**Consultation Document on Listing Eligibility and Conservation Actions**

*Vombatus ursinus ursinus* (Common Wombat (Bass Strait))

You are invited to provide your views and supporting reasons related to:

1) the eligibility of *Vombatus ursinus ursinus* (Common Wombat (Bass Strait)) for inclusion on the EPBC Act threatened species list; and

2) the necessary conservation actions for the above subspecies.

Evidence provided by experts, stakeholders and the general public are welcome. Responses can be provided by any interested person.

Anyone may nominate a native species, ecological community or threatening process for listing under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) or for a transfer of an item already on the list to a new listing category. The Threatened Species Scientific Committee (the Committee) undertakes the assessment of species to determine eligibility for inclusion in the list of threatened species and provides its recommendation to the Australian Government Minister for the Environment and Energy.

Responses are to be provided in writing either by email to: [species.consultation@environment.gov.au](mailto:species.consultation@environment.gov.au)

or by mail to:

The Director

Marine and Freshwater Species Conservation Section

Wildlife, Heritage and Marine Division

Department of the Environment

PO Box 787

Canberra ACT 2601

**Responses are required to be submitted by 13 July 2018.**

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**General background information about listing threatened species**

The Australian Government helps protect species at risk of extinction by listing them as threatened under Part 13 of the EPBC Act. Once listed under the EPBC Act, the species becomes a Matter of National Environmental Significance (MNES) and must be protected from significant impacts through the assessment and approval provisions of the EPBC Act. More information about threatened species is available on the department’s website at:

<http://www.environment.gov.au/biodiversity/threatened/index.html>.

Public nominations to list threatened species under the EPBC Act are received annually by the department. In order to determine if a species is eligible for listing as threatened under the EPBC Act, the Threatened Species Scientific Committee (the Committee) undertakes a rigorous scientific assessment of its status to determine if the species is eligible for listing against a set of criteria. These criteria are available on the Department’s website at: <http://www.environment.gov.au/biodiversity/threatened/pubs/guidelines-species.pdf>.

As part of the assessment process, the Committee consults with the public and stakeholders to obtain specific details about the species, as well as advice on what conservation actions might be appropriate. Information provided through the consultation process is considered by the Committee in its assessment. The Committee provides its advice on the assessment (together with comments received) to the Minister regarding the eligibility of the species for listing under a particular category and what conservation actions might be appropriate. The Minister decides to add, or not to add, the species to the list of threatened species under the EPBC Act. More detailed information about the listing process is at: <http://www.environment.gov.au/biodiversity/threatened/nominations.html>.

To promote the recovery of listed threatened species and ecological communities, conservation advices and where required, recovery plans are made or adopted in accordance with Part 13 of the EPBC Act. Conservation advices provide guidance at the time of listing on known threats and priority recovery actions that can be undertaken at a local and regional level. Recovery plans describe key threats and identify specific recovery actions that can be undertaken to enable recovery activities to occur within a planned and logical national framework. Information about recovery plans is available on the department’s website at: <http://www.environment.gov.au/biodiversity/threatened/recovery.html>.

**Privacy notice**

The Department will collect, use, store and disclose the personal information you provide in a manner consistent with the Department’s obligations under the Privacy Act 1988 (Cth) and the Department’s Privacy Policy.

Any personal information that you provide within, or in addition to, your comments in the threatened species assessment process may be used by the Department for the purposes of its functions relating to threatened species assessments, including contacting you if we have any questions about your comments in the future.

Further, the Commonwealth, State and Territory governments have agreed to share threatened species assessment documentation (including comments) to ensure that all States and Territories have access to the same documentation when making a decision on the status of a potentially threatened species. This is also known as the [‘common assessment method’](http://www.environment.gov.au/biodiversity/threatened/cam). As a result, any personal information that you have provided in connection with your comments may be shared between Commonwealth, State or Territory government entities to assist with their assessment processes.

The Department’s Privacy Policy contains details about how respondents may access and make corrections to personal information that the Department holds about the respondent, how respondents may make a complaint about a breach of an Australian Privacy Principle, and how the Department will deal with that complaint. A copy of the Department’s Privacy Policy is available at: <http://environment.gov.au/privacy-policy> .

**Information about this consultation process**

Responses to this consultation can be provided electronically or in hard copy to the contact addresses provided on Page 1. All responses received will be provided in full to the Committee and then to the Australian Government Minister for the Environment.

