

# Overview of proposed environmental impact avoidance and mitigation requirements for the Cooloola Great Walk Ecotourism Project

## Introduction

This document provides a summary of baseline environmental impact avoidance and mitigation measures that will be required to meet environmental approval requirements for the Cooloola Great Walk Ecotourism Project (the Project). This list was adapted from a summary of environmental impact measures that were submitted as part of the Project's referral to the Commonwealth Government for assessment under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC) (referral number 2021/8954). On 30 June 2021, the Commonwealth Minister for the Environment determined that the Project is not a controlled action under EPBC.

Note that this is not an exhaustive list, and that the Department of Environment and Science (DES) may require additional measures to be implemented based on the outcomes of ongoing environmental assessment and detailed site planning.

Environmental protection measures are provided in four parts that cover:

- Aspects of the initial site selection process that directly considered impacts on Matters of National Environmental Significance (MNES) and Matters of State Environmental Significant (MSES);
- Site and structure design features ;
- Measures to be implemented during construction; and
- Measures to be implemented during operation.

## 1. Initial Site Selection

- Site N – Alternative sites considered would have required substantial new or upgraded vehicle access and service infrastructure to be constructed within the adjacent patterned fens. The current site is located to take advantage of existing vehicle access to Campsite 3, thus avoiding significant direct or indirect impacts on critical environmental values located within the Cooloola patterned fens (MNES and MSES acid frog and fish and MSES wetland values).
- Site L - Alternative locations considered were located closer to Lake Cooloomera, which may contain MNES and MSES frog species. Surveys also identified several *Macrozamia pauli-guilielmi* specimens (listed as an Endangered MNES and MSES) within and around the Litoria Walkers Camp. The current proposed avoids direct impacts on Lake Cooloomera and a single *M. pauli-guilielmi* specimen located within the site footprint (which must not be disturbed or removed during construction and operation of the Project).
- Site K – alternative sites considered were located within, or in close to, MNES Critically Endangered Threatened Ecological Communities (TEC) around the Kauri Walkers Camp, as well as numerous MNES and MSES flora and fauna species. The current proposed site avoids the Critically Endangered TECs entirely, located in blackbutt woodland, and only contains a single, MNES/MSES Vulnerable *Cryptocarya foetida* specimen on-site (which must not be disturbed or removed during construction and operation of the Project).
- Site P - Alternative sites considered to the north and south of Poona Lake were substantially closer to



the lake and had unacceptable impacts on ecological values, scenic amenity and cultural heritage values, as well as being within, or requiring vehicle access to be constructed through, the MNES Critically Endangered Littoral Rainforests and Coastal Vine Thickets of Eastern Australia TEC. Alternative options considered back from Poona Lake and well outside of the lake's catchment, along the ridgelines to the west and southwest, but were rejected due to direct clearing of the Critically Endangered TEC which would be required for construction and vehicle access. All areas east and North of Poona Lake were similarly rejected due to significant risks to the Critically Endangered TEC and cultural heritage concerns. The current proposed site and vehicle access alignment were specifically chosen to avoid direct impacts to the TEC (being located in a remnant patch of blackbutt dominated woodland, and being accessed through a blackbutt dominated vegetation corridor). Original alignment of the vehicle access corridor to the site to take advantage of more of the existing (now closed) forestry track and follow less-steep topography required substantial clearing of the Critically Endangered TEC and MNES/MSES threatened species habitat, and so was rerouted into the current proposed corridor. The width of the access corridor will allow vehicle access to completely avoid MNES/MSES Vulnerable *Archidendron lovelliae* specimens identified during flora surveys.

- D1 and D2 – Ecological surveys of Double Island Point confirmed MNES/MSES Vulnerable black-breasted button-quail (*Turnix melanogaster*) habitat in a gully between D1 and D2. Sites were specifically chosen to avoid direct impacts at that location.

