

Blue stars

Aristea ecklonii



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Summary

Blue stars (*Aristea ecklonii*) is a small (c. 70 cm tall), rhizomatous perennial native to Africa. It is a popular garden ornamental in Australia and overseas, where it is grown for its attractive blue flowers. It has escaped from gardens to become an unwanted 'weed' in New Zealand, New South Wales and Victoria. At some sites, overseas and interstate, it has formed dense stands over small areas and is probably still spreading. As such, it is predicted to become a weed within comparable habitat types and climate zones in Queensland. Based on climatic and habitat information from its native range, habitats at risk of invasion appear to be limited to open or otherwise disturbed sites in mesic, upland rainforests in subtropical Queensland (open grassy areas/pastures, roadsides, tracks and riparian habitats). Remaining areas of the state are predicted to be either too hot or dry. While this study found evidence that this species is having an impact as a weed elsewhere, the exact nature of these impacts is poorly described in the literature. While it seems reasonable to predict that *Aristea ecklonii* will become more abundant in the future within suitable habitats of Queensland, a lack of information on the nature and scale of impacts makes predictions on its potential impacts in Queensland very difficult to make.

Identity and taxonomy

Species identity: *Aristea ecklonii*

Common names: Blue stars, blue-eyed iris (New Zealand), blue corn lily (New Zealand), blousterre (Afrikaans), phayimashimane (Swaziland), ikhambi eliluhlaza, ikkwanyana, umabhanjana, umafosi, umhushuza (Zulu)

Taxonomy: Family—Iridaceae
Aristea comprises c. 50 species (Goldblatt *et al.* 2004)

Description

Blue stars is a spreading, evergreen, rhizomatous perennial with stiff, upright, grass-like leaves. It grows 30–70 cm tall in a tight clump. In spring or early summer its flowering stalks become covered with dozens of small, blue, saucer-shaped flowers standing above the leaves. Each flower lasts for one day and only opens in bright light.

The Royal Botanic Gardens Sydney (2007) describes the plant as follows:

‘Basal leaves 3–11, linear to falcate, 10–60 cm long, 5–11 mm wide, usually thin and subleathery, venation moderately pronounced, leaf bases usually red; cauline leaves 2–5, smaller. Scape compressed, slightly winged; spathe bracts 5–14 mm long, apex finely acuminate and green to rusty brown, margins hyaline, rusty brown; inner bracts similar, slightly smaller. Flowers in loose panicle, opening for a few hours only, pedicels 2–10 mm long. Perianth c. 12 mm long; tube very short, green; outer lobes about two-thirds the size of inner ones, bright blue. Style unbranched or shortly 3-lobed. Capsule oblong, triquetrous, c. 20 mm long; seeds numerous, c. 1.5 mm long, circular and angular-compressed, surfaces reticulate.’

Origin and distribution

Species within the *Aristea* genus are native to sub-Saharan Africa and Madagascar (Goldblatt *et al.* 2004), with about 40 species native to southern Africa, eight native to tropical Africa and six native to Madagascar (Goldblatt 1995).

Blue stars is native to central and southern Africa. According to GRIN (2007), its native range is as follows:

- eastern tropical Africa: Uganda
- west-central tropical Africa: Burundi, Cameroon, Rwanda, Zaire
- southern tropical Africa: Mozambique, Zimbabwe
- southern Africa: Cape Province, Natal, Transvaal, Swaziland.

While its range extends into tropical areas, it appears to be restricted to cooler, highland habitats. For example, in Cameroon, it has been collected from wet, upland grasslands (above 4500 feet) (Royal Botanic Gardens, Kew). In southern (subtropical) Africa, it appears to occur at lower elevations. In South Africa, it can be found all along the Drakensberg and in many gardens.

The genus *Aristea* has a pronounced centre in southern Africa and a centre of diversity in the winter rainfall zone, with only one species extending eastward into the adjacent southern edge of the summer rainfall zone (Goldblatt *et al.* 2005).

In Australia, *A. ecklonii* has been recorded from Victoria and New South Wales (with a new record from Queensland) (Figure 1).

