



DA 2021-170
Response to Submissions

Mixed Use Development

951 Broken Head Road,
Broken Head

PLANNERS NORTH, October 2021

LINNAEUS PROPERTY • MIXED USE DA 2021-170 RESPONSE TO SUBMISSIONS

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1 INTRODUCTION

1.1 BACKGROUND

BHCF Pty Ltd ("BHCF") is the trustee for the BHCF Unit Trust that operates a Private Education facility at Broken Head south of Byron Bay. A separate entity, the Linnaeus Property Trust ("Linnaeus Property"), is seeking consent for a Mixed Use Development of the property known as "Linnaeus Estate".

DA 2021-170 and its Statement of Environmental Effects ("SEE") was publicly exhibited by Byron Shire Council ("Council") from 22 April 2021 to 19 May 2021. This Response to Submissions document has been prepared to provide commentary concerning the key issues raised in submissions.

1.2 AMENDMENT OF PROPOSAL

Having regard to submissions received and with the benefit of mature reflection, Linnaeus Property has "scaled back" the development application. In summary, the changes to the proposal include:

- Removing the workers' car parking area, change rooms and ablutions (referred to as Precinct B in the SEE) and instead bussing workers to and from the site;
- Changing the location of the Refuge Building #1 to ensure that no realignment of the watercourse in that locality is required; and
- Deleting proposed cabins A9-22 and C1 and replacing those cabins with the five accommodation units approved under the commenced Development Consent 2013/600.

These changes have the effect of completely removing the need to remove any site trees.

1.3 STRUCTURE OF THIS REPORT

Section 2 provides a brief summary of the submissions received. Consideration concerning the supporting submissions is set out in Section 3. Considerations in relation to Government agency submissions are described in Section 4. Section 5 provides consideration concerning key matters raised by objector submissions particularly in relation to cultural considerations, zoning, waste, access, flora and fauna, amenity, noise and vibration, services and hazards. The final section provides a brief conclusion.

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2 SUBMISSIONS SUMMARY

The Council received a total of 2,623 submissions in response to the exhibition. **Table 2.1** below provides details of these submissions from government agencies, special interest groups and the general public.

TABLE 2.1: TOTAL SUBMISSIONS BY CATEGORY.

| | |
|--|--|
| 2 Government Agency Submissions | |
| <ul style="list-style-type: none"> Ballina Shire Council | <ul style="list-style-type: none"> Department of Planning, Environment and Industry (DPIE) |
| 4 Special Interest Group Submissions | |
| <ul style="list-style-type: none"> Tyr Group HDC Planning | <ul style="list-style-type: none"> Broken Head Protection Committee Scarlet Global Corporation |
| 2,618 General Public Submissions | |
| <ul style="list-style-type: none"> 2,113 identical form letters objecting; 209 form letters with some comment objecting; 257 unique objections; and 42 unique support submissions. | |

No government authorities have objected to the proposal. However, Ballina Shire Council recommended one minor traffic related condition (relating to access to the site).

Submissions received from the general public were from a wide geographical area. Typically, the majority were from individuals located in the Northern Rivers Region. However, there were also a proportion of submissions from other states and territories as well as overseas locations including the United Kingdom, South Korea, Japan, France, the United States of America, Spain, the Ukraine and Chile.

Further detail of the submissions received during the exhibition period is presented in **Table 2.2** below. The issues have been categorised (in the 'issues raised' column) using the key headings identified in the SEE, to enable a consolidated response to the issues in **Section 3** (for supporters), **Section 4** (for government agencies) and **Section 5** (special interest groups and general public objecting to the proposal) below.

TABLE 2.2: SUMMARY OF SUBMISSIONS.

| <i>Stakeholder</i> | <i>Stance</i> | <i>Issues Raised</i> | <i>Issue Specifics</i> |
|---|---------------|--|---|
| Authority Submissions | | | |
| Ballina Shire Council (BSC) | Comments | <ul style="list-style-type: none"> Access | <ul style="list-style-type: none"> Site Access Ingress/Egress |
| Special Interest Group Submissions | | | |
| Tyr Group | Objects | <ul style="list-style-type: none"> Services | <ul style="list-style-type: none"> Wastewater Assumptions System Capacities Treatment Design |

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| <i>Stakeholder</i> | <i>Stance</i> | <i>Issues Raised</i> | <i>Issue Specifics</i> |
|----------------------------------|---------------|--|---|
| Broken Head Protection Committee | Objects | <ul style="list-style-type: none"> • Flora and Fauna • Planning Context • Services • Fire Hazard • Context and Setting • Access • Noise and Vibration • Waste • Water | <ul style="list-style-type: none"> • Biodiversity Assessment • EPBC Referral • Koalas • Access to Beach • LEP Issues • Sewage System Capacities • Treatment Design • Assessment Issues • Eco Tourism • Roads • Car Parks • Noise • Generation • Water Usage |
| HDC Planning | Objects | <ul style="list-style-type: none"> • Planning Context | <ul style="list-style-type: none"> • LEP Issues |
| Scarlett Global Corporation | Objects | <ul style="list-style-type: none"> • Planning Context • Amenity of the Area | <ul style="list-style-type: none"> • LEP Issues • Commercialisation |
| <i>Public Submissions</i> | | | |
| Various | Supports | <ul style="list-style-type: none"> • Social and Economics • Flora and Fauna | <ul style="list-style-type: none"> • Tourism Positive Impacts • Significant Employment • Benefits to Community • Economic Benefits to Local Businesses and Suppliers • Benefits to Businesses • Well Managed Environmental Programs • Sustainable Operational Practices • Planting of Trees • In-perpetuity Conservation Agreement |

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| <i>Stakeholder</i> | <i>Stance</i> | <i>Issues Raised</i> | <i>Issue Specifics</i> |
|--------------------|---------------|---|---|
| Various | Objects | <ul style="list-style-type: none"> • Construction Works | <ul style="list-style-type: none"> • Sound Waste Targets • Effective Recycling Systems |
| | | <ul style="list-style-type: none"> • Access | <ul style="list-style-type: none"> • Electric Vehicles Onsite |
| | | <ul style="list-style-type: none"> • Social and Economic | <ul style="list-style-type: none"> • Facility for the Elite • Commercialisation • Scale of Proposal |
| | | <ul style="list-style-type: none"> • Cultural Considerations | <ul style="list-style-type: none"> • Consultation |
| | | <ul style="list-style-type: none"> • Services | <ul style="list-style-type: none"> • Sewage System Capacities • Wastewater Treatment Design |
| | | <ul style="list-style-type: none"> • Access | <ul style="list-style-type: none"> • Capacity of Local Roads to Deal with Traffic • Parking |
| | | <ul style="list-style-type: none"> • Waste | <ul style="list-style-type: none"> • Waste Generation • Construction Waste |
| | | <ul style="list-style-type: none"> • Flora and Fauna | <ul style="list-style-type: none"> • Compliance with Ecological Requirements • Protection of Koalas • Flora and Fauna Impacts • Climate Change • Biodiversity Assessment • Pollution • Littoral Rainforest • Vegetation Removal |
| | | <ul style="list-style-type: none"> • Planning Context | <ul style="list-style-type: none"> • LEP Issues • Education Facility |
| | | <ul style="list-style-type: none"> • Fire Hazard | <ul style="list-style-type: none"> • Fire Assessment |
| | | <ul style="list-style-type: none"> • Noise and Vibration | <ul style="list-style-type: none"> • Impacts on Neighbours |

3 CONSIDERATION OF SUPPORTING SUBMISSIONS

In addition to the more obvious economic benefits such as employment and direct expenditure with local businesses, supporting submissions also acknowledged that the proposal can be undertaken with minimal environmental impacts and that the cultural and environmental benefits to the region were substantial.

The key issues raised by supporters are shown in **Figure 3.1**.

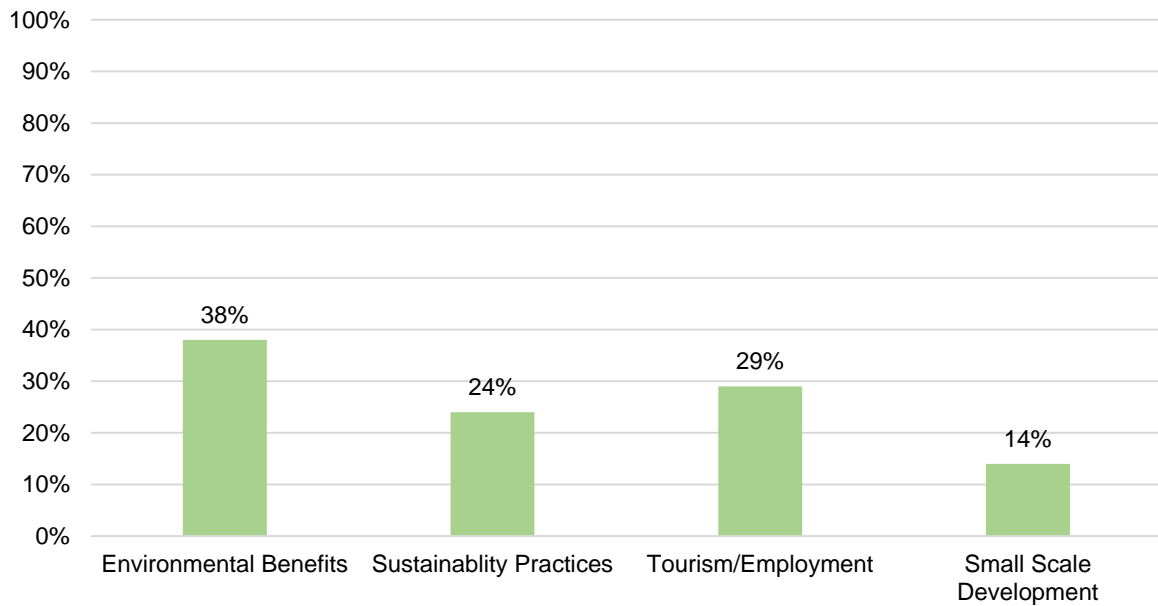


Figure 3.1: Supporter Key Issues – Public and Special Interest Groups (n=42).

4 CONSIDERATION OF GOVERNMENT AGENCY ISSUES

Two submissions were received from government agencies. Neither submission objected to the proposal. The key issues raised in these government agency submissions are shown in italics, followed by our response to the issues.

4.1 DEPARTMENT OF PLANNING, INDUSTRY AND ENVIRONMENT

4.1.1 Crown Land

"While the proposal does not directly impact on the Crown estate, please ensure that the applicant does not undertake any activity on the Crown land or use the Crown land for any purpose associated with the development."

The proposal is entirely situated on private land. All activities shall only take place on this private land. Where required, Linnaeus Estate will develop and implement controls to protect adjacent Crown Land through the development and implementation of its Environmental Management System.

4.2 BALLINA SHIRE COUNCIL

4.2.1 Traffic

"Council has concerns in relation to the queue length for vehicles entering the site via the controlled gate. It is considered the 24m of queue provision should be wholly located within the driveway and not include storage on turning lanes as suggested in Section 3.4.1, page 16 of the Traffic Impact Assessment submitted. Accordingly, Council recommends the controlled gate be moved into the site a minimum of 4m to accommodate 24m of queue length on the driveway."

Agreed. The amended Plan Set provides for the recommended queue length.

5 CONSIDERATION OF OBJECTING SUBMISSIONS

A broad range of issues have been raised by special interest groups and members of the general public. While more than 88% of these submissions were form letters or form letters with a brief unique introduction, there were some 255 unique objections providing more detail surrounding their concerns.

The key issues raised by these unique objectors and special interest groups are shown in **Figure 5.1** below.

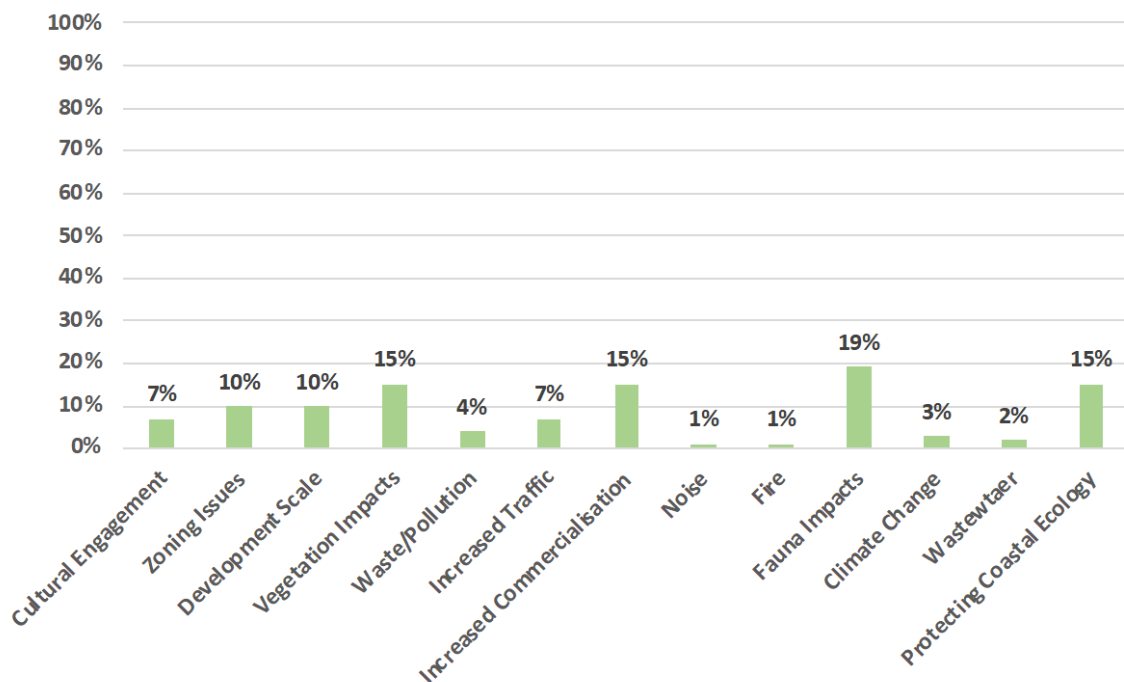


Figure 5.1: Objector Key Issues – Public and Special Interest Groups (n=259)

A detailed consideration of the issues raised in the special interest and general public submissions is presented below. Examples of key issues raised in various submissions are shown in italicised font, followed by our response to the issues.

5.1 CULTURAL CONSIDERATIONS

5.1.1 Cultural Engagement

Objector:

"I have deep concerns about the lack of cultural engagement with the traditional land owners, I am in full support of elder and custodian of Seven mile beach Auntie Lois Cook"

An Aboriginal Cultural Heritage Assessment ("ACHA") was undertaken in November 2019 in accordance with the Aboriginal Cultural Heritage Consultation Requirements for Proponents (ACHCRP) Guidelines.

Linnaeus Estate has an ongoing relationship with the Jali Local Aboriginal Land Council ("LALC") arising from the archaeological investigations from previous development applications. These consultations were formalised via a Memorandum of Understanding ("MoU") in 1999 which was endorsed by the then NSW National Parks and Wildlife Service. The MoU was negotiated with Uncle Lewis Cook and included agreed buffers around the foredunes, Aboriginal site monitoring procedures and "stop work" provisions in the event of unexpected Aboriginal finds. The consultation for this application was undertaken in accordance with this MoU.

