Review of Environmental Factors
Tree Management and Vegetation Works
Terrace Holiday Park: Southern Precinct

Environmental Assessment under Part 5 Environmental Planning and Assessment Act 1979

By Ecological Consultants Australia Pty Ltd TA
Kingfisher Urban ecology and Wetlands

June 2018

Statement of Authorship

This study and report was undertaken by Ecological Consultants Australia for the Client. The author of the REF is Geraldene Dalby-Ball whose qualifications are BSc. (Hons I) majoring in Ecology and Botany with over 20 years' experience in this field.

Limitations Statement

Information presented in this report is based on an objective study undertaken in response to the brief provided by the client. Any opinions expressed in this report are the professional, objective opinions of the authors and are not intended to advocate any particular proposal or pre-determined position.

Document Control Sheet	
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Signed: Geraldene Dalby-Ball – Director of Ecological Consultants Australia

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Ecological Consultants Australia Pty Ltd (Kingfisher) was engaged by Reflections Holiday Parks, to provide an REF ecological impact assessment of recommendations proposed in the Arboricultural Report (ArborSafe March 2018) and to provide recommendations for the vegetation management of the Southern Precinct of the Terrace Holiday Park, Brunswick Heads, NSW. 3

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Appendix II Expertise of author ..... Error! Bookmark not defined.

We acknowledge the traditional owners of the land and Elders past, present and future. We acknowledge the First People of the area the Minjangbal and Durrungbil tribes of Brunswick Valley.

1 Purpose of this REF

Ecological Consultants Australia Pty Ltd (Kingfisher) was engaged by Reflections Holiday Parks, to provide an REF ecological impact assessment of recommendations proposed in the Arboricultural Report (ArborSafe March 2018) and to provide recommendations for the vegetation management of the Southern Precinct of the Terrace Holiday Park, Brunswick Heads, NSW.

A site inspection (March/April 2018) was made of the vegetation, focusing on the Coastal Cypress Pine Forest EEC both within the holiday Park and the immediate surrounds. The site inspection informs much of this REF. Literature, in attachment A, was also reviewed.

2 Section A – Site Identification

Street address	Fingal Street, Brunswick Heads. NSW 2483
Lot and DP Description	Part Lot 416 DP 728666 4.21ha; Lot 313 in DP 755692 373 m^2; Lot 403 in DP 728637 1,990 m^2; Lot 50 in DP 1169550 4,013 m^2; Lot 1 in DP 1169548 318.2 m^2.

	Works are restricted to Part of Lot 416 DP 728666 See Figures 1a, 1b and 1c.
Reserve name / number	R 82999 (Terrace Reserve Holiday Park)
Locality	Brunswick Heads
Local Government Area	Byron Shire
Land Status	Reserve for Public Recreation and Resting Place
Aboriginal land claims / Native Title	A search of the native Title Tribunal website has revealed that there are currently two recorded claims over the site. References are NC2001/008 and NSD6020/2001. The works are not precluded by the claims.
Consistent with reserve purpose?	Yes basic management of risk and environmental sustainability (through planting and bush regeneration)
Consistent with land assessment?	Yes

Figure 2 Land Status

Figure 1a total area of DP 728666. Source: Plan of Management (2010)

