GOVERNMENT OF WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986 (WA) (CKI)

Purpose Permit number:	CPS 11049/1
Permit Holder:	Fulton Hogan Construction Pty Ltd
Duration of Permit:	From 10 November 2025 to 10 November 2037

The permit holder is authorised to clear *native vegetation* subject to the following conditions of this permit.

PART I – CLEARING AUTHORISED

1. Clearing authorised (purpose)

The permit holder is authorised to clear *native vegetation* for the purpose of constructing access tracks, a seawall, and asphalt, bitumen and concrete batching plants and associated infrastructure, to facilitate the Cocos (Keeling) Islands Airfield Upgrade Project.

2. Land on which clearing is to be done

Lot 100 on Plan 18500, West Island Cocos (Keeling) Islands

Lot 342 on Deposited Plan 42274 (Crown Reserve 47727), West Island Cocos (Keeling) Islands

Lot 327 on Deposited Plan 219651, West Island Cocos (Keeling) Islands

3. Clearing authorised

The permit holder must not clear more than 5.2 hectares of *native vegetation* within the combined areas cross-hatched yellow in Figure 1, Figure 2 and Figure 3 of Schedule 1.

4. Period during which clearing is authorised

The permit holder must not clear any *native vegetation* after 10 November 2030.

PART II – MANAGEMENT CONDITIONS

5. Demarcation of the clearing area

Prior to undertaking any *clearing* authorised under this permit, the permit holder must:

(a) demarcate the *clearing* area to avoid inadvertent removal of adjacent *native vegetation*; and

(b) within one (1) month of installing the above demarcation, notify the *CEO* in writing that the demarcation has been completed.

6. Erosion management

The permit holder must:

(a) ensure that construction activities occur no later than six (6) months after undertaking the *clearing* authorised under this permit; and

(b) undertake temporary erosion control measures immediately after *clearing* the areas cross-hatched red in Figure 4 and Figure 5 of Schedule 1, to ensure there is no increased short-term erosion from the *clearing* of these areas.

7. Avoid, minimise, and reduce the impacts and extent of clearing

In determining the *native vegetation* authorised to be cleared under this permit, the permit holder must apply the following principles, set out in descending order of preference:

(a) avoid the *clearing* of *native vegetation*;

(b) minimise the amount of *native vegetation* to be cleared; and

(c) reduce the impact of *clearing* on any environmental value.

8. Weed management

When undertaking any *clearing* authorised under this permit, the permit holder must take the following measures to minimise the risk of introduction and spread of *weeds*:

(a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;

(b) ensure that no known *weed*-affected soil, *mulch*, *fill*, or other material is brought into the area to be cleared; and

(c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

9. Fauna management – direction and timing of clearing

The permit holder must:

(a) conduct *clearing* activities authorised under this permit in a slow, progressive manner towards adjacent *native vegetation*;

(b) allow a reasonable time for native vertebrate fauna present within the area being cleared under this permit to move into adjacent *native vegetation* ahead of the *clearing* activity; and

(c) restrict *clearing* activities to *daytime hours*.

10. Fauna management – nesting birds

The permit holder must:

(a) engage a *fauna specialist* to inspect the *native vegetation* authorised to clear under this permit immediately prior to and for the duration of *clearing*, to identify any evidence of nesting native birds.

(b) where nesting native birds are identified under *condition* 10(a), maintain a minimum 50-metre buffer between any *clearing* activity authorised under this permit and the nesting birds until the nest is no longer in use, as determined by a *fauna specialist*, unless otherwise approved by the *CEO*.

(c) where evidence of *conservation listed* nesting birds is identified under *condition* 10(a), include the following in a report submitted to the *CEO*:

(i) the species and number of each nesting bird identified;

(ii) the date each nesting bird was identified;

(iii) the location where each nest was identified, recorded using a GPS unit set to GDA2020, expressing the geographical coordinates in Eastings and Northings or decimal degrees; and

(iv) measures taken to provide a 50-metre buffer between any nest identified and *clearing* activities, unless otherwise approved by the *CEO* under *condition* 10(b).

11. Revegetation of temporary cleared areas

The permit holder must:

(a) *revegetate* all areas of *native vegetation* cleared within the areas cross-hatched yellow in Figure 1 of Schedule 1, that are not reasonably required for ongoing operations, unless otherwise approved by the *CEO*;

(b) undertake the *revegetation* required under *condition* 11(a) within 12 months of the area no longer being required for ongoing operations, and prior to 10 November 2031, unless otherwise approved by the *CEO*;

(c) ensure the *revegetation* required under *condition* 11(a) uses *local provenance* species, and at a minimum achieves the *pre-clearing vegetation condition* by 10 November 2036, as determined by an *environmental specialist*, unless otherwise approved by the *CEO*; and

(d) should the *revegetation* required under *condition* 11(a) not achieve the *pre-clearing vegetation condition* by 10 November 2036, the permit holder must notify the *CEO* and must undertake *remedial actions* to achieve the *pre-clearing vegetation condition*, as determined by an *environmental specialist.*

PART III - RECORD KEEPING AND REPORTING

12. Records that must be kept

The permit holder must maintain records relating to the listed relevant matters in accordance with the specifications detailed in Table 1.

Table 1: Records that must be kept

No.	Relevant matter	Specifications
1.	In relation to the authorised *clearing* activities generally	(a) the species composition, structure, and density of the cleared area; (b) the location where the *clearing* occurred, recorded using a GPS unit set to GDA2020, expressing the geographical coordinates in Eastings and Northings; (c) the date that the area was cleared; (d) the size of the area cleared (in hectares); (e) actions taken to demarcate the clearing area in accordance with *condition* 5; (f) actions taken to minimise erosion in accordance with *condition* 6, whether any increased erosion was identified, and any additional measures undertaken to prevent further erosion; (g) actions taken to avoid, minimise, and reduce the

No.	Relevant matter	Specifications
		impacts and extent of *clearing* in accordance with *condition* 7; (h) actions taken to minimise the risk of the introduction and spread of *weeds* in accordance with *condition* 8; and (i) actions taken to avoid impacts to fauna in accordance with *condition* 9.
2.	In relation to fauna management pursuant to *condition* 10	(a) actions taken to avoid impacts to fauna in accordance with *condition* 10; and (b) a copy of the fauna report in accordance with *condition* 10(c).
3.	In relation to the *revegetation* of areas pursuant to *condition* 11	(a) the size of the area *revegetated*; (b) the date(s) on which *revegetation* was undertaken; (c) the boundaries of the area *revegetated* recorded using a GPS unit set to GDA2020; (d) the description of the *revegetation* actions undertaken; (e) the species composition, structure, and density of the revegetated area as determined by an *environmental specialist*; (f) the condition of the *revegetated* area; and (g) after 48 months of commencing *revegetation*, and prior to 10 November 2036, the written determination from an *environmental specialist* on whether the *revegetation* has achieved the *pre-clearing vegetation condition.*

13. Reporting

(a) The permit holder must provide to the *CEO* on or before 30 June of each year, a written report containing:

(i) the records required under *condition* 12; and

(ii) records of activities done by the permit holder under this permit between 1 January and 31 December of the preceding calendar year.

