MANAGEMENT AND ENHANCEMENT MEASURES FOR CROWN LAND AND SEPP 26 LITTORAL RAINFOREST #116:

PROPOSED AS PART OF FUTURE DEVELOPMENT ON PART LOT 123 DP 1106943, & LOT 5 DP 25886, OCEAN DRIVE, LAKE CATHIE

For

Luke and Company Pty Ltd
Port Macquarie
Pty Ltd

Prepared By:

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NOTE:

This report is presented on an objective basis to fulfil the stated legislative obligations, consideration and requirements in order to satisfy the client's instructions to undertake the appropriate studies and assessments. It is not directly intended to advocate the proponent's ambitions or interests, but is to provide information required in the determination of development consent by the decision-making authority for the subject proposal.

To the best of our knowledge, the proposal described in this assessment accurately represents the proponent's intentions when the report was completed and submitted. However, it is recognised and all users must acknowledge that conditions of approval at time of consent, post development application modification of the proposal's design, and the influence of unanticipated future events may modify the outcomes described in this document. Completion of this report has depended on information and documents such as surveys, plans, etc provided by the proponent. While checks were made to ensure such information was current at the time, this consultant did not independently verify the accuracy or completeness of these information sources.

The ecological information contained within this report has been gathered from field survey, literature review and assessment based on recognised scientific principles, techniques and recommendations, in a proper and scientific manner to ensure thoroughness and representativeness. The opinions expressed and conclusions drawn from this report are intended to be objective, based on the survey results and this consultant's knowledge, supported with justification from collated scientific information, references/citations or specialist advice.

Furthermore, it is clarified that all information and conclusions presented in this report apply to the subject land at the time of the assessment, and the subject proposal *only*.

This report recognises the fact, and intended users must acknowledge also, that all ecological assessments are subject to limitations such as:

- Information deficits (eg lack of scientific research into some species and availability of information)
- Influences on fauna detectability eg season in which survey is undertaken
- Influences on species occurrence eg stage of lifecycle, migratory, etc
- Time, resource and financial constraints.

All users should take into account the above information when making decisions on the basis of the findings and conclusions of this report.

For and on behalf of Darkheart Eco-Consultancy,

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1.0 BACKGROUND INFORMATION

This firm has previously prepared an ecological survey, impact assessment and EPBCA – *Matters of National Environmental Significance* assessment of the land identified as Part Lot 123 DP 1106943 and Lot 5 DP 25886, Ocean Drive, Lake Cathie (Darkheart 2009). This assessment forms part of an Environmental Assessment for two applications under Part 3A of the *Environmental Planning and Assessment Act 1979* to the Dept of Planning (DoP), NSW, as follows:

MP 06_0085	Rainbow Beach Concept Plan
MP 07_0001	Open Space Corridor and Constructed Wetland, Rainbow Beach

In consideration of the current masterplan for the subject land, the Department of Planning (DoP) has requested the provision of ameliorative measures and development controls on site in relation to the adjacent dunal vegetation and SEPP 26 Littoral Rainforest to the northeast of the subject property.

SEPP 26 *Littoral Rainforest* #116 (which is currently zoned Environmental Protection 7(f1) – *Coastal* under the Hastings Local Environmental Plan 2001) lies on Crown land adjacent to the northeast corner of the property (see figures 1 and 2). This high conservation value vegetation forms part of a remnant strip of dune succession vegetation (see figure 2), narrowed down to a ribbon of varying width by historical clearing for pasture to the west, particularly over the last 30yrs (ERM 1996).

SEPP 26 does not legally apply to the site as it zoned residential, which is exempt under Clause 4. The subject land was zoned under LEP No. 21 in 1984 or LEP No. 23 in 1983, and therefore was zoned residential before SEPP 26 was gazetted (Michelle Hollis, Luke and Co. Pty Ltd, pers. comm.).

Littoral rainforest is also listed as an Endangered Ecological Community under the *Threatened Species Conservation Act 1995*, and the *Environment Protection and Biodiversity Conservation Act 1999*. SEPP 26 #116 extends about 110m south adjacent to the northeast boundary of the site, degrading to a stalled dune succession (assumedly due to historical sand mining) south of the existing beach access (see figures 1 and 2).

The masterplan for the proponent's property proposes future tourist development east of Duchess Gully instead of residential landuse as proposed on adjoining land to the north (King and Campbell 2007). The extent of potential development on the proponent's property east of Duchess Gully is however significantly limited by setbacks/buffers to the west, south and east for bushfire, watercourse protection, and an odour buffer for the sewage treatment plant. Hence any future development is expected to be relatively localised and low key eg maximum 3 storey limit with a café or similar, and a carpark for beach visitors. A cycleway/pedestrian path interlinking south to Bonny Hills under an existing cleared overhead powerline easement is also proposed to run along the eastern boundary, with a single beach access formalised out of the existing unmanaged access adjacent to the site.

