Lepidium hyssopifolium

Lepidium hyssopifolium.
H&A Wapstra.

FAMILY: BRASSICACEAE

BOTANICAL NAME: *Lepidium hyssopifolium,* Desv., *J. Bot. (Desvaux)* 3: 164, 179 (1815)

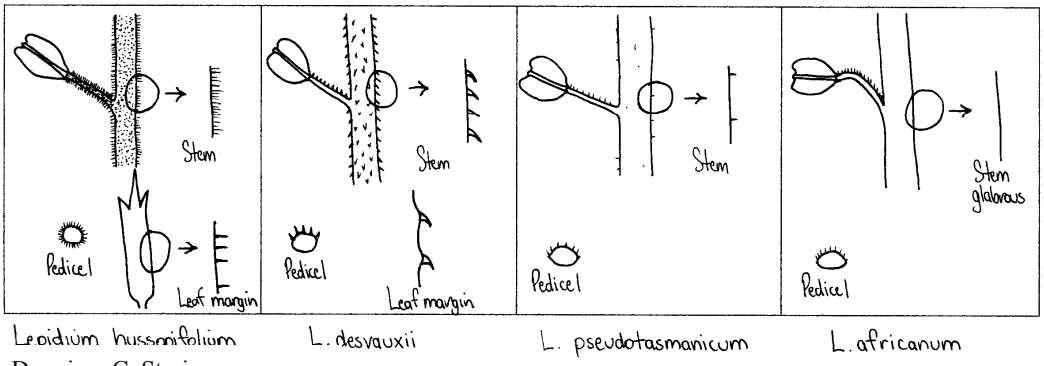
COMMON NAME: soft peppercress

COMMONWEALTH STATUS: (*EPBC Act*) Endangered

TASMANIAN STATUS: (*TSP Act*) endangered

Description

An erect, weedy looking, much branched perennial herb, up to 50 cm tall with a blue-green appearance. **Leaves:** The leaves are hairy, variable in shape and between 1-4 cm long and 1-2.5 mm wide. Most leaves have an ear-like lobe or appendage at the base. **Flowers:** The flowers are greenish, inconspicuous and borne in an elongated stem. Flowering in summer. **Fruit:** The fruit is an ovate pod. Each plant produces a large amount of seed. Most herbarium specimens have been collected from August to May. **Confusing species:** This species is distinguished from other *Lepidium* species by the thick hairs on its flowering stalks (description from Barker & Johnson 1998, Leigh 1984). **Please refer to the attached *Lepidium* taxonomy table (Strain 2002).**



Drawing: C. Strain

Distribution and Habitat

On the mainland this species occurs in Victoria. In Tasmania, *Lepidium hyssopifolium* occurs from Falmouth on the East Coast, through the northern Midlands, southern Midlands and Derwent Valley as well as on Preservation Island in the Furneaux Islands. There is also one historical record from South Arm, south of Hobart and an unconfirmed report from Dunalley in the south-east. The native habitat of *Lepidium hyssopifolium* is the growth suppression zone beneath large trees in grassy woodlands (Kirkpatrick & Gilfedder 1998) and grasslands (Leigh *et al.* 1984). The species is now found primarily within the growth suppression zone of large exotic trees on roadsides and home yards on farms (Kirkpatrick & Gilfedder 1998). It occurs in dry, warm and fertile areas in Tasmania, on flat ground, from an altitude of 40 to 500 metres, on weakly acid to alkaline soils derived from a range of rock types (Kirkpatrick & Gilfedder 1998).

The occurrence of this species is associated with bare ground and is absent where vegetation cover is complete (Kirkpatrick & Gilfedder 1998).

