

# 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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**Acacia constablei** Tindale

Family: Mimosaceae

**Conservation Status** Vulnerable (Code 2V/N/58)



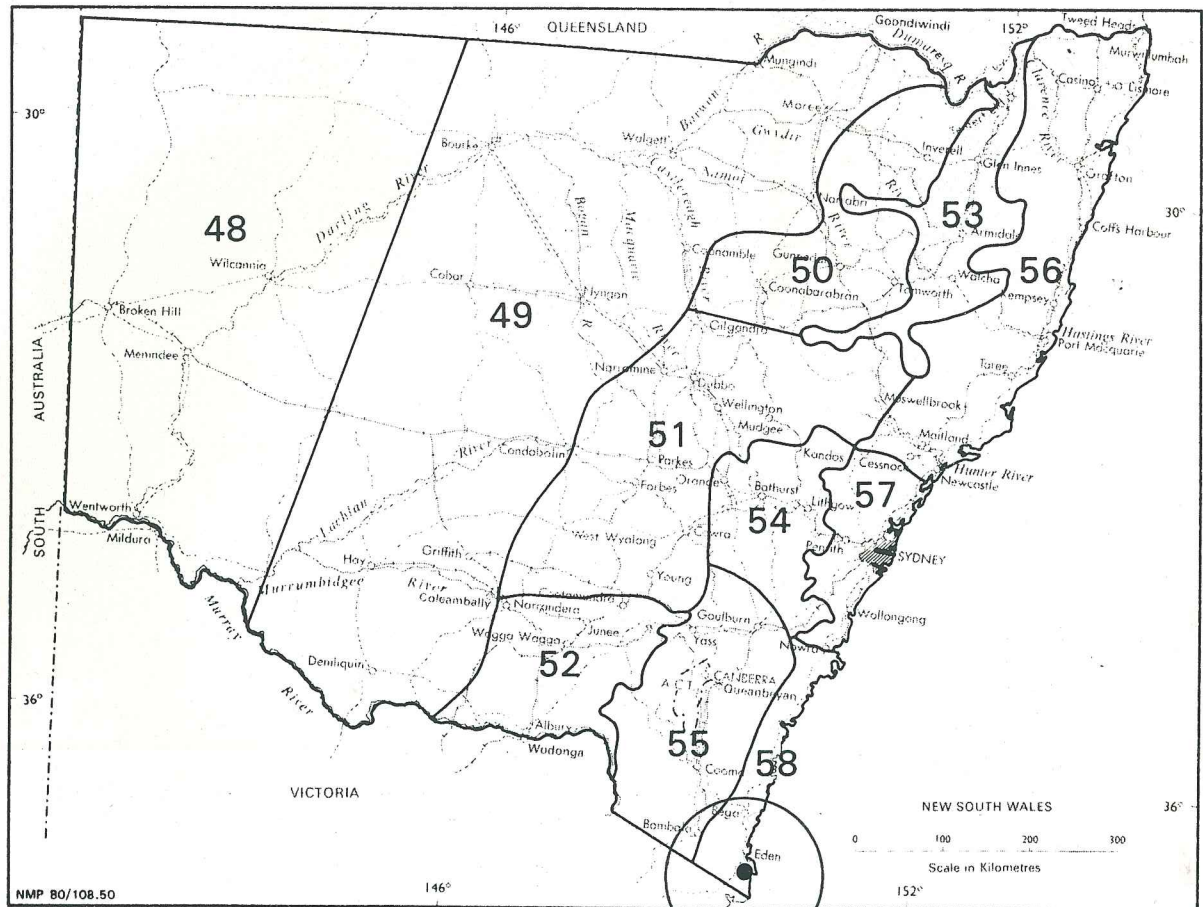
Regenerating shrubs of *A. constablei* about 1 m high on the rocky summit of Narrabarba Hill.

### **Description**

Straggling to erect shrubs mostly 1.5-2.5 m high but up to 5 m high in sheltered situations. The bark is smooth and light-grey and the branchlets are covered in a dense mat of short fine hairs and have characteristic knobbly ridges about 0.5 mm high. Leaves bipinnate with a short stalk 0.5-1.2 cm long



