

ANNUAL QUOTA REPORT
for the
COMMERCIAL HARVEST OF
BRUSHTAIL POSSUM

Trichosurus vulpecula
in
Tasmania

1 July 2016 to 30 June 2017

Wildlife Management Branch

June 2016

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1.

1. Introduction

The commercial harvest and export of brushtail possum products in Tasmania is managed by a Commonwealth-approved trade management plan. This Quota Report sets the quota for the second year of this iteration of the plan. This, the second iteration of the *Trade Management Plan for the Export of Brushtail Possum in Tasmania* (the plan), covers the period 1 July 2015 to 30 June 2020.

Section 7.4.1 of the plan requires an annual quota to be determined for the maximum number of brushtail possums (*Trichosurus vulpecula*) that may be commercially harvested from each management region in Tasmania during the quota year. The quota year extends from 1 July to 30 June of the following year.

The quota for each management region is based on the trigger point density indices specified in section 7.4.1 of the plan and determined by the results of annual population monitoring. The trigger points and corresponding commercial harvest quotas determined for the quota period are described in Section 2 of this document. Quotas and management responses provide a safeguard against over-harvesting of the population and are set at levels unlikely to lead to a long-term decline of the species that would threaten its survival in each region of Tasmania. Appropriate management controls will be implemented in response to any change in brushtail possum numbers identified by annual population monitoring.

The non-commercial take of brushtail possums, including that from 1080 poisoning, is not considered a management control under the plan. However, as the non-commercial take has typically accounted for between 95-99% of the total brushtail possum take in Tasmania, it is taken into account when determining commercial quotas.

Information critical to determining the annual quota for each region in Tasmania is provided in this report and includes the following:

- The results of population monitoring
- The density estimates for the year
- The size of the allocated commercial quota for brushtail possums, set in accordance with section 7.4 of the plan;

2 Commercial Quotas: Trigger Points and Management Responses

Trigger point density indices for the brushtail possum in Tasmania have been determined in the plan. Trigger points for initiating management changes in each region are given in Tables 1(a)-1(d). The commercial quotas are based on the estimated minimum total take (crop protection and commercial) and mean 3-year exponentially weighted moving average density (see Section 7.4.1) from the last 10 years in each management region. In developing these trigger points, conservative quotas have been determined based on the average of the three lowest annual total harvests. This quota has been allocated to the commercial sector at the 10-year mean density level (to the nearest 5/km²) in each region and a sliding linear scale determined from this point.

2.1 Additional Management Responses

Management aims to maintain possum densities at between 10 and 20/km². The plan provides for additional management responses to ensure the sustainability of the harvest.

At densities of 20/km² or below, commercial permits in that region may be restricted to properties holding crop-protection permits. Should the density level in a management region fall below 10 possums/km², the WMB will conduct property inspections for all properties in that region on which commercial hunters wish to take brushtail possum. These inspections will determine whether that property has a legitimate crop protection need before a commercial permit to take possums on that property will be granted. The Commonwealth Department of the Environment will be notified should commercial hunting permits be issued within a region that has a possum density below 10/km².

Where the density is above the levels at which crop damage is unacceptable in a management region (>20/km²), the intention is to drive possum populations down¹. Where the density is below that desired (<10/km²), the intention is to allow populations to recover. Where the density is at a sustainable long-term level (10-20/km²), the intention is to maintain populations in the prescribed range.

It should be noted that these trigger points assume that the annual crop protection take for specific possum population densities will be consistent with previous levels. Crop protection take is not managed under this plan and is based on the crop-protection needs of the landholder. There is therefore a possibility, however unlikely, that future crop protection take may exceed previous levels. This would not however influence the setting of a commercial quota unless density levels observed during annual spotlight surveys indicated an associated unacceptable level of decline in possum density.

The annual commercial quotas outlined in Tables 1(a)-(d) will be implemented when population density indices fall within the corresponding trigger point range.

¹ The intention to drive possum populations down applies to situations where there is a need for crop protection from high possum densities. Where populations are at densities greater than 20/km² but are having no impact on primary production there is no intention and likely to be no need to decrease possum numbers.

Tables 1a, b, c & d: Commercial quotas to be allocated to each management region based on specific possum densities[#].

