



Wombats and sarcoptic mange

SYNOPSIS – JUNE 2024

The impact of sarcoptic mange on bare-nosed wombats (*Vombatus ursinus*) has raised concerns about the status of their populations in Tasmania. The aim of this report is to present information on mange prevalence and population trends of wombats in Tasmania.

Background

The bare-nosed wombat is found in south-eastern Australia including Tasmania. Three subspecies are recognised: one on mainland Australia (*V. u. hirsutus*), one on mainland Tasmania (Tasmanian wombat, *V. u. tasmaniensis*) and one that was once found widely on Bass Strait islands (Flinders Island Wombat *V. u. ursinus*) but is now restricted to Flinders Island (and Maria Island following its introduction to the island in the 1970s). The conservation status of the bare-nosed wombat is not considered to be threatened under Tasmanian nor Commonwealth legislation.

Wombat populations across south-eastern Australia are affected by sarcoptic mange which is caused by the parasitic mite *Sarcoptes scabiei*. The mites burrow into the wombat's skin causing itching and scratching followed by skin thickening and crusting, loss of hair, and lesions (Fig. 1). If left untreated the wombat will die. The parasite is of human origin and there is strong evidence to suggest that it was introduced into Australia by Europeans and their domestic animals. Although mange is widespread in bare-nosed wombat populations in south-eastern Australia, rarely

does it cause large population declines. However, in northern Tasmania sarcoptic mange caused a large decrease in wombat numbers in Narawntapu National Park (Martin et al. 2018) and surrounding areas between 2010 and 2016 (Carver et al. 2021).



Fig. 1 Wombat with mange (K. Simpson)

In response to this outbreak the Department of Natural Resources and Environment Tasmania (NRE Tas) undertook mange prevalence surveys and reviewed wombat population trends using the Department's Tasmanian Spotlight Survey Program, which was established to monitor

wallabies and possums (Driessen and Hocking 1992). Overall, since 1985, the wombat population in Tasmania increased (Carver et al. 2021, Driessen et al. 2022a). Surveys also confirmed that mange prevalence across most parts of Tasmania is low (Driessen et al. 2022b). In this report we update the mange prevalence and wombat population trends with the most recent analyses of data.

Sarcoptic mange distribution and prevalence

Wombats occur widely in Tasmania in all major habitat types from the coast to 1500 m above sea level (Fig. 2). Mange-affected wombats occur throughout large parts Tasmania, particularly on agricultural land. There are currently no confirmed records of mange from remote areas of western Tasmania or Maria Island (Fig. 2).

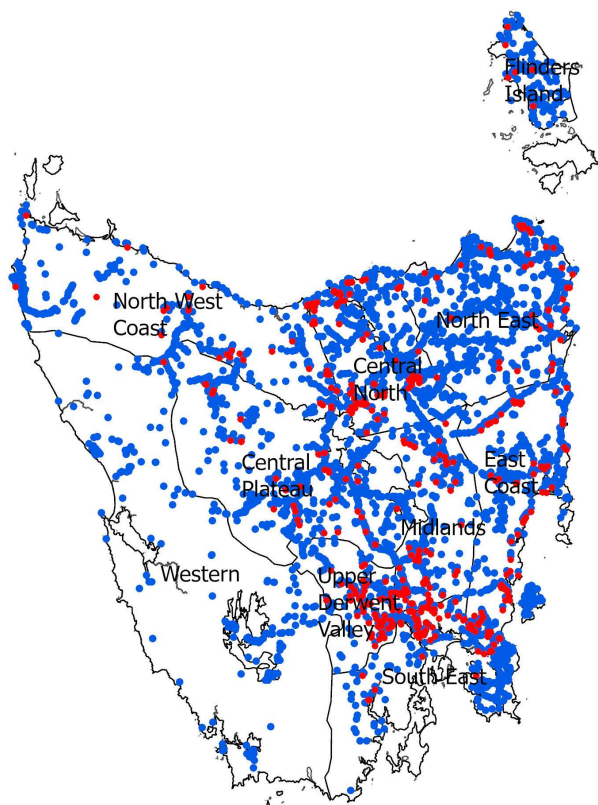


Fig. 2 Distribution of wombats (blue circles) and sarcoptic mange (red triangles) in Tasmania based on observation records stored in the Tasmanian Natural Values Atlas (as at 30 May 2024). Regions are shown and labelled.