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Following advice from Mikael Smith, CEO at Jali LALC, an invitation to attend a site inspection was provided to the following Aboriginal stakeholders on 20 September 2019:

- Jali LALC;
- Lois Cook;
- Troy Anderson; and
- Marcus Ferguson.

Both Mr Smith and Mr Anderson attended the site inspection on 25 September 2019. Ms Cook advised on the day of the inspection that she was unable to attend and requested another time. Ms Cook was advised that this was not possible as all of the associated professional persons had been gathered at the site at the appointed time. Further, Ms Cook was advised that a copy of the report would be sent to her and that the archaeological consultant was happy to continue “talking” with her.

5.1.2 Cultural Heritage Sites

Objector:

“I think it appropriate to investigate the possibility of significant heritage remains on the site or adjacent to the site prior to any approval. The coastal environment has provided sea food supply for generations. It is hard to believe that there is not a midden site in this location.”

“I fully support traditional custodians rights to preserve and protect their homelands. This development will have a direct impact on these sacred and significant sites.”

The Linnaeus Estate has been the subject of four ACHA's as follows:

- Byrne, 1986;
- Dallas, 1998;
- Piper, 2004; and
- Everick Heritage, 2019.

The Everick Heritage Report submitted as part of this Development Application drew on the findings of past assessments in addition to information gained through the site visit on 25 September 2019 with local indigenous representatives.

The key findings of the Everick assessment were that:

- No Aboriginal sites were identified within the immediate location of the proposed works;
- Having consideration for the potential of the Beach Cabins to contain sub-surface middens and the anticipated footprint of the proposed cabins, inclusive of subsurface utilities such as water and power, it is considered that there is sufficient space around the cabin precinct to be able to manage any midden material should it be present. This may include re-siting individual cabins or relocating the midden material itself to a permanent nearby conservation area;
- Having consideration for the outcomes of the previous studies it is not unexpected that middens occur at the headland, along the foredune and at the outlet of the lake to the south of the Project Area. As such the previous studies provide a reasonable assessment of the general nature and distribution of Aboriginal sites in and around the Project Area; and
- The location of the Artefact Site (#04-5-0152) was identified from its Site Card. However, the site could not be accessed due to vegetation cover and will not be impacted by the proposed works.

The Everick assessment made the following recommendations, which shall be incorporated into the proposed Environmental Management System for the site:



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1. If suspected Aboriginal material has been uncovered because of development activities within the Project Area:
 - a. Work in the surrounding area is to stop immediately;
 - b. a temporary fence is to be erected around the site, with a buffer zone of at least 10 metres around the known edge of the site;
 - c. an appropriately qualified archaeological consultant is to be engaged to identify the material;
 - d. if the material is found to be of Aboriginal origin, the Aboriginal community is to be consulted in a manner as outlined in the: Aboriginal Cultural Heritage Consultation Requirements for Proponents (2010); and
 - e. should the works be deemed to have harmed the Aboriginal objects the DPIE should be notified immediately via the EPA Enviro Hotline.
2. Although it is unlikely that Human Remains will be located at any stage during earthworks within the Project Area, should this event arise it is recommended that all works must halt in the immediate area to prevent any further impacts to the remains. The Site should be cordoned off and the remains themselves should be left untouched. The nearest police station (Lennox Head), the Jali LALC and the DPIE Regional Office (Coffs Harbour) are all to be notified as soon as possible. If the remains are found to be of Aboriginal origin and the police do not wish to investigate the Site for criminal activities, the Aboriginal community and the DPIE should be consulted as to how the remains should be dealt with. Work may only resume after an agreement is reached between all notified parties, provided it is in accordance with all parties' statutory obligations.

5.2 ZONING

5.2.1 Mixed Use Development

Objector: Broken Head Protection Committee

"Despite the concern regarding the zone label change, it's unclear whether this application meets the criteria for Mixed Use Development and the requirements for two or more uses, as the application is for a single use, being ecotourism. The application does however, present that it will incorporate aspects of the prior approvals for the Private Education Facility."

Objector: Memorandum of advice to Scarlett Corporation

Mixed use development is defined in the LEP Dictionary to mean "a building or place comprising two or more different land uses". Interpolating that definition in the zoning description, development is permissible with consent in the SP1 zone if (and only if) it is for a building or place comprising two or more different land uses, or aquaculture. It is not aquaculture.

There is no development application for two or more different land uses before Council.

The application is for only one land use: eco-tourism or eco-tourist facilities (it is variously described in the SEE). No part of the application seeks consent for anything other than eco-tourism within the SP1 zone...

Since the recent gazettal of BLEP14 Amendment 17 the land is largely zoned; E2 Environmental Conservation (48.4ha); E3 Environmental Management (7.6ha) and SP1 Special Activities (Mixed Use Development) (47.8ha); and RU2 Rural Landscape (2ha). The physical development proposed by this application is wholly located within the land zoned SP1 Special Activities (Mixed Use Development).

Refer to **Figure 5.2**.



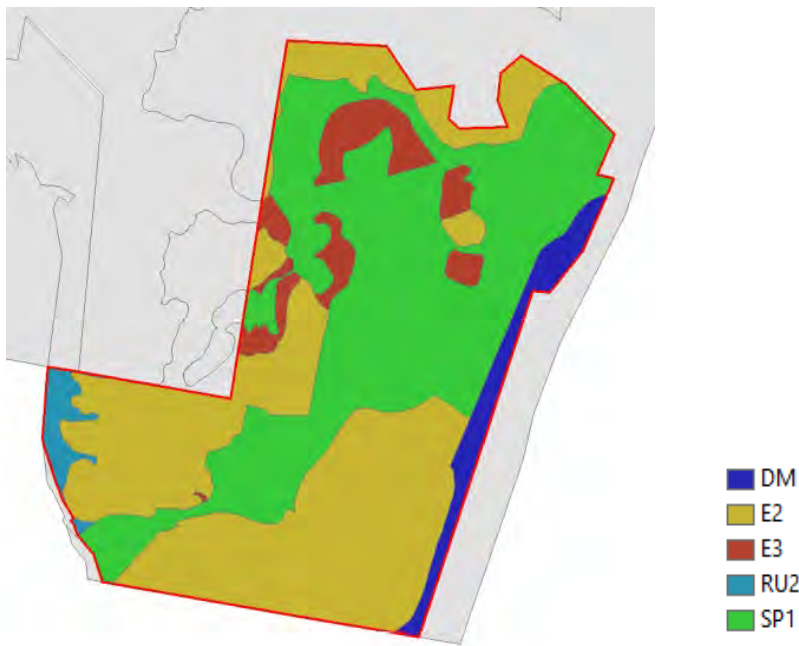


Figure 5.2: Land Zoning Map.

Our amended DA 2021-170 proposes a "mixed use development" comprised of the ongoing use of the land for the purposes of Private Education, in accordance with the existing consent, and the addition of 3 "additional uses", that being use of the land for the purposes of "Eco tourism facility"; a "restaurant or café" (a type of "food and drink premises"); and a health studio and gym operating as "recreation facility (indoor)". These uses noting that only the latter 3 require consent - constitute the "2 or more different land uses" that comprise the mixed use development

5.2.2 Zone Change

Objector:

"The zone change that allows tourism was flawed, it lacked transparency and denied the community the right to comment."

Objector: Memorandum of advice to Scarlett Corporation

But for the fact that the earliest amendment was made in 2017, four years ago (later amendments were made much more recently), I would conclude that the relevant amendments are invalid and the amending LEPs and the principal LEP to that extent would be set aside.

It is not appropriate for us to comment on the validity or of the zoning change gazetted by the NSW Department of Planning, Industry and Environment in September 2017. The applicant relies upon the presumption of regularity concerning the making of LEP amendments and the relevant government officials properly discharging their official duties.

5.2.3 Development in E2, E3 and RU2 zones

Objector: Memorandum of advice to Scarlett Corporation

... it is completely wrong for the SEE to claim that no development is proposed in the E2, E3 and RU2 zones. On the contrary, it makes it pellucidly clear that the eco-tourism use (a species of development – see s 1.5(1)(a), Environmental Planning and Assessment Act 1979 (the EPA Act)) is to be undertaken throughout the property, and includes a map (p 24) showing nature trails in the wetland and rainforest areas zoned E2 and E3. Of these trails, under the heading of "Eco-Tourism Use", the SEE states that the

“special or unique environmental and cultural features of the site are identified and built into the visitor experience”

Despite the SEE, works are proposed in the E3 zone. A compensatory planting area is identified as Management Zone MZ4, where an area of 0.652 ha will be revegetated with 1,630 trees as littoral rainforest: SEE, p 29. The reason this is necessary is explained in detail in the biodiversity assessment. An area of 0.44 ha will be cleared, largely to accommodate the rainforest cabins or to create asset protection zones: p 6. As a mitigation strategy, the biodiversity assessment details proposed revegetation of MZ4 (pp 53-56) and shows the location of the area on illustration 6.1. That is work for the purpose of this development, within the E3 zone.

The Statement of Environmental Effects makes it clear that no “new development” is proposed in the E2, E3 and RU2 zones. The eco-tourism facility relies upon the facilities that have been established under the Private Education use. This includes, for example, the utilisation of the trail system and interpretative centre building that has been developed at the site and within the zones E2, E3 and RU2.

In relation to the planting work proposed in Management Zone MZ4, we confirm that the relevant approvals to carry out planting within that Management Zone have been obtained pursuant to a DA2013/600. Accordingly, no “new” development approval is sought for that work – it is not necessary because approval is already granted.

5.2.4 Eco-tourism and Education

Objector: Memorandum of advice to Scarlett Corporation

The eco-tourism proposal is not for the purpose of education. It is for tourism, with an educational “experience” (not a program of education) as a fringe benefit. Indeed, one of the consequences of eco-tourism is, it is to be hoped, that visitors are educated about the “aesthetic, scientific and cultural values of the site” (SEE, p 23), but no formal educational program is required. Rather, the concept of eco-tourism in the LEP encourages “an appreciation of the environmental and cultural values of the site”: cl 5.13(3)(c) and in defining eco-tourist facility in the Dictionary to the LEP it adds that the facility: “... may include facilities that are used to provide information or education to visitors and to exhibit or display items.”

We agree that the eco-tourism facility proposal is different and distinct from the purpose of Private Education which has been consented to pursuant to DA98/146. In practice, the patrons of the eco-tourism facility will utilise many of the educational facilities that are provided at the site via the Private Education approval. Further, guests of the eco-tourism facility will be invited to attend lectures and workshops covering matters relating to ecological, cultural heritage, coastal processes and health and wellness pursuant to training for professional and personal development curated by the eco-tourism facility.

5.2.5 The Relevance of LEP Schedule 1 to the Application

Objector: Memorandum of advice to Scarlett Corporation

... the SEE does not rely on the additional use for permissibility, but that is not the question. The question is whether the additional use for area D within the now larger SP1 zone displaces the Land Use Table for that area by dint of cl 2.5(2) (this clause has effect despite anything to the contrary in the Land Use Table), with the added support of cl 2.3(4) which makes the Land Use Table subservient to other provisions of the LEP.

In summary, the text of Sch 1.8 does not offer an option to an applicant for mixed use development within area D on the additional land use map: Sch 1.8 applies because it is the dominant provision and to that extent, and for area D, it displaces the Land Use Table...

As stated in the Statement of Environmental Effects, Schedule 1 item 8 is not reliant upon for the purposes of DA 2021-170. DA 2021-170 is for a Mixed Use development but does not include “tourist or visitor accommodation” as “eco-tourist facility” is a specifically defined land use. Given that the eco-

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tourism facility is not the use of the type referred to in item 8 (2), the requirements under item 8 (3) do not apply.

5.3 WASTE

5.3.1 Waste Generation Rates

Objector: Broken Head Protection Committee

"how much waste will there be and how much will be recycled? It appears from TR-N that the estimate of waste production is 2781 litres and the recycled quantity is 524 litres. These amounts to a 23.2% recycling rate, which is below National waste targets of 90% by 2030 and the NSW Waste Avoidance Resource Recovery (WARR) Targets of 70% by 2022.

Objector:

"Not to mention the 600kg of waste that would be generated by the resort each day."

Objector:

"The submission casually uses the terms 'ECO resort', 'zero waste', 'zero carbon', yet are okay with an extra 200 tonnes of waste going to landfill per year and less than 25% of recycling even being attempted. With no commitment to follow through - this is Greenwash."

As required by Byron Shire Council's DCP 2014 Appendix B8.2, proponents must summarise worst-case waste generation rates for each building type based on floor space. While it is acknowledged that such reporting appears to show the facility diverting material away from landfill, these waste and recycling rates required under DCP 2014 Appendix B8.2 do not taken into account a range of waste avoidance, reuse and recycling initiatives articulated in the Sustainability Management Plan submitted as part of the application.

Being positioned in the marketplace as an eco-tourism facility, it is critical that the systems and processes employed by the business result in best practice environmental outcomes. To this end, the specific initiatives proposed to manage waste and recycling rates include:

- A procurement policy to guide sustainable purchasing and minimise packaging, etc;
- Refillable/reusable consumables for use by guests;
- A welcome pack for guests highlighting environmental systems including recycling, towel usage, etc);
- Source separation of organic waste streams for use in an onsite composting/vermiculture system; and
- Periodic waste and recycling audits to measure and track performance as part of the facility's Environmental Management System.

5.3.2 Pollution

Objector:

"Not only would this resort destroy the coastline it would continue to contribute to more pollution whilst in action"

Objector:

"Once again we face coastal exploitation, by ruining such magnificent beauty with the many man made pollutants that these people will carry into the rich untouched experience of 7 mile. My family and I do beach clean ups there after our picnics and we rarely see any rubbish, there is a wonderful community of people far and wide truly take care of the place because it offers such a special element in there

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lives, when you love something you look after it, I'm extremely concerned these tourists won't have the same honour and protection for the place.

The interrelationship between the eco-tourism facility and the natural environment is paramount to the success of the business. Operating in a pristine environment requires a range of systems and processes that ensure that staff and guests have a heightened awareness of the need to safeguard the surrounding ecology from pollutants entering the environment. In addition to educating staff and guests is also a failsafe requirement to physically undertake regular monitoring of key locations to ensure no foreign materials enter the environment.

Such systems are already used by other tourism facilities in the Byron Shire, such as Elements which has beachfront access and is located adjacent to the Belongil Creek Estuary Catchment and the Cumbebin Nature reserve. This facility continues to successfully manage its staff and guests to ensure litter or other foreign matter does not enter these important ecosystems. Linnaeus Property will manage litter by incorporating the following controls into the facility's Environmental Management System:

Guests

- A Guest Welcome Pack will be developed to communicate the broader environmental values and features of the site and tourism facility. This will also include:
 - Practices to reduce waste including communication about the three waste streams in accommodation units;
 - Programming of guest activities to emphasise environmental values and features of the facility including 'paddock to plate' cooking, environmental walking tours, revegetation etc.; and
 - Details and locations of waste and recycling bins across parts of the site.

Staff

- All staff will be required to undertake an initial site induction covering environmental aspects including litter and waste management as well as pollution incident reporting requirements;
- Staff will be required to undertake an annual environmental awareness session with records of such captured via the facility's Environmental Management System;
- Daily visual litter assessments to be undertaken by nominated staff covering the grounds of the Linnaeus Estate; and
- Daily visual litter assessments to be undertaken by nominated staff covering the immediate beach frontage and access pathways of the Linnaeus Estate.

5.4 ACCESS

5.4.1 Increased traffic movements (externally)

Objector:

"The approval of this DA will mean increased traffic and tens of thousands of extra visitors disturbing this fragile area."

