

# Am I missing critical plant species?

Predicting the likely occurrence of the Leafless Tongue Orchid *Cryptostylis hunteriana*

**Research undertaken by Claire deLacey, Stephen Bell, Steven Chamberlain and Karl Bossard**

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Surveys to detect rare or cryptic plant species or areas of likely habitat for such species are expensive and time-consuming, and commonly do not provide much useful information. Furthermore, the current rate of habitat loss for these plants is unknown. The Leafless Tongue Orchid is a good example of a rare and cryptic species which is often overlooked in surveys. A better understanding of what conditions and habitats that cryptic species like the Leafless Tongue Orchid prefer can improve the way we manage our activities to help protect and conserve them.

Generally speaking, where a plant species naturally occurs is a consequence of landscape variations. There is often good correlation between observed species distribution patterns and climate, geology, and soil variables. In our recent study of the Leafless Tongue Orchid we analysed plant census data and landscape variations at known sites across the entire range of the species. This has resulted in the preparation of habitat information and a predictive map.

Although modelling and habitat profiles may be used for estimating the probability of occurrence of a range of threatened cryptic plant species, it is important to note that unknown populations may occur that have not been predicted because their habitat was not represented in the sample data. Outlier populations, particularly those which occur at the limit of a species' range, may be very important in enabling that species to adapt to future alterations to habitat, including those produced by climate change. Given the foregoing, and the limited nature of the study, total reliance should not be placed on our research in defining potential habitat for the Leafless Tongue Orchid. Instead, the suitability of an area to provide habitat for the Leafless Tongue Orchid should be determined using our research along with other tools, such as the scientific literature and local knowledge.

The Leafless Tongue Orchid lives off decaying organic matter in the soil. It has no leaves and only appears above the ground when in flower. Its flowering season is between November to February in New South Wales and Victoria, and between June and August in Queensland.

Even when the Leafless Tongue Orchid is flowering, it is hard to detect amongst the surrounding vegetation because of its lack of leaves and low stature. Also, it does not flower every year but when it does, it produces up to 5–10 flowers on a spike.

Substantial New South Wales populations of the Leafless Tongue Orchid are known to occur in: the Gibraltar Range area; between Jervis Bay and Batemans Bay (particularly around Vincentia); and near Lake Macquarie and Nelson Bay. There are other records near Eden, Nowendoc and in the Blue Mountains. A significant population of the species also occurs in East Gippsland in Victoria, and there are scattered records in southeast Queensland. These locations are shown on the map (see overleaf). Although the Leafless Tongue Orchid is known to occur in swamp-heath on sandy soils in coastal districts, field surveys undertaken as part of this research suggest that the habitat profile is much more variable: in New South Wales the Leafless Tongue Orchid was found in association with a number of vegetation communities, including:

- New England Blackbutt Shrubby Forest
- New England Blackbutt Grassy Forest
- Peppermint/ Bloodwood/ Stringybark/ Silver-top Ash Forest
- Large-fruited Blackbutt/ Strawberry Gum Woodland
- Scribbly Gum/ Bloodwood/ Apple Woodland
- Bloodwood/ Scribbly Gum/ Silver-top Ash Forest
- Bloodwood/ Apple/ Mahogany/ Peppermint Forest
- Banksia/ Hakea Dry Scrub-heath
- Silver-top Ash/ Yertchuck/ Spotted Gum Forest
- Grey Gum/ Bloodwood/ Stringybark Forest
- Woollybutt/ Bangalay/ Stringybark/ Rough-bark Apple Forest
- Dwarf Apple/ Banksia Scrub
- Spotted Gum/ Woollybutt/ Paperbark Forest
- Banksia/ Hakea Wet Heath
- Coachwood/ Lily Pily/ Bangalay Rainforest



## Predictive Distribution for the Leafless Tongue Orchid *Cryptostylis hunteriana*



Leafless Tongue Orchid

- Point location records for *C. hunteriana*
- *C. hunteriana* May Occur
- *C. hunteriana* Likely to Occur
- Bioregions