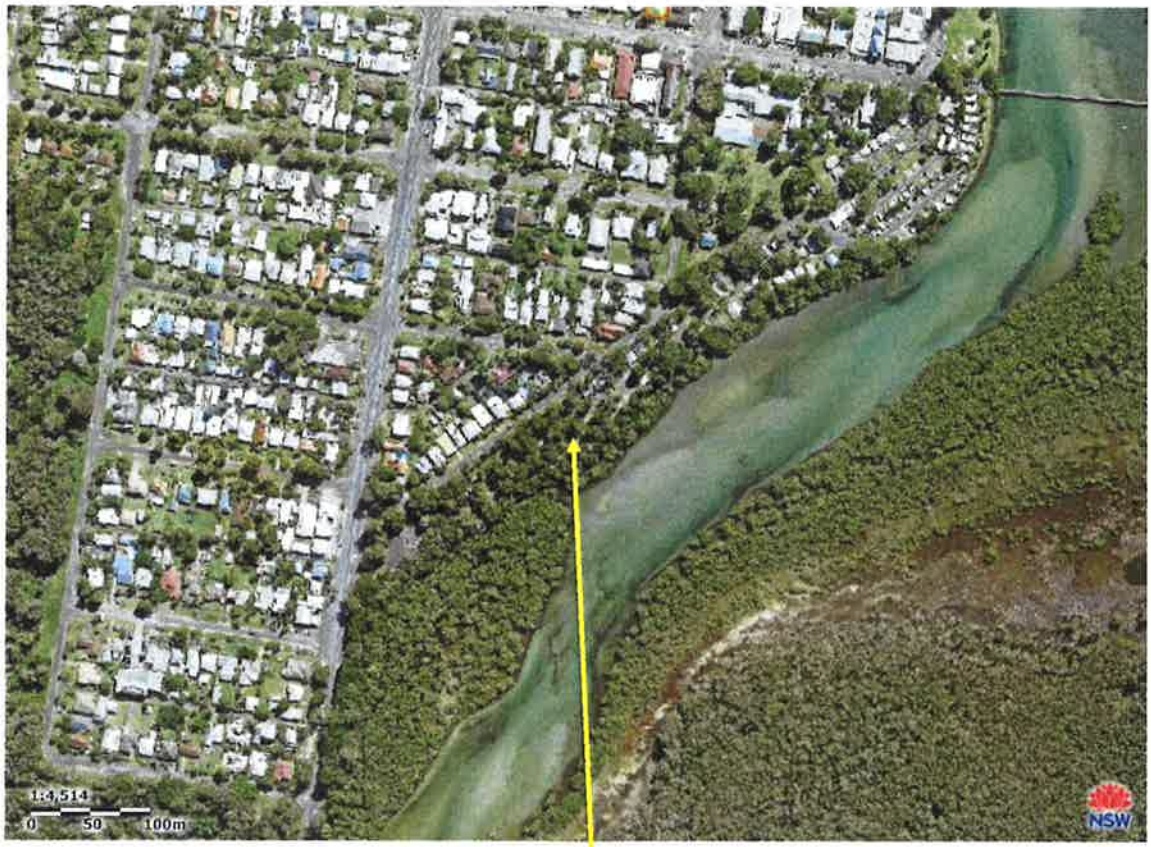

Figure 1b Aerial showing context of area and surrounds

Figure 1c Aerial showing close up of area where tree management works are required and DP # Source: Six Maps

Site inspection

The Terrace Holiday Park is the key site location shown in Figure 1a (yellow approximate outline). The study area included the site and land adjoining. The study area covered ~ 42ha see Figure 2

Figure 2a. The Terrace Holiday Park. Source: Six Maps 2018.

Figure 2b. Study Area. Source: Six Maps 2018. Yellow Highlight shows surveyed area ~ 40ha.

3 Section B – Planning Control

Yes	No	
☐	☒	Is development consent required from the local council? *(if yes, a REF is not required)* Planning Instrument (eg LEP): Zone: RE1
☐	☒	Is the proposal prohibited by an LEP, SEPP or REP? *(if yes, a REF is not required)*
☐	☐	If the proposal is prohibited, does the development have existing use rights? *If so, obtain details of previous approvals given from the proponent.* **Not Applicable**
☐	☒	Is the proposal exempt development? *(if yes, a REF is not required)*
☐	☒	Is the proposal complying development? *(if yes, a REF is not required)*
☐	☒	Are any other permits or licences from other authorities required? (eg EPA, NPWS, NSW Fisheries etc.)? Environmental assessments have been undertaken to check this and confirm no authority approvals are required.

4 Section C – Site Description

Current use of the site	Holiday Park
Uses on adjoining land	Residential, Brunswick River (Cape Byron Marine Park).
Vegetation	Remnants of three native vegetation communities occupy parts of the park. They are; • Mangrove • Coastal Cypress Forest and Woodland and • Remnant Littoral Rainforest Trees. There is also an artificial community of Lawns, Shrubberies and Specimen Trees which includes some native trees and shrubs. The Coastal Cypress and Littoral Rainforest Tree communities are listed as Endangered Ecological Communities (EECs) under the Threatened Species Conservation Act 1995 (TSC Act). A Vegetation Management Plan (Idyll Spaces, 2011) has been prepared for the park, which describes the vegetation communities, their composition, condition, threats, conservation status and actions for future management. The VMP is expanded on in the Plan of Management for Part of Reserve 82999 for Public Recreation and Resting Place (TERRACE RESERVE HOLIDAY PARK) at BRUNSWICK HEADS (Integrated Site Design 2015).
Fauna	The vegetation of the park provides potential habitat threatened fauna including Osprey, Collared Kingfisher, Black Bittern, Beach Stone Curlew, Black-necked Stork,

