

Black Cockatoo Cumulative Impact Assessment, Twin Hills Wind Farm

Final

Prepared for:
Twin Hills Wind Farm Pty Ltd

April 9, 2026

Prepared by:
Stantec Australia Pty Ltd

Project Number:
304502117



Revision Schedule

Rev.	Date	Description	Prepared by	Quality Reviewer	Technical Reviewer	Project Manager Approval
A	07/04/2026	Draft report for client review	Eryn Jackson	Michelle Davies	Peter Tapsell	Stephanie Kemp
0	09/04/2026	Final for Client Issue	Eryn Jackson	Peter Tapsell	Peter Tapsell	Stephanie Kemp

Disclaimer

The conclusions in the Report titled Black Cockatoo Cumulative Impact Assessment Twin Hills Wind Farm are Stantec's professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the scope of work was conducted and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient's own risk.

Stantec has assumed all information received from Wind Prospect Pty Ltd (the "Client") and third parties in the preparation of the Report to be correct. While Stantec has exercised a customary level of judgment or due diligence in the use of such information, Stantec assumes no responsibility for the consequences of any error or omission contained therein.

This Report is intended solely for use by the Client in accordance with Stantec's contract with the Client. While the Report may be provided by the Client to applicable authorities having jurisdiction and to other third parties in connection with the project, Stantec disclaims any legal duty based upon warranty, reliance or any other theory to any third party, and will not be liable to such third party for any damages or losses of any kind that may result.

Table of Contents

Executive Summary	ii
Acronyms / Abbreviations.....	iii
Glossary	iii
1 Introduction	1
1.1 Purpose and Scope.....	1
1.2 Legislative Policy Context	3
1.3 Black Cockatoos Species Context	3
1.3.1 Carnaby's Black-Cockatoo	3
1.3.2 Regional survey evidence and context	3
1.3.3 Proposal Habitat context	4
1.3.4 Proposal impacts.....	5
1.3.5 Proposal Mitigation Actions.....	5
2 Approach	6
2.1.1 Limitations and Assumptions	6
3 Results and Discussion.....	7
3.1 Cumulative Impact Pathways.....	7
3.2 Cumulative Impact Rankings	7
3.2.1 Ranking categories	8
3.3 Definition of the baseline.....	8
3.4 Cumulative Impact Assessment.....	9
3.4.1 NVCP results.....	10
3.4.2 Significant Proposals results	10
3.4.3 Regional Clearing Assessment.....	17
4 Conclusion.....	19
5 References	20

List of Tables

Table 1: Past, present and reasonably foreseeable actions.....	12
Table 2: Regional Clearing Assessment	17

List of Figures

Figure 1: Regional Location	2
Figure 2: Cumulative Impact Assessment projects within 50km and 12 km buffer.....	11



Executive Summary

Carnaby's Black-Cockatoo (*Zanda latirostris*) was confirmed to utilise the Twin Hills Proposal Area for foraging, roosting and flight movements, with large flocks of up to approximately 380 individuals observed during Bird and Bat Utilisation Surveys (Stantec 2025c). The Proposal Area contains suitable foraging habitat, numerous suitable and potential breeding trees, and is located within approximately 2 km of a confirmed night roost.

A review of third-party Black-Cockatoo surveys undertaken within 0–30 km of the Proposal Area indicates that the broader region supports intermittent and opportunistic use by Carnaby's Black-Cockatoo, with multiple studies identifying suitable habitat and several confirming direct records. While breeding has not been confirmed within the Proposal Area, the landscape contributes to the species' broader foraging and roosting network within the Northern Agricultural Region.

Cumulative impacts to Black-Cockatoos in the region primarily relate to incremental loss or modification of foraging habitat, disturbance from construction activities, and collision risk associated with wind energy developments. When considered alongside existing and approved developments, the Proposal represents a relatively small additional contribution to cumulative impacts.

The Twin Hills Wind Farm Proposal is not expected to result in a significant cumulative impact on Carnaby's Black-Cockatoo at a local or regional scale, provided avoidance, minimisation and mitigation measures are implemented. The Proposal occurs within a landscape that has experienced historical clearing and ongoing development, and contributes incrementally rather than fundamentally altering the availability or function of Black-Cockatoo habitat.



Acronyms / Abbreviations

Acronym / Abbreviation	Full Name
BBUS	Bird and Bat Utilisation Survey
BESS	Battery energy storage system
EPBC Act	Environmental Protection and Biodiversity Act
BMP	Bushfire Management Plan
CBC	Carnaby's Black-Cockatoo
CEMP	Construction Environmental Management Plan
CIA	Cumulative Impact Assessment
DAWE	Department of Agriculture, Water and the Environment
DBCA	Department of Biodiversity, Conservation and Attractions
DE	Development Envelope
DEWHA	Department of the Environment, Water, Heritage and the Arts
DPaW	Department of Parks and Wildlife
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities
DWER	Department of Water and Environmental Regulation
EP Act	Environmental Protection Act 1986 (WA)
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Cth)
EPA	Environmental Protection Authority
NVCP	Native Vegetation Clearing Permit
WA	Western Australia
WTGs	Wind Turbine Generators

Glossary

Term	Definition
Category 1 -3 habitat tree	Defined by EPBC referral guideline for the three WA threatened black-cockatoo species (2022) Category 1 - Confirmed breeding trees, Category 2 Confirmed roost or previously used breeding trees, Category 3 — Potential breeding trees



1 Introduction

1.1 Purpose and Scope

Twin Hills Wind Farm Pty Ltd (the Company) is seeking approval to develop, construct, and operate the Twin Hills Wind Farm (the Proposal) approximately 30 km north-east of the township of Eneabba, 25 km south-east of the township of Three Springs, and 260 km north of Perth, Western Australia (WA) **(Figure 1)**. The Proposal will involve the construction of up to 110 wind turbines, a battery energy storage system (BESS), and associated infrastructure, and will be developed across freehold properties and road reserves.

This report assesses the Proposal's cumulative impacts on the Carnaby's Black-Cockatoo (*Zanda latirostris*). Impacts to Baudin's Black-Cockatoo (*Z. baudinii*) and Forest Red-tailed Black-Cockatoo (*Calyptorhynchus banksii naso*) were not assessed as their current range is located outside of the Proposal Area. This is supported by a lack of records in desktop assessments and no observations made during field assessments. While there is a record of a Forest Red-tailed Black-Cockatoo from 2022 in the vicinity of the Proposal, it is suspected to be the non-listed subspecies *Calyptorhynchus banksii samueli*, which was recorded during the Survey (Stantec 2025b).

This cumulative impact assessment is prepared to support referral under the *Environmental Protection Act 1986* (EP Act) and to address cumulative impact considerations consistent with Commonwealth and Western Australian guidance.