2.0 IMPACT/THREAT ASSESSMENT

2.1 IMPACT/THREAT ASSESSMENT AND IDENTIFICATION

The following table assesses the recognised current and future (ie from development in the area between Lake Cathie and Bonny Hills as anticipated by the UIA 14 Masterplan) threats/impacts from literature review and site inspection to littoral rainforest and the dune vegetation:

Figure 1: Location of SEPP 26 #116 relative to site

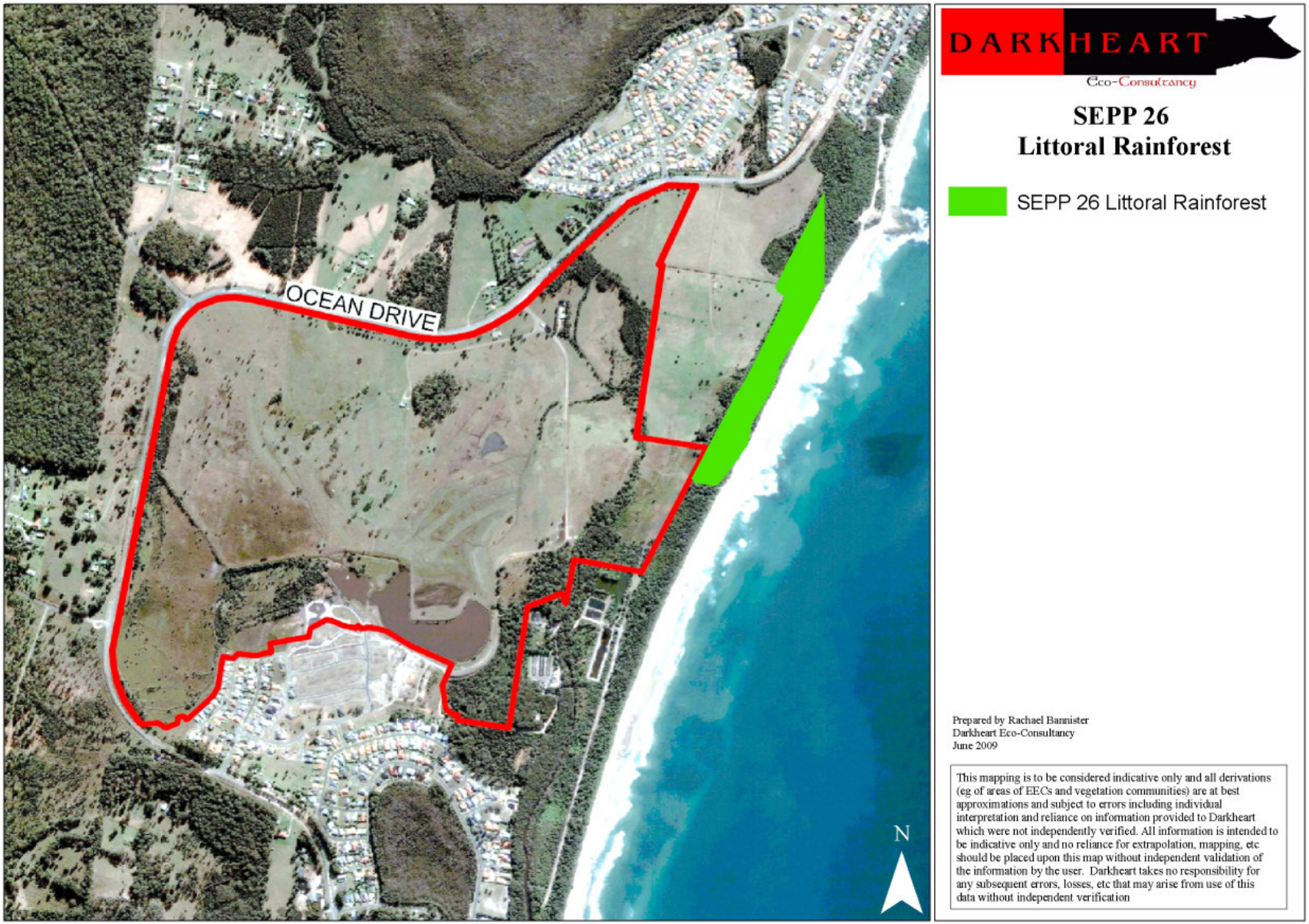

Figure 2: Current vegetation mapping of the area

(Source: Biolink 2005)