	Rose-crowned Fruit Dove, Mangrove Honeyeater, Koala, Eastern Tubenosed Bat, Grey-headed Flying Fox, Greater Broad-nosed Bat and Little Bentwing Bat. Habitat on site: habitat for these species will not be impacted as a result of the proposed tree management works. Long-term habitat will be improved due to addition plantings of both tree and mid and understory species. See Biodiversity Impact Assessment (Kingfisher June 2018).
Water Bodies	☒ a creek ☐ river ☐ coastline ☐ wetland ☐ other water body ☐ drainage channel ☒ flood prone ☐ Not applicable Distance of activity to water body : >50 metres to Simpons Creek
Topography	☒ relatively flat ☐ moderately sloping ☐ steeply sloping Approx. degree of slope: 0-5%
Soil Type	The area primarily consists of Pleistocene sands, which are generally of relatively low fertility. Some localised areas have been filled over the previous decades, and a rock revetment wall was constructed along parts of the river foreshore in the 1960's.
Soil stability / erosion	The site is well grassed and stable. There is no evidence of erosion due to the established grass cover and flat grades.
Landforms	The site is generally flat with a shallow grade towards Simpsons Creek. The bank of the creek is steep and uncontrolled in some sections however reasonable vegetation cover exists. No works are proposed on the banks.
Cultural Heritage	Representations have been made to the Trust indicating that some Coastal Cypress within the reserve have heritage significance. The historical significance has yet to be formally established. The life expectancy of the trees is less than 5 years, and their removal for safety reasons must take priority over the heritage value.
Aboriginal Heritage	A search of the Aboriginal Heritage Information Management System shows that three Aboriginal sites or places have been recorded or declared on the site. The works will not impact or affect Aboriginal (First Peoples) objects or sites.
Other features	

Plate 1 Callitris and understory turf leading to the camping area of the Southern Precinct Easter Day 2018

Plate 2 Callitris and understory along the foreshore area of Simpsons Reserve this area is within the riparain setback and proposed for bush regeneration.

Plate 3 Callitris and understory along the foreshore area of The Terrace Southern Precinct at the far southern end. Proposed revegetaiton will result in more areas like this.

5 Section D - Description of the Activity

Where on the site will the activities occur?	In the southern precinct of the holiday park – see exact location of trees in the Arboricultural Report ArborSafe (March 2018)
What activities are involved in the proposal? (include the main activity, ancillary and ongoing activities)	Vegetation Management Works include actions to implement tree protection mechanisms including load cells to spread weight, a reduction in site density, designated site dimensions and sizes, a refining of site usage, specific tree protection measures and the allocation of specific areas to regeneration and assisted regeneration these are detailed in ArborSafe March 2018 see also the Biodiversity Impact Assessment (Kingfisher) June 2018. **Defining protection areas around trees** reduction in the number of sites and set-backs from trees with use limited. **Installation of load cells** Ground protection measures are to be put in place to minimise impacts to the tree roots see the ArborSafe (March 2018) report for recommended locations. Locations were proposed were examined as part of this assessment and biodiversity values will be retained as the cells are porous and allow water infiltration. **Installation of permanent screw anchors** to be installed at obvious key locations around the sites. These anchor points will negate the need for hammering in new pegs and thus protect tree roots long term. **Mulching** The pros and cons of adding mulch around the SRZ of the individual trees situated in the Southern Precinct has been reviewed and it is recommended that Structural Root Zone (SRZ) and rehabilitation areas (turf to CP EEC) be mulched with a native forest blend or wood chip mulch that conforms to AS4454–2012. Mulching will NOT occur in areas of possible natural regeneration of the EEC. **Tree Management Pruning** recommendations from the report ArborSafe (March 2018) are detailed in Appendix F of that report and include the removal of deadwood/stubs (minor work) and the removal of selected branches from 30 trees (25, 29, 30, 38, 50, 51, 53, 62, 65, 68, 76, 82, 98, 100, 109, 116, 121, 122, 127, 131, 136, 142, 153, 174, 196, 200, 201, 207, 231, 260).

	Tree Removal three Callitris trees (232, 234 and 238) are proposed for removal (of the 115 CP). While most of the trees have a life expectance over 10 years these three have under five years and a high safety risk from an arboriculture perspective. Trees were carefully observed for signs of key fauna habitat, hollows etc. Care will be taken when removing these trees so that mammals are protected during works. Trees can be utilised on-site to created buffers to stop the access to vegetation rehabilitation areas including under existing trees. **Infilling of low areas with clean sand** A course grade sand (an inorganic mulch) has been recommended for areas where depressions in the natural soil grade have been created by vehicle or storm wear or where structural roots have been exposed. The sand will allow free drainage to the underlying soil profile, so no perched water tables are created, while providing support and protection. The infilling is expect to have a positive outcome with increased protection to sub-soils.
What environmental protection measures are proposed?	**Fauna check pre and during tree removal.** Inspection of the tree for fauna prior any tree removal activity. **Planting and Rehabilitation of CP EEC** Vegetation works include planting canopy, mid and ground level species from the EEC and convert turf areas to areas of native plants from the EEC community including under planting the existing trees with species from the CCPF. Simpson Reserve (formally South Terrace Reserve) is a narrow Reserve situated between the estuary edge and the main entrance road into Brunswick Heads. It's located immediately south of Terrace Holiday Park and is not part of the commercial camping area. This area retains well-developed stands of Coastal Cypress amongst extensive areas of mowed grass. This area is within the lease area and bush regeneration will occur in remnant CP EEC as well as conversion of turf to CP EEC areas. All weeding should be undertaken by hand. Any chemical use must not impact the regeneration of CCPF. Works will be done by experienced bush regenerators. **Removal of Exotic Vegetation** All exotic trees and shrubs not aligning with the CCPF will be systematically removed from the southern precinct over time and replaced with CCPF associated species. This includes the removal of the *Murraya paniculate* hedges and various shrubs.