Systematic mange prevalence surveys have been conducted since 2017 at 40 locations in six regions, primarily in eastern and central Tasmania (Table 1). Mange was recorded in five of the six regions; however, there have been few surveys in the Upper Derwent Valley region where mange is known to occur. No mange was recorded at 27 (two thirds) of 40 locations surveyed. Mange prevalence varied between locations and overall, the average mange prevalence was less than 5%. Mange prevalence estimates will change as more data are gathered because mange prevalence varies in space and time.

Table 1 Mange prevalence estimates by region using direct observation (obs) and camera (cam) surveys at night (2017–2023)

Region	No. of locations	Survey type	No. of wombats*	% mange
Central North	3	Obs	17	17.6
		Cam	49	2.0
Central Plateau	19	Obs	250	2.8
		Cam	1179	0.3
Flinders	3	Obs	1061	3.8
		Cam	18	0.0
East Coast	4	Obs	1060	0.1
		Cam	849	0.0
North East	10	Obs	2682	6.4
		Cam	498	0.8
Upper Derwent Valley	1	Obs	3	0.0
		Cam	-	-
Total	40	Obs	5073	4.3
		Cam	2593	0.3

*Wombat numbers have been totalled across locations and multiple surveys within locations within regions. Number of wombat visits is used for camera data.



At six locations in Tasmania, NRE Tas has been monitoring mange prevalence at least annually since 2017 (Appendix I). These locations were chosen because (i) they have (or had in the case of Narawntapu National Park) abundant wombats, (ii) they had populations with no/low or high mange prevalence, and (iii) both subspecies were represented.

Mange has been recorded regularly during surveys at Cape Portland and Flinders Island. Only one wombat with mange has been recorded from Forestier Peninsula and mange was not recorded in the surveys at Maria Island, Narawntapu or Cradle Mountain. Mange has previously been recorded within Narawntapu and Cradle Mountain-Lake St Clair National Parks. At Cape Portland and Flinders Island, mange prevalence has been relatively stable since surveys began (Figs 3-4, Appendix I).

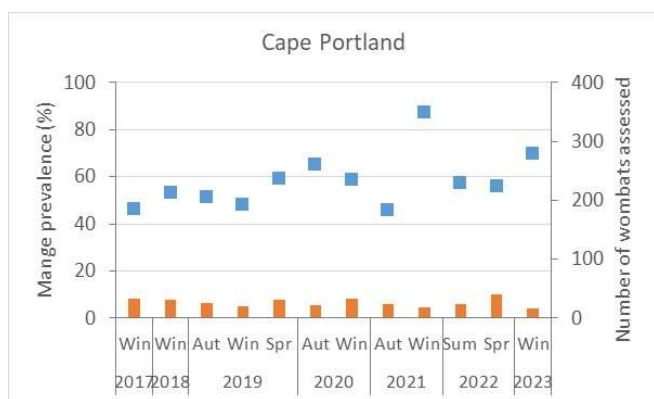


Fig. 3 Mange prevalence at Cape Portland from 2017 to 2023. Blue squares show the number of wombats assessed for mange during each survey (range: 185–350).

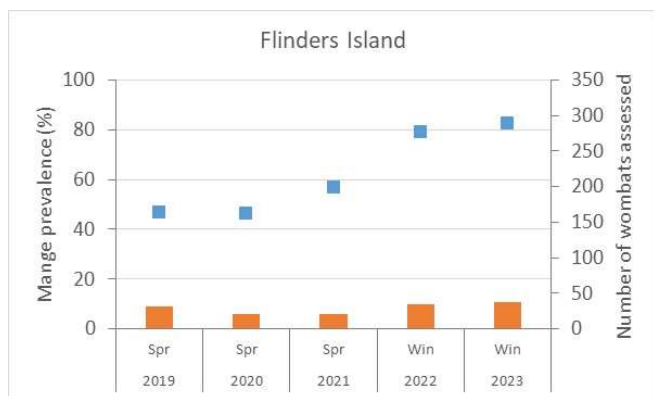


Fig. 4 Mange prevalence at Flinders Island from 2019 to 2023. Blue squares show the number of wombats assessed for mange during each survey (range: 162–289).

Wombat population trends

For several decades, NRE Tas has been undertaking annual spotlight surveys for mammals across large areas of Tasmania, but not in the south-west and west, largely due to its inaccessibility. Since 1985, 132 ten km-long transects have been surveyed annually on mainland Tasmania and since 1994, eight transects have been surveyed on Flinders Island.

