Threatened Flora: Spiny Lignum

Flood recovery population status assessments

Biodiversity Flood Recovery Update July 2024

Key Messages

- Spiny Lignum *(Duma horrida* subsp*. horrida*) is a floodplain shrub that is listed as critically endangered in Victoria.
- 32 sites were assessed with populations present at 17 sites. Thirteen new populations were discovered. Populations were in good condition and consisted of healthy mature plants. Limited recruitment was recorded.
- Populations likely benefited from the last few years of high rainfall and flooding which increased available resources resulting in good plant growth.

PROJECT SUMMARY

Spiny Lignum populations were present at 17 of 32 sites assessed. Nine known sites were assessed, and Spiny Lignum was present at only four sites. The remaining 13 sites where Spiny Lignum was present are new populations.

Over 1726 plants were found and most were healthy mature individuals.

Limited recruitment was recorded, and it is unknown how long lived this species is, nor how often recruitment needs to occur to ensure populations are self-sustaining.

Overall, Spiny Lignum population condition was predominantly good likely reflecting the response to multiple years of high rainfall and the 2022 flood event.

Project background

In October 2022 heavy rainfall throughout Victoria resulted in large-scale flooding. Flooding resulted in changes to floodplains and waterways, introducing threats to rare plants from increased pest plants and animal impacts and habitat alterations. Thus, actions to mitigate risks to key threatened plants vulnerable to impact from flooding are required for recovery.

The 'Threatened Flora 2022 Flood Recovery' project aimed to provide essential data on a selection of State and Federal listed threatened plant species and their critical habitat, impacted by the 2022 flood. This will enable targeting of appropriate management actions to assist survival and recovery. Monitoring data informs conservation outcomes and provides the much-needed feedback loop for reporting on investments and flood recovery.

Spiny Lignum

Spiny Lignum *(Duma horrida* subsp*. horrida)* is a stiff branched shrub to one metre tall. Stems often have spines and are commonly partially leafless (Figure 1). The species is State listed as critically endangered in Victoria (FFG Act 1988).

Spiny Lignum is a flood dependent shrub providing essential fauna habitat.

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Spiny Lignum occurs across floodplain and waterway systems in semi-arid environments. Much of which has been degraded through river regulation and historical disturbances. As such Spiny Lignum provides essential fauna habitat in these locations. Spiny Lignum is a flood dependant species but also thrives in seasons with moderate moisture levels. However, there is limited information on the species thus it is difficult to enable effective management to improve its conservation.

Over 50% of the currently known Victorian Spiny Lignum populations occur within the 2022 flood zone.

Findings

- 32 were sites assessed with populations present at 17 sites, including 13 newly discovered populations.
- Over 1726 plants were recorded. Most plants were healthy mature individuals.
- Reproductive output (e.g. flower buds) were recorded at eight populations.
- Limited recruitment (juvenile plants) was recorded.
- Population condition (lignum condition score) was good with only one population in moderate condition.

Flood impacts

Spiny Lignum is thought to respond positively to flooding. Duration, depth and timing of inundation are key factors influencing its health. Extended periods of inundation [e.g. > 12 months] may not be beneficial.

During this assessment most Spiny Lignum populations appeared to be in good condition with healthy plants. This is likely due to high annual and seasonal rainfall and the associated flood event which increased available resources resulting in higher-than-average plant growth. However, further data is required to accurately evaluate the impacts of flooding on the species.

Front banner credits: Claire Moxham, Brad Farmilo, Annette Muir.

Acknowledgement

This project was supported by the Victorian Government's flood recovery program.

Figure 1: Spiny Lignum (Credit: Claire Moxham)

Threats and management

Spiny Lignum is impacted by grazing (both native and introduced herbivores), human disturbances (e.g. off-road vehicles), weed invasion and climate impacts influencing moisture availability.

Monitoring data crucial

Long-term population and demographic data are critical to obtaining a detailed understanding of the biology and requirements of Spiny Lignum to inform management actions and responses to climatic events.

Further reading

Moxham, C., Dabal, R., Farmilo, B., Muir, A. and Kenny, S. (2024). Threatened flora 2022 flood recovery: assessment outcomes. Unpublished Report. Arthur Rylah Institute for Environmental Research. Department of Energy, Environment and Climate Action, Heidelberg, Victoria.

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We acknowledge Victorian Traditional Owners and their Elders past and present as the original custodians of Victoria's land and waters and commit to genuinely partnering with them and Victoria's Aboriginal community to progress their aspirations.

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