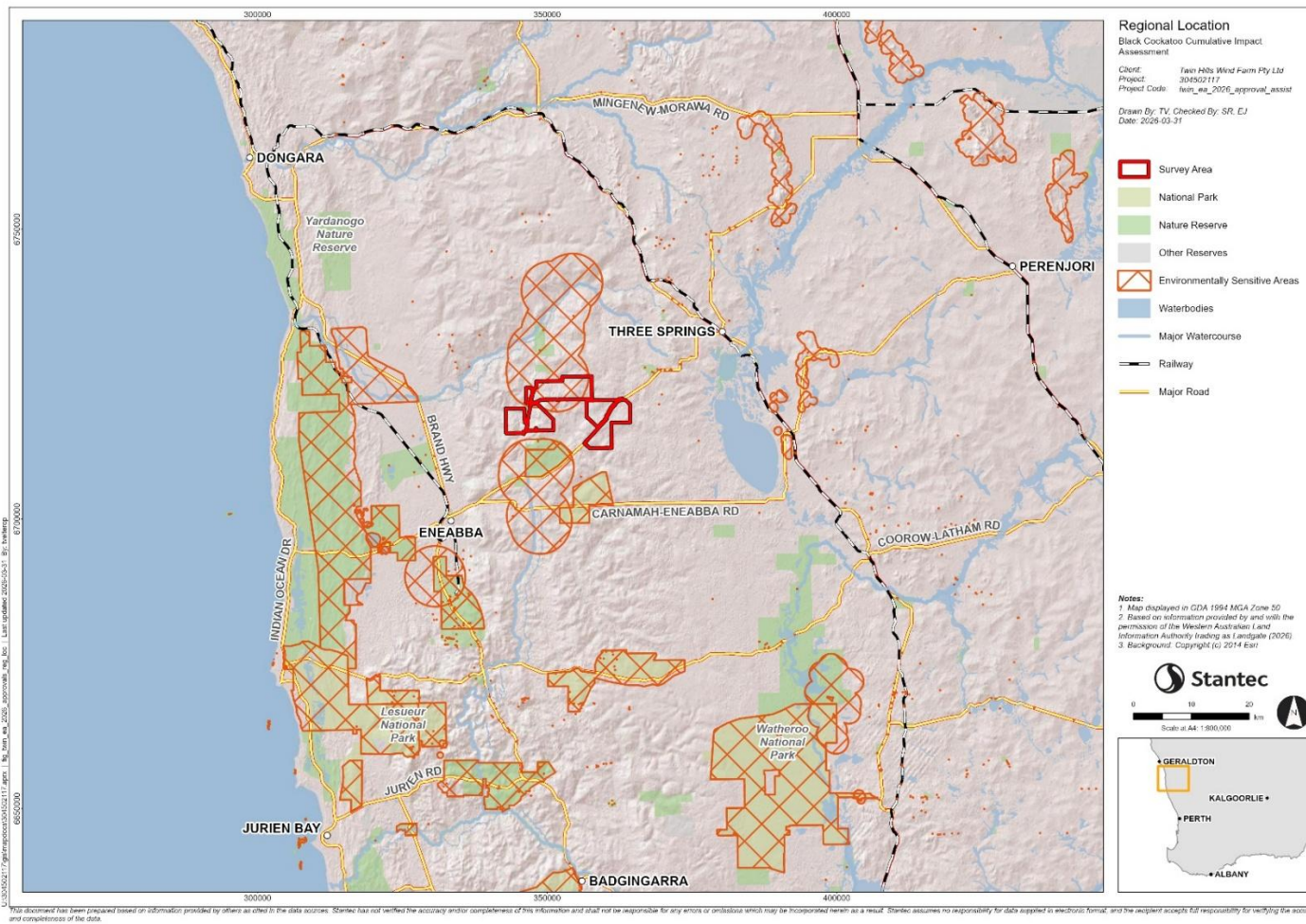


Figure 1: Regional Location



1.2 Legislative Policy Context

A summary of the Commonwealth and State legislation, policies and guidelines relevant to the assessment of impacts on black cockatoos is provided below

- *Environmental Protection Act 1986* (GoWA 1986)
- *WA Biodiversity Conservation Act 2016* (DBCA 2016)
- *Environment Protection and Biodiversity Conservation Act 1999* (DEWHA 1999)
- WA EPA Guideline for Cumulative Impact Assessment (EPA 2026).
- EPA Environmental Factor Guideline - Terrestrial Fauna (EPA 2016)
- EPA Technical Guidance for vertebrate fauna surveys for environmental impact assessment (EPA 2020)
- Referral guideline for 3 WA threatened black cockatoo species (DAWE 2022)
- Onshore Wind Farms – interim guidance on bird and bat management (DAWE 2021)

1.3 Black Cockatoos Species Context

1.3.1 Carnaby's Black-Cockatoo

The Carnaby's Black-Cockatoo (*Zanda latirostris*) is listed as Endangered under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and the *WA Biodiversity Conservation Act* (2016). The species breeds primarily within the Wheatbelt, including areas between Three Springs and Eneabba, before moving coastward outside the breeding season. Long-term monitoring indicates an ongoing population decline driven by historical clearing, fragmentation of breeding habitat, and loss of high-quality foraging resources (DPaW 2013).

The Twin Hills Proposal Area falls within the known range of Carnaby's Black-Cockatoo and supports habitat suitable for foraging, roosting and breeding. Targeted surveys undertaken for this project and previous studies in the surrounding region confirm that the species utilises the broader landscape intermittently, consistent with its highly mobile ecology.

1.3.2 Regional survey evidence and context

Multiple Black-Cockatoo assessments undertaken within approximately 0–30 km of the Proposal Area provide important context for cumulative impact assessment. These include surveys conducted between 2012 and 2022 for wind farms, seismic surveys, mineral sands projects and energy developments (Stantec 2025c).

These studies consistently identified habitat suitable for Carnaby's Black-Cockatoo across kwongan heath, Banksia woodland and scattered Eucalyptus trees within cleared agricultural landscapes. Direct records of Carnaby's Black-Cockatoo were confirmed in several studies, including within areas intersecting the Twin Hills Survey Area. Other surveys did not record Black-Cockatoos but noted that survey timing, duration and scope were limiting factors, rather than an absence of suitable habitat.

The available information demonstrates that the wider region supports habitat suitable for Carnaby's Black-Cockatoo, and that the species has been recorded intermittently, reflecting its mobile, seasonal and opportunistic use of habitat, rather than continuous local residency.



Although Carnaby's Black-Cockatoos have not been observed breeding or nesting within the Proposal Area, a Red-tailed Black-Cockatoo *Calyptorhynchus banksii esconditus* (not a significant species) was observed roosting or sheltering in a hollow in a dead *Eucalyptus accedens* (Powderbark Wandoo) indicating that these hollows are utilised by Black-Cockatoo species. Powderbark Wandoo is common throughout the Survey Area (Stantec 2025c). In White Gums Nature Reserve, approximately 7.5 km outside the Proposal Area, Carnaby's Black-Cockatoos were observed foraging on *Allocasuarina campestris* and *Banksia* sp. in Shrubland on Lateritic Ridge/Outcrop

Across all reviewed studies, habitats relevant to Black-Cockatoos are consistently identified, including:

- Proteaceous heath and Banksia-dominated kwongan, supporting foraging.
- Scattered Eucalyptus trees, often associated with paddocks or cleared land, with potential value for roosting and historical breeding.
- Drainage lines and remnant woodland patches, contributing to habitat connectivity.

Importantly, these habitat types occur broadly across the landscape, not solely within the Twin Hills Proposal Area. The Twin Hills site forms part of a larger, continuous mosaic of modified agricultural land and remnant vegetation that is already subject to:

- Clearing and fragmentation.
- Existing infrastructure such as roads, farms, and exploration activities.
- Previous and approved developments, including wind farms and seismic surveys.

1.3.3 Proposal Habitat context

A total of 2,273.00 ha of the Proposal Area is mapped as high-quality foraging habitat for Carnaby's Black-Cockatoo. Within the Proposal Area, Carnaby's Black-Cockatoos were observed foraging on species including *Banksia* spp and *Callitris arenaria* in Diverse Shrubland and Heath, and three individuals were observed feeding on introduced *Pinus radiata* cones beside a homestead

Large flocks of Carnaby's Black-Cockatoos, comprising up to approximately 380 individuals, were observed during Bird and Bat Utilisation Surveys undertaken for the Proposal (Stantec 2025c). A significant night roost supporting up to 350 individuals was recorded approximately 2 km north of the Proposal Area, representing a newly identified roost not previously captured in desktop datasets.

A total of 336 suitable and 896 potential breeding trees were identified within the Proposal Area, with additional suitable and potential breeding trees identified in additional survey areas and adjacent reserves and road reserves. Although no active nesting was recorded, hollow-bearing trees were observed to be utilised by Black-Cockatoo species, indicating the functional importance of these resources (Stantec 2025a).

The proximity of the Proposal Area to a confirmed night roost and the repeated observation of large flocks during surveys indicate that the area contributes to daily and seasonal movement patterns. However, there is no evidence that the site functions as a primary movement corridor or contains major breeding tree concentrations (Stantec 2025a).



1.3.4 Proposal impacts

Potential impacts of the Proposal on Carnaby's Black-Cockatoo include:

- Direct clearing of low to moderate quality foraging habitat.
- Removal of some scattered trees with potential hollow development.
- Disturbance during construction affecting transient use of habitat.
- Operational collision risk associated with wind turbines.

1.3.5 Proposal Mitigation Actions

The Proposal avoids clearing of Category 1 to 3 breeding trees as defined by EPBC referral guideline for the three WA threatened black-cockatoo species (DSEWPaC 2012) and limits clearing of higher quality foraging habitat. Recorded flight heights and movement patterns observed during Bird and Bat Utilisation Surveys (BBUSs) (Stantec 2025c) indicate that while Black-Cockatoos traverse the Proposal Area, movements are variable and not confined to consistent flight corridors.