Population trends for the Tasmanian wombat (*V. u. tasmaniensis*) are presented using the average of all 132 mainland transects. Regional differences in population trends for the Tasmanian wombat are also presented by aggregating the transects into seven climatic regions (Central North, Central Plateau, East Coast, Midlands, North East, North West, and South East). Population trends for the Flinders Island wombat (*V. u. ursinus*) are presented using the average of all eight transects on Flinders Island.

A total of 6,988 wombats was recorded over the past 39 years on the Tasmanian mainland transects and 1,899 wombats were recorded over the past 30 years on the Flinders Island transects. All 140 transects recorded at least one wombat during the overall survey period.

Mainland Tasmania trends

Overall, between 1985 and 2023 the wombat population estimated from spotlight surveys on mainland Tasmania increased by 61% (Fig. 5). From 1985 to 1995 the population increased, then plateaued between 1996 and 2007, then increased again from 2008 to 2019, followed by lower counts over the past four years (Fig. 5).

Over the past 10 years (2014 to 2023), the wombat population on mainland Tasmania decreased by 7% (Fig. 6).



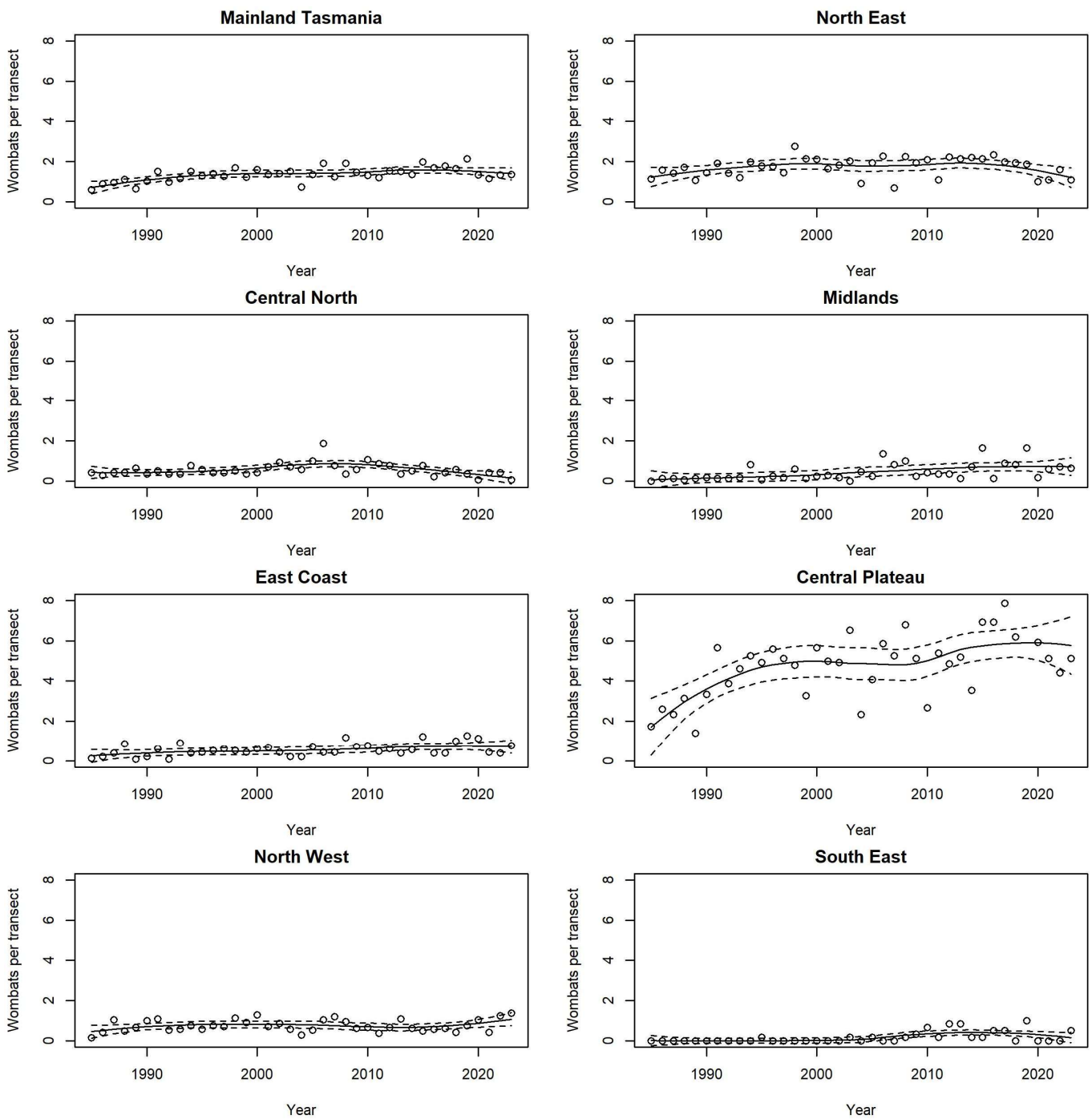


Fig. 5 Trends in annual population indices for the Tasmanian wombat (*V. u. tasmaniensis*) for mainland Tasmania and seven climatic regions from 1985 to 2023 (loess fit with 95% confidence limits).



