

**Advice to the Minister for the Environment, Heritage and the Arts
from the Threatened Species Scientific Committee (the Committee)
on Amendment to the list of Threatened Species
under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)**

1. Scientific name (common name)

Hibbertia sp. Bankstown (R.T.Miller & C.P.Gibson s.n. 18/10/06) (a shrub).

Following taxonomic revision, the name of this species has changed and is listed under the EPBC Act as at 25 September 2013 as:

Hibbertia puberula subsp. *glabrescens*

2. Reason for Conservation Assessment by the Committee

This advice follows assessment of information provided by a public nomination to list *Hibbertia* sp. Bankstown (R.T.Miller & C.P.Gibson s.n. 18/10/06). The nominator suggested listing in the critically endangered category of the list.

The Committee provides the following assessment of the appropriateness of the species' inclusion in the critically endangered category in the EPBC Act list of threatened species.

This is the Committee's first consideration of the species under the EPBC Act.

3. Summary of Conclusion

The Committee judges that the species has been demonstrated to have met sufficient elements of Criteria 2, 3, and 4 to make it **eligible** for listing as **critically endangered**.

The highest category for which the species is eligible to be listed is **critically endangered**.

4. Taxonomy

The species is conventionally accepted as *Hibbertia* sp. Bankstown (R.T.Miller & C.P.Gibson s.n. 18/10/06) (a shrub) (CHAH 2007, Australian Plant Census).

5. Description

Hibbertia sp. Bankstown (R.T.Miller & C.P.Gibson s.n. 18/10/06) is a prostrate shrub in the Dilleniaceae family. It has few to numerous spreading, glabrous, wiry branches which are up to 40 cm in length. Its leaves are oblong-lanceolate to almost linear, 3 to 6 mm long by 0.8 – 1.4 mm wide. The flowers are yellow with notched petals.

6. National Context

Hibbertia sp. Bankstown (R.T.Miller & C.P.Gibson s.n. 18/10/06) is endemic to Australia and is only known from one population covering 2 hectares of Bankstown Airport, NSW (Area 5). This population is found in highly modified Georges River Tertiary Alluvium Floodplain Communities, which due to vegetation clearance and modification are currently maintained as grasslands. The NSW National Parks and Wildlife Service has completed broadscale mapping of the area where this population is found and mapped the area as modified Sydney Coastal Riverflat Forest – Alluvial Woodland.

Hibbertia sp. Bankstown (R.T.Miller & C.P.Gibson s.n. 18/10/06) is not currently listed under any Australian or state government legislation.

7. Relevant Biology/Ecology

Hibbertia sp. Bankstown (R.T.Miller & C.P.Gibson s.n. 18/10/06) flowers from October to December and seed set usually occurs from October to January.

As this species is a prostrate shrub, vegetative reproduction is possible, however the species has not been observed to reproduce vegetatively.

This species occurs on Sandy Tertiary Alluvium with a high silt content.

8. Description of Threats

The major threats to this species are from potential developments and significant habitat changes in Area 5 of Bankstown Airport, as well as weed invasion. The Committee is aware of a variety of proposals, past and present, to develop Area 5 that are yet to come to fruition. *Hibbertia* sp. Bankstown (R.T.Miller & C.P.Gibson s.n. 18/10/06) is found in a section of Area 5 that is dominated by pasture species and introduced weeds. A recent survey of Area 5 identified 18 introduced weed species. Weeds such as African Love Grass *Eragrostis curvula* and Kikuyu Grass *Pennisetum clandestinum* may outcompete this *Hibbertia* species if they are not adequately controlled.

As there is only one known extant population of this species which covers only 2 hectares of Bankstown Airport, stochastic events such as disease and extreme weather may also threaten this species.

Past impacts on this species are likely to be from modification and loss of habitat, and removal of native vegetation as a result of urbanisation. Given the population's proximity to residential development it is expected that these pressures will continue in the future. An example of this is the proposal to develop a link road on airport lands.

