

**Supplementary Material**

**Habitat loss and degradation reduce the abundance of the glossy grass skink, *Pseudemoia rawlinsoni***

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**Table S1.** The abundance of by-catch species (i.e. species other than *Pseudemoia rawlinsoni*) at each site for each survey session. Total capture numbers are given for each site, each survey session, and a grand total. The number of individuals of each species is provided in the parentheses.

N/A Indicates no by-catch.

	Survey session 1 November	Survey session 2 December	Survey session 3 January	Survey session 4 March	Survey session 5 April	Total per site
Port Fairy Remnant	<i>Pseudemoia entrecasteauxii</i> (2)  <i>Tiliqua nigrolutea</i> (1)	<i>Pseudemoia entrecasteauxii</i> (3)  <i>Notechis scutatus</i> (2)	<i>Pseudemoia entrecasteauxii</i> (2)	<i>Pseudemoia entrecasteauxii</i> (1)	<i>Pseudemoia entrecasteauxii</i> (1)	3 by-catch species: <i>Pseudemoia entrecasteauxii</i> (9) <i>Notechis scutatus</i> (2) <i>Tiliqua nigrolutea</i> (1)
Port Fairy Disturbed	N/A	<i>Pseudemoia entrecasteauxii</i> (2)	<i>Pseudemoia entrecasteauxii</i> (3)	<i>Pseudemoia entrecasteauxii</i> (3)	<i>Limnodynastes tasmaniensis</i> (1)	3 by-catch species: <i>Limnodynastes tasmaniensis</i> (1)

					<i>Litoria verreauxii</i> (1)	<i>Pseudemoia</i> <i>entrecasteauxii</i> (8) <i>Litoria verreauxii</i> (1)
Queenscliff Remnant	N/A	<i>Carinascincus</i> <i>metallicus</i> (2)	<i>Carinascincus</i> <i>metallicus</i> (1)	N/A	<i>Carinascincus</i> <i>metallicus</i> (4)	1 by-catch species: <i>Carinascincus</i> <i>metallicus</i> (7)
Queenscliff Disturbed	N/A	N/A	N/A	N/A	N/A	N/A
Swan Bay Remnant	<i>Acritoscincus</i> <i>duperreyi</i> (4)	N/A	N/A	<i>Acritoscincus</i> <i>duperreyi</i> (1)	<i>Acritoscincus</i> <i>duperreyi</i> (1)	1 by-catch species: <i>Acritoscincus</i> <i>duperreyi</i> (6)
Swan Bay Disturbed	<i>Limnodynastes</i> <i>tasmaniensis</i> (11)	<i>Limnodynastes</i> <i>tasmaniensis</i> (38) <i>Acritoscincus</i> <i>duperreyi</i> (2)	N/A	<i>Limnodynastes</i> <i>tasmaniensis</i> (10)	N/A	2 by-catch species: <i>Limnodynastes</i> <i>tasmaniensis</i> (59)

						<i>Acritoscincus duperreyi</i> (2)
Yering Remnant	<i>Lissolepis coventryi</i> (10) <i>Saproscincus mustelinus</i> (2)	<i>Lissolepis coventryi</i> (4) <i>Austrelaps superbis</i> (3) <i>Saproscincus mustelinus</i> (2)	N/A	<i>Austrelaps superbis</i> (11)	<i>Lissolepis coventryi</i> (1) <i>Austrelaps superbis</i> (9) <i>Lampropholis guichenoti</i> (1)	4 by-catch species: <i>Lissolepis coventryi</i> (15) <i>Austrelaps superbis</i> (23) <i>Lampropholis guichenoti</i> (1) <i>Saproscincus mustelinus</i> (4)
Yering Disturbed	<i>Lampropholis guichenoti</i> (3) <i>Saproscincus mustelinus</i> (2)	<i>Lampropholis guichenoti</i> (5)	<i>Lampropholis guichenoti</i> (1)	<i>Limnodynastes tasmaniensis</i> (38) <i>Litoria verreauxii</i> (1)	<i>Limnodynastes tasmaniensis</i> (1) <i>Lampropholis guichenoti</i> (2)	4 by-catch species: <i>Limnodynastes tasmaniensis</i> (39) <i>Litoria verreauxii</i> (1)

						<i>Lampropholis guichenoti</i> (11) <i>Saproscincus mustelinus</i> (2)
Tooradin Remnant	<i>Lissolepis coventryi</i> (43) <i>Carinascincus metallicus</i> (23)	<i>Lissolepis coventryi</i> (21) <i>Carinascincus metallicus</i> (2)	<i>Lissolepis coventryi</i> (17) <i>Carinascincus metallicus</i> (8)	<i>Lissolepis coventryi</i> (11) <i>Carinascincus metallicus</i> (5) <i>Pseudemoia entrecasteauxii</i> (1)	<i>Lissolepis coventryi</i> (9) <i>Carinascincus metallicus</i> (11)	3 by-catch species: <i>Lissolepis coventryi</i> (101) <i>Carinascincus metallicus</i> (49) <i>Pseudemoia entrecasteauxii</i> (1)
Tooradin Disturbed	<i>Lissolepis coventryi</i> (1)	N/A	N/A	<i>Austrelaps superbus</i> (1)	<i>Austrelaps superbus</i> (1)	2 by-catch species: <i>Lissolepis coventryi</i> (1) <i>Austrelaps superbus</i> (2)