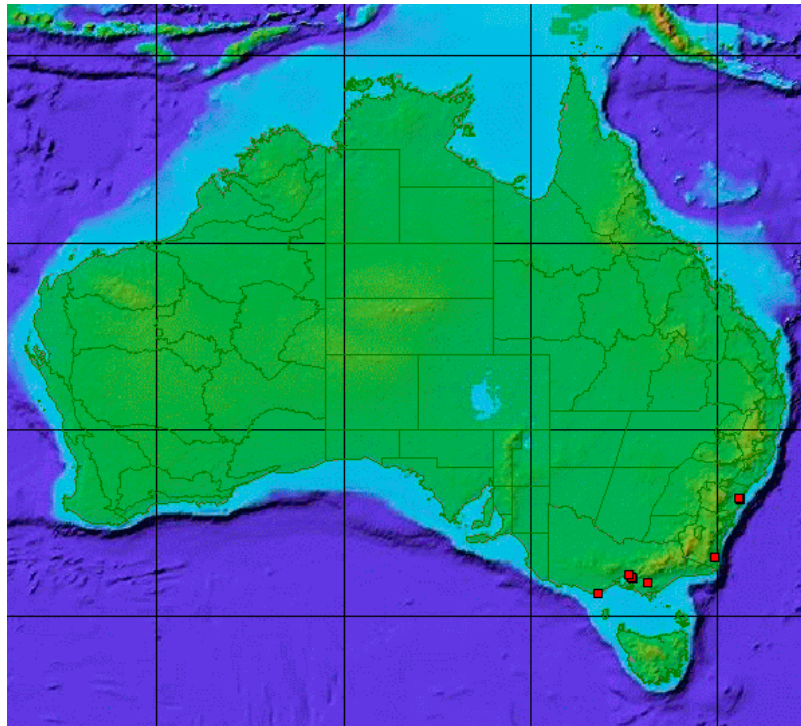


Figure 1. Locations where *A. ecklonii* has been collected and recorded by Australian herbaria (source: Australian Virtual Herbarium).

Status in Queensland

Blue stars was first collected in Queensland at Springbrook (south-east Queensland) by A. Keto in October 2007 (herbarium record below). To date, this is the only documented site for this species, although it is likely to be quite common in gardens elsewhere.

Collection details:

AQ Number: 751858 (ID Number: 1401)

Collection date: 29 October 2007

Location: Grid ref: 527 836 6877 705 at 820 m

Notes: Eastern Springbrook—property purchased by the Queensland Government—large spreading population of *Aristea*—more prolific in shade, soils based on rhyolite, in rainfall zone >3000 mm per annum.

Abundance: 3 ha of plants—146 plants per m².

Preferred habitats

In tropical areas, blue stars appears to be restricted to cool, wet, upland habitats (such as open grasslands). In subtropical areas, such as South Africa, it occurs in forest margins, streambanks, grassland and shrubland, often in shady areas.

When cultivated in the garden, it is reported to grow best in humus-rich, well-drained soil with plenty of moisture and full sun (Floridata 2007).

Reproduction, dispersal and seed longevity

Blue stars spreads primarily from seeds, which are produced in abundance. However, it can also be propagated by dividing rhizomes, tubers, corms or bulbs (including offsets).

Seeds are reported to be dispersed by water (Carr *et al.* 1992), wind or gravity (Auckland Regional Council 2007).

History as a weed overseas

Blue stars is listed as a weed in New Zealand (Biosecurity New Zealand 2007) where it grows in extensive patches within native vegetation, along roadsides, tracks, streamsides and in open forest (e.g. kauri) (Auckland Regional Council 2007).

In Australia, blue stars has escaped from gardens to form wild (naturalised) populations in Victoria and New South Wales. Currently, these populations are still small. In Victoria, it is considered to pose a threat to riparian vegetation and dry sclerophyll forest/woodland (Carr *et al.* 1992; Csurhes & Edwards 1998). In New South Wales, it inhabits disturbed woodland on the central coast and in the Sydney area (Harden 1993; Csurhes & Edwards 1998). In Warringah Shire (New South Wales), although not declared, it is listed on a 'register' of environmental weeds (Warringah online 2007).

