



Department of
Primary Industries

Performance of Felixer Devices When Faced With Captive Spotted-tailed Quolls





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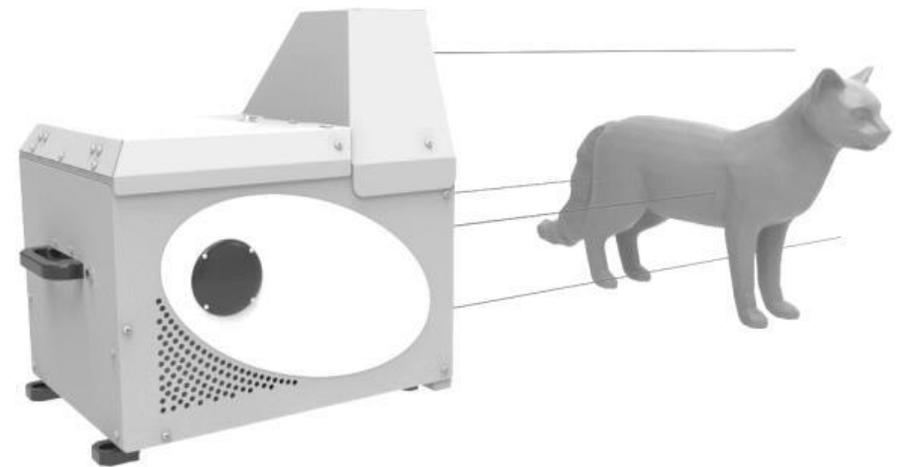
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17 September 2023



Felixer 3.1 Grooming Trap





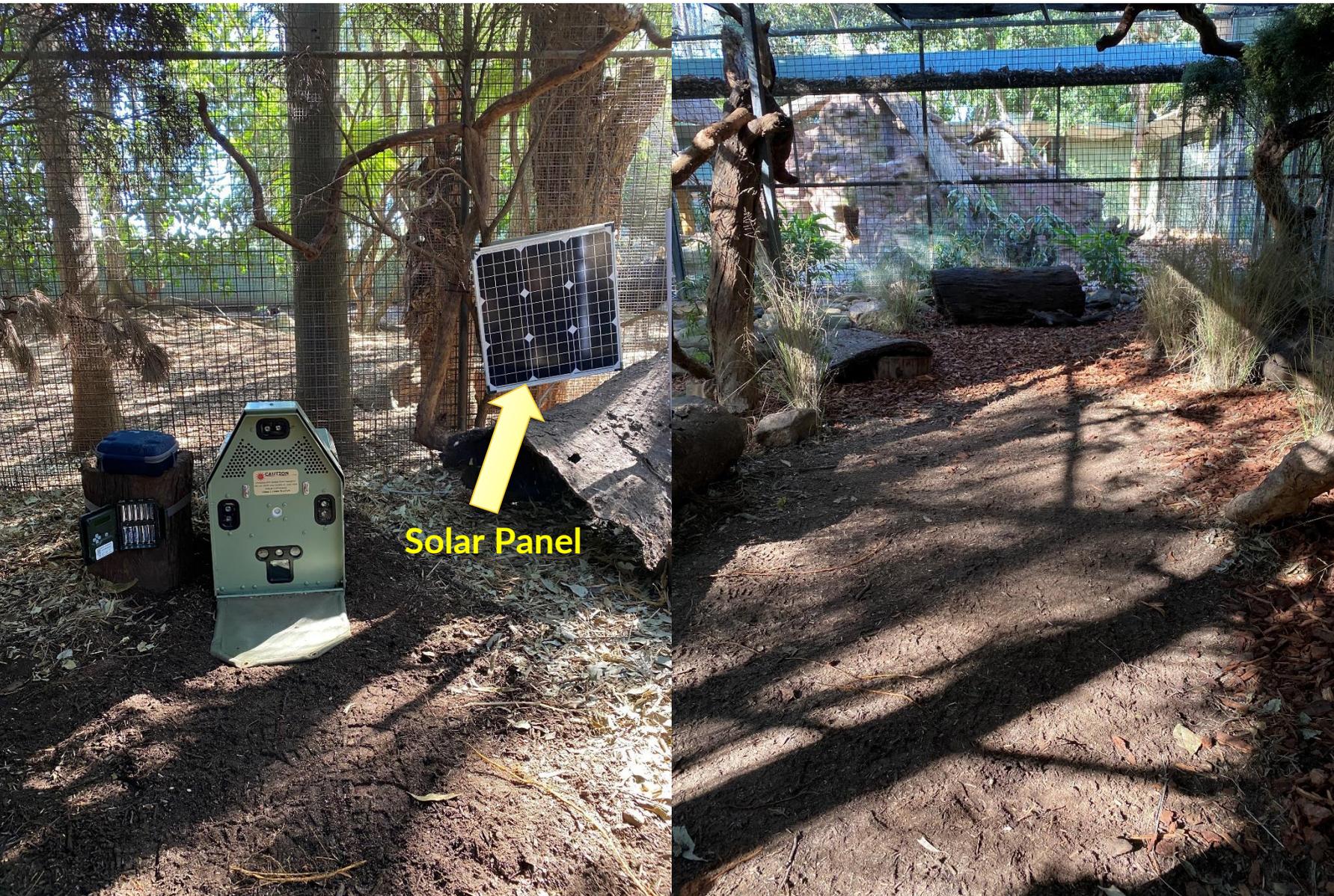
Resolving Non-Target Issues Part of Jigsaw