Densities listed refer to the 3-year exponentially weighted moving average density. Shaded rows show the likely annual quotas for each region based on long-term average densities.

a. Central Region 10-year average density = 64.3/km ² Average 3-yrs lowest take = 36,447	
Density (possums/km ²)	Commercial quota
≥100	56,075
95	53,271
90	50,467
85	47,663
80	44,859
75	42,055
70	39,251
65	36,447
60	33,643
55	30,839
50	28,035
45	25,231
40	22,427
35	19,623
30	16,819
25	14,015
20*	11,211
15*	8,407
<10*	Up to 5,603
5	0
0	0

b. South East Region 10-year average density = 39.2/km ² Average 3-yrs lowest take = 48,403	
Density (possums/km ²)	Commercial quota
≥100	121,003
95	114,953
90	108,903
85	102,853
80	96,803
75	90,753
70	84,703
65	78,653
60	72,603
55	66,553
50	60,503
45	54,453
40	48,403
35	42,353
30	36,303
25	30,253
20*	24,203
15*	18,153
<10*	Up to 12,103
5	0
≥100	121,003

c. North East Region 10-year average density = 28.8/km ² Average 3-yrs lowest take = 76,040	
Density (possums/km ²)	Commercial quota
≥100	253,462
95	240,789
90	228,116
85	215,443
80	202,770
75	190,097
70	177,424
65	164,751
60	152,078
55	139,405
50	126,732
45	114,059
40	101,386
35	88,713
30	76,040
25	63,367
20*	50,694
15*	38,021
<10*	Up to 25,348
5	0
0	0

d. North West Region 10-year average density = 22.4/km ² Average 3-yrs lowest take = 10,231	
Density (possums/km ²)	Commercial quota
≥100	40,921
95	38,875
90	36,829
85	34,783
80	32,737
75	30,691
70	28,645
65	26,599
60	24,553
55	22,507
50	20,461
45	18,415
40	16,369
35	14,323
30	12,277
25	10,231
20*	8,185
15*	6,139
<10*	Up to 4,093
5	0
0	0

[#] Tabled quotas show a sliding density scale in 5/km² increments as a simple guide. Actual quotas are set using the exact density estimate.

* Commercial take may be restricted to properties covered by existing crop protection permits.

3 Current Population Trends and Quotas

As required by the plan, regional brushtail possum population trends were monitored through the annual program of statewide spotlight surveys. Referred to as the 2015 surveys, the most recent set of surveys were undertaken during the period November 2015 to February 2016.

Monitoring of trends in regional brushtail possum populations is undertaken through a system of standardised spotlight survey counts performed annually on mainland Tasmania. The standardised surveys are carried out in accordance with the method set out in the Tasmanian Spotlight Survey Manual (Hocking & Driessen 1992) and analysed in accordance with the methods described in section 7.6 of the plan. The results of these surveys provide the basis for determining the regional commercial quotas set in the document. Normally quotas are set annually in June based on data from the previous surveys. Analysis of the current population trend for each region (with the exception of South West Region, due to the absence of commercial activity in this region) is provided below.

As stipulated in the plan, commercial quotas are to be determined annually for the maximum number of brushtail possums that may be commercially harvested in each region during the quota period. These quotas are based on the sliding scale provided for each management region (see Tables 1(a)-(d)). In this quota report the quota is being determined for the period 1 July 2016 to 30 June 2017.

The commercial quotas for the four management regions are based on the 3-year exponentially weighted moving average (EWMA) density for each region and the predetermined sliding scale of quotas for each region as stipulated in the plan (Tables 1(a)-(d)). The quotas determined by that process, for each region, are described below and summarised in Table 2.

Table 2. Regional commercial harvest quotas for brushtail possum for the period 1 July 2016 – 30 June 2017 based on mean 3-year EWMA density.

Region	Quota for July 2015- June '16	Quota for July 2016-June '17
Central	32 409	20 797
South East	35 093	37 664
North East	69 197	70 383
North West	7 776	13 631
Total	144 475	142 475

3.1 Central Region

In the spotlight surveys undertaken in the Central Region in 2015-16, the observed density of brushtail possums decreased from 51.9/km² to 37.1/km², while the three-year Exponentially Weighted Moving Average (EWMA) decreased from 57.8/km² to 47.5/km². The three-year EWMA remains considerably higher than the trigger point (density = 20/km² or below) that initiates consideration of additional management controls (section 2.1).

Reference to Table I(a) indicates the appropriate quota for this region at this density is **20 797** possums for the quota year 2016-17.

