

# DELINEATION of IMPORTANT HABITATS of THREATENED PLANT SPECIES in SOUTH-EASTERN NEW SOUTH WALES



RESEARCH REPORT  
to the  
Australian Heritage Commission

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**Zieria adenophora** Blakely

Family: Rutaceae

**Conservation Status:** Endangered (Code 2E/N/55)

**Conservation Status prior to this survey:** Presumed Extinct (Code 2X/N/55)

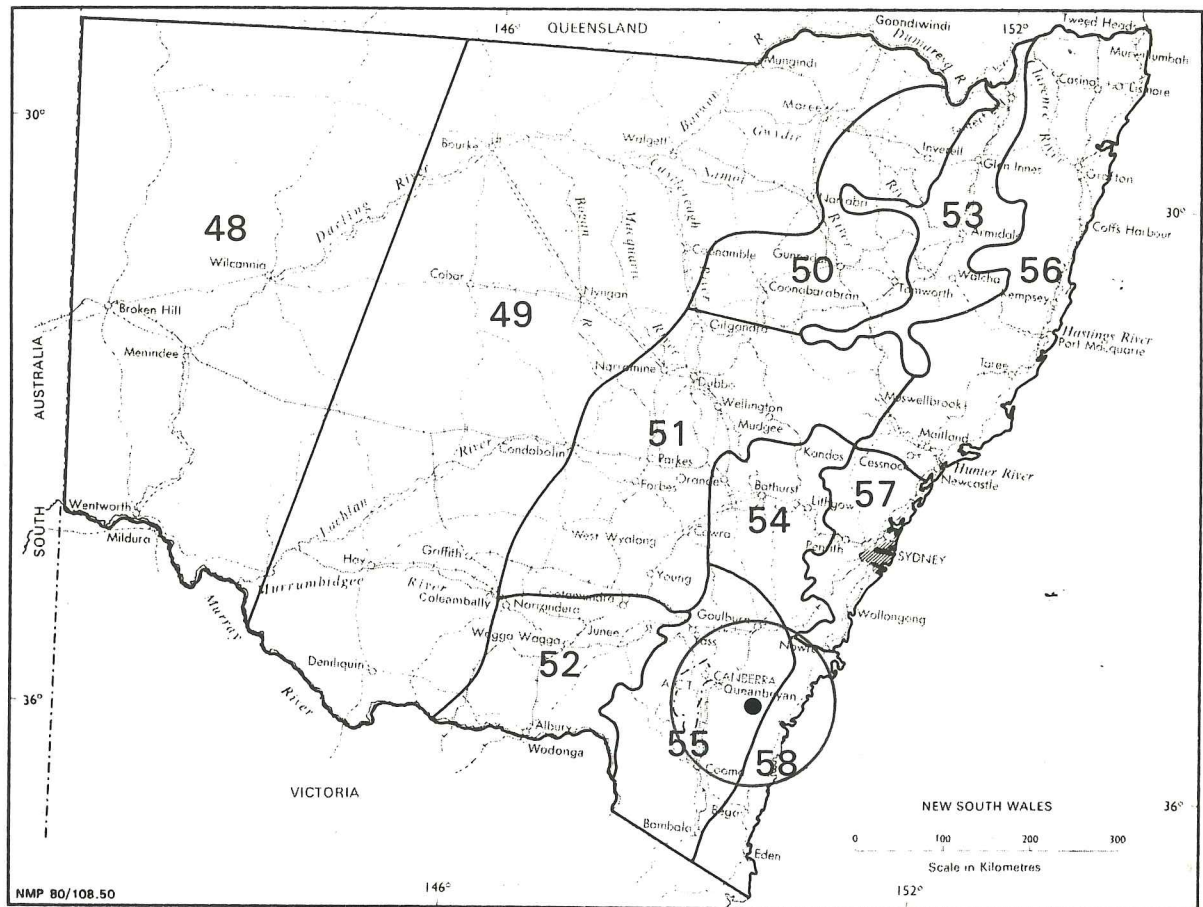


Branchlet showing the small white flowers and small trifoliate, warty leaves of the species. One reddish-tinged, 4-chambered, developing fruit is also visible.