(b) If no *clearing* authorised under this permit has been undertaken, a written report confirming that no *clearing* under this permit has been carried out, must be provided to the *CEO* on or before 31 December of each calendar year.

(c) The permit holder must provide to the *CEO*, no later than 90 calendar days prior to the expiry date of this permit, a written report of records required under *condition* 12, where these records have not already been provided under *condition* 13(a).

DEFINITIONS.

In this permit, the terms in Table 2 below have their meanings defined.

Table 2: Definitions

Term	Definition
CEO	Chief Executive Officer of the department responsible for the administration of the *clearing* provisions under the *Environmental Protection Act 1986* (WA) (CKI).
clearing	has the meaning given under section 3(1) of the EP Act.
condition	a condition to which this clearing permit is subject under section 51H of the EP Act.
conservation listed	means those fauna species listed under the *Environment Protection and Biodiversity Conservation Act 1999*.
daytime hours	means the duration starting 30 minutes before sunrise and ending 30 minutes after sunset.
department	means the department established under section 35 of the *Public Sector Management Act 1994* (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 2.
environmental specialist	means a person who is engaged by the permit holder for the purpose of providing environmental advice, who holds a tertiary qualification in environmental science or equivalent, and has experience relevant to the type of environmental advice that an environmental specialist is required to provide under this permit.
EP Act	*Environmental Protection Act 1986* (WA) (CKI).
fauna specialist	means a person who holds a tertiary qualification specialising in environmental science or equivalent, and has experience in fauna identification and surveys of fauna native to the area being inspected, or who is approved by the *CEO* as a suitable fauna specialist for the area.
fill	means material used to increase the ground level, or to fill a depression.
local provenance	means *native vegetation* known to occur on Cocos (Keeling) Islands
mulch	means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation.
native vegetation	has the meaning given under section 3(1) and section 51A of the EP Act.
pre-clearing vegetation condition	means the condition of the vegetation within the area cross-hatched yellow shown on Figure 1 of Schedule 1, as described within the document titled 'Technical Memorandum. Flora and Fauna Survey – Enabling Works Areas' (GHD, 24 September 2021).
remedial actions	means any activity that is required to ensure successful re-establishment of vegetation to its pre-clearing composition, structure and density, and may include a combination of soil treatments and *revegetation*.
revegetation / revegetate /	means the re-establishment of a cover of *local provenance native vegetation* in an area using methods such as natural regeneration, direct

Term	Definition
revegetated	seeding and/or planting, so that the species composition, structure and density is similar to pre-clearing vegetation types in t.
weeds	means any plant – (a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*; or (b) published in a Department of Biodiversity, Conservation and Attractions species-led ecological impact and invasiveness ranking summary, regardless of ranking; or (c) not indigenous to the area concerned.

END OF CONDITIONS

Meenu Vitarana
MANAGER
NATIVE VEGETATION REGULATION

Officer delegated under Section 20
of the Environmental Protection Act 1986 (WA) (CKI)

16 October 2025

Schedule 1

The boundaries of the areas authorised to clear under this permit are shown as the combined areas cross-hatched yellow in Figure 1, Figure 2, and Figure 3 and those subject to conditions in Figure 3 and 4 below.

Figure 1: Map of the boundary of the area within which *clearing* may occur cross-hatched yellow.

Figure 2: Map of the boundary of the area within which *clearing* may occur cross-hatched yellow.

Figure 3: Map of the boundary of the area within which *clearing* may occur cross-hatched yellow.

Figure 4: Map of the boundary of the area within which *condition* 6(b) applies.

Figure 5: Map of the boundary of the area within which *condition* 6(b) applies.

Government of Western Australia
Department of Water and Environmental Regulation

Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 11049/1
Permit type:	Purpose permit
Applicant name:	Fulton Hogan Construction Pty Ltd (Fulton Hogan)
Application received:	28 April 2025
Application area:	Up to 5.2 hectares of native vegetation within an 11.23-hectare footprint
Purpose of clearing:	To facilitate the Cocos Keeling Islands (CKI) Airfield Upgrade Project
Method of clearing:	Mechanical
Property:	Lot 100 on Plan 18500, Lot 327 on Deposited Plan 219651, Lot 342 on Deposited Plan 42274 (Crown Reserve 47727).
Location:	Shire of Cocos (Keeling) Islands
Locality:	West Island, Cocos (Keeling) Islands

1.2. Description of application

Fulton Hogan Construction Pty Ltd (Fulton Hogan), on behalf of the Australian Department of Defence (DoD), has applied for a clearing permit under Part V of the *Environmental Protection Act* (WA)(CKI)(EP Act). The application is to clear up to 5.2 hectares of native vegetation within a 11.23 hectare footprint on the West Island of the Cocos (Keeling) Islands (CKI), to facilitate the Cocos Keeling Islands (CKI) Airfield Upgrade Project.

The CKI airfield services both civilian and DoD operations (GHD, 2023). The applicant has been contracted by DoD to deliver the project.

The applicant has advised that upgrades to the CKI airfield are required to enable the Royal Australian Air Force to support aircraft capability on the runway, reduce safety risks associated with operating specific aircrafts on the airfield, and address Civil Aviation Safety Authority (CASA) requirements (GHD, 2023).

The application areas comprise three separate areas on West Island and form the second stage of clearing required for the project. The first stage of clearing, for an accommodation camp and materials offloading facility, was approved under clearing permit CPS 10428/2 on 18 February 2025. The stage 2 proposed clearing areas (see figures under section 1.5) include (GHD, 2023):

- Quarantine station (Q-Station) (Lot 327) – comprises the previously partially cleared former livestock quarantine station, with largely scattered native vegetation. This area forms the base of operations and includes a proposed asphalt, bitumen and concrete batching plant and associated infrastructure. Up to 4.68 hectares of native vegetation clearing is proposed in a 10.44-hectare footprint area.
- Airfield access (Lot 100) – includes a largely vegetated area and existing airfield access track, proposed as an access road to the existing CKI airfield to accommodate site works. Up to 0.16 hectares of native vegetation clearing is proposed in a 0.21 hectare footprint area.
- Seawall (Lot 342) – includes a largely vegetated area proposed for a seawall and associated infrastructure, to ensure coastal protection at the southern end of the runway extension. Up to 0.36 hectares of native vegetation clearing is proposed in a 0.58 hectare footprint.

The Delegated Officer notes that the 5.2-hectare extent of native vegetation clearing applied for is likely to overestimate the native vegetation that occurs within the application areas. This is noting that all *Cocos nucifera* (coconut palms) has been captured as 'native vegetation' within the biological surveys (GHD, 2021; GHD, 2021a; GHD, 2023), however it is only those coconut palms that occur adjacent to the shoreline that are considered native by DWER under the EP Act, as this species can only reach inland areas through human intervention (see Section

3.2.1 for more information). The airfield access and Q-Station application areas both include inland coconut palms that have been considered native by the applicant as a precaution, given these areas often include some native understorey vegetation.

The project is supported by a Memorandum of Understanding (MoU) between the former Department of Infrastructure, Transport, Regional Development, Communications and the Arts (DITRDCA) (now the Department of Infrastructure, Transport, Regional Development, Communications, Sport and the Arts (DITRDCSA) as referred to herein) and the DoD. This MoU provides the DoD with access to Commonwealth land for project related purposes, subject to conditions.