Key Sites and Populations

Barker & Johnson (1998) consider the Annandale (private property) at Tunbridge to be especially significant as it is the only relatively natural occurrence of the species. Key sites include Shones Corner (Risdon), Black Snake Road (Granton), Knights Point (Claremont), Salmon Ponds Road (Salmon Ponds), Midland Highway & East Bagdad Highway (Bagdad), Midland Highway (Dysart), Tunnack Road (Parattah), Jericho Road (Jericho), Lake Highway, Hollow Tree Road & Dennistoun Road (Bothwell Township), Lake Dulverton, Oatlands Township, York Plains Road (Oatlands), York Plains Road (Pawtella), Township Lagoon (Tunbridge), Midland Highway & Tunbridge Tier Road intersection (Tunbridge), Tunbridge Tier Road (Tunbridge), Barton Road, Wyldes Plain (west of Conara), Macquarie Road (south of Cressy), River Road & Murfet Street (Cressy), Kingston Road (northeast of Cleveland), Esk Main Road (Ormley), Deddington Road (Nile), Nile Road (Nile), Clarendon Road (Clarendon), Gully Run Hill (east of Evandale), Deddington Road (Blessington), Devils Creek Bridge (Falmouth), Cove Point (Preservation Island, Furneaux Islands). All populations are considered to be important as it occurs in small numbers at a site and can be subject to fluctuations in population size. In Tasmania, the species is estimated to occupy less than 3 hectares.

Known Reserves

A small population of Lepidium hyssopifolium is reserved in the Township Lagoon Nature Reserve. A population occurs in the Sydney Point Historic Site, two populations occur in Cemetery Reserves and one population occurs on a council managed Crown Reserve. A population has also been introduced to the Conara Roadside Park (B. Nicholson pers comm). The largest population occurs in a Private Comprehensive, Adequate and Representative (CAR) Reserve.

Ecology and Management

A major limiting factor for the occurrence of *Lepidium hyssopifolium* is the extent of fertile open ground that is free from stock grazing (Kirkpatrick & Gilfedder 1998). Another limiting factor is, though this species produces a prolific amount of seed and these readily germinate especially with soil disturbance, most of these seedlings do not survive to reproductive age (Kirkpatrick & Gilfedder 1998, Pyrke 1994). While

there are numerous populations of this species in Tasmania, most of these are very small and prone to extinction from grazing, tree removal, road works and unsustainable roadside management.

Lepidium hyssopifolium is only found in areas that have been lightly grazed or ungrazed by stock (Kirkpatrick & Gilfedder 1998). Removal of trees including exotics such as Monterey cypress (*Cupressus macrocarpa*) and radiata pine (*Pinus radiata*) allows grasses and herbs to quickly establish and outcompete *Lepidium hyssopifolium*. This species will persist where there is root competition but not above ground competition (Kirkpatrick & Gilfedder 1998).

The threats to roadside populations include the use of herbicides, slashing more than once per year, tree removal and excessive disturbance such as shoulder hardening (Cropper 1993).

Lepidium hyssopifolium is able to persist after fire, resprout after damage such as slashing (TPLUC 1996) and can regenerate from soil-stored seed following disturbance such as animal digging or roadside scraping (Pyrke 1994). This species is included as a critical species in the Management, Monitoring and Management Agreement for Tasmania's Significant Grassy Roadsides, currently being developed by A.J. North and Associates for the Department of Infrastructure, Energy and Resources, also included in a Recovery Plan for Tasmanian Native Grasslands 2000 – 2002 and an operations plan for the Private CAR (Comprehensive Adequate and Representative) Reserve at Tunbridge.

Insects are the most likely pollination vector for this species (A. Hingston pers. comm.).

Conservation Status Assessment

There is no immediate need for reassessment of *Lepidium hyssopifolium.*

Further Information

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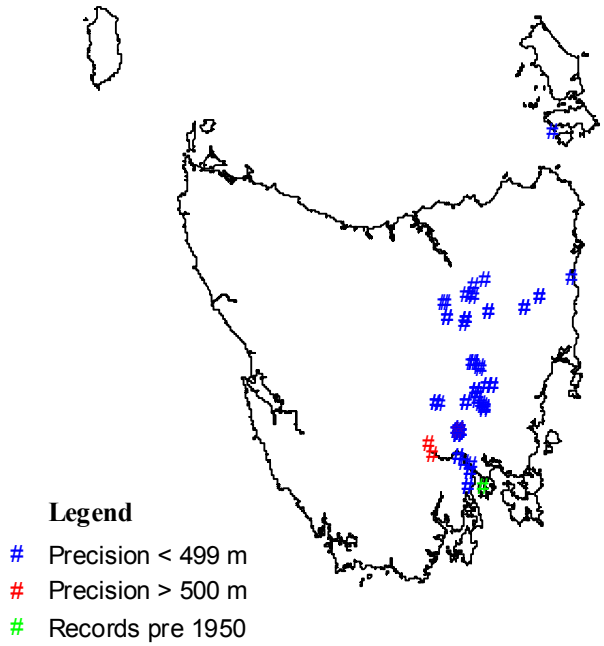
Tasmanian Distribution

(As per Threatened Species Unit records, June 2003)



1:25 000 Map Sheets

Blessington, Bothwell, Bushy Park, Cleveland, Conara, Cressy, Delmont, Dunalley, Elderslie, Evandale, Faddens, Falmouth, Fingal, Hanleth, Hobart, New Norfolk, Nile, Oatlands, Preservation, Richmond, Rossarden, Stonor, Taroona, Tunbridge, Uxbridge, Vincents.