### **Description**

Small erect, open sub-shrubs to about 50 cm high, with the branchlets and leaves covered in numerous small warts (tubercles). Leaves opposite, small, comprised of three leaflets (trifoliate) and strongly aromatic when crushed. The central leaflet is elliptical to obovate, 2-8 mm long and 2-4 mm wide, with the secondary leaflets of similar shape and size. Flowers very pale-pink to white, arranged singly or in small clusters in the leaf axils. Each flower is about 5 mm across with 4 oblanceolate petals. Fruits are warty capsule about 5 mm across and deeply divided into 4 chambers. Each chamber contains one or rarely two elliptical seeds about 2 mm long.

**Flowering:** August-September.

Distribution of *Zieria adenophora*





A typical shrub of *Z. adenophora* growing in gravelly soil amongst granite boulders.

### Distribution

Presently known only from a single population of 29 plants from the Bells Creek Valley north of Araluen on the eastern boundary of the Southern Tablelands of New South Wales.

The re-discovery of *Z. adenophora* near Bells Creek Falls by J.D.B. and Armstrong followed two previous independent and unsuccessful searches of the area by Armstrong and J.D.B. The small population was eventually discovered on a rocky slope about 500 m south-east of the falls.

Prior to this survey the species had not been collected since 1890 and it was Presumed Extinct. Previous collections, all by W. Baeuerlen, had been made from the following localities: 'Bells Creek, Araluen' in 1888 and 1889, 'Bells Creek Falls, Araluen' in 1890, 'Near the Clyde', in 1889 and 'Some of the remotest sources of the Murrumbidgee at Maneroo' in 1888. Investigations by J.D.B. indicate that there was not a specific place called Maneroo anywhere in southern New South Wales at the time of the collection and it is most likely that Maneroo was an old name for what is now known as the 'Monaro', i.e. that area of the Southern Tablelands centred on Cooma. It is thus not possible to search for this southern locality, but there is a possibility the species survives on a rocky outcrop somewhere along the Murrumbidgee in the vicinity of



Cooma. It seems likely that Baeuerlen's locality of 'near the Clyde' is a different one to that on Bells Creek. The 'near the Clyde' collection was made in the same year as another collection for which he specified Bells Creek, Araluen as a site, a more specific location he had also given for two other collections of *Z. adenophora*. During this survey an unsuccessful search was made on Clyde and Sugarloaf Mountains in case this was the other locality Baeuerlen was referring to, as he had collected the type specimen of *Eucalyptus bauerlenii* from Sugarloaf Mountain near Clyde Mountain also in 1889. Whilst the topography on Sugarloaf Mountain appears suitable, the substrate is not granitic, as it is at the Araluen site. It thus seems that Baeuerlen was referring to another locality which is not re-locatable.

#### **Habitat Summary**

*Zieria adenophora* grows in shallow sandy loam amongst granite boulders on the steep upper slopes of a north-north-west-facing hillside in a shrub community on the margins of *Eucalyptus* low open-forest.

#### **Threats Summary**

The small population of 29 plants is confined to an area of 10 x 5 m. The species is highly vulnerable to localised disturbance and catastrophic events. At the time of the survey serious general habitat degradation caused by heavy browsing and trampling by goats and possibly also by wallabies was observed. Whilst plants of *Z. adenophora* had not been browsed, the longer term effects of continued accelerated erosion of the shallow gravelly soils through trampling and loss of vegetation cover are of concern. Many *Zieria* species are highly palatable and it is most fortunate that this species is one which is unattractive to herbivores. Because of its small stature, had the species been palatable, it would have been eliminated by feral goats.

It is interesting to note that Baeuerlen recorded on his 1890 collection that only one plant was seen. The species was apparently extremely rare in this area at the time of its original discovery a century ago and the present low population at the Araluen site probably does not represent a significant change since then.

#### **Reservation**

Not reserved.

### **Cultivation**

The species is readily propagated from cuttings and a total of 63 plants from 5 individuals are established at the Australian National Botanic Gardens, Canberra (Richardson, pers. comm.). Strike rates have been 90-100% (Armstrong, pers. comm., J.D.B.). The species has little horticultural appeal because of its small flowers.

### **Recommendations**

The site is on Crown land which should be converted to a Nature Reserve in order to formally protect the species. The New South Wales National Parks and Wildlife Service is currently negotiating with the Lands Department for acquisition of the area (Dovey, pers. comm.).

Feral goats should be eliminated from the area and the site monitored to determine whether any further damage is being caused by high numbers of wallabies. Appropriate culling of wallabies should be undertaken if necessary.