1.3. Decision on application

Decision:	Granted
Decision date:	16 October 2025
Decision area:	5.2 hectares of native vegetation, as depicted in Section 1.5, below.

1.4. Reasons for decision

This clearing permit application was submitted, accepted, assessed and determined in accordance with sections 51E and 51O of the EP Act. The Department of Water and Environmental Regulation (DWER) advertised the application for 21 days and no submissions were received.

In making this decision, the Delegated Officer had regard for:

- the site characteristics (see Appendix A)
- relevant datasets (see Appendix D.1)
- the findings of biological surveys
- the applicant's environmental management plan (EMP) and supporting information, including measures to avoid and minimise impacts
- the clearing principles set out in Schedule 5 of the EP Act (see Appendix B)
- relevant planning instruments, and other matters considered relevant to the assessment (see Section 3)
- the Works Approval issued by DWER under Part V, Division 3 of the EP Act, to operate the Q-Station batching plants
- the purpose and necessity of the clearing, to reduce the safety risks associated with operating specific aircrafts on West Island and to meet CASA requirements.

The assessment identified that the proposed clearing would result in:

- the loss of native vegetation that provides suitable habitat for conservation listed fauna
- potential injury to native fauna and disturbance to nesting native birds through clearing operations should they be using the application areas at the time of clearing
- potential land degradation from wind erosion which may lead to increased turbidity of the marine environment
- the potential spread of weeds into adjacent native vegetation, which could impact on the biodiversity of adjacent vegetation and its fauna habitat values.

The Delegated Officer considered that the above impacts can be managed appropriately through conditions on the clearing permit. In considering the information set out above, the Delegated Officer therefore determined that on balance, it was appropriate to grant a clearing permit subject to environmental management conditions.

The Delegated Officer also had regard for the applicants EMP, which sets several management commitments relating to the construction and end land use (Fulton Hogan, 2024). The EMP is required to be implemented under the MoU between the DoD and DITRDCSA (see Section 3.3).

The Delegated Officer considers that the management conditions below, will ensure that the proposed clearing achieves an acceptable environmental outcome. The Delegated Officer therefore decided to grant a clearing permit subject to conditions to require:

- avoid and minimise measures to reduce the impacts and extent of clearing
- hygiene steps to minimise the risk of the introduction and spread of weeds

- commencement of construction works within three months of undertaking any clearing to reduce the potential for wind erosion and increased turbidity of the adjacent marine environment
- management measures to prevent short term erosion of the seawall application area and coastal portion of the Q-Station application area
- demarcation of the proposed clearing area prior to clearing
- slow, progressive one directional clearing to allow fauna to move into nearby habitat ahead of the clearing activity
- engagement of a fauna specialist to undertake a pre-clearance inspection of the application areas for nesting birds, and avoidance of nesting birds with a 50-metre buffer until they are no longer using the nest
- restrict clearing activities to daylight hours to reduce the risk of injury to fauna
- revegetation of temporary cleared areas within the Q-Station site to the pre-cleared vegetation condition.

1.5. Site map(s)

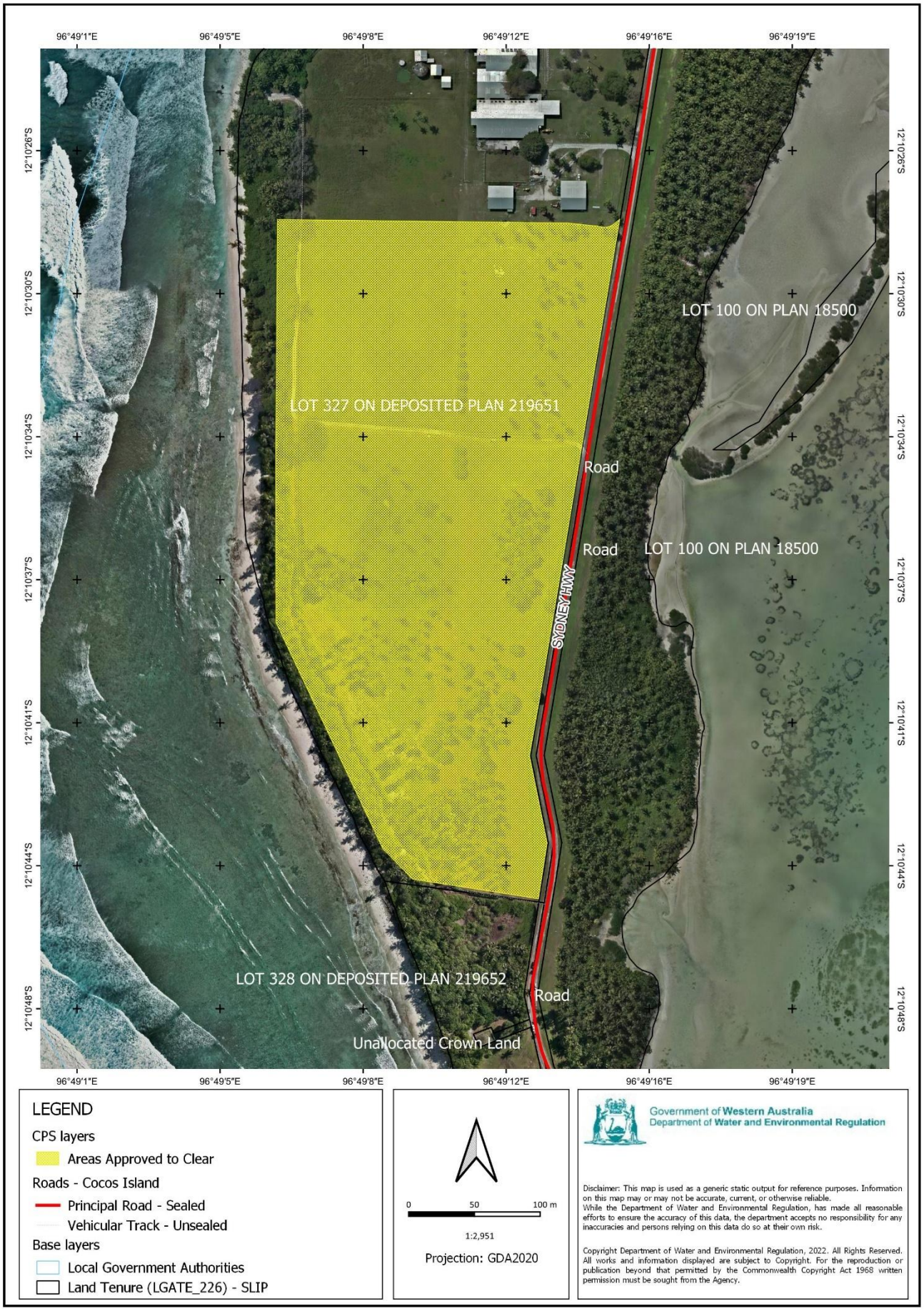

Figure 1. Map of the Q-Station application area cross-hatched yellow.

Figure 2. Map of the Airfield access application area cross-hatched yellow.

Figure 3. Map of the seawall application area cross-hatched yellow.

