

Eucalyptus boliviana (Myrtaceae), a distinctive new species of stringybark from New England, New South Wales

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Abstract

Williams, J.B. (Botany Division, University of New England, Armidale NSW 2351, Australia) and Hill, K.D. (National Herbarium of New South Wales, Royal Botanic Gardens, Mrs Macquaries Road, Sydney, NSW 2000, Australia) 2001. *Eucalyptus boliviana* (Myrtaceae), a distinctive new species of stringybark from New England, New South Wales. *Telopea* 9(2): 409–413. ***Eucalyptus boliviana***, a distinctive new species allied to *E. williamsiana*, is described and illustrated. A distribution map is provided, and the conservation status of the new species is discussed.

Introduction

A distinctive new species of *Eucalyptus* from New South Wales is described. The new species is classed as rare or threatened and a formal name is required in order to facilitate appropriate listing and action for conservation purposes.

Eucalyptus boliviana J.B. Williams & K.D. Hill, **sp. nov.**

E. williamsiana affinis sed ramulis quadrialatis glaucis, alabastris fructibusque brevioribus, pedunculis crassioribus, staminibus flavis, fructibus quadrivalvibus annulatis, petiolis longioribus tortilibus, foliis juvenilibus hebetibus plusminusve glaucescentibus differt

Type: New South Wales: Northern Tablelands: high part of Bolivia Hill, c. 33 km S of Tenterfield, E of New England Highway, J.B. Williams 99187 & P.J. Clarke, 22 Sep 1999 (holo NSW; iso NE).

Shrub or mallee to 5 m tall, sometimes a tree to 12 m. Bark persistent, long-fibrous ('stringy') with included thin scales, branches to c. 2 cm diam. smooth, weakly glaucous, quadrangular. Seedling leaves not seen. Juvenile leaves elliptical, dull green, glaucous, glabrous, 8–11 cm long, 3–6 cm wide, petioles 2–3 cm long. Adult leaves semi-glossy green with a bluish sheen, becoming glossy green with age, glabrous, highly coriaceous, simlifacial, broad-lanceolate, acute or apiculate, oblique at base, 8–13 cm long, 2.0–5.0 cm wide; petioles 2.0–3.0 cm long, strongly flattened to quadrangular, usually several times twisted, decurrent into strong ribs on branchlets. Inflorescences axillary; umbellasters 7-flowered. Peduncles thick and broadly flattened, 4–10 mm long, to 7 mm wide. Mature buds sessile, glaucous, ovoid to rhomboid, often curved, strongly 3–4-angular, 7–10 mm long, 6–7 mm diam., calyptra as long as hypanthium. Flowers yellow. Filaments irregularly flexed, stamens all fertile, anthers reniform. Fruits sessile, tightly clustered, flattened-globular, weakly angular, distinctly flanged at top of hypanthium, glaucous, 4–(rarely 5)-locular, 7–11 mm long, 9–15 mm diam. Calyptra scar and stemophore raised, 0.5–1 mm wide. Disc raised, 2–4 mm wide. Valves broadly triangular, obtuse, raised at a low angle, tips exerted. Seeds dark brown, semiglossy, pyramidal or D-shaped, 1.5–2 mm long; chaff similar, smaller. (Fig. 1).

Notes: *E. boliviana* is nearest to *E. williamsiana* L.A.S. Johnson & K.D. Hill, from which it is readily distinguished by the 4-winged, glaucous stems, the shorter buds and fruits and the thicker peduncles, the usually 4-valved fruits with a medial flange, the flowers with yellow stamens, the longer, flattened, twisted petioles and the dull more-or-less glaucous juvenile leaves (Table 1). *E. boliviana* is also frequently a mallee or shrub.

Table 1. Comparison of *E. boliviana* and *E. williamsiana*.

	<i>E. boliviana</i>	<i>E. williamsiana</i>
Habit	mallee to 5 m tall or tree to 12 m	tree to 20 m tall
Branchlets	strongly winged, glaucous	weakly ridged, not glaucous
Juvenile leaves (cm)	elliptical 8–11 × 3–6	ovate to orbicular 15 × 13
Petioles (cm)	2–3	to 1.3
Adult leaves (cm)	broad-lanceolate 8–13 × 2.0–5.0	broad-lanceolate 8–18 × 1.6–5.0
Petioles (cm)	2.0–3.0	0.9–1.5
Peduncles (mm)	4–10	3–12
Pedicels (mm)	0	0–2
Buds (mm)	7–10 × 6–7	9–12 × 6–7
Fruits (mm)	7–11 × 9–15	9–13 × 10–15
Locules	usually 4	usually 3

E. boliviana and *E. williamsiana* are placed in Section *Renantherae* of subgenus *Monocalyptus* (Pryor & Johnson 1970) by the renantherous anthers. Within the section, they are placed in Series *Capitellatae* (the stringybarks - alternatively known as series *Pachyphloiae* Blakely or *Pachyphloius* Brooker) by the stringy bark and the hispid early juvenile leaves. Both taxa are distinguished within that series by the broad, highly coriaceous juvenile leaves that become glabrous at an early stage, the sessile, angular buds and the closely clustered and more or less sessile fruits. *E. boliviana* is uniquely characterised in this series by the glaucous juvenile leaves, branchlets and buds, and the yellow flowers.