## Distribution of *Acacia constablei*



and a central axis 2-6.5 cm long. There are 5-11 pairs of pinnae 1-2 cm long and 0.3-0.4 cm wide and 13-28 pairs of somewhat fleshy pinnules 1-2.5 mm long and about 0.5 mm wide. An orbicular elevated hairy gland is found on the main leaf axis at the base of each pair of pinnae. *Flowers* pale-yellow, borne in 30-flowered globular heads 4.5-6.5 mm in diameter and arranged in racemes arising from the leaf axils or in panicles arising at the ends of the stems. *Fruits* are leathery, black, mostly straight pods 5-7 cm long and 7-9 mm wide which are covered with short appressed grey hairs and each contains 4-8 seeds lying longitudinally in the pod. Note: This species closely resembles the widespread species *A. mearnsii* (Black Wattle) but *A. constablei* differs in having more slender stems, knobbly ridged branchlets, fewer pairs of pinnae (5-11 pairs instead of 9-20), more fleshy and less numerous pinnules (13-28 pairs instead of 16-70) and the more hairy almost straight sided pods.

**Flowering:** June-August.

### **Distribution**

Known only from the vicinity of Narrabarba Hill about 20 km direct south of Eden on the New South Wales far South Coast. The geographic range of the species is only 2 km.

At the time of this survey the species had been collected only from the summit of Narrabarba Hill, but during the survey three new, equally localised populations were found to the north of the Type locality. The three sites north of Narrabarba Hill each had populations of several hundred plants whilst the Narrabarba Hill population consisted of several thousand young plants.

Unsuccessful searches to locate other populations were made in the area but no other rock outcrops of suitable geology were found. To the east and south of Narrabarba Hill the substrate changes to granite and to the north and west most rock outcrops are composed of ignimbrite which support different shrub communities.

### **Habitat Summary**

*Acacia constablei* occurs on skeletal humus-rich brown to black loam on extremely rocky and exposed aplite and rhyolite outcrops. It occurs on all aspects, but predominates on westerly slopes. It is usually the dominant species in a shrub community.

### Threats Summary

All sites are within State Forest and although no populations are directly threatened by logging operations, because of the steep rocky nature of the sites, the *A. constablei* communities are vulnerable to too frequent fire.

Two of the sites were last burnt by a wildfire in November 1980. Prior to that fire the sites were dominated by *Melaleuca armillaris* and *Kunzea ambigua* (M. Parris, pers. comm.). However, these two species have been almost eliminated from those sites by that single wildfire event. Such a dramatic change in the species composition for these sites reflects the fire-sensitive nature of the communities. Whilst *A. constablei* has regenerated well from seed following the 1980 fire, any subsequent burning before the species has replenished soil-stored seed reserves could result in a marked decline of the *Acacia* population.

### Reservation

Not reserved.

### Cultivation

The pale-yellow, unspectacular flowers and straggly habit are without horticultural appeal. Can be propagated from seed. A total of 17 plants are in cultivation at the Australian National Botanic Gardens, Canberra (M. Richardson, pers. comm.).

### Recommendations

The 4 known sites are now on the Register of the National Estate. The areas supporting *A. constablei* should be formally protected either within flora reserves administered by the Forestry Commission of New South Wales or in nature reserves administered by the New South Wales National Parks and Wildlife Service.

Control-burning, if conducted on adjacent State Forest, should not be permitted to encroach upon the *A. constablei* sites. Efforts should also be made to protect the sites from wildfire until the *Acacia* communities reach maturity.



## SITE DETAILS

### Site 1 - Narrabarba Hill

**Latitude and Longitude:** 37°15' 55", 149°50' 25".

**Altitude:** 180-210 m.

**Location:** The summit area of Narrabarba Hill above the 180 m contour level. The summit of Narrabarba Hill corresponds with the Narrabarba 1:25,000 map sheet 8823-II-N grid reference point 519720. (See map page 31).

**Land Status:** Nadgee State Forest.

**Area:** 2.5 ha.

**Population:** Estimated at 3000+ small plants which have regenerated from seed following a wildfire in November 1980.

**Habitat:**

**Soil:** Shallow, brown loam.

**Substrate:** Aplite.

**Topography:** A conspicuous, exposed narrow ridge running north-west to south-east and which in places tapers to a 'knife-edge' and has very steep sides. The surrounding terrain is dominated by low hills.

**Aspect:** On all aspects but least commonly with northern aspect.

**Vegetation:** Low open shrub community presently dominated by *Acacia constablei* and *Zieria* sp. aff. *cytisoides* and with scattered shrubs of *Melaleuca armillaris*, *Platysace lanceolata*, *Parahebe perfoliata*, *Epacris impressa*, *Dendrobium speciosum* and *D. striolatum*. There is an abrupt change from the shrub community to *Eucalyptus sieberi* open-forest at the base of the rocky slopes of the ridge.

