7 May 2025

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Aquatic Ecology Assessment for 87-89 Tweed Coast Road, Hastings Point, NSW

Dear Simon

This letter presents formal Assessments of Significance required under Section 221ZW of the *Fisheries Management Act 1994* (FM Act) to assess the impacts to threatened species, populations or ecological communities listed under the FM Act associated with the proposed development at 87-89 Tweed Coast Road, Hastings Point, NSW (the 'subject site').

An impact assessment providing details of threatened species, populations or ecological communities listed under the FM Act present, or with the potential to be present, in the subject site is provided in **Appendix A**, which also details the methodology used to identify these. The Assessments of Significance are provided in **Appendix B** for identified threatened species and ecological communities listed under the FM Act. Although some of the entities identified are not formally listed as threatened under the FM Act, Assessments of Significance have still been prepared for entities that are considered to provide potential fish habitat to ensure that impacts to all matters covered by the FM Act have been appropriately assessed.

Yours sincerely,

Trevor Meers

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APPENDIX A :
Impact Assessment

A.1. Introduction

A.1.1. The Project

Cumberland Ecology was commissioned by Planit Consulting on behalf of TriCare (Hastings) Limited (the 'client'), to prepare Assessments of Significance under the NSW *Fisheries Management Act 1994* (FM Act) to support a Development Application (DA) for a Seniors' Living development (the 'Project') to be located at Lot 1 DP 786570, otherwise known at 87-89 Tweed Coast Road, Hastings Point, NSW (the 'subject site'). The 37,390m^2 subject site is located at the southern end of Hastings Point. Hastings Point is predominantly a low-scale coastal settlement providing a range of recreational, holiday and residential opportunities.

The subject site is surrounded by public open space and environmental land including Cudgera Creek to the west, Cudgera Beach and dunal foreshore to the east, .and the Pottsville Environmental Park to the north and south. An existing Service Station adjoins the site's south-east.

The subject site is located approximately 22 km south of Tweed Heads City Centre, within the Tweed Shire Local Government Area (LGA) and is zoned R1 General Residential under the *Tweed Local Environment Plan 2014*. The subject site is bound on the western side by Cudgera Creek and on the eastern side by the Tweed Coast Road, as shown in **Figure 1**. An area of native vegetation along Cudgera Creek extends from within the subject site right up to the edge of Cudgera Creek, all of which has been included in the 'study area' (see **Figure 1**). This narrow riparian strip connects to similar vegetation to the north and a larger patch to the south where the vegetated strip is substantially wider. The study area is just over 1 km south of the mouth of Cudgera Creek, which is subject to tidal influence.

The TriCare Hastings Point development comprises both independent living units (ILUs) and a residential aged care home (RAC) home, that will be supported by a range of other services.

Specifically, the proposal includes:

- A 47 place RAC (Building D) comprising:
    - individual private rooms with ensuites facilities;
    - shared dining, lounge and sitting rooms;
    - café;
    - kitchen;
    - serveries;
    - nurses stations;
    - offices;
    - staff room and facilities;
    - waste room; and

- loading bay.

- 51 ILUs split across 3 buildings, including:
  - 24 ILUs in Building E
  - 18 ILUs in Building F
  - 9 ILUs in Building G

Complimenting the ILUs and RAC, the development offers a range of communal facilities for entertainment, health, active and passive recreation. These facilities include:

- Bowling Green and pavilion with bowls store, amenities, kitchen and covered seating area;
- Indoor swimming pool and spa, with amenities and viewing area;
- Perimeter walking trail; and
- Landscaped gardens.

The proposed development will provide an important contribution to supporting the need for seniors accommodation and care within the Kingscliff locality.

No changes to the existing Stage 1 development are proposed.

The four buildings are referred to as building D, E, F and G, and are built around a central community precinct that will include a bowls green, bowls pavilion and pool pavilion. A proposed walking trail will be located around the exterior of the development and will form an emergency access track. The Project will be accessed by road from the existing Stage 1 development and there will be above ground parking spots in addition to the basement level cark parks. Areas between the access roads, car parks, buildings and facilities will be landscaped with garden beds, walking tracks and informal lawn areas.

Areas to be cleared/modified to establish APZs also form part of the development footprint.

The Project layout including landscaping is shown in **Figure 2** while a ground floor plan, including APZs is provided as **Figure 3** as per plans prepared by Aquis Design (2024). The area directly impacted by the Project, including APZs is referred to as the subject land, and is shown on **Figure 1**.

A.1.2. Assessment Requirements

Development Consent for the Project is being sought through the State Significant Development approval pathway under the *Environmental Planning and Assessment Act 1979* (EP&A Act).

Cumberland Ecology has prepared a separate Biodiversity Development Assessment Report (BDAR) (Report No. 21273 RP2) for the Project. The BDAR assesses the potential impacts to biodiversity values listed under the *Biodiversity Conservation Act 2016* (BC Act) but does not specifically address impacts to values declared under the *Fisheries Management Act 1994*.

A.1.3. Fisheries Management Act 1994

Section 221ZW of the *Fisheries Management Act 1994* (FM Act) states:

(1) If a Project is likely to significantly affect threatened species, populations or ecological communities, an application for development consent under Part 4 of the Planning Act is to be accompanied by a species impact statement.

(2) This section does not apply to State significant development.

In order to determine whether a significant affect is likely to occur to threatened species, populations or ecological communities as a result of the Project a 7 Part Assessment of Significance (7 Part Test) under Section 12 221ZV of the FM Act is required to be prepared. If the 7 Part Test indicates that a significant affect on these entities is likely to occur, a Species Impact Statement (SIS) would be required to be prepared.

The entities with potential to be impacted by the Project have been identified using the methodology presented in ***Section A.3*** and separate 7 Part Assessments of Significance have been conducted for each entity that is considered to have potential to be impacted by the Project. These assessments are presented in **Appendix B**. Some threatened entities have been identified as occurring in the study area that are not listed under the FM Act, but which have potential to provide fish habitat, and these have therefore also been assessed in **Appendix B**.

Given that Section 221ZW of the FM Act does not apply to a SSD, only the BDAR specifically prepared under the Part 4 development assessment pathway (Report No. 21273 RP4) is hereafter referred to.

A.2. Biodiversity Values

Vegetation mapping undertaken by Cumberland Ecology has identified one Plant Community Type (PCT) in the study area, PCT 4091 Mangrove – Grey Mangrove low closed forest, that is Key Fish Habitat under the FM Act. This community will not be directly impacted by vegetation clearing, however there is potential for indirect impacts to occur. In addition to PCT 4091, areas of open water are present in the study area that have the potential to be Key Fish Habitat. This area is subject to tidal influence and may be subject to indirect impacts as a result of the project. The extent of all vegetation communities in the study area is shown in **Figure 4** and a description of those that are likely to be Key Fish Habitat are provided in the following sections. Other PCTs present within the study area are not subject to estuarine influence, and are not relevant to the FM Act and are therefore not described further in this assessment; these have been fully described and assessed in the BDAR (Report No. 21273 RP4).

A.2.1. PCT 4091 Grey Mangrove-River Mangrove Forest

Vegetation Formation: Saline Wetlands.

Vegetation Class: Mangrove Swamps.

Percent Cleared Value: 53%.

BC Act Status of PCT within subject land: n/a.

EPBC Act Status of PCT within subject land: n/a.

FM Act Status of PCT: Type 2 - Moderately sensitive key fish habitat.

A.2.1.1. General Description

This community is described in the BioNet VIS Classification (E&H 2023) as a low, mid-high or tall mangrove open forest or woodland, sometimes including a saltmarsh ground layer, occurring on tidal flats of the NSW coast. The tree canopy is sparse, mid-dense or sometimes dense and is almost always dominated by *Avicennia marina* subsp. *australasica*. *Aegiceras corniculatum* is common, occurring at around half of the known locations, however usually with a sparser projected foliage cover than *Avicennia marina* subsp. *australasica*. Other trees are rare, however may include a sparse cover of *Rhizophora stylosa*, or on mangrove fringes *Casuarina glauca, Melaleuca linariifolia* or *Ficus rubiginosa*. Salt-tolerant ground cover species make a significant contribution to the species richness of this PCT overall, however are not always present. Where present, the ground layer is sparse to mid-dense. *Sarcocornia quinqueflora* subsp. *quinqueflora* occasionally occurs with sparse cover, while *Sporobolus virginicus* or *Samolus repens* rarely occur however generally with higher projected foliage cover. Other rare species with variable cover include *Juncus kraussii* subsp. *australiensis, Tecticornia arbuscula, Sesuvium portulacastrum* and *Spergularia marina* amongst other salt-tolerant grasses, forbs and sedges.