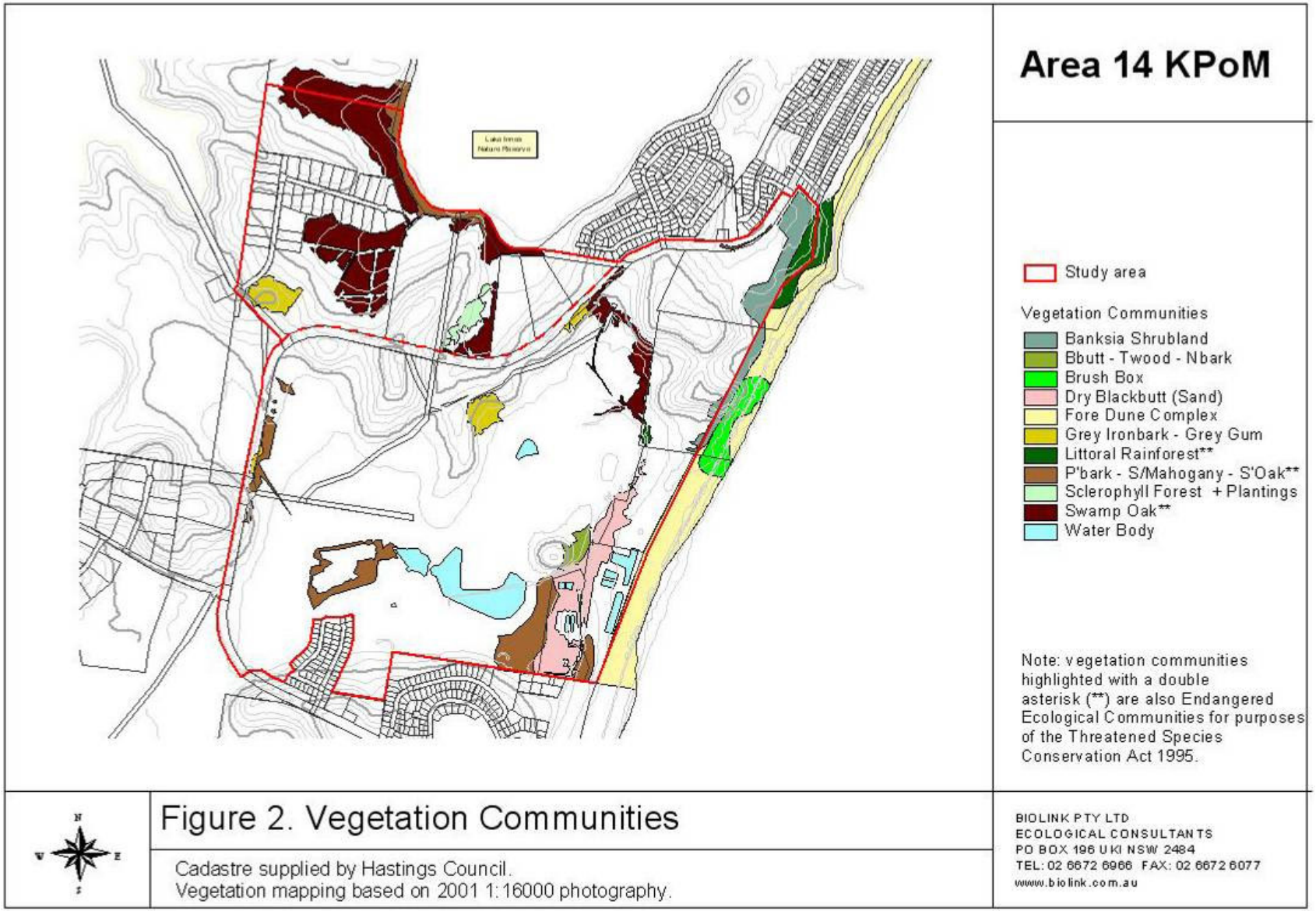

Table 1: Indirect threats/impacts associated with the proposal.