	Signage and Engagement The significance and vulnerability of CCPF would be unknown by the majority of site visitors. Informative and educational signage is likely to increase the respect and understanding of the importance of CCPF by site users. Example wording may include (source: Arboriculture Report ArborSafe 2018); *The Cypress Pine trees within Terrace Reserve form part of an endangered ecological community named 'Coastal Cypress Pine Forest in the NSW North Coast Bioregion' (CCPF). The forest is in a vulnerable condition and in order to preserve the viability of the forest, please park in designated locations only, refrain from discharging waste water in the area and do not damage the trees in any way'*

6 Section E – Reasons for Activity and Consideration of Alternatives

Reasons for activity	Trees 232, 234 and 238 are proposed for removal as they have been assessed by a Level 5 arborist who has determined the trees have under five years and are a high safety risk. Most of the trees have a life expectance over 10 years and minor works like removal of dead stubs and selected branches are all that is needed to retain site safety. The trees have a number of defects including wounds, cracks, splits, weak unions, and cavities – see ArborSafe March 2018. **Planting and Rehabilitation of CP EEC** Vegetation works include planting canopy, mid and ground level species from the EEC and convert turf areas to areas of native plants from the EEC community including under planting the existing trees with species from the CCPF. Simpson Reserve (formally South Terrace Reserve) is a narrow Reserve situated between the estuary edge and the main entrance road into Brunswick Heads. It's located immediately south of Terrace Holiday Park and is not part of the commercial camping area. This area retains well-developed stands of Coastal Cypress amongst extensive areas of mowed grass. This area is within the lease area and bush regeneration will occur in remnant CP EEC as well as conversion of turf to CP EEC areas. All weeding should be undertaken by hand. Any chemical use must not impact the regeneration of CCPF. Works will be done by experienced bush regenerators.

	Removal of Exotic Vegetation All exotic trees and shrubs not aligning with the CCPF will be systematically removed from the southern precinct over time and replaced with CCPF associated species. This includes the removal of the *Murraya paniculate* hedges and various shrubs. **Signage and Engagement** The significance and vulnerability of CCPF would be unknown by the majority of site visitors. Informative and educational signage is likely to increase the respect and understanding of the importance of CCPF by site users. Example wording may include (source: Arboriculture Report ArborSafe 2018); • The arborist has reported that whole failure of the trees may occur at any time. • The trees have been assessed as having an urgent risk priority. • The arborist has recommended that campers be excluded from under the high risk trees until works are undertaken.
Alternatives:	Retention of the trees would be a short-term outcome as they are likely to fail in the coming 5 years. Retaining the trees would require the continued quarantining of the surrounds until the trees fail. No other options exist. Works include planting, exotic plant removals and bush regeneration this will result in an improved environmental outcome and without this weed incursions could see the on-going degradation of the Endangered Community (as is occurring elsewhere in the locality – on other public land).
Justification for preferred option	The arborists have reported that the trees are at imminent risk of failure and the safety of other guests and passers by cannot be guaranteed as the timing of the failure and the area that may be impacted by debris cannot be predicted. The health and structure of the trees is poor and the arborists prognosis is that the trees are dying. Removal is necessary. Replanting from locally collected seed and propagated plants is part of the works and this will result in longer term sustainability for the vegetation community and the tree species.