Objector:

"There is too much traffic now. Cars thunder along the road well over the limit. It is a wildlife corridor and almost every day there is road kill along the road, parking is a problem, roads are filled with potholes now and the amount of traffic generated by this development will further add to the problem."



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The site is accessed directly from classified road MR545, which consists of Broken Head Road to the immediate north of the site access location and Byron Bay Road at the site access location and to the immediate south.

MR545 is classified as a regional road and has a speed zone of 80 km/h at the site frontage. MR545 is a two-lane, two-way road with wide traffic lanes and sealed shoulders north and south of the site.

Traffic generation rates for the eco-tourist aspect of the development were modelled according to the traffic authority rates for motel accommodation, which is also in accordance with the recommended parking rates from Byron Shire Council. Traffic generation was modelled according to the RMS TDT 2013/04a rate for dwellings in regional areas.

It can also be expected that traffic on MR545 will increase. Average annual growth of traffic volumes across the 10-year design horizon on MR545 was calculated using data provided by Ballina Shire Council and Byron Shire Council to be approximately 0.5% per year.

This rate has been applied to the November 2019 data provided by Byron Shire Council in order to determine design traffic volumes for MR545, as shown on the following page in **Table 5.1:**

TABLE 5.1: ESTIMATED TRAFFIC GROWTH ON MR545

| | 2019 Northbound | 2019 Southbound | Annual Growth | 2029 Northbound | 2029 Southbound |
|-------------------------|--------------------|--------------------|------------------|--------------------|--------------------|
| AADT (veh/day) | 2957 | 2974 | 0.5% | 3109 | 3127 |
| AM Peak Hour (veh/h) | 253 | 208 | 0.5% | 266 | 219 |
| PM Peak Hour (veh/h) | 242 | 270 | 0.5% | 255 | 284 |

The estimated traffic generation rates were then calculated as shown in **Table 5.2** below:

TABLE 5.2: ESTIMATED TRAFFIC GENERATION

| Proposed Use | Number | Daily Trip Rate per Unit | Peak Hour Trip Rate per Unit | Total Daily Trips | Total Peak Hour Trips |
|------------------------------|--------|-----------------------------|---------------------------------|----------------------|--------------------------|
| Eco-tourism Accommodation | 27 | 3 | 0.4 | 81 | 10.8 |

While the modelling was undertaken using an average of 3 daily trips per accommodation cabin, given the nature of the facility (being an eco-tourism facility) it is expected that guests will opt to maximise time at the facility rather than undertake numerous trips per day. Regardless, the modelling shows an overall increase in daily traffic trips of 81 per day and no detrimental impacts on MR545.

5.4.2 Internal Roads

Objector: Broken Head Protection Committee

"This application involves additional roads and clarification of the road standards requires checking. Of particular interest is a road in the north eastern sector that forms a ring road from the new cabins in the north down to the main centre area. There is no need for that road other than the possibility of the construction of 5 buildings that were approved under previous consents but removed in this application. It would appear that there is an intention to construct them at a future stage due to the inclusion of this infrastructure, but this is not documented in the application."

The roads (including the north eastern sector) are not designed or intended for use by motor vehicles. Rather, they will be utilised by guests to access their cabins either on foot or using an electric vehicle (i.e., golf buggy style vehicle). Service and maintenance staff will also access these cabins by electric

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vehicle. All of the vehicular roads are already constructed or approved as part of the existing site usage.

5.4.3 Car Parking

Objector: Broken Head Protection Committee

"The application seeks to deliver 99 carparks to service the proposed use. Its unclear from the application where the carparks are to be located and how and why the reference to 99 is given when there are 54 in the original approval."

Existing parking is provided on site in a number of locations. Each of the existing accommodation buildings has a single covered car parking space provided adjacent to the building.

There are also some larger central formal parking areas along with informal parking provided in a variety of locations across the site.

The central formal car parking areas provide a minimum of 49 parking spaces including at least three spaces for people with disabilities. The existing dwelling has two associated parking spaces and there are hardstand parking areas associated with the maintenance shed and other buildings on the site. As a result, a minimum of 66 parking spaces are available on site.

Required parking for the existing buildings on site has been calculated using the parking rates recommended for use by Byron Shire Council in their letter following on from the 15th of August 2019 Development Advisory Panel meeting for the development. These rates correspond to the figures provided in Byron Shire Council's Development Control Plan Chapter B4, Table B4.1 for hotel or motel accommodation.

5.5 FLORA AND FAUNA

5.5.1 Koalas

Objector: Broken Head Protection Committee

There are numerous records of koalas in the vicinity and BHPC has been advised by local residents that this was made known to the applicants during community consultation. Neighbours to the property all have koala siting records, experiences and some photographic evidence but most have unfortunately failed to log with council or Bionet.

Objector:

"This is a wildlife corridor for many species, including koalas."

Examination of Koala records in Bionet shows very few Koala records in the locality and none at the site (refer **Figure 5.3** below). The record immediately south of the site is from 2006, while more recent records occur >2 km northwest of the site around Midgen Flat Road, where eucalypt forest (including occasional Tallowood and Swamp Mahogany) occurs.

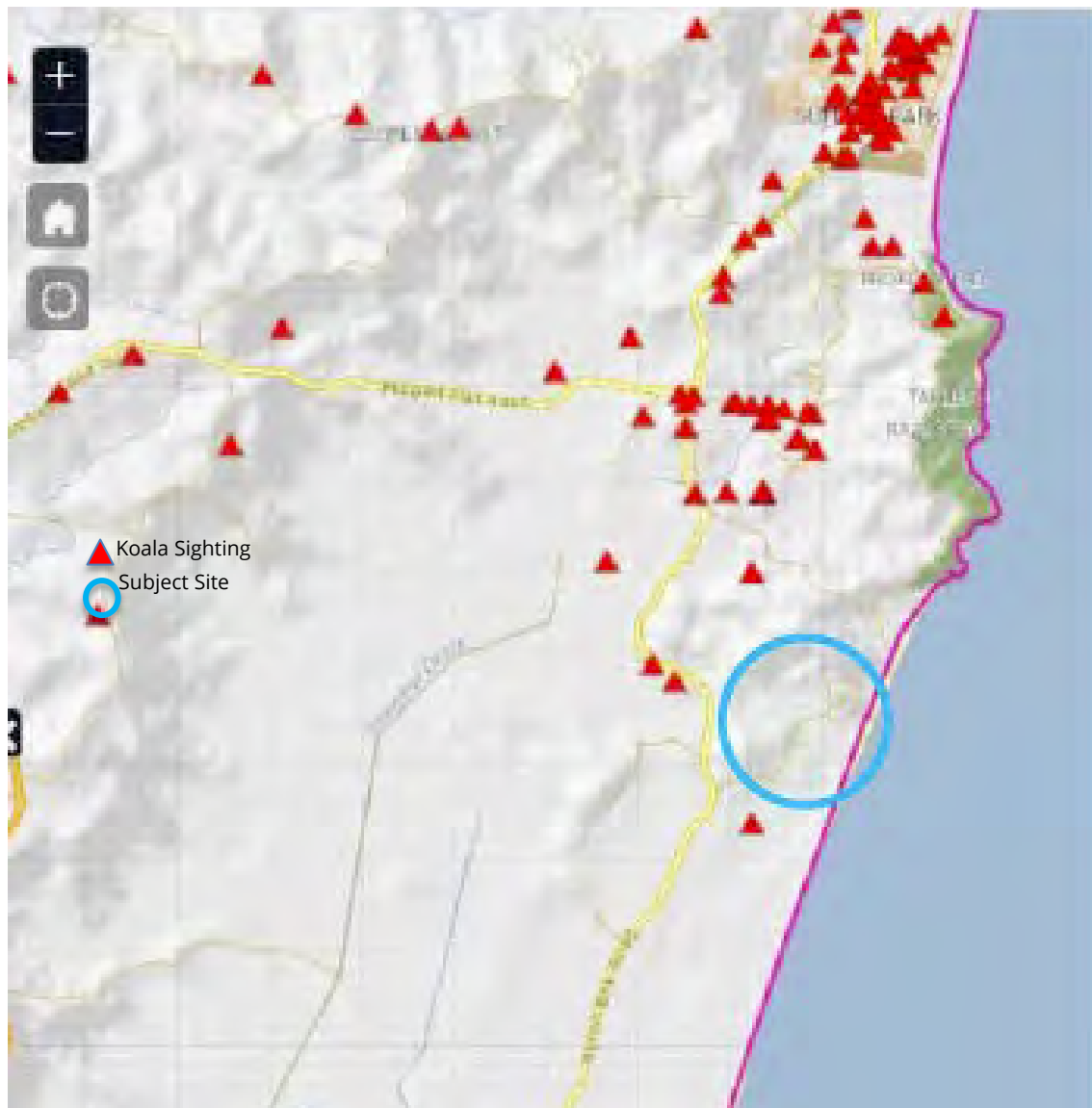


Figure 5.3: Biolink Koala Records.

As part of the Biodiversity Assessment undertaken by Geolink issued in February 2021, SAT plots did not return any signs of Koala use, as expected in vegetation communities where preferred feed trees are absent. A total of six of the primary feed tree Swamp Mahogany (*Eucalyptus robusta*) occur within the site (five naturally occurring trees and a single isolated planted tree).

A further eight Swamp Mahogany occur within the adjoining road reserve adjacent to the site entry.

These trees provide the best Koala resources near the site. However, they are very scant and would be insufficient to sustain even a single Koala. As can be seen in **Figure 5.4** below, these trees are not affected by the Proposal.

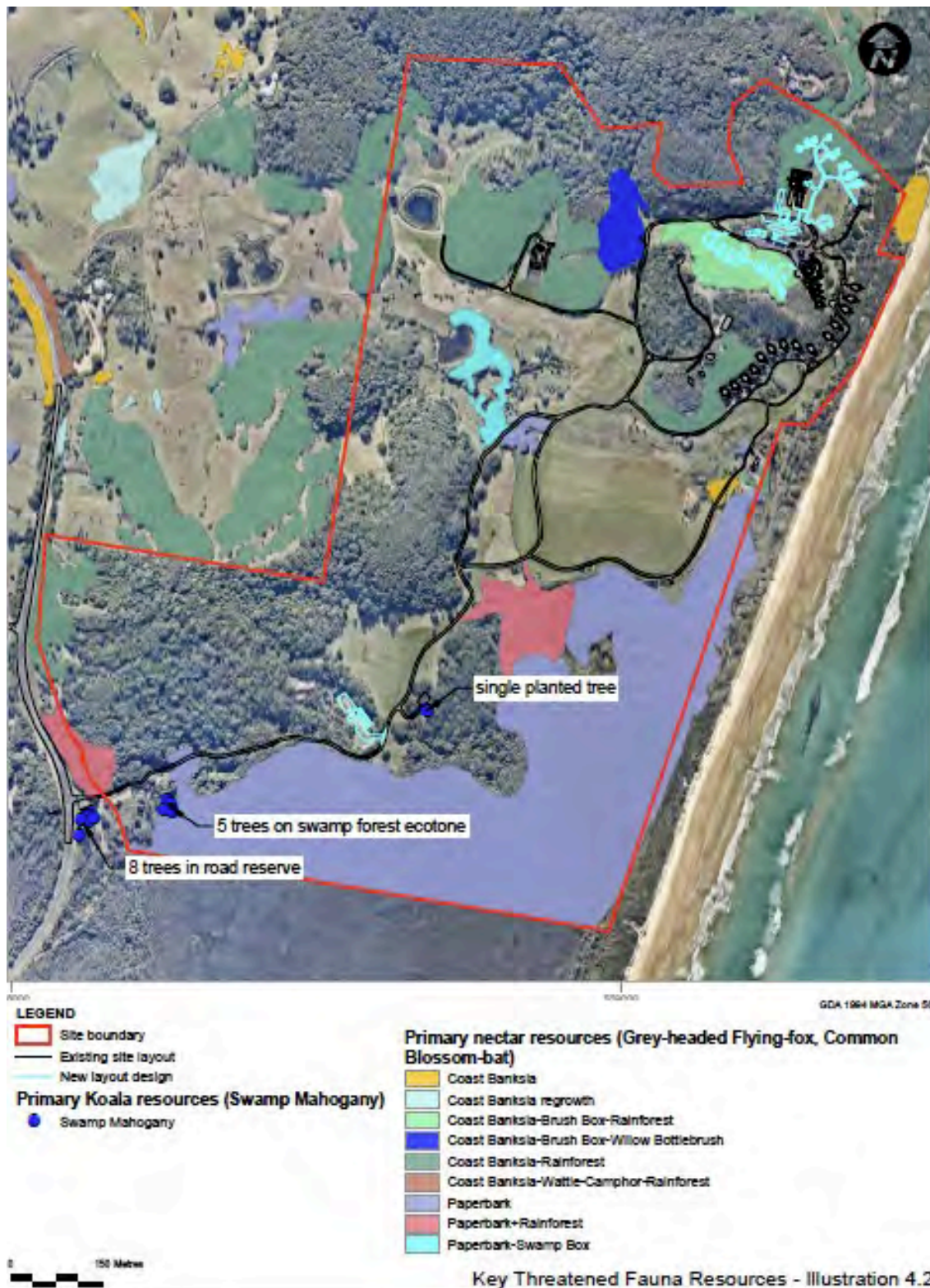


Figure 5.4: Key Threatened Fauna Resources.

While there has been a general absence of Koala sightings over the years in the immediate vicinity of the site, it is proposed to plant Koala feed trees as part of a range of endemic species for the ongoing revegetation program planned for the eco-tourism facility.

5.5.2 Biodiversity Development Assessment Report

Objector:

"The likelihood of a significant effect on threatened fauna species should have triggered the Biodiversity Offsets Scheme (BC Act 2016) and required the preparation of a Biodiversity Development Assessment Report (BDAR), contrary to the claim in the Biodiversity Assessment Report (Certification, GeoLINK 2021)."

Objector: Memorandum of advice to Scarlett Corporation

... I do not think that it is open to the consent authority, on the material before it, to determine that the proposed development is not likely to significantly affect threatened species, ecological communities or their habitat.

Desktop and field assessment information has been applied to the Biodiversity Conservation (BC) Act's (five-part test). The BC Act requires a test of significance (five-part test) when assessing whether an action, development or Proposal is likely to significantly affect threatened species, ecological communities or their habitats. Based on the occurrence of a number of threatened flora species at the site, a Threatened Ecological Community (TEC) and potential for several threatened fauna species to occur, tests of significance have been completed based on the concept plans provided.

The tests concluded that the Proposal would be unlikely to significantly increase the risk of extinction for any threatened species or TEC.

However, as an additional precaution and in response to several submissions, 5 part tests have now been completed on the following fauna:

- *White-eared Monarch*
- *Common Planigale*
- *Eastern Blossom-bat*
- *Eastern Long-eared Bat*

Having regard to the changes to the proposal described in Section 1.2 of this report and the additional 5 part tests (refer to **Appendix A**), it is considered that the proposal would not significantly impact threatened species or communities and a Biodiversity Development Assessment Report is not required.

5.5.3 Field Assessments for Threatened Fauna

Objector:

"Inadequate field survey for threatened fauna species"

The fauna survey was targeted at species with the potential to occur within the development footprint. It is acknowledged the site comprises a rich and diverse range of habitats for fauna (including threatened fauna). However, the majority of these habitats are separated from the proposed cabin locations by significant distances. The fauna survey methods were based on the fact that the proposed cabins occur within disturbed areas in proximity to actively used (tennis, swimming, car parking) and maintained (mowing) areas around the main 'hub' of Linnaeus Estate in the north of the site.

