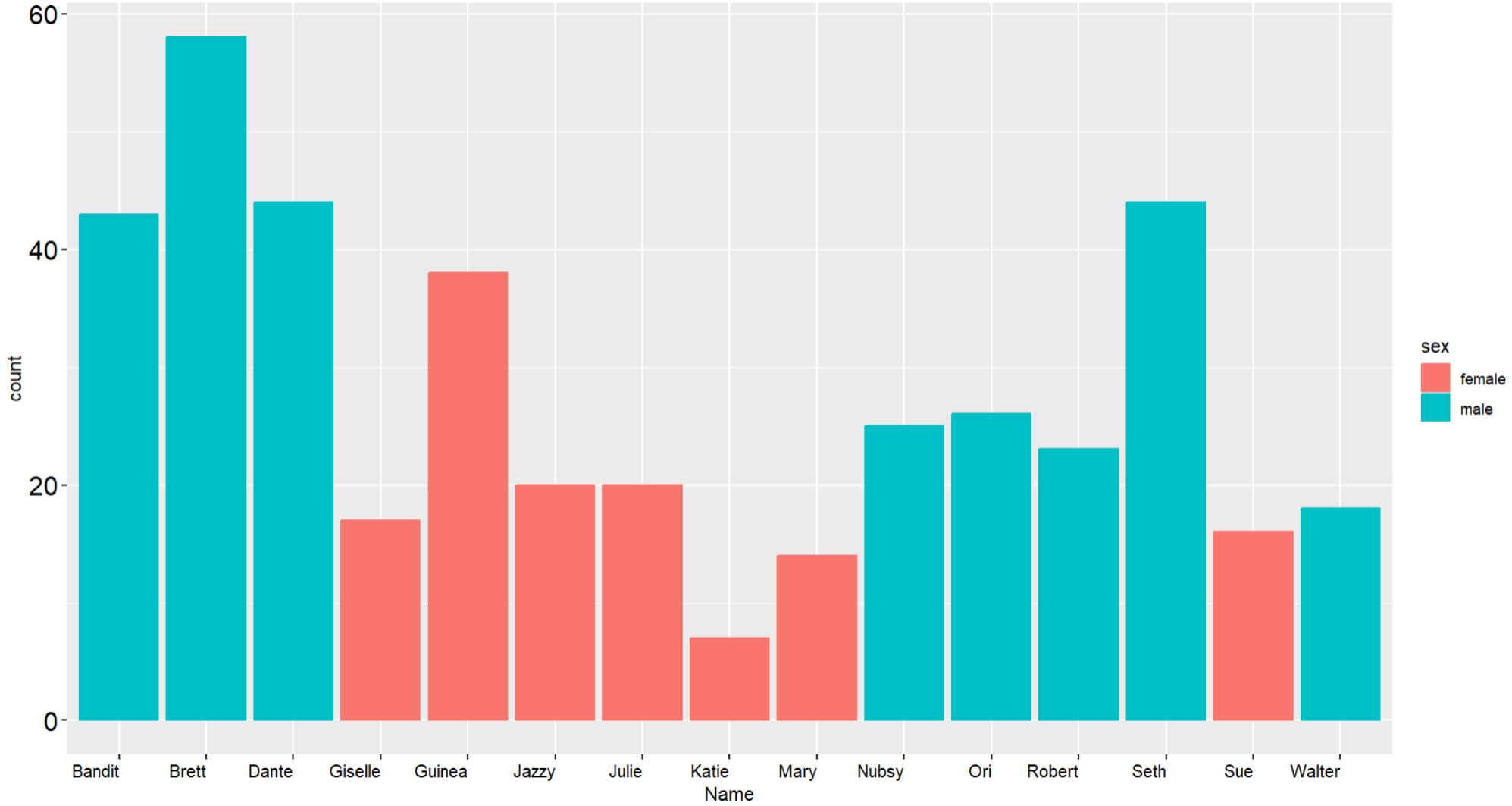