2 Legislative context

The clearing of native vegetation in Western Australia is regulated under the EP Act and the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004*.

In addition to the matters considered in accordance with section 51O of the EP Act (see Section 1.4), the Delegated Officer has also had regard to the objects and principles under section 4A of the EP Act, particularly:

- the precautionary principle
- the principle of intergenerational equity
- the principle of the conservation of biological diversity and ecological integrity.

Other legislation of relevance to this assessment include:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)

The key guidance documents which informed this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2013)
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016)
- Technical guidance – *Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment* (EPA, 2020).

3 Detailed assessment of application

3.1. Avoidance, minimisation and mitigation measures

The applicant advised that the application areas have been located in previously cleared areas where possible (GHD, 2023), noting that much of the Q-station site (where most clearing is required), has been previously cleared or highly modified.

The applicant has prepared an EMP for the project which sets out the following measures to minimise the extent of native vegetation clearing (Fulton Hogan, 2024):

- conduct selective pruning/removal of trees where possible to minimise vegetation clearing
- removal of mature trees and root zones to be avoided where possible.

The EMP also sets out several commitments to manage the risk of impact to environmental values from the proposed clearing, construction and end land use, which are detailed under Section 3.3.

Noting the necessity of clearing, and that avoidance measures are limited by the existing airfield location and small terrestrial areas available to facilitate the project on West Island, the Delegated Officer was satisfied that the applicant has made a reasonable effort to avoid and minimise potential impacts of the proposed clearing on environmental values.

3.2. Assessment of impacts on environmental values

In assessing the application, the Delegated Officer has had regard for the site characteristics (see Appendix A), biological survey information and the extent to which the impacts of the proposed clearing present a risk to environmental values.

The assessment against the clearing principles (see Appendix B) identified that proposed clearing presents a risk to fauna values and land and water resources. The consideration of these impacts, and the extent to which they can be managed through conditions applied in line with sections 51H and 51I of the EP Act, is set out below.

3.2.1. Environmental value: Fauna – Clearing Principle (b)

CKI Conservation listed fauna

According to available datasets, there are 17 non-aquatic conservation listed fauna species known from the local area, which are all bird species, the majority migratory (see listed in table A.1). These species have been historically recorded on CKI as either residents, visitors, vagrants or migrants. CKI is the only seabird breeding area within a 900 kilometres radius.

The proposed clearing does not include aquatic or marine vegetation, therefore, except for the green turtle (*Chelonia mydas*) (vulnerable) which comes ashore to nest on CKI, impacts to aquatic fauna have not been considered further below. This is also noting that while hawksbill turtles (*Eretmochelys imbricata*) (vulnerable) forage in CKI waters, they do not nest on CKI.

Surveys

The application areas were subject to flora and fauna surveys undertaken by GHD (the Surveys) on 8 to 11 September 2020 and 19 to 22 June 2021 (GHD, 2021; GHD, 2021a; GHD, 2023). The Surveys were undertaken to identify and describe the dominant vegetation types, fauna habitats and their condition. Methods involved traversing the application areas and maintaining a flora and fauna inventory of species identified (GHD, 2021).

The Surveys noted that methodology was taken with reference to the WA Environmental Protection Authority (EPA) Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment (EPA 2016) and Technical Guidance – Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment (EPA 2020) (GHD, 2021).

Fauna habitat types

The following fauna habitat types were recorded within the application areas during the Surveys, as shown in Table 1 below (GHD, 2021; GHD, 2021a):

Table 1. Fauna habitat types recorded in the application areas

Fauna Habitat Type	Description	Application Area	Area (ha)
Mixed trees over grassland	Scattered or isolated stands of *Cocos nucifera* (coconut palms) trees (majority), with some scattered *Guettarda speciosa*, *Morinda citrifolia* and *Scaevola toccata* trees with minimal to no native understorey. Leaf litter and branches may be present at the base of some tree stands.	Q-Station Airfield Access	4.68 0.03
Mixed shrubland and trees	Contains areas of shrubland and trees (e.g. coconut palms). Canopy cover is generally high and this habitat tends to open up beneath the canopy, comprising a tangle of branches and trunks. Abundant leaf litter is present, with fallen branches and occasional small hollows.	Airfield Access	0.13
Grassland (non-native)	Previously cleared areas comprising introduced grasses and herbs. The habitat provides low value to fauna as no structural diversity and limited cover is present (i.e. scarce leaf litter and no understorey vegetation). The habitat may be used by bird species for foraging and by avian and ground dwelling species as corridors.	Q-Station Airfield Access	5.67 0.03
Shrubland	Shrubland (e.g. *Scaevola* sp.) with isolated/scattered trees (e.g. coconut palms and *Guettarda speciosa*).	Seawall	0.36

While coconut palms are native to CKI, they can only reach inland areas through human intervention. Therefore, this species is considered native (under the EP Act) only where it grows close to the shoreline, where seeds can naturally move and germinate. Therefore, the coconut palms that occur in the Airfield Access application area, and those occurring beyond the band of shoreline vegetation in the Q-Station application area, are not considered to be native by DWER.

Fauna presence and habitat suitability

All fauna habitats within the application areas provide foraging habitat for the following Migratory listed bird species (under the EPBC Act and BC Act) (GHD, 2021: GHD, 2021a):

- barn swallow (*Hirundo rustica*)
- yellow wagtail (*Motacilla flava*)
- grey wagtail (*Motacilla cinerea*).

The 'Shrubland', 'Mixed shrubland and trees' and 'Mixed trees over grassland' habitat types may provide suitable nesting habitat for CKI birds. Specifically, the Surveys identified that the 'Mixed shrubland and trees' habitat type may provide suitable nesting habitat for the following Migratory listed fauna (GHD, 2021; GHD, 2021a):

- lesser frigatebird (*Fregata ariel*);
- great frigatebird (*Fregata minor*); and
- oriental cuckoo (*Cuculus saturatus*).

DWER considers that based on the available information on the habitat and ecology of conservation listed birds known from CKI (Birdlife International, 2017; 2018; 2019a; 2019b; 2020a; 2020b; 2021a; 2021b), the application area may also provide suitable nesting habitat for the Migratory listed common (brown) noddy (*Anous stolidus*) and brown booby (*Sula leucogaster*).

The buff-banded Rail (*Hypotaenidia philippensis andrewsi*) (critically endangered) has been identified foraging and sheltering on West Island in recent years (Commonwealth of Australia, 2016). This species has presumably dispersed to West Island from the nearby Horsburgh Island population, which was re-introduced in 2013 from the previously only known CKI population on North Keeling Island. This species is known to nest in *Pisonia grandis* tree debris, grass tussocks or similar ground layer vegetation; the forks of *Pisonia grandis*; and the bases of coconut palms (Commonwealth of Australia, 2016). This species has not been identified nesting on West Island and was not identified during the surveys (GHD, 2021; GHD, 2021a).

The Surveys identified the following non-conservation listed fauna species within or nearby the application areas (GHD, 2021: GHD, 2021a):

- white tern (*Gygis alba*), observed flying overhead during the search of all application areas
- green jungle fowl (*Gallus varius*) (non-native), identified foraging in / nearby all application areas
- land crab (*Cardisoma carnifex*), identified near the Airfield Access application area.