## 2. Design

- 2.1. Suitable vegetation buffers (based on recommendations from independent ecological experts) will be incorporated into the site design to separate all site elements (including clearing footprint, structures, walkways, vehicle access and ancillary infrastructure) from ecologically sensitive ecosystems, ecological communities and key local ecological features, in particular:
  - At Site N, no development or clearing will be permitted to occur within 10m of the adjacent MSES wetland value patterned fens, which has been identified as potential habitat for MNES/MSES acid frog and fish species and MSES flora species known to occur within the wetland such as the MSES Endangered *Blandfordia grandiflora* and Near Threatened *Boronia rivularis*.
  - At Site P, no development or clearing will be permitted to occur within 10m of the adjacent Critically Endangered TEC.
- 2.2. Structure designs must be low impact and on no dig footings – structures must be as small as possible and designed to blend into the surrounding scenery.
- 2.3. Clearing for site construction will be minimised to structure and infrastructure footprints and access, and will not permit to removal of culturally and ecologically significant trees. No clearing will be permitted to create or enhance views, or to provide for additional activities or infrastructure. Clearing of substantial firebreaks (i.e. to meet accepted or code assessable development approval requirements) will not be permitted.
- 2.4. Building will be connected by raised walkways, to avoiding trampling of ground cover vegetation and allow fauna movement within and through the site.
- 2.5. Design must not restricted or isolate potential fauna habitat from habitat within or adjacent to sites.
- 2.6. Routing for access tracks will comply with QPWS&P road grade standards, be no wider than 7m (within a 10m corridor) and avoid the clearing of ecologically and culturally significant trees.
- 2.7. To the greatest extent possible, clearing and position of structures will focus on existing cleared areas and avoid the removal of canopy vegetation (including both the complete removal of trees and significant lopping or pruning of the upper branches of canopy trees). Clearing of ecologically significant trees EPBC listed fauna – those containing hollows, hollow bearing species of a DBH greater than 0.3m, or with visible signs of use or habitation (scratches, nests, etc) – must be

- avoided.
- 2.8. Structure designs and placement will implement measures to minimise impacts from artificial lighting – Lighting will be designed and located to avoid light spill onto surrounding habitat, will be internally facing, and will be at a frequency that will not adversely affect nocturnal wildlife. Interior lights will be low blue light emitting. External lights will be a soft orange.
  - 2.9. Structures must implement measures to avoid bird window strike in design and siting.
  - 2.10. All accommodation and storage structures will be raised off the ground and have footings with minimal ground penetration to not impede surface and groundwater flows or pose a threat to critical subsurface features (such as confining layers at Sites N and P)
  - 2.11. Any infrastructure installed on ground or underground (e.g. structure anchors) must not interfere with surface or subsurface water flow (e.g. not being located in areas that may cause water pooling), or critical subsurface features (e.g. confining layers).
  - 2.12. Designs will not incorporate concentrated stormwater runoff diversion that significantly alter surface topography or hydrology through the creation of channels and gullies.
  - 2.13. Design of access roads and site footprints must consider and include measures to minimise erosion risk during construction and operation, including consideration of slope and potential erosion risk, design of infrastructure, establishment of physical barriers to stabilise substrate and capture sediment (e.g. sediment traps), establishment of a long term maintenance and erosion monitoring program, and establishing a proactive rehabilitation program to mitigate long term erosion risk.
  - 2.14. Structures and infrastructure will be micro-sited within the lease footprint to avoid the removal of, or disturbance to, all MNES and MSES flora specimens and significant trees located within or adjacent to the project site.
  - 2.15. Micro-siting of structures must also aim to avoid disturbance of important habitat features for MNES and MSES listed fauna species at each site, with specific regard to:
    - areas of denser thickets of native ground level vegetation and dense leaf litter, which may provide habitat for the MNES/MSES species such as MNES/MSES Vulnerable black-breasted button quail and MNES Vulnerable three-toed snake-tooth skink (*Coeranoscincus reticulatus*);
    - vegetation associated with adjacent patterned fens or sedgeland habitat, including transitional vegetation, at Site N (which may provide habitat for MNES and MSES listed acid frog and contain MSES flora species);
    - Pools and streams within the adjacent patterned fens, which may provide habitat for the MNES Endangered and MSES Vulnerable Oxleyan Pygmy perch (*Nannoperca oxleyana*), noting that no standing water was identified within or adjacent to Site N during field surveys undertaken following rainfall in the area;
    - Rotting logs and natural fallen timber Sites N, L, K and P which may provide habitat for the MNES Vulnerable three-toed snake tooth skink and similar species;
    - Living or dead trees that exhibit hollows or evidence of fauna habitat at all sites, which may provide habitat for the MNES Vulnerable grey-headed flying-fox (*Pteropus poliocephalus*) and similar hollow-dwelling species
    - Potential fauna food sources such as Eucalyptus, Banksia and Allocasuarina trees.
  - 2.16. Sites N and P will be designed with fully contained wastewater systems. No wastewater will be dispersed into the surrounding environment.
  - 2.17. At Site P, all infrastructure for the storage and collection of wastewater, and any other hazardous substances, will be located at the southern/southwestern edge of the site, outside of the perched catchment of Poona Lake (as indicated by groundwater and subsurface feature mapping), and at a minimum of 40m from the edge of the Critically Endangered TEC. Additional protection measures will be required to contain any leakage or spillage of hazardous material, such as double reinforced tanks, subsurface bunding and allowing above-ground infrastructure only.