THREAT/IMPACTS	LITERATURE REVIEW	CURRENT THREAT STATUS	FUTURE THREAT STATUS
Direct Clearing	Littoral rainforest is listed as an EEC at the NSW and Federal level. ERM (1996) reviewed aerial photos of the area between Bonny Hills and Lake Cathie, documenting the contraction of native vegetation to the west. Sand mining is also known to have occurred north of Bonny Hills, and most of the vegetation east of the site indicates this, as well as the modified dune topography.	The SEPP 26 area falls within Crown land east of private landholdings. A current beach access exists.	The Part 3A proposals do not propose any clearing of the SEPP 26 vegetation. Existing beach access to be formalised as part of the property's future development. Route will follow existing track hence no new track created. No other clearing or intrusion into the Crown land proposed.
Weed Invasion	Bitou Bush is the main weed threat to littoral rainforest due to its ability to penetrate closed canopies and overwhelm existing communities, as well as out compete native regrowth (Buchanan 1989, ERM 1996, NSWSC 1999, Hamilton *et al* 2008). Lantana is also a threat as it dominates the edges and suppresses establishment of native species (ERM 1996, Lamb 1982, NSWSC 2006a). Other weeds such as Winter Senna, also compete with native species especially at the edge. Disturbance of soil provides the opportunity for weed invasion. Weeds may also be transported into littoral rainforest via informal tracks made by people, and well as grazing stock eg cattle and horses. Dumping of green wastes may also introduce plant propagules, or introduce nutrients which advantage such species (ERM 1996, Buchanan 1989). Some ornamental plants also have the potential to escape and become weeds (Bennet *et al* 2000), though restrictions on the sale of such plants under the *Noxious Weeds Act 1993* reduce this threat.	Bitou Bush heavily infests the foredune, especially on the lee side (see later photos), but is not a threat to the rainforest north of the beach access due to the closed canopy. South of the beach access, it is hampering regeneration/succession in the Banksia woodland by rainforest species via smothering rainforest regeneration and development of protective shrubland to the east (see later photos). Bitou also occurs as scattered plants along the western fringe but is not a significant weed. Lantana dominates a large patch on the immediately southern side of the beach access (see later photo), and lines most of the beach access track. It only occurs as a few small plants along the western fringe north of the beach access, and south of the beach access thins out from the initial dense patch to a few scattered plants due to the well developed edge. Some pioneer plants are struggling to infest gaps in the southern end of the rainforest from the track infestations. Also occurs in patches just behind the foredune where it is hampering regeneration/succession. Winter Senna (*Senna pendula*) occurs sporadically along the western edge, in the canopy gaps in the rainforest (see later photo), along the beach access, and sporadically under the mosaic of rainforest, Banksia woodland and tall *Leptospermum* spp shrubland (latter dominates) which constitutes the dune vegetation south of the beach access.	No substantial soil disturbance is likely to occur during the rehabilitation of the walking track – sand will probably be imported to fill foundation for track, or will be sealed. Specific weed control will be undertaken to ensure weeds do not re-establish. Current weed infestations in the Crown land vegetation from the beach front to the site will be removed to encourage the continuation of ecological processes and re-development of rainforest vegetation. Development envelope centred on pasture, with positive impact of removing primary invasive weed source, and maintenance of the remaining pasture via mowing to form lawns will minimise propagule production and dispersal. No residential subdivision to be established adjacent to Crown land (nearest located >300m west) hence no risk of any garden or other significant waste dumping. All plantings in interface zone to be based on local indigenous species to avoid risk of exotic escapees.

		Other problem weeds such as Coastal Morning Glory (*Ipomoea cairica)*, Morning Glory (*I. indica*) and Turkey Rhubarb (*Acetosa sagittata*) are also present. Pasture grasses eg Rhodes Grass) and weeds (eg Crofton Weed) dominate the beach access. A few Native Tobacco also occur.	
Fencing	Fences have potential to obstruct the movement of threatened fauna across the site. Some threatened fauna can be injured by collision with wire fences, particularly barbed wire eg the Yellow-Bellied Glider, owls and Squirrel Glider have been recorded being injured by barbed wire fences (Lindenmayer 2002, Berrigan 2001c, Woodford 1999).	Eastern boundary is currently fenced with strand boundary fence. South of the beach access, the fence is largely overgrown with native species. North of the access, the fence stands out from the forest. This poses a minor (compared to barbed wire) potential injury risk to birds and perhaps Microbats at dusk and dawn, and at night during times of limited visibility.	Fence retained to act as impediment to human penetration and minimise soil disturbance. Native vegetation to be planted around it to incorporate the fence as a structure within the forest.
Noise and Physical Disturbance	Noise effects on fauna in Australia are relatively poorly studied (Clancy 2001, Berrigan 2001d). Most evidence presented is anecdotal, but suggests most fauna have a fair degree of tolerance and adaptation at least to residential noise depending on species, situation, habitat/lifecycle stage affected, habitat significance, etc. Generally as noise is accompanied with a physical disturbance, it has a greater negative effect (ERM 1996, Clancy 2001, Radle *undated*).	Background noise dominated by ocean. No proximate roads and limited vehicle activity on beach.	Noise will increase due to: • Public using beach access as primary access to beach. • Establishment of a tourist facility adjacent. • Establishment of carpark. This elevated level of anthropogenic activity may deter use of habitat in close proximity to the beach access by diurnal birds. Limited activity is expected at night (eg fishermen) with consequentially limited impacts.
Erosion and Sedimentation	Sedimentation and erosion impacts can occur at both the construction and establishment phases. Erosion/sedimentation may occur via erosion of fill material and disturbed soils, scouring of exposed soil, earthen banks and habitats adjacent to the development area via directed flow (eg stormwater), or where runoff is concentrated.	Local topography is generally flat hence erosion by water flow is a very minor risk. Beach access is highly eroded (gully formation) at eastern end. Requires rehabilitation to prevent penetration by large seas.	Beach access to be completely reconstructed to be erosion resistant, mitigate penetration of maritime stresses, prevent wave access, and passable when wet (to avoid people detouring through adjacent vegetation to avoid mud and puddles). Fencing along side of beach access and planting of appropriate species (eg Spiney-Headed Matrush) will deter creation of informal tracks. Construction adjacent to Crown land on flat land, with all construction activity confined to designated areas to avoid compaction in the vegetated screen areas. Standard erosion and sedimentation controls will also apply.