The Surveys did not identify any conservation listed species, or any birds nesting within the application areas (GHD, 2021: GHD, 2021a).

DWER also considered the potential for nesting green turtles (vulnerable; EPBC Act) to occur within the seawall and Q-Station application areas, which are both close to the shoreline, noting these turtles come ashore to nest on CKI. Green turtle nesting has mainly been observed in low to moderate density on North Keeling Island (32 kilometres north of West Island) rather than West Island, however suitable nesting habitat does exist on West Island (Whiting et al., 2014) and nesting is therefore considered a possibility here.

The beach adjacent to the seawall application area is narrow, rocky and not likely to provide suitable green turtle nesting habitat. The Q-Station application area maintains a minimum 10-metre vegetative buffer to the beach at this location and is also unlikely to provide green turtle nesting habitat.

Habitat value and significance of impacts

The value of the foraging and potential nesting habitat in the application areas for the above conservation listed birds ranges from low to moderate. All habitat types within the application areas have been heavily modified and did not show evidence of current nesting or foraging by any of these species (GHD, 2021; GHD, 2021a; GHD, 2023). This also considers the impact of feral cats and black rats on West Island since their introduction, which has limited bird nesting here.

The fauna habitat recorded within the application areas is well represented across West Island and is not of comparatively higher value than the estimated 424.9 hectares of vegetation on West Island. The proposed clearing of 5.2 hectares of vegetation, represents the loss of around 1.22% of the remaining vegetation on West Island, and will not significantly reduce the extent of fauna habitat here, or the broader CKI.

Noting the above, the proposed clearing is not likely to impact on significant habitat for CKI fauna. The proposed clearing may however directly impact on native fauna using the application areas at the time of clearing, through machinery strike.

The proposed clearing may also result in indirect impacts via disturbance to nesting birds through vibration, noise, lighting and weed spread into adjacent habitat, and potentially to turtles through noise or lighting impacts in the

unlikely event of turtles nesting on the Q-Station beach. Appropriate management measures will assist in minimising these risks.

Management measures

The applicant has developed an EMP for the Airfield Upgrade Project which provides a commitment to the following measures to reduce impacts to fauna associated with the clearing, construction and end land uses (Fulton Hogan, 2024):

- ecologist to be present during clearing to identify EPBC Act listed species and relocate fauna as required
- ecologist to be present during clearing to identify signs of nesting birds and turtles, and order works to stop if there is unavoidable risk to wildlife
- developing an erosion and sediment control plan to mitigate erosion and sedimentation for disturbance areas
- minimising slope angles and lengths of cleared surfaces with exposed soils
- using water tankers to spray areas of exposed soils and other dust suppression control measures
- develop a light management plan prior to commencing works, which will include the use of narrow spectrum and long wavelength lighting and a commitment to no lighting directly luminating beaches
- noise regulation criteria will be complied with (45 dBA during the day and 35 dBA at night) and terrestrial noise monitoring will be undertaken pre and during construction against adopted project noise criteria.

The applicant is required to adhere to the EMP under the MoU between the DoD and DITRDCSA.

The Delegated Officer notes that the applicant is also required to obtain a section 13 permit under the EPBC Act to kill, injure or take threatened fauna listed under the EPBC Act.

Conclusion

No conservation significant fauna species were recorded within the application areas.

The proposed clearing is not likely to impact on significant habitat for the fauna of CKI, however it will increase the risk of fauna strike should any fauna be using the application area at the time of clearing. The proposed clearing may also result in indirect impacts via disturbance to fauna through vibration, noise, and weed spread into adjacent habitat.

Appropriate management actions will be conditioned on the clearing permit, as shown below, to assist in minimising this risk.

Conditions

The following management measures will be required as conditions on the clearing permit:

- slow, one directional clearing to allow fauna to move into adjacent vegetation ahead of the clearing activity
- restrict clearing activities to daylight hours to reduce the risk of injury and indirect impacts (noise and lighting) to fauna
- engage a fauna specialist to undertake a pre-clearance inspection of the application areas for nesting birds, with a required avoidance buffer of 50 metres to any nesting birds identified, until the nest is no longer in use
- weed hygiene management measures
- revegetate temporary cleared areas in the Q-Station application area to the pre-clearing vegetation condition.

3.2.2. Environmental value: Land and water sources – Clearing Principles (g) and (i)

Land degradation and marine water quality

The soils of West Island comprise medium to coarse grain coralline sands which are highly permeable and not typically susceptible to water erosion from rainfall, given their high infiltration rates.

Coralline sands are however susceptible to wind erosion if left exposed. Given the strong trade winds and occasional adverse weather conditions experienced on CKI, wind erosion of exposed soils may result in land degradation without appropriate management. This risk is highest for the Q-Station and seawall application areas, which largely border the beaches in these areas. The seawall application area currently exhibits signs of erosion.

In addition to the potential for wind erosion, the proposed clearing for the coastal portions of the Q-Station and the seawall may contribute to wave induced sand erosion during storm events, and localised sedimentation and turbidity of the adjacent marine environment. This is noting the significant erosion processes currently experienced by the ocean (west) side of West Island where these application areas occur.

The seawall is intended to limit erosion and prevent potential ocean flooding of adjacent road and airfield infrastructure, therefore the potential erosion and sedimentation risk for this area resulting from the small area of proposed clearing is expected to be short-term and localised.

The applicant has committed to implementing erosion control measures for cleared areas within its EMP, to minimise the risk of wind erosion. These measures include (Fulton Hogan, 2024):

- developing an erosion and sediment control plan to identify strategies to mitigate erosion and sedimentation for disturbance areas
- minimising slope angles and lengths of cleared surfaces with exposed soils
- using water tankers to spray areas of exposed soils and other dust suppression control measures
- rehabilitation of temporary cleared areas to pre-clearance condition
- high wind stop works protocols.

Groundwater quality

Noting the highly porous sands present on West Island, all rainfall infiltrates rapidly to the shallow groundwater, which is in direct connection with seawater. The infiltrated rainfall forms a thin brackish lens over the saline groundwater. West Island comprises two freshwater lenses; one at the south end of the island, largely under the airport runway and West Island's major infrastructure (West Island Airfield Lens), and another in the northern portion of the island, above the Q-Station. The Q-Station and seawall application areas are not located within either lens. The airfield access application area is located on the West Island Airfield Lens.

Noting the Q-Station and seawall application areas are not located on the two freshwater lenses, with the more substantial Q-Station application area about 650 metres from the closest freshwater lens, the proposed clearing of these areas is not likely to impact on groundwater recharge, or impact on the quality of groundwater.

The airfield access application area is small and linear, and buffered by vegetation on either side. Considering this, and CKI's high infiltration rates, the proposed clearing of up to 0.16 hectares in this area is unlikely to impact on groundwater recharge or quality.

There is the risk of groundwater and ocean contamination from the potential accidental release of hydrocarbons and other chemicals during construction and operation of the proposed infrastructure. This potential risk is detailed under section 3.3 noting it relates to the end land use rather than the clearing of native vegetation.

Conclusion

The proposed clearing may result in localised wind and wave erosion and sedimentation if appropriate management measures are not adhered to.

