Pest risk assessment

Sicklebush (*Dichrostachys cinerea*

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This publication has been compiled by Steve Csurhes of Biosecurity Queensland, Department of Primary Industries.

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Summary

Dichrostachys cinerea (Sicklebush or Chinese Lantern Tree) is a hardy, relatively slow-growing, very thorny shrub native to parts of African and the Indian subcontinent. There is uncertainty over the species' status in Queensland, but the Queensland Herbarium considers it to be native to the Northern Territory.

In Cuba, it has invaded about 20,000 km^2 of agricultural land. It is also considered to be a significant woody weed within parts of its native range in Africa, where it encroaches into pastures.

Preferred habitat is tropical, dry savannah woodlands where annual rainfall is 200 – 400 mm.

D. cinerea has a history of cultivation as a garden ornamental and can escape cultivation to form wild (naturalised) populations, wherever favourable habitat exists.

Based on the species' history as a major weed elsewhere, it seems reasonable to predict that it could cause similar problems in comparable habitat types in Queensland. Habitats most at-risk appear to be disturbed sites within the dry tropics.

Potential impacts are likely to include damage to pastures (replacing pasture species), invading certain native plant communities and, like many thorny, thicket-producing weeds, hindering stock mustering and providing a refuge for feral pigs.

*Important note: This assessment is based on the best available literature at the time of writing. It is acknowledged that new information may come to hand over time and please send any additional information, or advice on errors, to the author.

Identity and taxonomy

(adapted from: WFO 2025).

Species: *Dichrostachys cinerea* (L.) Wight and Arn.

Synonyms:

- Acacia cinerea (L.) Spreng.
- Cailliea cinerea (L.). JF MacBr
- Cailliea cinereus (L.) Roberty
- Desmanthus cinereus (L.) Willd.
- Mimosa cineraria L.
- Mimosa cinerea L.
- Neptunia cinerea (L.) F. Muell.

Common names: Sicklebush, Chinese Lantern Tree, Bell Mimosa, Kalahari Christmas Tree, El Marabú (Cuba), Marabou weed (Cuba)

Family: Fabaceae

D. cinerea is a variable species and its taxonomy is confused. Over the years, it has been treated as several distinct species, with up to 10 sub-species and it has a number of synonyms (Fern 2014). Eighteen sub-species are listed by WFO (2025):

- *Dichrostachys cinerea* subsp. *africana* Brenan & Brummitt
- *Dichrostachys cinerea* subsp. *argillicola* Brenan & Brummitt
- *Dichrostachys cinerea* subsp. *burmana* Brenan & Brummitt
- *Dichrostachys cinerea* subsp. *cinerea*

- *Dichrostachys cinerea* subsp. *forbesii* (Benth.) Brenan & Brummitt
- *Dichrostachys cinerea* subsp. *keniensis* Brenan & Brummitt
- *Dichrostachys cinerea* subsp. *malesiana* Brenan & Brummitt
- *Dichrostachys cinerea* subsp. *nyassana* (Taub.) Brenan
- *Dichrostachys cinerea* subsp. *platycarpa* (Welw. ex W.Bull) Brenan & Brummitt
- *Dichrostachys cinerea* var. *hirtipes* Brenan & Brummitt
- *Dichrostachys cinerea* var. *indica* Brenan & Brummitt
- *Dichrostachys cinerea* var. *karamojensis* Brenan & Brummitt
- *Dichrostachys cinerea* var. *lugardiae* (N.E.Br.) Brenan & Brummitt
- *Dichrostachys cinerea* var. *occidentalis* Brenan & Brummitt
- *Dichrostachys cinerea* var. *paucijuga* Miq.
- *Dichrostachys cinerea* var. *pubescens* Brenan & Brummitt
- *Dichrostachys cinerea* var. *setulosa* (Welw. ex Oliv.) Brenan & Brummitt
- *Dichrostachys cinerea* var. *tanganyikensis* Brenan & Brummitt

Description and Biology

A thorny deciduous to semi-deciduous shrub up to 7 metres tall. Leaves are bipinnate and up to 15 cm long. Rachis 4-8 cm, with 5-15 (max. 19) pairs of pinnae, with 12-22 pairs of leaflets. Terminal pair of pinnae shorter, dark green, underside pale. Leaflets about 8 x 2.5 mm wide; leaflets and petioles very tomentose and ciliate. Flowers are bicoloured (yellow and pale purple) and cylindrical, 6 – 8 cm long. Pods are usually twisted or spiralled and up to 100 mm long by 15 mm wide. Each pod has about 4 seeds.