Introduction of feral/introduced species	Urban and rural developments are often associated with the introduction of non-native species ie rodents, cats and dogs. Cats are significant predators of native species (NSWSC 2000a, Dickman 1996), and domestic dogs are significant threats to species such as the Koala (Wilkes and Snowden 1998, Port Stephens Council 2001, Connell Wagner 2000b, DECC 2009b). Rodents compete with native species but also form component of native species prey (DECC 2009b, Debus 1993). Foxes may also be attracted to urbanised and rural areas by opening up forest to open woodland (NPWS 2001, NSWSC 2000b), and food scraps (NPWS 2001, NSWSC 2000b).	Berrigan and Bray (2004) and Parker (2002) have in total surveyed almost all of SEPP 26 #116. Both surveys recorded a high abundance of native species. In survey of property, Darkheart (2009) also did not record small exotic mammals but did observe evidence of deer, foxes and wild dogs. Deer tracks are evident in the rainforest and dune vegetation, and control measures has seen 9 removed since August 2007 from the property. Deer are particularly problematic as they may graze plantings and damage regeneration areas.	Domestic dogs currently allowed on the adjacent beach, and local residents may walk their dogs along this beach via the beach access. It is expected these would be required by Council statute to be leashed when entering or leaving the beach. Dogs will be allowed within the residential area to the west. Dogs and cats potentially could roam from future residential development to the north-northwest due its closer proximity. Control measures will be required to mitigate access to the littoral rainforest by non-native species. Foxes may currently use the vegetated Crown land and other remnant vegetation for refuge. Feral cats may also occur and may potentially increase with future urban development in the area. Deer may be deterred by high human presence. Exotic rodents likely to establish in the residential areas in the medium to long term, and may potentially move into the Crown land. Ongoing deer control to be undertaken, and plantings to be protected eg via tree guards.
Artificial Lighting	Lighting may potentially discourage particularly nocturnal native species from foraging near areas of development (eg Squirrel Gliders), especially given light may travel significant distances and it can have a similar effect to a full moon on the hunting success of predators such as owls, or a behavioural avoidance impact by potential prey species (DEC 2004a, Andrews 1990, Grayson and Calver 2004, ERM 1996). Artificial lighting also shown to affect Microchiropteran bat assemblages positively and negatively (Scanlon and Petit 2008). Conversely, wallabies, kangaroos, Tawny Frogmouth Owls, Kookaburras, Magpies and possums have been noted foraging under artificial lighting in residential areas eg around Lake Innes, Port Macquarie and Kendall (personal observations). Artificial lighting may also be	Currently no artificial light source in any proximity to Crown land.	Artificial lighting will exist in close proximity to the Crown land from: • Street and path lighting. • Lighting in any carpark. • Lighting around and in any building. • Vehicle headlights. Light spillage dissipates with distance (ERM 1996), but in general ambient light levels are expected to significantly increase. This may affect nocturnal fauna in the adjacent Crown land.