### Note

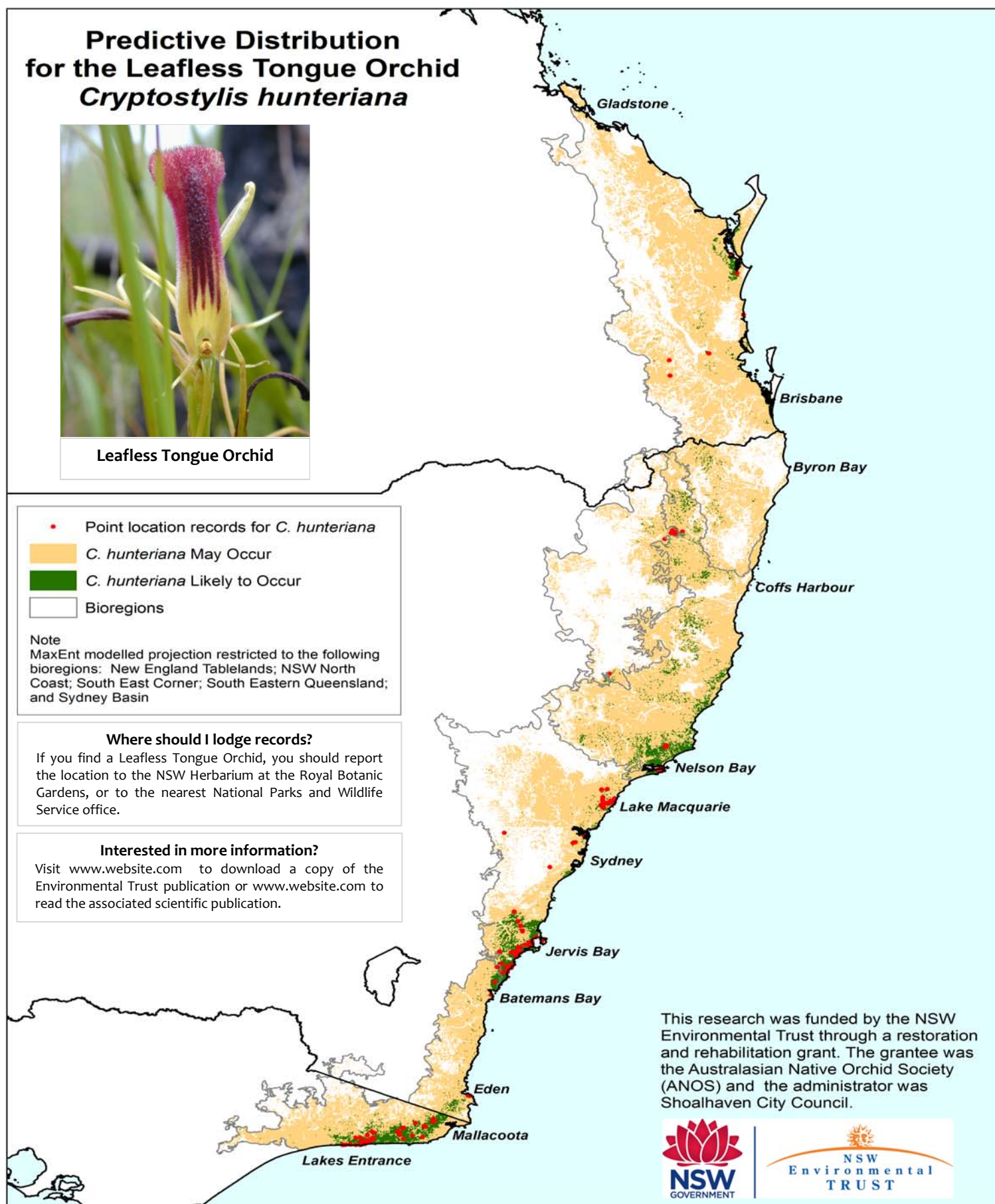
MaxEnt modelled projection restricted to the following bioregions: New England Tablelands; NSW North Coast; South East Corner; South Eastern Queensland; and Sydney Basin

### Where should I lodge records?

If you find a Leafless Tongue Orchid, you should report the location to the NSW Herbarium at the Royal Botanic Gardens, or to the nearest National Parks and Wildlife Service office.

### Interested in more information?

Visit [www.website.com](http://www.website.com) to download a copy of the Environmental Trust publication or [www.website.com](http://www.website.com) to read the associated scientific publication.



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