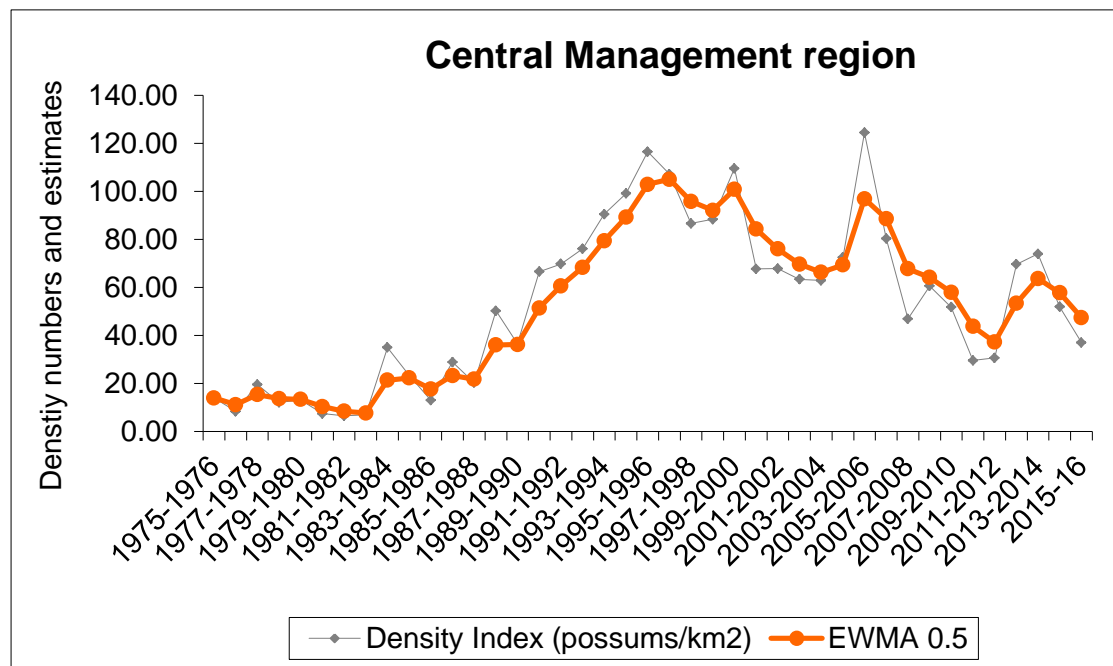


Figure I Central Region historical and current Density Index and three-year density trend

3.2 South East Region

In the South East Region the observed density of brushtail possums in 2015-16, increased from 23.1/km² to 31.1/km², and the three-year Exponentially Weighted Moving Average (EWMA) increased from 29.0/km² to 30.0/km². The EWMA remains above the trigger point (density = 20/km² or below) that initiates consideration of additional management controls (section 2.1).

Reference to Table 1(b) indicates the appropriate quota for this region at this density is **37 664** possums for the quota year 2016-17.

