

**SPECIES PROTECTION PLAN FOR POPULATIONS OF  
*LEPIDIUM HYSSOPIFOLIUM* (SOFT PEPPERCRESS) UNDER  
THE JURISDICTION OF THE TASMANIAN DEPARTMENT OF  
STATE GROWTH  
2018-2028**



**Department of State Growth  
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This document has been prepared by Mark Wapstra of ECOTas for Environment and Development Approvals (EDA), Department State Growth. The document may only be used for the purposes for which it was commissioned.

This report should be cited as Department of State Growth, 2017 'Species Protection Plan for population of *Lepidium Hyssopifolium* (Soft Peppercross) under the Jurisdiction of the Tasmanian Department of State Growth, 2018-2028', Department of State Growth, Hobart, Tasmania.

## 1. INTRODUCTION

### 1.1 Background on *Lepidium hyssopifolium*

*Lepidium hyssopifolium* (known in Tasmania as the “soft peppercross” but elsewhere also as the “basalt peppercross”) is presently listed as endangered on both the Tasmanian *Threatened Species Protection Act 1995* and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*. As part of a statewide review of the available information on the species in Tasmania, a detailed report was produced:

ECOtas (2017). *Review of Records and Collections of Lepidium hyssopifolium (Soft Peppercross) in Tasmania: Background Information to Inform Long-Term Management Options of Sites under the Jurisdiction of the Tasmanian Department of State Growth*. Report by Environmental Consulting Options Tasmania (ECOtas) for the Department of State Growth.

*Lepidium hyssopifolium* occurs in Tasmania, Victoria, New South Wales, Queensland, South Australia, and New Zealand (Figure 1).

Within Tasmania, *Lepidium hyssopifolium* is widespread, mainly in the southeast, east and Midlands, with outlying records on eastern Bass Strait islands (Figure 2). It occurs in the Southern Ranges, South East, Northern Midlands, Ben Lomond and Flinders bioregions (Figure 3). The species occurs in several municipalities including Kingborough, City of Hobart, City of Glenorchy, City of Clarence, Sorell, Brighton, Southern Midlands, Northern Midlands, Central Highlands, Derwent Valley, Glamorgan-Spring Bay, Break O’Day, and Flinders (Figure 4).

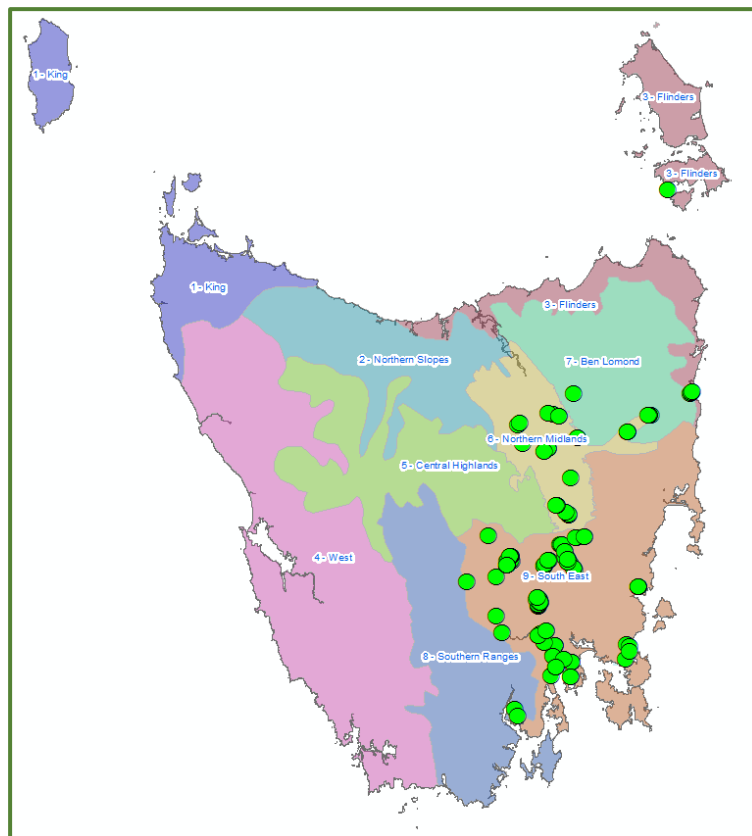
In Tasmania, the key habitat for the species appears to be highly disturbed/modified road verges, where the species occurs primarily under mature exotic conifers (mainly *Hesperocyparis macrocarpa* and *Pinus radiata* but also some other species). Less frequently the species occurs in open grassland habitats, also usually on highly modified road verges dominated by exotic grass species. There are few confirmed extant sites in “natural” situations, with all such sites associated with anthropogenic activities such as gravel extraction, refuse management and other land uses.