In providing comments, please provide references to published data where possible. Should the Committee use the information you provide in formulating its advice, the information will be attributed to you and referenced as a ‘personal communication’ unless you provide references or otherwise attribute this information (please specify if your organisation requires that this information is attributed to your organisation instead of yourself). The final advice by the Committee will be published on the department’s website following the listing decision by the Minister.

Information provided through consultation may be subject to freedom of information legislation and court processes. It is also important to note that under the EPBC Act,the deliberations and recommendations of the Committee are confidential until the Minister has made a final decision on the nomination, unless otherwise determined by the Minister.

*Vombatus ursinus ursinus*

Common Wombat (Bass Strait)

**Taxonomy**

Conventionally accepted as *Vombatus ursinus ursinus* Shaw, 1800. It is one of three subspecies of *V. ursinus* (Common Wombat), the other two are: *V. u. tasmaniensis* (Tasmania) and *V. u. hirsutus* (mainland Australia) (Groves 2005).

**Species/Subspecies Information**

**Description**

The Common Wombat (*V. ursinus*) is a large, burrowing marsupial. It is solidly built with a squat, round body, small ears and eyes, and a large naked nose. It has short legs, large paws and long, strong claws which are used in the excavation of burrows. It has a short tail growing to 2.5 cm. The rump is covered by a very tough, thick skin. Its thick, coarse fur varies in colour from sandy brown to grey and black, and is sometimes flecked with fawn (McIlroy 2008; DPIPWE 2014).

On the mainland they average 1 m in length and 27 kg in weight, yet can reach up to 1.2 m in length and weights of up to 35 kg. The Tasmanian subspecies is not as large or bulky, averaging 85 cm in length and 20 kg in weight, while the Bass Strait subspecies is smaller still at only 75 cm in length (DPIPWE 2014).

The Common Wombat differs from all other marsupials by having a single pair of upper and lower incisors (front teeth). These teeth are never ground away as they are both rootless and never stop growing. The females have a backward opening pouch (DPIPWE 2014).

Distribution

The Common Wombat (Bass Strait) (*V. u. ursinus)* is now restricted to Flinders Island, which lies to the north-east of Tasmania in the Bass Strait (Rounsevell et al. 1991). It formerly occurred on King Island (from which it was eradicated in the nineteenth century; Hope 1974), and on Cape Barren Island, Deal Island and Clarke Island from which it was extirpated by 1910 (Hope 1973). The range has diminished by more than 50 percent.

A translocated population of this subspecies was established on Maria Island, and persisted at least until the 1980s (Rounsevell 1989), although it is uncertain to what extent individuals retained genetic distinctiveness with respect to the native population of Common Wombat (Tasmania), already present on the Island.

Relevant Biology/Ecology

The Common Wombat is ground-dwelling and shelters during the day in burrows, which are often dug in areas above creeks and gullies. In Tasmania it shows a preference for heathland, coastal scrub and open forest where soils favour their burrowing habits (DPIPWE 2014). On Flinders Island it inhabits heath, grassy woodlands and pasturelands, with predominantly introduced grass species (Green & Rainbird 1988; Maxwell et al. 1996). McLaren (1966) reported "wombat water holes" behind sand dunes in the south-east of Flinders Island and suggested they may have been dug by wombats to obtain drinking water. Green and Rainbird (1988) reported somewhat similar features.

Burrows can be up to 20 m long and more than 2 m below the ground, and have numerous connecting tunnels and entrances. There may also be more than one nest in the burrow, with the nests made from sticks, leaves and grasses. Although they are solitary animals, with only one wombat inhabiting any one burrow, the overlap of home ranges occasionally results in a number of wombats using the same burrow. To avoid the overlap of feeding areas they use scent-marking, vocalisations and aggressive displays. The dung has a distinctive cube shape which is also used to mark areas. If threatened, a wombat will dive into a nearby burrow or hollow log, using its rump as protection from attackers. The wombat is also capable of crushing attackers against the burrow roof (DPIPWE 2014).

Home range size varies markedly, from 2 to 82 hectares (McIlroy 2008). However, most appear to be less than 25 ha (McIlroy 1973; Taylor 1993) which is comparatively small for a marsupial herbivore (Evans 2008). The wide variation in home range size may be due to differences in habitat quality, food availability and wombat density between areas (Taylor 1993; Evans 2008). Small home ranges and obligate burrow use constrain wombats to foraging near burrows (Evans 2008). Important environmental predictors of burrow presence include proximity to vegetative cover, proximity to watercourses, and vegetation type (Roger et al. 2007; Borchard et al. 2008). Wombats are generally limited to riparian buffer zones in agricultural landscapes (Borchard et al. 2008).