The main environment around the proposed cabins comprises mown grassland, scattered Coast Banksia and regrowth littoral rainforest. These are highly modified and disturbed areas that would not be used by more reclusive fauna species. The fauna surveys were based around the habitats and resources most likely to be directly affected by the proposal - Coast Banksia and littoral rainforest.

Precinct B (south of the site) comprises an old quarry site and proposed development in that location has now been removed from the proposal.

While patrons will use the existing sealed access road to access the proposed cabins, this is an existing asset and already carries numerous vehicles on a daily basis. Patrons arriving at the site (by private

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transport, shuttle bus) will quickly transfer to smaller electric vehicles. This will result in a very low increase in use of existing road infrastructure. These impacts would be negligible.

In addition to desktop assessments covering flora and fauna, additional information covering the field survey work is provided in **Figure 5.4** below:

TABLE 5.4: SUMMARY OF FIELD SURVEY ASSESSMENT.

| <i>Date</i> | <i>Task</i> | <i>Comments/ Weather</i> |
|--------------------------------------|--|---|
| Diurnal Survey and Assessment | | |
| 25/09/2019 | Scoping impact sites, threatened flora searches, 2 x BAM plots (1 and 2) | fine and sunny |
| 1/10/2019 | Meeting with architects - site scoping, additional threatened flora survey and tagging | fine and sunny |
| 15/10/2019 | Meeting with architects and bushfire consultant - APZ scoping, defining brush box edge, tagging threatened flora for surveyors | fine and sunny |
| 24/10/2019 | Vegetation stratification and mapping, guava parent searches, general searches for threatened flora | fine and sunny |
| 28/11/2019 | BAM plots (3 and 4), tree survey ground truthing | fine and sunny |
| 29/11/2019 | BAM plot 5 | fine and sunny |
| 24/02/2020 | Tree survey and tagging around pegged cabin sites; targeted threatened flora traverses; BAM plot 6 | fine and sunny |
| 07/04/2020 | Visit with bushfire consultant to determine tree retention within APZ | Overcast, light rain |
| 16/04/2020 | Dawn bird survey #1 (1 hour) | fine and sunny |
| 17/04/2020 | Dawn bird survey #2 (1 hour) | fine and sunny |
| 23/04/2020 | Dawn bird survey #3 (1 hour) | fine and sunny |
| 29/04/2020 | Final vegetation mapping; selection of compensation area | fine and sunny |
| 07/05/2020 | Revisit compensation areas; SATs and Swamp Mahogany searches | fine and sunny |
| 22/01/2021 | Revisit cabins for new pathway design and tree impacts | fine and sunny |
| Nocturnal Survey | | |
| 15/04/2020 | Nocturnal survey #1 (1.4 hours spotlighting/11 hours Anabat) | Mild and clear, 50% moon (last quarter) |
| 20/04/2020 | Nocturnal survey #2 (1.3 hours spotlighting and Anabat [combined]) | Mild and clear, 6% moon (waning crescent) |
| 22/04/2020 | Nocturnal survey #3 (1.3 hours spotlighting/11 hours Anabat) | Mild and clear, 1% moon (waning crescent) |

The field assessments for the proposal utilised the following methodology over multiple site visits:

Flora

- Walking survey of all areas of vegetation within and in proximity to the Proposal searching for threatened flora and identification of threatened ecological communities. Locations of any significant features were taken by a global positioning system ("GPS").
- Completion of vegetation plots (20 m x 50 m) consistent with the BAM within affected vegetation.



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- Ground-truthing Council mapping and typing of broad vegetation types at the site.
- Assessment and inventory of native trees impacted by proposed buildings, pathways, boardwalks, etc.

Fauna

- Opportunistic survey of all fauna based on visual or aural observations.
- Dawn bird surveys on three occasions at three sites, based on the 'area search' method (20 mins at each 2 ha site).
- Nocturnal surveys over three nights, using a handheld spotlight and deploying an Anabat 'Express' detector (Titley Scientific) during survey transects at two locations over an entire night.
- Anabat files were sent to Greg Ford (Balance! Consulting) for expert analysis.
- Koala scat surveys using the SAT (Phillips & Callaghan 2011), with two sites assessed within Precinct A.
- Targeted searches for Swamp Mahogany (primary Koala feed tree) by walking the ecotone between extensive swamp forest and adjacent rainforest and Brush Box forest in the south of the site and completing opportunistic scat surveys under located trees. All Swamp Mahogany located were surveyed by GPS.

In summary, the fauna survey completed was suited to the environments impacted by the proposal. In the case that areas of well-connected unmodified forest were directly affected, then fauna survey would have been more comprehensive. However, for the development as proposed, this is not the case.

5.5.4 Littoral Rainforest Impacts

Objector:

With the presence of the Nationally Critically Endangered Ecological Community, Littoral Rainforest and Vine Thickets of Eastern Australia I query why this development was not referred to the Federal Government under the EPBC.

Objector:

"The development will lead to a negative impact on the wildlife corridor and Critically Endangered Littoral Rainforest."

While vegetation within and proximate to the proposal have all been modified to some degree, they are all broadly consistent with littoral rainforest and generally align (as best they can) with Plant Community Type 1275 Tuckeroo - Riberry - Yellow Tulipwood littoral rainforest of the NSW North Coast Bioregion based on characteristic species including Coast Banksia, Tuckeroo, Beach Acronychia, Three-veined Laurel and Brown Kurrajong.

Littoral rainforest is also listed under the EPBC Act as the TEC Littoral rainforests and coastal vine thickets of eastern Australia and is subject to condition thresholds, where a minimum patch size of 0.1 ha applies in addition to having a weed cover of 70% or less and meeting specific levels of floristic diversity and/or at least 30% canopy cover of one rainforest canopy species (excluding Banksia and Eucalyptus species). The latter point (canopy cover) precludes all Banksia dominated areas of littoral rainforest as meeting criteria, while all other areas of 'softwood' dominated rainforest are likely candidates for meeting thresholds for TEC Littoral rainforests and coastal vine thickets of eastern Australia and therefore qualify as Matters of National Environmental Significance ("MNES").

No areas of vegetation impacted by the Proposal meet the condition thresholds for the TEC Littoral rainforests and coastal vine thickets of eastern Australia. **Figure 5.5** illustrates the extent of mapped Littoral Rainforest and the existing and proposed additional structures.

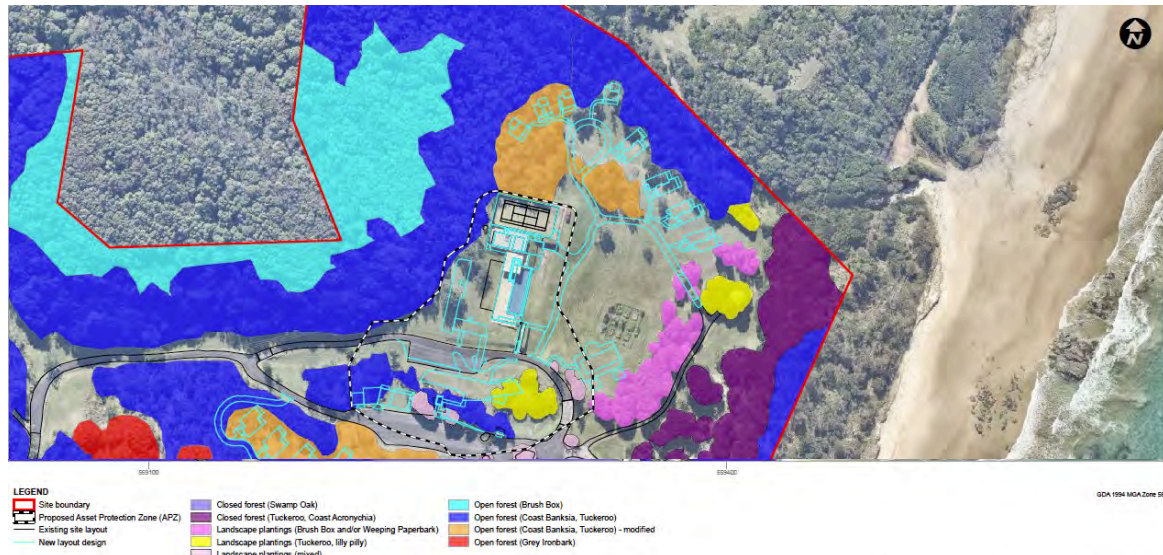


Figure 5.5: Vegetation Communities.

5.5.5 Additional Threatened Species of Concern

Objector:

"The 5-part test (Appendix K, GeoLINK 2021) includes only eight of these threatened species, with another 10 species such as the Coastal Petaltail, Wallum Froglet, Square-tailed Kite, Spotted Harrier, Pale-vented Bush-hen, Pied Oystercatcher, Masked Owl, Eastern Grass Owl, Common Planigale and Eastern Coastal Freetail Bat dismissed from consideration as of "low" potential occurrence in the proposal area and immediate surrounds and consequently regarded as "unlikely" to be significantly affected (Appendix J, GeoLINK 2021)."

Suitable habitat for the 10 threatened fauna species not addressed in the Biodiversity Assessment is considered not to occur within the proposal area and immediate surroundings. The reasoning for not including them in a 5 part test is provided below:

- **Coastal Petaltail:** Potential breeding habitat may occur in swamp/wetland habitats elsewhere on the site; however no habitat occurs in the direct impact area where vegetation comprises mown lawn and littoral rainforest/Coast Banksia. These environments do not provide breeding habitat for the species, and foraging values are very low.
- **Wallum Froglet:** Known/potential habitat for the species is limited to wetland areas in the central and southern portion of the site. No wetland areas occur within or proximate to the proposed cabins - no foraging or breeding habitat would be impacted. Vehicular movements to Precinct A (the development area) will utilise a sealed road (and timber bridge) adjacent to potential Wallum Froglet habitat. The potential to impacts these areas is negligible, and as it would be expected that the vast majority of vehicle movements would be in daylight hours, the potential for roadkill of any frogs would be very low.

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- **Square-tailed Kite:** The development impact area does not contain any habitat of significant value to the Square-tailed Kite in terms of foraging (largely areas of mown lawn with scattered trees/regrowth - low prey suitability) or breeding habitat.
- **Spotted Harrier:** Potential foraging habitat occurs in the central and southern portions of the site. The development area is of low value to the species as per the Square-tailed Kite (refer above).
- **Pale-vented Bush-hen:** Known/potential habitat for the Bush-hen is limited to wetland areas in the central and southern portion of the site. These habitats are absent from within the development impact area. The potential for any birds to be struck by vehicles is extremely low, given the secretive and reclusive nature of this species.
- **Pied Oystercatcher:** Foraging habitat occurs on Seven Mile Beach. This species should have been subject to a 5 part test (an oversight) given that patrons of the proposed cabins will access the beach for recreation and hence disturbance to the species foraging habitat would occur. Given the low increase in visitor numbers to the beach from the proposal, the intensification of beach access with regard to unrestricted public access from the end of Broken Head Road would be very low. In this regard, a minor increase in human disturbance would be unlikely to affect foraging habitat for the Pied Oystercatcher over Seven Mile Beach and breeding habitat would not be affected. A 5 part test has been completed for this species (**Appendix A**) and concluded the proposal would not significantly impact on foraging habitat of the Pied Oystercatcher in a local context.
- **Masked Owl:** As for the Square-tailed Kite, the development impact area does not contain any habitat of significant value in terms of foraging (largely areas of mown lawn with scattered trees/regrowth - low prey suitability) or breeding habitat.
- **Eastern Grass Owl:** Potential foraging habitat is restricted to open wet grassland of rank *Setaria* in the central portion of the site and associated wetland habitats. The development site comprises mown lawns and scattered trees which would be unlikely to provide a suitable prey base.
- **Common Planigale:** Potential habitat occurs in other parts of the site, but due to the modified nature of the development area (mown lawn, slashed areas with little woody debris or litter), habitat for the species is poor. A 5 part test has been completed for this species (**Appendix A**) and concluded it would be highly unlikely that the Proposal would result in an adverse effect on the life cycle of the Common Planigale such that a viable local population of the species is likely to be placed at risk of extinction.

5.5.6 Adequacy of Assessment of Impact on Threatened Fauna Species

Objector:

"The lack of knowledge of the local occurrence and ecology of relevant threatened fauna species evident in the assessment of their potential occurrence in the site (Appendix J, GeoLINK 2021) is carried through to the assessment of potential impacts from the proposal (Appendix K, GeoLINK 2021), with the result that many species have been overlooked or arbitrarily dismissed.

Concerns covering the following fauna were raised by this objector and include:

- Wallum Tree Frog;
- Rose-crowned Fruit Dove;



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- Square-tailed Kite;
- Pied Oystercatcher;
- White-eared Monarch;
- Common Planigale;
- Eastern Blossom-bat; and
- Eastern Long-eared Bat

Comments are made with respect to the above threatened fauna species below:

- **Wallum Tree Frog:** No suitable habitat occurs in the development footprint. The potential for road kill is very low considering that patrons are likely to spend residence time in Precinct A and that any vehicular movements along the existing access road would be during daytime periods when Wallum Tree Frogs are inactive.
- **Rose-crowned Fruit-dove:** Species assessed via 5 part test. Potential for window strike not considered, however the risk posed by this is unlikely to be significant. Construction or design measures to mitigate the potential for window strike can be implemented during construction.
- **Square-tailed Kite:** The development represents a minor intensification of use at the site within a small and existing area already subject to human activity and disturbance. The extent of loss of foraging habitat from the proposal is minuscule in the context of the site and more broadly in the locality.
- **Pied Oystercatcher:** Foraging habitat occurs on Seven Mile Beach. This species should have been subject to a 5 part test (an oversight) given that patrons of the proposed cabins will access the beach for recreation and hence disturbance to the species foraging habitat would occur. Given the low increase in visitor numbers to the beach from the proposal, the intensification of beach access with regard to unrestricted public access from the end of Broken Head Road would be very low. In this regard, a minor increase in human disturbance would be unlikely to affect foraging habitat for the Pied Oystercatcher over Seven Mile Beach and breeding habitat would not be affected. A 5 part test has been completed for this species (**Appendix A**) and concluded the proposal would not significantly impact on foraging habitat of the Pied Oystercatcher in a local context.
- **Eastern Grass Owl:** The proposed planting would result in the loss of 0.65 ha of potential foraging habitat for the species. The proposed planting would represent a negligible reduction of habitat in the context of large areas of rank grassland in the central portion of the site, which provide superior foraging habitat.
- **White-eared Monarch:** Species assessed via 5 part test. The proposed cabins occur within a disturbed area already subject to regular human and vehicular/tractor disturbance (as noted). On this basis, the value of the foraging habitats within the development footprint to a reclusive and sensitive species would be very low.
- **Common Planigale:** The proposed planting would result in the loss of 0.65 ha of potential low quality habitat for the species (rank grassland with little debris or litter). The proposed planting would represent a negligible reduction of habitat in the context of large areas of rank grassland in the central portion of the site, which provide similar low quality habitats.