A.2.1.2. Condition States

Within the study area, PCT 4091 exists as one broad condition state detailed below. This PCT does not occur within the subject land.

A.i. PCT 4091 Mangroves Condition State

This PCT is located on tidally inundated areas within the Cudgera Creek estuary. The vegetation structure is simple, consisting of a closed canopy of *Avicenna marina* var *australasica* (Grey Mangrove) with occasional shrubs of *Aegiceras corniculatum* (River Mangrove). The ground layer contains seedlings of these species and is otherwise dominated by pneumatophores and estuarine mud or water. The outermost fringe of Cudgera Creek also contains *Rhizophora stylosa* (Stilt Mangrove/Red Mangrove). At low tide, some areas of bare mud extend beyond the mangroves into Cudgera Creek. Isolated coastal saltmarsh species are present including *Juncus krausii* and *Baumea juncea* but form a minor component of the understorey, and do not develop into areas of coastal saltmarsh vegetation.

An example of this PCT at high and low tide is shown in **Photographs 1** and **2**

Photograph 1 PCT 4091 Mangrove inundated at high tide

Photograph 2 PCT 4091 Mangrove at low tide

A.2.2. Open Water

The area mapped as Open water includes an area of estuarine water surrounding mangroves that forms part of Cudgera Creek. This community, whilst generally devoid of vegetation contains areas of estuarine mudflats that are periodically exposed at low tide. No Eel Grass beds were observed within open water in the study area. Eel Grass is classified as Key Fish Habitat and marine vegetation under the FM Act. An area of open water is shown in **Photograph 3**.

Photograph 3 Area of Open Water viewed through a gap in Mangroves

A.3. Methodology

In addition to vegetation mapping and terrestrial fauna surveys undertaken for the BDAR (Report No. 21273 RP2), in order to determine if any threatened species, populations or ecological communities listed under the FM Act are likely to be present within the study area (and could therefore potentially be impacted by the Project), relevant databases were searched. These included:

- The NSW BioNet Atlas (E&H 2024);
- The EPBC Act Protected Matters Search Tool (DCCEEW 2024a);

- The Directory of National Important Wetlands (DCCEEW 2024b);
- The Fisheries NSW Spatial Data Portal (NSW DPI 2024) and
- The Atlas of Living Australia (ALA 2024)

These database searches focussed on an area within a 5 km radius of the study area (the locality) but where relevant, findings for the broader NSW north coast were considered.

Relevant reports for the study area and surrounds were also reviewed including:

- Flora and Fauna Assessment of Lot 1 DP786570, Coast Road, Hastings Point, December 2005 (Bushfire Safe 2005); and
- Tweed Shire Council (2013) Coastal Management Plan for the Tweed Coast Estuaries.

In order to assess potential impacts the following reports were also reviewed:

- Hydrological Impact Assessment (Martens 2024);
- Stormwater Management Plan (Cozens Regan 2024a); and
- Erosion and Sediment Control Plan (Cozens Regan 2024b).

A.4. Results of Database Searches

A.4.1. The Fisheries NSW Spatial Data Portal

The Fisheries NSW Spatial Data Portal includes broad mapping of Key Fish Habitat within and surrounding the study area.

In addition to the broad Key Fish habitat mapping, an associated community of Estuarine Macrophyte is present in the study area with Mangroves identified along the bank of Cudgera Creek, as shown in **Figure 5**. This mapping matches closely with the mapping undertaken by Cumberland Ecology for the BDAR where PCT 4091 was found to cover an area of 0.54 ha as mentioned in ***Section A.2*** and shown in **Figure 4**. An area of Coastal Saltmarsh was also identified on the opposite side of Cudgera Creek to the south east of the study area, with the closest occurrence located approximately 100 m from the study area.

Under the FM Act, Mangroves are considered to be Type 2 - Moderately sensitive key fish habitat. Key fish habitat under the FM Act includes all marine and estuarine habitats up to highest astronomical tide level (that reached by 'king' tides) and most permanent and semi-permanent freshwater habitats including rivers, creeks, lakes, lagoons, billabongs, weir pools and impoundments up to the top of the bank. Within the study area this includes all open water and mangroves as shown in **Figure 6**.

Mangroves are also defined as 'marine vegetation' under the FM Act. These habitats play a vital role in the coastal ecosystems of Australia and are particularly important in the sustainability of commercial and recreational fisheries because of their roles in maintaining sediment stability and water quality, and in providing

shelter and food critical to the survival of a wide variety of aquatic biota. These habitats are essential nursery areas for many species of commercially and recreationally important fish and crustaceans (Tweed Shire Council 2013).

Cudgera Creek is also mapped as a Freshwater Fish Community, although it is entirely estuarine within and adjacent to the study area.

A review of habitat for threatened freshwater species listed under the FM Act indicates that no habitat is mapped within, or within a 5 km radius of the study area. Three threatened fish species have habitat mapped more broadly within north-eastern NSW. These species are:

- Oxleyan Pygmy Perch (*Nannoperca oxleyana*)- listed as Endangered under the FM Act;
- Southern Purple Spotted Gudgeon (*Mogurnda adspersa)*- listed as Endangered under the FM Act; and
- Eastern Freshwater Cod (*Maccullochella ikei*)- listed as Endangered under the FM Act.

Four threatened shark species could pass through marine waters but would be unlikely to enter the shallower estuarine waters of Cudgera Creek. These species are:

- Grey Nurse Shark (*Carcharias taurus*) – listed as Critically Endangered under the FM Act;
- Scalloped Hammerhead Shark (*Sphyrna lewini*) – listed as Endangered under the FM Act;
- Great Hammerhead Shark (*Sphyrna mokarran*) – listed as Vulnerable under the FM Act; and
- White Shark (*Carcharodon carcharias*) – listed as Vulnerable under the FM Act.

These species are not expected to be directly or indirectly impacted by the civil works and are not assessed further.
Two other marine or estuarine species that are threatened under the FM Act could potentially occur within the locality. These species are:

- White's Seahorse (*Hippocampus whitei*) – listed as Endangered under the FM Act; and
- Black Rockcod (*Epinephelus daemelii)* – listed as Vulnerable under the FM Act.

For the species identified from the Fisheries NSW Spatial Data Portal that have the potential to occur within the locality, an assessment of their likelihood of occurrence within the study area is provided in **Table 2** with consideration of habitat requirements and the number of NSW BioNet Atlas records and Atlas of Living Australia records. This assessment indicates that two species have potential to occur in the study area and are required to be assessed further, being Whites Seahorse and the Black Rock Cod.

Table 1 Likelihood of Occurrence Assessment for species listed as threatened under the FM Act.

Species	FM Act Status	No. of Records from Locality	Habitat requirements	Habitat in study area	Likelihood of Occurrence
Oxleyan Pygmy Perch (*Nannoperca oxleyana*)	Endangered	0	Oxleyan Pygmy Perch mostly occur in swamps, creeks and lakes of coastal 'wallum' swamps (Banksia-dominated coastal heath). They prefer slow-moving or still waters with plenty of in-stream aquatic vegetation or root-filled banks fringed with river-bank vegetation. The indicative distribution is coastal areas south of Ballina.	No coastal 'wallum' swamps (Banksia-dominated coastal heath) present in the study area.	Unlikely to occur
Southern Purple Spotted Gudgeon (*Mogurnda adspersa)*	Endangered	0	The species can be found in a variety of habitats such as rivers, creeks, streams and billabongs with slow-flowing or still waters. Cover in the form of aquatic vegetation, overhanging vegetation from river banks, leaf litter, rocks or snags are important for the species.	Although the species may occur in freshwater streams inland of the locality, the species is unlikely to be present in the estuarine waters of the study area.	Unlikely to occur
Eastern Freshwater Cod (*Maccullochella ikei*)		0	Eastern Freshwater Cod are typically found in clear, flowing streams with rocky substrate and large amounts of in-stream cover such as boulders or large woody debris Such areas provide complex habitats which influence the quality and quantity of food and shelter.	Although the species may occur in freshwater streams inland of the locality, the species is unlikely to be present in the estuarine waters of the study area.	Unlikely to occur
White's Seahorse (*Hippocampus whitei*)	Endangered	1 marine record in Atlas of Living Australia off the	The White's Seahorse is considered to be endemic to the waters of southern Queensland (Hervey Bay) to Sussex Inlet	No suitable habitat present. Although estuarine waters are present there are sponge	May occur rarely downstream of the study area

