

Action Statement

Flora and Fauna Guarantee Act 1988

No. 212

Dergholm Guinea-flower *Hibbertia humifusa* subsp. *debilis*

This Action Statement is based on a draft Recovery Plan prepared for this species by DSE under contract to the Australian Government Department of the Environment, Water, Heritage and the Arts.

Description

The Dergholm Guinea-flower (*Hibbertia humifusa* subsp. *debilis*) is a shrub with branches to 20 cm long. The branches grow horizontally but turn up at the ends, and have simple or stellate hairs. The leaves are linear-elliptic or linear-lanceolate, 4-14 mm long and 0.9-3 mm wide, with a terminal tuft of simple hairs. The leaf margins are narrow, revolute, and scarcely raised above a narrow central ridge which is covered in short dense hairs. The flower is borne at the end of a slender peduncle, 4-7 mm long, with one or two bracts in the lower third of the peduncle. The outer sepals are 3.3-3.6 mm long and 1.3-1.5 mm wide, and are sparsely covered with scattered simple hairs which lie above stellate hairs. The flowering period is November to December (Walsh & Entwisle 1996).

Dergholm Guinea-flower may be distinguished from other *Hibbertia humifusa* subspecies by its relatively narrow outer sepals (compared to Rising Star Guinea-flower (*H. humifusa* ssp. *humifusa*)), and short sepals (relative to Euroa Guinea-flower (*H. humifusa* ssp. *erigens*)). The Euroa Guinea-flower also has scattered stellate hairs on its branches while the Dergholm Guinea-flower does not (Toelken 1995).

Distribution

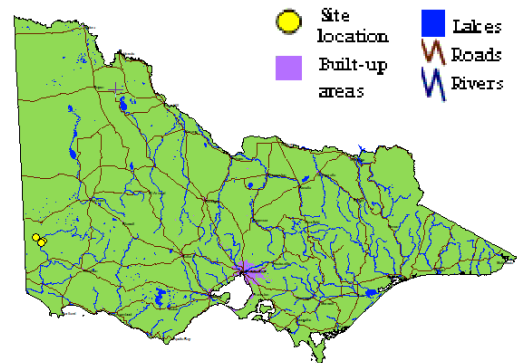
Dergholm Guinea-flower has been recorded only from wet heathland in the Dergholm area, approximately 350 km west of Melbourne (Walsh & Entwisle 1996).

Abundance

It is estimated that 200 individuals exist. These plants occur in four populations. The extent of range and abundance of Dergholm Guinea-flower prior to European settlement is unknown.



Dergholm Guinea-flower (Photo: Hill)



Distribution in Victoria
(Flora Information System DSE 2007)

Important populations

All four populations occur within Dergholm State Park and all are considered important.

Habitat

Populations of Dergholm Guinea-flower occur in wet heathland. Associated species may include Prickly Tea-tree (*Leptospermum continentale*), Silver Banksia (*Banksia marginata*), Bundled Guinea-flower (*Hibbertia fasciculata*), Common Heath (*Epacris impressa*) and Golden Heath (*Styphelia adscendens*) (J. Downe pers obs.). Scattered River Red-gum (*Eucalyptus camaldulensis*) or Swamp Gum (*Eucalyptus ovata*) may comprise a sparse overstorey.

Life history and ecology

There have been no targeted ecological or biological studies of the Dergholm Guinea-flower. The cues required for germination are unknown; anecdotal information suggests fire may be important.

Conservation status

National conservation status

Dergholm Guinea-flower (*Hibbertia humifusa* subsp. *debilis*) is listed as vulnerable under the

Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

Victorian conservation status

Dergholm Guinea-flower is listed as threatened under the *Victorian Flora and Fauna Guarantee Act 1988* under the name *Hibbertia* sp aff. *humifusa*.

It is considered vulnerable in Victoria according to DSE's *Advisory List of Rare or Threatened Plants in Victoria - 2005* (DSE 2005).

Potentially threatening processes

Inappropriate biomass reduction / fire regimes

According to observations by Parks Victoria staff, Dergholm Guinea-flower recently survived a hot December fire. The species' regeneration strategy, however, was not recorded. Fire intervals shorter than the time taken to reach reproductive maturity may restrict population persistence.

Previous management action

- Surveys were undertaken in Dergholm State Park and Brimboal State Forest. Density estimates were produced, permanent quadrats were established with marked plants, and monitoring quadrats were established.

Conservation objectives, actions and targets

Long term objective

To ensure that the Dergholm Guinea-flower can survive, flourish and retain its potential for evolutionary development in the wild.

Specific objectives, actions and targets

The intended management actions listed below are further elaborated in DSE's Actions for Biodiversity Conservation (ABC) system. Detailed information about the actions and locations, including priorities, is held in this system and will be provided annually to land managers and other authorities.