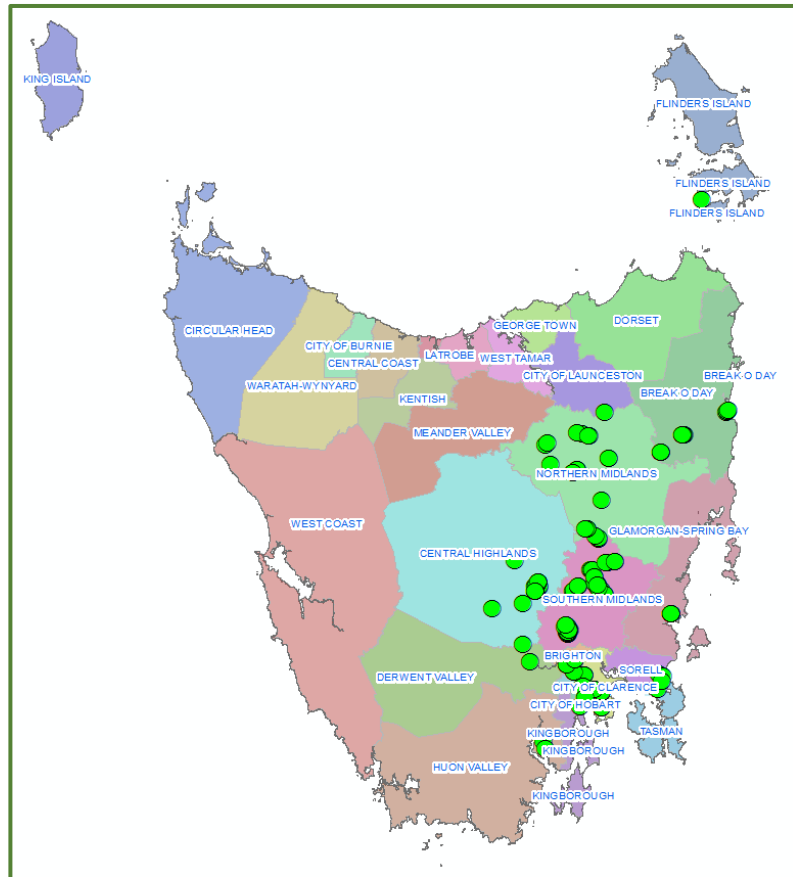
**Figure 1.** Distribution of *Lepidium hyssopifolium* in Australia and New Zealand [source: *Atlas of Living Australia*, accessed 28 April 2017]



**Figure 2.** Distribution of *Lepidium hyssopifolium* in Tasmania – circled records not in Department of Primary Industries, Parks, Water & Environment’s (DPIPWE) *Natural Values Atlas* [source: *Atlas of Living Australia*, accessed 28 April 2017]



**Figure 3.** Distribution of *Lepidium hyssopifolium* in Tasmania – by IBRA [source: *Natural Values Atlas*, 12 March 2017]



**Figure 4.** Distribution of *Lepidium hyssopifolium* in Tasmania – by municipality [source: *Natural Values Atlas*, 12 March 2017]

ECotas (2017) identified 84 subpopulations of *Lepidium hyssopifolium* from Tasmania (Table 1).