**Survey Date:** 15/7/86.

**Voucher Specimen:** J.D.B. and D. Albrecht No. 1947.



Looking SW across part of Nadgee State Forest towards Narrabarba Hill. The numerous dead stems through the forest are a legacy of the 1980 wildfire.





Looking north along the ridge of Narrabarba Hill. Vegetation on the rocky aplite slopes is presently dominated by a dense regrowth of *A. constablei*.



Looking south across a broader section of the Narrabarba Hill ridge. The patches of light green vegetation on the ridge are regenerating *A. constablei*.



**Site 2 - East Boyd**

**Latitude and Longitude:** 37°15' 10", 149° 50' 15".

**Altitude:** 80-114 m.

**Location:** Rock outcrop on a hill approximately 2 km east-south-east of 'Narrabarba' and bounded to the west and south by the Wonboyn River. The nominated area is a rectangular area bounded on the west by the Wonboyn River and otherwise enclosed by straight lines joining the Narrabarba 1:25,000 map sheet 8823-II-N grid reference points 514732 and 518732 and the Kiah 1:25,000 map sheet 8823-I-S grid reference points 518737 and 514737. (See map page 31).

**Land Status:** East Boyd State Forest.

**Area:** 3 ha.

**Population:** Estimated at 1,000+ mature plants.

**Habitat:**

**Soil:** Skeletal humus-rich black loam.

**Substrate:** Exposed rhyolite.

**Topography:** Rock outcropping on the summit and steep upper slopes of a relatively isolated hill.

**Aspect:** West and north-west.

**Vegetation:** Low shrub community dominated by *Melaleuca armillaris*, *Kunzea ambigua*, *Dodonaea triquetra*, *Lasiopetalum macrophyllum*, *Acacia longifolia*, *Platysace lanceolata* and *Cryptandra amara*. The site is surrounded by open-forest dominated by *Eucalyptus sieberi*.



Looking east from the Princess Highway towards the East Boyd Site. *Acacia constablei* grows in the low shrub community occupying the rhyolite outcropping clearly visible in the photo.

**Survey Date:** 15/7/87.

**Voucher Specimen:** J.D.B. and D. Albrecht No. 1954.

### **Site 3 - Swamp Road West**

**Latitude and Longitude:** 37°15' 45", 149°50' 05".

**Altitude:** 120-150 m.

**Location:** Exposed rock outcropping on hills about 1 km north-east of Ludwigs Swamp. The nominated area encompassing this and a nearby stand (Swamp Road East Site) of *A. constablei* is bounded on the south by a straight line joining the Narrabarba 1:25,000 map sheet 8823-II-N grid reference points 512720 and 518722 and bounded to the west, north and east by Swamp Road. (See map page 31).

**Land Status:** Nadgee State Forest.

**Area:** 3 ha.

**Population:** Several hundred mature plants.



**Habitat:**

**Soil:** Skeletal humus-rich black loam.

**Substrate:** Exposed rhyolite/granitic? rock.

**Topography:** Gently sloping hillside.

**Aspect:** West.

**Vegetation:** Shrub community including *Alcoasuarina littoralis*, *Melaleuca armillaris*, *Kunzea ambigua*, *Dodonaea triquetra*, *Calytrix tetragona* and *Platysace lanceolata*. The shrub community is surrounded by *Eucalyptus sieberi* open-forest.



Looking south-west across Site 4. *Acacia constablei* dominates the shrub community on the rhyolite outcropping. The site is surrounded by *Eucalyptus sieberi* open-forest which was logged in the mid 1970's for woodchips and is now regenerating following a wildfire in November 1980.

**Survey Date:** 15/7/86.

**Voucher Specimen:** J.D.B. and D. Albrecht No. 1950.

**Site 4 - Swamp Road East**

**Latitude and Longitude:** 37°15' 40", 149°50' 15".

**Altitude:** 150 m.

**Location:** See Site 3.

**Land Status:** Nadgee State Forest.

**Area:** 1 ha.

**Population:** Approximately 200 plants.

**Habitat:**

**Soil:** Skeletal humus-rich black loam.

**Substrate:** Exposed rhyolite.

**Topography:** Gently sloping broad ridge on range of low hills.

**Aspect:** North.

**Vegetation:** As for Site 3.

**Survey Date:** 15/7/86.

**Voucher Specimen:** J.D.B. and D. Albrecht No. 1950 .



# NARRABARBA

East Boyd Site  
Area containing Acacia constablei

1:25000 map sheet 8823-11-N  
PRINCES HIGHWAY 5km