Species	FM Act Status	No. of Records from Locality	Habitat requirements	Habitat in study area	Likelihood of Occurrence
		coast of Pottsville	NSW where it can be found occurring in coastal embayments and estuaries. It is known to occur from depths of 1 m to 18 m. Habitats that are considered important habitat for the White's Seahorse include natural habitats such as sponge gardens, seagrass meadows and soft corals. It is also known to use artificial habitats such as protective swimming net enclosures and jetty pylons.	gardens, seagrass meadows and soft corals. Small areas of Eel Grass meadows are mapped approximately 600 m to the north in the Fisheries NSW Spatial Data Portal within the Cudgera Creek estuary	
Back Rockcod (*Epinephelus daemelii)*	Vulnerable	1 record in Atlas of Living Australia from Hastings Point	The Black Rockcod is a territorial species that inhabits caves, gutters and crevices. They are usually found in depths up to 50 m, although individuals have been collected from below 100 m. Juveniles are found inshore, often in coastal rockpools and estuaries	Juveniles may enter the Cudgera Creek estuary on occasion, which provides marginal suitable habitat.	May occur rarely

A.4.2. Previous Flora and Fauna Assessment

Bushfire Safe (2005) assessed the potential for nine freshwater species listed under the FM Act to occur and considered that none of these species were likely to be present. An Eight Part Test was then prepared for two species being the:

- Southern Purple Spotted Gudgeon (*Mogurnda adspersa)*; and
- Olive Perchlet (*Ambassis agassizii*) western New South Wales population.

The Eight Part Tests indicated that a significant impact was not likely to occur to either species from the original development proposal.

It is noted that the listing of the Olive Perchlet (*Ambassis agassizii*) only applies to the western New South Wales population located in the Darling and Lachlan River catchments. Populations in northern NSW coastal catchments (which include the study area) are not covered by this listing. As such, a Test of Significance for the current proposal is not provided as the endangered population is not present.

A.4.3. The Directory of Nationally Important Wetlands

Cudgen Nature Reserve is a listed Nationally Important Wetland on the National Register of Important Wetlands (DCCEEW 2024b) and is mapped approximately 150m north of the study area. The Directory of Important Natural Wetlands (DCCEEW 2024b) indicates that the wetland covers 614 ha, including 160 ha of Cudgen Lake. Cudgen Lake receives waters from the flood plains drained by Clothiers and Reserve Creeks. The lake acts as a natural flood retention basin which attenuates floods in the creek and often inundates an area over three times that normally covered under non-flood conditions. The Cudgen Creek estuary has been engineered with permanent rock groynes and training walls which in association with periodic dredging programs, maintains a permanently open entrance channel. Cudgen Lake itself is located approximately 5 km north of the study area, with the surrounding reserve located in several land parcels with the closest being to the north-west of the subject site on the opposite bank Cudgera Creek.

The Directory of Important National Wetlands (DCCEEW 2024b) details that Cudgen Nature Reserve supports 15 distinct vegetation associations including littoral rainforest, lowland subtropical rainforest on Round Mountain, lowland subtropical rainforest on swamp forest margins, Swamp Paperbark (*Melaleuca quinquenervia*) swamp forest, Swamp Mahogany (*Eucalyptus robusta*) forest, Blackbutt (*Eucalyptus pilularis*) forest, Grey Gum (*Eucalyptus propinqua*) - Blackbutt (*Eucalyptus pilularis*) tall open forest, Red Gum (*Eucalyptus tereticornis*) - Pink Bloodwood (*Corymbia intermedia*) - Swamp Turpentine (*Lophostemon suaveolens*) forest, Scribbly Gum (*Eucalyptus signata*) - Wallum Banksia (*Banksia aemula*) forest, Wallum Banksia (*Banksia aemula*) heath, Wet heath, *Baumea rubiginosa* Closed Sedgeland, Water Ribbons (*Triglochin procera*) Sedgeland, *Schoenoplectus litoralis* Sedgeland, and Grey Mangrove (*Avicennia marina*) Mangrove Wetland. Other vegetation communities of special significance include Swamp Banksia (*Banksia robur*) wet heathlands, Riberry (*Syzygium luehmanni*) - Broad-leaved Lilly Pilly (*Acmena hemilampra*) littoral rainforests and Swamp Banksia (*Banksia robur*) - *Leptospermum liversidgei* - *Xanthorrhoea fulva* wet heathland community. The perimeter of Cudgen Lake contains dense stands of Common Reed (*Phragmites australis*) and *Lepironia articulata* scattered with *Cladium procerum*. The shallow lake waters support a dense emergent growth of reeds *Schoenoplectus*

litoralis and *Cumbungi (Typha* sp.*)* on the northern side of the lake. Other aquatic species include *Baumea rubiginosa* sedgeland and *Triglochin procera*, while intertidal and subtidal species are dominated by mangroves e.g. Grey Mangrove (*Avicennia marina*), *Bruguiera gymnorrhiza* and seagrasses.

Overall, the Directory of Important National Wetlands indicates that extensive FM Act fish habitat is present in the vicinity of the study area including waterways, lakes, mangroves saltmarsh and sea grasses.

A.4.4. EPBC Act Protected Matters Search Tool

The EPBC Act Protected Matters Search Tool (DCCWEE 2024a) indicates that one threatened ecological community that is FM Act fish habitat may be present in the study area, Subtropical and Temperate Coastal Saltmarsh. However, this community was found to be absent from the study area during field surveys.

As the search area extends into the Coral Sea, a range of marine species that are listed as threatened or migratory under the EPBC Act or their habitat is known or may occur. These include species of shark, Manta Ray, Orca, Dolphin, whale, seahorse, pipehorse, pipefish, turtle and sea snake. This includes the species of shark listed under the FM Act and White's Seahorse for which the species or its habitat is known to occur. As the study area is not within a marine area, the marine species are not considered further in this assessment.

A.4.5. Coastal Wetlands

Review of the NSW Planning Portal Spatial Viewer indicates that the study area is mostly comprised of mapped Coastal Wetland (Cudgera Creek) and associated Proximity Area for Coastal Wetlands under the State Environmental Planning Policy Resilience and Hazards 2021 (Resilience and Hazards SEPP). These areas are shown on **Figure 7**. The subject land is outside of the area mapped as Coastal Wetland, but entirely within the Proximity Area for Coastal Wetlands (see **Figure 7**).

A.5. Impact Assessment

This section provides as assessment of the potential impacts of the project on the FM Act listed entities identified from the study area. Initially a brief summary of the existing impacts operating in the study area are considered, followed by an assessment of the potential impacts of the Project.

A.5.1. Existing Threats

Existing threats to estuarine habitat along Cudgera Creek (Tweed Shire Council 2013) include:

- Acid runoff from disturbed acid sulfate soils in the catchment of Cudgera Creek;
- Entrance shoaling - during times of high longshore sand transport and low creek flows, the entrance can become heavily shoaled and sometimes closes. This can create flooding and water quality concerns. On occasions the creek entrance has been artificially opened; and
- Stream bank erosion.

A.5.2. Predicted Impacts of the Project

No direct impacts such as vegetation clearing, trimming or modification is proposed to occur to fish habitat listed under the FM Act. Any potential impacts from the project are limited to indirect impacts associated with

changes to stormwater quality, the hydrology of estuarine wetlands and impacts to groundwater during both the construction and operational phases of the Project. Weed control is proposed under the Restoration Management Plan prepared for the study area (Cumberland Ecology 2024b), however that is intended to improve the ecological quality of this area and will result in no additional impacts. These works will not occur within mangroves, or other fish habitat.