7 Section F – Environmental Impacts

All possible impacts on the environment which are likely to be caused by the activity are to be recorded in this part, as well as an analysis of the environmental significance of those impacts. Please refer to the accompanying guidelines for assistance in completing this section.

a.	**Will there be any environmental impact on a community (people)?** ☐ not applicable ☒ negligible ☐ positive ☐ low adverse ☐ high adverse Comment: The only impact on communities either within or adjacent to the holiday park is short term noise from during the implementation of tree management works. The final use of the site will not change, and all works will be contained within holiday park boundaries. Activity will be minimal and over a short time frame. The outcome for the resident on site will be positive as a result of the risk of personal and property damage being removed.
b.	**Will there be any transformation of a locality?** ☐ not applicable ☒ negligible ☐ positive ☐ low adverse ☐ high adverse Comment: The final use of the holiday park will remain as before, and the total number of sites will be similar. Safety of residents and guests within the park will be improved. The Forested natural of this area will be retained and the additional planting will ensure a longer term sustainability of the Vegetation Community.
c.	**Will there be any environmental impact on the ecosystems of the locality?** ☐ not applicable ☒ negligible ☒ positive ☐ low adverse ☐ high adverse Comment: The short-term removal of three trees (that are expected to fail within 5 years) will be balanced by the planting of over 30 locally native Cyprus Pine trees, bush regeneration of the community on site and conversion of areas of turf to the community this will result in a far greater long-term positive outcomes for the environment.
d.	**Will there be any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality?** ☐ not applicable ☒ negligible ☐ positive ☐ low adverse ☐ high adverse Comment: The impact of the removal of three trees within the holiday park will have a low overall impact due to the number (over 115) of these trees in close proximity. The replanting of trees, as proposed, will result in a long-term improved visual outlook.
e.	**Will there be any effect on a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations?** ☐ not applicable ☒ negligible ☐ positive ☐ low adverse ☐ high adverse

	Comment: Claims regarding potential heritage value of the trees have been noted, however the action to remove the trees to address an urgent safety risk is appropriate management response that will not materially alter the historic value. The historic value have been successfully challenged based on the proposed age or the trees see Kyooman 2017 – despite this the removal of the 3 trees still wouldn't impact the importance of this stand of trees as an important place. On the contrary it would make the areas still accessible, rather than being closed off.
f.	**Will there be any impact on the habitat of any protected fauna (within the meaning of the National Parks and Wildlife Act, 1974)?** ☐ not applicable ☒ negligible ☐ positive ☐ low adverse ☐ high adverse Comment: No particular habitat feature (hollows etc) were observed in these trees.
g.	**Will there be any endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air?** ☐ not applicable ☒ negligible ☐ positive ☐ low adverse ☐ high adverse Comment: No
h.	**Will there be any long-term effects on the environment?** ☐ not applicable ☐ negligible ☒ positive ☐ low adverse ☐ high adverse Comment: The planting and bush regeneration (see Biodiversity Impact Assessment June 2018) will result in positive environmental outcomes with long term benefits
i.	**Will there be any degradation of the quality of the environment?** ☐ not applicable ☒ negligible ☐ positive ☐ low adverse ☐ high adverse Comment: short term loss of 3 trees and long term replacement of 30 and mid and understorey species.
j.	**Will there be any risk to the safety of the environment?** ☐ not applicable ☒ negligible ☐ positive ☐ low adverse ☐ high adverse Comment: The work area will be actively managed to ensure a safe and secure work site. There will be no long term implications with regard to safety.
k.	**Will there be any reduction in the range of beneficial uses of the environment?** ☐ not applicable ☒ negligible ☐ positive ☐ low adverse ☐ high adverse Comment: Impacts will be negative if the works are not conducted as the areas will be blocked off from use until the trees fail this may be a number of years. Impacts will be positive if the area remains open and safe to use.
l.	**Will there be any pollution of the environment?** ☐ not applicable ☒ negligible ☐ positive ☐ low adverse ☐ high adverse Comment:
m.	**Will there be any environmental problems associated with the disposal of waste?**

	☐ not applicable ☒ negligible ☐ positive ☐ low adverse ☐ high adverse Comment: Tree waste and timber will be re-used or mulched.
n.	**Will there be any increased demands on resources, natural or otherwise which are, or are likely to become in short supply?** ☐ not applicable ☒ negligible ☐ positive ☐ low adverse ☐ high adverse Comment: No long term impacts.
o.	**Will there be any cumulative environmental effect with other existing or likely future activities?** ☐ not applicable ☐ negligible ☒ positive ☐ low adverse ☐ high adverse Comment: The three trees proposed for removal will be replaced by 30 trees and the area will have a cumulative increase in positive environmental outcomes through bush regeneration and planting of ground and mid layers of vegetation.

8 Section I – Threatened Species Impacts

Potential impacts on threatened species, populations or ecological communities, or their habitats, which are likely to be caused by the activity, are to be identified in this part. Address each of the factors set out in s 94 of the TSC Act to decide whether there is likely to be a significant effect on threatened species, populations, ecological communities or their habitats, as set out below, or alternatively address the factors in a separate document. In preparing this section, refer to any relevant guidelines published by the Department of Environment and Conservation.

