Approved Conservation Advice
(s266B of the *Environment Protection and Biodiversity Conservation Act 1999*)

Approved Conservation Advice for *Calectasia pignattiana* (Stilted Tinsel Lily)

This Conservation Advice has been developed based on the best available information at the time this Conservation Advice was approved; this includes existing plans, records or management prescriptions for this species.

Description

Calectasia pignattiana, Family Dasypogonaceae, also known as Stilted Tinsel Lily, is an erect, stilt-rooted perennial herb which forms clumps up to 10 cm in diameter. There are numerous stilt roots up to 3 mm thick and 15 cm long, some projecting from the upper branches. The upper branches (main stems) are woody and up to 60 cm long. The leaves are narrow, linear and slightly prickly, arranged spirally on the main stems and at the ends of short shoots. The flowers have six narrow lobes which form a star shape and six anthers which change from yellow to red as they age (Brown et al., 1998; Durell & Buehrig, 2001; Patrick & Brown, 2001; DEC, 2008).

This species has previously been called *Calectasia arnoldii* and *C. bella* (see CHAH, 2005).

Conservation Status

Stilted Tinsel Lily is listed as **vulnerable**. This species is eligible for listing as vulnerable under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act) as, prior to the commencement of the EPBC Act, it was listed as vulnerable under Schedule 1 of the *Endangered Species Protection Act 1992* (Cwlth). The species is also listed as declared rare flora under the *Wildlife Conservation Act 1950* (Western Australia).

Distribution and Habitat

Stilted Tinsel Lily is endemic to Western Australia and is known from 11 populations which occur within the south-west Coorow, Narrogin and Katanning areas. Of these populations, three occur on land reserved for conservation of flora and fauna, two on unallocated Crown land, two on road verges, one on a water reserve, one on a camping ground, one on private land, and one on land owned by a Shire. The total number of mature, flowering plants is estimated to be 280 and the extent of occurrence is approximately 14 540 km^2. There are insufficient data to determine the area of occupancy. Given that most populations are healthy and have increased in the past, it is possible that the populations will continue to increase in the future unless disturbed by fire (DEC, 2008).

Stilted Tinsel Lily occurs among tall open scrub of *Actinostrobus* sp. over heath with *Verticordia* sp., *Leptospermum* sp. and *Baeckea* sp. It grows in pale yellow-grey sand and while-yellow sand over laterite. Associated species include *Melaleuca scabra, Banksia violacea* and *Calectasia grandiflora* (Brown et al., 1998; Durell & Buehrig, 2001; Patrick & Brown, 2001; DEC, 2008). This species occurs within the Avon and South West (Western Australia) Natural Resource Management Regions.

The distribution of this species is not known to overlap with any EPBC Act-listed threatened ecological community.

Threats

The main identified threats to Stilted Tinsel Lily are inappropriate fire regimes and invasive weeds, which affect the populations on road verges and on unallocated Crown land (DEC, 2008). Frequent fires, would deplete the soil seed bank

The main potential threats to the species include the disruption of populations and surrounding habitat by human recreation activities; roadworks and infrastructure maintenance, which could reduce populations on road verges and within infrastructure areas; grazing by domestic and feral animals; burrowing in sandy soil by feral rabbits; and use of a gravel pit, which could disturb one population (Brown et al., 1998; Durell & Buehrig, 2001; DEC, 2008).

Research Priorities

Research priorities that would inform future regional and local priority actions include:

- More precisely assess population size, distribution, ecological requirements and the relative impacts of threatening processes.
- Investigate the effect and response of fire on the species' survival.
- Undertake survey work in suitable habitat and potential habitat to locate any additional populations/occurrences/remnants.
- Design and implement a monitoring program or, if appropriate, support and enhance existing programs. Survey populations every five years.
- Undertake seed germination and/or vegetative propagation trials to determine the requirements for successful establishment.

Regional Priority Actions

The following regional priority recovery and threat abatement actions can be done to support the recovery of Stilted Tinsel Lily.