Wombats are entirely herbivorous, feeding on plant material such as grasses, sedges and herbs; especially on young plants (Green & Rainbird 1988). They are mostly nocturnal, usually coming out at night, dusk or dawn to graze when temperatures are lower. However, in cooler weather they may be seen during the day either grazing or basking in the sun. They graze for three to eight hours a night, during which time they may travel many kilometres and visit up to four burrows within their home range to rest or tidy up the burrow (DPIPWE 2014).

Breeding for the Common Wombat (Bass Strait) is seasonal and births occur in the seven-month period between mid-January and the last week of August (Green & Rainbird 1988). This is in marked contrast to the breeding biology of the Tasmanian and mainland subspecies, where births were found to occur throughout the year (Green & Rainbird 1987). Generation length is 6.5 years, derived from a mean of age at sexual maturity (2 years) and longevity (10−12 years) (McIlroy 2008).

Threats

The main threat to the Common Wombat (Bass Strait) is sarcoptic mange caused by *Sarcoptes scabiei*. Over-hunting in the past led to the local extinction of the Common Wombat (Bass Strait) on a number of Bass Strait islands (Maxwell et al. 1996).

**Table 1:** Threats to the Common Wombat (Bass Strait) in approximate order of severity of risk, based on available evidence

|  |  |  |  |
| --- | --- | --- | --- |
| **Number** | **Threat factor** | **Threat type and status** | **Evidence base** |
| 1.0 | Disease | | |
| 1.1 | Sarcoptic mange | known current | Mange, caused by the scabies or itch mite (*Sarcoptes scabiei*), occurs in Common Wombat populations throughout the species’ range (Martin et al. 1998). While outbreaks are sporadic, anecdotal evidence suggests that mange can cause significant morbidity and mortality and can have a substantial effect on local abundance (Woinarski et al. 2014). |
| 2.0 | Direct mortality from anthropogenic activities | | |
| 2.1 | Road traffic | known current | Flinders Island has a high level of roadkill, including wombats. However, population-level impacts are unclear (Woinarski et al. 2014). |
| 2.2 | Secondary poisoning | known current | There is some evidence of mortality caused by 1080 baits used to control non-native predators (DPIPWE 2014). |
| 3.0 | Introduced species | | |
| 3.1 | Predation by non-native predators | known current | Predation by dogs (*Canis familiaris*) are a cause of mortality, but population-level impacts are unclear (Woinarski et al. 2014). |
| 3.2 | Competition for food resources with livestock | potential | Not demonstrated, but plausible. Common Wombats rely on food resources within their home range (Evans 2008). Major threats to food resources are likely to be competition for food from domestic stock, or land changes due to intensive agriculture (Evans 2008). |
| 4.0 | Habitat loss and degradation | | |
| 4.1 | Clearing of habitat | known past and potential | Extensive areas of Flinders Island have been cleared for agricultural purposes, reducing habitat availability. However, population-level impacts are unclear.  Common Wombats can occur at high densities in agricultural areas due to the higher food availability. However, their burrows are restricted to remnant riparian vegetation (Skerratt et al. 2004; Borchard et al. 2008) and their overall abundance is lower due to lower shrub and tree cover which provide protection/shelter (McIlroy 1973; Borchard et al. 2008). |
| 4.2 | Habitat degradation due to livestock | potential | Not demonstrated, but plausible. Wombats are generally limited to riparian buffer zones in agricultural landscapes, which are vulnerable to degradation of streambanks through the trampling of livestock (Borchard et al. 2008). |
| 5.0 | Fire | | |
| 5.1 | Extensive or intense fires | potential | Not demonstrated, but plausible. Wombats are well protected from fire in their burrows, but fire threatens their food supply. |

Assessment of available information in relation to the EPBC Act Criteria and Regulations