Indirect impacts can be created through changes in the quality of stormwater discharge, and changes to hydrology, including impacts to groundwater levels. The creation of impervious surfaces in the form of roads, roofs and driveways has the potential to modify the subject land's existing hydrology. The creation of hardstand reduces infiltration of rainwater into the soil, thus lowering the volumes of freshwater flowing to groundwater. At the same time, the impervious surfaces increase surface water runoff. The removal of vegetation decreases the demand for water taken up from the soil store which can increase the volume of rainwater infiltrating into the groundwater environment.

The existing development drains to the rear and discharges to Cudgera Creek. It is noted that Stage 1 of the original development approval has already been constructed and thus some consideration has been made to this with regards to servicing of the remaining stages of development with the stormwater management requirements for the initial stage expected to have already been installed in accordance with the previously approved Stormwater Management Plan. As the site grades to the rear, no ponding of water occurs and the site is not subject to the influence of any external catchments. Currently discharge from the site is by sheet flow to Cudgera Creek (Cozens Regan 2024a). Drainage from the site is proposed to be collected in a piped system and directed to Cudgera Creek. The proposed legal point of discharge is Cudgera Creek (Cozens Regan 2024b). The potential impact on the quality of Cudgera Creek is to be mitigated through implementation of the following measures detailed in the Stormwater Management Plan (Cozens Regan 2024a):

- Provision of Oil and Grit Separator's to improve discharged water quality from the carpark hardstand areas during the operational phase;
- Provision of infiltration pits to comply with Council's requirements. The major event discharge will also be mitigated to less than the pre-development discharge rate with the installation of proposed infiltration areas; and
- Management of operations of the site during the life of the development to minimise the potential pollutant loads.

With the implementation of the above measures, significant impacts to Cudgera Creek and associated mangroves are not expected as a result of stormwater discharge.

The assessment of groundwater impacts in the Hydrological Impact Assessment (Martens 2024) indicates that post-development there will be a drawdown of approximately 0.15 m of groundwater within areas mapped as Coastal Wetlands under the State Environmental Planning Policy (Resilience and Hazards) 2021. For areas of mangrove the predicted drawdown is less than 0.05 m. This drawdown is likely to be inconsequential as the mangroves are subject to tidal influence. Further to this, predicted sea level rises in response to climate change would negate any minor drawdown impacts.

In addition, some erosion and sedimentation impacts could occur during construction. The Erosion and Sediment Control Plan (Cozens Regan 2024b) indicates that underlying soils comprise of sand, which are considered non-dispersive. The risk of erosion and sediment being transferred from site due to the soil type and gentle slope is considered low (Cozens Regan 2024b). While the potential exists for sediment to be generated during construction, the potential sediment volume is dependent upon rainfall, site topography, the material type exposed, flow characteristics, and construction practices (Cozens Regan 2024b). Eroded sediment can contain weed matter and nutrients, and movement of this material into waterways can facilitate the spread of weeds and result in impacts to wetland communities. These potential impacts are considered to be able to be adequately managed through the implementation of appropriate mitigation measures. This includes minimising the area of soil exposed at any given time. All soil stockpiles should be adequately covered when not in use to prevent erosion from heavy rainfall. Sediment fences should be established around the perimeter of the development area to prevent the impacts of sedimentation on the adjoining areas. During development, precautions should be taken to ensure that no pollution, such as petrochemical substances or water containing suspended solids, escapes the construction site. Pollution traps and efficient removal of pollution to an off-site location will also help to minimise pollution impacts. With the implementation of the above mitigation measures it is considered that erosion and sediment inputs will be unlikely to impact on Cudgera Creek and associated mangroves.

The excavation of acid sulfate soils (ASS) will be required as detailed in the Acid Sulphate Soils Management Plan (ENV Solutions 2024). As such amelioration of ASS will be required. A range of measures to treat and manage ASS are detailed in the Acid Sulphate Soils Management Plan (ENV Solutions 2024). The performance criteria that are relevant to management of ASS as detailed in the Acid Sulphate Soils Management Plan (ENV Solutions 2024) include:

- All ASS material has been identified;
- Excavation and/or filling to occur only in those areas where disturbance is necessary;
- No residual sulfidic acidity is present following full oxidation of disturbed ASS i.e. appropriate treatment of excavated ASS confirmed by collection and analysis of verification samples;
- Confirmation that any containment measures (i.e. bunds) are intact and impermeable and that records be kept of effectiveness and augmentation of these facilities;
- Groundwater level is maintained above ASS during and after works, where possible;
- Confirmation that any collected groundwater or surface water meets relevant criteria and/or existing characteristics prior to discharge to a receiving environment (note: this is an unknown control measure for the proposed development);
- Confirmation that handling and storage of hazardous materials is undertaken in accordance with relevant legislation and that records are kept of said handling and storage; and,
- All personnel involved in the works have undertaken appropriate training for their role in the project with regards to management of ASS.

With implementation of the Acid Sulphate Soils Management Plan (ENV Solutions 2024), and with the above performance criteria met, no impacts to mangroves or other fisheries habitat are considered likely.

Rehabilitation and management measures will be implemented in accordance with the Restoration and Management Plan prepared by Cumberland Ecology (Report No. 21273 RP3). These will ensure an adequate vegetated buffer zone is created and maintained between the Project and adjacent mangroves and creekline.

A.6. Summary

To determine whether the potential impacts of the Project identified in ***Section A.5.2*** above are likely to result in a significant impact to entities listed under the FM Act, 7 Part Assessments of Significance under the FM Act were completed and are provided in **Appendix B** for each of the following entities:

- Ecological communities that are Key Fish Habitat, potential Key Fish Habitat and/or marine vegetation:
    - Mangroves;
    - Coastal Saltmarsh; and
    - Zostera/Eel Grass Beds.
- Threatened species:
    - White's Seahorse (*Hippocampus whitei*); and
    - Black Rockcod (*Epinephelus daemelii).*

No direct impacts will occur to any of these entities listed above and the entirety of their occurrence or potential habitat is outside of the subject land and no areas are proposed to be removed. Although there is some potential for indirect impacts to occur such as sedimentation, groundwater drawdown, and impacts to water quality, a range of mitigation measures are proposed that will avoid these impacts and will result in an increase in the quality of water entering the adjacent wetland and estuarine areas. Accordingly, it is considered unlikely that the Project will have an adverse effect on any species or area of fish habitat.

Accordingly, as indicated by the Tests of Significance, the Project is not expected to have a significant impact on any ecological communities or threatened species listed under the FM Act, and an SIS does not need to be prepared.

A.7. References

ALA 2024. Atlas of Living Australia. https://www.ala.org.au/

Aquis Design 2024. TriCare Hastings Point, 87 Tweed Coast Road, Hastings Point, Development Application.

Cozens Regan 2024a. Stormwater Management Plan, Tricare (Hastings) Limited. Lot 1 DP786570, 87-80 Tweed Coast Road, Hastings Point. Cozens Regan Group.

Cozens Regan 2024b. Erosion and Sediment Control Plan, Tricare (Hastings) Limited. Lot 1 DP786570, 87-80 Tweed Coast Road, Hastings Point. Cozens Regan Group.

Cumberland Ecology. 2024a. Biodiversity Development Assessment Report TriCare Hastings Point, 87-89 Tweed Coast Road, Hastings Point (Report No. 21273 RP2).

Cumberland Ecology. 2024b. Restoration Management Plan. TriCare Hastings Point, 87-89 Tweed Coast Road, Hastings Point (Report No. 21273 RP3).

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DCCEEW 2024a. EPBC Act Protected Matters Search Tool.

DCCEEW 2024b Directory of Important Wetlands in Australia.

Fisheries NSW Policy and Guidelines for Fish Habitat Conservation and Management (2013 update) Environment, Water, Population and Communities. Available from:http://www.environment.gov.au/biodiversity/threatened/communities/pubs/118-conservation-advice.pdf. In effect under the EPBC Act from 10-Aug-2013.

Martens 2024. Hydrological Impact Assessment, State Significant Development. Proposed Seniors Housing Development. 87-89 Tweed Coast Road, Hastings Point NSW.

NSW DPI 2024 Fisheries NSW Spatial Data Portal. https://www.dpi.nsw.gov.au/fishing/fisheries-research/spatial-data-portal.

Tweed Shire Council. 2013. Coastal Zone Management Plan for the Tweed Coast Estuaries, June 2013.