The Delegated Officer considers that the below conditional requirements of the clearing permit will adequately manage the erosion and sedimentation risks relating to the proposed clearing.

The Delegated Officer also had regard for the applicants EMP which details proposed measures to manage the erosion risks resulting from the construction and end land use. The EMP is required to be implemented under the MoU that exists between the DoD and DITRDCSA.

The proposed clearing is not likely to impact on the quality of groundwater.

Conditions

The following management actions will be required as conditions on the clearing permit:

- commence construction works within three months of undertaking any clearing, to reduce the exposure time of bare soils
- apply appropriate temporary erosion control measures, to be in place immediately after clearing the seawall application area and coastal portions of the Q-Station application area

- revegetate temporary cleared areas of the Q-Station application area to the pre-clearing vegetation condition, to minimise long term erosion risks.

3.3. Relevant planning instruments and other matters

Land access

The DoD has an MoU with DITRDCSA to access multiple properties associated with the Airfield Upgrade Project, including portions of Lot 100 on Plan 18500 (excluding areas administered by the CKI Shire), Lot 327 on Deposited Plan 219651 (Q-Station) and Lot 342 on Deposited Plan 42227 (seawall). The MoU requires DoD to produce and implement an EMP to manage impacts directly or indirectly resulting from the project.

The CKI Shire has provided its authority for the DoD to access Lot 100 on Plan 18500 for the airfield access application area (CKI Shire, 2025).

CKI Shire comment

The CKI Shire did not provide comment on this clearing permit application. The CKI Shire did however provide comment on clearing permit application CPS 10428/1, which initially included all Airfield Upgrade Project works subject to clearing permit requirements (including the areas subject to this (CPS 11049/1) application). This was prior to CPS 10428/1 later being refined to exclude the areas subject to this (CPS 11049/1) application. The CKI Shire advised that (CKI Shire, 2024):

- it supports the clearing permit application to facilitate the proposed airfield upgrades
- the applicant should provide regular updates to the Shire as the project progresses
- development approval for the project is not required, given the proposed works are Public Works.

Construction and end land use impacts

Works Approval – Q-Station

Several of the Q-Station project activities align with prescribed premises categories, described under Schedule 1 of the *Environmental Protection Regulations 1987*. A Works Approval is required by the occupier of a prescribed premise. The applicant has therefore obtained Works Approval (DWER Reference W2982/2025/1) for the following prescribed premises categories:

- asphalt manufacturing (Category 35)
- bitumen manufacturing (Category 36)
- concrete batching manufacturing (Category 77)
- bulk storage of chemicals (Category 73)
- solid waste facility (Category 61A)
- crushing of building material (Category 13)

The Works Approval assessed the following potential environmental impacts associated with the above prescribed premises activities, and conditioned the Works Approval appropriately to manage these impacts:

- dust
- noise and vibration
- odour
- emissions
- sediment laden stormwater
- hydrocarbons and chemical spills
- contaminated waste.

Environmental Management Plan (EMP)

The proposed construction and operation of the Q-Station, airfield access road, and seawall have the potential to impact on the environment through dust and sedimentation, erosion, light, noise and vibration and the release of hydrocarbons and other contaminants, which may impact on the shallow freshwater lenses that exist on West Island.

The applicant has developed an EMP to manage these potential environmental impacts. The EMP is required to be implemented under the MoU between DoD and DITRDCSA.

The EMP includes a commitment to the following measures (amongst others), to manage construction and end land use impacts (Fulton Hogan, 2024):

- weeds to be managed through the use of chemical and mechanical controls
- implement a groundwater monitoring program during construction within the vicinity of project works
- storage and handling of hazardous substances to occur at least 100 metres from potable water abstraction galleries and 50 metres from marine waterbodies
- bunding to protect the island's freshwater lenses from refuelling and chemical storage areas
- implement an erosion and sediment control management plan
- control dust through water spray, minimising slope angles of cleared areas, and establishing cover on stockpiles
- monitor noise during construction to ensure compliance with noise regulation criteria
- prepare and implement a light management plan in accordance with the *National Light Pollution Guidelines for Wildlife 2023* prior to commencement of project works

The applicant is also required by DWER (under planning policy) to adhere to specific groundwater extraction rate limits relating to the project, which are informed by DWER groundwater monitoring on CKI using telemetry measurements associated conductivity.

Contaminated sites

No contaminated sites have been identified within the application areas. Fragments of asbestos have been identified within Lot 345 which occurs 100 metres north of the airfield access application area. The applicant has advised that prior to construction, a contaminated sites management plan will be developed to manage potential contamination risks.

EPBC Act

The applicant has advised DWER that the Department of Defence considered its obligation to refer the project to the Department of Climate Change, Energy, the Environment and Water under the EPBC Act and determined that referral was not warranted as the project is not likely to cause a significant environmental impact.

Cultural heritage

There are no Aboriginal Sites of Significance or Native Title Claims on CKI. The are however several sites listed on the Commonwealth Heritage list on CKI. The applicants EMP commits to undertaking a cultural heritage site inspection in consultation with the local CKI community ahead of construction to inform the establishment of no-go areas or monitoring programs (if required) (Fulton Hogan, 2024).

End

Appendix A. Site characteristics

A.1. Site characteristics

Characteristic	Details
Local context	The CKI comprise 27 low-lying tropical coral islands around 2,175 kilometres north-west of Australia. The application area is located on the West Island of CKI. The West Island is on the Southern Atoll and comprises a land mass of around 632 hectares. The main townsite on West Island is immediately south of the airfield access application area, one kilometre north of the seawall application area and 750 metres south-east of the Q-Station application area. The West Island retains around 67% vegetative cover (424.9 hectares) and includes cleared areas associated with the airfield, housing, and other associated infrastructure amongst vegetated areas dominated by coconut palms. The proposed clearing represents the loss of about 1.2% of the estimated vegetation on West Island.
Conservation areas	There are no DBCA managed lands on CKI. The CKI Marine Park, established by the Australian Government under the EPBC Act, covers an area of 467,054 square kilometres and extends from most of the island's shoreline (including West Island) to the limit of Australia's Exclusive Economic Zone (AEEZ). Within the Southern Atoll, the CKI Marine Park contains two zones, the National Park Zone and the Habitat Protection Zone. The National Park Zone begins at 3 nautical miles from shore to the limit of the AEEZ, where extractive industries such as fishing and mining are not allowed. The Habitat Protection Zone covers most of the marine parks inshore waters and allows fishing however prohibits sea floor disturbance. The application areas do not encroach on the CKI Marine Park.
Vegetation description	The vegetation on West Island has been heavily influenced by the historical clearing of native vegetation and replacement with coconut palm plantations, last maintained in 1987. While coconut palms are native to the CKI shoreline where seeds and nuts can naturally move and germinate, it can only reach and proliferate within inland areas through human intervention. Therefore, it is only along the shoreline that coconut palms are considered native on CKI. Broad, non-detailed vegetation mapping of CKI was created by Geoscience Australia. This dataset was derived from topography data (around 1:1000 scale) and was taken from 1987. This dataset maps the application areas as either 'cleared land', 'settlement area' or 'coconut palm plantations'. Flora and fauna surveys (GHD, 2021; GHD, 2021a and GHD, 2023) identified the following vegetation types in the application areas (where * denotes a weed species): <u>Mixed trees – Q-Station (4.68 hectares) and airfield access (0.03 hectares)</u> *Cocos nucifera, Guettarda speciosa, Morinda citrifolia* and *Scaevola toccata* over lawn. Sparsely spread *Cocos nucifera* and isolated clumps/stands of trees usually comprising one or two species over grasslands. <u>Cocos closed to open forest - airfield access (0.13 hectares)</u> *Cocos nucifera* with scattered *Morinda citrifolia, Terminalia catappa* and *Guettarda speciosa* mid forest over *Scaevola taccada* and *Turnera ulmifolia* tall shrubland over *Ipomoea macrantha, *Euphorbia cyathophora* and **Tridax procumbens* low open herbland. <u>Scaevola shrubland - seawall (0.36 hectares)</u> *Cocos nucifera*, *Argusia argentea* and *Guettarda speciosa* tall to mid sparse woodland over *Scaevola taccada* tall closed shrubland over **Euphorbia cyathophora, *Spermacoce remota* and **Turnera ulmifolia* low sparse herbland. <u>Grasslands (non-native) – Q-Station and airfield access</u> **Cynodon radiates, *Cynodon dactylon* and **Cenchrus ciliaris* low to mid closed grassland with emergent **Boerhavia diffusa, *Cyanthillium cinereum, *Tridax procumbens* and **Euphorbia cyathophora* low sparse herbland.