Yes	No	
☒	☐	Threatened Species If yes, list: The holiday Park provides potential habitat for the following threatened fauna of the locality; Osprey, Collared Kingfisher, Black Bittern, Beach Stone Curlew, Black-necked Stork, Rose-crowned Fruit Dove, Mangrove Honeyeater, Koala, Eastern Tubenosed Bat, Grey-headed Flying Fox, Greater Broad-nosed Bat and Little Bentwing Bat. The proposed works will have no impact on the lifecycle or habitat for any of the species listed above due to lack of habitat being disturbed and lack of key habitat on-site. Test of Significance (5-part test) were not required for these species.
☒	☐	Endangered Ecological Communities If yes, list: • Coastal Cypress Pine Forest • Remnant Littoral Rainforest The proposed works will remove 3 of over 115 Coastal Cyprus trees and will not impact the extent of the EEC's or the EECs composition. See test of Significance below (5-part test) and Biodiversity Impact Assessment (June 2018) for more details. There will be no impact on Littoral Rainforest EEC

☐	☒	Critical Habitat If yes, list: No

Test of Significance for determining whether proposed development or activity likely to significantly affect threatened species or ecological communities, or their habitats - *Callitris columellaris* (Coastal Cypress Pines)

Test of Significance (5-part test for the Endangered Ecological Community (EEC) of Coastal Callitris Pine Forest (CCPF), namely the *Callitris columellaris* (Coastal Cypress Pines). The CCPF was designated as an EEC in 2008. This 5-part test investigates the possible impacts of proposed vegetation works being: defining and mulching protection areas around trees, installation of load cells, tree management pruning, tree removal, planting and rehabilitation of CP EEC, removal of exotic vegetation, educational signage and infilling of low areas with clean sand - all measures detailed in the Recommendations in the Arboriculture Report (Arbor Safe 2018).

(1) The following is to be taken into account for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:

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

CCPF is not a threatened species

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

(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or

The activity has 3 components and each is listed here with an assessment of its likelihood to have an adverse effect on the **extent** of the community.

The activity proposed is:

Tree protection works being the increased protection for tree roots via the installation of permeable, weight spreading surfaces at camp sites (installation of load cells), designated maximum camping footprints at each site, set places for tent peg tie-off (details are provided in the Arboricultural Impact Assessment March 2018).

This component of works will assist in tree retention relative to the existing use. The expert Aboricultural advice has recommended these actions and concludes that the trees will continue to grow well in this area. Materials recommended for load spreading have been reviewed along with specific camp locations. There is not an adverse effect on the extent of the community by undertaking the recommended tree protection works.

The reduction in sites increases the potential to replant and regenerate areas of CCPF on the site so overall the *extent of the community is to be increased.*

Tree management works comprising of removing dead wood and removal of three trees is proposed for safety reasons. Currently the number of semi-mature and mature trees

within the Southern Precinct of the Terrace Holiday Park is 115 trees. This number includes 105 *Callitris columellaris* (Coastal Cypress Pines) which are the dominant tree within the CCPF. The majority of the 115 existing trees located within the Southern Precinct were assessed as being in good health (79), with the remainder being fair (39) or poor (3), during the most recent 2018 ArborSite assessment.

The 3 trees in poor condition are proposed for removal. While this reduces the number of trees (from 115) is does not reduce the extent of the EEC. Replanting will occur at a ratio of minimum 10:1 with on-going monitoring.

Re-vegetation Works are confined to areas that are currently tuft and transforming these into areas with at least the plants species of this EEC. The species for planting are those in the EEC and listed as native and currently growing on-site (R. Kooyman Oct 2017). On-site investigations back up the findings of this report with regard to species present. Re-vegetation works are in the VMP and will require a minimum expansion of the EEC area of 300m² per annum (for at least 5 years) resulting in progressive increases in extent.

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

The composition of the EEC currently in the existing use area is a modified section of the EEC and is comprised of turf and exotic plant understory and Callitris Pine canopy. The proposed activities (as in (i)) will see the modification of turf within the CCPF on-site converted to native under and mid story species at a rate of 200m² each year on-site and likely larger areas as they becomes available. Will be written for this land and specific VMP will detail areas to be revegetated.

The other areas of the CCPF outside the southern precinct can be replanted (areas existing as turf) and bush regenerated (in areas of bushland).

(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 activity, and

The current total number of existing semi-mature and mature trees within the Southern Precinct of the Terrace Holiday Park is 115 trees. This number includes 105 *Callitris columellaris* (Coastal Cypress Pines) which are the dominant tree within the CCPF. The majority of the 115 existing trees located within the Southern Precinct were assessed as being in good health (79), with the remainder being fair (39) or poor (3), during the most recent 2017 ArborSite assessment.
Three trees, all listed as poor, are proposed for removal.