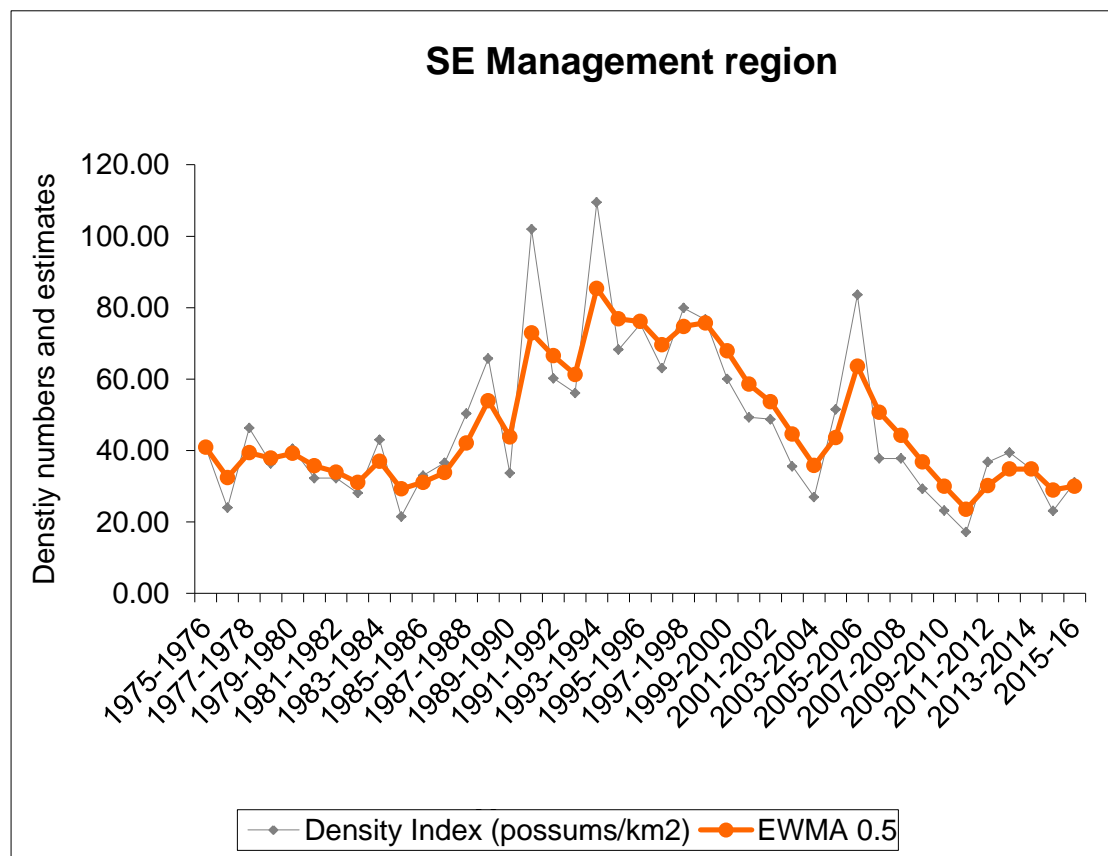


Figure 2 South East Region historical and current Density Index and three-year density trend

3.3 North East Region

In the North East Region the observed density of brushtail possums in 2015-16, has remained stable at 27.8/km². The three-year Exponentially Weighted Moving Average (EWMA) increased very slightly from 27.3/km² to 27.5/km² (see Figure 3) and remains above the trigger point (density = 20/km² or below) that initiates consideration of additional management controls (section 2.1).

Reference to Table 1(c) indicates the appropriate quota for this region at this density is **70 383** possums for the quota year 2016-17.