- 2.18. Wastewater systems at Sites L, K and D1 will be designed to treat and dispose of black and grey water separately. The blackwater system will be fully contained. Subject to further environmental impact assessment, on site treatment of greywater via a septic/AES system to advanced secondary quality and sub-surface disposal may be permitted.

### 3. Construction

- 3.1. Pre-clearing ecological surveys will be undertaken prior to commencing clearing confirm that no MNES and MSES will be impacted by the proposed clearing and construction. Should any new specimens or evidence of habitat be found, site design must be revised to ensure that impacts are avoided.
- 3.2. An audit of listed/declared weed species present on site will be undertaken prior to commencement of clearing and works, including along access tracks.
- 3.3. Structures are to be pre-fabricated and modular, and on-site construction is to be avoided where possible.
- 3.4. Modular sections of structures, and vehicles used for delivery, will be dimensioned to not require widening or removal of vegetation along any existing vehicle access tracks, in particular tracks within the Pettigrews Timber Tramway Complex and Double Island Point historic heritage areas.
- 3.5. Site clearing and construction of vehicle access will be undertaken by the DES to ensure that impacts on significant natural and cultural values of the national park are reduced. Access tracks will be constructed as State assets.
- 3.6. All vegetation waste will be removed. No disposal of vegetation waste, including mulching, will be permitted outside of the site boundary. Re-use of any vegetation waste for the creation of new fauna microhabitat (e.g. placing fallen timber to provide habitat) will be assessed on a case by case basis by a qualified ecological
- 3.7. All clearing will be undertaken in line with the sequential clearing provisions of the Nature Conservation (Koala) Conservation Plan 2017 (Qld), which:
  - imposes limits on duration of continuous clearing to allow koalas time to move out of the path of clearing without human intervention;
  - requires maintenance of wildlife corridors to adjacent habitat; and
  - not clearing trees that contain, or are adjacent to trees that contain, individual koalas).These provisions will also be generally adhered to for any clearing of any other known MNES and MSES fauna habitat.
- 3.8. Clearing and construction activities will be limited to daylight hours – 7am to 5pm.
- 3.9. Appropriately qualified ecologists/fauna spotters will be employed during vegetation clearing to ensure that threatened fauna and important habitat features are appropriately managed.
- 3.10. Appropriately qualified Cultural Heritage Monitors will be on site for all vegetation and ground disturbance works.
- 3.11. Modular shower and bathroom facilities will include complete shower bays, eliminating the need for waterproofing substances to be brought on-site.
- 3.12. Construction must not require substantial alterations to the surface or width of existing access tracks.
- 3.13. Prior to commencing construction appropriate buffers and physical protection (including fencing and erosion/runoff barriers) will be provided around the TEC adjacent to Site P, EPBC listed flora specimens and key ecological habitat features of EPBC listed fauna (such as the patterned fens adjacent to Site N, large fallen trees and logs, and midgen berry (*Austromyrtus dulcis*) patches and dense thickets of ground cover at Sites P, D1 and D2), during construction. The protections will be approved by a qualified ecologist prior to any clearing or construction commencing.