	beneficial to Microchiropteran bats by localised aggregation of insects, with these animals being observed foraging under streetlights, floodlights, and even landing on fully lit footpaths in Horton St, Port Macquarie, to scamper for insects (personal observations). Artificial lighting can also have the positive impact of increasing sight detection of fauna on roads, thus reducing risk of road kills eg Koalas (Wilkes and Snowden 1998, AKF 2003, Connell Wagner 2000, Port Stephens Council 2001, Lunney *et al* 1999, DECC 2008d).		
Bushfire	Bushfire is an extinction threat to the ecological integrity of littoral rainforest (ERM 1996, Keith 2004, NSWSC 2004a, DEWHA 2009). Small fires only burning the edges can also open up closed canopies, altering microclimates, resulting in lower humidity and drying out. This also prevents extension of the community, and provides an edge for weeds to establish (ERM 1996, DEWHA 2009, NSWSC 2004a).	There is no evidence of recent fire in the Crown land but extensive fire could readily lead to local extinction of the local occurrence. Adjacent land to west is grassland with a high component of Bladey Grass, hence risk of grass fire burning into rainforest, though periodic slashing and minimum arson risk as no proximate residential area.	Pasture will be removed/maintained by development, hence this threat will be eliminated. Higher human presence especially due to pathway adjacent to Crown land and beach access will increase risk of arson, but high vigilance due to high human presence. Enhancement of edge to maintain high moisture levels would also reduce fire risk.
Overshadowing	Overshadowing by buildings does not appear to be an issue for this community. ERM (1996) suggests overshadowing may have positive impacts via protecting exposed western edges from drying out and disadvantaging light favouring weeds.	Current edge exposed to western sun due to extent of pasture and limited or no ecotone vegetation.	At most three storey buildings may be erected though single storey more likely. With required setbacks for Asset Protection Zones, very limited potential for any substantial overshadowing.
Maritime Stresses	Onshore salt laden winds are a primary environmental factor responsible for the character of this community (NSWSC 2004a, DEWHA 2009, ERM 1996, Keith 2004, Floyd 1990). The wind and salt content is a prime influence in the dune vegetation succession, but also provides nutrients to otherwise poor soils. Clearing or modification of seafront vegetation can allow salt-laden winds to penetrate into the closed rainforest, affecting humidity and moisture content, as well as toxic effects resulting die off of sensitive species and invasion by weeds or seral natives eg Banksias and Leptospermums.	The foredune vegetation contains at times high infestations of low Bitou Bush which hampers development of a tall Banksia woodland which is required to protect the littoral rainforest. Much of the littoral rainforest immediately northeast of the site has little or no buffering vegetation, with salt burn evident. Occurrence adjacent to site has good protection, but south of beach access, senescent Banksias are not being replaced by recruits due to smothering by Bitou, leaving rear vegetation exposed hence hampering regeneration. Numerous old tracks/drains also cut through dunes, providing tunnels for maritime stresses.	Beach access will be formalised with design to minimise penetration of wind funnel effect. Removal of weeds along edge will be undertaken to minimise risk of salt penetration and burn, and re-establish an effective edge based on native species.

		The current access cuts to just above mean high tide level in the foredune, and forms a wind funnel to and from the beach. Despite this, the generally dense edge vegetation along the track appears to limit salt damage.	
Other Wind Impacts	Turbulence formed by the lack of continuity to the forest or a gradual ecotone, as well as gaps in the canopy on the western side allow the microclimate to dry out by hot westerly winds (ERM 1996). Salt burn may also result on the western due to turbulence and eddies (ERM 1996). Windshear effects created by locating buildings close to littoral rainforest where there is no height gradation in vegetation or a funnel effect between buildings and retained vegetation (ERM 1996), This may also contribute to wind sheer, exacerbating the above impacts.	ERM (1996) report dieback on the western side of the community due to salt burn as a result of loss of buffering vegetation and impacts on wind patterns. No salt damage was evident on western side of rainforest adjacent to the site. Vegetation north of beach access generally has typically wind-sheared shaped canopy with limited gaps. Vegetation south of beach access very patchy with many gaps promoting turbulence.	Buildings will be setback from Crown land vegetation at least 30m due to APZs, hence will create an open space between built zone and Crown land vegetation, and may affect wind patterns. Measures proposed to provide more effective buffers and vegetation canopies to mitigate environmental stresses and support ecological succession processes.
Rubbish Dumping	Rubbish dumping can assist the introduction of some weeds via transport of propagules and crushing of native vegetation during access or by dumped materials.	Several piles of old concrete lie on the eastern boundary of the site. Possibly a relic of former sandmining activities.	Concrete piles will be removed. Litter will be controlled by Council fines advertised on signage, with sufficient bins provided at the tourism facility and along paths for litter control.
Stock Grazing	Stock access leads to modification of floristics and structure, and creates access for weeds, feral animals and maritime stresses, collectively leading to degradation of littoral rainforest (NSWSC 2004a, DEWHA 2009, ERM 1996).	Stock are kept on the property, but have no access to Crown reserve other than reaching through the fence to graze.	Stock will be permanently removed from the property with residential and tourist development.
Hydrology and Eutrophication	Conversion of catchments into urban areas modifies local hydrology eg more and faster runoff, less groundwater penetration, etc. Nutrients from lawn fertilisers, dog faeces and petrochemical residues are also directed via stormwater to areas where runoff may collect. Where stormwater discharges into native vegetation, localised elevated moisture and nutrient levels can lead to dieback or displacement of native species with other natives adapted to such conditions, or weed species (ERM 1996, Webb 1995, DLWC 1998a, 1998b).	No risk as catchment has limited urbanisation and located well away from stormwater collection areas.	Crown land and adjacent area of site falls on flat land, hence rain will most likely infiltrate in situ, or be directed to Duchess Gully. Runoff from adjacent future residential land to north will be subject to Water Sensitive Urban Design (WSUD) principles and appropriate treatment before discharge to Duchess Gully.