Image 1. Flower of D. cinerea (photo: Wikipedia, https://en.wikipedia.org/wiki/Dichrostachys_cinerea)

Reproduction and dispersal

Reproduction is from seeds and root-suckers. The seeds are readily consumed by large herbivores, including cattle and camels. A study in Africa found that 55% of plants were root-suckers (Wakeling and Bond 2007). Even when subject to annual burning the species continues to produce root-suckers.

In southern Africa, flowering is from October to February, with fruiting from May to September.

Fern (2014) stated that it "can produce a large number of seeds almost all year round - these can germinate freely and can also remain dormant in the soil for a long time.

Owra *et al*. (2009) stated that seeds can be stored for up to 10 years at room temperature, if kept dry and free from insects. Hence, seed longevity under field conditions is likely to be shorter. This study was unable to find specific information on seed longevity.

Preferred habitat and climate

Preferred habitat is seasonally dry, tropical savannah woodlands. While it can grow well in high-rainfall areas, it is perhaps best-adapted to drier areas with mean average rainfall of 300 – 500 mm and daytime temperatures from 15 - 40°c (Fern 2014). It can tolerate mean annual rainfall of 200 – 600 mm and temperatures of 10 - 50°c (Fern 2014).

In Africa, *D. cinerea* occurs at altitudes from sea-level to 2,000 metres. It tolerates low quality soils from clays to deep, sandy soils with a wide pH range.

In India, it occurs in dry deciduous forest.

Native range and global distribution

Most references state that *D.* cinerea is native to tropical and sub-tropical parts of Africa and the Indian subcontinent. Some references state that it is native to the Northern Territory and Queensland. The Queensland Herbarium considers it to native to the Northern Territory but not Queensland.

Orwa *et al.* (2009) stated that it was native to Cameroon, Djibouti, Eritrea, Ethiopia, Ghana, Kenya, Madagascar, Malawi, Nigeria, Somalia, South Africa, Sudan, Swaziland, Tanzania, Togo, Uganda, Zambia

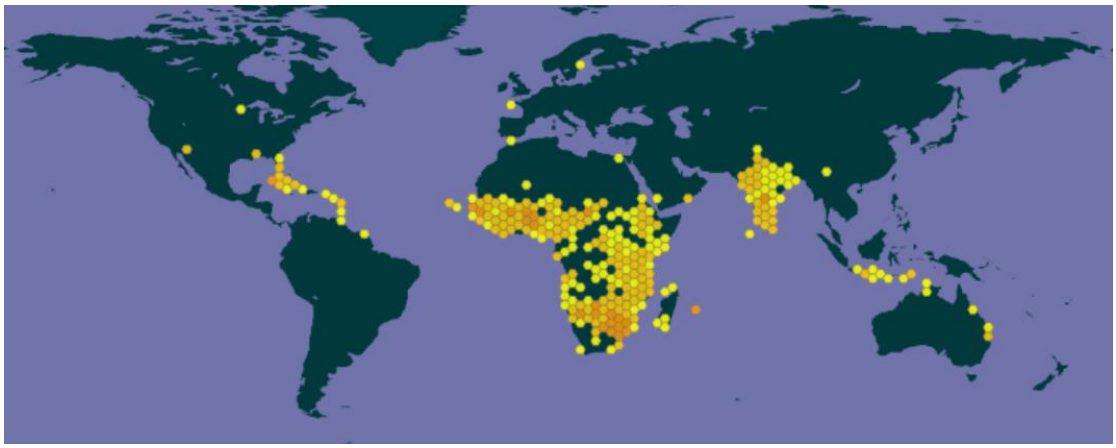

Figure 1. Global distribution of Dichrostachys cinerea (from GBIF, Resource search).

History as a weed overseas

Within its native range in Africa, *D. cinerea* is a dominant shrub species. In Africa, Wakeling and Bond (2007) commented that "the combination of establishment from seeds and spread by root-suckers makes this species a formidable native invasive woody shrub".

In Cuba, it is a serious problem, infesting about 5M acres (20,000 km^2) of agricultural land. According to Orwa *et al*. (2009), "in some parts of central Cuba, there are reports that whole farms have been rendered useless by this foreign weed" (where cane-growing has been discontinued). "Within a period of 10 years, an individual of this species can produce 130 new stems in a radius of 15 m by its root suckers" (Orwa *et al*. 2009).