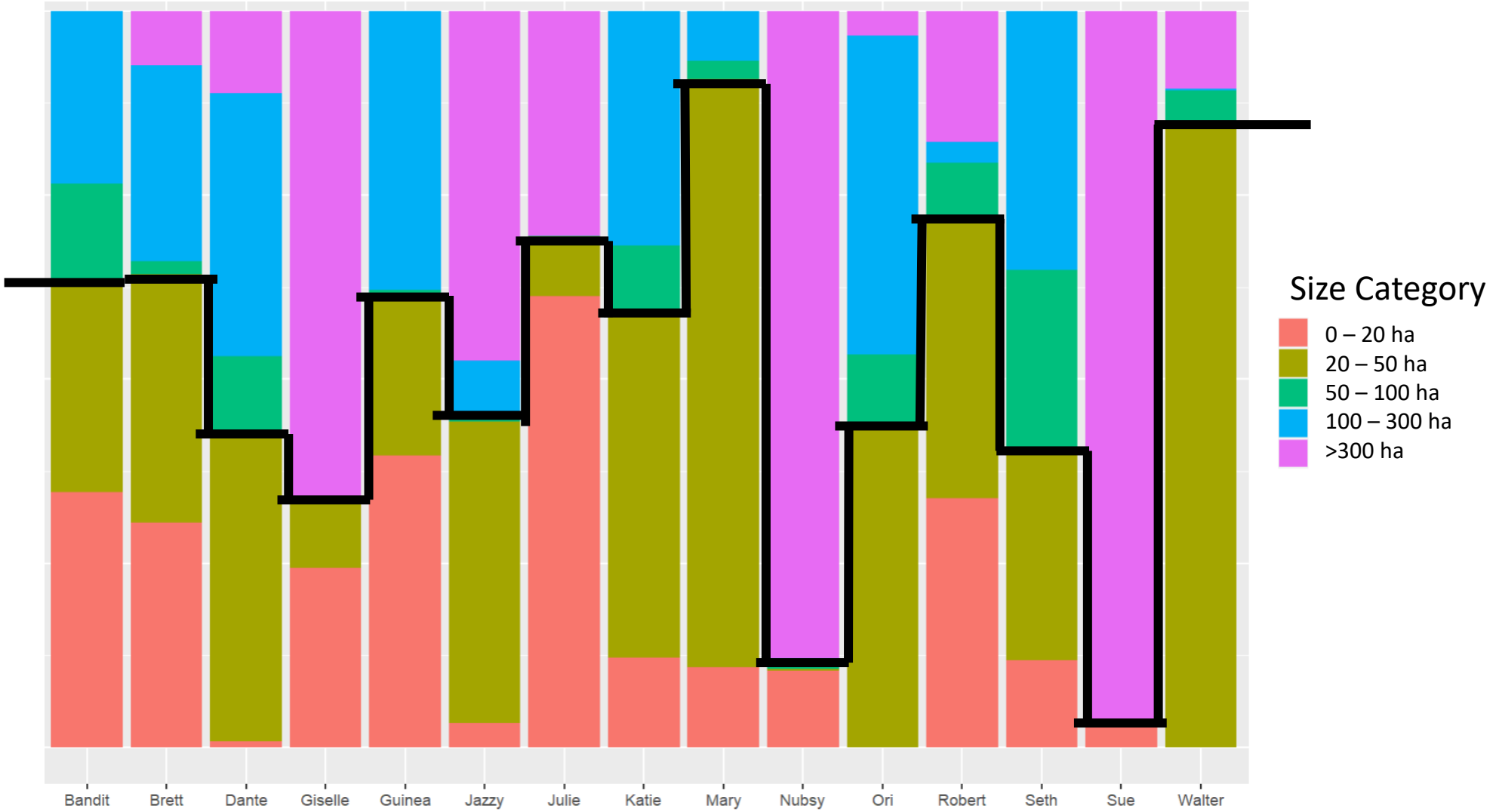