Characteristic	Details
	The surveys identified that the vegetation within the application areas largely lacked structural diversity and weed incursion was noted at most locations. The detailed description and photographs of the recorded vegetation types are available within the applicants supporting survey information which is publicly available within the documents titled 'Supporting information - Flora and Fauna Report - Enabling Works' and 'Supporting information - Flora and Fauna Report – Airfield' via the following link Index of /permit/11049 (dwer.wa.gov.au).
Vegetation condition	Flora and fauna surveys (GHD, 2021; GHD, 2021a and GHD, 2023) identified that the vegetation within the application areas ranged from good to completely degraded (Keighery, 1994): • Q-Station - degraded to completely degraded condition • Airfield access – good (limited to the cocos closed forest vegetation type) to completely degraded condition • Seawall – degraded condition.
Climate and landform	The CKI consist of two separate low-lying coral atolls, 24 km apart, which have formed on top of an old volcanic seamount that rises from a depth of 5,000 metres in the north-eastern Indian Ocean. The topography of both application areas is flat. The CKI experience a tropical climate with an average annual rainfall of around 2000 millimetres per annum.
Soil description	The soils of the application area comprise medium to coarse grain coralline sands. Soil density is generally loose to medium in the upper soil profile, becoming predominantly medium dense below.
Land degradation risk	No land degradation risk mapping exists for the CKI. The greatest land degradation risks are associated with wind erosion noting the presence of highly permeable fine to medium grain sands.
Waterbodies	The application areas do not intersect any known wetlands or watercourses, and none were identified during the flora and vegetation surveys (GHD, 2021; GHD, 2021a and GHD, 2023). A swamp has been mapped within the Cocos Island vegetation dataset in the northern portion of the island, which occurs around 2.6 kilometres north of the Q-Station application area.
Marine environment	The CKI is within the Indian Ocean, with the shoreline largely adjacent to the Q-Station and seawall application areas.
Hydrogeography	There are two fresh groundwater lenses that occur on West Island. The freshwater lenses exist in a layer of saturated sand above the saltwater table and are recharged from rainfall that permeates from the surface into these lenses. The southern lens occurs under the airfield and townsite and extends southeast by around 2.7 kilometres. Within this lens, groundwater has been recorded at depths of between 0.57 to 2.4 metres below ground level. The northern lens is around 200 metres west of the Rumah Baru freight terminal at its closest point. This lens extends just past Heartbreak Drive to the north of West Island, to around 2.7 kilometres south. The Q-Station and seawall application areas are not located within either lens. The airfield access application area is located on the West Island Airfield Lens
Flora	According to available datasets, no state or Commonwealth listed flora species were recorded within, or nearby the application areas. The Western Australian Herbarium (1998-) database returned records of three priority (P) (DBCA listed) flora species on CKI: • *Acalypha lanceolata var. lanceolata* (P1) and *Clerodendrum inerme* (P1) – recorded on the Home Island of CKI around 8 kilometres from West Island

Characteristic	Details
	• *Lepturus repens* (P3) – closest record around 400 metres from the airfield access application area.
Ecological communities	According to available datasets, no state or Commonwealth listed threatened or priority ecological communities have been recorded on the CKI.
Fauna	According to available datasets, there are records of 15 threatened fauna and 13 migratory listed fauna (listed under the EPBC Act) known from CKI. Of the 15 threatened fauna, 11 are marine species, and 4 are bird species. The threatened and migratory bird species are listed in the below table. The application is not proposing to clear native vegetation from the marine environment therefore, except for the green turtle and hawksbill turtle which best nest ashore, marine species have not been listed in the below table. The closest conservation significant fauna record to the application area is the Migratory common noddy (*Anous stolidus*), recorded 2.8 km east of the seawall application area.

A.2. Fauna analysis table

Conservation listed fauna species (excluding marine species, except for commonly occurring marine turtles) previously recorded on the CKI.

Species name	Conservation status (EPBC Act)	Abundance / status on CKI (Johnstone and Darnell, 2017).	Suitable habitat? [Y/N/NA]	Are surveys adequate to identify? [Y, N, N/A]
Round Island Petrel (*Pterodroma arminjoniana*)	Critically Endangered	Irregular visitor– does not nest on CKI	N	Y
Buff-banded Rail (*Hypotaenidia philippensis andrewsi*)	Endangered	Common resident on North Keeling Island	Y – suitable foraging habitat, but no recorded nesting on West Island	Y
Christmas Island White-tailed Tropicbird (*Phaethon lepturus fulvus*)	Endangered	Irregular visitor – does not nest on CKI	N	Y
Greater Sand Plover (*Charadrius leschenaultii*)	Vulnerable	Regular visitor – does not nest on CKI	N	Y
Green Turtle (*Chelonia mydas*)	Vulnerable	Resident – mainly nests on North Keeling Island	N – no suitable nest habitat and no impacts to marine vegetation (foraging)	Y
Hawksbill Turtle (*Eretmochelys imbricata*)	Vulnerable	Regular visitor – does not nest on CKI	N – no impacts to marine vegetation (foraging)	Y
Barn Swallow (*Hirundo rustica*)	Migratory (M)	Uncommon passage migrant	Y - foraging only	Y
Brown Booby (*Sula leucogaster*)	M	Uncommon resident	Y	Y
Common Noddy (*Anous stolidus*)	M	Common breeding visitor to CKI	Y	Y
Great Frigatebird (*Fregata minor*)	M	Common resident	Y	Y
Grey Wagtail (*Motacilla cinerea*)	M	Vagrant	Y - foraging only	Y
Lesser Frigatebird (*Fregata ariel*)	M	Common resident	Y	Y
Masked Booby (*Sula dactylatra*)	M	Uncommon resident	N – no suitable nest habitat	Y
Oriental Cuckoo (*Cuculus optatus*)	M	Irregular visitor	Y	Y
Red-footed Booby (*Sula sula*)	M	Common resident on North Keeling Island	N – only nests on North Keeling Island	Y
Red-tailed Tropicbird (*Phaethon rubricauda*)	M	Rare visitor	N	Y
Wedge-tailed Shearwater (*Ardenna pacifica*)	M	Rare visitor	N	Y

