

Twin Hills Wind Farm Orchid Memorandum

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1. Project Background

In 2024, Stantec Australia Pty Ltd (Stantec) was engaged by Twin Hills Wind Farm Pty Ltd, care of Wind Prospect Pty Ltd (Wind Prospect), to undertake a Detailed and Targeted flora and vegetation survey to inform the development application process for the proposed Twin Hills Wind Farm (the Project). The Survey Area comprised 9,993 hectares (ha) of land that is primarily cleared for crops and livestock grazing, with interspersed patches of remnant native vegetation that is generally (but not exclusively) associated with ridges, hills and slopes. Detailed and targeted flora and vegetation surveys were also conducted on 12,769 ha of additional area (Additional Area).

Two Threatened orchid species, *Paracaleana dixonii* (En/T) (Sandplain Duck Orchid) and *Thelymitra stellata* (En/T) (Star-Sun Orchid), were recorded during the surveys. Both species were associated with vegetation type LOW_Euc.tod_shrubland, described as Low Open Woodland of Eucalyptus tottiana over shrubland. Specifically, two specimens of *Paracaleana dixonii* and two specimens of *Thelymitra stellata* were recorded. Both species are listed under the *Environment Protection and Biodiversity Conservation Act 1999* as Threatened (Endangered) and under the *Biodiversity Conservation Act 2016* as Threatened (DCCEEW, 2025a, 2025b).

Following completion of the surveys in 2024, an adjacent land parcel (Adjacent Land Parcel) was incorporated into the proposed Survey Area (**Figure 1**). Twin Hills Wind Farm Pty Ltd, through Wind Prospect, engaged Stantec to undertake a Targeted Threatened orchid survey (the Survey) within remnant vegetation located in the Development Envelope of the Adjacent Land Parcel, upon which non-turbine infrastructure may be installed for the Project.

2. Objectives and Scope

The objective of this survey was to search remnant vegetation within the Development Envelope of the Adjacent Land Parcel to determine the presence or absence of *Paracaleana dixonii* and *Thelymitra stellata*. The survey was undertaken in accordance with the *Draft Survey Guidelines for Australia's Threatened Orchids* (2013).

3. *Paracaleana dixonii* and *Thelymitra stellata*

Paracaleana dixonii

According to the *Approved Conservation Advice for Paracaleana dixonii* Hopper & A.P.Br. nom. inval. (Sandplain Duck Orchid) (DEWHA, 2008a), *Paracaleana dixonii* is a terrestrial orchid growing 0.18 m in height. Flowering occurs much later than other associated orchids, from October to January, with flowering being more profuse after summer fire. This species is found in association with deep sand in open areas beneath dense tall shrubs with scattered *Banksia*'s, or in heathland in shallow sand over laterite (DEWHA, 2008a). There are 21 records of this species on FloraBase recorded from the Swan Coastal Plain and Geraldton Sandplains bioregions (WAH, 1998a).

Thelymitra stellata

According to the *Approved Conservation Advice for Thelymitra stellata* (Star Sun-orchid) (DEWHA, 2008b), *Thelymitra stellata* is a terrestrial orchid growing to 0.25m in height on a robust stem. The flowers are usually golden brown but may be yellow with orange stripes on the sepals and petals, flowering from late September to November (DEWHA, 2008b). This species is found in association with gravelly loam among low heath and scrub in *Eucalyptus marginata* and *Eucalyptus wandoo* woodland, and in low heath or lateritic hill tops (DEWHA, 2008b). There are 20 records of this species on FloraBase recorded from the Jarrah Forrest, Swan Coastal Plain and Geraldton Sandplain (WAH, 1998b).

4. Survey Methods

4.1 Survey Timing and Personnel

The survey was conducted by Alice Bott (Principal Botanist, license FB2000072) and Sinai Wright (Botanist, license FB62000808). Alice has greater than 15 years' experience conducting flora and vegetation surveys across WA and has



previously undertaken targeted searches for another Duck Orchid, *Paracaleana nigrita*, within the Geraldton Sandplain bioregion.

The Survey was undertaken on 6 and 7 November 2025, aligning with the flowering period for both species (late September to November for *Thelymitra stellata*, and October to January for *Paracaleana dixonii*). Weather conditions during the survey were fine and sunny, with temperatures in the low 20°, representing optimal conditions for detecting orchids, which can close during overcast or cloudy days.

Prior to commencing the Survey at the Adjacent Land Parcel, the survey team ground-truthed one known location of each of the species in nearby areas outside of the Adjacent Land Parcel. Both species were confirmed and observed flowering at these reference sites, indicating optimal timing for detection.

4.2 Survey Design

The survey was designed in accordance with the *Draft Survey Guidelines for Australia's Threatened Orchids* (DoE, 2013). Following these guidelines, qualified botanists systematically traversed the remnant native vegetation located in the Development Envelope of the Adjacent Land Parcel. Surveying was conducted using parallel transects spaced at intervals of approximately 10 m, ensuring comprehensive coverage and minimising the likelihood of overlooking individual orchid specimens.

5. Survey Results and Discussion

The systematic traverses are presented as tracklogs on **Figure 1**, with particular focus on vegetation type LOW_Euc.tod_shrubland. No records of *Paracaleana dixonii* and *Thelymitra stellata* were recorded within the Adjacent Land Parcel. Additionally, the representation of LOW_Euc.tod_shrubland within the Adjacent Land parcel was considered highly unsuitable for orchid species, given the understory was heavily dominated by weeds and that the patch was surrounded by paddock (**Plate 1**).



Plate 1: Understorey of LOW_Euc.tod_shrubland within the Development Envelope of the Adjacent Land Parcel dominated by weeds.



The patches of remnant vegetation mapped as LW-LF_Euc.acc.Bank.fras.Mel.leu.TS_Aca.sal. and the eastern occurrence of LOW_Euc.tod paddock were considered highly unsuitable for orchid species due to the understorey being completely dominated by weeds.



Plate 2: Understorey of LW-LF_Euc.acc.Bank.fras.Mel.leu.TS_Aca.sal. within the Development Envelope of the Adjacent Land Parcel dominated by weeds.





Figure 1: Targeted orchid survey effort within the Development Envelope of the Adjacent Land Parcel.

6. Summary

Given that the survey was conducted during the optimal flowering period for both species, that both species were confirmed flowering in nearby locations, and that no individuals were detected within the Development Envelope of the Adjacent Land Parcel, *Paracaleana dixonii* and *Thelymitra stellata* are considered absent from the Development Envelope of the Adjacent Land Parcel.

SENSITIVE



7. References

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