(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 activity, and

Areas with CCPF are already fragmented with the distribution being both patchy and restricted (see also this description in the final determination). The CCFP EEC was found to be growing in an area covering approximately 7ha in the immediate vicinity of the Holiday Park with the southern precinct making up 0.75ha of that area. The 7ha includes ~ 1ha of residential land and highly fragmented EEC, foreshore reserve area (over 3ha) with high potential for the restoration of existing PCCF EEC and incremental re-creation of PCCF EEC.

Additional areas of CCPF EEC occur on the western side of the Pacific Hwy (~2ha). Currently these are the most impacted by weeds. No works are proposed in these areas now, as part of this plan, however they are potential areas for rehabilitation.

The proposed activity will not further fragment the EEC and on-ground rehabilitation works will increase the area of ground and mid story vegetation under existing Callitris and link patches with understory both on and off site.

(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,

The three trees that are in poor condition will have no negative impact on the EEC. Cut wood can also be included in the local revegetation projects such that the wood stays onsite and can act as informal edging protecting areas that have been rehabilitated or planted (recreated).
There will be no increase in fragmentation or isolation.
A minimum of 30 trees of the same species will be planted on-site and maintained until they reach maturity and beyond.

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

not a declared area

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

The proposed activity includes tree removal which is part of the key threatening process of 'clearing'. The proposal also has activities that go towards mitigating the loss of the 3 trees including replanting locally collected and propagated seed form these trees and associated ground and mid-story.

At least 2000m^2 is to be actively rehabilitated each year and an additional 200m^2 re-created annually and maintained on-going. Re-creation of EEC in existing areas of turf is finite however maintenance is not. Once all relevant areas are converted to EEC then these areas are to have on-going maintenance.

9 Section G Conclusions

Based on the REF, the information submitted and any additional information obtained, the application for the activity be determined as follows:

Approval:

☒ The environmental impacts are acceptable and the proposal is approved.

Refusal:

☐ The proposal is not permissible and therefore cannot be considered for approval;

☐ The proposal is inconsistent with Trust policy and is therefore recommended for refusal;

☐ The impact of the activity is considered unacceptable and therefore recommended for refusal;

Further Information Required:

☐ The activity is likely to significantly affect the environment – an EIS is required.

☐ The activity is likely to have a significant effect on threatened species, populations, ecological communities or their habitats – a SIS is required;

☐ The activity is in respect of land that is, or is part of, critical habitat – a SIS is required.

Recommended for approval

Approved

Steve Edmonds
CEO
NSW Crown Holiday Parks Trust

Reference and Background Literature

Dalby-Ball G (2018) Biodiversity Assessment of proposed Vegetation Management Terrace Holiday Park: Southern Precinct.

Department of Environment, Climate Change and Water NSW (2010) Northern Rivers Regional Biodiversity Management Plan.

NSW Scientific Committee (2008) Coastal Cypress Pine Forest in the NSW North Coast Bioregion - Endangered ecological community determination - final.

NSW Scientific Committee (2011) Coastal Cypress Pine Forest in the NSW North Coast Bioregion - Minor Amendment to Endangered ecological community determination.

Kooyman R. (Oct 2017) Report for Byron Shire Council Results of property inspection and site assessment Crown Land known as The Terrace Holiday Park

NSW Department of Primary Industries – Office of Water. *Guidelines for vegetation management plans on waterfront land.* (2012). Accessed March 8, 2018. Available at: http://www.water.nsw.gov.au/__data/assets/pdf_file/0010/547219/licensing_approvals_controlled_activities_veg_mgt_plans.pdf
NSW Department of Primary Industries – Office of Water. *Guidelines for riparian corridors on waterfront land.* (2012). Accessed March 8, 2018. Available at:
NSW Department of Primary Industries. *Biosecurity Act 2015.* Accessed March 8, 2018. Available at: https://www.legislation.nsw.gov.au/acts/2015-24.pdf

North Coast Regional Strategic Weed Management Plan 2017-2022 Local Land Services North Coast
https://northcoast.lls.nsw.gov.au/biosecurity/weed-control/north-coast-regional-strategic-weed-management-plan

See also
Bowman, D. M. J. S. and P.K. Latz. 1993. Ecology of Callitris glaucophylla (Cupressaceae) on the MacDonnell Ranges, Central Australia. Australian Journal of Botany 41(2):217.**Acts, Regulations &**