APPENDIX B :
Tests of Significance

B.1. Introduction

This Appendix provides 7 Part Assessments of Significance for the following entities listed under the FM Act that are considered to have potential to occur in the study area and surrounding area:

- Ecological communities that are Key Fish Habitat, potential Key Fish Habitat and/or marine vegetation:
  - Mangroves;
  - Coastal Saltmarsh; and
  - Zostera/Eel Grass Beds.
- Threatened species:
  - White's Seahorse (*Hippocampus whitei*); and
  - Black Rockcod (*Epinephelus daemelii).*

Each entity is considered individually under a separate subheading, and each assessment question is presented in italics followed by a response in plain text.

B.2. Mangrove Forest

PCT 4091 Grey Mangrove-River Mangrove Forest is not listed as a Threatened Ecological Community under the BC Act, EPBC Act or the FM Act, however it is listed as Type 2 - Moderately sensitive key fish habitat under the FM Act. This community does not occur in the subject land; however, it occurs in a narrow band on the eastern edge of Cudgera Creek within the study area.

As this community is not listed as an endangered community under the FM Act, a formal Assessment of Significance under the FM Act is not required, however as it is considered to comprise Type 2 - Moderately sensitive key fish habitat, an Assessment of Significance in accordance with the FM Act has been provided here on a precautionary basis. For the purposes of this assessment, the criteria for an endangered ecological community have been used.

(a) in the case of a threatened species, whether the Project or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

Not applicable

(b) in the case of an endangered population, whether the Project or activity is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction.

Not applicable

(c) in the case of an endangered ecological community or critically endangered ecological community, whether the Project or activity—
(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or

The Project will not reduce the extent of this ecological community. The entirety of its occurrence is outside of the subject land and no areas are proposed to be removed. Although there is some potential for indirect impacts to occur such as sedimentation, groundwater drawdown, and impacts to water quality, a range of mitigation measures are proposed that will avoid these impacts and will result in an increase in the quality of water entering this community. Accordingly, it is considered unlikely that the Project will have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction.

(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction.

The Project will not modify the composition of this ecological community in any way. The entirety of its occurrence is outside of the subject land and no direct impacts are proposed. Although there is some potential for indirect impacts to occur such as sedimentation, groundwater drawdown and impacts to water quality, a range of mitigation measures are proposed that will avoid these impacts and will result in an increase in the quality of water entering this community. Accordingly, it is considered unlikely that the Project will substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction.

(d) in relation to the habitat of a threatened species, population or ecological community—
(i) the extent to which habitat is likely to be removed or modified as a result of the Project or activity,

No area of habitat for this community is likely to be removed or modified. Its entire occurrence is outside of the subject land.

(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the Project or activity,

No area of habitat for this community is likely to become fragmented or isolated from other areas of habitat as a result of the Project as the habitat occurs in a narrow linear strip along Cudgera Creek that will not be impacted. Accordingly, no area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the Project.

(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the threatened species, population or ecological community in the locality,

No area of habitat for this community will be removed, modified, fragmented or isolated.

(e) whether the Project or activity is likely to have an adverse effect on any critical habitat (either directly or indirectly),

No critical habitat for this community has been identified.

(f) whether the Project or activity is consistent with a Priorities Action Statement,

No Priorities Action Statement has been prepared for this community as it is not listed under the FM Act.

(g) whether the Project constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process.

The Project will not result in the operation of any key threatening process listed under the FM Act, neither will it increase the impact of a key threatening process.

Conclusion

No significant impact is predicted to occur to this community as a result of the Project and therefore an SIS is not required.

B.3. Coastal Saltmarsh

Coastal Saltmarsh is listed as an Endangered Ecological Community under the BC Act as Coastal Saltmarsh of the NSW North Coast and Sydney Basin and South East Corner Bioregions Endangered Ecological Community. It is also listed as a Vulnerable Ecological Community under the EPBC Act as Subtropical and Temperate Coastal Saltmarsh. This community does not occur in the subject land; however, it is mapped as occurring to the south east of the study area on the opposite bank of Cudgera Creek, within 100 m of the study area.

As this community is not listed under the FM Act, a formal Assessment of Significance under the FM Act is not required, however due to its conservation status under the BC Act and EPBC Act, and as it is considered to comprise Type 2 - Moderately sensitive key fish habitat under the FM Act, an Assessment of Significance in accordance with the FM Act has been provided here on a precautionary basis. For the purposes of this assessment, the criteria for an endangered ecological community have been used.

(a) in the case of a threatened species, whether the Project or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

Not applicable

(b) in the case of an endangered population, whether the Project or activity is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction.

Not applicable

(c) in the case of an endangered ecological community or critically endangered ecological community, whether the Project or activity—
(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or

The Project will not reduce the extent of this ecological community. The entirety of its occurrence is outside of the subject land and no areas are proposed to be removed. Although there is some potential for indirect impacts to occur such as sedimentation and impacts to water quality, a range of mitigation measures are proposed that will minimise these impacts. Accordingly, it is considered unlikely that the Project will have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction.

(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,

The Project will not modify the composition of this ecological community in any way. The entirety of its occurrence is outside of the subject land and no direct impacts are proposed. Although there is some potential for indirect impacts to occur such as sedimentation and impacts to water quality, a range of mitigation measures are proposed that will minimse these impacts. Accordingly, it is considered unlikely that the Project will substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction.

(d) in relation to the habitat of a threatened species, population or ecological community—
(i) the extent to which habitat is likely to be removed or modified as a result of the Project or activity, and

No area of habitat for this community is likely to be removed or modified. Its entire occurrence is outside of the subject land.

(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the Project or activity,

No area of habitat for this community is likely to become fragmented or isolated from other areas of habitat as a result of the Project. The areas of costal saltmarsh are located on the opposite bank of Cudgera Creek and are separated from the subject land by Cudgera Creek and fringing vegetation that will not be directly impacted by the Project. Accordingly, no area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the civil works.

(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the threatened species, population or ecological community in the locality,

No area of habitat for this community will be removed, modified, fragmented or isolated.

(e) whether the Project or activity is likely to have an adverse effect on any critical habitat (either directly or indirectly),

No critical habitat for this community has been identified.

(f) whether the Project or activity is consistent with a Priorities Action Statement,

No Priorities Action Statement has been prepared for this community as it is not listed under the FM Act.

(g) whether the Project constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process.

The Project will not result in the operation of any key threatening process listed under the FM Act, neither will it increase the impact of a key threatening process.

Conclusion

No significant impact is predicted to occur to this community as a result of the Project and therefore an SIS is not required.

B.4. *Zostera* Eel Grass Beds

No areas of Eel Grass beds are present in the study area, with the closest mapped occurrences located approximately 600 m downstream within the Cudgera Creek estuary. Eel Grass is classified as Key Fish Habitat and marine vegetation under the FM Act. As this vegetation is not listed under the FM Act, a formal Assessment of Significance under the FM Act is not required, however as it is considered to comprise Key Fish Habitat and marine vegetation under the FM Act, an Assessment of Significance in accordance with the FM Act has been provided here. For the purposes of this assessment, the criteria for a threatened species have been used.

(a) in the case of a threatened species, whether the Project or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,

The Project will not impact on this species in any way. The entirety of its occurrence is located well outside of the subject land and no areas are proposed to be removed. Although there is some potential for indirect impacts to occur such as sedimentation and impacts to water quality, a range of mitigation measures are proposed that will minimise these impacts. Accordingly, it is considered unlikely that the Project will have an adverse effect on the life cycle of this species such that a viable local population of the species is likely to be placed at risk of extinction.

(b) in the case of an endangered population, whether the Project or activity is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction,

Not applicable

(c) in the case of an endangered ecological community or critically endangered ecological community, whether the Project or activity—
(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or

The Project will not reduce the extent of this ecological community in any way. The entirety of its occurrence is well outside of the subject land and no areas are proposed to be removed. Although there is some potential for very minor indirect impacts to occur such as sedimentation and impacts to water quality, a range of mitigation measures are proposed that will avoid these impacts and will result in an increase in the quality of water entering this community. Accordingly, it is considered unlikely that the Project will have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction.