- **Eastern Blossom-bat:** Considered in 5 part test, based on a small loss of resources. Large areas of available foraging resources occur over the site which would be unaffected. It is acknowledged the proposed compensation plantings may not have foraging benefits for some time, however foraging and roosting resources over the balance of the site are substantial to support the life cycle requirements of the species (as are adjacent habitats and reserves to the north and south of the site).
- **Eastern Long-eared Bat:** The proposed development area is already modified from previous construction and noise and light are existing impacts to some degree. The intensification of disturbance that the proposal will bring to the northern hub of the site is of a relatively small scale. Substantial areas of foraging and roosting habitat occur in well developed and less disturbed areas which are separated from the development area by substantial distances.

5.5.7 Climate Change

Objector:

"I believe the application fails to adequately address the potential impacts of climate change."

Objector:

"In our changing climate we need now more than ever to leave these natural areas as undisturbed by development."

Objector:

"Think about climate change effects, even if you are a denier (sic) it is still important to save our wildlife. Future generations are already not going to see so much of what we had."

One of the key aspects of an eco-tourism facility, as defined by the International Ecotourism Society, is to "minimise physical, social, behavioural, and psychological impacts". The Sustainability Management Plan (SMP) prepared for Linnaeus Property focuses specifically on issues surrounding climate change, particularly with respect to carbon emissions.

The project seeks a new benchmark in genuinely sustainable tourism development in the region. Linnaeus Estate is committing to zero carbon energy and will target zero carbon for transport and waste. A key component of this approach is an electricity system that is 100% renewable with the majority of energy needs being met with onsite solar generation.

Beyond carbon, every aspect of the guest experience is seen as an opportunity to reduce environmental impact. The design responses detailed in the SMP effectively integrated sustainability in this context and will deliver reductions in carbon emissions associated with electricity and transportation, improve resource efficiency, while minimising impact or enhancing natural systems consistent with climate-resilient principles.

Some of the proposed carbon related programs include:

- Accommodation units designed and orientation maximised to solar access and natural ventilation (passive design), with high performance facades and efficient appliances specified throughout.
- Approximately 250kW of solar PV is to be located on distributed rooftops throughout the development - equating to 100% of the summer consumption.
- Transport will use electric vehicles where possible, including: EV airport transfers (on request), 2x EV on-site for guest use, E-bikes and electric golf carts.

- Building Management System (“BMS”) which allows oversight of energy and water use (HVAC in unoccupied units, leak detection etc).
- Maximise passive thermal performance through:
 - Living areas orientated for best solar orientation.
 - cross flow ventilation with dual aspects on all dwellings and key buildings.
 - Insulation is appropriate for climate.
 - High efficiency ceiling fans to all bedrooms and living areas.
 - Shading will be provided to all north, east and western facades.
 - LED lighting throughout (wall light, oyster or pendant) for all buildings.

The design responses detailed in the sustainability management plan will effectively integrate sustainability into the project and deliver reductions in carbon emissions associated with electricity and transportation, while minimising impacts or enhancing natural systems consistent with climate resilient principles.

5.5.8 Coastal Erosion

Objector:

“Coastal Erosion with hundreds of people accessing the beach.”

Objector:

“due to my concerns around impact of the local ecology, wildlife and biodiversity as well as accelerating coastal erosion on and already fragile coastal area.”

As part of the community consultation process that occurred between 15 February and 8 March 2021, concerns were raised about the inclusion of 6 cabins within the mapped coastal erosion zone. As a result of these concerns, these cabins were removed entirely from the development application. As such, all of the eco-tourism development proposed as part of the development application is located outside of the mapped coastal erosion zones.

With respect to beach access, there is an existing well established and defined pathway leading from the north-east corner of the site to the terminus of Seven Mile Beach Road and Seven Mile Beach itself. Guests will be provided with information covering beach access as part of their guest arrival pack in addition to clearly signed and delineated pathways and walkways leading to the beach access route.

5.6 THE AMENITY OF THE AREA

5.6.1 Commercialisation

Objector:

“Not only would approval contribute to the disintegration of our communities, but also to the further commercialisation of our region’s culture. With a proud history of prioritising community values over consumerism, the Byron Shire has stood as an important example to people all around the world who aspire to a more genuine form of progress.”

Objector:

“I also have concerns for Byron Shire itself and the direction we are heading regarding tourist-centred commercialisation.”

Objector:

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"Commercialising what is precious is unacceptable, we do NOT need more tourism."

As stated in the Statement of Environmental Effects the vision for Linnaeus Estate is to *"inspire a lasting connection to nature, community, and the self while protecting this land"*.

The eco-tourism facility is modest in nature with just 12 new cabins now proposed. These cabins are located within a compact precinct of this 110ha property that will provide patrons with an unparalleled immersion into a sub-tropical coastal environment.

Linnaeus Property believes that combining a low-impact sustainable business model with a property that holds various environmental values is a proven model for protecting those values in the long-term. The International Eco-tourism Society defines this industry as follows:

Conservation

- Offering market-linked long-term solutions, ecotourism provides effective economic incentives for conserving and enhancing bio-cultural diversity and helps protect the natural and cultural heritage of the planet.

Communities

- By increasing local capacity building and employment opportunities, ecotourism is an effective vehicle for empowering local communities around the world to fight against poverty and to achieve sustainable development.

Interpretation

- With an emphasis on enriching personal experiences and environmental awareness through interpretation, ecotourism promotes greater understanding and appreciation for nature, local society, and culture

From an operational perspective, the 97.4% of land not forming part of the facility site will be protected and enhanced through a number of initiatives including:

- An Environmental Management System compliant with ISO 14001. This system will set objectives, targets and management plans to monitor, report and respond to changes in environmental values across time. Linnaeus Property will publish annually an environmental performance report covering progress towards its stated objectives and targets.
- A vegetation management plan will be developed to inform the compensation planting and set out tasks, species schedules, preparation prescriptions and monitoring and reporting requirements as required to address criteria in Byron Shire Council's guidelines.
- Entering into voluntary conservation agreements that effectively "lock away" valuable plant communities in perpetuity; and
- An ongoing tree planting and landscaping program that utilised native endemic species. Such a program will be targeted at existing degraded vegetation communities across the site.

While the proposal is based on a business model that generates income for its owners, it will simultaneously protect and enhance the environment in which it operates, while also providing employment opportunities to local people drawn from the Byron and Northern Rivers region.

5.6.2 Scale of Development

Objector:

"The repercussions of a development of this scale will be incredibly detrimental to what is an already suffocating coastal town suffering from over development and over population"



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Objector:

"Visitors to the Linnaeus Estate invariably comment that this is one of the most extraordinary pieces of land they have seen anywhere in the world. I can say with complete confidence that they would not react in this way if it were to become a tourism venue of the type and scale proposed."

Objector:

"A mega development of this scale would ruin this very special place forever."

With respect to scale, three important aspects have guided the development proposal, being:

1. the ratio of the combined footprint of buildings and structures Vs overall property size.
2. repurposing/reuse of existing facilities on site; and
3. sustainable location and design principles for new structures.

In relation to point 1, the footprint of all buildings (existing and proposed) equates to 0.7% of the 110.7ha site. **Figure 5.6** provides an overall land budget (expressed as a percentage of the total site), which also factors in roads and parking as well as habitat and landscaped areas.

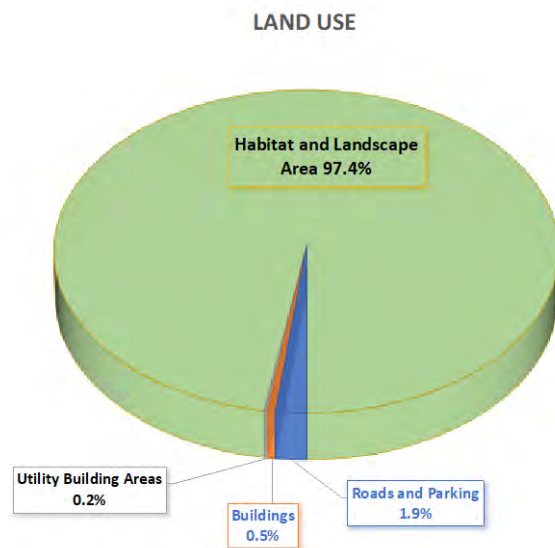


Figure 5.6: Proposed Land Use Budget.

As **Figure 5.6** illustrates, the scale of buildings, roads and parking areas as a proportion of the overall site is minimal. More than 97% of the site is dedicated to habitat and landscaping areas.

With regard to point 2, the proposal has focussed on repurposing a range of existing buildings that avoids the need for additional land to build these structures. Specifically, the following structures will be refurbished and included as part of the eco-tourism facility:

- the Centre;
- the pool and amenities; and
- the tennis court.

Other reuse or repurposing of assets onsite include the existing entry road, car parking areas, access paths and boardwalk bridge.

In relation to point 3, the first element relating to location has been carefully considered with a view to integrating new structures into existing open or cleared spaces. **Figure 5.7** on the following page provides this comparison.



Existing Vegetation and Built Form



Proposed Buildings

Figure 5.7: Comparison of existing and proposed structures.

The second element of Point 3 relates to design. The scale of the ecotourism facility is deliberately designed around very small cabin structures, to ensure that any visual change is minimised. This approach is enhanced through the use of colours and materials which integrate well with the local flora. The cabins are also designed to minimise impact on the existing habitat and maximise the use of renewable energy sources.

Cabins are designed to be simple; clad boxes that float on a platform off the ground reducing the impact with the existing vegetation. Assembled in modules offsite will allow these re-locatable cabins to be placed onsite to provide minimal site disturbance, reduce onsite construction requirements and the need for scaffolding.

Working with a contractor that specialises in prefabricated structures will allow all the cabins to be built before being relocated to site. Designing to material sizes will reduce the volume of offcuts and materials required allowing for an efficient design that will significantly reduce construction waste.

Some of the design principles are shown below for each of the three cabin types:

Beach Cabins

Wrapping around the North-Eastern border of the site, 8 beach cabins are sited between existing vegetation pockets to avoid removal of any vegetation. Single storey and raised off the ground the cabins are paired together to reduce overall footprint and site disturbance for services.

Rainforest Cabins

Tucked into the landscape, the rainforest cabins introduce a special cabin typology. Predominately south facing the roof is designed for optimal solar access. A natural plunge spa is an additional element that is filled with rainwater collected on site. Solar panels are located on the roof, with electric charge stations outlets provided for bikes.

Intentionally, each of the new structures is designed around the existing vegetation and sits below the canopy lines of the existing trees. This allows the proposed structures to recede into the landscape, minimising any effect on the scenic characteristics of the site.

In summary, contemplating the three principles listed above, the overall scale of the proposal is not considered to be excessive. Rather, it is deemed to be a development that is both small in scale and one which integrates sensitively into the environment in which it sits.

5.7 NOISE AND VIBRATION

Objector: "Because the houses have not been occupied by all of the owners at one time, the noise factor from them being around the pool and tennis court has been tolerable up to now. If there is an increase in numbers of people in a resort then there will be a huge increase in noise from day to day operation. Apart from the pool and tennis court there would be noise from patrons cars and buses and delivery trucks to the restaurant."

A noise impact assessment was undertaken in January 2021 by Greg Alderson and Associates identified two adjoining dwellings as noise sensitive residential receivers, directly to the north of the subject property, being:

- 492 Seven Mile Beach Road, Lot 1 DP747147 (typ. 140m from development); and
- 512 Seven Mile Beach Road, Lot 1 DP394061 (Typ. 230m from development)

The report states that if compliance can be shown for the above receivers, compliance can typically be justified for receivers further afield. **Figure 5.8** illustrates the proximity of these receivers in relation to the proposal.



Figure 5.8: Receiver Locations
(Source: Greg Alderson and Associates, 2021).

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Background noise modelling established the following noise criteria (in line with the NSW Industrial Noise Policy) for assessing noise from the proposal as follows:

Patron noise:

- Evening & Night: 35 to 40 dB(A) LAeq,15min
- Assessed at external face of neighbouring window

Air-conditioning condenser unit & pool plant:

- Day 45.1 dB(A) LAeq,15min
- Evening 43.0 dB(A) LAeq,15min
- Night 38.0 dB(A) LAeq,15min
- Assessed at 30m from the dwelling or at the boundary if it is closer

For perspective, equivalent sound pressure levels of speech for different vocal efforts at a distance of 1m is provided in **Table 5.5** below.

TABLE 5.5: SOUND PRESSURE LEVELS OF SPEECH AT 1M

(Source: M.J. Hayne, J.C. Taylor, R.H. Rumble, D.J. Mee, 2011).

| Vocal Effort | Speech Level (dB(A)) |
|-----------------|----------------------|
| Whispering | 36 |
| Soft | 42 |
| Relaxed | 48 |
| Relaxed, normal | 54 |
| Normal, raised | 60 |
| Raised | 66 |
| Loud | 72 |
| Very loud | 78 |
| Shouting | 84 |

The following scenarios were modelled to gain an understanding of the extent of potential noise emission from the proposed development and are as follows:

- Scenario 1 – Noise emissions from Eco-tourism cabins
- Scenario 2 – Noise emissions from use of proposed pool area
- Scenario 3 – Noise emissions from use of barn as a dining space

Scenario 1 – Noise emissions from eco-tourism cabins

A noise model was prepared to predict the potential impact upon neighbouring receivers from noise emissions associated with patron usage of the proposed Eco-tourism cabins. The model allows for 1 x air conditioning condenser unit per cabin and patrons on the cabin balcony.

Patron noise emissions have been accounted for via 1-point source per balcony at a height of 1.5m above floor level, representing a conversation between 2 people. **Figure 5.9** on the following page shows the modelled results for predicted noise emissions resulting from use of the Eco-tourism cabins.

It is predicted that the patron noise limiting criteria of 35 to 40dB(A) at the external façade of neighbouring receivers is within compliance. Predictions show approximately 26 dB(A) experienced at the façade of the nearest neighbouring receiver as a result of Eco-tourism cabin usage.

Similarly, the 38dB(A) noise limiting criteria for emissions from the Eco-tourism cabin air-conditioning condenser units is also shown to be met.