Specific mitigation actions relating to Carnaby's Black Cockatoo (CBC) include:

- Locate wind turbines on cleared land (i.e. land free of native vegetation or any planted trees) only.
- Implement a minimum turbine blade tip height of 40m above ground level.
- Ensure no wind turbines are installed within 2 km of the CBC roost identified during the baseline BBUSs that is located north of the Proposal Area.
- Implement site vehicle and machinery hygiene procedures to minimise the spread of weeds and plant pathogens.
- Restore land used for temporary infrastructure during the construction phase to its pre-construction-state during the operations phase.
- Develop and implement fire prevention and management procedures (e.g. hot works procedures, fuel storage procedures) as well as a BMP.
- Undertake monitoring (including carcass searches) in accordance with the Monitoring Program described within the BBMP (Stantec 2026)
- Develop and implement awareness, induction, and training packages to effectively implement the BBMP
- Actively manage any potential and actual impacts to birds, bats, and associated habitats during the construction phase of the Project through implementing a CEMP.
- Develop and implement awareness, induction, and training packages to effectively implement the CEMP.



2 Approach

A desktop assessment, comprising database searches and a literature review, was undertaken to gather contextual information on the cumulative impact of the Proposal to CBC. The Cumulative Impact Assessment (CIA) follows the WA EPA Guideline for Cumulative Impact Assessment (2026) and applies the EPBC Black-Cockatoo referral guideline (DAWE 2022) to identify sensitive receptors, define spatial–temporal boundaries, catalogue other actions, and evaluate combined effects after application of the mitigation hierarchy. It integrates desktop sources, targeted habitat mapping and risk-based analysis of collision, disturbance and habitat change.

Projects considered in the CIA include existing and foreseeable projects referred under the EP Act and EPBC Act within a 50 km radius of the Proposal and any granted or amended clearing permits within a 15 km radius of the Proposal, (**Figure 2**) with publicly accessible data. These projects were investigated to determine their impact on CBC and their habitats. The 50 km radius was chosen as it covers overlapping foraging networks, adjacent wind, solar and transmission upgrades, and nearby operations such as Warradarge Wind Farm and the proposed Tathra Wind Farm footprint.

The environmental baseline was defined using existing project assessments, desktop data review and available spatial and survey information to characterise current environmental values prior to project implementation. This baseline informed impact identification, risk assessment and mitigation development. CIA methods are described in detail in Section 3.4.

2.1.1 Limitations and Assumptions

In undertaking the CIA, in the context of the Proposal, a number of limitations and assumptions apply:

- Although land clearing or degradation may be estimated, the final impact to the local population or regional distribution of a species is difficult to quantify based on information available in the public domain.
- Cumulative impacts to terrestrial fauna and fauna habitats resulting from third-party projects are conservative and based on information available in the public domain and may not represent the most accurate levels of disturbance.
- It is assumed that other terrestrial fauna within the Proposal Area, including common and widespread species, would also be subject to a similar range of impacts.
- Direct and indirect impacts that may affect terrestrial fauna can be difficult to quantify and predict in advance of development occurring.
- The Native Vegetation Clearing Permit (NVCP) datasets reflect approved clearing and does not confirm clearing extent or vegetation condition at present.



3 Results and Discussion

3.1 Cumulative Impact Pathways

The CIA considered past, present and reasonably foreseeable projects within a 50 km radius of the Proposal, including operating and proposed wind farms, energy developments and mineral processing facilities (**Figure 2**).

When considered cumulatively with surrounding projects, the key potential impact pathways for CBC at Twin Hills are:

- Incremental loss of foraging habitat, particularly proteaceous heath.
- Reduction in scattered roost trees, especially mature Eucalyptus trees.
- Disturbance during construction, potentially affecting transient use of the area.
- Collision risk, relevant specifically to wind energy developments, though no regional evidence suggests this area is a core movement corridor.

Consistent with the EPA's findings in determinations for other wind energy projects, collision risk is recognised as a relevant impact pathway. However, available monitoring data from operational wind farms in the region indicates that impacts to conservation-listed bird species have been low to date and are subject to ongoing adaptive management.

3.2 Cumulative Impact Rankings

Cumulative impact rankings are used to provide a transparent, proportional evaluation of the Proposal's contribution to existing and reasonably foreseeable impacts on CBC. The rankings do not represent absolute impact significance on the species, but rather the incremental contribution of the Proposal when assessed in the context of other actions occurring within the region.

Cumulative impact rankings were derived by comparing:

- The extent and nature of impacts from the Twin Hills Proposal (post-mitigation); and
- The combined impacts of past, present and reasonably foreseeable actions within the defined spatial and temporal boundary for CBC.

Where available, rankings were informed by indicative disturbance footprints published in referral documentation. Where third-party data were limited, a conservative approach was applied using Development Envelopes or worst-case assumptions.

Rankings account for:

- Habitat affected (type and quality).
- Presence or absence of key resources (breeding trees, roosts, foraging habitat).
- Duration and timing of impacts.
- Degree to which mitigation and rehabilitation have been incorporated.
- Whether impacts are novel, additive or overlapping with existing pressures.



3.2.1 Ranking categories

Low cumulative impact (0–10% incremental contribution)

A Low ranking indicates that the Proposal contributes a minor incremental increase to existing cumulative impacts, and:

- Affects a small proportion of available habitat at a local or regional scale.
- Avoids or minimises impacts to critical resources such as breeding trees and known roosts.
- Occurs within a landscape already subject to disturbance, without fundamentally altering habitat function.
- Applies mitigation and offset measures consistent with current Commonwealth and State policy.

For Twin Hills, impacts to Carnaby's Black Cockatoo habitat fall largely within this category due to the limited area of clearing, avoidance of Category 1–3 breeding trees, and retention of surrounding habitat.

Moderate cumulative impact (>10–30% incremental contribution)

A Moderate ranking indicates that the Proposal makes a noticeable but manageable contribution to regional cumulative impacts, where:

- Impacts combine with other developments to increase pressure on habitat availability or connectivity.
- Some key habitat features are affected, but alternatives remain available at the landscape scale.
- Mitigation and rehabilitation are expected to partially offset impacts over time.

Moderate impacts typically require strong mitigation, monitoring and adaptive management, but do not indicate unacceptable cumulative risk on their own.

High cumulative impact (>30% incremental contribution)

A High ranking indicates that the Proposal would make a substantial contribution to cumulative impacts, potentially resulting in:

- Loss or degradation of critical or irreplaceable habitat.
- Reduction in habitat below functional thresholds.
- Increased risk to population viability when combined with other actions.

High rankings generally signal the need for design redesign, avoidance, or significant offsets, and may raise concerns under both the EP Act and EPBC Act.

No cumulative impact pathways associated with the Twin Hills Proposal were assessed as High.

3.3 Definition of the baseline

For the purposes of this cumulative impact assessment, the baseline condition for CBC represents the current state of the receiving environment at the time of assessment, incorporating the effects of historical land use change and existing infrastructure, but excluding impacts associated with the Twin



Hills Proposal and other projects in development. This approach is consistent with the WA EPA Guideline for Cumulative Impact Assessment (2026), which defines baseline as the condition against which the incremental contribution of a proposal is assessed.

The baseline condition in the Twin Hills region is characterised by extensive historical agricultural clearing, resulting in widespread loss and fragmentation of breeding and foraging habitat across the Geraldton Sandplains and Northern Agricultural Region. The landscape now comprises a mosaic of cleared farmland with remnant vegetation, scattered mature trees, road reserves and conservation reserves, which collectively support intermittent and opportunistic use by Carnaby's Black-Cockatoo rather than continuous residency. Existing infrastructure, including roads, farms, utilities and operating wind energy facilities, already contributes to background levels of disturbance and collision risk.

Despite this modification, CBC continues to utilise the landscape for foraging, roosting and movement, as demonstrated by historical records, recent targeted surveys and Bird and Bat Utilisation Surveys (Stantec 2025c). The baseline therefore represents a degraded but functional ecological system, where key resources persist in fragmented form.

Historical agricultural clearing and associated infrastructure are recognised as the primary drivers of long-term population decline for CBC and are treated as a baseline condition as these pressures are widespread, long-established and largely irreversible at a project scale. Accordingly, historical clearing is assigned a **High** baseline pressure rating, providing context for assessing the incremental cumulative impacts of contemporary projects, including the Proposal.

3.4 Cumulative Impact Assessment

Significant past, present and reasonably foreseeable actions were identified using the Department of Water and Environmental Regulation (DWER) EPA-assessed proposals spatial dataset (Dataset 120). Projects located within or intersecting a 50 km buffer of the Proposal were included in the cumulative impact assessment, reflecting the spatial scale relevant to CBC movement ecology and habitat use. Dataset 120 was used to identify proposals referred under Part IV of the EP Act. Projects clearly unrelated to CBC habitat or impact pathways were screened out through expert judgement, with remaining projects assessed qualitatively for their relevance to cumulative impacts.