9. Public Consultation

The nomination used in this assessment was made available for public exhibition and comment for 30 business days. No comments were received.

10. How judged by the Committee in relation to the criteria of the EPBC Act and Regulations

The Committee judges that the species is **eligible** for listing as **critically endangered** under the EPBC Act. The assessment against the criteria is as follows:

Criterion 1: It has undergone, is suspected to have undergone or is likely to undergo in the immediate future a very severe, severe or substantial reduction in numbers

It is suspected that this species has undergone a reduction in numbers in the past as historical aerial photography shows a continual modification of habitat and removal of native vegetation from the Sydney Basin, Georges River Floodplain, Bankstown Local Government Area and Bankstown Airport lands. However, there are limited historical population data available, as this species was first observed in October 2006.

One of the occurrences of this species and all but two plants from another occurrence at Bankstown Airport have disappeared since October 2006. This represents an estimated loss of approximately 18 plants. The cause of this suspected reduction in numbers is unknown. However, these figures cannot be verified as the original survey in October 2006 by Miller and Gibson didn't take an exact count of population numbers, identify population numbers from each occurrence of this species, or map/photograph each occurrence (Gibson, C. 2008, pers. comm.).

It is suspected that the species will undergo a reduction in numbers in the immediate future due to the current threats operating on the species and its suspected recent decline (see section 8 above).

Although the Committee judges that the species is suspected to have undergone a reduction in numbers and that it is likely to experience further declines, there are insufficient data available to judge whether the reduction was, or will be, very severe, severe, substantial, or not substantial. Therefore, the species has not been demonstrated to have met the required elements of Criterion 1, and is **not eligible** for listing in any category under this criterion.

Criterion 2: Its geographic distribution is precarious for the survival of the species and is very restricted, restricted or limited

Hibbertia sp. Bankstown (R.T.Miller & C.P.Gibson s.n. 18/10/06) is known from only one location at Bankstown Airport in NSW (Area 5). The extent of occurrence is estimated to be 2 hectares with a similar area of occupancy. This population is bound by urban development and it is unlikely that its current distribution represents its historical distribution. On this basis, it is considered that the geographic distribution of this species is very restricted.

It can be inferred that the extent of occurrence; area of occupancy; area, extent and quality of habitat; and the number of mature individuals will continue to decline given the very low number of mature individuals, the fact that this is the sole remaining population of this species and the effect of current threats on this species (see section 8 above). The Committee understands that there is interest in further development of Area 5, however specific details and impacts are unclear. In addition, Area 5 is severely infested by various weed species which compete with this *Hibbertia* species. On this basis, it is considered that the geographic distribution is precarious for the survival of the species.

The Committee considers that the species has a very restricted geographic distribution, which is precarious for the survival of the species due to the isolation of this single population, competition with weed species and the ongoing threats to this species as a result of maintenance and development of airport lands. Therefore, the species has been demonstrated to have met the relevant elements of Criterion 2 to make it **eligible** for listing as **critically endangered**.

- Criterion 3: The estimated total number of mature individuals is limited to a particular degree; and either**
- (a) evidence suggests that the number will continue to decline at a particular rate; or**
 - (b) the number is likely to continue to decline and its geographic distribution is precarious for its survival**

The total number of mature individuals was estimated to be fewer than 50 individuals in October 2006. One of the occurrences of this species and all but two plants from another occurrence at Bankstown Airport have disappeared since October 2006. This represents an estimated loss of approximately 18 plants. The cause of this suspected reduction in numbers is unknown. However, this figure cannot be verified as the original survey in October 2006 by Miller and Gibson didn't take an exact count of population numbers, identify population numbers from each occurrence of this species, or map/photograph each occurrence (Gibson, C. 2008, pers. comm.). Given the population is bound by urban development and that it is unlikely that its current distribution represents its historical distribution, the number of mature individuals is considered to be very low.