3.0 THREAT/IMPACT MITIGATION MEASURES

3.1 LITTORAL RAINFOREST VEGETATIVE SCREEN

3.1.1 General Characteristics

As noted in section 1, the location and extent of the potential development envelope east of Duchess Gully is limited by the required setbacks to vegetation in the west along Duchess Gully; vegetation and the Bonny Hills sewage treatment plant (STP) to the south; and the vegetated Crown land to the east. Compared to traditional residential development, tourism style development fronting the dunal vegetation will limit threats such as green waste dumping, predation by domestic pets, invasion by exotic fauna, ornamental escapees, erosion and sedimentation, extension of private back yards into native vegetation, etc.

To protect the rainforest core of SEPP 26 #116 from the main environmental threats ie exposure to westerly winds, prolonged exposure to the setting sun, and excess salt deposition on the western fringe via turbulence, the proponent intends to establish a varying width vegetated screen adjacent to the core rainforest area adjacent to the northeast as shown in figure 3. This vegetated screen will predominantly consist of rainforest species in a fully structured community interconnecting with similar works proposed to the north (King and Campbell 2007). A gradation from east to west will occur in structure and floristics, with protective species such as Banksias, wattles and Spiney-Headed Matrush occupying the western edge (as per photo 10), and rainforest species dominating the inner zone.

Photo 1: Area to be revegetated with rainforest and edge species
Some of the pasture in the foreground falls into the proposed vegetative screen, with the green arrow showing the width, northwest to southeast of the screen.

Photo 2: Example of current western edge of rainforest adjacent to site
This edge is in very good condition with a dense ground layer of Bracken Fern, Spiney Headed Matrush and Bladey Grass hampering weeds. The forest edge is however open at the shrub level.

This vegetated screen will be at most about 50m wide in the north, tapering southeast to the beach access as shown indicatively in figure 3.

3.1.2 Species Composition and Structure

3.1.2.1 Species Composition

Berrigan and Bray (2004) conducted a flora survey of most of the Crown land vegetation for Hastings Council as part of a management plan for the Middle Rock reserve. Table 2 lists the native species found in the reserve (excluding vines and epiphytes). Most of these species are rainforest species and indicate many of the species which are best suited to local edaphic conditions and maintenance of local genetic diversity. Vines and epiphytes occur in the littoral rainforest but are not to be planted in the revegetation works due to practicality and some vines may hinder early stages of regeneration (eg resulting in a vine thicket instead of littoral rainforest). These plants have the ability to colonise the vegetated screen in due course when environmental conditions are suitable.

Some of these species (eg Acacias) are only suitable for outer edge/ecotone, with true rainforest species to constitute the core part of the vegetated screen adjacent to the existing rainforest. These latter species are intended to close existing gaps and establish a broader closed canopy.

The threatened plant, *Cynanchum elegans* was found in the northern end of the littoral rainforest adjacent to where Middle Head Rd cuts through the reserve. The rainforest dominated vegetated screen will have the positive impact of increasing the potential habitat for this nationally threatened species.

Table 2: Species recorded in SEPP 26 #116 and suitable for vegetated screen planting