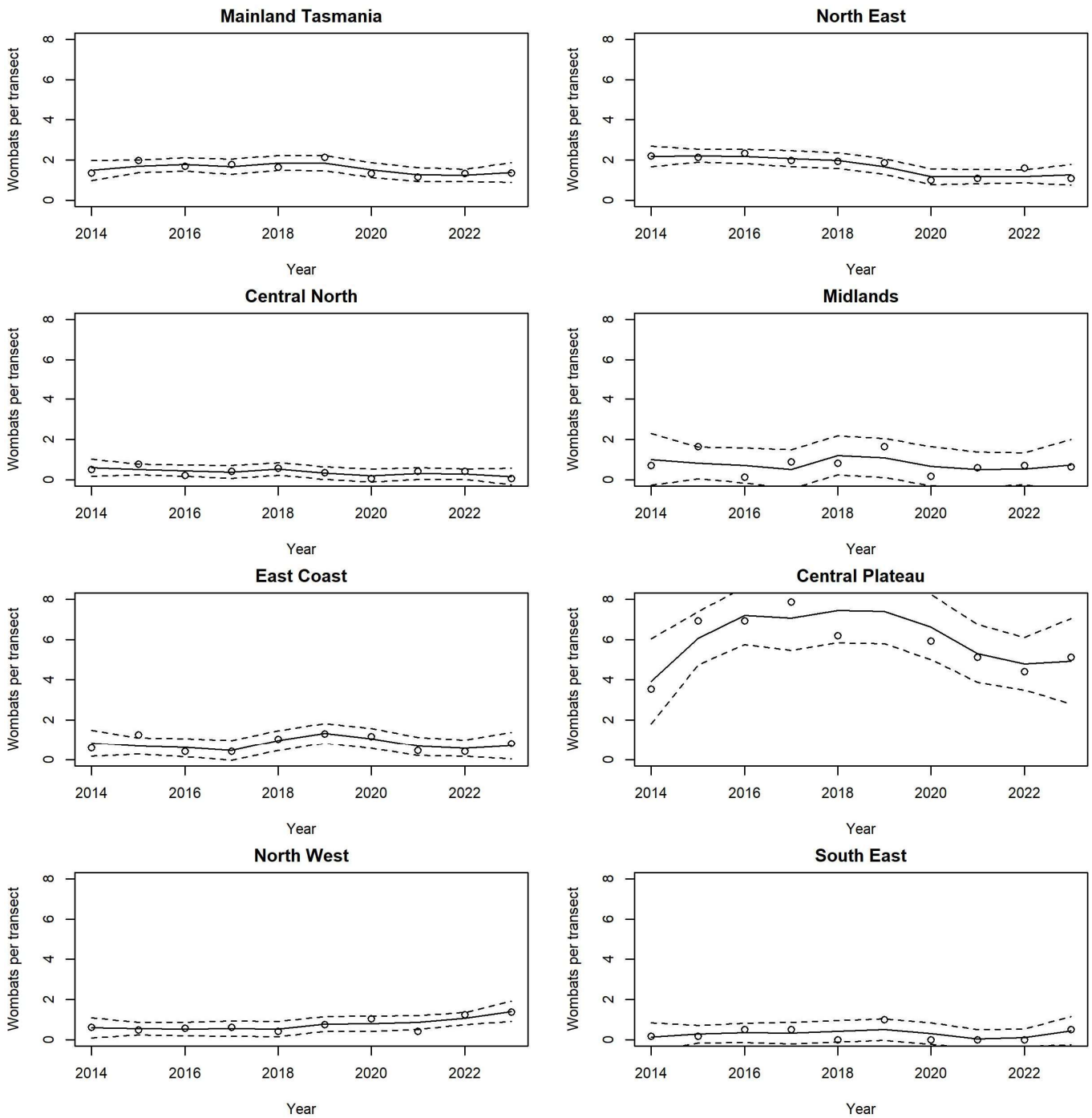


Fig. 6 Trends in annual population indices for the Tasmanian wombat (*V. u. tasmaniensis*) for mainland Tasmania and seven climatic regions from 2014 to 2023 (loess fit with 95% confidence limits). Surveys were conducted over summer, thus year 1985 = 1985/1986.



Regional trends

Across the regions, wombat population trends vary, both overall and over the last decade (2014–2023) (Figs 5–6).

- In the **Central North** the wombat population has decreased since 2007 coinciding with the mange outbreak in this part of the State.
- In the **Midlands, East Coast** and **Central Plateau** regions the wombat populations have generally increased since 1985, with lower counts in the Central Plateau over the last three years.
- In the **North East** region, the wombat population increased from 1985 to 2000, then remained relatively stable, with lower counts over the past four years.
- In the **North West** region the wombat population increased from 1985 to 1990 and then remained relatively stable until higher counts over the past two years.
- In the **South East** region, wombats were often not recorded on the transects. Wombats were detected more often between about 2005 and 2020 but overall, the population indices were low. Most of the transects in the South East have habitat that is not suitable for wombats.

Flinders Island trends

Wombats on Flinders Island are an endemic subspecies (*Vombatus ursinus ursinus*). This subspecies was previously found more widely on Bass Strait islands but is now restricted to Flinders Island and more recently also on Maria Island, following its introduction there in the 1970s.

Between 1994 and 2023 the wombat population estimated from spotlight surveys increased by 459% (Fig. 7). The wombat population was generally stable between 1995 and 2010). From 2010 to 2020 the wombat population increased, with the highest wombat count recorded in 2023. Over the last decade (2014 to 2023), the wombat population from spotlight surveys has increased by 426% (Fig. 7).