**Table 1.** Status of subpopulations of *Lepidium hyssopifolium* in Tasmania

Status category	No.
<b>Extant</b>	<b>24</b>
- voucher available	19
- voucher absent	5
<b>Locally extinct</b>	<b>31</b>
- voucher available	14
- voucher absent	17
<b>Uncertain</b>	<b>29</b>
- voucher available	20
- voucher absent	9
<b>TOTAL</b>	<b>84</b>

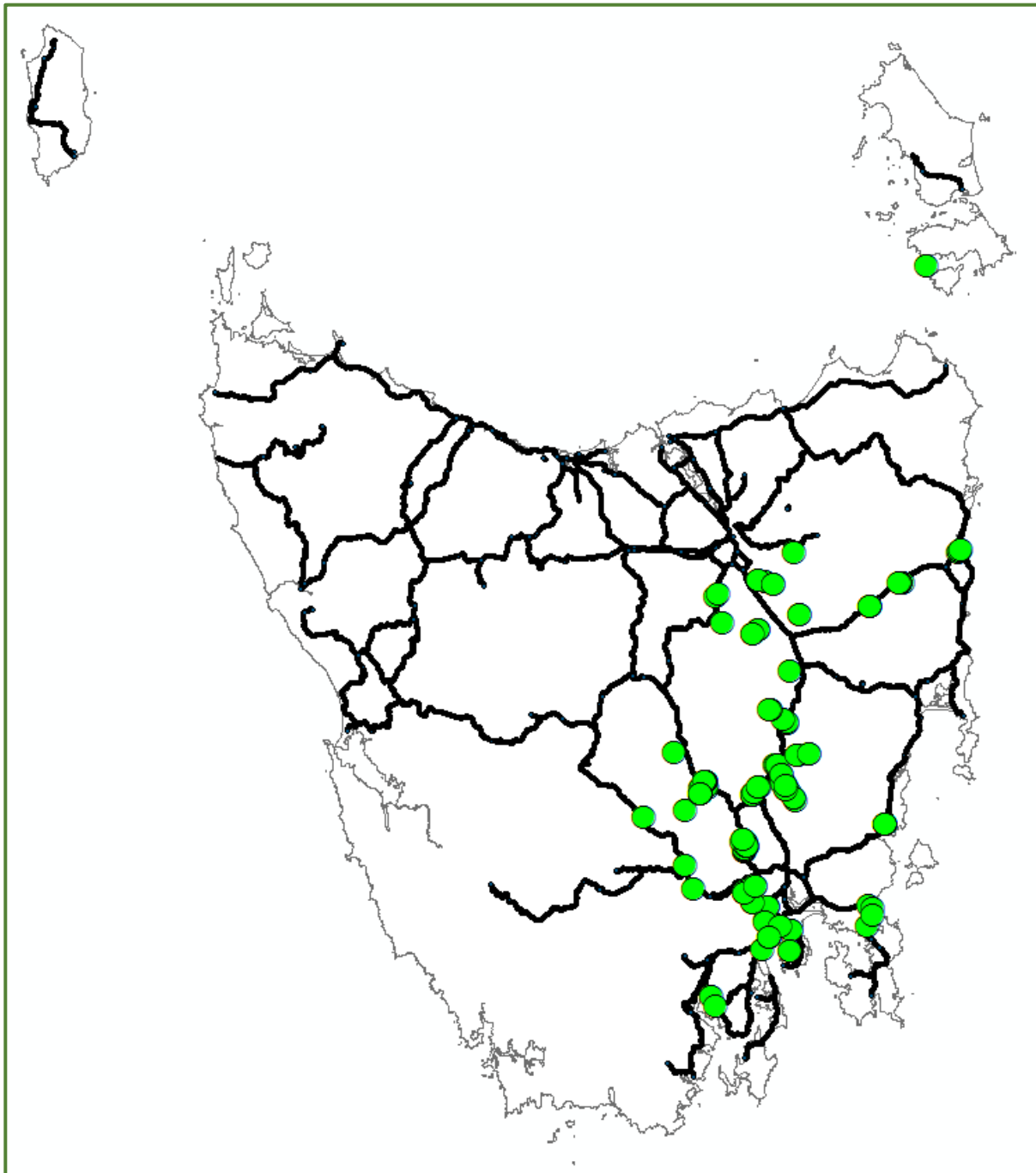
Of the 84 sites/subpopulations known, only 24 are now considered extant. Most of these are confirmed by a voucher specimen. However, five still do not have a supporting voucher collection. 31 of the 84 sites/subpopulations are now considered locally extinct. Some of these are a small group of sub-sites along Tunnack Road considered as separate sites but possibly all part of one larger meta-population. Of the 84 sites/subpopulations, 29 are classified as uncertain, most with a supporting voucher. Sites without a voucher cannot be guaranteed to even be *Lepidium hyssopifolium* but are included herein because it is not possible to properly

