

## Approved Conservation Advice for *Westringia davidii*

(s266B of the *Environment Protection and Biodiversity Conservation Act 1999*)

This Conservation Advice has been developed based on the best available information at the time this Conservation Advice was approved; this includes existing plans, records or management prescriptions for this species.

### Description

*Westringia davidii* Family Lamiaceae, also known as the David's Westringia, is an ascending perennial rounded somewhat straggly shrub, to 2 m in height. Leaves are arranged along stems in whorls of three. The lower surface of the leaves and the leaf stalk are densely hairy while the upper surface is sparsely hairy to hairless towards the leaf tips. Flowers are arranged into clusters of up to 12 flowers per leaf whorl. Individual flowers consist of a green calyx and are pale mauve with orange spots in the throat (Briggs and Leigh, 1990; Harden, 1992; Elith, 2002). Flowers throughout the year (Harden, 1992).

### Conservation Status

David's Westringia is listed as **vulnerable**. This species is eligible for listing as vulnerable under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act) as, prior to the commencement of the EPBC Act, it was listed as vulnerable under Schedule 1 of the *Endangered Species Protection Act 1992* (Cwlth). The David's Westringia is also listed as vulnerable under the *Threatened Species Act 1995* (New South Wales).

### Distribution and Habitat

David's Westringia is endemic to the coastal ranges to the west of Eden and Pambula in the catchments of the Yowaka and Pambula rivers. The extent of occurrence is less than 20 km<sup>2</sup> and the area of occupancy is only 0.14 km<sup>2</sup>. This species is known from 24 small and discrete populations. Population numbers range from 20 to 800-1000 mature individuals and the total population size is estimated to be approximately 8000 individuals (Elith and Potts pers comm., 2003). Populations are found on private land, in Flora Reserves, State Forests and National Parks (NSW NPWS, 2002).

This species is confined to volcanic rocky outcrops (of rhyolite and ignimbrite) at altitudes of 150-500 m and skeletal loamy soils. It occurs predominantly on northerly and easterly aspects on hillsides of the coastal ranges (Briggs and Leigh, 1990; Elith, 2002). The climate across the species range is maritime temperate with very variable rainfall averaging 800 mm per year (NSW NPWS, 2002). This narrow niche approximates the ecotone between open forest dominated by Silvertop Ash and the steep slabs of rock which support a mosaic of shrubland, scattered or isolated herbs, shrubs and patches of bare rock.

This species occurs within the South East Corner Bioregion and the Southern Rivers Natural Resource Management Region.

The distribution of this species is not known to overlap with any EPBC Act-listed threatened ecological community.

### Threats

The main identified threat to David's Westringia is its susceptibility to consequences of population isolation and fragmentation, as populations are scattered and discrete. While this

species is not currently threatened by overt habitat destruction there is some circumstantial evidence that the species is declining slowly (NSW NPWS, 2002).

The main potential threats to David's *Westringia* include browsing and grazing by feral goats (Briggs and Leigh, 1990), infection from *Phytophthora cinnamomi* (Elith, 2002), clear-felling and other forestry operations which have the potential to change the physical environment (Elith pers. comm., 2003). Some evidence suggests this species may be sensitive to fire, therefore, inappropriate fire regimes may be a potential threat to this species (NSW NPWS, 2002).

### **Research Priorities**

Research priorities that would inform future regional and local priority actions include:

- Design and implement a monitoring program or, if appropriate, support and enhance existing programs.
- More precisely assess population size, distribution, ecological requirements and the relative impacts of threatening processes.
- Undertake survey work in suitable habitat and potential habitat to locate any additional populations.
- Undertake seed germination and/or vegetative propagation trials to determine the requirements for successful establishment.
- Identify optimal fire regimes for regeneration (vegetative regrowth and/or seed germination), and response to other prevailing fire regimes.
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### **Regional Priority Actions**

The following regional priority recovery and threat abatement actions can be done to support the recovery of David's *Westringia*.