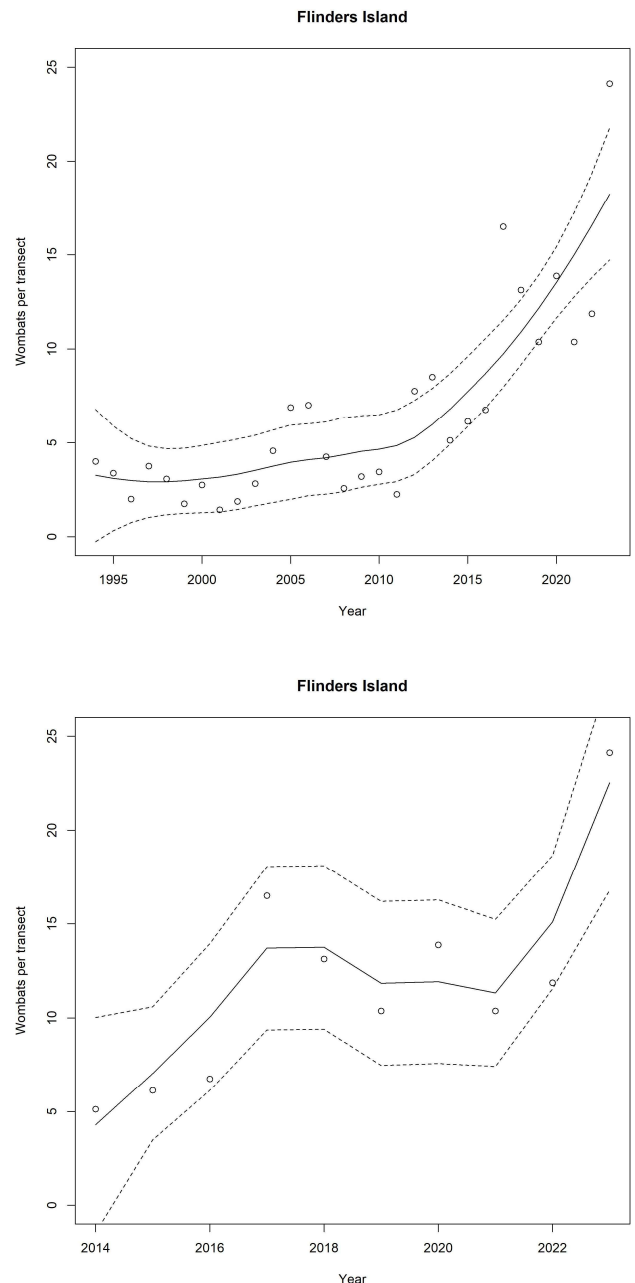


Fig. 7 Trends in annual population indices for the Flinders Island wombat (*V. u. ursinus*) on Flinders Island from 1994 to 2023 (top) and 2014–2023 (bottom) (loess fit with 95% confidence limits). Surveys were conducted over summer, thus year 1995 = 1995/1996.

Narawntapu National Park trends

Following an outbreak of mange the wombat population Narawntapu National Park decreased to such an extent that it is not easily detected via spotlighting. Instead, remote cameras have been



deployed annually since 2018 in the areas of the park where wombats previously occurred (Fig. 8). Because they can operate 24/7 for long periods of time, remote cameras are more efficient at monitoring species at low abundance.



Fig. 8 Location of remote cameras in Narawntapu National Park. Blue dots indicate where wombats were detected in 2023.

In 2023, five independent visits of wombats were recorded on three of the 23 cameras deployed. This is an increase from 2022 when only three visits were recorded from one camera and halts a declining trend in survey results (Fig. 9). All wombats were detected by cameras located at the eastern end of the survey area, consistent with our previous camera surveys (Fig. 9). None of the wombat images showed any sign of visible mange.

These surveys confirm that wombats are persisting in the park, albeit at very low numbers. There have also been reports of wombats further east in the park. It is encouraging that no evidence of mange was observed on the wombats detected by the cameras and no mange has been recorded in previous camera surveys.