Species name	Conservation status (EPBC Act)	Abundance / status on CKI (Johnstone and Darnell, 2017).	Suitable habitat? [Y/N/NA]	Are surveys adequate to identify? [Y, N, N/A]
White-tailed Tropicbird (*Phaethon lepturus*)	M	Rare visitor	N	Y
Yellow Wagtail (*Motacilla flava*)	M	Vagrant	Y - foraging only	Y

Appendix B. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
Principle (a): *"Native vegetation should not be cleared if it comprises a high level of biodiversity."* Assessment: The vegetation on West Island has been heavily modified through the extensive planting of coconut palms, which is the dominant overstorey species in the Q-Station and airfield access application areas (GHD, 2021; GHD, 2021a; GHD, 2023). These palms are only considered native within areas close to the shoreline. The application areas lack structural diversity and weed incursion was noted in all (GHD, 2021; GHD, 2021a; GHD, 2023). The vegetation types recorded in the application areas align with those previously identified on West Island. No threatened (BC Act; EPBC Act) or priority listed flora or fauna species, or priority or threatened ecological communities were recorded within the application areas (GHD, 2021; GHD, 2021a; GHD, 2023). Given the above, the application areas are unlikely to contain a high level of biodiversity. The proposed clearing may increase the risk of weeds spreading into adjacent vegetated areas. The applicant will be required to undertake weed hygiene management measures as a condition of the clearing permit. The applicant has also committed to undertake weed control as part of its EMP.	Not likely to be at variance	No
Principle (b): *"Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna."* Assessment: The application area is not likely to contain significant habitat for fauna, however it may result in direct impacts to any native fauna using the application area at the time of clearing. The assessment against this principle is detailed under Section 3.2.1.	Not likely to be at variance	Yes *Refer to Section 3.2.1, above.*
Principle (c): *"Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."* Assessment: No threatened flora are known from West Island and no threatened flora (under the BC Act or EPBC Act) were recorded within the application areas (GHD, 2021; GHD, 2021a; GHD, 2023). Based on desktop searches of the local area, no threatened flora were considered as having the potential to occur within the application areas.	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
Principle (d): *"Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community."* Assessment: No threatened ecological communities (under the BC Act or EPBC Act) have been recorded on West Island and the biological surveys did not identify the presence of any threatened ecological communities within the application area (GHD, 2021; GHD, 2021a; GHD, 2023)	Not likely to be at variance	No
Environmental value: significant remnant vegetation and conservation areas		
Principle (e): *"Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared."* Assessment: The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30% of that present pre-1750, below which species loss accelerates exponentially at an ecosystem level (Commonwealth of Australia, 2001). Based on vegetation mapping and aerial imagery, West Island retains about 67% vegetative cover (424.9 hectares). The proposed clearing of 5.2 hectares represents the loss of 1.2% of this vegetation. Much of the remaining vegetation on West Island occurs as planted coconut palms in non-coastal locations, over a mix of native and non-native understorey. Therefore, it is not clear what % of the vegetative cover on the island is native. The application area is representative of the highly modified vegetation types on West Island. This is noting a dominance of coconut palms over non-native and native understorey in the Q-Station and airfield access areas and degraded shrubland in the seawall area. Given the above, the application areas are not likely to contain a significant remnant of vegetation in an extensively cleared landscape.	Not likely to be at variance	No
Principle (h): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area."* Assessment: There is one conservation area within the local area, the CKI Marine Park. This Park extends from most of the CKI shoreline to the limit of Australia's EEZ. The proposed clearing, which is all terrestrial, is not likely to impact on the CKI Marine Park.	Not likely to be at variance	No
Environmental value: land and water resources		
Principle (f): *"Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland."* Assessment: The closest wetland or watercourse is a swamp located around 2.6 kilometres north of the Q-Station application area. Flora surveys did not identify the presence of any riparian vegetation (GHD, 2021; GHD, 2021a; GHD, 2023).	Not likely to be at variance	No
Principle (g): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation."* Assessment:	May be at variance	Yes *Refer to Section 3.2.2, above.*

Assessment against the clearing principles	Variance level	Is further consideration required?
The sandy soils recorded on West Island are susceptible to wind erosion. The risk of appreciable land degradation has been assessed under Section 3.2.2.		
Principle (i): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water."* Assessment: While the proposed clearing is not likely to result in the deterioration of surface or groundwater quality, the airfield access application area sits atop one of two freshwater lenses that exist on West Island. Potential impacts to groundwater are assessed under Section 3.2.2.	Not likely to be at variance	Yes *Refer to Section 3.2.2, above.*
Principle (j): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding."* Assessment: CKI experiences monsoonal rainfall events and has a high average annual rainfall of 2000 millimetres. The soils within the application areas are highly permeable with high infiltration rates. Noting that, and the absence of watercourses or wetlands within the application area, the proposed clearing is not likely to increase the incidence or intensity of flooding.	Not likely to be at variance	No

Appendix C. Vegetation condition rating scale

Vegetation condition is a rating given to a defined area of vegetation to categorise and rank disturbance related to human activities. The rating refers to the degree of change in the vegetation structure, density and species present in relation to undisturbed vegetation of the same type. The degree of disturbance impacts upon the vegetation's ability to regenerate. Disturbance at a site can be a cumulative effect from a number of interacting disturbance types.

While the GHD biological surveys indicate that the vegetation condition rating scale for the Eremaean and Northern Botanical Provinces was used, the values referred to in the surveys align with the Keighery scale referred to below. This scale has been extracted from Keighery, B.J. (1994) *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Measuring vegetation condition for the South West and Interzone Botanical Province (Keighery, 1994)

Condition	Description
Pristine	Pristine or nearly so, no obvious signs of disturbance.
Excellent	Vegetation structure intact, with disturbance affecting individual species; weeds are non-aggressive species.
Very good	Vegetation structure altered, with obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and/or grazing.
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and/or grazing.
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and/or grazing.

Condition	Description
Completely degraded	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs.

Appendix D. Sources of information

D.1. GIS databases

Publicly available GIS Databases used (sourced from www.data.wa.gov.au):

- Bore Sites – Cocos Islands
- Cadastre (LGATE-218)
- DBCA Legislated Lands and Waters (DBCA-011)
- Vegetation – Cocos Islands
- Contaminated Sites
- Hydrography – Inland Waters – Waterlines
- Hydrological Zones of Western Australia (DPIRD-069)
- Imagery
- Ramsar Sites (DBCA-010)
- Roads – Cocos Islands

Restricted GIS Databases used:

- ICMS (Incident Complaints Management System) – Points and Polygons
- Threatened Flora (TPFL)
- Threatened Flora (WAHerb)
- Threatened Fauna
- Threatened Ecological Communities and Priority Ecological Communities
- Threatened Ecological Communities and Priority Ecological Communities (Buffers)

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