(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,

The Project will not modify the composition of this ecological community in any way. The entirety of its occurrence is well outside of the subject land and no direct impacts are proposed. Although there is some potential for very minor indirect impacts to occur such as sedimentation and impacts to water quality, a range of mitigation measures are proposed that will avoid these impacts and will result in an increase in the quality of water entering this community. Accordingly, it is considered unlikely that the Project will substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction.

(d) in relation to the habitat of a threatened species, population or ecological community—
(i) the extent to which habitat is likely to be removed or modified as a result of the Project or activity,

No area of habitat for this species is likely to be removed or modified. Its entire occurrence is outside of the subject land.

(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the Project or activity, and

No area of habitat for this species is likely to become fragmented or isolated from other areas of habitat as a result of the Project. This community occurs in several small patches located approximately 600 m downstream of the subject land within Cudgera Creek, and as no impacts are proposed in this area, no area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the Project.

(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the threatened species, population or ecological community in the locality,

No area of habitat for this species will be removed, modified, fragmented or isolated.

(e) whether the Project or activity is likely to have an adverse effect on any critical habitat (either directly or indirectly),

No critical habitat for this community has been identified.

(f) whether the Project or activity is consistent with a Priorities Action Statement,

No Priorities Action Statement has been prepared for this species as it is not listed under the FM Act.

(g) whether the Project constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process.

The Project will not result in the operation of any key threatening process listed under the FM Act, neither will it increase the impact of a key threatening process.

Conclusion

No significant impact is predicted to occur to this species as a result of the project and therefore an SIS is not required.

B.5. Whites Seahorse

White's Seahorse is considered to be endemic to the waters of southern Queensland (Hervey Bay) to Sussex Inlet NSW where it can be found occurring in coastal embayments and estuaries. It is known to occur from depths of 1 m to 18 m. Habitats that are considered important habitat for the White's Seahorse include natural habitats such as sponge gardens, seagrass meadows and soft corals. It is also known to use artificial habitats such as protective swimming net enclosures and jetty pylons. No such habitat is present in the study area.

As areas of Zostera Eel Grass occur approximately 600 m downstream of the study area, and there is a single record from the locality, this species has potential to occur very rarely. Whites Seahorse is listed as Endangered under the FM Act, and therefore an Assessment of Significance has been prepared and is presented below.

(a) in the case of a threatened species, whether the Project or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,

The Project is not considered likely to impact on this species. The entirety of its habitat (Zostera Eel Grass) in the study area is outside of the subject land/study area and no areas are proposed to be removed. Although there is some potential for indirect impacts such as impacts to water quality, a range of mitigation measures are proposed that will minimise these impacts. Accordingly, it is considered unlikely that the Project will have an adverse effect on the life cycle of this species such that a viable local population of the species is likely to be placed at risk of extinction.

(b) in the case of an endangered population, whether the Project or activity is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction,

Not applicable

(c) in the case of an endangered ecological community or critically endangered ecological community, whether the Project or activity—
(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction,

Not applicable

(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,
Not applicable

(d) in relation to the habitat of a threatened species, population or ecological community—
(i) the extent to which habitat is likely to be removed or modified as a result of the Project or activity, and

No area of habitat for this species (Zostera Eel Grass) is likely to be removed or modified. The entire occurrence of its potential habitat is well outside of the subject land.

(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the Project or activity, and

No area of habitat for this species is likely to become fragmented or isolated from other areas of habitat as a result of the Project. This species habitat occurs in several small patches within Cudgera Creek, approximately 600m downstream of the subject land, and as no impacts are proposed in this area, no area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the Project.

(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the threatened species, population or ecological community in the locality,

No area of habitat for this species will be removed, modified, fragmented or isolated.

(e) whether the Project or activity is likely to have an adverse effect on any critical habitat (either directly or indirectly),

No critical habitat for this species has been identified.

(f) whether the Project or activity is consistent with a Priorities Action Statement,

A draft Priorities Action Statement has been prepared for this species which lists the following actions.

- Advice to consent and determining authorities;
- Collate and review existing information;

- Community and stakeholder liaison, awareness and education;
- Habitat protection and rehabilitation;
- Stocking / translocations;
- Compliance / enforcement;
- Enhance, modify or implement NRM planning processes to minimize adverse impacts on threatened species;
- Research / monitoring; and
- Survey / mapping

It is considered that the Project is consistent with the actions identified in the draft Priorities Action Statement for the species.

(g) whether the Project constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process.

The Project will not result in the operation of any key threatening process listed under the FM Act, neither will it increase the impact of a key threatening process.

Conclusion

No significant impact is predicted to occur to this species as a result of the civil works and therefore an SIS is not required.

B.6. Black Rock Cod

The Black Rock Cod is a territorial species that inhabits caves, gutters and crevices. They are usually found in depths up to 50 m, although individuals have been collected from below 100 m. Juveniles are found inshore, often in coastal rockpools and estuaries.

The study area is located adjacent to the estuarine parts of Cudgera Creek, and there is a single marine record from the locality, and therefore this species has potential to occur rarely. The Black Rock Cod is listed as Vulnerable under the FM Act, and therefore an Assessment of Significance has been prepared and is presented below.

(a) in the case of a threatened species, whether the Project or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,

The Project is not considered likely to impact on this species in any way. The entirety of its habitat (Cudgera Creek) in the study area is outside of the subject land and no areas are proposed to be removed. Although there is some potential for indirect impacts to occur such as sedimentation and impacts to water quality, a

range of mitigation measures are proposed that will minimise these impacts. Accordingly, it is considered unlikely that the Project will have an adverse effect on the life cycle of this species such that a viable local population of the species is likely to be placed at risk of extinction.

(b) in the case of an endangered population, whether the Project or activity is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction,

Not applicable

(c) in the case of an endangered ecological community or critically endangered ecological community, whether the Project or activity—
(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction,

Not applicable

(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,

Not applicable

(d) in relation to the habitat of a threatened species, population or ecological community—
(i) the extent to which habitat is likely to be removed or modified as a result of the Project or activity, and

No area of habitat for this species (Cudgera Creek) is likely to be removed or modified. The entire occurrence of its potential habitat is outside of the subject land.

(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the Project or activity, and

No area of habitat for this species is likely to become fragmented or isolated from other areas of habitat as a result of the Project. This species habitat occurs in Cudgera Creek which is located outside of and to the west of the subject land, and as no impacts are proposed in this area, no area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the Project.

(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the threatened species, population or ecological community in the locality,

No area of habitat for this species will be removed, modified, fragmented or isolated.

(e) whether the Project or activity is likely to have an adverse effect on any critical habitat (either directly or indirectly),

No critical habitat for this species has been identified.

(f) whether the Project or activity is consistent with a Priorities Action Statement,

A draft Priorities Action Statement has been prepared for this species which lists the following actions.

- Advice to consent and determining authorities;
- Collate and review existing information;
- Community and stakeholder liaison, awareness and education;
- Compliance / enforcement;
- Enhance, modify or implement NRM planning processes to minimize adverse impacts on threatened species;
- Research / monitoring; and
- Survey / mapping

It is considered that the Project is not consistent with the actions identified in the draft Priorities Action Statement for the species.