Considering the species' current exposure to a variety of threats (see section 8 and Criterion 2 above), and that there is only one extant population of this species occupying a 2 hectare area, the geographic distribution of this species is precarious for the survival of the species. It is likely that the area of occupancy, extent and quality of habitat, as well as the number of mature individuals will continue to decline though it is not clear at what rate.

The Committee considers that the estimated total number of mature individuals of the species is very low and that the geographic distribution of the species is precarious for the survival of the species. Therefore, the species has been demonstrated to have met the relevant elements of Criterion 3 to make it **eligible** for listing as **critically endangered**.

- Criterion 4: The estimated total number of mature individuals is extremely low, very low or low**

The total number of mature individuals is estimated to be less than 50 individuals. Given the limited number of mature individuals, the fact that this is the sole remaining population of this species and the effect of the current threats on this species (see section 8 and Criterion 2 above), the Committee considers that the estimated total number of mature individuals of the species is extremely low. Therefore, the species has been demonstrated to have met the relevant element of Criterion 4 to make it **eligible** for listing as **critically endangered**.

- Criterion 5: Probability of extinction in the wild that is at least:**
- a) 50% in the immediate future; or**
 - b) 20% in the near future; or**
 - c) 10% in the medium-term future.**

There are insufficient data available to estimate a probability of extinction of the species in the wild over a relevant timeframe. Therefore, as the species has not been demonstrated to have met the required elements of Criterion 5, it is **not eligible** for listing in any category under this criterion.

11. CONCLUSION

Conservation Status

Hibbertia sp. Bankstown (R.T.Miller & C.P.Gibson s.n. 18/10/06) was nominated for inclusion in the list of threatened species referred to in section 178 of the EPBC Act. The nominator suggested listing in the critically endangered category of the list.

The Committee accepts that the species is known from only one location at Bankstown Airport in NSW, which probably represents a reduction in its natural range. The extent of occurrence and area of occupancy is estimated to be 2 hectares. Given that this is the sole remaining population of this species and the effect of current threats on this species, the Committee judges the geographic distribution to be very restricted and precarious for the survival of the species. Therefore, the species has been demonstrated to have met sufficient elements of Criterion 2 to make it **eligible** for listing as **critically endangered**.

The Committee accepts that the estimated number of mature individuals is less than 50 individuals, which is considered to be very low, given this population is bound by urban development and it is unlikely that its current distribution represents its historical distribution. The Committee also accepts that the species' geographic distribution is precarious for its survival given that this is the sole remaining population of this species and the effect of the current threats on this species. Therefore, the species has been demonstrated to have met sufficient elements of Criterion 3 to make it **eligible** for listing as **critically endangered**.

Given the limited number of mature individuals, the fact that this is the sole remaining population of this species and the effect of the current threats on this species, the Committee considers that the estimated total number of mature individuals of the species is extremely low. Therefore, the species has been demonstrated to have met the relevant element of Criterion 4 to make it **eligible** for listing as **critically endangered**.

The highest category for which the species is eligible to be listed is **critically endangered**.

Recovery Plan

The Committee considers that there should not be a recovery plan for this species as recovery actions would be better achieved through the provision of conservation advice.

12. Recommendations

- (i) The Committee recommends that the list referred to in section 178 of the EPBC Act be amended by **including** in the list in the **critically endangered** category:

***Hibbertia* sp. Bankstown (R.T.Miller & C.P.Gibson s.n. 18/10/06) (a shrub)**

- (ii) The Committee recommends that there should not be a recovery plan for this species.



Associate Professor Robert J.S. Beeton

Chair

Threatened Species Scientific Committee

The Minister included this species in the critically endangered category, effective from 16 January 2009

13. References cited in the advice

Council of Heads of Australian Herbaria (2007). Australian Plant Census. IBIS database. Centre for Plant Biodiversity Research. viewed 15 June 2007, <http://www.chah.gov.au/apc/index.html>.

Gibson, C. (Bankstown Bushland Society). Personal communication. 1 February 2008.