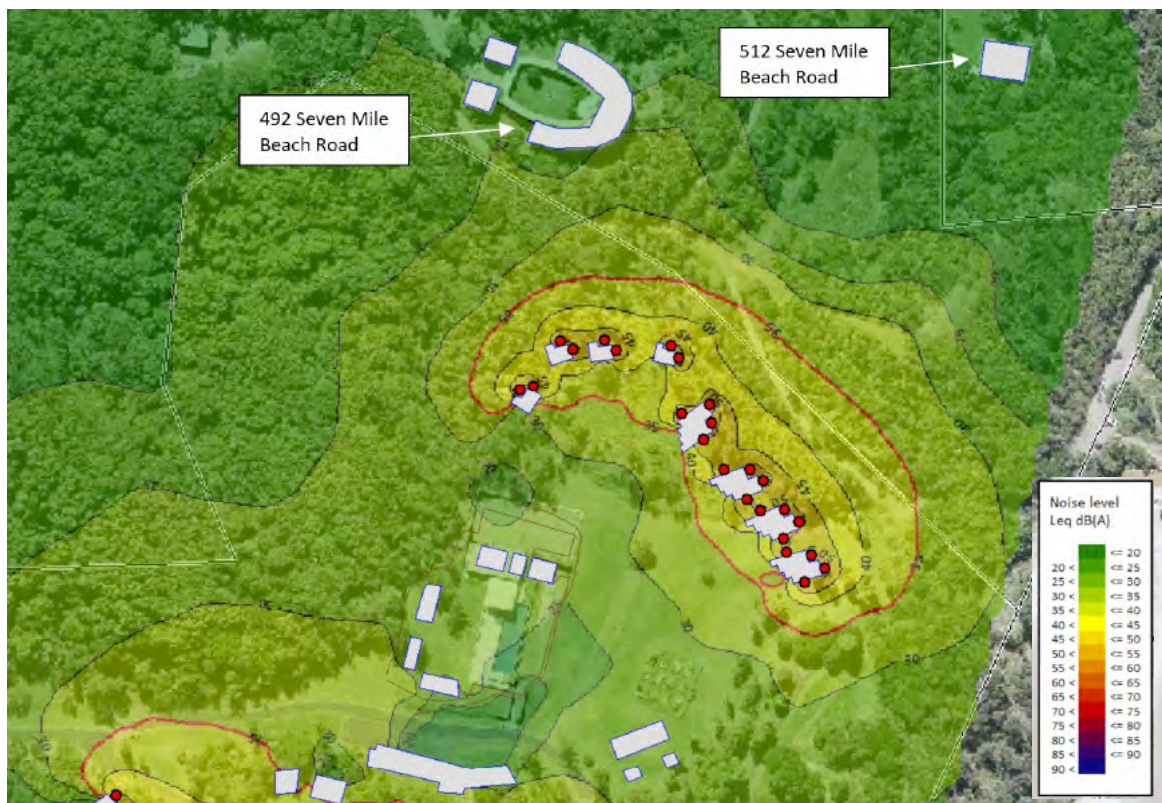


Figure 5.9: Eco-tourism cabin model - 35dB(A) limit line
(Source: Greg Alderson and Associates, 2021).

Scenario 2 – Noise emissions from use of proposed pool area

Noise emissions from the use of the proposed pool area, associated lounge and gardens was assessed via the preparation of a typical model. The model allows for typical usage of this area with regards to patron noise emissions. A typical surface level of RL 15m has been utilised to model the pool area and associated facilities.

56-point sources are positioned throughout the pool area and typically represent a conversation with at least two people.

Figure 5.10 presents the noise contour map modelled for the pool area scenario and shows that the predicted noise level is within the 35 dB(A) to 40 dB(A) limit line at the external façade of the neighbouring receivers.



Figure 5.10: Patron usage of pool area – Lw of 65 dB(A) per point source – 35dB(A) limit line
(Source: Greg Alderson and Associates, 2021).

Scenario 3 – Noise emissions from use of barn as a dining space

Modelling was undertaken for the proposed barn to cover circumstances where it may be utilised for dining purposes, with a typical capacity of 149 patrons. The industrial building source within Sound Plan 8 was used to predict noise emitting from the usage of the barn. The model assumes an internal noise level of 80 dB(A) and applies noise transmission loss through typical construction materials of the barn. The barn is modelled with the following materials:

- Walls – 25mm Western Red Cedar, timber frame (no insulation), 10mm plasterboard, Rw 33 dB(A).
- Bi-fold doors – 6mm glass, Rw 31 dB(A).
- Sliding barn door – 25mm Western Red Cedar, Rw 23.
- Windows – 6mm glass, Rw 31 dB(A).
- Roof – Custom Orb roof sheeting, Rw 21 dB(A).

It should be noted, sound reduction values were obtained from INSUL Sound Insulation Prediction software. The above construction material assumptions are considered to be conservative with regards to the proposed noise transition capabilities of the proposed barn. This is particularly noted for the Rw 33 dB(A) prediction of the barn walls, and Rw 21 dB(A) for the roof. Actual construction materials are likely to result in greater sound reduction than that modelled.

Two models were prepared which explored noise emissions with doors opened and with the doors closed.

The respective results are shown in **Figures 5.10** and **5.11**.

The modellings shows that the noise limiting criteria of 35 dB(A) to 40 dB(A) is comfortably achieved in both options.

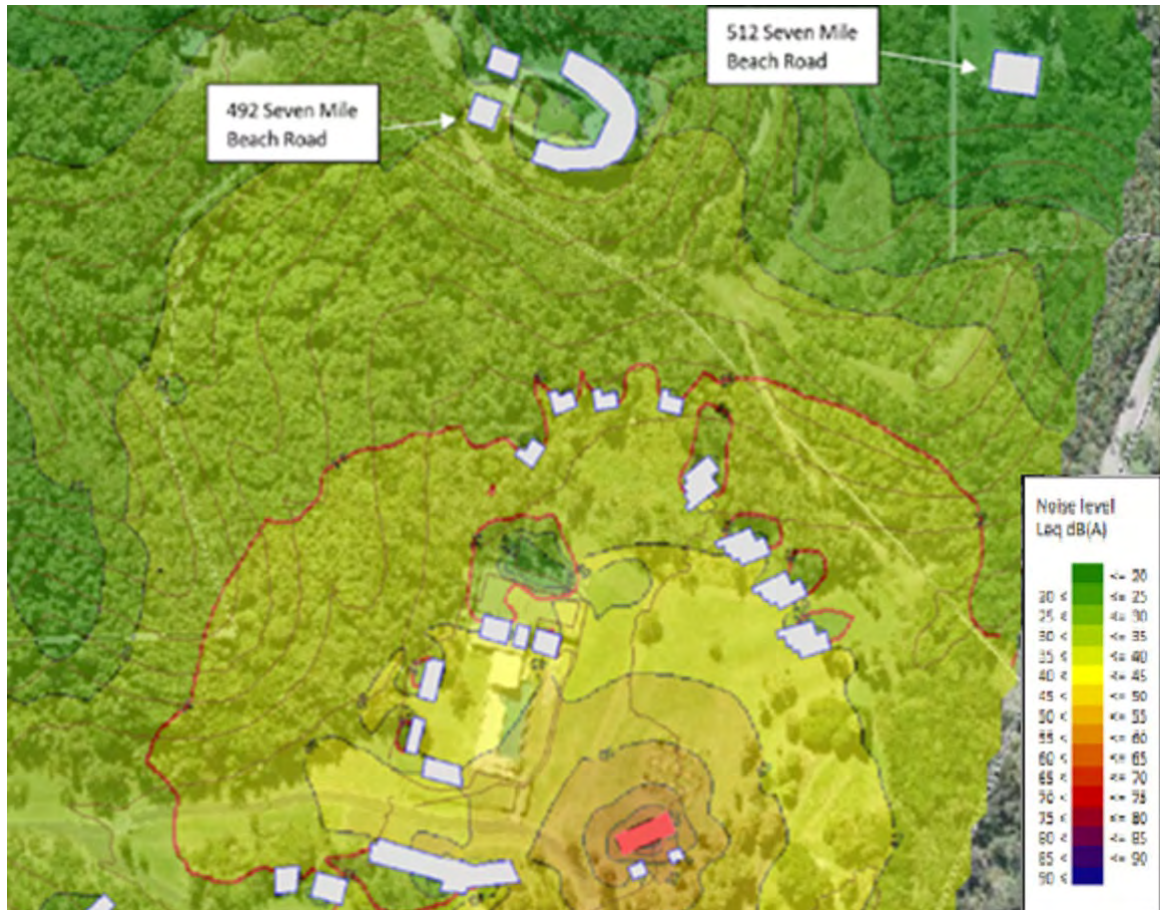


Figure 5.11: Barn use with doors open – 35dB(A) limit line
(Source: Greg Alderson and Associates).

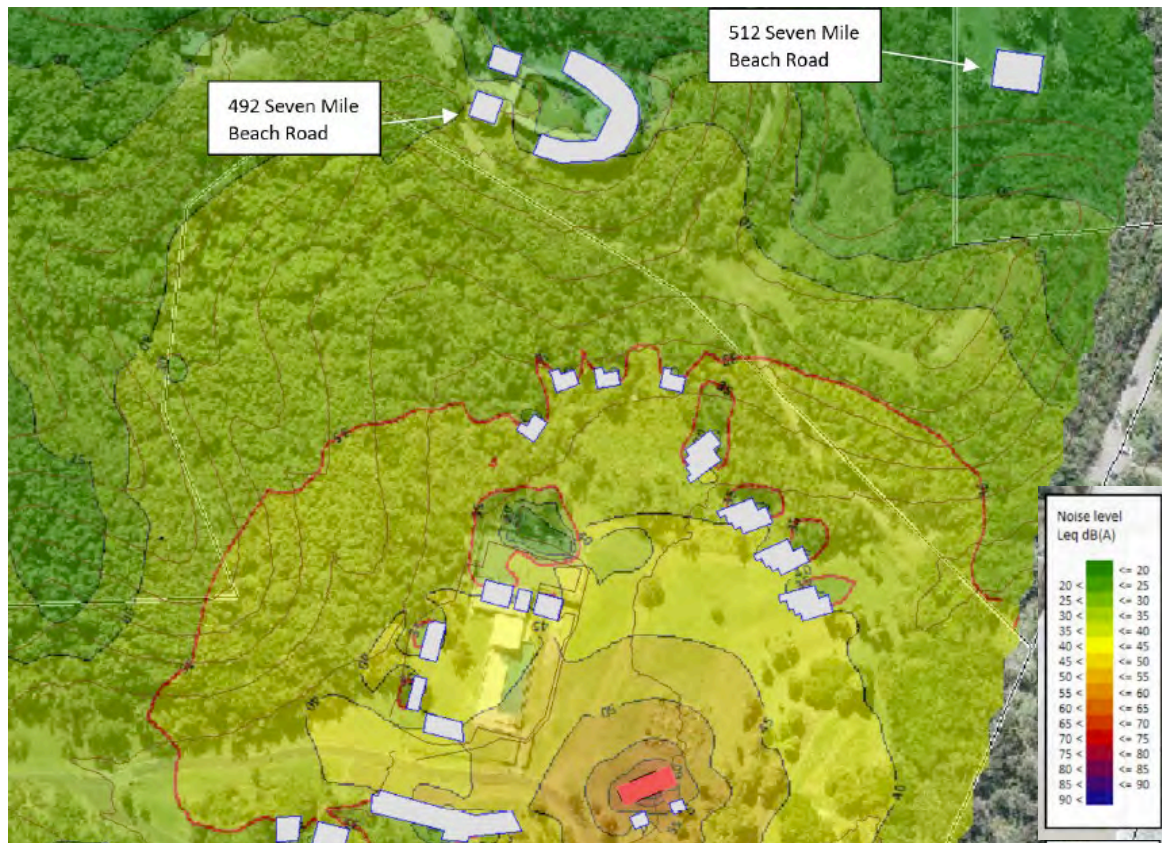


Figure 5.12: Barn use with doors closed – 35dB(A) limit line
(Source: Greg Alderson and Associates).

While the modelled results show that it is feasible to manage noise emission levels from the proposed eco-tourism facility within the specified target levels at neighbouring receivers the Alderson report made a number of recommendations to manage potential intrusive noise emissions as follows:

- Air-conditioning condenser units associated with the proposed cabins have a sound power level generally in line with that modelled, being an Lw of 64 dB(A).
- Staff members to encourage patrons to facilitate a quiet and relaxing environment within the pool area, lounge and garden, particularly during evening and night-time hours. Staff should endeavour to employ management measures to ensure patron noise emissions in this area are not loud or intrusive.
- Staff members to ensure appropriate patron behaviour conducive to a dining experience where voices do not need to be raised to shouting point to be heard.
- Minimise any music to a level suitable for 'background' ambient music only, to encourage a suitable serene & relaxing environment.
- Patrons & staff voices (e.g. speeches or announcements) are not to be amplified and broadcasted over a sound system.
- Encourage patrons to be respectful of noise sensitive neighbours.
- Ensure signage regarding the noise sensitivity of the site, particularly during evening and night hours at the pool area.

5.8 SERVICES

5.8.1 Risk of Underestimation of Wastewater Flows and Loads

Objector: Tyr Group

“The wastewater flows (and the associated pollutant loads) which will be generated by the development appear likely to have been substantially underestimated – primarily due to the following key factors:

- Omission of the sewage generated through activities of staff on site;*
- Likely underestimation of the typical wastewater generation rates for tourists in high-end resorts; and*
- Risk of infiltration during and after wet weather.*

Geolink prepared the Water Supply and Wastewater Assessment Report that accompanied the development application lodged with Byron Shire Council. Each of the above claims is reviewed below.

The sewage generated through activities of staff on site

Appendix A of the Geolink report deals with wastewater generation calculations and made the following assumptions:

- Number of staff onsite at any one time – 49
- The EP (Effective Person) ratio used in this instance, to describe a staff member’s wastewater generation rate Vs a guest – 0.13 EP (or 13% of a guest over a 24-hour period)
- Therefore $49 \text{ staff} \times 0.13\text{EP} = 6.4\text{EP}$
- An EP as stipulated in Australian Standard 1547 (Onsite Domestic Wastewater Management = 150 litres/day).

The report therefore clearly documents the predicted wastewater generation rates for staff based on the appropriate Australian Standard as 956 litres per day ($6.4\text{EP} \times 150 \text{ litres/day} = 956 \text{ litres/day}$).

The typical wastewater generation rates for tourists in high-end resorts

The Tyr Group author bases his assumption that wastewater generation rates are “likely” to be underestimated by way of the following statement:

“As an example, analysis of water consumption at Hayman Island Resort identified a rate of approximately 600 L/EP/d for each guest, and sewage generation rates only marginally below this value (personal experience, 2001).”

This inference is drawn from personal experience gained twenty years ago. It does not appear to take into account the water-saving devices listed in the BASIX Report submitted with the development application. Most of these devices are a minimum 4 star rated.

The value used in the Water Supply and Wastewater Assessment Report as previously stated was 150 litres/EP/day. While it is estimated that the total daily wastewater generation rate will be 22.6Kl, the augmentation of the wastewater treatment plant is proposed to increase the maximum capacity to 30Kl/day (an increase of 25% in treatment capacity).

5.8.2 Invalid Sizing and Capacity Assessment for Effluent Disposal Areas

Objector: Tyr Group

"Tyr Group does not specialise in the assessment of land capability for effluent disposal, but has frequent exposure and interactions with specialists in this particular field as a part of municipal water reuse applications. The effluent disposal proposed has been developed and assessed using design standards suitable only for single domestic dwellings (Byron OSMS [2, p. 2]) or populations of up to 10 persons (AS1547 [2, p. 5]). The proposed system is at least 14 times larger than the largest systems covered by these standards based on the calculations in the DA."

The primary concern raised by the Tyr Group is that the proposed effluent disposal system was assessed and designed using the Design Guidelines for On-site Sewage Management for Single Households (Byron Shire Council, 2004) ('guidelines') and associated model, and Australian Standard 1547:2012 On-site domestic wastewater management ('AS 1547' hereafter). This response addresses the points raised.

The fact that these guidelines are stated as being for the purpose of design of single dwellings in a domestic situation does not limit the theoretical components of the model being extrapolated to larger systems with appropriate risk attenuation.

With direction from the guidelines, the Byron On-site Sewage Management System Design Model was used to develop the wastewater irrigation scenario. This is an intricate model incorporating daily water and nutrient budgets, and historic rainfall and evaporation data over a 20 year period (01/07/1980-30/06/2001). While these guidelines and model were developed primarily for use in single dwellings, they are a very well-developed nutrient and water balance approach and can be extrapolated to larger systems such as the proposed Linnaeus Eco-tourist facility.