discount the sites. Those with vouchers are listed as uncertain mainly because the population has not been confirmed for over a decade.

The conclusion at this stage is that we can reliably confirm 24 extant populations of *Lepidium hyssopifolium* in Tasmania, suggest that 31 may be locally extinct, and that 29 have an uncertain status.

### 1.2 Distribution of *Lepidium hyssopifolium* under State Growth jurisdiction

Most sites supporting *Lepidium hyssopifolium* are outside the jurisdiction of the Tasmanian Department of State Growth (Figure 5), occurring on private property or land managed by a local government authority (mainly Council-managed road verges).



**Figure 5.** Distribution of *Lepidium hyssopifolium* in Tasmania in relation to the road network under the jurisdiction of the Department of State Growth [source: *Natural Values Atlas*, 12 March 2017]

Of the sites/subpopulations identified by ECOtas (2017), only six are under the jurisdiction of the Tasmanian Department of State Growth (State Growth).

**Table 2.** Summary of subpopulations of *Lepidium hyssopifolium* under State Growth jurisdiction<sup>1</sup>

No.	Location	Municipality	Status
18a	Lyell Highway, c. 2 km SE of Ouse	Central Highlands	<b>EXTANT (vouchered)</b>
39	Maclaines Creek, Triabunna	Glamorgan-Spring Bay	<b>EXTANT (vouchered)</b>
40	Spring Hill, Midland Highway	Southern Midlands	<b>EXTANT (vouchered)</b>
46	Tunnack Road, c. 200 m W of 'Woodstock'	Southern Midlands	<b>EXTANT (vouchered)</b>
69	Ormley, Esk Main Road	Break O'Day	<b>EXTANT (vouchered)</b>
74	Falmouth	Break O'Day	<b>LOCALLY EXTINCT (vouchered)</b>

Subpopulation 39 (Maclaines Creek) was the primary impetus for the review of the status of *Lepidium hyssopifolium* in Tasmania and specifically sites under the jurisdiction of State Growth. Subpopulation 69 (Ormley) is part of an existing formal management plan under State Growth's Roadside Conservation Program (RCP), with ongoing management of this site. Subpopulation 74 (Falmouth) was part of a formal RCP but this has been discontinued due to the locally extinct status of the species at the site.

Of the remaining sites/subpopulations under the jurisdiction of Department of State Growth, none were identified by ECOTas (2017) as warranting incorporation into State Growth's RCP.

## 2 MANAGEMENT OPTIONS

### 2.1 General

The key extant populations of *Lepidium hyssopifolium* in Tasmania are either on private property and/or council-managed road verges adjacent to private property. Therefore, their persistence is reliant on the actions of local government authorities and private landowners. State Growth is not aware of any formal attempts by local government authorities to actively manage *Lepidium hyssopifolium*.

State Growth considers there are two management options available for *Lepidium hyssopifolium* in Tasmania, which are outlined below:

1. No management / benign neglect
2. Protective measures

#### **OPTION 1: no management/benign neglect**

While this may seem an extreme management approach for an "endangered" species, there is no evidence that any form of active management has resulted in a direct benefit to the species in Tasmania. Usually active management aims to maintain the population in its current state or improve its status (e.g. increase in numbers). The abundance of *Lepidium hyssopifolium* at any particular site appears to be unrelated to management actions at that site, except where management has resulted in the loss of over-topping ornamental trees - which has generally resulted in a decrease in abundance or the complete loss of the population.