Objective 1 To increase knowledge of biology, ecology and management requirements

Action	Targets	Responsible
1. Acquire baseline population data. Conduct detailed field and desk top surveys including identification of the area and extent of the population; estimates of the number, size and structure of the population; and inference or estimation of population change.	<ul style="list-style-type: none">▪ Determination or update of conservation status and other records on all State databases (Flora Information System, VROTPop and Herbarium).▪ Populations accurately mapped.	DSE
2. Assess habitat characteristics and/or condition. Accurately survey known habitat, and collect floristic and environmental information relevant to community ecology and condition.	<ul style="list-style-type: none">▪ Core habitat mapped.▪ Ecological requirements for the completion of essential life history stages, recruitment and dispersal identified at known sites.	DSE

3. Conduct survey to locate suitable habitat. Identify and survey potential habitat using ecological and bioclimatic information that may indicate habitat preference.	<ul style="list-style-type: none"> Predictive model for potential habitat developed and tested. 	DSE
4. Identify disturbance regimes to maintain habitat or promote regeneration and recruitment.	<ul style="list-style-type: none"> Preparation of management prescriptions for ecological burning at all sites. 	DSE
5. Assess threats.	<ul style="list-style-type: none"> Identify current threats and their perceived risk at all sites. 	DSE, Parks Victoria
6. Undertake research to identify key biological functions. Evaluate current reproductive/regenerative status, seed bank status and longevity, fecundity and recruitment levels by conducting field based experimental trials. Determine seed germination requirements by conducting laboratory and field trials aimed to identify key stimuli.	<ul style="list-style-type: none"> Seed bank/regenerative potential quantified for target populations. Stimuli for recruitment/regeneration identified. Management strategies identified to maintain, enhance or restore regenerative processes fundamental to reproduction and survival. 	DSE, Royal Botanic Gardens
7. Analyse population trends. Measure population trends and responses against recovery actions by collecting demographic information including recruitment and mortality, timing of life history stages and morphological data. Collate, analyse and report on census data and compare with management histories.	<ul style="list-style-type: none"> Techniques for monitoring developed and implemented. Census data for target populations collected. Population growth rates determined. Population Viability Analysis completed for targeted populations. 	DSE

Objective II To increase the extent of habitat

<i>Action</i>	<i>Targets</i>	<i>Responsible</i>
8. Prevent habitat loss. Control potential threats.	<ul style="list-style-type: none"> Measurable seedling recruitment/vegetative regeneration and a measurable reduction in plant mortality at all sites. 	DSE, Parks Victoria

Objective III To secure populations or habitat from potentially incompatible land use or catastrophic loss.

<i>Action</i>	<i>Targets</i>	<i>Responsible</i>
9. Establish cultivated plants <i>ex situ</i> to safeguard from the unforeseen destruction of the wild populations.	<ul style="list-style-type: none"> Development of effective propagation and cultivation techniques. At least 30 mature plants in cultivation. 	Royal Botanic Gardens

Objective IV To increase the number of populations or individuals

<i>Action</i>	<i>Targets</i>	<i>Responsible</i>
10. Store reproductive material. Establish a seed bank.	<ul style="list-style-type: none"> Long-term storage facility identified. Seed from target populations in storage. 	DSE, Royal Botanic Gardens
11. Determine seed viability.	<ul style="list-style-type: none"> Seed viability determined. 	Royal Botanic Gardens

12. Identify potential sites for reintroduction / translocation. Select and evaluate suitable translocation sites that are ecologically and biologically suitable, have secure land tenure, and are managed appropriately.	<ul style="list-style-type: none"> ▪ Criteria for site suitability identified and site selected. ▪ Translocation plan prepared. 	DSE
13. Establish and maintain a reintroduced / translocated population. Prepare site(s) to achieve maximum survival of translocated plants and implement translocation plan. Maintain and monitor plants / seed stock	<ul style="list-style-type: none"> ▪ Successful translocation techniques developed. ▪ At least 30 percent survival of translocated plants. 	DSE, Royal Botanic Gardens

Objective V To increase community awareness and support

<i>Action</i>	<i>Targets</i>	<i>Responsible</i>
14. Involve community groups and volunteers in recovery activities.	<ul style="list-style-type: none"> ▪ Opportunities for involvement identified, promoted and supported. 	DSE

References

DSE (2005) *Advisory List of Rare or Threatened Plants in Victoria - 2005*. Department of Sustainability and Environment, East Melbourne, Victoria.

Toelken, H.R. (1995) Notes on *Hibbertia* I. New taxa from south-eastern Australia, *Journal of the Adelaide Botanic Gardens*, **16**: 59-72.

Walsh, N.G. & Entwisle, T.J. (1996) *Flora of Victoria*, Vol 3: Dicotyledons: Winteraceae to Myrtaceae, Inkata Press, Melbourne.

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