Habitat Loss, Disturbance and Modification

- Monitor known populations to identify key threats.
- Monitor the progress of recovery, including the effectiveness of management actions and the need to adapt them if necessary.
- Ensure road widening and maintenance activities (or other infrastructure or development activities) involving substrate or vegetation disturbance in areas where Stilted Tinsel Lily occurs do not adversely impact on known populations.
- Investigate formal conservation arrangements, management agreements and/or covenants on private land, and for crown and private land investigate inclusion in reserve tenure if possible.

Trampling, Browsing or Grazing

- Implement the Threat Abatement Plan for feral rabbits (EA, 1999).

Fire

- Develop and implement a suitable fire management strategy for Stilted Tinsel Lily.
- Identify appropriate intensity and interval of fire to promote seed germination.
- Provide maps of known occurrences to local and state Rural Fire Services and seek inclusion of mitigative measures in bush fire risk management plans, risk register and/or operation maps.

Enable Recovery of Additional Sites and/or Populations

- Undertake appropriate seed collection and storage.
- Investigate options for linking, enhancing or establishing additional populations.
- Implement national translocation protocols (Vallee et al., 2004) if establishing additional populations is considered necessary and feasible.

Local Priority Actions

The following local priority recovery and threat abatement actions can be done to support the recovery of Stilted Tinsel Lily.

Habitat Loss, Disturbance and Modification

- Control access routes to suitably constrain public access to known sites on public land.
- Suitably control and manage access on private land.
- Minimise adverse impacts from land use at known sites.
- Protect populations of the listed species through the development of conservation agreements and/or covenants.

Invasive Weeds

- Identify and remove weeds in the local area, which could become a threat to Stilted Tinsel Lily, using appropriate methods.
- Manage sites to prevent introduction of invasive weeds, which could become a threat to the species, using appropriate methods.
- Ensure chemicals or other mechanisms used to eradicate weeds do not have a significant adverse impact on Stilted Tinsel Lily.

Trampling, Browsing or Grazing

- Manage total grazing pressure at important/significant sites through exclusion fencing or other barriers.

Fire

- Implement an appropriate fire management regime for local populations.

This list does not necessarily encompass all actions that may be of benefit to Stilted Tinsel Lily, but highlights those that are considered to be of highest priority at the time of preparing the conservation advice.

Existing Plans/Management Prescriptions that are Relevant to the Species

- Wildlife Management Plan No. 28, Declared Rare and Poorly Known Flora in the Moora District (Patrick & Brown, 2001),
- Wildlife Management Plan No. 28, Declared Rare and Poorly Known Flora in the Narrogin District (Durell & Buehrig, 2001),
- Threat Abatement Plan for Competition and Land Degradation by Feral Rabbits (EA, 1999), and

These prescriptions were current at the time of publishing; please refer to the relevant agency's website for any updated versions.

Information Sources:

Brown, A, Thomson-Dans, C & Marchant, N (eds) 1998, *Western Australia's Threatened Flora*, Department of Conservation and Land Management, Western Australia.

Council of Heads of Australasian Herbaria (CHAH) 2005, *Australian Plant Census, IBIS database*, Centre for Plant Biodiversity Research, viewed 3 October 2008, <http://www.anbg.gov.au/cgi-bin/apni?taxon_id=228244>.

Department of Environment and Conservation (DEC) 2008, Records held in DEC's Declared Rare Flora Database and rare flora files, Department of Environment and Conservation, Western Australia.

Durell, GS & Buehrig, RM 2001, Declared Rare and Poorly Known Flora in the Narrogin District, Wildlife Management Plan No 30, Department of Conservation and Land Management, WA.

Environment Australia (EA) 1999, *Threat Abatement Plan for Competition and Land Degradation by Feral Rabbits*, Biodiversity Group, Environment Australia, viewed 19 August 2008, <http://www.environment.gov.au/biodiversity/threatened/publications/tap/rabbits/index.html>

Patrick, SJ & Brown, AP 2001, Declared Rare and Poorly Known Flora in the Moora District, Wildlife Management Plan No 28, Department of Conservation and Land Management, WA.

Vallee, L, Hogbin, T, Monks, L, Makinson, B, Matthes, M & Rossetto, M 2004, *Guidelines for the Translocation of Threatened Plants in Australia* (2nd ed.), Australian Network for Plant Conservation, Canberra.