Clearing impacts approved under (NVCPs were assessed using the DWER NVCP spatial dataset (Dataset 076). A 15 km buffer was applied to identify NVCPs relevant to the assessment, reflecting the local to sub-regional scale at which vegetation clearing is most likely to interact with the Proposal through habitat loss, fragmentation and disturbance. This distance is considered appropriate having regard to typical CBC foraging movements and daily habitat use.

All NVCPs within the 15 km buffer were reviewed. Permits with a status of Refused, Declined or Withdrawn were excluded, as these do not authorise clearing. Permits with a status of Granted, Granted with Conditions, Amended, Superseded or Expired were retained, recognising that expired permits may have been lawfully exercised prior to expiry and that the dataset reflects approvals rather than verified clearing.

Where information on actual clearing extent was not publicly available, the maximum approved clearing area was conservatively used to characterise potential cumulative impacts. Where available, information specific to CBC habitat and impact pathways was prioritised.



3.4.1 NVCP results

Following screening and de-duplication, NVCPs within the 15 km buffer represent a combined approved clearing extent of approximately 762 ha. These approvals are primarily associated with mineral sands mining, pastoral land use and linear infrastructure, and reflect historical or long-established clearing pressures within the local landscape. This clearing has contributed to the existing fragmented habitat mosaic used opportunistically by CBC for foraging and movement.

While NVCP approvals indicate a high baseline pressure on foraging habitat availability, they do not represent a current or interacting cumulative action with the Proposal and are therefore treated as part of the baseline environmental condition, rather than as incremental cumulative impacts.

3.4.2 Significant Proposals results

When assessed collectively (**Table 1**), most projects contribute **Low** cumulative impacts, with **Moderate** impacts arising only from large-scale, ongoing habitat-disturbance projects (e.g. wind farms and major mineral sands developments). In this context, the Twin Hills Wind Farm contributes a **Low** incremental impact to cumulative effects on CBC at the local and regional scale.



