

NSW SCIENTIFIC COMMITTEE

Preliminary Determination

The Scientific Committee, established by the *Threatened Species Conservation Act 1995* (the Act), has made a Preliminary Determination to support a proposal to list *Hibbertia* sp. Turramurra (A.Robinson s.n. NSW981514) as a **CRITICALLY ENDANGERED SPECIES** in Part 1 of Schedule 1A of the Act. Listing of Critically Endangered species is provided for by Part 2 of the Act.

This species is currently provisionally listed as a Critically Endangered species.

The Scientific Committee has found that:

1. *Hibbertia* sp. Turramurra (A.Robinson s.n. NSW981514) (family Dilleniaceae) is a newly discovered species that has been described by Toelken (*in litt.* April 2014) as “shrubs up to 0.30 m high, diffusely decumbent with moderately branched main branches; branches wiry-woody, with long decurrent leaf bases to almost flanged, finely hirsute. Vestiture \pm persistent, predominantly simple hairs often on a tubercle particularly on leaves; on branches moderate to dense particularly along the groove to both sides of the decurrent leaf bases, with mainly long fine simple hair (1.4–1.8 mm long), antrorsely spreading and few shorter ones interspersed, without obvious tubercles; on leaves above scattered, with antrorse to usually erect, mainly longer hairs on raised tubercles, which remain when the hairs soon wear off; on leaves below sparse, with similar hairs as above but usually with less pronounced tubercles and with longer hairs mainly on the flanks of the recurved margins and the central vein, while the sparsely exposed undersurface has few short hairs towards the margins; on bracts like on leaves but often shorter; on outer calyx lobes outside sparse, with longer over shorter antrorse simple hairs without tubercles, inside largely glabrous except for appressed long and short hairs on the upper third; on inner calyx lobes outside, sparse, with scattered smaller appressed simple hairs under longer ones mainly towards the margins, inside glabrous. Leaves with axillary tuft of hairs up to 1.8 mm long and continued along the grooves on both sides of the decurrent leaf bases; petiole 0.2–0.5 mm long; lamina linear to linear-oblong, (2.8–) 4–7.5 (–8.6) \times 0.6–0.9 mm, sparsely constricted into short petiole, obtuse to rounded with recurved apex with short hairs, above flat to convex with central vein not visible, sparsely pilose when young and tuberculate later, below with undersurface sometimes visible between the scarcely raised central vein and revolute margins, sparsely pilose to rarely tuberculate. Flowers with rounded base, sessile, terminal on all branches; buds ovoid-oblong; bracts subtending calyx, linear, 4.6–5.3 \times 0.7–0.8 mm, fleshy and leaf-like, sparsely hirsute, merging into leaves. Calyx lobes unequal; outer calyx lobes lanceolate, rarely linear-lanceolate, (5.5–) 5.8–6.6 \times 1.9–2.6 mm, acute with recurved apex, with revolute margins and with central ridge becoming prominent on the upper half, outside pubescent, inside pubescent on upper third; inner calyx lobes obovate to broadly oblong-elliptic, (4.7–) 5.2–6 \times 3.5–4.4 mm, obtuse to often slightly split, scarcely ridged, pubescent and with glabrous membranous margins. Petals 6.6–8.3 mm long, obovate, shallowly bilobed. Stamens 13 (–15), on one side of the ovary; filaments 1–1.2 mm long; anthers narrowly oblong, 1.4–1.6 mm long, with back ones slightly shorter, \pm constricted above and below. Pistils 2; ovaries ovoid, each with 4 ovules, erect-hirsute to sericeous; style attached to apex, with style base \pm hairy, erect, stigmas

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well above anthers. Fruit and seeds not seen. Flowering: October, November, but with an odd flower throughout the year.”