Some points to consider regarding the use of the Byron Shire OSMS Model for the proposed development include:

- The limiting factor for the required irrigation areas was hydraulic loading, which was more than three times the required area for Nitrogen disposal, and more than 30 times the area required for Phosphorus.
- The conservative factor applied for the steepness of the irrigation area effectively doubled the irrigation area calculated by the model, further distributing the nutrient loads and making excessive nutrient loading extremely unlikely. Based on soil types and treatment method, the default percolation value in the guideline is 4mm/day while the final wastewater application rate adopted on site was 1.5mm/day.

The Tyr Group submission questions why the 'established practices for determining irrigation area requirements and capacity such as the use of the MEDLI model was not used. In consultation with Byron Shire Environmental Health Officers, the use of the locally specific Byron Shire OSMS Model was the preferred model as the inputs and workings are well known and tested throughout the Shire given that the model was sufficient.

Medli modelling has been carried out for the project. That modelling is to be found as an Appendix to our RFI response report. The Medli modelling shows that the daily timestep hydraulic and nutrient balance modelling for 22.3 KL/d meets the requirements of *Use of Effluent by Irrigation; Environmental Guidelines* (DEC 2004).

In addition, there were multiple conservative measures incorporated into the assessment of the land application capacity. The 'precautionary principle' was enacted to ensure the disposal area was not undersized. The following conservative measures were included:

- The proposed upgrade to the existing sewage treatment plant, as designed by Aerofloat, will produce a highly treated tertiary grade of wastewater.

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- The Sewage Treatment Plant includes a large, lined collection dam used for wet weather storage.
- The approval sought a development with a total predicted daily peak sewage load of 22,602L, whereas the area of the proposed total disposal zone (3.44ha) has the capacity to accept 51,750L/day, (i.e. twice the predicted peak generation volume).
- The peak generation volume assumes a 100% occupancy rate of the tourist accommodation, which will not be the case, thus the annualised application rate is lower than the calculated 1.5mm/day.
- The limiting factor in the nutrient and water balances identified in the Byron Shire OSMS model is the hydraulic load; this suggests the nutrient and by extension, other potential contaminants, are applied at rates well below the saturation limit of the disposal area.
- Nitrogen will be removed through a series of biochemical reactions and plant up take.
- Phosphorus will be stored in the soil through sorption and used by the forest vegetation.
- The proposed irrigation system will be designed with sequential dosing of irrigation blocks, rainfall shut off systems, groundwater quality monitoring, effluent quality and volume monitoring.

In summary, there have been many conservative measures included in the assessment to minimise the risk of contamination of the downstream waterways, aquatic habitat and groundwater quality. It is expected that a rigorous monitoring and maintenance schedule for both infrastructure and the environment will be adopted including adaptive management strategies and contingency planning.

5.8.3 Flaws in Wastewater Treatment System Selection and Design

Objector: Tyr Group

“Moving Bed Bioreactors (MBBR) provides the ability to achieve treatment in a smaller bioreactor volume – a useful attribute for large plants on confined sites. However, this advantage, which is not likely to be relevant to Linnaeus given the size of the site relative to the plant, comes with a number of risks and major drawbacks – particularly when considered at this small scale. Key issues include:

- *Risk of plastic in effluent and receiving environment*
- *High energy demand*
- *Large plastic waste generation*
- *Susceptibility to contaminants in influent sewage*
- *Issues in meeting process requirements*
- *High load variability*
- *Biosolids management*

Screenings and grit disposal.

Plastic in effluent and receiving environment

Aerofloat, a specialist wastewater treatment firm have designed the proposed system. Aerofloat have designed and commissioned more than 750 wastewater treatment systems over the past 40 years. This specialist has built numerous MMBRs without plastics migrating into the receiving environment. Aerofloat advises that it has not seen any evidence of deformation of the plastic biomedica in any of

their commissioned plants and there has been no evidence of fragments OR microplastics in the effluent.

Energy demand

The process proposed is a hybrid of suspended growth and fixed film micro-organisms. Hence, the design including a Return Activated Sludge ("RAS") pump from the Intermittent Aeration Tank ("IAT"). As a result, mixing rates are more efficient based on this design. As the bubble plume pathways are much longer with MBBRs, the contact time and turbulent conditions within the MBBR provides for a more efficient oxygen transfer for the same type of coarse bubble aeration. It is argued that energy consumption is on par or less than more conventional STPs.

Plastic waste generation

The proposal clearly states that there will be 15m³ not 20m³ of bio-media. A key feature of the MBBR system is that with the type of aeration processes employed and the elimination of mechanical mixers (which significantly reduce the life expectancy of bio-media) it is expected that there will be no requirement to replace this product, except in the longer term. Other similar STPs have experienced no malformation of the bio-media after 20 years of operation.

Susceptibility to contaminants in influent sewage

The Tyr Group state that *"The Process Mechanical and Electrical Design for the Sewage Treatment Plant Upgrade includes no details of the screen to assess its suitability for protection of the downstream MBBR."*

This is fact not the case. A fine sieve bend screen is proposed as is shown in the provided design drawings.

The Tyr Group further state *"Additionally, oil and grease in the sewage stream fed to the MBBR (as generated by kitchens) can inhibit the MBBR process preventing the biofilm from attaching to the carriers. The oil and grease levels in the sewage generated on site have not been considered in the design, and no process has been provided for their removal upstream of the MBBR."*

Aerofloat advises that they do not anticipate abnormal grease concentrations in the sewage. The extended aeration process in the MBBR employs a hybrid of suspended and fixed growth organisms. Any grease in the sewage would be readily biodegradable by these micro-organisms.

Issues in meeting process requirements

The Tyr Group state that *"Section 3.2 of the Process Mechanical and Electrical Design [7, p. 46 of 70] states that the MBBR is intended to be cycled between aerobic and anoxic conditions. To operate an MBBR anoxically (that is, without air flows into the tank), a mechanical mixer is required to keep the carriers in motion. It appears that the designer is not aware of this requirement, as no mixer has been included in the design. Mixer selection for MBBR must be undertaken carefully to ensure that the mixer does not damage the carriers."*

Aerofloat is aware of the requirements of anoxic denitrification and that many larger plants use mechanical mixers. Many of the large plants Aerofloat have successfully commissioned use mechanical mixers.

However, the Aerobic/Anoxic Tank ("AAT") designed for this specific MBBR contains suspended growth as well as fixed growth which results in the successful cycling from aerobic to anoxic conditions by turning blowers on and off.

In addition, there is a RAS pump that returns mixed liquor from the IAT to the AAT/ MMBR, which also assists in mixing the incoming sewage with the mixed liquor suspended solids (MLSS). Automatic dissolved oxygen control (and possible Redox meters) will be used to optimise the denitrification process. The bio-media are readily suspended when the blowers turn back on again for extended aerobic periods.

High load variability

The designer is aware of the load variability experienced over any given year. Aerofloat confirms that the proposed design is very robust and adaptable for varying loads. The fact that the climate in this locality is quite warm also assists in the rapid growth of nitrifiers, particularly in the warmer summer months, which is the typical timeframe that peak higher loads are likely to occur.

Biosolids management

The Tyr Group state *"The DA does not provide any indication of where the biosolids treatment and disposal (or reuse) proposed."*

Sludge is automatically wasted from the main tank by the waste activated sludge pump to the drying beds. The pump will operate during the Aeration period for a set adjustable time. Depending on the load on the plant the frequency will vary. The plant is also fitted with a return activated sludge pump which returns some of the sludge to the MBBR to increase MLSS concentrations.

The guidelines state that 0.1 square meters of drying bed area is required per equivalent population. This area is already provided within the existing drying beds.

Screenings and grit disposal

The sewage from the pump station is screened using a wedge wire screen and then is gravity fed into the MBBR and AAT. The existing screen and existing method of screening disposal is proposed for the augmented plant.

5.9 HAZARDS

5.9.1 Fire Hazard

Objector:

"Part of our DA application included a Bushfire Threat Assessment. This assessment recommended and our approval demanded that we create an Asset Protection Zone around the dwelling. How are they going to create an Asset Protection Zone around buildings that are placed in the bush?"

Objector:

"'Sacrificial' cabins built in the bush without need for an APZ is dangerous for people and will encroach on core wildlife habitat. I note that the Fire Report does not address the sacrificial cabins. Clearly this is because they are not supposed to be protected."

Objector:

"after such devastating bushfires last years I can't see how this can be approved, the risk is unfathomable, imagine all those extra people trying to get out if there was a bush fire? Please let there never ever be one..."

Linnaeus Property is proposing an eco-tourism development and given the nature of this type of use and further ecological assessments establishing the ecological value within the site and limitations for clearing vegetation, the applicant has advised they would like to implement this option pursuant to s6.3.1 PBP2019 which states:

"Ecotourism – Due to its focus on the natural environment and creating minimal impact, the principles of ecotourism and the establishment of APZs for bush fire mitigation are often in conflict. All relevant parties must accept that there is an increase for the potential for loss of structures due to the competing objective to reduce the environmental footprints of these types of developments. The emphasis is therefore placed on emergency management, leaving early and non-operation on days of extreme or catastrophic fire weather."

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Linnaeus Property has discussed this concept with their insurers as required by the NSW RFS Fact Sheet for Ecotourism which was applicable during early to mid-design development phase of development prior to the implementation of PBP2019 on 1 March 2020. All other buildings (existing, repurposed or proposed) shall have the necessary APZs in place.

As such, a better bushfire protection outcome for existing buildings has been achieved by providing increased Asset Protection Zones, evacuation planning and management, upgraded access and water supply, and a mechanism to ensure ongoing management and maintenance by the requirement for a Bushfire Management Plan to be included and referenced on the Fire Safety Schedule.

Emergency and evacuation planning is a critical measure for a Special Fire Protection Purpose to provide a higher level of co-ordination and safety for the occupants in a bushfire event. It is extremely important that the emergency plan is constantly monitored and amended when required and that training of staff, participants and stakeholders is sustained at a high level.

With respect to the safety of guests and staff, the Linnaeus Property will be provided with two on-site evacuation buildings demonstrated not to receive a forecast 10kW/m² of radiant heat from the fire front. This will also provide additional refuge options for the occupants associated with the existing development.

An emergency evacuation procedure and detailed plans of all Emergency Assembly Areas (onsite and offsite) are to be prepared in accordance with Section 6.8.4 and Table 6.8d of PBP2019. In this regard, the following aspects are to be implemented and adhered to:

- a Bush Fire Emergency Management and Evacuation Plan is to be prepared consistent with the NSW RFS document: A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan, and AS 3745:2010.
- for proposals in isolated or remote areas which involve large travel distances through bush fire prone vegetation, the following issues should be determined and addressed:
 - the amount of travel likely to be generated during an emergency evacuation.
 - the capacity of the broader road network to facilitate safe emergency evacuation.
 - limitations/constraints inherent in the road system; and
 - management of potential traffic conflicts (such as emergency vehicles versus evacuating members of the public).
- the Bush Fire Emergency Management and Evacuation Plan must consider a mechanism for the early relocation of occupants on days when adverse fire weather is notified, or adverse fire activity occurs in the local government area in which the development operates.
- a copy of the Bush Fire Emergency Management and Evacuation Plan is to be provided to the Local Emergency Management Committee for its information prior to occupation of the development.
- an Emergency Planning Committee is to be established to consult with residents (and their families in the case of aged care accommodation and schools) and staff in developing and implementing an Emergency Procedures Manual; and
- detailed plans of all emergency assembly areas including on-site and off-site arrangements as stated in AS 3745:2010 are to be clearly displayed, and an annually emergency evacuation is conducted

6 CONCLUSION

It is considered that the scaling back of the development and the additional information provided in this Response to Submissions, together with the information provided in the Statement of Environmental Effects, adequately addresses the issues raised in submissions.

Having regard to all the salient environmental, social and economic issues, it is considered that the proposed development represents reasonable and suitable development of the land.

A handwritten signature in black ink, appearing to read 'Stephen Connelly', is written over a diagonal line that spans the width of the signature.

Stephen Connelly RPIA (Fellow)
Partnership Principal
PLANNERS NORTH

APPENDIX A

5 Part Tests

Tests of significance ('five-part tests') under Section 7.3 of the BC Act have been completed/revised for the following threatened species:

- Pied Oystercatcher
- White-eared Monarch
- Common Planigale
- Eastern (Common) Blossom-bat
- Eastern Long-eared Bat

a) in the case of a threatened species, whether the proposed development or Proposal 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,

Pied Oystercatcher

Pied Oystercatchers favours intertidal flats of inlets and bays, open beaches and sandbanks. They forage on exposed sand, mud and rock at low tide, for molluscs, worms, crabs and small fish. Nesting mostly occurs on coastal or estuarine beaches although occasionally saltmarsh or grassy areas are used. Nests are shallow scrapes in sand above the high tide mark, often amongst seaweed, shells and small stones. Two to three eggs are laid between August and January. The female is the primary incubator and the young leave the nest within several days.

Threatening processes for this species include:

- Predation of eggs and chicks by foxes.
- Disturbance of nesting shorebirds and direct mortality of eggs and chicks by trampling or removal by humans. 4WDs are a threat at some sites.
- Disturbance of nesting shorebirds and direct predation of eggs and chicks by domestic dogs.
- Inundation of nests by high tides, storms and other flooding.
- Predation of eggs and chicks by avian predators (mostly corvids and gulls).
- Loss or degradation of habitat (e.g. nesting areas and foraging areas) due to hydrological changes in estuaries.
- Degradation of habitat due to contamination of estuaries by urban and agricultural run-off, sediment re-suspension and oil-spills.
- Reduction of nesting area due to encroachment of vegetation.
- Entanglement in or ingestion of marine debris.
- Long-term declines of a key food source, the Pipi, as a result of over-harvesting.

Potential Impacts from the Proposal

The proposal would result in a nominal increase in human visitation to Seven Mile Beach by patrons, which comprises a large area of foraging for the species in a local context. An additional 12 cabins are proposed, each with capacity for two people. On this basis, a maximum of 24 people may access the beach (via an existing formalised access) for recreational purposes and there is potential that any Oystercatchers foraging along the beach may be temporarily disturbed. The northern end of Seven Mile Beach is already accessed by the general public via Seven Mile Beach Road for surfing, fishing and recreation; disturbance to foraging Oystercatchers would occur at a low level (based on a relatively low level of usage).

While the proposal would result in a nominal intensification of visitation to the beach by patrons and increase disturbance factors to a small degree, given the substantial areas of foraging habitat along the entire beach (and including small beaches to the north and along Broken Head Beach), the impacts to

Oystercatchers is expected to be highly limited in scope and area. Breeding is not known to occur in the immediate locality. On this basis it would be highly unlikely that an adverse effect on the life cycle of the Pied Oystercatcher would occur such that a viable local population of the species is likely to be placed at risk of extinction.

White-eared Monarch

In NSW, White-eared Monarchs occurs in rainforest, especially drier types, such as littoral rainforest, as well as wet and dry sclerophyll forests, swamp forest and regrowth forest. They appear to prefer the ecotone between rainforest and other open vegetation types or the edges of rainforest, such as along roads. White-eared Monarchs eat insects, but their diet is not well studied. They breed from about September to March, usually nesting high in the canopy, and often at the edge of patches of rainforest.

Threatening processes for this species include:

- Clearing and increasing fragmentation and isolation of habitat, especially low-elevation subtropical rainforest, littoral rainforest and wet sclerophyll forest, through agricultural, tourist and residential development or forestry activities.
- Forest management that results in conversion of multi-aged forests to young, even-aged stands.
- Invasion of forests by weeds.
- Inappropriate fire regimes that degrade habitat or allow invasion by weeds.
- Degradation or loss of habitat through grazing of stock.
- Changes to rainforest habitat with climate change including drying and increased fire frequency.
- Lack of information on the species habitat requirements in NSW, particularly breeding habitat.
- Easily disturbed by the presence of people.