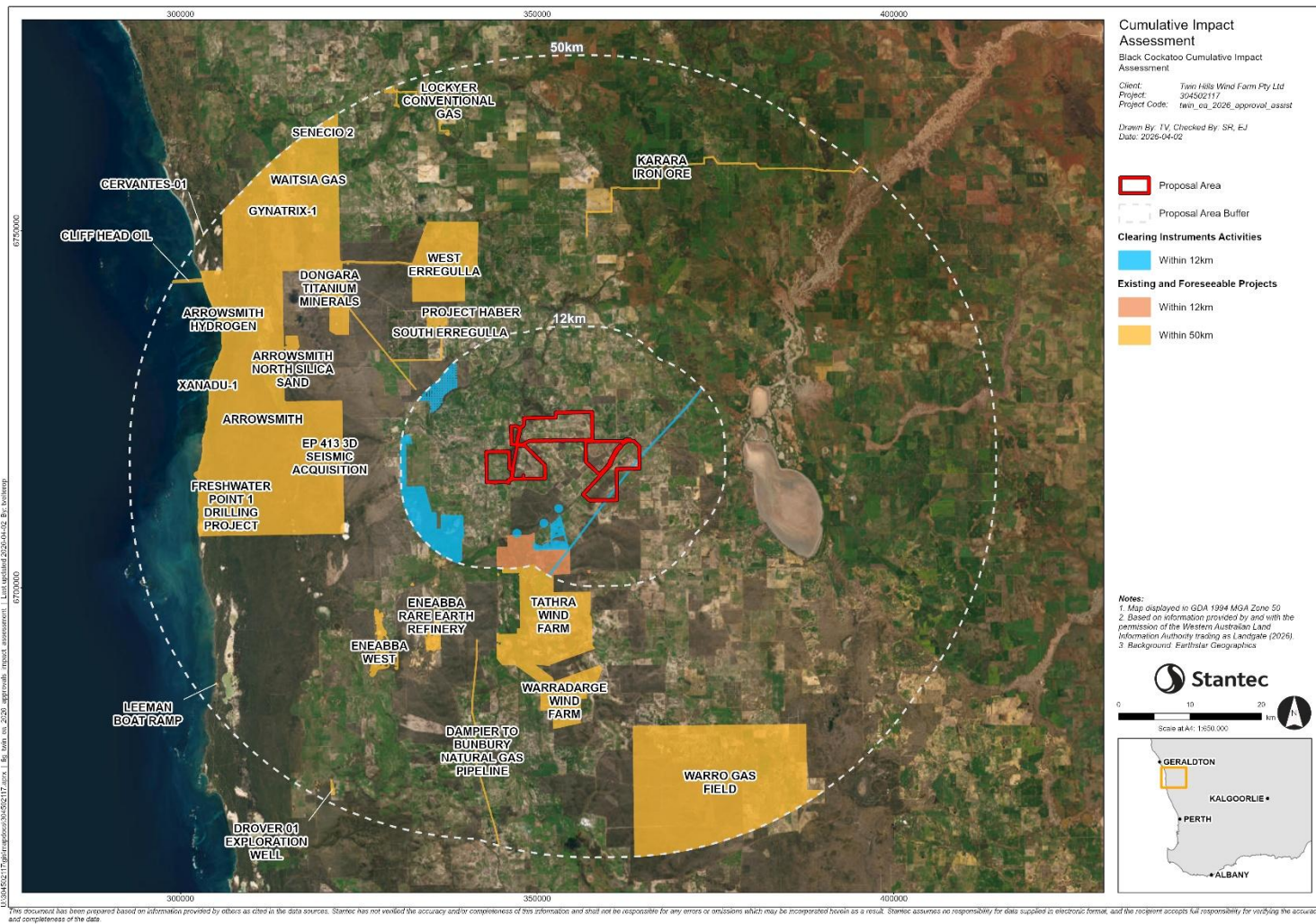


Figure 2: Cumulative Impact Assessment projects within 50km and 12 km buffer



Black Cockatoo Cumulative Impact Assessment

Project: 304502117

Table 1: Past, present and reasonably foreseeable actions

Project Title and Distance from Proposal DE	Project Description	Relevant Project Impacts	Cumulative Assessment	Ranking
Twin Hills Wind Farm (THW 2026)		Direct impacts: Loss, fragmentation, or modification of habitat from clearing vegetation. Loss of or injury to individuals from: Clearing vegetation 17.13 ha of which 15.5 ha represents high quality CBC foraging habitat Collisions with wind turbines or other Project infrastructure. Collisions with vehicles. Fires that result from operating equipment or hot works. Indirect impacts: Introduction of weeds, pathogens, or pest fauna f	No suitable breeding habitat trees and 2 potential breeding habitat trees will be impacted by the Proposal A maximum of 15.5 ha of high quality foraging habitat will be cleared for the Proposal Carnaby's Black-Cockatoos recorded during fauna surveys and Bird and Bat Utilisation Surveys consistently flew at heights between 0–40 m above ground level, which is at or below the minimum blade tip height of proposed turbines, and published observations indicate the species typically flies well below rotor-swept height and actively avoids wind farm infrastructure (Stantec 2025c). Given the low observed flight heights, the height of surrounding vegetation, and evidence of avoidance behaviour, interactions with turbine blades are considered unlikely.	Low Although up to ~15.5 ha of high quality foraging habitat will be cleared this represents only 0.76% of the available high quality foraging habitat in the project area. No suitable breeding trees are impacted, collision risk is considered low given observed flight heights and avoidance behaviour, and impacts are limited relative to available habitat at the regional scale.
Tathra Wind Farm Development ~25km south (SynergyRED 2025)	The Proposal comprises up to 140 wind turbine generators (WTGs) (total wind capacity of up to 1,000 MW across the Development Envelope (DE), solar facilities (up to 500 MW), battery energy storage system (BESS) (up to 500 MW), and associated supporting infrastructure. The DE and surrounding area are primarily utilised for low intensity broad-acre agricultural purposes and consist of predominantly cleared land, with pockets of remnant native vegetation that are proposed to be largely retained	The Proposal will clear no more than 8.50 ha of fauna habitat represented by vegetation (native and non-native) including: Clearing less than 1 ha of high to moderate quality foraging habitat for Carnaby's Black Cockatoo (score 4 to 6). No clearing Category 1 to 3 Carnaby Black Cockatoo breeding trees. Clearing less than 1.9 ha of low to moderate foraging habitat (comprised of native and non-native vegetation) (score 3) for Carnaby's Black Cockatoo. Clearing less than 4.3 ha of low-quality foraging habitat (comprised of native and non-native vegetation) (score 2) for Carnaby's Black Cockatoo.	Moderate The EPA has acknowledged collision risk to threatened avifauna at wind farms as a relevant cumulative pressure. While impacts are expected to be mitigated and offset, the scale of infrastructure contributes meaningfully to regional cumulative pressures when considered alongside other wind energy developments.	Moderate Large-scale wind infrastructure contributes to regional cumulative collision risk and incremental habitat loss; while clearing of Carnaby's habitat is limited and mitigated, EPA recognises wind farms as a meaningful cumulative pressure when combined with other developments
Warradarge Wind Farm ~15 km south (Verve Energy 2012)	Construction of 100 wind turbines each up to 152 m high, with a capacity of up to 400 MW and all associated infrastructure: electricity transformers; underground cabling; access tracks, all weather access to Garibaldi Willis Road; crane hardstands; a substation compound including a metering building, site office and workshop and a communication mast.	Clearing up to 0.7 ha (less than 1% of the total 82.5 ha footprint of the wind farm). Habitat loss and disturbance for Carnaby's Black Cockatoo from vegetation clearing and construction for habitat. Bird strike risk from turbine blades — monitored post construction. Noise and vibration may affect sensitive species during breeding seasons.	Most strikes involved nankeen kestrels and wedge-tailed eagles, with no conservation-listed species impacted to date. Clearing of 0.7 ha of vegetation is not considered locally or regionally significant no roost sites, or potential roost sites, were observed during field surveys along the line route or in any location across the project such that this clearing is unlikely to affect Carnaby's Cockatoos.	Low–Moderate Habitat clearing is small (<1% of footprint) and no roosting or breeding trees were identified; however, existing and expanded turbine infrastructure contributes additively to regional collision risk.
South Erregulla Conventional Gas Field Development Program (Strike 2022) ~8km south	Construct and operate the South Erregulla Conventional Gas Development (gas-fired peaking power plant), located approximately 280 km north of Perth and 45 km southeast of Dongara in the Shire of Three Springs and the Shire of Irwin.	The Proposal has been sited to avoid clearing native vegetation, therefore, no fauna habitat is proposed to be cleared Possible disturbance to fauna from noise, light, and vehicle movement during construction and operation. 111.82 ha disturbance footprint	Given the South Erregulla Conventional as project does not include clearing of native vegetation, the potential for cumulative impacts on vegetation and fauna habitat is negligible	Low No clearing of native vegetation is proposed; potential impacts are limited to temporary disturbance, resulting in negligible contribution to cumulative impacts on Carnaby's Black-Cockatoo



Project Title and Distance from Proposal DE	Project Description	Relevant Project Impacts	Cumulative Assessment	Ranking
West Erregulla Field Development Program (Strike Energy) (JBS&G 2023)	Strike West Pty Ltd is proposing to construct and operate a gathering system to connect its West Erregulla gas field and convey the extracted gas to an upstream separating facility.	Clearing of 38.46 ha of fauna habitat, including 38.46 ha of moderate value foraging habitat for Carnaby's Black Cockatoo. Potential indirect loss of an additional 13.42 ha of native vegetation, being potential fauna habitat and foraging habitat for Carnaby's Black Cockatoo. Fragmentation of habitat. Injury or mortality of fauna individuals as a result of interaction with vehicles/machinery. Reduction or loss of Carnaby's Black-Cockatoo habitat due to increased fire frequency or intensity; and Disturbance to Carnaby's Black-Cockatoo and its habitat from dust, noise and vibration.	There are currently no records of individuals of Carnaby's Black-Cockatoo within the Development Envelope (JBS&G 2023) The Development Envelope does not support breeding or roosting trees. 30 ha will be rehabilitated following the completion of construction	Moderate Clearing of ~38.5 ha of moderate-quality foraging habitat and indirect disturbance represents a meaningful contribution to regional habitat attrition, despite absence of breeding and roosting trees and proposed rehabilitation.
West Erregulla Processing Plant and Pipeline (AGI Operations Pty Limited) (Eco Logical Australia 2022)	The proponent is proposing to construct and operate a 16.5 km pipeline and gas processing plant to transport gas to the existing Dampier to Bunbury Natural Gas Pipeline.	90ha of fauna habitat clearing permanent clearing of 48.5 ha of fauna habitat • temporary clearing of 41.5 ha of fauna habitat. Potentially suitable foraging habitat occurs within the Development Envelope, however no potential or confirmed breeding or roosting trees were recorded as occurring. Loss and fragmentation of habitat • Injury or mortality of fauna individuals as a result of interaction with vehicles/machinery • Reduction or loss of Carnaby's Cockatoo habitat due to increased fire frequency or intensity • Disturbance to Carnaby's Cockatoo and Carnaby's Cockatoo habitat from dust, noise and vibration.	A total of 37.7 ha (17.7% of the Development Envelope) is considered as providing 'Low' quality foraging habitat for Carnaby's Cockatoo 37.68 ha will be rehabilitated within 2-3 years post construction. Therefore, only 0.02 ha (0.05% of available habitat) will be permanently disturbed by the Proposed Action, which is not considered a significant loss of habitat. The greatest potential for fragmentation is along the 16.5 km pipeline corridor, which is surrounded by remnant vegetation. However, Carnaby's Cockatoo are expected to be able to freely cross this corridor, therefore no significant fragmentation of habitat is expected to occur as a result of the	Low While up to 90 ha of habitat may be disturbed, almost all is temporary and low-quality, with rehabilitation reducing permanent loss to negligible levels; fragmentation effects are not expected to affect Cockatoo movement.
Eneabba Rare Earth Refinery (NVCP 6915/3) ~26km south west (Iluka Midwest Ltd 2021)	Construction and operation of a new rare earth refinery at Iluka Eneabba Mine Site. The proposal will utilise the existing Eneabba monazite concentrate, future Iluka feedstocks and third party feedstocks	Clearing of 5.4 ha of rehabilitated vegetation within 319.6 ha disturbance footprint Loss of foraging habitat for Carnaby's cockatoo within the Kwongan Heath (Uplands) and Rehabilitation (Shrublands and Woodlands) habitats. Disturbance from noise, vibration, and vehicle movement during construction Project areas selected specifically to minimise cumulative impacts by using existing highly disturbed land.	The project has been designed to avoid the clearing of black cockatoo habitat where practicable, with the proposed clearing of 5.4 ha of partially rehabilitated shrubland and heathland representing a relatively small contribution to the extent of suitable habitat available within the local and regional landscape. Management measures will be implemented to avoid, minimise and mitigate potential impacts to black cockatoos, including the retention of surrounding habitat and measures to reduce disturbance. In the context of the limited scale of habitat loss and the application of mitigation measures, the proposal is not expected to contribute to a significant cumulative impact on black cockatoo populations. With commissioning scheduled for 2026, it is anticipated that localised noise, dust and traffic impacts associated with the Eneabba Rare Earth Refinery will be completed prior to construction of the Proposal. This suggests that no cumulative impacts associated with disturbance due to construction will occur for these projects.	Low Clearing is limited (~5.4 ha) and confined to partially rehabilitated vegetation on disturbed land, with no breeding or roosting habitat affected and no construction overlap with the Proposal timeline.
Dampier to Bunbury Natural Gas Pipeline (DBNGP) Stage 5 Expansion (Strategen 2006)	The construction of eleven loops adjacent and connected to the existing underground gas transmission pipeline within the existing corridor to raise the capacity of the system.	Clearing of less than 1,000 ha of vegetation (approximately 220ha within the assessment area) and an additional 100 ha outside of the pipeline corridor for infrastructure (construction camp, turkey nests and turnarounds). Disturbance of approximately 2,200 ha of fauna habitat.	The Dampier to Bunbury Natural Gas Pipeline (DBNGP) is a large, linear development with sections located in proximity to the Development Envelope (DE). Where the DBNGP traverses areas near the DE, habitats and associated Black-Cockatoo values are expected to be similar to those present within the Proposal area. However, as distance from the DE increases,	Low Although extensive in total length, only small sections overlap comparable habitat near the Proposal; impacts are linear, localised and largely historical, contributing minor incremental effects relative to baseline.