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| --- | --- | --- | --- | --- |
| **Criterion 1. Population size reduction (reduction in total numbers)**  Population reduction (measured over the longer of 10 years or 3 generations) based on any of A1 to A4 | | | | |
|  | **Critically Endangered**  **Very severe reduction** | | **Endangered**  **Severe reduction** | **Vulnerable**  **Substantial reduction** |
| **A1** | **≥ 90%** | | **≥ 70%** | **≥ 50%** |
| **A2, A3, A4** | **≥ 80%** | | **≥ 50%** | **≥ 30%** |
| A1 Population reduction observed, estimated, inferred or suspected in the past and the causes of the reduction are clearly reversible AND understood AND ceased.  A2 Population reduction observed, estimated, inferred or suspected in the past where the causes of the reduction may not have ceased OR may not be understood OR may not be reversible.  A3 Population reduction, projected or suspected to be met in the future (up to a maximum of 100 years) [(*a) cannot be used for A3*]  A4 An observed, estimated, inferred, projected or suspected population reduction where the time period must include both the past and the future (up to a max. of 100 years in future), and where the causes of reduction may not have ceased OR may not be understood OR may not be reversible. | | (a) direct observation [*except A3*]  (b) an index of abundance appropriate to the taxon  *based on any of the following:*  (c) a decline in area of occupancy, extent of occurrence and/or quality of habitat  (d) actual or potential levels of exploitation  (e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites | | |

**Evidence:**

There have been few formal surveys for the subspecies. McLaren (1966) reported on a brief survey conducted in March 1965 on Flinders Island. This was part of a broader study of the biology of the Common Wombat, and included mapping the distribution of the species in relation to geography and vegetation types.

Green and Rainbird (1988) reported on various aspects of the biology and ecology of the wombat on Flinders Island. This study was based on 77 wombats collected mainly from pastoral properties and road killed animals. The report stated that there had probably been a great increase in the numbers of wombats during the 1960s−1980s due to land management activities. Whilst historical evidence indicates that there has been a decline in the total population of the subspecies due to the extinction of the subspecies from other Bass Strait islands (Hope 1974), there is no evidence that there have been any major changes in numbers on Flinders Island, and extreme fluctuations are considered unlikely (Woinarski et al. 2014).

The Tasmanian Department of Primary Industries, Parks, Water and Environment have conducted regular spotlight surveys on Flinders Island since 1991. While these surveys are mainly targeted at possums and wallabies, wombat numbers are also recorded (Driessen & Hocking 1992). Spotlighting data for wombats on Flinders Island suggest that numbers have increased over the past three-generation period (about 20 years) (Figure 1).

**Figure 1.** Sightings of the Common Wombat (Bass Strait) on Flinders Island from annual state-wide spotlighting surveys. A transect is a 10km section of road and adjacent land. Source: DPIPWE (2016; 2018. pers comm 21 March).

The information presented above appears to demonstrate that the subspecies is not eligible for listing under this criterion. However, the purpose of this consultation document is to elicit additional information to better understand the subspecies’ status. This conclusion should therefore be considered to be tentative at this stage, as it may be changed as a result of responses to this consultation process.

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| **Criterion 2.** **Geographic distribution as indicators for either extent of occurrence AND/OR area of occupancy** | | | |
|  | **Critically Endangered**  **Very restricted** | **Endangered**  **Restricted** | **Vulnerable**  **Limited** |
| B1. Extent of occurrence (EOO) | **< 100 km2** | **< 5,000 km2** | **< 20,000 km2** |
| B2. Area of occupancy (AOO) | **< 10 km2** | **< 500 km2** | **< 2,000 km2** |
| AND at least 2 of the following 3 conditions indicating distribution is precarious for survival: | | | |
| (a) Severely fragmented OR Number of locations | **= 1** | **≤ 5** | **≤ 10** |
| (b) Continuing decline observed, estimated, inferred or projected in any of: (i) extent of occurrence; (ii) area of occupancy; (iii) area, extent and/or quality of habitat; (iv) number of locations or subpopulations; (v) number of mature individuals | | | |
| (c) Extreme fluctuations in any of: (i) extent of occurrence; (ii) area of occupancy; (iii) number of locations or subpopulations;( iv) number of mature individuals | | | |

**Evidence:**

The area of occupancy effectively corresponds to the extent of occurrence, which is taken as the area of Flinders Island, 1360 km2. The subspecies occurs at a single location. There is no evidence of a continuing decline in the population, and the subspecies does not undergo extreme fluctuations.

The information presented above appears to demonstrate that the subspecies is not eligible for listing under this criterion. However, the purpose of this consultation document is to elicit additional information to better understand the subspecies’ status. This conclusion should therefore be considered to be tentative at this stage, as it may be changed as a result of responses to this consultation process.