Potential Impacts from the Proposal

The Proposal would result in the minor loss of vegetation within a disturbed and modified environment which has been subject to ongoing low levels of human activity (mowing, recreation, traffic) for many years in the northern portion of the site. While this vegetation may comprise potential foraging and nesting habitat for the species, it is likely to represent habitat of low value and usage for a sensitive species in comparison to superior areas of undisturbed habitat over the ~ 111 ha of the site.

Vegetation loss and a minor intensification of human activity within a highly modified environment in the north of the site would be highly unlikely to have an adverse effect on the life cycle of the White-eared Monarch such that a viable local population of the species is placed at risk of extinction.

Common Planigale

Common Planigales inhabit rainforest, eucalypt forest, heathland, marshland, grassland and rocky areas where there is surface cover, and usually close to water. They are active at night and during the day shelter in saucer-shaped nests built in crevices, hollow logs, beneath bark or under rocks. Planigales are fierce carnivorous hunters and agile climbers, preying on insects and small vertebrates, some nearly their own size. Breeding occurs from October to January; females build a nest lined with grass, eucalypt leaves or shredded bark.

Threatening processes for this species include:

- Predation by foxes.
- Predation by cats
- Predation and poisoning by cane toads
- Loss of habitat from a variety of land uses resulting in species fragmentation and habitat degradation. Includes changes to riparian areas and hydrology from residential and associated

infrastructure development, and loss of ground cover vegetation and woody debris from too frequent fire and clearing.

- Frequent burning that reduces ground cover such as hollow logs and bark.
- Over grazing that reduces ground cover
- Disturbance of vegetation surrounding water bodies.
- Predation by domestic cats
- The species is often misidentified and requires further survey work to identify distribution and abundance.

Potential Impacts from the Proposal

The development footprint comprises grassland areas that are mown/slashed and where litter and debris are either absent (most of the northern Linnaeus hub) or occur at low levels. These environments provide very poor habitat for the Common Planigale. The Proposal represents the loss of vegetation around the margins of existing disturbed areas and does not intrude into better quality habitat where modification is absent. When examined in the context of the overall site (~ 111 ha), the impacts on potential Planigale habitat in the context of substantial areas of high quality habitat would be very low.

Similarly, the proposed vegetation offset planting within an area of *Setaria* grassland (with low litter levels, and which is subject to occasional slashing) represents a low of low quality habitat which is insignificant in the context of the site. On this basis, it would be highly unlikely that the Proposal would result in an adverse effect on the life cycle of the Common Planigale such that a viable local population of the species is likely to be placed at risk of extinction.

Common Blossom-bat

Common Blossom-bats typically roost in littoral rainforest and feed on nectar and pollen from flowers in adjacent heathland and paperbark swamps. They have also been recorded in a range of other vegetation communities, such as subtropical rainforest, wet sclerophyll forest and other coastal forests. They generally roost individually in dense foliage and vine thickets of the sub-canopy, staying in the same general area for a season. They change roost sites daily, but each roost site is generally only 50m or so away from other recent roosts.

Favoured feeding sites are repeatedly visited on consecutive nights within a flowering season and revisited over several years. Blossom-bats require a year-round supply of nectar and pollen which is gathered from a mosaic of coastal complex vegetation types. When these vegetation types are in short supply of nectar and pollen (Nov/Dec in northern NSW) Common Blossom-bats have been known to utilise riverine areas containing Black Bean, Silky Oak and Weeping Bottlebrush.

Threatening processes for this species include:

- Clearing of coastal habitat for urban development or sandmining.
- Weeds, such as Bitou Bush, that suppress the regeneration of key food trees, such as Coastal Banksia.
- Predation by foxes and feral cats may occur whilst the bat is feeding on low hanging flowers and fruit.
- Inappropriate fire regimes applied in heathland habitats leading to reduced flowering of Banksia, Callistemon and Melaleuca species.

Potential Impacts from the Proposal

The Proposal would result in the loss of up to ~ 0.44 ha of potential foraging habitat (Coast Banksia) for the Common Blossom-bat within a disturbed and modified environment which has been subject to ongoing low levels of human activity (mowing, recreation, traffic) for many years in the northern portion of the site.

The loss of this habitat is negligible in a local context where this resource occurs extensively, both on the site and within private land and conservation reserves which occur contiguously to the north and south. No potential roost habitat would be affected given the existing levels of disturbance and existing edge effects in the proposed cabin locations. Given the occurrence of extensive undisturbed forested habitat both on the site and the broader locality, the Proposal represents a minor reduction of foraging resources in a local context. On this basis, it would be highly unlikely that the Proposal would result in an adverse effect on the life cycle of the Common Blossom-bat such that a viable local population of the species is likely to be placed at risk of extinction.

Eastern Long-eared Bat

Occurs in lowland subtropical rainforest and wet and swamp eucalypt forest, extending into adjacent moist eucalypt forest. Coastal rainforest and patches of coastal scrub are particularly favoured. Roosts in tree hollows, the hanging foliage of palms, in dense clumps of foliage of rainforest trees, under bark and in shallow depressions on trunks and branches, among epiphytes, in the roots of strangler figs, among dead fronds of tree ferns and less often in buildings.

Threatening processes for this species include:

- Development pressures in or near swamp, wet sclerophyll and rainforests resulting in habitat degradation, alterations to moisture regimes, and edge effects, and loss of connectivity
- Loss of hollow-bearing trees and stands of palms and rainforest trees used for roosting and maternity sites.
- Invasion of habitat by weeds, particularly by Bitou Bush on the coast.
- High frequency fire.
- Climate change resulting in degradation of habitat from forest drying and increasing likelihood of fire.
- Limited known sites for the species reducing NSW population viability.
- Predation from cats.
- Vehicle strike.
- Light pollution in and near habitat areas impacting species behaviour.

Potential Impacts from the Proposal

The Proposal would result in the minor loss foraging habitat for the Eastern Long-eared Bat within a disturbed and modified environment which has been subject to ongoing low levels of human activity (mowing, recreation, traffic) for many years in the northern portion of the site. The construction of the cabins and various buildings would result in nominal loss of foraging habitat in the context of the site, and increases in lighting noise from discrete cabins at low levels of occupancy is expected to be low. Further, any vehicle movements around cabins and buildings by patrons would be via electric vehicles, so increases in noise to any proximate roosting habitat would be negligible.

Disturbance to potential roost habitat in proximity to the proposed buildings is very low in a local context where roost habitats occur extensively, both on the site and within private land and conservation reserves which occur contiguously to the north and south. The majority of these habitats are not subject to the existing levels of disturbance and existing edge effects in the proposed building locations. On this basis it would be highly unlikely that the Proposal would result in an adverse effect on the life cycle of the Eastern Long-eared Bat such that a viable local population of the species is likely to be placed at risk of extinction.

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b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or Proposal:

- (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***
- (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 to threatened fauna.

c) in relation to the habitat of a threatened species or ecological community:

(i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or Proposal, and

- Pied Oystercatcher: no habitat removed; a portion of Seven Mile Beach would be subject to minor increases of human visitation. In the context of large areas of beachside foraging grounds in the locality, the impacts of the Proposal are minor.
- White-eared Monarch: minor loss of low-quality potential foraging and nesting habitat resources (~ 0.44 ha) within a disturbed and modified area. The Proposal represents an expansion of human intensification and activity around the existing hub in the north of the site. This is restricted in its extent and in the context of large areas of suitable habitat within the balance of the site.
- Common Planigale: loss of very low-quality potential habitat in slashed areas (eg. tree house cabins) and for the proposed compensation planting. These areas represent low quality habitats in comparison to superior quality, better connected habitats with established ground layers which occur over much of the balance of the site.
- Eastern (Common) Blossom-bat: minor loss of foraging resources (~ 0.44 ha); minor intensification of disturbance to potential roosting habitat in proximity to the development footprint. The Proposal represents an expansion of human intensification and activity around the existing hub in the north of the site. This is restricted in its extent and in the context of large areas of suitable habitat within the balance of the site.
- Eastern Long-eared Bat: minor loss of foraging resources (~ 0.44 ha); minor intensification of disturbance to potential roosting habitat in proximity to the development footprint. The Proposal represents an expansion of human intensification and activity around the existing hub in the north of the site. This is restricted in its extent and in the context of large areas of suitable habitat within the balance of the site.

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

- Pied Oystercatcher: no habitat would be fragmented or isolated as a result of the Proposal.
- White-eared Monarch: the development footprint is already highly fragmented; the Proposal would not isolate habitat for the species or result in barriers to movement.
- Common Planigale: the development footprint is already highly fragmented; the Proposal would not isolate habitat for the species or result in barriers to movement.
- Eastern (Common) Blossom-bat: the development footprint is already highly fragmented; the Proposal would not isolate habitat for the species (which is highly mobile) or result in barriers to movement.
- Eastern Long-eared Bat: the development footprint is already highly fragmented; the Proposal would not isolate habitat for the species (which is highly mobile) or result in barriers to movement.

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

- Pied Oystercatcher: a minor increase in human activity at Seven Mile Beach is unlikely to negatively impact the long term survival of the species, given the substantial local habitats available.
- White-eared Monarch: the habitat to be removed forms a small part of an existing modified and disturbed area subject to noise and human activity on a regular basis. In the context of extensive areas of high quality habitat within the site and adjacent private land and conservation reserves, the importance of the affected habitat is likely to be minor.
- Common Planigale: the low quality potential habitat to be removed forms a small part of an existing modified and disturbed area subject to noise and human activity on a regular basis. In the context of extensive areas of high quality habitat within the site and adjacent private land and conservation reserves, the importance of the affected habitat is likely to be minor.
- Eastern (Common) Blossom-bat: the habitat to be removed forms a small part of an existing modified and disturbed area subject to noise and human activity on a regular basis. In the context of extensive areas of high quality foraging and roosting habitat within the site and adjacent private land and conservation reserves, the importance of the affected habitat is likely to be minor.
- Eastern Long-eared Bat: the habitat to be removed forms a small part of an existing modified and disturbed area subject to noise and human activity on a regular basis. In the context of extensive areas of high quality foraging and roosting habitat within the site and adjacent private land and conservation reserves, the importance of the affected habitat is likely to be minor.

d) whether the proposed development or Proposal is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly).

No areas of outstanding biodiversity value have been declared in Byron LGA.

e) whether the proposed development or Proposal is or is part of a key threatening process or is likely to increase the impact of a key threatening process.

A key threatening process (KTP) is as a process that threatens, or may have the capability to threaten, the survival or evolutionary development of species or ecological communities. KTPs listed in the BC Act, and whether the Proposal is recognised as a KTP is shown in **Table A.1**.

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Table A.1 Key Threatening Processes

| Key Threatening Process (as per Schedule 4 of the BC Act) | Is the development or Proposal proposed of a class of development or Proposal that is recognised as a threatening process? | | |
|--|--|----------|----------|
| | Likely | Possible | Unlikely |
| Aggressive exclusion of birds by noisy miners (<i>Manorina melanocephala</i>) | | | ✓ |
| Alteration of habitat following subsidence due to longwall mining | | | ✓ |
| Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands | | | ✓ |
| Anthropogenic climate change | | | ✓ |
| Bushrock removal | | | ✓ |
| Clearing of native vegetation | ✓ | | |
| Competition and grazing by the feral European Rabbit (<i>Oryctolagus cuniculus</i>) | | | ✓ |
| Competition and habitat degradation by feral goats (<i>Capra hircus</i>) | | | ✓ |
| Competition from feral honeybees (<i>Apis mellifera</i>) | | | ✓ |
| Death or injury to marine species following capture in shark control programs on ocean beaches | | | ✓ |
| Entanglement in or ingestion of anthropogenic debris in marine and estuarine environments | | | ✓ |
| Forest eucalypt dieback associated with over-abundant psyllids and bell miners | | | ✓ |
| Habitat degradation and loss by Feral Horses, <i>Equus caballus</i> | | | ✓ |
| Herbivory and environmental degradation caused by feral deer | | | ✓ |
| High frequency fire resulting in the disruption of life cycle processes in plants and animals and loss of vegetation structure and composition | | | ✓ |
| Importation of red imported fire ants (<i>Solenopsis invicta</i>) | | | ✓ |
| Infection by <i>Psittacine circoviral</i> (beak and feather) disease affecting endangered psittacine species and populations | | | ✓ |
| Infection of frogs by amphibian chytrid causing the disease chytridiomycosis | | | ✓ |
| Infection of native plants by <i>Phytophthora cinnamomi</i> | | | ✓ |

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| Key Threatening Process (as per Schedule 4 of the BC Act) | Is the development or Proposal proposed of a class of development or Proposal that is recognised as a threatening process? | | |
|---|--|----------|----------|
| | Likely | Possible | Unlikely |
| Introduction and Establishment of Exotic Rust Fungi of the order Pucciniales pathogenic on plants of the family Myrtaceae | | | ✓ |
| Introduction of the large earth bumblebee (<i>Bombus terrestris</i>) | | | ✓ |
| Invasion and establishment of exotic vines and scramblers | | | ✓ |
| Invasion and establishment of Scotch Broom (<i>Cytisus scoparius</i>) | | | ✓ |
| Invasion and establishment of the Cane Toad (<i>Bufo marinus</i>) | | | ✓ |
| Invasion, establishment and spread of Lantana (<i>Lantana camara</i>) | | | ✓ |
| Invasion of native plant communities by African Olive (<i>Olea europaea</i> L. subsp. <i>cuspidata</i>) | | | ✓ |
| Invasion of native plant communities by <i>Chrysanthemoides monilifera</i> (bitou bush and boneseed) | | | ✓ |
| Invasion of native plant communities by exotic perennial grasses | | | ✓ |
| Invasion of the Yellow Crazy Ant (<i>Anoplolepis gracilipes</i>) into NSW | | | ✓ |
| Loss and degradation of native plant and animal habitat by invasion of escaped garden plants, including aquatic plants | | | ✓ |
| Loss of hollow-bearing trees | | | ✓ |
| Loss or degradation (or both) of sites used for hill-topping by butterflies | | | ✓ |
| Predation and hybridisation by feral dogs (<i>Canis lupus familiaris</i>) | | | ✓ |
| Predation by the European Red Fox (<i>Vulpes vulpes</i>) | | | ✓ |
| Predation by the feral cat (<i>Felis catus</i>) | | | ✓ |
| Predation by <i>Gambusia holbrooki</i> (Plague Minnow or Mosquito Fish) | | | ✓ |
| Predation by the Ship Rat (<i>Rattus rattus</i>) on Lord Howe Island | | | ✓ |
| Predation, habitat degradation, competition and disease transmission by feral pigs (<i>Sus scrofa</i>) | | | ✓ |
| Removal of dead wood and dead trees | ✓ | | |

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The Proposal involves the removal of dead wood and dead trees (removal of minor dead branches and small limbs cleared as part of the works).

These impacts occur around small, localised and disturbed parts of the site, with the balance of habitats at the site being unaffected. The degree that the Proposal would contribute to any threatening process is not considered likely to place the local population of any of the subject species at significant risk of extinction.

Conclusion

It is considered unlikely that the local population of any of the subject species would be placed at significant risk of extinction as a result of the Proposal.