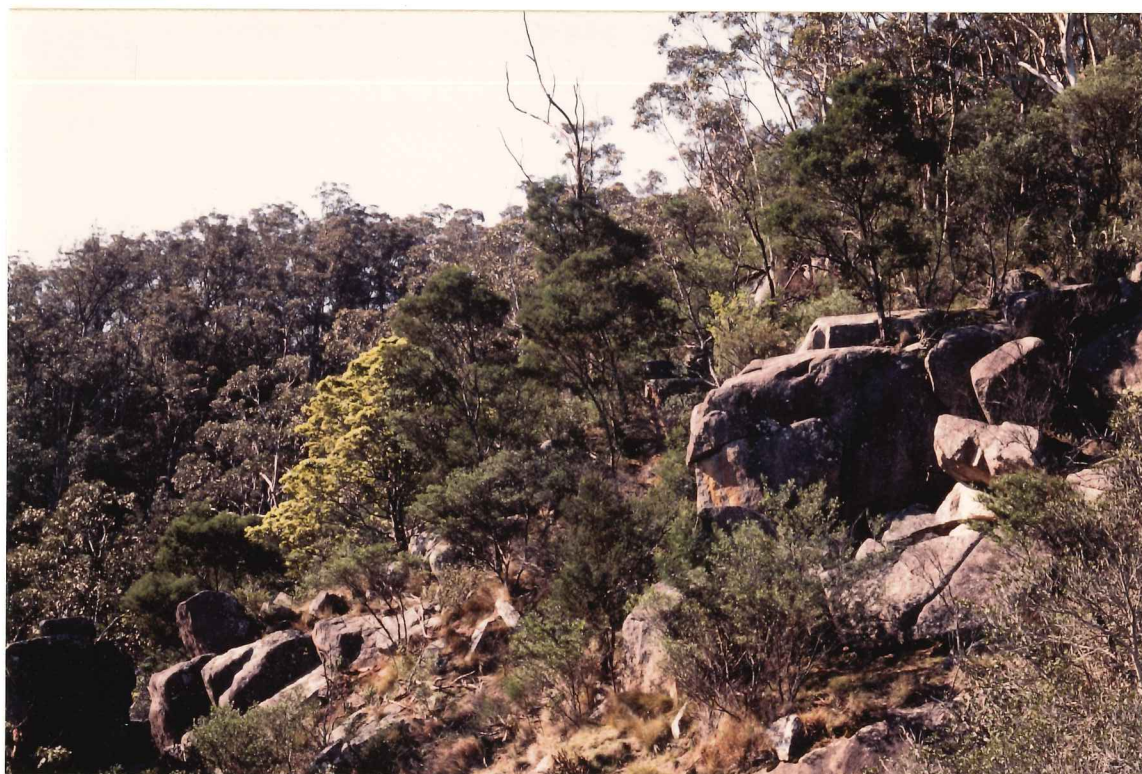
## **SITE DETAILS**

### **Site 1 - Bells Creek**

**Latitude and Longitude:** 35° 36' 10", 149° 47' 35".

**Altitude:** 500m.

**Location:** 300 m directly south-east of the top of Bells Creek Waterfall and centred on the Monga 1:25,000 map sheet 8826-1-N grid reference point 53105675. (See map page 220).



The upper section of the steep rocky north-north-west-facing slope supporting the *Z. adenophora* population. No *Zieria* plants are visible in this photo as they are hidden by the granite boulders and shrubs.



**Land Status:** Apparently Crown land but this requires confirmation.

**Area:** 50 m<sup>2</sup>.

**Population:** 29 mature healthy plants. No seedlings found.

**Habitat**

**Soil:** Loose gravelly loam derived from decomposed granite.

**Substrate:** Granite.

**Topography:** Upper, steep, rocky hillside overlooking deep valley.

**Aspect:** North-north-west.

**Vegetation:** Shrub community including *Acacia mearnsii*, *Dodonaea viscosa*, *Correa reflexa*, *Ficus rubiginosa*, *Notelaea venosa*, *Plectranthus parviflorus* and *Poa sieberiana*. Stunted *Eucalyptus maideni* open-forest abuts the upper limits of this community.

**Threat:** See summary section.

**Recommendation:** See summary section.

**Survey Date:** 31/8/88.

**Voucher Specimen:** Collected by J. Armstrong (C.B.G.).