SPECIES NAME	COMMON NAME	FAMILY
Trees		
Acacia implexa	Hickory Wattle	Mimosoidaceae
Acacia longifolia v. sophorae	Sydney Golden Wattle	Mimosoidaceae
Acacia maidenii	Maiden's Wattle	Mimosoidaceae
Acmena smithii	Lilly Pilly	Myrtaceae
Acronychia oblongifolia	Common Acronychia	Rutaceae
Alchornea ilicifolia	Native Holly	Euphorbiaceae
Alectryon coriaceus	Beach Alectryon	Sapindaceae
Arytera divaricata	Coogera	Sapindaceae
Baloghia inophylla	Brush Bloodwood	Euphorbiaceae
Banksia integrifolia	Coastal Banksia	Proteaceae
Callistemon salignus	Willow Bottlebrush	Myrtaceae
Canthium coprosmoides	Coast Canthium	Rubiaceae
Cassine australis var.australis	Red Olive Plum	Celastraceae
Casuarina equisetifolia	Horse-Tail She-Oak	Casuarinaceae
Casuarina glauca	Swamp Oak	Casuarinaceae
Claoxylon australe	Brittlewood	Euphorbiaceae
Croton verreauxii	Native Cascarilla	Euphorbiaceae
Cryptocarya microneura	Murrogun	Lauraceae
Cryptocarya rigida	Forest Maple	Lauraceae
Cupaniopsis anacardioides	Tuckeroo	Sapindaceae
Diospyros australis	Black Plum	Ebenaceae
Diospyros pentamera	Myrtle Ebony	Ebenaceae
Drypetes australasica	Yellow Tulip	Euphorbiaceae
Duboisia myoporoides	Corkwood	Solanaceae
Elaeocarpus obovatus	Hard Quandong	Elaeocarpaceae
Euroschinus falcata v. falcata	Ribbonwood	Anacardiaceae
Ficus fraseri	Sandpaper Fig	Moraceae
Ficus obliqua	Small-Leaved Fig	Moraceae
Ficus rubiginosa	Rusty Fig	Moraceae
Glochidion ferdinandi	Cheese Tree	Euphorbiaceae
Guioa semiglauca	Guioa	Sapindaceae
Jagera pseudorhus	Foambark Tree	Sapindaceae
Livistona australis	Cabbage Palm	Arecaceae
Lophostemon confertus	Brush Box	Myrtaceae
Melaleuca quinquenervia	Broad-Leaved Paperbark	Myrtaceae
Myoporum acuminatum	Boobialla	Myoporaceae
Neolitsea australiensis	Green Bolly Gum	Lauraceae
Notelaea longifolia	Large Mock-Olive	Oleaceae
Notelaea venosa	Smooth Mock-Olive	Oleaceae
Planchonella australis	Black Apple	Sapotaceae
Rhysotoechia bifoliata	Twin Leaf Tuckeroo	
Podocarpus elatus	Plum Pine	Podocarpaceae
Rapanea howittiana	Brush Muttonwood	Myrsinaceae
Rapanea variabilis	Muttonwood	Myrsinaceae
Rhodomyrtus psidioides	Native Guava	Myrtaceae
Sarcomelicope simplicifolia	Bauerella	Rutaceae
Scolopia braunii	Flintwood	Flacourtiaceae
Stenocarpus salignus	Scrub Beefwood	Proteaceae
Synoum glandulosum	Scentless Rosewood	Meliaceae
Tristaniopsis laurina	Water Gum	Myrtaceae
Wilkiea huegeliana	Veiny Wilkiea	Monimiaceae

Shrubs		
Breynia oblongifolia	Breynia	Euphorbiaceae
Citriobatus pauciflorus	Orange Thorn	Pittosporaceae
Clerodendrum tomentosum		Verbenaceae
Commersonia fraseri	Brush Kurrajong	Sterculiaceae
Cordyline stricta	Palm Lily	Agavaceae
Pittosporum revolutum	Hairy Pittosporum	Pittosporaceae
Polyscias elegans	Celery Wood	Araliaceae
Psychotria loniceroides	Hairy Psychotria	Rubiaceae
Groundcovers/Herbs		
Alocasia brisbanensis	Cunjevoi	Araceae
Calanthe triplicata	Xmas Orchid	Orchidaceae
Carex sp.	Sedge	Cyperaceae
Crinum pedunculatum	Swamp Lily	Amaryllidaceae
Dianella sp (caerulea?)	Blue Flax Lily	Liliaceae
Doodia aspera	Rasp Fern	Blechnaceae
Doodia caudata	Small Rasp Fern	Blechnaceae
Einadia hastata	Berry Saltbush	Chenopodiaceae
Gahnia aspera	Saw Sedge	Cyperaceae
Gahnia clarkei	Saw Sedge	Cyperaceae
Gahnia sieberiana	Saw Sedge	Cyperaceae
Gymnostachys anceps	Settlers Flax	Araceae
Isolepis nodosa	Knobby Club Rush	Cyperaceae
Lastreopsis microsora	Creeping Shield Fern	Dryopteridaceae
Lepidosperma laterale	Sword Sedge	Cyperaceae
Lomandra longifolia	Mat Rush	Lomandraceae
Lomandra spicata	Mat Rush	Lomandraceae
Pellaea falcata v. falcata		Sinopteridaceae
Pteris tremula	Tender Brake	Pteridaceae
Tetragonia tetragonoides	New Zealand Spinach	Aizoaceae
Viola hederaceae	Ivy-Leaved Violet	Violaceae

The proponent's bush regenerator has advised that some species found in the adjacent littoral rainforest (Berrigan and Bray 2004) are difficult/impossible to propagate (especially some of the groundcovers and herbs). These species are not recommended to be incorporated in the screen for efficiency and to maximise establishment success.