In both Victoria and New South Wales, *A. ecklonii* appears to be spreading with additional naturalised populations being detected. For example, in 2007, it was discovered on several roadsides in Latrobe City (Victoria) (LaTrobe City Council media release 2007). There are now several small populations derived from garden plants on roadsides around Moe, Newborough and Yallourn North.

Uses

Blue stars is a popular garden plant grown for its attractive blue flowers and low, clumping habit. It is often planted as a ground cover on the edges of gardens or along the borders of paths and ponds.

Most species within the genus are rarely grown. However, blue stars seems to be the most commonly grown species within the genus (Pacific Bulb Society 2007), perhaps due to its hardiness and ease of propagation. One gardening internet site comments that 'all *Aristea* are beautiful, but unfortunately not all of them are so easy to grow'.

Currently, blue stars is a permitted import under AQIS regulations.

Related species

From Pacific Bulb Society website (2007):

A. abyssinica is found from the Eastern Cape, South Africa to tropical Africa where it grows in on rocky outcrops, in grassland and marshy areas. It has narrow leaves, clustered at the base and sky blue, violet, deep red or pink flowers.

A. africana is an evergreen, short plant with blue flowers and a style with three fringed lobes. It is found on sandy flats and mountain slopes in the winter rainfall area of South Africa.

A. bakeri (syn. *A. confusa*) is an evergreen rhizomatous plant found on stony sandstone slopes in the Cape province of South Africa. It can grow to one metre tall. The flowers are short-lived (they do not even last for one day) and blue.

A. biflora is native to the south-west Cape of South Africa. It has large lilac to purple flowers with transparent to translucent bronze windows on the lower margins.

A. capitata (syn. *A. major*) is an evergreen rhizomatous species that grows up to 1.5 m tall. It is a striking species with many blue flowers. It occurs over a wide range of the Cape growing on mountain slopes and blooming spring to summer.

A. cantharophila grows on clay and granite slopes in fynbos or renosterveld in the south-west Cape.

A. ecklonii is a summer rainfall *Aristea*. It grows on forest margins, streambanks, grassland and scrub from the Eastern Cape to Tanzania. It has basal leaves arranged in a fan shape and mauve-blue flowers. It flowers early in the morning and the flowers fade by afternoon, but it can bloom throughout the year. When grown in a well-watered garden is important to remove seedheads to avoid a proliferation of seedlings.

A. lugens grows on low, granitic hills in renosterveld in the south-west Cape, South Africa. Plants are evergreen and rhizomatous with striking pale blue to white flowers with dark blue-black outer tepals.

A. oligocephala is found on sandstone slopes from the Hottentots Holland Mountains to Bredasdorp (South Africa). Flowers are blue and the style has three fingered lobes.

A. spiralis is found on rocky sandstone and granite slopes from the Cape peninsula to Kynsna (South Africa). Flowers face to the side and are white or pale blue.

A. teretifolia grows in the south-west Cape on low, clay hills in renosterveld. Flowers are large, lilac to cream. Tepals are unequal; the inner has a large dark mark toward the base.

Pest potential in Queensland

Blue stars has a history as a weed in New Zealand and interstate (New South Wales and Victoria). As such, it is predicted to become a weed within comparable habitat types and climate zones in Queensland.

Based on climatic and habitat information from its native range, habitats at risk of invasion appear to be limited to open or otherwise disturbed sites in mesic, upland rainforests in sub-tropical Queensland (open grassy areas/pastures, roadsides, tracks and riparian habitats). Remaining areas of the state are predicted to be either too hot or dry.

Even though blue stars is listed as a weed interstate and overseas, there is very limited information available on its impact. It is reported to be replacing native vegetation in New Zealand, but the scale of such impacts is poorly described.

Blue stars is in an early stage of invasion in Queensland and could become a significant pest within suitable habitats after its population has had sufficient time to develop.

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