Project Title and Distance from Proposal DE	Project Description	Relevant Project Impacts	Cumulative Assessment	Ranking
			habitat characteristics and ecological values diverge, reducing the relevance of much of the DBNGP alignment to the cumulative impact assessment for Black-Cockatoos. Accordingly, only a limited portion of the DBNGP clearing occurs in habitat comparable to that affected by the Proposal. The majority of clearing associated with the DBNGP occurs outside areas supporting similar Black-Cockatoo foraging, roosting or potential breeding habitat relevant to the Proposal. Given the limited spatial overlap, the linear and localised nature of impacts, and the existing baseline condition of the landscape, the DBNGP is anticipated to contribute only a minor incremental effect to cumulative impacts on Black-Cockatoos. On this basis, the interaction between the Proposal and the DBNGP is not expected to result in significant cumulative impacts on Black-Cockatoo populations at a local or regional scale.	
Arrowsmith North Silica Sand Project (VRX Silica Ltd) (Preston Consulting 2023)	Proposal to develop a silica sand mine in the Geraldton Sandplain bioregion of Western Australia, approximately 270km north of Perth	Up to 14.5 ha of medium to high value foraging habitat clearing to remain cleared for the life of the Proposal; Clearing and progressive rehabilitation of up to 339.3 ha of moderate to high value foraging habitat; Increased predation or competition from introduced fauna; and Some indirect impacts to habitat health and behavioural impacts.	The Proposal will result in clearing of up to 353.8 ha of native vegetation, 14.5 ha of which will remain cleared for the life of the Proposal, and up to 339.3 ha of native vegetation will be progressively rehabilitated via Vegetative Direct Transfer. Impacts less than 22% of mapped local moderate – high value Carnaby's Cockatoo foraging habitat.	Moderate Up to ~353.8 ha of moderate to high value foraging habitat will be disturbed, with 14.5ha permanent clearing; rehabilitation reduces longer-term effects, but scale results in a moderate cumulative contribution.
Arrowsmith Hydrogen Project (Infinite Green Energy Limited) (IGE 2022)	The proposed amendments includes reducing the development envelope from 1929.68 ha, addition or road widening on Brand Highway, increase in Solar Farm size, relocation and reduction in size of the hydrogen production facility and associated infrastructure	232.62 ha disturbance footprint Clearing of 14.32 ha of vegetated fauna habitat for a period of up to 12 months Clearing of 105.93 ha of vegetated fauna habitat for the life of the project	The proposed clearing avoids Carnaby's Black Cockatoo foraging habitat. Project is outside CBC breeding range The vegetation to be cleared for turbines is in small parcels surrounded by vegetation and will not create isolated remnants of vegetation. Rehabilitation of up to 14.32 ha of fauna habitat immediately following construction ERD notes risk of bird strike to Carnaby's Black Cockatoo is lowered as the wind turbines are located outside of their habitat and in a direction the species is less likely to occur in.	Low Clearing largely avoids Carnaby's habitat and occurs outside the breeding range, with rehabilitation proposed and low collision risk due to being located away from preferred habitat
Eneabba West Mineral Sands Project (Iluka Resources) (Iluka 2012)	The proposal is to extend AMC Mineral Sands' existing heavy mineral sand mining operation.	350ha clearing of Carnaby's Black Cockatoo foraging habitat.	The Proposal footprint does not contain breeding or roosting habitat for Carnaby's Black-Cockatoo, and higher quality foraging habitat is available in surrounding areas outside the Development Envelope. The Development Envelope includes rehabilitated shrubland and heathland that provides variable foraging value, dependent on rehabilitation maturity, species composition and vegetation condition. The Proposal has been designed to avoid remnant native vegetation and minimise disturbance to rehabilitated areas. Noise, light and dust emissions are not expected to result in significant effects, as rehabilitated foraging habitats adjacent to the Development Envelope have historically been exposed to similar mining and rehabilitation activities.	Moderate Disturbance is largely confined to rehabilitated areas with variable foraging value; no breeding or roosting habitat is affected and higher-quality habitat is widely available nearby. Progressive rehabilitation, limited disturbance areas during life of mine, relatively short life of mine (6yr).



Project Title and Distance from Proposal DE	Project Description	Relevant Project Impacts	Cumulative Assessment	Ranking
Dongara Titanium Minerals Project, Shire of Irwin (Tronox Management) (Strategen 2012)	The proposal is to develop and operate a mineral sands mine approx 25km south-east of Dongara in the Midwest Region of WA. The proposal is to mine and concentrate titanium bearing and other valuable mineral sands. s46: Changes to Condition 3 of Ministerial Statement 953 in order to extend the Time Limit for Authorisation for substantial commencement of the proposal	3239 ha disturbance footprint loss of up to 1200 ha of potential foraging habitat for Carnaby's Black-Cockatoo. Potential indirect impacts include the introduction and spread of invasive weed species and the plant pathogen <i>Phytophthora cinnamomi</i> (dieback).	Carnaby's Black-Cockatoos were recorded within the Project area; however, the project is not considered to support suitable breeding habitat. Despite the presence of some potential nesting trees in the broader vicinity, the species was not observed during breeding periods, indicating that the area is not utilised for breeding or nesting purposes. Primary impact relates to the loss of foraging habitat, with the majority of native vegetation within the Proposal Area considered to provide foraging resources. Short to medium-term impacts include clearing of up to 1,200 ha of native vegetation with potential foraging value. Over the longer term, impacts are expected to be progressively reduced through rehabilitation, with targets for re-establishment of forage species intended to restore foraging function. Indirect impact risks are managed through established biosecurity and rehabilitation measures.	Moderate Up to ~1,200 ha of potential foraging habitat has been cleared historically and the project remains ongoing; while breeding habitat is not affected and rehabilitation occurs, the scale results in a moderate cumulative contribution
Freshwater Point 1 Drilling Project (Origin Energy Resources) (EPA 2007)	The clearing of an area of native vegetation not exceeding 6.5 hectares; the construction of a lease pad, access track and camp site; extraction of material from a Reserve Borrow Pit drilling of petroleum exploration well Freshwater Point 1	The clearing of an area of native vegetation not exceeding 6.5 hectares within 21.66 disturbance footprint	The project involves a relatively small and localised disturbance footprint, with limited or no clearing of native vegetation relevant to Carnaby's Black-Cockatoo foraging, breeding or roosting habitat. Impacts are largely temporary or confined to previously disturbed areas and are not expected to interact spatially or functionally with the Proposal.	Low Small clearing footprint (≤6.5 ha) with localised disturbance only; no breeding or roosting habitat affected
Cervantes-01 Conventional Well Drilling Proposal (RCMA Australia Pty Ltd) (RCMA Australia 2020)	RCMA is proposing to drill one conventional oil exploration well to determine if there is oil in the prospect	5.3ha Clearing of less than 2.7 ha of vegetated fauna habitat fringing an existing access track for a period of up to 3 months Clearing of 2.6 ha of vegetated fauna habitat in a previously uncleared vegetated swale for a period of up to 6 months	The Carnaby's Black-Cockatoo would be present as a regular migrant but only in small numbers, as the vegetation is of low foraging value for the species and there is no roosting or breeding habitat. The potential loss of foraging habitat for species such as the Carnaby's Black-Cockatoo is expected to be negligible due to the small proposed impact area, the low-quality foraging value of the vegetation and presence of similar habitat nearby.	Low Very limited clearing and disturbance within a largely modified landscape; negligible contribution to cumulative impacts
Cliff Head Oil Field Development (ROC Oil) (ROC 2004)	The construction and operation of offshore and onshore oil and water pipelines and an onshore oil separation plant and the transport of oil to Geraldton and / or Kwinana by road or rail.	158.96 disturbance footprint	Limited or no clearing of native vegetation relevant to Carnaby's Black-Cockatoo foraging, breeding or roosting habitat. Impacts are largely temporary or confined to previously disturbed areas and are not expected to interact spatially or functionally with the Proposal.	Low Predominantly offshore and previously disturbed onshore components; no meaningful interaction with Carnaby's Black-Cockatoo habitat
Warro Gas Field 3D Onshore Seismic Survey (Latent Petroleum) (EPA 2010)	To conduct a 3D seismic survey that would involve the rolling of vegetation for vehicle access to the seismic lines.	125 ha of vegetation impacted Trees with potential breeding hollows may be removed and feeding habitat will be disturbed.	Instead of total vegetation clearing, vegetation will be rolled temporary impact As vegetation is to be rolled and not cleared, regeneration is likely, with minimal long-term disturbance.	Low Vegetation rolling is temporary, and no permanent habitat loss or fragmentation is expected; disturbance effects are short-term.
EP 413 3D Seismic Acquisition Survey (Norwest Energy) (Strategen 2013)	To undertake a seismic survey in the locality of Arrowsmith, located approximately 250 km north of Perth along the Brand Highway between Eneabba and Dongara in the mid west region of Western Australia	clearing of native vegetation (up to 250ha) resulting in loss of individual specimens of conservation-significant fauna associated with vehicle strike clearing of native vegetation resulting in reduction in suitable habitat for conservation-significant fauna species	The seismic survey is planned to take place out of breeding season, and all trees with potential breeding hollows will be avoided. If the survey is conducted in breeding season, all trees with potential breeding hollows will be inspected and no further disturbance will take place within 20 m of the tree if the hollow is being used by Carnaby's Cockatoo for a breeding event. Feeding habitat disturbance will be kept to a minimum. As vegetation is to be rolled and not	Low Temporary, dispersed disturbance without permanent clearing of key habitat; effects are localised and reversible