2. *Hibbertia* sp. Turramurra (A.Robinson s.n. NSW981514) may be distinguished from other species of *Hibbertia* that have stamens to one side of the ovaries by: “the combination of larger over smaller fine simple hairs, which have pronounced basal tubercles particularly on the upper surface of the leaves; bracts are indistinguishable from the leaves; single sessile flowers borne terminal on larger branches and slender anthers overtop hirsute ovaries” (H. Toelken *in litt.* April 2014).
3. *Hibbertia* sp. Turramurra (A.Robinson s.n. NSW981514) is endemic to NSW where it is restricted to three known locations in the northern Sydney suburbs of Turramurra, North Ryde and Cheltenham.
4. *Hibbertia* sp. Turramurra (A.Robinson s.n. NSW981514) grows in a forest with canopy species including *Eucalyptus pilularis*, *E. piperita*, *E. resinifera*, *Corymbia gummifera*, *Angophora costata* and *Syncarpia glomulifera* (H. Toelken *in litt.* April 2014, Robinson *in litt.* March 2014). The understorey is open with species of Poaceae, Proteaceae, Orchidaceae and Fabaceae including *Platylobium formosum*, *Banksia spinulosa*, *Acacia myrtifolia* and *Themeda australis*.
5. The number of mature individuals of *Hibbertia* sp. Turramurra (A.Robinson s.n. NSW981514) is extremely low, with a total of fewer than 20 plants occurring in the known locations.
6. The geographic distribution of *Hibbertia* sp. Turramurra (A.Robinson s.n. NSW981514) is very highly restricted. The area of occupancy and extent of occurrence were estimated to be 12 km². The area of occupancy is based on three 2 x 2 km grid cells, the scale recommended for assessing area of occupancy by IUCN (2014).
7. There is little known about the life history of *Hibbertia* sp. Turramurra (A.Robinson s.n. NSW981514). The species was only discovered in 2007. Seed production has been observed and plants of different ages have been seen within the largest population (A. Robinson *in litt.* Jan 2014). The species may regenerate from a resprouting rootstock following fires, as seen in most *Hibbertia* species (H. Toelken *in litt.* Jan 2014).
8. There are many threats to the species and associated habitat due to the close proximity of urban areas. These threats include habitat loss and disturbances such as people walking for recreation and bike riding. (A. Robinson *in litt.* March 2014). Trampling of plants and compaction of soil leading to altered drainage also threaten known locations (A. Robinson *in litt.* March 2014). A part of one site has been fenced to reduce impacts. Weeds, including Privet (*Ligustrum* sp.), *Senna* and *Hydrocotyle bonariensis* may impact on some of the locations. Illegal dumping and an altered fire regime (including the possibility of a lack of fire) may also pose a threat. By having a very highly restricted geographic distribution and occurring at only three locations, *Hibbertia* sp. Turramurra (A.Robinson s.n. NSW981514) is prone to the effects of human activities or stochastic events within a very short time period in an uncertain future.

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9. *Hibbertia* sp. Turramurra (A.Robinson s.n. NSW981514) is eligible to be listed as a Critically Endangered species as, in the opinion of the Scientific Committee, it is facing an extremely high risk of extinction in New South Wales in the immediate future as determined in accordance with the following criteria as prescribed by the *Threatened Species Conservation Regulation* 2010:

Clause 7 Restricted geographic distribution and other conditions

The geographic distribution of the species is estimated or inferred to be:

- (a) very highly restricted,
and
- (d) a projected or continuing decline is observed, estimated or inferred in either of the key indicators:
 - (a) an index of abundance appropriate to the taxon, or
 - (b) the geographic distribution, habitat quality or diversity, or genetic diversity.

Clause 8 Low numbers of mature individuals of species and other conditions

The estimated total number of mature individuals of the species is:

- (a) very low,
and
- (d) a projected or continuing decline is observed, estimated or inferred in either of the key indicators:
 - (a) an index of abundance appropriate to the taxon, or
 - (b) the geographic distribution, habitat quality or diversity, or genetic diversity.

Clause 9 Low number of mature individuals of species

The total number of mature individuals of the species is observed, estimated or inferred to be:

- (a) extremely low.

Professor Michelle Leishman
Chairperson
NSW Scientific Committee

Exhibition period: 12/12/14 – 06/02/15

Proposed Gazettal date: 12/12/14

References:

IUCN Standards and Petitions Subcommittee (2014) Guidelines for Using the IUCN Red List Categories and Criteria. Version 11. Prepared by the Standards and Petitions Subcommittee.
<http://www.iucnredlist.org/documents/RedListGuidelines.pdf>.