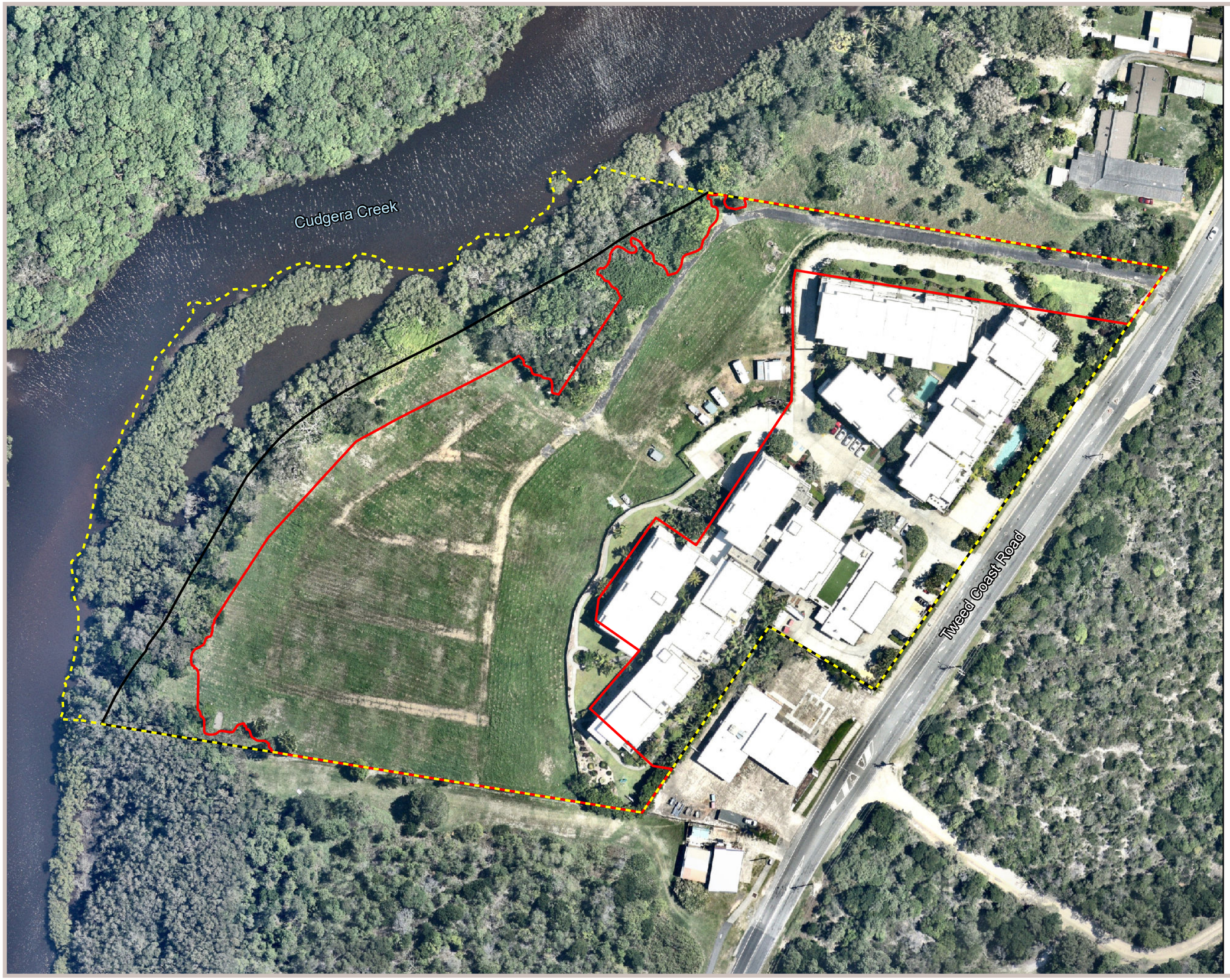
(g) whether the Project constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process.

The Project will not result in the operation of any key threatening process listed under the FM Act, neither will it increase the impact of a key threatening process.

Conclusion

No significant impact is predicted to occur to this species as a result of the Project and therefore an SIS is not required.

FIGURES



Legend

- Subject Land
- Subject Site
- Study Area

Image Source:
Image © NearMap 2024
Dated: 22/01/2024

Data Source:
NSW Government Spatial Services
SIX Maps 'Clip and Ship'

Coordinate System: MGA Zone 56 (GDA 94)

cumberland ecology

0 40 m

I:\...\21273\Figures\Letter 10\20250212\Figure 1. Location

Figure 1. Location of the subject site, study area and subject land

Arqus DESIGN

Integrated perspective

Arqus Design Pty Ltd
ABN 68 135 616 303

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Fortitude Valley Qld 4006
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Arqus Design acknowledges the Traditional Owners of Country on which we live, work and design and pay our respects to their Elders, past and present.

NOTES:

Contractors are to verify all dimensions on site before commencing any work or producing shop drawings.

Detail applicable to the scale of the drawing published.

DATE	REVISION	ISSUE
24.01.23	DRAFT DA PACKAGE	A
24.08.16	DRAFT DA PACKAGE	B
24.10.03	UPDATED DRAFT DA PACKAGE	C
24.10.09	DA PACKAGE	D

LANDSCAPING AREAS

DEEP PLANTING (INCLUDES ENDANGERED ECOLOGICAL COMMUNITY ZONE)	12309.862m²
LAWN	980.65m²
PLANTER	856.18m²
EXISTING LANDSCAPING	5439.18m² (approx.)
GROUND LEVEL TOTAL LANDSCAPE AREA	14126.87m²
TOTAL AREA (WITH EXISTING)	19565.83m² (approx.)

NOTE: AREAS TO BE READ IN CONJUNCTION WITH LANDSCAPE DA PACKAGE. REFER TO ARCADIA PROJECT NO. 24-244 DRAWING 21

LANDSCAPING LEGEND

- CURRENT RIPARIAN VEGETATION TREE LINE
- CORE REHABILITATION ZONE
- RESIDUAL OUTER REHABILITATION ZONE
- DEEP PLANTING
- LAWN
- PLANTER
- EXISTING LANDSCAPE

REFER TO LANDSCAPE ARCHITECTS DOCUMENTATION FOR ALL LANDSCAPE AREAS

- APZ LINE

CLIENT

TriCare
Retirement Living. Home Care. Aged Care.

PROJECT

TRICARE HASTINGS POINT

87 TWEED COAST RD, HASTINGS POINT 2489, NSW

COUNTRY: BUNDJALUNG

DRAWING

OVERALL AREA PLAN - LANDSCAPING AREAS (GROUND LEVEL)

JOB NUMBER	DESIGN	DRAWN	CHECKED
23-0025	SP	KF,SS	SP

SCALE	DATE CREATED	NORTH
1 : 500 @A1 @A3	01/12/23	

DRAWING NUMBER	ISSUE
DA-2-16	D

ISSUED FOR

DEVELOPMENT APPLICATION

I:\...\21273\Figures\Letter 10\20250212\Figure 2. Project Layout

Figure 2. Project Layout

Image Source: Arquis Design (2025)

ECOLOGICAL ZONES LEGEND

- CURRENT RIPARIAN VEGETATION TREE LINE
- CORE REHABILITATION ZONE
- RESIDUAL OUTER REHABILITATION ZONE
- APZ LINE

Arqus DESIGN

Integrated perspective

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ABN 68 130 616 303

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New Farm Qld 4005

Registration:
Nominated Architect: Scott Peabody
QLD: 3544
NSW: 9238
VIC: 600111 (Arqus Design 400939)

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Arqus Design acknowledges the Traditional Owners of Country on which we live, work and design and pay our respects to their Elders, past and present.

NOTES

Contractors are to verify all dimensions on site before commencing any work or producing shop drawings.

Detail applicable to the scale of the drawing published.

DATE	REVISION	ISSUE
23.12.01	DRAFT DA PACKAGE	A
23.12.15	DRAFT DA PACKAGE	B
24.01.23	DRAFT DA PACKAGE	C
24.03.08	FOR INFORMATION	D
24.04.15	FOR INFORMATION	E
24.06.12	FOR INFORMATION	F
24.08.16	DRAFT DA PACKAGE	G
24.10.03	UPDATED DRAFT DA PACKAGE	H
24.10.09	DA PACKAGE	I

CLIENT
TriCare
Retirement Living. Home Care. Aged Care.

PROJECT
TRICARE HASTINGS POINT

87 TWEED COAST RD, HASTINGS POINT 2489, NSW

COUNTRY: BUNDJALUNG

DRAWING
SITE PLAN - GROUND FLOOR (AGED CARE FACILITY)

JOB NUMBER	DESIGN	DRAWN	CHECKED
23-0025	SP	KF,SS	SP

SCALE	DATE CREATED	NORTH
1 : 500 @A1 1 : 1000 @A3	29/08/23	

DRAWING NUMBER: DA-2-02
ISSUE: I

ISSUED FOR
DEVELOPMENT APPLICATION

I:\...\21273\Figures\Letter 10\20250212\Figure 3. Ground Floor Plan

Figure 3. Ground Floor Plan

Image Source: Arquis Design (2025)

Figure 4. Vegetation mapping for the study area

Legend

- Subject Land
- Subject Site
- Study Area

Estuarine Macrophyte (Fisheries NSW Spatial Data Portal)

- Mangrove
- Saltmarsh

Image Source:
Image © NearMap 2024
Dated: 22/01/2024

Data Source:
NSW Government Spatial Services
SIX Maps 'Clip and Ship'
NSW Fisheries Spatial Data Portal
NSW Department of Primary Industries
and Regional Development.

