

# Short range Endemic Flora Taxa in Western Australia

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Figure 1 *Ricinocarpos brevis* seedling (Elliott, Wilkinson, & Turner, 2018)

An endemic species is only found in a single geographic location, such as an island, country, state, bioregion, or subregion (Iberdrola, 2024). The extent of this geographic location is referred to as the species range. When the range is restricted to less than 10,000km<sup>2</sup>, the species may be described as a Short-Range Endemic (SRE) (Cochrane, 2018). The term SRE is typically used to describe invertebrate fauna species such as spiders, scorpions, millipedes, etc. (Mason, Bateman, & Wardell-Johnson, 2018) however, it is also relevant for flora species.

SRE flora species are commonly found in old, stable landscapes (Mason, Bateman, & Wardell-Johnson, 2018). These landscapes have experienced prolonged weathering or erosion with limited to no rejuvenation, leading to nutrient-poor soils (Mucina & Wardell-Johnson, 2011). Rejuvenation may occur through floods, earthquakes, landslides, fires, cyclones and fauna burrowing, which turns the soil over. An example of an old, stable landscape is Windarling Range, a banded iron formation approximately 200km west of Kalgoorlie (DCCEEW, 2010). The Windarling Range has experienced weathering over a prolonged period (Gibson, Coates, & Thiele, 2007) and is where *Ricinocarpos brevis* (Figure 1) is found. *Ricinocarpos brevis* is an endangered shrub with white flowers restricted to a 1,700km<sup>2</sup> range within the Windarling Range area (Halford & Henderson, 2007). It is found in shallow sandy soils at an elevation of 500 and 550m above mean sea level (AMSL).

## Potential Reasons for Species' Small Range

Some landscapes appear contiguous but contain barriers that limit a species' range (Tomlinson, Lewandrowski, Elliott, Miller, & Turner, 2020). These barriers could be water availability, soil water content, soil composition, light and shade or the presence of breakages in rocks (Robinson, Virgilio, D Temple-Smith, & Wardell-



*Acacia diallaga*

Photos: D. Coulltas

Figure 2 *Acacia diallaga* (Western Australian Herbarium, 2024)



## Summary

This InSight explores the concepts of Short Range Endemic Flora Species in Western Australia .





Figure 3 *Banksia corvijuga*  
(Western Australian Herbarium, 2023)

A landscape with an SRE can also include areas considered suitable for the species, but it doesn't occur there (Robinson, Virgilio, D Temple-Smith, & Wardell-Johnson, 2019). This could be due to the species' dispersal method or required species interactions limiting its dispersal (Cochrane, 2018). For instance, *Banksia corvijuga* (formerly known as *Dryandra corvijuga*) (Figure 3), a Priority 3, 1m tall shrub with yellow flowers (Western Australian Herbarium, 2023), occurs in the Ravensthorpe area 550km south-east of Perth (Markey, Kern, & Gibson, 2012). In this area, the species is found on the northern and central ridges between 230 to 440m altitude but not on the south-eastern side at 110 to 280m altitude. The north and south ridges are similar, both dominated by eucalyptus species with a banksia species understory and their soil consists of sandy loams (Markey, Kern, & Gibson, 2012). However, the north and central ridges contain *Banksia cirioides* and *Banksia pallida* in their understory, which are not present on the south-eastern ridge; potentially, these banksia species influence *Banksia corvijuga*'s distribution.

#### Conservation Difficulties

Flora species considered an SRE have a small range, low reproduction rate and small dispersal area, which can make conservation activities difficult (Mason, Bateman, & Wardell-Johnson, 2018). Typically, conservation efforts involve creating nature reserves around the population to reduce threats (DPLH, 2023). However, when the population is considered small and vulnerable, conservation also involves identifying new populations, establishing insurance populations, or translocating the population to a similar habitat (Tomlinson, Lewandrowski, Elliott, Miller, & Turner, 2020). Due to their very specific requirements, these targeted efforts can be challenging to undertake for SREs (Mason, Bateman, & Wardell-Johnson, 2018). For example, *Pigea cymulosa* (formerly known as *Hybanthus cymulosus*) (Figure 4) is a 0.9m critically endangered herb in the Mt Singleton area (DCCEEW, 2009); it is found along drainage lines and gullies on a series of hills in a range of 140km<sup>2</sup> but is believed to occupy only 1km<sup>2</sup> within this range. A recovery plan has been created for the species (DEC, 2009) however, with little known about its habitat requirements,



Figure 5 *Eucalyptus mooreana*  
(Nicolle & Barrett, 2018)

Johnson, 2019). For instance, the priority 1 species *Acacia diallaga* (Figure 2) a 1.5m shrub with yellow flowers found in the Midwest Region of Western Australia, 315km northwest of Perth (Maslin & Buscumb, 2008). Other acacia species are present in the Midwest Region, however, *Acacia diallaga* is only found on the slopes and occasionally the crests of low rocky hills. Bui, Gonzalez-Orozco & Miller (2014) determined the species is associated with high magnesium soils similar to other SRE plants in the region. Potentially, *Acacia diallaga* requires magnesium for its growth or it provides a competitive advantage (Tomlinson, Lewandrowski, Elliott, Miller, & Turner, 2020).

A landscape with an SRE

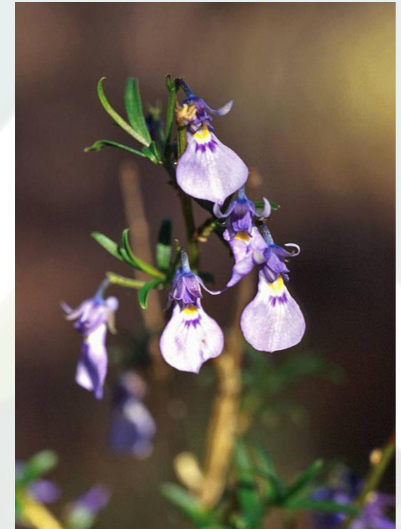


Figure 4 *Pigea cymulosa* (Fame, 2021)



traditional conservation activities are difficult to apply. Instead, the plan focused on reducing threats to the known populations such as grazing from feral goats.

Conservation difficulties can also occur from a lack of knowledge due to the SRE being in a remote location that is hard to access. An example is *Eucalyptus mooreana* (Figure 5) a Priority 4, 9m tall tree found in the King Leopold Ranges in the Kimberly region (DCCEEW, 2008). It is found on the sandy soils at the summits of the range (DCCEEW, 2008) which makes accessing the species for research difficult (Nicolle & Barrett, 2018). Despite this, specimens were first collected in 1914 and further specimens showed two variants: one with a powdery coating and one without. Nicolle & Barrett (2018) later discovered the non-powdery variant was a new species called *Eucalyptus revelata* (Figure 6). The species is a 4m tree that covers a similar area in the King Leopold Ranges as *Eucalyptus mooreana*, and is classified as Priority 2 and requires more research.



Figure 6 *Eucalyptus revelata* (Nicolle & Barrett, 2018)

Integrate Sustainability Pty Ltd understands the threats to Short-Range Endemic species; if your company needs to understand its obligations relating to Short Range Endemic flora and fauna, please call us on 08 9468 0338 or email us at [enquiries@integratesustainability.com.au](mailto:enquiries@integratesustainability.com.au).

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