Properties

- Size of properties visited



Properties

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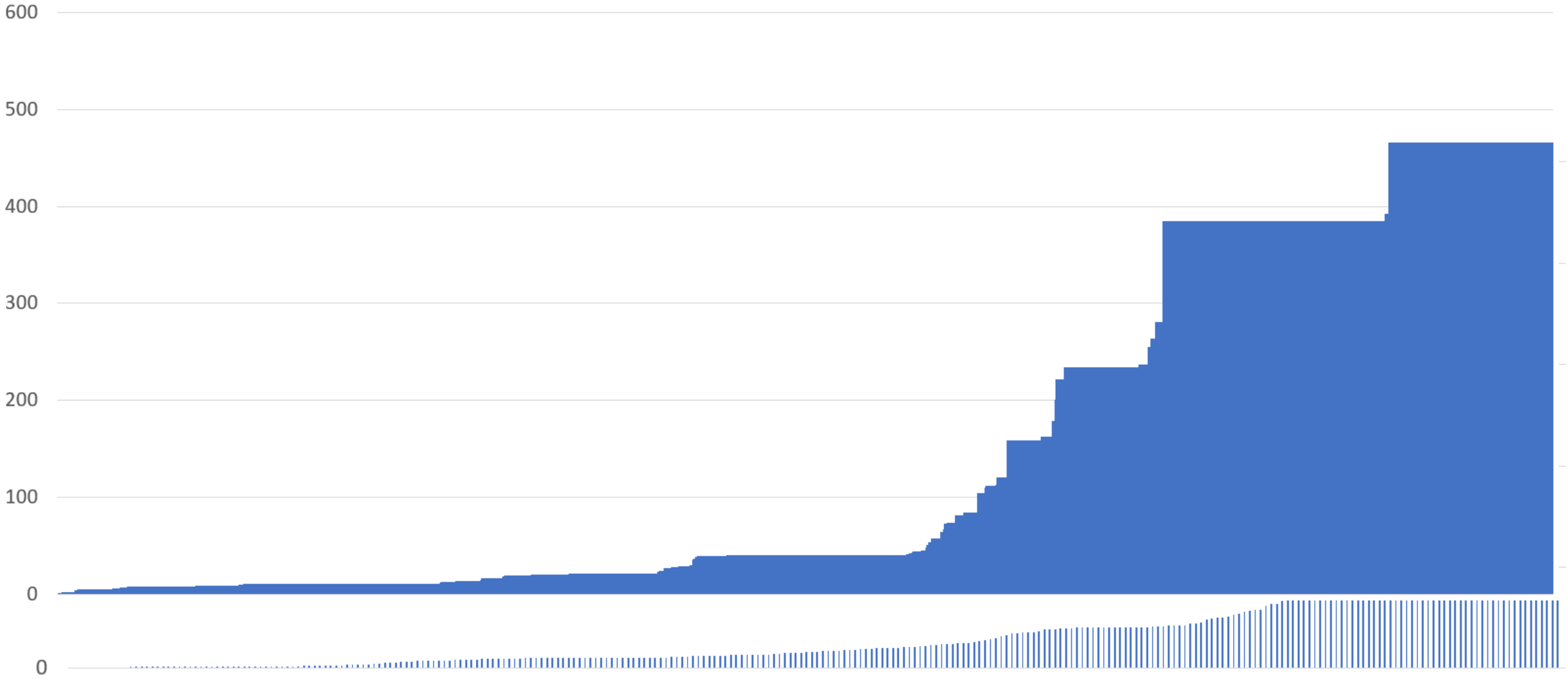