Planning Instruments

- *Byron Local Environment Plan 1988*
- *Draft Byron Local Environment Plan 2012*
- *Crown Lands Act 1989*
- *Crown Lands (General Reserves) By-law 2006*
- *Disability Discrimination Act 1992*
- *Disability (Access to Premises – Buildings) Standards 2010*
- *Environmental Planning & Assessment Act 1979*
- *Local Government Act 1993*

- *Local Government (Manufactured Home Estates, Caravan Parks, Camping Grounds and Moveable*
- *Dwellings) Regulation 2005*
- *Residential Parks Act 1998*
- *Residential (Land Lease) Communities Bill 2013*
- *Holiday Park (Long Term Casual Occupation) Act 2002*
- *State Environmental Planning Policy No. 14 – Coastal Wetlands*
- *State Environmental Planning Policy No. 21 – Caravan Parks*
- *State Environmental Planning Policy No 71*
- *State Environmental Planning Policy – Major Development and State Environmental Planning Policy*
- *(State and Regional Development) 2011*
- *State Environmental Planning Policy (Infrastructure) 2007*
- **Local Plans, Policies and Documents**
- Boyle M 2011, *The Byron Shire Economy: Industry Overview*
- Brunswick Heads Business and Tourism Group 2005, *"Taking Care of Brunswick" Draft Tourism*
- *Management Strategy, 2004 - 2009*
- Brunswick Heads Chamber of Commerce 2007, *Simple Pleasures Marketing Strategy 2007-2009*
- Plan of Management
- Brunswick Heads Chamber of Commerce 2009, *Brunswick Heads Business Expansion and Retention*
- *Survey*
- Brunswick Heads Chamber of Commerce & NSW Trade & Investment 2010, *The Brunswick Heads*
- *Experience, A ten year partnership 2000-2010*
- Brunswick Heads Chamber of Commerce 2011, *Brunswick Heads Community Economic Transition*
- *Plan "Taking Care of Brunswick" 2011 – 2016*
- Brunswick Heads Parking, Traffic & Pedestrian Safety Task Force 2004, *Brunswick Heads Parking,*
- *Traffic & Pedestrian Safety Plan*
- Byron Shire Council 1986, *Brunswick River Flood Study*
- Byron Shire Council 2004, *Byron Biodiversity Conservation Strategy*
- Byron Shire Council 2004, *Byron Coastline Management Study*
- Byron Shire Council 2004, *Brunswick Heads Settlement Strategy*
- Byron Shire Council 2007, *Brunswick Estuary Management Plan & Study*
- Byron Shire Council 2008, *Bike Strategy and Action Plan (Bike Plan)*
- Byron Shire Council 2008, *Community Based Heritage Study Listing Proposals*

- Byron Shire Council 2008, *Local Environment Study*
- Byron Shire Council 2009, *Climate Change Strategic Planning Policy*
- Byron Shire Council 2009, *Byron Shire Tourism Management Plan 2008 – 2018*
- Byron Shire Council 2010, *Draft Coastal Zone Management Plan*
- Byron Shire Council 2012, *Coastal Zone Management Plan for the Brunswick Estuary, Issue No. 4*
- Byron Shire Holiday Parks Reserve Trust 2005, *Ferry Reserve Plan of Management*
- Catchment Management Authority(Northern Rivers), April 2013, *Northern Rivers Catchment*
- *Action Plan 2013-2023*
- Department of Lands 1990, *Crown Lands Caravan Park Policy*
- Department of Lands 1996, *Assessment of Crown Lands at Brunswick Heads*
- Department of Lands 2008, *Brunswick Heads Foreshore Reserves Strategic Plan*
- Destination NSW, *Travel to NSW, Year ended June 2013*
- Destination NSW, *Travel to Regional NSW, Year ended June 2013*
- Destination NSW, *Travel to North Coast NSW, Year ended June 2013*
- Destination NSW, *Travel to Byron Shire LGA, Four year average annual to September 2011*
- Plan of Management
- Geolink 2007, *Brunswick Heads Caravan Parks – Shoreline Redemption Report*
- Integrated Site Design Pty Ltd 2006, *Options for Management Models for Crown Reserves on the*
- *North Coast NSW*
- New South Wales Government 1997, *NSW Coastal Policy 1997, A Sustainable Future for the New*
- *South Wales Coast, Department of Urban Affairs and Planning*
- New South Wales Government 2005, *Floodplain Development Manual*
- New South Wales Government, *Estuary Management Program*
- North Coast Destination Network 2013, *North Coast of NSW Destination Management Planning*
- NSW Department of Environment and Climate Change 2008, *Summary of Climate Change Impact*
- *North Coast Region, NSW Climate Change Action Plan*
- NSW Department of Planning 2006, *Far North Coast Regional Strategy 2006 – 2031*