Distribution: known only from a small stand near the crest of the Bolivia Hill in the New England region of north-eastern New South Wales (Fig. 2).

Ecology: locally frequent in one small area at the foot of a low scarp on the upper slopes of a steep east-facing ridge (altitude 1200 m), on gritty sandy soils over granite (Bolivia Hill Leucoadamellite) and among outcropping boulders. In low dry sclerophyll woodland with *Eucalyptus prava*, *Callitris endlicheri*, *Acacia pycnostachya*, *A. adunca* and many shrubs.

Flowering: September.

Conservation status: a species of apparently limited distribution and small population size, appropriately regarded as potentially vulnerable, code 2V (after Briggs & Leigh 1996). The total known population is in an area recently purchased for conservation reserve purposes by the New South Wales National Parks and Wildlife Service, but the full population extent is still unknown and requires further study.



Fig. 1. *E. boliviana*. **a**, Juvenile leaves. **b**, adult leaves and inflorescences. **c**, inflorescence and buds. **d**, anther. **e**, inflorescence and fruit. **f**, seed. (from Williams 99187 & Clarke). Scale bar: a, b = 8 cm, c = 2 cm, d = 2.5 mm, e = 3 cm, f = 4 mm.

The epithet is from the occurrence on Bolivia Hill.

Specimens examined: New South Wales: Northern Tablelands: top of Bolivia Hill, E of New England Highway, *L.F. Fulloon & P.J. Clarke* 29, 7 Nov 1998 (NE, NSW).

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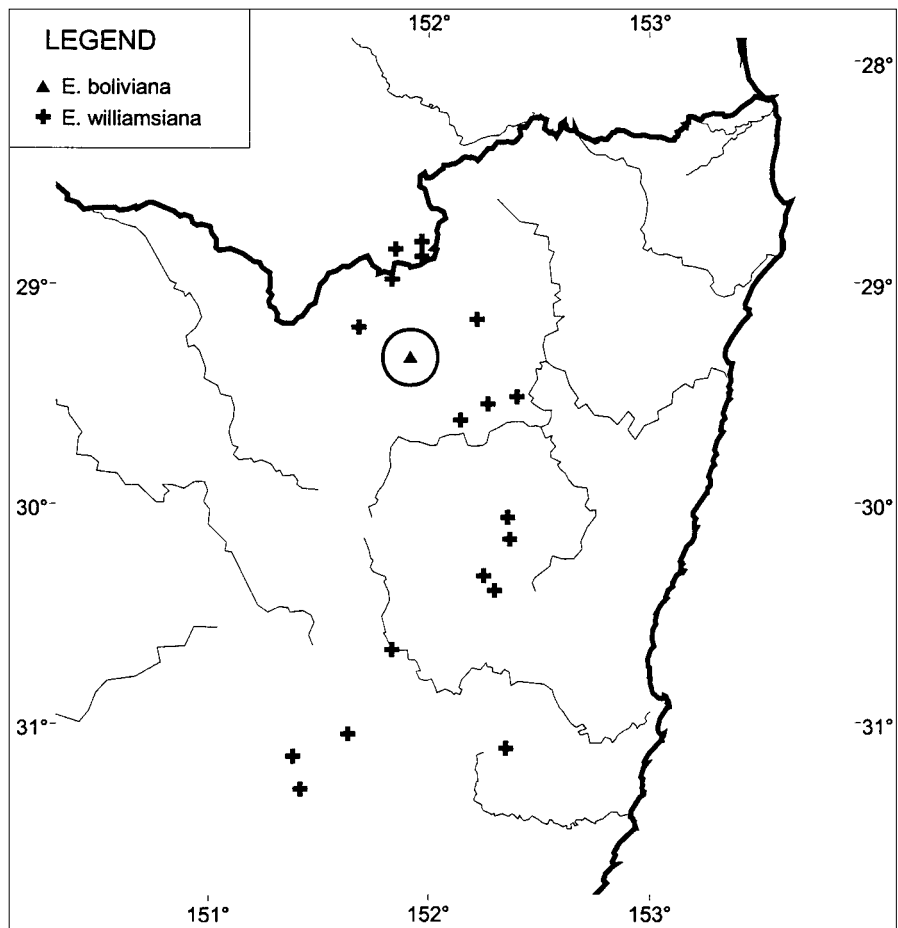


Fig 2. Distribution of *E. boliviana* and *E. williamsiana*.

References

- Briggs, J.D. & Leigh, J.H. (1996) *Rare or Threatened Australian Plants* (CSIRO: Collingwood, Vic.)
Pryor, L.D. & L.A.S. Johnson (1971) *A Classification of the Eucalypts* (ANU Press: Canberra).

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