Movement patterns

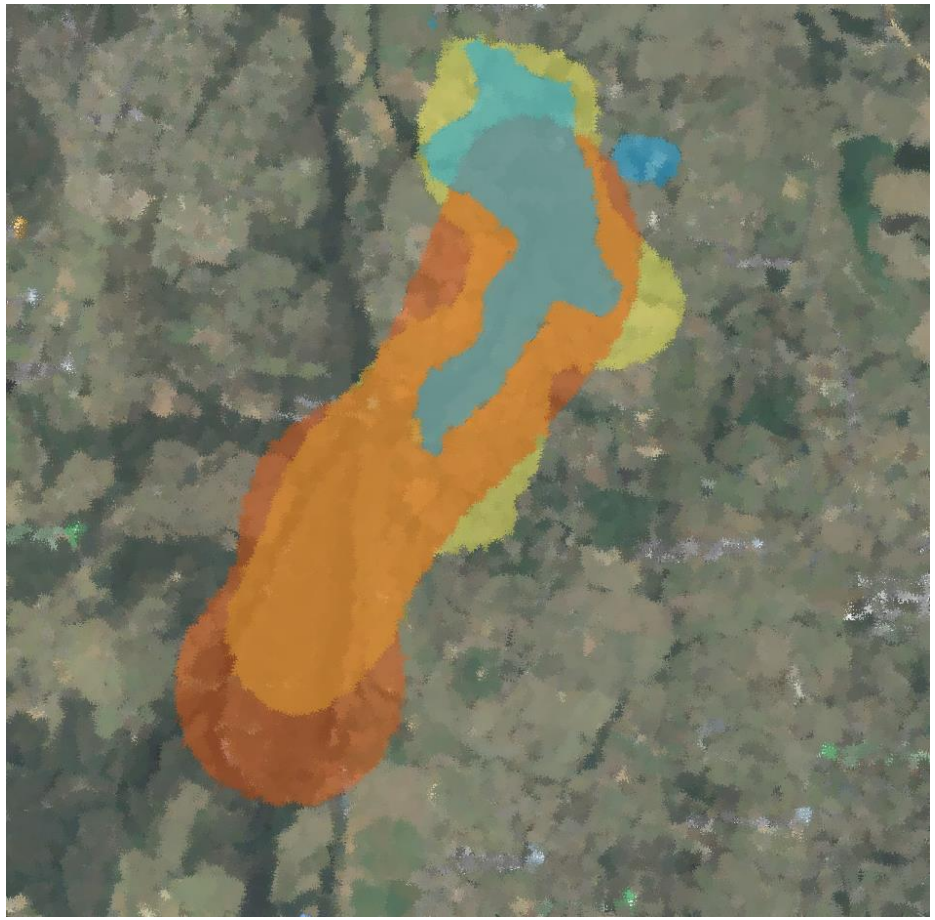
- Seasonal

season	Month	male	Buck	female	Doe	Damage
Summer	Jan	bach1	Single sex herds / Growing antlers (velvet)	fawn	Fawn	Rubbing trees and shrubs
	Feb	bach1	Single sex herds / Growing antlers (velvet)	group	Weaning (in groups)	Rubbing trees and shrubs
Autumn	Mar	rut	Rut	group	Groups	Rutting stands / leks
	Apr	rut	Rut	group	Groups	Rutting stands / leks
	May	post-rut	Rut	group	Groups	Rutting stands / leks
Winter	Jun	post-rut	Single sex herds / antler hardening	pregnant	Pregnant	Browsing damage to plants
	Jul	bachelor	Single sex herds / antler hardening	pregnant	Pregnant	Browsing damage to plants
	Aug	bachelor	Single sex herds / antler hardening	pregnant	Pregnant	Browsing damage to plants
Spring	Sep	bachelor	Single sex herds / antler hardening / cast	pregnant	Pregnant	Browsing damage to plants
	Oct	bachelor	Single sex herds / Cast / Growing antlers	fawn	Pregnant (start to isolate)	Browsing damage to plants
	Nov	bachelor	Single sex herds / Young cast / Growing antlers	fawn	Fawn	Browsing damage to plants
Summer	Dec	bachelor	Single sex herds / Growing antlers (velvet)	fawn	Fawn	Rubbing trees and shrubs

Movement patterns

- Seasonal areas / distance

Bachelor
Rut
Post-rut



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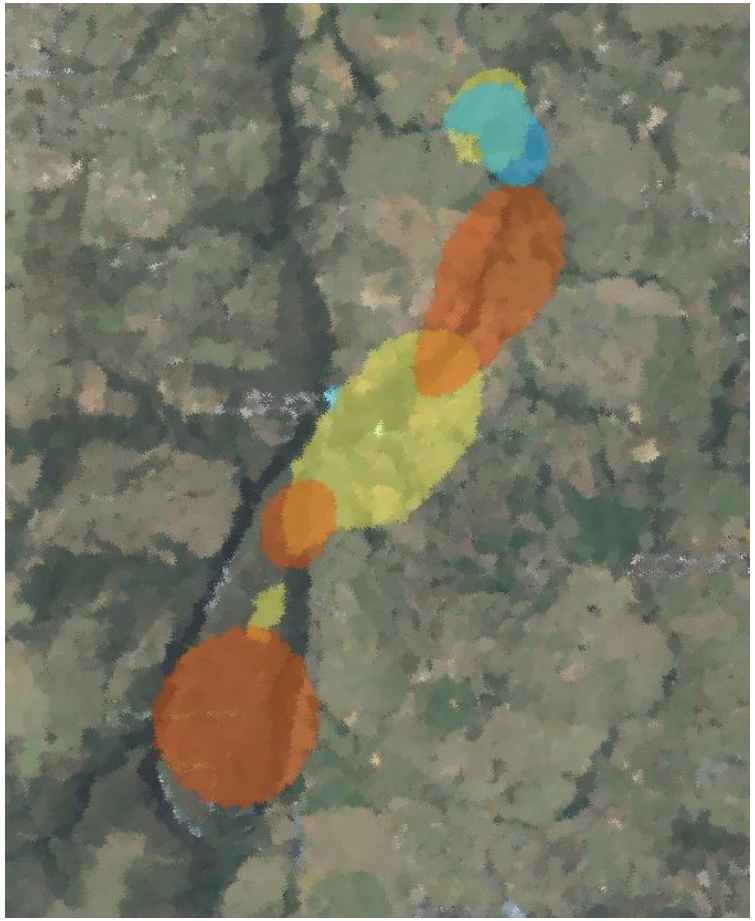

KDE50

Acknowledgements

- Graham Wilson - GS LLS
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- Derek Keeper – Nepean Mobile Vet
- Paul Lipscombe – USYD
- Nathan O’Maley – NPWS
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