Benign neglect is the term used to refer to the current lack of management at almost all sites for *Lepidium hyssopifolium* in Tasmania. That is, no specific, active management of the species but routine general maintenance, such as roadside slashing of grasses. ECOTas (2017) found that sites subject to benign neglect usually support the largest and healthiest populations of

<sup>1</sup> Subpopulation numbers refer to a longer list of subpopulations included in ECOTas (2017), hence discontinuities in Table 2.



*Lepidium hyssopifolium*. For example, many road verge site populations (mainly council-managed) are long-persistent and include multi-aged and locally abundant populations. The extreme of this is observed around Oatlands where the species is acting as a weed of gravel car parks and "lawns" in recreation areas. Other examples include York Plains Road, Nile Road and Stewarton Bridge, where the species is performing extremely well, despite roadside maintenance works and no management aimed at protecting the site population.

The case for no management of *Lepidium hyssopifolium*, or benign neglect, is that there is no evidence that active management of a site results in a benefit for the species. On the contrary, there is evidence that if a site is neglected for a decade or two, the species will remain present in much the same state.

## **OPTION 2: protective measures**

Active management is appropriate for some sites where the presence of the species is directly threatened by proposed works. A recent example is protection of the population of *Lepidium hyssopifolium* by barrier mesh around the site at Ouse during shoulder works and weed spraying. This example demonstrates the principle of maintaining the status quo – there is localized protection during works but no ongoing management as there is no practical intention to actively manage for the objective of increasing the local population.

## **2.2 Management of sites under State Growth jurisdiction**

Within the road network under the direct jurisdiction of State Growth, there are several sites supporting extant subpopulations of *Lepidium hyssopifolium* (Table 2). Sites of uncertain status or presumed extinct are not included in this consideration.

### **Site 18A. Lyell Highway, c. 2 km SE of Ouse**

The population is restricted to a small patch in dense roadside grass. In the absence of active management, it is likely that the species will persist. Occasional roadside slashing of grass - undertaken by the local municipality - is likely to be beneficial, with potential impacts of slashing obviated by the species flowering and fruiting for much of the year.

State Growth does not consider this site suitable for formal inclusion in State Growth's RCP.

### **Site 39. Maclaines Creek, Triabunna**

This site once supported *Lepidium hyssopifolium* but was modified for the construction of a new bridge. The modification involved the removal of the mature conifers adjacent the bridge under which the species was growing. This was followed by an attempt to re-establish the species under the canopy of new shrubs grown at the site. The futility of further active management of this site is discussed in *ECOtas 2017*. The species remains present but in much lower numbers (at least in terms of mature individuals).

State Growth proposes no active management of this site, i.e. benign neglect, and to conduct periodic informal monitoring of species abundance and distribution.

### **Site 40. Spring Hill, Midland Highway**

This population comprises two main parts: a locally dense patch on the eastern side of the Midland Highway under some weedy wattles, and two patches on a steep rise on the western side of the Midland Highway, above a truck pull-off.

The eastern population is restricted to the shade of several closely-planted introduced wattle species (*A. baileyana*, *A. pravissima*, *A. floribunda*, *A. longifolia*). As with many of these shrubby wattles, these specimens are all showing signs of senescence. Current management is to slash the grass around the clump of wattles only.

Once the wattles die, it is presumed that *Lepidium hyssopifolium* will begin to decline. It may persist amongst dense grass for some time (as it has at other sites, such as Hollow Tree Road)



and may spread due to roadside slashing cutting through the fertile heads and deposit seed further afield.

The two sites on the western side of the highway are growing on the flat above the now very steep roadside batter – this flat being the old alignment of the Midland Highway. The northern patch occurs under planted *Eucalyptus globulus* and the introduced *Acacia baileyana*. The southern patch is growing amongst very dense grass and young *Acacia dealbata*.