Hastings Remnant	<i>Lissolepis coventryi</i> (9)	<i>Lissolepis coventryi</i> (15)	<i>Lissolepis coventryi</i> (12)	<i>Lissolepis coventryi</i> (9) <i>Austrelaps superbus</i> (2)	<i>Lissolepis coventryi</i> (5) <i>Acritoscincus duperreyi</i> (1)	3 by-catch species: <i>Lissolepis coventryi</i> (50) <i>Austrelaps superbus</i> (2) <i>Acritoscincus duperreyi</i> (1)
Hastings Disturbed	N/A	<i>Litoria verreauxii</i> (2)	<i>Litoria verreauxii</i> (2)	<i>Pseudemoia entrecasteauxii</i> (2) <i>Litoria verreauxii</i> (3)	<i>Litoria verreauxii</i> (7)	2 by-catch species: <i>Pseudemoia entrecasteauxii</i> (2) <i>Litoria verreauxii</i> (14)
Total survey session	8 by-catch species: <i>Lissolepis coventryi</i> (63)	10 by-catch species: <i>Lissolepis coventryi</i> (40)	5 by-catch species: <i>Lissolepis coventryi</i> (29)	7 by-catch species: <i>Lissolepis coventryi</i> (20)	8 by-catch species: <i>Lissolepis coventryi</i> (15)	11 by-catch species (n = 415): <i>Lissolepis coventryi</i> (167)

	<i>Limnodynastes tasmaniensis</i> (11)	<i>Limnodynastes tasmaniensis</i> (38)	<i>Carinascincus metallicus</i> (9)	<i>Limnodynastes tasmaniensis</i> (48)	<i>Limnodynastes tasmaniensis</i> (2)	<i>Limnodynastes tasmaniensis</i> (99)
	<i>Carinascincus metallicus</i> (23)	<i>Carinascincus metallicus</i> (4)	<i>Pseudemoia entrecasteauxii</i> (5)	<i>Carinascincus metallicus</i> (5)	<i>Carinascincus metallicus</i> (15)	<i>Carinascincus metallicus</i> (56)
	<i>Pseudemoia entrecasteauxii</i> (2)	<i>Austrelaps superbus</i> (3)	<i>Litoria verreauxii</i> (2)	<i>Austrelaps superbus</i> (14)	<i>Austrelaps superbus</i> (10)	<i>Austrelaps superbus</i> (27)
	<i>Lampropholis guichenoti</i> (3)	<i>Pseudemoia entrecasteauxii</i> (5)	<i>Lampropholis guichenoti</i> (1)	<i>Pseudemoia entrecasteauxii</i> (7)	<i>Pseudemoia entrecasteauxii</i> (1)	<i>Pseudemoia entrecasteauxii</i> (20)
	<i>Acritoscincus duperreyi</i> (4)	<i>Litoria verreauxii</i> (2)		<i>Litoria verreauxii</i> (4)	<i>Litoria verreauxii</i> (8)	<i>Litoria verreauxii</i> (16)
	<i>Saproscincus mustelinus</i> (4)	<i>Lampropholis guichenoti</i> (5)		<i>Acritoscincus duperreyi</i> (1)	<i>Lampropholis guichenoti</i> (3)	<i>Lampropholis guichenoti</i> (12)
	<i>Tiliqua nigrolutea</i> (1)	<i>Acritoscincus duperreyi</i> (2)			<i>Acritoscincus duperreyi</i> (2)	<i>Acritoscincus duperreyi</i> (9)
		<i>Saproscincus mustelinus</i> (2)				

		<i>Notechis scutatus</i> (2)				<i>Saproscincus mustelinus</i> (6) <i>Notechis scutatus</i> (2) <i>Tiliqua nigrolutea</i> (1)
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**Table S2.** The linear mixed effects model output for fixed effects between *Pseudemoia rawlinsoni* body temperature and tile surface temperature and sex. \* indicates significance.

	Estimate	Standard Error	Degrees of freedom	t value	P-value
(Intercept)	3.011	1.636	31.466	1.841	0.075
Tile Surface temperature	0.997	0.080	43.780	12.495	<0.001*
Sex: Male	0.597	0.730	43.237	0.818	0.418

**Table S3.** The linear mixed effects model output for fixed effects between  $\Delta T_{\text{air-body}}$  and  $\Delta T_{\text{air-tile}}$  and sex for *Pseudemoia rawlinsoni*. \* indicates significance.

	Estimate	Standard Error	Degrees of freedom	t value	P-value
(Intercept)	1.988	0.807	10.672	2.464	0.032*
Tile Surface temperature	0.553	0.070	38.196	7.867	<0.001*
Sex: Male	0.217	0.912	31.754	0.238	0.813

**Table S4.** Summary statistics of weather conditions recorded at sites where *Pseudemoia rawlinsoni* were caught during tile checks (from 8<sup>th</sup> November 2021 to 18<sup>th</sup> April 2022).

Variable	Median	Standard Error	Range
Air temperature (°C)	19.3	0.4	14.1 – 25.2
Wind speed (km/h)	6.2	0.6	0.5 – 16.5
Relative humidity (%)	62.1	1.4	50.1 – 90.4
Cloud cover (0–8)	3.5	0.5	0 – 8
Rain intensity (0–3)	0	0	0 – 0.5