#### Habitat Loss, Disturbance and Modification

- Monitor known populations to identify key threats.
- Monitor the progress of recovery, including the effectiveness of management actions and the need to adapt them if necessary.
- Identify populations of high conservation priority.
- Ensure there is no disturbance in areas where David's *Westringia* occurs, excluding necessary actions to manage the conservation of the species.
- Investigate formal conservation arrangements, management agreements and covenants on private land, and for crown and private land investigate and/or secure inclusion in reserve tenure if possible.
- Manage any other known, potential or emerging threats.

#### Trampling, Browsing or Grazing

- Develop and implement a management plan for to control the adverse impacts of feral goats in the region.

#### Fire

- Develop and implement a suitable fire management strategy for the habitat of David's *Westringia*.
- Ensure new records and known occurrences within NSW are provided to NSW DECCW for entry into the NSW Wildlife Atlas to ensure up to date data is available for impact assessment and fire planning.

### Diseases, Fungi and Parasites

- Develop and implement suitable hygiene protocols to protect known sites from outbreaks of dieback caused by *Phytophthora cinnamomi*.

### Conservation Information

- Raise awareness of David's Westringia within the local community.
- Engage with private landholders and land managers responsible for the land on which populations occur and encourage these key stakeholders to contribute to the implementation of conservation management actions.

### Enable Recovery of Additional Sites and/or Populations

- Undertake appropriate seed collection and storage.
- Investigate options for linking, enhancing or establishing additional populations.
- Implement national translocation protocols (Vallee et al., 2004) if establishing additional populations is considered necessary and feasible.

### **Local Priority Actions**

The following local priority recovery and threat abatement actions can be done to support the recovery of David's Westringia.

### Habitat Loss, Disturbance and Modification

- Control access routes to suitably constrain public access to known sites on public land.
- Suitably control and manage access on private land and other land tenure.
- Minimise adverse impacts from land use at known sites.
- Protect populations of the listed species through the development of conservation agreements and/or covenants.

### Trampling, Browsing or Grazing

- Where appropriate, manage total grazing pressure at important/significant sites through exclusion fencing or other barriers

### Fire

- Implement an appropriate fire management regime for local populations.

### Diseases, Fungi and Parasites

- If necessary, implement appropriate management actions to minimise the adverse impacts of existing *Phytophthora cinnamomi* infestations

This list does not necessarily encompass all actions that may be of benefit to David's Westringia, but highlights those that are considered to be of highest priority at the time of preparing the Conservation Advice.

### **Existing Plans/Management Prescriptions that are Relevant to the Species**

- Threat abatement plan for competition and land degradation by unmanaged goats (DEWHA, 2008).
- Draft recovery plan for threatened flora of rocky outcrops in south eastern New South Wales (NSW NPWS, 2002).
- Threat abatement plan for Dieback caused by the root-rot fungus *Phytophthora cinnamoni* (Environment Australia, 2001).

These prescriptions were current at the time of publishing; please refer to the relevant agency's website for any updated versions.

### **Information Sources:**

Briggs JD and Leigh JH (1990). Delineation of Important Habitats of Threatened Plant

Species in South-Eastern New South Wales. Canberra: Australian Heritage Commission.

Department of Environment, Water, Heritage and the Arts (2008). Threat Abatement Plan for Competition and Land Degradation by Unmanaged Goats. DEWHA, Canberra. Available on the Internet at:

<http://www.environment.gov.au/biodiversity/threatened/publications/tap/pubs/tap-goat-report.pdf>

Elith J (2002). Predicting the distribution of plants. Ph.D. Thesis. School of Botony, University of Melbourne.

Elith J and Potts J (2003). Personal communication. Botany Department, University of Melbourne.

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Harden GJ (ed.) (2002). Flora of New South Wales, Volume Two - rev. edn. University of New South Wales Press, Sydney.

New South Wales National Parks and Wildlife Service (NSW NPWS) (2002). Draft Recovery Plan for Threatened Flora of Rocky Outcrops in South Eastern New South Wales. NSW National Parks and Wildlife, Hurstville NSW. Available on the Internet at:

<http://www.environment.nsw.gov.au/resources/nature/recoveryplanDraftFloraRockyOutcrops.pdf>

Vallee L, Hogbin T, Monks L, Makinson B, Matthes M and Rossetto, M (2004). Guidelines for the Translocation of Threatened Plants in Australia - Second Edition, Australian Network for Plant Conservation, Canberra.