Project Title and Distance from Proposal DE	Project Description	Relevant Project Impacts	Cumulative Assessment	Ranking
			cleared, regeneration is likely, with minimal long-term disturbance.	
Drilling Program in EP407 - Warro Gas Field, Shire of Dandaragan (Latent Petroleum) (Latent Petroleum 2009)		Trees with potential breeding hollows may be removed and feeding habitat will be disturbed.	The project involves a relatively small and localised disturbance footprint, with limited or no clearing of native vegetation relevant to Carnaby's Black-Cockatoo foraging, breeding or roosting habitat. Impacts are largely temporary or confined to previously disturbed areas and are not expected to interact spatially or functionally with the Proposal.	Low Temporary, dispersed disturbance without permanent clearing of key habitat; effects are localised and reversible.
Waitsia Gas Project Stage 2 (AWE Perth Pty Ltd) (AWE 2019)	Expand and amend development envelope	Clearing of 3 ha of native vegetation in good condition that is suitable habitat to support Carnaby Black Cockatoo foraging	Flowline alignments were designed to avoid native vegetation, with approximately 91% of the development envelope located within existing agricultural or previously cleared land. Only 1.5% comprises good-quality Carnaby's Black-Cockatoo foraging habitat, with approximately half of this proposed to be cleared, resulting in a maximum clearing extent of about 17 ha. No suitable breeding or roosting trees were identified within clearing areas, and four potential breeding trees will be retained. The proposed clearing represents around 1% of the unburnt Banksia vegetation within the adjacent Yandanogo Nature Reserve, and impacts to Carnaby's Black-Cockatoo habitat are therefore considered small-scale and not regionally significant.	Low Clearing of Carnaby's foraging habitat is limited (~17 ha), no breeding or roosting trees are impacted, and impacts represent ~1% of nearby high-quality habitat
Xanadu-1 Conventional Onshore Oil Well (Strategen 2017)	Proposal to construct a conventional oil well south of Dongara	clearing of 4.5 hectares of native vegetation	The projects involve a relatively small and localised disturbance footprint, with limited or no clearing of native vegetation relevant to Carnaby's Black-Cockatoo foraging, breeding or roosting habitat. Impacts are largely temporary or confined to previously disturbed areas and are not expected to interact spatially or functionally with the Proposal.	Low/ Negligible Very small clearing footprint (~4.5 ha) with no breeding or roosting habitat affected
Gynatrix-1 Conventional Exploration Drilling Program (AWE Perth Pty Ltd) (AWE 2022)	The Proposal is to undertake a conventional exploration drilling program located east-south-east of Dongara	1.9 ha of clearing ha		Low/ Negligible Minor clearing (≤2 ha) and short-term disturbance only; negligible cumulative effect
Drover 01 Exploration Well (AWE 2013)	Exploratory drilling ~220 km NNW of Perth within Exploration Licence EP455.	Will involve clearing up to 12 ha of agricultural land.		Low/ Negligible Clearing largely within agricultural land; no material loss of Carnaby's habitat.
Project Haber (Project Haber Pty Ltd) (JBS&G 2022)	The Proposal is the construction and operation of a urea production facility on the Mid West Low Carbon Manufacturing Precinct, approximately 280 km north of Perth CBD and 45 km south-east of Dongara	Loss of less than 1 ha of potential non-breeding foraging habitat; Potential indirect impacts (noise, dust etc.).	Less than 1 ha of potential foraging habitat will be cleared; Vegetation within the vicinity has been mapped as having 'Low to moderate' foraging value and does not provide a primary forage resource; and The Development Envelope is adjacent to large areas of similar native vegetation that will not be fragmented because of the Proposal.	Low Clearing of <1 ha of low-moderate quality foraging habitat; no fragmentation or breeding habitat impacts
Lockyer Conventional Gas Project (Energy Resources Limited) (MRL 2024)	The Lockyer Conventional Gas Project is located in the Mid-West region of Western Australia, approximately 312 km north of Perth, 25 km east of Dongara, and 15 km west of Mingenew. It involves the construction and operation of up to six natural gas production wells.	179.74 ha disturbance footprint A total of 5.0 ha of low quality foraging habitat and 7.0 ha of negligible to low quality foraging habitat for Carnaby's Cockatoo was recorded within the Development Envelope	The Development Envelope occurs outside the known breeding range of the species and the lack of suitable foraging habitat to support breeding, the large trees with DBH over 500 mm within the Development Envelope are unlikely to provide any suitable breeding habitat for Carnaby's Cockatoo No evidence of roosting within the Development Envelope has been recorded (Phoenix 2023b, 2024; BCE 2024). However, given that suitable water sources are likely to be available nearby, all of the potential breeding trees are likely to represent suitable roosting habitat	Low Only low-quality foraging habitat affected, outside breeding range, no roosting recorded, and impacts are small relative to available habitat.



3.4.3 Regional Clearing Assessment

Table 2 provides a comparative overview of vegetation clearing associated with projects and activities within the assessment area, allowing the scale of clearing for the Twin Hills Wind Farm Proposal to be considered in context. The table shows that the Twin Hills Proposal contributes a very small proportion of the total recorded clearing (0.47%) when compared with several large-scale mining, infrastructure and resource development projects that account for the majority of vegetation loss. This comparison demonstrates that, relative to regional development pressures, the extent of clearing associated with the proposal is minor and represents a small incremental contribution to cumulative clearing within the assessment area.

Table 2: Regional Clearing Assessment

Proponent/Proposal	Extent of Clearing (ha)	Percent of total Clearing for assessed Proposals and Activities(%)
Twin Hills Wind Farm	17.13	0.47
Tathra Wind Farm Development	8.50	0.23
Warradarge Wind Farm	0.70	0.02
South Erregulla Conventional Gas Field Development Program (Strike Energy)	-	0.00
West Erregulla Field Development Program (Strike Energy)	38.46	1.05
West Erregulla Processing Plant and Pipeline (AGI Operations Pty Limited)	90.00	2.45
Eneabba Rare Earth Refinery (NVCP 6915/3)	5.40	0.15
Dampier to Bunbury Natural Gas Pipeline (DBNGP) Stage 5 Expansion	220.00*	5.99
Arrowsmith North Silica Sand Project (VRX Silica Ltd)	340	9.25
Arrowsmith Hydrogen Project (Infinite Green Energy Limited)	232.62	6.33
Eneabba West Mineral Sands Project (Iluka Resources)	350	9.52
Dongara Titanium Minerals Project (Tronox Management)	1200	32.66
Freshwater Point 1 Drilling Project (Origin Energy Resources)	6.50	0.18
Cervantes-01 Conventional Well Drilling Proposal (RCMA Australia Pty Ltd)	5.30	0.14
Cliff Head Oil Field Development (ROC Oil)	158.90	4.32
Warro Gas Field 3D Onshore Seismic Survey (Latent Petroleum)	125	3.40



Proponent/Proposal	Extent of Clearing (ha)	Percent of total Clearing for assessed Proposals and Activities(%)
EP 413 3D Seismic Acquisition Survey (Norwest Energy)	250	6.80
Drilling Program in EP407 - Warro Gas Field, Shire of Dandaragan (Latent Petroleum)	Number of trees only provided	0.00
Waitsia Gas Project Stage 2 (AWE Perth Pty Ltd)	17	0.46
Xanadu-1 Conventional Onshore Oil Well	4.50	0.12
Gynatrix-1 Conventional Exploration Drilling Program (AWE Perth Pty Ltd)	1.90	0.05
Drover 01 Exploration Well	12	0.33
Project Haber (Project Haber Pty Ltd)	1.0	0.03
Lockyer Conventional Gas Project (Energy Resources Limited)	12	0.33
Iluka Resources Ltd (2362/3)	82.80	2.25
Iluka Resources Limited (389/2)	30.0	0.82
Iluka Resources Limited	6.44	0.18
Jeanian Pastoral Co Pty Ltd (467/1)	151.75	4.13
Jeanian Pastoral Co Pty Ltd (6067/1)	211.68	5.76
Mr Stephen John Davies (5436/2)	0.68	0.02
Karara Mining Limited (3961/5)	20	0.54
Lattice Energy Limited (8171/1)	74.50	2.03
Total	3674.76 ha	100.00

Note: Where specific details of impacts to Black Cockatoo habitat are not available the maximum clearing amounts for the project have been used in the assessment.