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| **Criterion 3. Population size and decline** | | | | |
|  | | **Critically Endangered**  **Very low** | **Endangered**  **Low** | **Vulnerable**  **Limited** |
| Estimated number of mature individuals | | **< 250** | **< 2,500** | **< 10,000** |
| AND either (C1) or (C2) is true | |  |  |  |
| C1 An observed, estimated or projected continuing decline of at least (up to a max. of 100 years in future) | | **Very high rate**  **25% in 3 years or 1 generation**  **(whichever is longer)** | **High rate**  **20% in 5 years or 2 generation**  **(whichever is longer)** | **Substantial rate**  **10% in 10 years or 3 generations**  **(whichever is longer)** |
| C2 An observed, estimated, projected or inferred continuing decline AND its geographic distribution is precarious for its survival based on at least 1 of the following 3 conditions: | |  |  |  |
| (a) | (i) Number of mature individuals in each subpopulation | **≤ 50** | **≤ 250** | **≤ 1,000** |
| (ii) % of mature individuals in one subpopulation = | **90 – 100%** | **95 – 100%** | **100%** |
| (b) Extreme fluctuations in the number of mature individuals | |  |  |  |

**Evidence:**

The Common Wombat (Bass Strait) was regarded as “common” on Flinders Island (Rounsevell et al. 1991). Maxwell et al. (1996) estimated that the total population size was 4000 individuals. There is no reliable recent estimate of population size, but it is inferred to be fewer than 10 000 mature individuals (Woinarski et al. 2014). There is no evidence of a continuing decline in the population (see Criterion 1).

The information presented above appears to demonstrate that the subspecies is not eligible for listing under this criterion. However, the purpose of this consultation document is to elicit additional information to better understand the subspecies’ status. This conclusion should therefore be considered to be tentative at this stage, as it may be changed as a result of responses to this consultation process.

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| **Criterion 4. Number of mature individuals** | | | |
|  | **Critically Endangered**  **Extremely low** | **Endangered**  **Very Low** | **Vulnerable**  **Low**  **(Medium-term future)1** |
| Number of mature individuals | **< 50** | **< 250** | **< 1,000** |
| D2**1** Only applies to the Vulnerable category  Restricted area of occupancy or  number of locations with a plausible  future threat that could drive the  species to critically endangered or  Extinct in a very short time | **-** | **-** | **D2.** Typically: area of  occupancy < 20 km2 or  number of locations ≤ 5 |

*1 The IUCN Red List Criterion D allows for species to be listed as Vulnerable under Criterion D2. The corresponding Criterion 4 in the EPBC Regulations does not currently include the provision for listing a species under D2. As such, a species cannot currently be listed under the EPBC Act under Criterion D2 only. However, assessments that demonstrate eligibility for listing under other criteria may include information relevant to D2. This information will not be considered by the Committee in making its assessment of the species’ eligibility for listing under the EPBC Act, but may assist other jurisdictions to adopt the assessment outcome under the* [*common assessment method*](http://www.environment.gov.au/biodiversity/threatened/cam)*.*

**Evidence:**

Maxwell et al. (1996) indicated that the then total population size was 4000 individuals. There is no reliable recent estimate of population size, but it is inferred to be fewer than 10 000 mature individuals (Woinarski et al. 2014).

The subspecies occurs at a single location, which meets the quantitative threshold for listing as Vulnerable under IUCN Criterion D2. However, its population appears stable on Flinders Island, and there is no plausible future threat that could drive the subspecies to critically endangered or extinct in a very short time.

The data presented above appear to demonstrate the subspecies is not eligible for listing under this criterion. However, the purpose of this consultation document is to elicit additional information to better understand the subspecies’ status. This conclusion should therefore be considered to be tentative at this stage, as it may be changed as a result of responses to this consultation process.

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| **Criterion 5. Quantitative Analysis** | | | |
|  | **Critically Endangered**  **Immediate future** | **Endangered**  **Near future** | **Vulnerable**  **Medium-term future** |
| Indicating the probability of extinction in the wild to be: | **≥ 50% in 10 years or 3 generations, whichever is longer (100 years max.)** | **≥ 20% in 20 years or 5 generations, whichever is longer (100 years max.)** | **≥ 10% in 100 years** |

**Evidence:**

Population viability analysis appears not to have been undertaken, there are insufficient data to demonstrate if the subspecies is eligible for listing under this criterion. However, the purpose of this consultation document is to elicit additional information to better understand the subspecies’ status. This conclusion should therefore be considered to be tentative at this stage, as it may be changed as a result of responses to this consultation process.

Consideration for delisting

The Common Wombat (Bass Strait) is currently listed as Vulnerable under the EPBC Act. The assessment presented in this Consultation Document suggests the subspecies may no longer be eligible to be listed under the EPBC Act as it may not satisfy the listing criteria in any category.