Do non-target species influence Felixer efficacy?

Do species such as spotted-tailed quolls, which weigh about the same as feral cats and have broadly similar body morphology, have the capacity to falsely activate Felixers?

May be critical to know for areas where both species co-occur and feral cat control is being considered.





Enclosure Dimensions

5.98 m Length

5.50 m Width

3.06 m Height

Area Cleared of Vegetation

4.0 m Length

2.0 m Width

Individual Quolls

2 Adult Females

2 Adult Males

Weighing 2.8-5.8 kg

Categorising Quoll Imagery



Angled



Perpendicular



Front-on

Number of occasions where Felixers took an image of a spotted-tailed quoll as it passed in front, based on device, mode setting and individual animal. The number of detections is also reported here in relation to deployment effort (days).

Felixer Device	Felixer Mode	Animal	Detections	Days in Mode	Detections/Day
1	Aggressive	Male 1	1058	19	55.68
1	Conservative	Male 1	1172	24	48.83
1	Aggressive	Female 1	291	23	12.65
1	Conservative	Female 1	505	16	31.56
2	Aggressive	Male 2	114	14	8.14
2	Conservative	Male 2	388	19	20.42
2	Aggressive	Female 2	166	22	7.54
2	Conservative	Female 2	274	27	10.15
		Total Detections	3968 (0)		

Number of detections where spotted-tailed quolls passed in front of Felixers, based on sensor activated. Proportion of overall detections for each sensor indicated in brackets.

Sensor Activated	Felixer Device 1	Felixer Device 2
Bottom	2306 (76.2%) ^{***}	453 (48.1%) ^{***}
Left	223 (7.3%)	145 (15.4%)
Multi	6 (0.2%)	6 (0.7%)
Right	453 (15%)	201 (21.3%)
Top	2 (0.1%)	2 (0.2%)
Fast*	27 (0.9%)	4 (0.4%)
Slow**	9 (0.3%)	131 (13.9%)
Total Detections	3026	942

* = animal is moving through frame faster than expected for a feral cat or fox.

** = animal is moving slower than expected for a feral cat or fox.

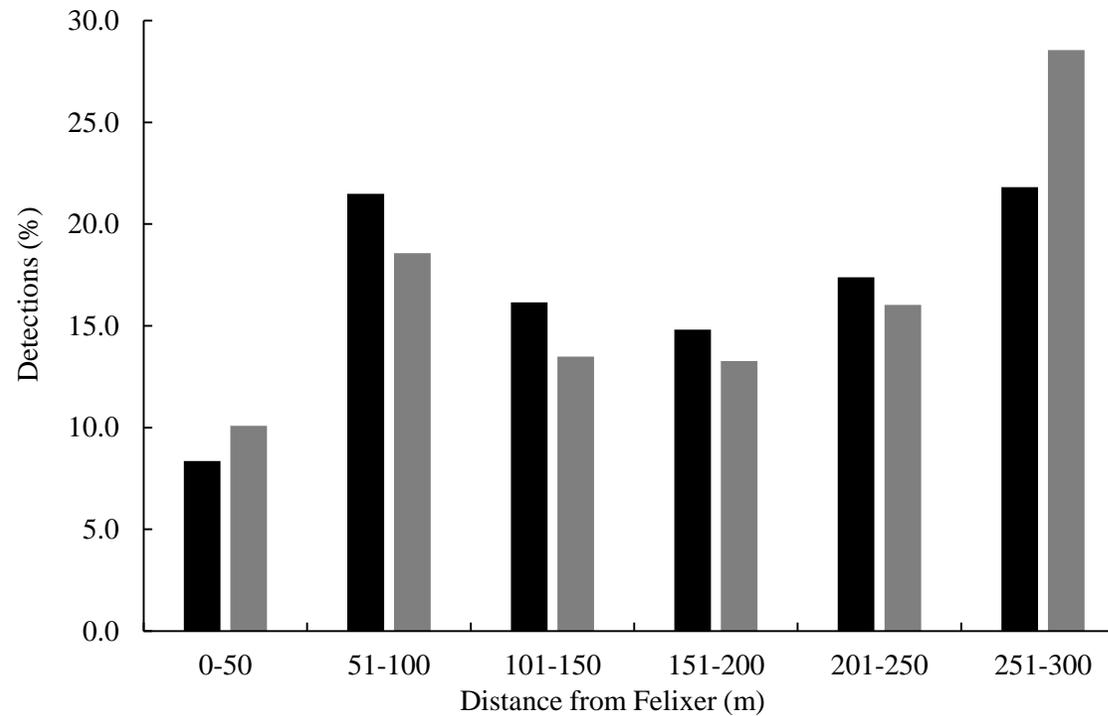
*** = proportion of detections significantly different ($p < 0.0001$).