Historically these sites have not been managed, other than exclusion fencing during Midlands Highway upgrade works. State Growth will include these two populations in the State Growth RCP during 2017-18 as they occur in proximity to other listed flora values which, as a broader group of flora, have sufficient value to justify management under the RCP. As a consequence of this, State Growth will:

- install roadside markers at the sites and produce a Management Plan, which will:
  - identify weed management requirements;
  - identify any additional threats to flora values on the sites;
  - protection measures (as far as practical) during any further road works, and
  - recommend 5 yearly biological monitoring

to protect the flora values including *Lepidium hyssopifolium* populations on the eastern and western side of the Midland Highway at Spring Hill.

#### **Site 46. Tunnack Road, c. 200 m W of “Woodstock”**

This is one of several sites along Tunnack Road between Baden and Oatlands for *Lepidium hyssopifolium* that is likely to have originated from one or two roadside gravel piles, possibly sourced from around Oatlands, where *Lepidium hyssopifolium* is locally abundant. The sites along Tunnack Road are nearly all short-lived as none occurred in typical habitat i.e. not under large old conifers – as all sites appear to be random adventitious “pop-ups” caused by road works.

The site is restricted to a few plants growing about 1-2 m from the sealed road edge amongst the gravel and frequently slashed dense grass and weeds. The long-term prospects are poor and it is reasonable to assume this localised patch is just persisting by chance. Given the size of the population and proximity to the sealed road edge, State Growth proposes no management or benign neglect of this population

#### **Site 69. “Ormley”, Esk Main Road**

This is one of State Growth’s current RCP sites. *Lepidium hyssopifolium* is present in high numbers along the dense grassy roadside verge and extending into adjacent private property. The species appears to be tolerating roadside slashing and occasional edge effects from roadside verge spraying, persisting in the gravel from the immediate road verge.

State Growth proposes no change to the current management regime at this site, noting the long-term persistence of the population is reliant on retention of the shading conifers. These conifers are on private property and, while there may be an informal agreement to maintain these tree, State Growth has no control over private land. State Growth had approval from the private property owner in 2016/17 to scatter seed under the mature conifers on their land to extend the population under suitable habitat. State Growth will seek agreement from the private property owner to conduct additional seeding during the period of this plan.

#### **Site 74. Falmouth**

This site was one of State Growth’s current RCP sites. Following approximately 9 years of annual monitoring, with no observed presence of *Lepidium hyssopifolium*, the species appears to be locally extinct. State Growth proposes no active management for this site, and to remove this site from the RCP during 2017-18.

### **2.3 Protection of sites under State Growth jurisdiction**

State Growth commits to implementing the following measures to protect *Lepidium hyssopifolium* populations under its jurisdiction.

#### **2.3.1 Protection of known and new sites subject to works**

If a known site of *Lepidium hyssopifolium* is present within or close to proposed road construction works managed by State Growth, State Growth will ensure the site is surveyed by a suitably qualified person to document the extent of the population and to recommend practical, on-site measures to protect the population during those works. Measures will include installation of exclusion fencing around the population, including trees that comprise the suitable habitat.

Any new sub populations found during pre-construction flora and fauna surveys will also be subject to protection measures, in accordance with the above.

If the population cannot be practically protected, a permit under Section 51 of the Tasmanian *Threatened Species Protection Act 1995* will be sought from DPIPWE under existing permit application protocols. If that permit is issued, a consideration of the need for referral under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* will be made. This would include a detailed review of the *Significant Impact Guidelines* and any other relevant provisions of the Act (e.g. Section 43B – exemption for maintenance works).

#### **2.3.2 Database management**

State Growth will provide the DPIPWE the documentation associated with the Statewide review of *Lepidium hyssopifolium* (ECOTas 2017) including all data files for incorporation into DPIPWE's *Natural Values Atlas* (NVA) database. This will ensure the nature and location of *Lepidium hyssopifolium* populations within the jurisdiction of State Growth are available to all authorities with land management responsibility.

As new sites of *Lepidium hyssopifolium* are detected within the State road network (e.g. as part of pre-works surveys), State Growth will ensure that relevant data is incorporated into DPIPWE's NVA in a timely manner in accordance with appropriate permit conditions (usually within three months of detection).