If the Common Wombat (Bass Strait) is delisted it will no longer be considered during the assessment of project referrals under the EPBC Act. However, the subspecies has triggered very few project referrals and significant impacts from developments on Flinders Island are unlikely. Delisting the subspecies is not expected to result in the loss of any management actions that could result in it becoming eligible for re-listing in the future.

Note: if the subspecies is found to be ineligible for listing as a threatened species under the EPBC Act, the following section of this consultation document will not be relevant.

**Conservation Actions**

Recovery Plan

There is no recovery plan currently in place for the Common Wombat (Bass Strait). A decision about whether there should be a recovery plan for this subspecies has not yet been determined. The purpose of this consultation document is to elicit additional information to help inform this decision.

Primary Conservation Actions

1. Implement measures for the treatment and prevention of sarcoptic mange.
2. Reduce the level of roadkill on Flinders Island.
3. Implement control measures for dogs on Flinders Island.
4. Determine population-level impacts of threatening processes.
5. Undertake regular monitoring to identify population trends over time.

**Conservation and Management Priorities**

There is no robust monitoring program for this subspecies. Part of its range occurs within conservation reserves for which some fire, pest and weed management occurs.

* Disease
* Treat wombats for sarcoptic mange if outbreaks of mange occur.
* Develop and implement suitable hygiene protocols to protect known sites from further outbreaks of sarcoptic mange.
* Direct mortality
* Identify areas with a high incidence of wombats killed on roads, and implement appropriate measures to reduce roadkill.
* Introduced species
  + Implement control mechanisms for dogs that minimise adverse impacts on wombats.
* Habitat loss and degradation
  + Protect remaining habitat from clearing.
  + Maintain the health of remnant riparian vegetation, and reduce livestock access to streambanks.
* Fire
  + Implement fire regimes that reduce the likelihood of extensive or intense fires.
* Translocation
  + Assess potential options and risks for re-introducing individuals to other Bass Strait islands within the subspecies’ historic range.

Stakeholder Engagement

* Develop conservation covenants on lands with high value for this subspecies.
* Liaise with the community to enhance their involvement in the management and monitoring of this subspecies.

**Survey and Monitoring priorities**

* Undertake regular monitoring to assess population size and trends, and the effectiveness of management actions.

**Information and Research priorities**

* Assess the incidence, prevalence and impact of sarcoptic mange and the factors contributing to outbreaks on Flinders Island.
* Identify mechanisms to reduce road mortalities on Flinders Island.
* Investigate techniques to reduce secondary poisoning from 1080 baits.
* Define population-level impacts of predation on the wombats by dogs.
* Assess the relative impacts of a range of management regimes for non-native predators.
* Define the subspecies’ responses to differing levels of grazing by livestock.
* Assess the extent to which food availability may limit population size or reproductive success.

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**Other sources cited in the advice**

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Available on the Internet at: <http://dpipwe.tas.gov.au/wildlife-management/animals-of-tasmania/mammals/possums-kangaroos-and-wombats/wombat>

Department of Primary Industries, Parks, Water and Environment (DPIPWE) (2018) Personal communication by email, 21 March 2018.

**Consultation questions**

PART 1 – INFORMATION TO AID LISTING ASSESSMENT

1. Do you have any additional information in the **ecology or biology** of the species?

2. Can you provide any additional information or estimates on **longevity, average life span or generation length** for the species?

3. Do you have additional information to support an **estimate of the current population size** of mature adults of the species (national extent)?

4. Do you have additional information on **population trends** over 3 generations, or an historic population size for the species (national extent)?

5. Do you have additional information on **current range** (national extent) or **location of populations** for the species?

6. Can you provide additional information on any **change in range** or **location of populations,** or an **historic range** (national extent)?

PART 2 – INFORMATION FOR CONSERVATION ADVICE ON THREATS AND CONSERVATION ACTIONS

7. Do you further information on the historic, current or potential **threats** facing the species?

8. Do you have further information on current or potential **management actions** to support protection and recovery of the species?

9. Do you have further information on current or potential **monitoring** or **research activities** for the species?

10. Are you aware of **other knowledge** (e.g. traditional ecological knowledge) that may help better understand the threats and management actions to aid recovery of the species?

11. Are you aware of any **cultural importance or use** that the species has?

12. What **individuals or organisations** are currently, or potentially could be, involved in management and recovery of the species?

PART 3 – **ANY** OTHER INFORMATION

13. Do you have comments on any other matters relevant to the assessment of this species?