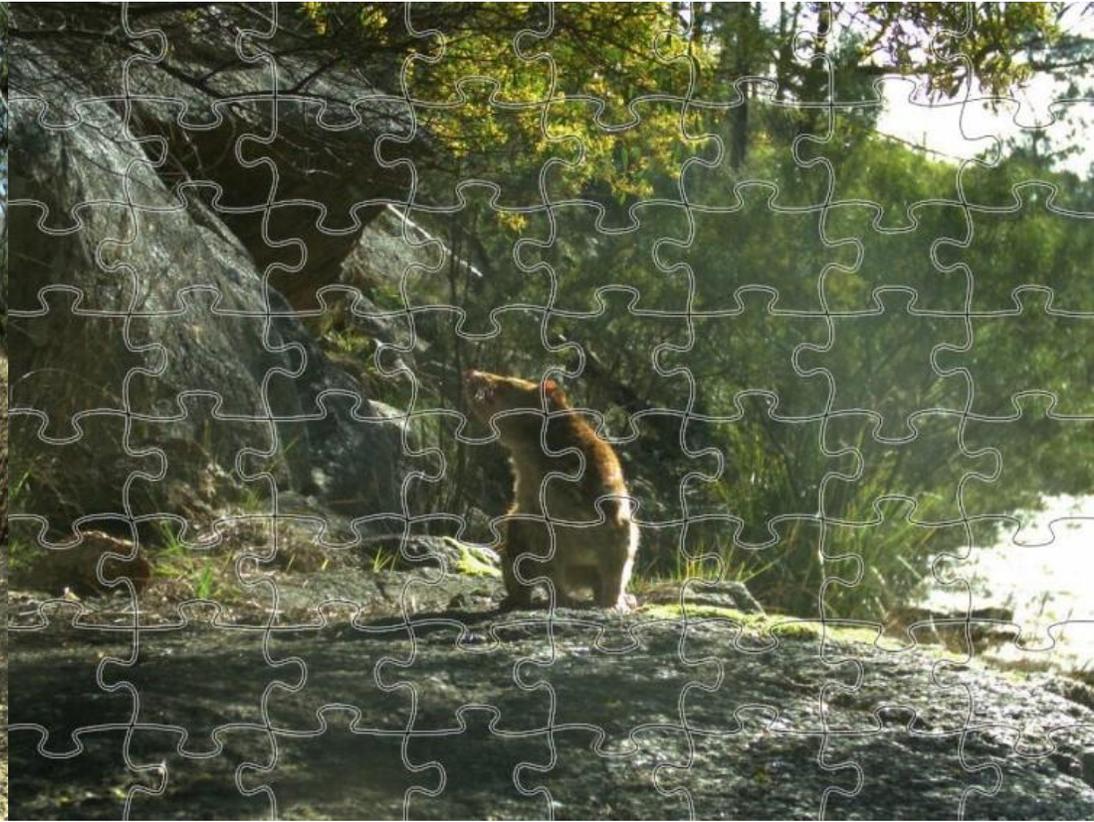
Orientation of spotted-tailed quolls when photographed by Felixer devices, at the time sensors were incurred. Proportion of detections for each orientation category is indicated in brackets.

Orientation of Quoll	Felixer Device 1	Felixer Device 2
Angled	1567 (51.8%)*	618 (65.6%)*
Perpendicular	1060 (35.0%)	200 (21.2%)
Straight-On	399 (13.2%)	124 (13.2%)
Total Detections	3026	942

* = proportion of detections significantly different (p < 0.0001).

Percentage of sensor-activation detections by spotted-tailed quolls at 50 cm distance increments from the front face of Felixer devices. Unit 1= black columns, Unit 2= grey columns.







Where To From Here?

- Continue to build knowledge about other potential non-target issues using Felixers (including AI-Equipped);
- Particularly in the context of the Eastern Seaboard of Australia;
- Build on existing knowledge of devices and that of feral cat biology to look at optimal use of Felixers in field settings;
- Where in the jigsaw puzzle do Felixers belong?

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