Coordinate System: MGA Zone 56 (GDA 94)

cumberland ecology

0 50 100 m

I:\...\21273\Figures\Letter 10\20250212\Figure 5. Estuarine Macrophytes_Fisheries NSW Spatial Data Portal

Figure 5. Estuarine Macrophytes mapped under the Fisheries NSW Spatial Data Portal

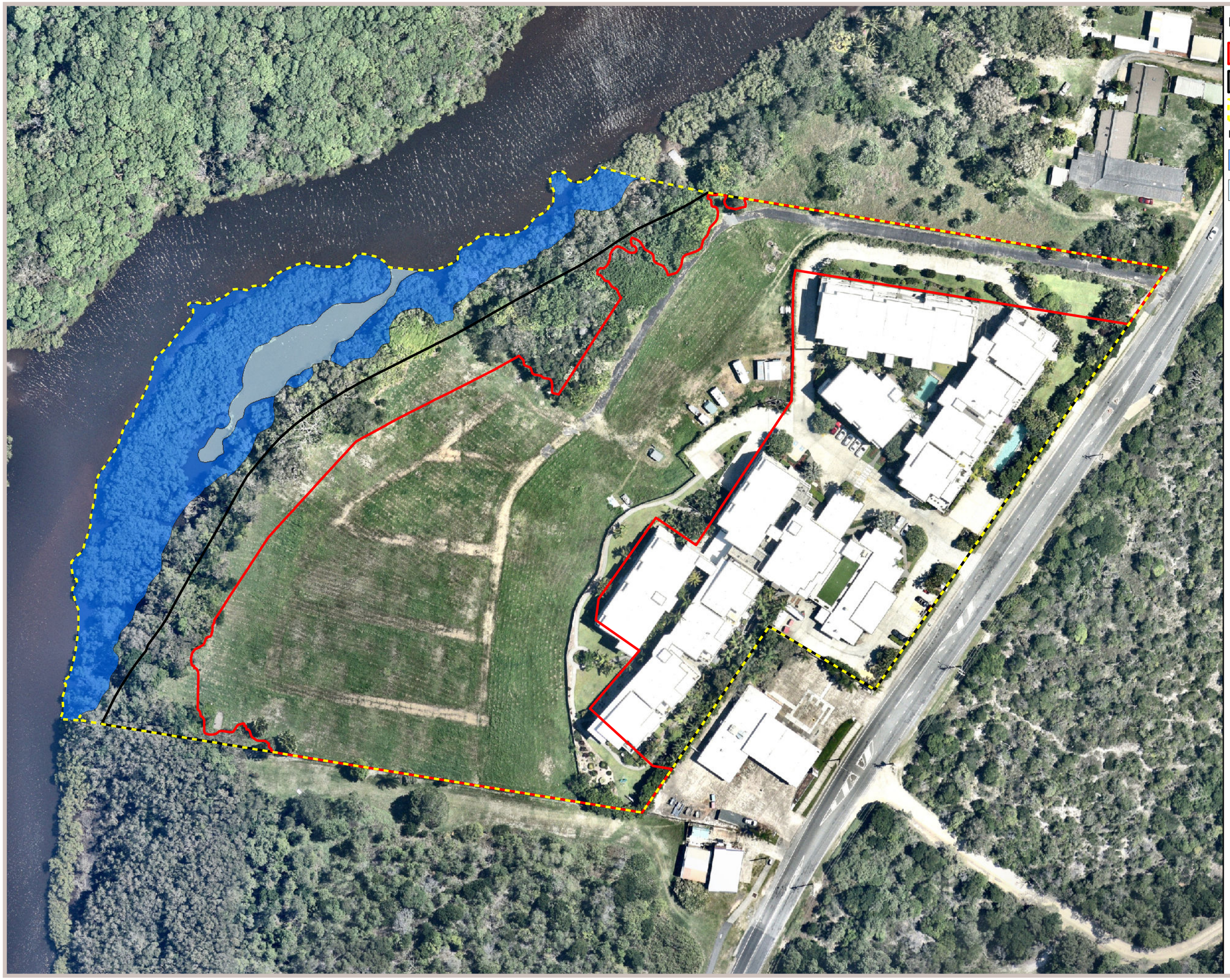

Figure 6. Key Fish Habitat

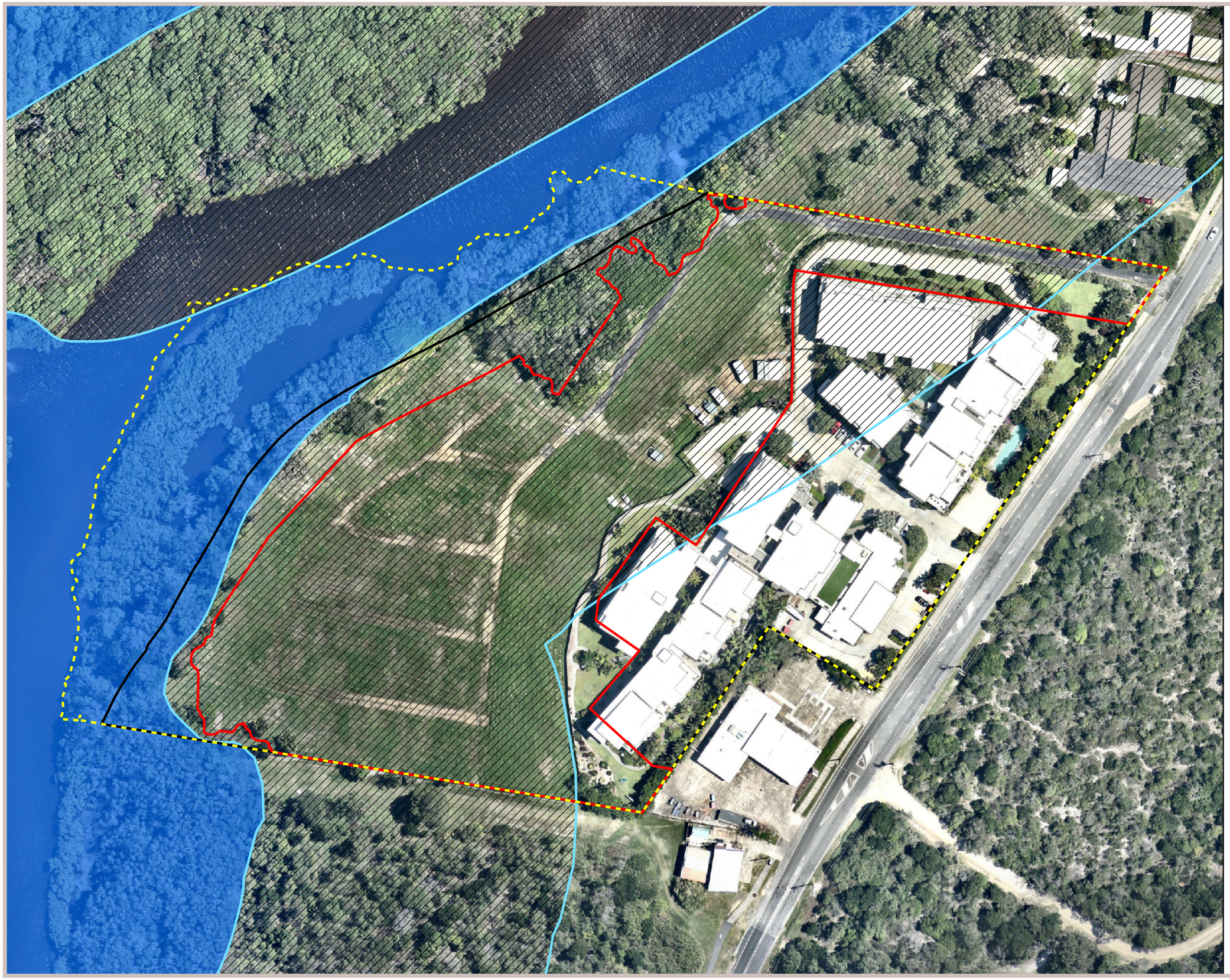

Figure 7. Coastal Wetlands Mapping