Fern (2014) commented that “it can encroach rapidly on overgrazed, trampled ground and on old lands where the grass cover has been removed. It is difficult to eradicate as it shoots again from portions of root. In certain situations, mechanical or chemical control measures are the only ways to control the potentially serious weed.”

Naturalised populations exist in many places elsewhere, including Florida.

Use

The twigs and leaves are readily consumed by large herbivores such as cattle and camels and are relatively high in protein (11 – 15%). In Africa, the wood is used for firewood and making tools. Parts of the plant are also used in traditional medicine. It is a popular subject for use as a bonsai plant and as a hardy garden ornamental.

Current distribution and impact in Queensland

D. cinerea exists as relatively small populations in Queensland (Figure 2). One of the most significant populations is near Townsville, where it has formed large thickets along the banks of a creek at Kelso. Isolated plants are scattered across other areas of eastern Queensland. In central and southern Queensland, the plant does not appear to have formed significant populations.

Figure 2. Locations where Dichrostachys cinerea has been recorded by Australian herbaria (specimen data reproduced from Australia's Virtual Herbarium, AVH 2025).

Potential distribution and impact in Queensland

Climate-matching software called ‘CLIMATCH’ (BRS 2009) was applied to predict areas of Queensland where climate is similar to that experienced across the native range of *Dichrostachys cinerea*. The model was based on the species’ native range as stated by Owra *et al.* (2009) (i.e. parts of Africa only). Most of Queensland outside the coastal wet tropics appears to offer favourable climate (Figure 3).

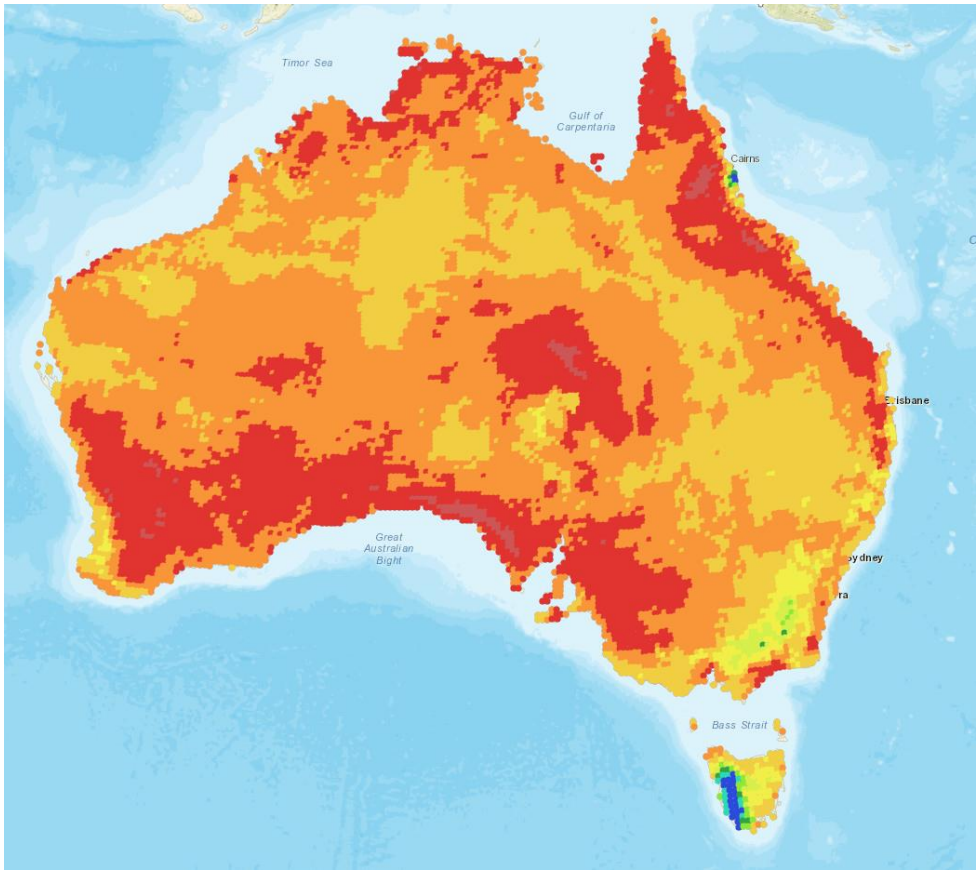

Figure 3. Area of Australia where climate appears suitable for survival of Dichrostachys cinerea.

The red, dark and light orange indicate areas where climate is most suitable, light orange and yellow indicate areas where climate is marginally suitable. Green, blue and white indicate areas where climate is considered unsuitable for this species.

References

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