- 3.14. Any interference with listed flora specimens, or entry into sensitive adjacent vegetation (e.g. the TEC at Site P and Cooloola patterned fens at Site N), will be reported to the site manager and/or on-site ecologist.
- 3.15. Locations, protections in place, instances of damage or interference, and any remediation actions taken will be recorded and retained by DES.
- 3.16. Areas of high ecological value, such as the TEC adjacent to Site P and patterned fens adjacent to Site N, will be designated 'no go' areas during construction. These areas will be clearly marked and all on-site staff will be instructed on the importance of avoiding all interference with these areas.
- 3.17. Dedicated storage structures will be provided for hazardous substances on-site, must be managed by specialist contractors.
- 3.18. Any spills of pollutants or hazardous substances within the national park will be immediately reported to DES. Records of incidents and any remediation actions taken will be recorded and retained by DES.
- 3.19. No disposal of waste will be permitted on site. All general waste must be collected and disposed of off-site.
- 3.20. No artificial open, standing water will be created provided at the camp sites that could act as an attractant to native fauna or pest species.
- 3.21. Clearing of walking access connecting camp sites to the existing Cooloola Great walk will be constructed to 'Grade 5' standard, will be constructed using hand tools only.
- 3.22. Entry to the national park during construction will require implementation of biosecurity measures, in line with the *QPWS Biosecurity Framework for Queensland Parks and Wildlife Service managed islands*. Note that while this framework was developed specifically for islands, it is also applied by QPWS&P to management of other isolated and remote ecosystems.
- 3.23. Vehicles using sand tracks within the national park must adhere to speed limits as signposted around the park (generally 30km/h unless otherwise signed)
- 3.24. All cleared areas outside of the final structure and infrastructure footprint will be rehabilitated a state commensurate with the surrounding non-disturbed ecosystem, including areas that show signs of disturbance pre-construction.
- 3.25. A construction environmental management plan (CEMP) will be prepared and approved by DES prior to the commencement of works that formalises the abovementioned management measures, and environmental outcomes throughout the construction phase, including management of waste, hazardous substances, water, erosion, fire, key ecological values, and biosecurity, cultural heritage, and will include plans for any revegetation that will occur following the completion of construction works.

## 4. Operation and monitoring

- 4.1. Occupancy of each camp site will be capped at 14 persons at the tent sites and 22 persons at the luxury sites (including staff and guides) to minimise impacts of excessive guest numbers.
- 4.2. Scheduled tours will be postponed or cancelled in response to significant biosecurity risks, occupational health and safety risks, fire, or risks to specific MNES/MSES matters.
- 4.3. All staff, including tour guides, will be trained in the identification of weeds, evidence of pest animal species and pathogens, such that they can provide regular feedback as part of a broader monitoring regime.
- 4.4. Visitor movement around the campsite will be restricted by the installation of boardwalks between cabins and communal structures. Signage will also specifically forbid visitors from leaving boardwalks and entering adjacent vegetation.
- 4.5. Visitors to the campsites (both guided and unguided) will be educated on the specific access restrictions and environmental protection measures in place at each site, particularly in relation to

- the introduction and spread of weeds and pathogens, potential high value flora and fauna, containment of pollution and waste, and excessive light and noise.
- 4.6. Hazardous substances stored on site, such as cleaning products, must be stored in areas where they do not pose a contamination risk (i.e. indoors in watertight storage areas).
  - 4.7. Stormwater outflows, wastewater systems and water storage tanks will be inspected regularly to ensure for signs of deterioration or contamination of, or damage to, the surrounding environment.
  - 4.8. Any fuel stored on site and refuelling areas must be adequately bunded to avoid contamination of the surrounding environment.
  - 4.9. All food storage and transport containers must be rodent free and rodent proof.
  - 4.10. All accidents or actions that may threaten key MNES values must be reported by CABN staff to QPWS&P and remedied (where possible) as soon as practicable – including spillage of hazardous substances, leakages or contamination of surrounding soil, surface water or groundwater (including along vehicle access tracks) collisions with threatened wildlife, trampling of threatened flora, entering of delineated high value area or fire. All incidents and any remediation actions will be recorded by DES.
  - 4.11. Outdoor use of water (e.g. cleaning outdoor areas or watering vegetation) will be avoided to the greatest extent possible to minimise the risk of groundwater contamination. All outdoor water usage must not use any substances that would pose a risk of ground or surface water contamination.
  - 4.12. All vehicles, equipment and footwear will be cleaned of mud and plant material prior to entry to the national park. Vehicle and machinery washdown procedures must be consistent with the requirements of Biosecurity Queensland's *Vehicle and Machinery Cleandown Procedures*.
  - 4.13. Smoking will be prohibited at all campsites.
  - 4.14. Condition of access roads and watercourse crossings will be inspected regularly, and after major rainfall events and repaired as required.
  - 4.15. The abovementioned operational mitigation measures will be formalised in an Operational environmental management plan (OEMP), which will be developed and approved by DES prior to the commencement of commercial operations. The OEMP will describe appropriate management strategies, environmental outcomes throughout the operational life of the project, including biosecurity, visitor management, waste management, bushfire risk (which will safety procedures and protection measures to mitigate risk to the development, and measures to be implemented to reduce fire risk from the development) , management of spills, wildlife interactions, water use, and monitoring and reporting requirements for impacts on sensitive environmental matters.