#### **2.3.3 Monitoring and reporting of known/additional sites**

During spring or early summer of 2021 and 2026 the Lyell Highway, Maclaines Creek (as shown in Annexure 1 of EPBC 2007/3807) and Tunnack Road sites will be subject to a population count and site mapping to estimate number and location of plants on these sites. This information will be presented in a field survey form with a summary of the sub population location description, plant count and maps of surveyed locations.

Spring Hill and Ormley populations are already subject to monitoring under formal DPIPWE arrangements as part of the State Growth RCP.

As part of the periodic compliance reports required under Condition 2 of approval for 2007/3807, State Growth will report on the implementation of this plan and the condition of *Lepidium hyssopifolium* subpopulations within the jurisdiction of State Growth (including populations monitored under DPIPWE managed State Growth RCP).

SOFT PEPPERGRASS SPECIES PLAN FOR *LEPIDIUM HYSSOPIFOLIUM* WITHIN THE STATE ROAD RESERVE**Table 3.** Summary of State Growth commitments to protect *Lepidium hyssopifolium* at sites under its jurisdiction

No.	Location	Population Size (date)	Land Management Practices	Existing SG Management Context	Plan commitments
18a	Lyell Highway, c. 2 km SE of Ouse	18 individuals (Apr. 2017)	Roadside reserve subject to periodic maintenance	Not suitable for RCS Program	Survey and protect from any roadside / construction works as far as practical, i.e. exclusion fencing. Population count and site monitoring Spring/Summer 2021 and 2026.
39	Maclaines Creek, Triabunna	54 individuals - including those outside of the offset area (Dec. 2016)	Roadside reserve in part subject to periodic maintenance	Under EPBC Conditions to monitor until 2018	Survey and protect from any roadside / construction works as far as practical, i.e. exclusion fencing. Population count and site monitoring Spring/Summer 2021 and 2026.
40	Spring Hill, Midland Highway (both sides of road)	64 individuals (Mar. 2017)	Roadside reserve, not usually subject to periodic maintenance as outside maintenance zone	To be included in RCS program during 2018, subject to DPIPWE approval	Survey and protect from any roadside / construction works as far as practical, i.e. exclusion fencing. Population count monitoring under formal DPIPWE management and monitoring arrangement.
46	Tunnack Road, c. 200 m W of 'Woodstock'	7 individuals (Apr. 2017)	Roadside reserve subject to periodic maintenance	Not suitable for RCS program	Few plants growing in gravel shoulder/verge. Protection measures not proposed. Population count and site monitoring Spring/Summer 2021 and 2026.
69	Ormley, Esk Main Road	Estimated – 200-250 individuals (Mar. 2017)	Roadside reserve in part subject to periodic maintenance	Part of current RCS Program	Survey and protect from any roadside / construction works as far as practical, i.e. exclusion fencing. Population count monitoring under formal DPIPWE management and monitoring arrangement.

**DECLARATION OF ACCURACY**

I declare that:

1. To the best of my knowledge, all the information contained in, or accompanying this Soft Peppercross Protection Plan is complete, current and correct.
2. I am duly authorised to sign this declaration on behalf of the approval holder.
3. I am aware that:
  - a. Section 490 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) makes it an offence for an approval holder to provide information in response to an approval condition where the person is reckless as to whether the information is false or misleading.
  - b. Section 491 of the EPBC Act makes it an offence for a person to provide information or documents to specified persons who are known by the person to be performing a duty or carrying out a function under the EPBC Act or the *Environment Protection and Biodiversity Conservation Regulations 2000* (Cth) where the person knows the information or document is false or misleading.
  - c. The above offences are punishable on conviction by imprisonment, a fine or both.

**Signed**

\_\_\_\_\_  
**Full name (please print)**

\_\_\_\_\_  
**Organisation (please print)**

\_\_\_\_\_  
Date \_\_\_\_ / \_\_\_\_ / \_\_\_\_