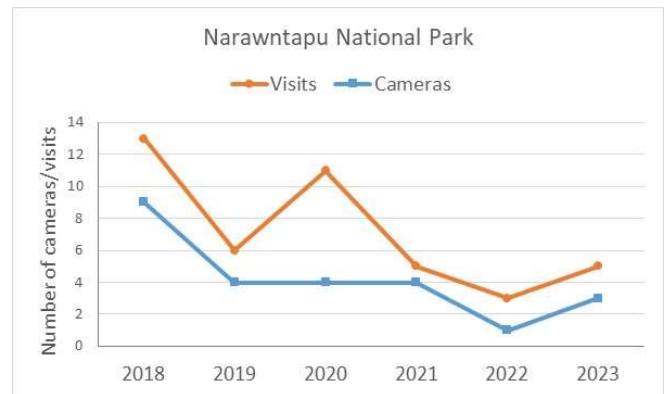


Fig. 9 Number of wombat visits and number of cameras that detected wombats in Narawntapu National Park from 2018 to 2023.

Further reading

The following references provide further detail about the information presented in this synopsis.

Carver S, Stannard GL & Martin AM (2024). The distinctive biology and characteristics of the bare-nosed wombat *Vombatus ursinus*. Annual Review of Animal Biosciences 12, 135-160.

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Contact

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Appendix I Summary of survey effort and mange prevalence at six locations where wombats and wombat mange are regularly monitored. Cradle Mountain data was recorded by visual observation during the late afternoon. Narawntapu National Park data was recorded at night using remote cameras and the number of wombats assessed represent number of visits to camera. Data from the remaining locations were recorded at night with the aid of spotlights.

Location	Survey Year							No. of surveys	No. of wombats assessed	Mange recorded	Mange prevalence (%)
	2017	2018	2019	2020	2021	2022	2023				
Maria Island		✓	✓		✓	✓		4	588	No	0.0
Flinders Island			✓	✓	✓	✓	✓	5	1089	Yes	3.9
Cape Portland	✓	✓	✓	✓	✓	✓	✓	12	2796	Yes	6.7
Forestier Peninsula	✓	✓	✓	✓	✓	✓		8	542	Yes	0.2
Cradle Mountain*	✓	✓	✓	✓	✓	✓	✓	74	2125	No	0.0
Narawntapu National Park		✓	✓	✓	✓	✓	✓	6	43	No	0.0

*This data was collected monthly by Wildcare Friends of Cradle Mountain and Parks and Wildlife Service staff