Date last modified: 28/08/03

Taxonomic comparison of four *Lepidium* species occurring in Tasmania **Cassandra Strain, June 2002**

Description	L. hyssopifolium	***L. desvauxii***	***L. pseudotasmanicum***	***L. africanum* (i)**
Life	Perennial	Perennial	Annual, biennial or perennial	Annual or perennial
Growth habit	Erect	**Erect to spreading**	Erect	Erect
Overall height	50 cm	40 cm 60 cm (Curtis)	20-30 (-60) cm	To 70 cm
Overall hairs	**Yes, fine and short**	**Yes, scabrous.**		**No**
Stem hairs	*Yes*	*Yes*	**Glabrous or scattered hairs**	**No, Glabrous**
Stem hair desc.	**Fine, needle-shaped short hairs**	**Mostly deflexed, sometimes bilobed,**		
Basal leaf shape	Pinnately lobed or toothed	Pinnately lobed, lobes toothed, terminal lobe largest, often large course hairs	Pinnately lobed, lobes narrowly linear	Mostly oblanceolate, sometimes pinnatisect with linear lobes
Basal leaf length			To 90 mm	20-80 mm
Stem leaf arrangement		Distant		
Stem leaf shape	Linear-lanceolate To pinnatisect with linear lobes	Spathulate to narrowly wedge-shaped	Linear, pinnate to entire	Lanceolate, acute apex
Leaf base	**Some leaves auriculate (ear-shaped)**	**Tapering to auriculate**	**Somewhat narrowed (Curtis)**	
Leaf surface	Fine short hairs		Midrib glabrous or with stout, needle-like or conical hairs	
Leaf margin	Toothed to entire	Toothed near apex	Pinnate to entire	Toothed to entire
Leaf margin hairs	*Longer than leaf hairs*	**Arising from warty projections, often bilobed**	**Marginal glabrous or with stout, needle-like or conical hairs**	**Glabrous or sparse needle-like hairs**
Leaf length	10-40 mm		To 90 mm	To 60 mm
Leaf width	1-2.5 mm		5 mm	5 mm
Inflorescence	Elongating raceme	Raceme	Elongating raceme	Dense elongating raceme
Sepal length	0.5-0.75 mm	0.5-0.8 mm	0.5-1 mm	To 0.8 mm
Petals	Reduced or absent	Very reduced, linear	Reduced or absent	Reduced, thread-like shorter than sepals
Stamen number	2 / Usually 2 (Harden, 1990)	2	2 / Usually 2 (Harden, 1990)	2 / Usually 2 (Harden, 1990)
Stigma	Sessile	Subsessile to sessile	Subsessile	Subsessile
Fruit	Silicula	Silicula	Silicula	Silicula
Silicula shape	Elliptic to ovate to narrow-lanceolate	Elliptic to ovate	Elliptic	Ovate, obovate to elliptic

Silicula length	2.5-5 mm	2.5-3 mm	2.5-5 mm	2-3 mm
Silicula width	1.5-2.5 mm	1.75-3 mm	2-2.5 mm	1.5-2 mm
Silicula wing shape	Narrow	Narrow	Narrow	Narrow
Silicula covering		Usually glabrous	Glabrous	
Apical notch	Yes, small	Yes, small	Yes, shallow	Yes, shallow
Pedicel length	2-4 mm	3-4 mm 4-6 mm (Curtis)	**2.5-6 mm**	2-3 mm Shorter than or equal to silicula
Pedicel/stem attachment	Spreading	Spreading +/- spreading (Curtis)	Spreading	*Curved, bow-shaped*
Pedicel shape	Terete		Somewhat flattened	Somewhat flattened
Pedicel covering?	**Hairy above & below**	**Hairy above, less so below**	**Finely/minutely hairy on upper surface only**	**Finely to minutely hairy on upper surface**

Bibliography

Based on:

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