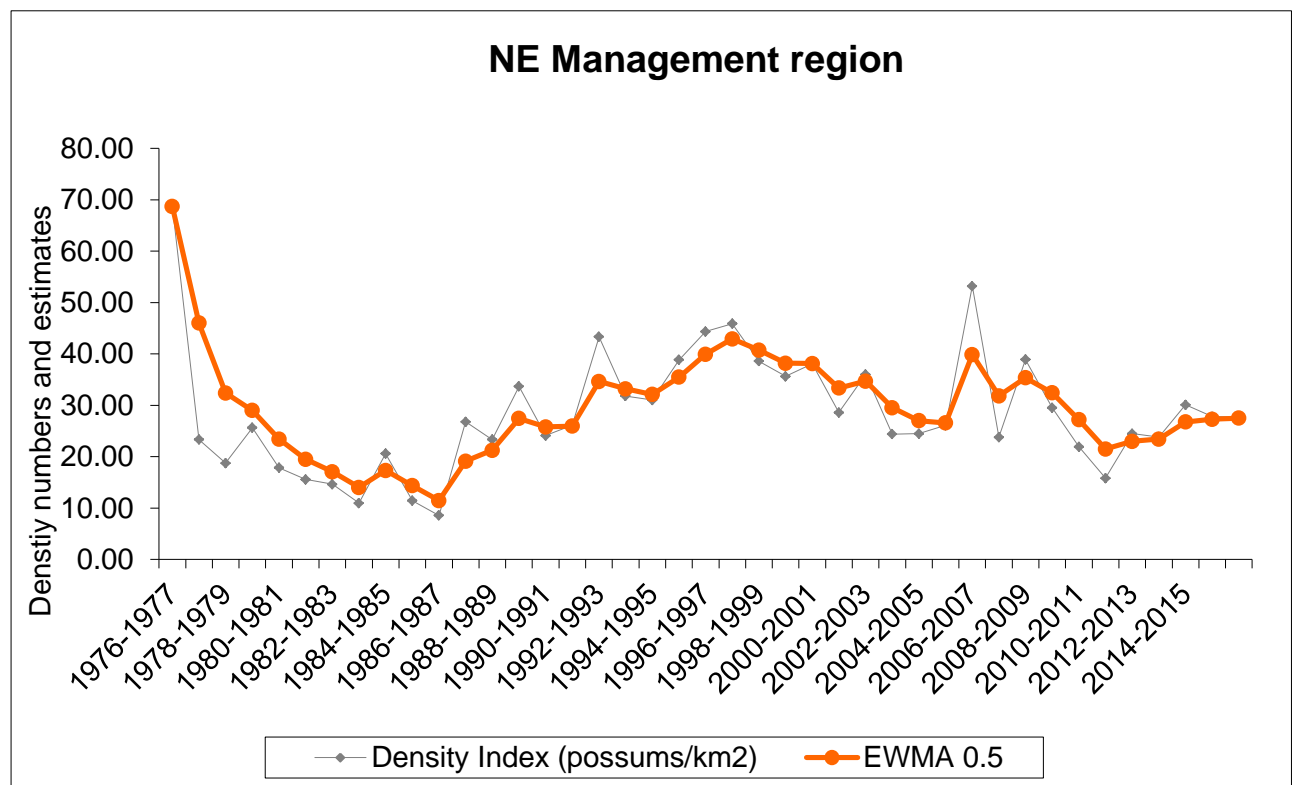


Figure 3 North East Region historical and current Density Index and three-year density trend

3.4 North West Region

In the North West Region the observed density of brushtail possums in 2015-16, increased from 16.6/km² to 33.3/km², and the three-year Exponentially Weighted Moving Average (EWMA) also increased from 19.0/km² to 26.2/km² (see Figure 4). The EWMA has returned above the trigger point (density = 20/km² or below) that initiates consideration of additional management controls (section 2.1).

Reference to Table 1(d) indicates the appropriate quota for this region at this density is **13 631** possums for the quota year 2016-17.

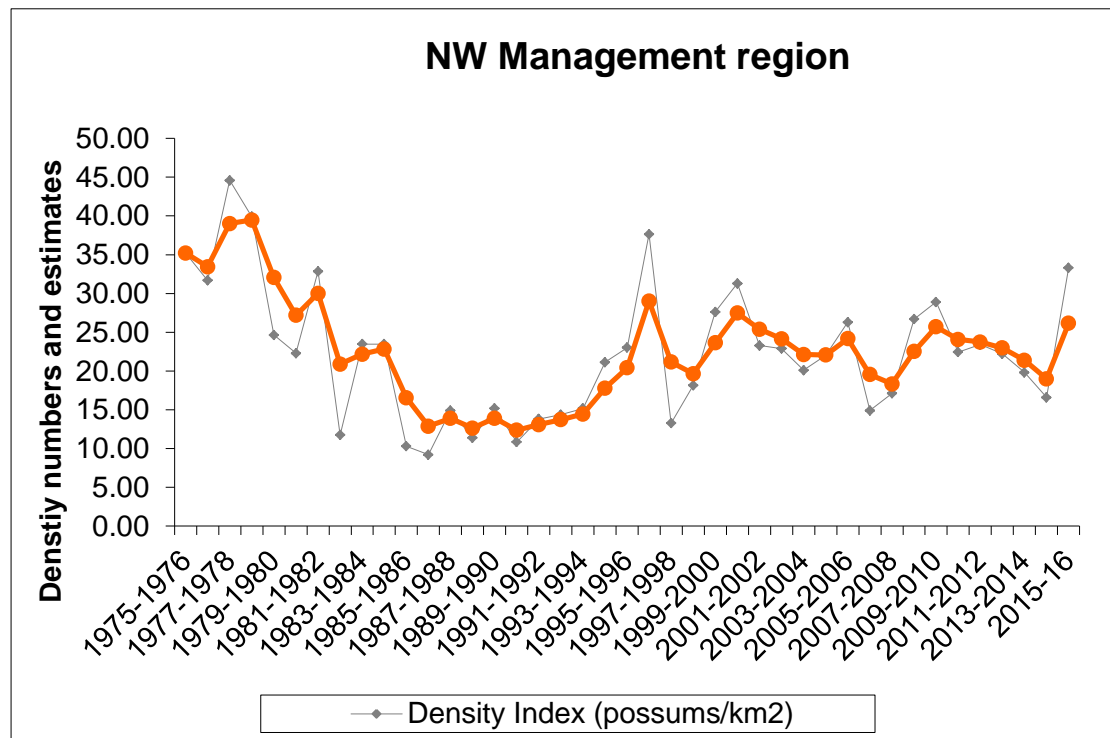


Figure 4 North West Region historical and current Density Index and three-year density trend