**An estimate of the extent of project impact within the assessment area*



4 Conclusion

Based on available survey data, desktop information and consideration of cumulative pressures, the Twin Hills Wind Farm Proposal is not expected to result in a significant cumulative impact on CBC at a population or regional scale. The Proposal is located within a landscape already subject to historical clearing and development, and contributes incrementally to existing pressures rather than introducing new (novel) impacts.

With implementation of avoidance, minimisation, monitoring and offset measures consistent with contemporary EPBC and EPA guidance, cumulative impacts to CBC can be managed to an acceptable level. While CBC is listed as Endangered, the cumulative impact significance at the Twin Hills proposal is considered moderate to low, based on:

- The absence of known breeding colonies within the footprint.
- The availability of similar habitat across the wider region.
- Evidence that CBC use the area opportunistically and intermittently.
- Previous nearby developments have not resulted in documented population-level effects.

The Twin Hills proposal represents a small additional contribution to regional impacts when viewed against existing and approved developments. Consistent with the CIA ranking framework, no High cumulative impacts were identified, with the Proposal contributing a **Low** incremental impact.



5 References

- AWE, AWE Perth Pty Ltd. (2013). Drover -01 Exploration Well Supplement to EPA Referral Document.
- AWE, AWE Perth Pty Ltd. (2022). Gynatrix-1 Conventional Exploration Drilling Program – Environmental Referral Supporting Information Document.
- AWE, AWE Perth Pty Ltd (2019). Waitsia Gas Project Stage 2 – Environmental Referral Supporting Report.
- DAWE, Department of Agriculture, Water and the Environment. (2021). Onshore Wind Farms - interim guidance on bird and bat management. Canberra.
- DAWE, Department of Agriculture, Water and the Environment. (2022). Referral guideline for 3 WA threatened black cockatoo species: Carnaby's Cockatoo (*Zanda latirostris*), Baudin's Cockatoo (*Zanda baudinii*) and the Forest Red-tailed Black-cockatoo (*Calyptorhynchus banksii naso*). Canberra, ACT.
- DBCA, Department of Biodiversity, Conservation and Attractions. (2016). Biodiversity Conservation Act 2016. Perth, Western Australia.
- DEWHA, Department of the Environment, Water, Heritage and the Arts. (1999). Environmental Protection and Biodiversity Conservation Act 1999. Australian Government. Available online at www.environment.gov.au/epbc/about/index.html.
- DPaW, Department of Parks and Wildlife. (2013). Carnaby's Cockatoo (*Calyptorhynchus latirostris*) Recovery Plan. Report prepared for the Department of Parks and Wildlife.
- DSEWPac, Department of Sustainability, Environment, Water, Population and Communities. (2012). EPBC Act Referral Guidelines for Three Threatened Black Cockatoo Species: Carnaby's Cockatoo (endangered) *Calyptorhynchus latirostris*, Baudin's Cockatoo (vulnerable) *Calyptorhynchus baudinii*, Forest Red-tailed Black Cockatoo (vulnerable) *Calyptorhynchus banksii naso*. Department of Sustainability, Environment, Water, Population and Communities, Canberra, Australian Capital Territory.
- Eco Logical Australia. (2022). West Erregulla Processing Plant and Pipeline Proposal Environmental Review Document.
- EPA, Environmental Protection Agency. (2010). Warro Gas Field 3D Onshore Seismic Survey Latent Petroleum Limited Report1369.
- EPA, Environmental Protection Authority. (2016). Environmental Factor Guideline - Terrestrial Fauna. Government of Western Australia, Perth, Western Australia.
- EPA, Environmental Protection Authority. (2020). Technical Guidance: Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment. Western Australian Government, Perth, Western Australia.
- EPA, Environmental Protection Authority. (2007). Bulletin 1277 Freshwater Point 1 Drilling Proposal within Beekeepers Nature Reserve Origin Energy Resources Limited.
- EPA, E. P. A. (2026). Guideline for Cumulative Impact Assessment. Western Australia.
- GoWA, Government of Western Australia. (1986). Environmental Protection Act 1986.
- IGE, Infinite Green Energy Pty Ltd (2022). Arrowsmith Hydrogen Project Section 38 Referral Supporting Document.
- Iluka, Iluka Resources Limited (2012). Eneabba Mineral Sands Mine IPL North Proposal Part IV – Referral Document Supporting Document.
- Iluka Midwest Ltd. (2021). Eneabba Rare Earth Refinery Referral Supporting Document.
- JBS&G. (2022). Project Haber Section 38 Referral Supporting Document.
- JBS&G. (2023). West Erregulla Field Development Program: *Environmental Protection Act 1986* Assessment on Referral Information Response to Submissions.
- Latent Petroleum. (2009). Warro Gas Field 3D Seismic Survey – Public Environmental Review. Prepared for Latent Petroleum Limited by Keith Lindbeck & Associates.
- MRL, Mineral Resources Limited. (2024). Lockyer Conventional Gas Project Referral Supporting Document.
- Preston Consulting. (2023). Arrowsmith North Silica Sand Project Environmental Review Document VRX Silica Limited.
- RCMA Australia. (2020). Cervantes 1 Conventional Oil Exploration Well Section 38 Referral Supporting Document.
- ROC, ROC Oil WA Pty Ltd. (2004). Cliff Head Development Cliff Head Development Public Environmental Review and Draft Public Environmental Report.
- Stantec. (2025a). Twin Hills Wind Farm Detailed and Targeted Flora Survey Report.
- Stantec. (2025b). Twin Hills Wind Farm: Basic and Targeted Fauna Survey Report. Unpublished report prepared for Twin Hills Wind Farm Pty Ltd.



Stantec. (2025c). Twin Hills Wind Farm Bird and Bat Utilisation Survey Report. Unpublished report for Twin Hills Wind Farm Pty Ltd.

Stantec. (2026). Twin Hills Wind Farm Bird and Bat Management Plan DRAFT. Unpublished report prepared for Twin Hills Wind Farm Pty Ltd.

Strategen. (2006). Dampier-Bunbury Natural Gas Pipeline Stage 5 Expansion Environmental Impact Assessment.

Strategen. (2012). Dongara Titanium Minerals Project Public Environmental Review Tiwest Pty Ltd.

Strategen. (2013). EP 413 3D Seismic Acquisition Survey Section 38 EPA Referral Prepared for Norwest Energy NL.

Strategen. (2017). Xanadu-1 Conventional Well Construction Section 38 referral supporting document.

Strike, Strike South Pty Ltd. (2022). Referral Document South Erregulla Conventional Gas Development EPA Part IV Section 38.

SynergyRED, Synergy Renewable Energy Developments Pty Ltd. (2025). Tathra Wind Farm Development Section 38 Referral Supporting Document. Unpublished report prepared by SLR Consulting Australia.

THW, Twin Hills Wind Farm Pty Ltd (Wind Prospect). (2026). Twin Hills Wind Farm Environmental Review Document - Draft.

Verve Energy. (2012). Warradarge Wind Farm Development Application Report.







Stantec is a global leader in sustainable engineering, architecture, and environmental consulting. The diverse perspectives of our partners and interested parties drive us to think beyond what's previously been done on critical issues like climate change, digital transformation, and future-proofing our cities and infrastructure. We innovate at the intersection of community, creativity, and client relationships to advance communities everywhere, so that together we can redefine what's possible.

Stantec Australia Pty Ltd
Ground Floor, 226 Adelaide Terrace
Perth WA 6000
AUSTRALIA
ABN 17 007 820 322
stantec.com

