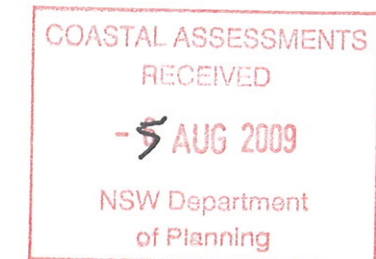




Killalea State Park



Preliminary Environmental Assessment

30 July 2009

Prepared by LFA (Pacific) Pty Ltd
for
Department of Planning
on behalf of
Killalea Coastal Investments

Schedule of Figures

01 - Development Zones within Killalea State Park	1
02 - Study Area Location and Context	4
03 - DP and Zoning	5
04 - Coastal Zone Map 24	6
05 - Development Zones	8
06 - The Farm (Area A)	9
07 - Eco-lodges Illustrative Perspectives	9
08 - The Crest (Area C)	10
09 - Portion of SEPP No 14 - Coastal Wetlands Amendment No 15 Map 57 of 82	12
10 - Topography and Drainage	13
11 - Vegetation	15

Table of Contents

Executive Summary	1
Part 1 - Introduction	3
Part 2 - The Environment	4
• Subject Land	4
• Title Details and Ownership	4
• Development Rights	4
• Existing Land Use	4
• Current Zoning	5
• Planning Matters	6
- State	6
- Regional	7
- Local	7
Part 3 - The Proposal	8
• The Farm	9
• The Crest	10
Part 4 - Environmental Assessment	11
• Introduction	11
• Heads of Consideration	11
- Suitability of the Site	11
- Social and Economic Issues	11
- Public Interest	11
• Statutory Planning Context	12
- Relevant Planning Instruments and Controls	12
- Non-applicable Planning Instruments and Controls	12
• Key Issues	13
- Topography	13
- Coastal Processes	13
- Hydrology/Drainage	13
- Flooding	13
- Geology and Soils	14
- Acid Sulfate Soils	14
- Contamination	14
- Archaeology and Heritage	14
- Flora and Fauna	15
- Flora	15
- Fauna	15
- Aquatic Habitats	16
- Bushfire Prone Land	17
- Traffic and Parking	17
- Infrastructure	17
- Built Form and Urban Design	17
- Planning and Design Principles	17
- Public Domain	17
Part 6 - Conclusion	18



Notes: LFA (Pacific) Pty Ltd. All rights reserved. This work is covered by copyright and cannot be reproduced or copied in any form or by any means without written permission of LFA (Pacific) Pty Ltd.	Rev	Amendments	Date	 Architects Urban Planners Interior Designers Landscape Architects LFA (Pacific) Pty Ltd ABN 92 830 134 905 PO Box 259, Edgecliff NSW 2027 Suite 4/2 New McLean Street Edgecliff NSW 2027 T 02 9327 6822 F 02 9327 5554 E lfa@lfa.com.au W www.lfa.com.au Nominated Architects: Alf Lester No 2128 Stephen Anders No 5764 In Conjunction with	 Project Killalea State Park - Preliminary Environmental Assessment Project Status Ongoing Project Director Alf Lester Checked by AL Date Issued Issue Type Client Killalea Coastal Investments
	1	Draft # 1 (pdf)	03-07-09		
	2	Submission to DoP	10-07-09		
	3	Amended submission to DoP	30-07-09		



Fig. 01 - Development Zones within Killalea State Park

Executive Summary

In 2003 the Killalea State Park Trust (the Trust) called for Expressions of Interest (EOI) for projects which would be able to achieve the management objectives contained within the Killalea State Park Plan of Management (PoM). Killalea Coastal Investments (KCI) was the successful applicant in the EOI process and subsequently entered into a Development Agreement with the Trust in April 2007.

In November 2007 a Preliminary Environmental Assessment (PEA) for a proposed eco-tourism facility within Killalea State Park was submitted to the Minister for Planning.

Since submission of the original PEA a review of the design has been undertaken which led to a reduction in the number of proposed development zones from three to two, resulting in the deletion of The Valley (Area B). The number of lodges in The Crest (Area C) was also reduced.

On 13 March 2009, in the New South Wales Government Gazette No. 51, the Minister ordered that the proposed development is a project to which Part 3A applies.

This PEA for Killalea State Park has been prepared by LFA (Pacific) Pty Ltd on behalf of KCI. The purpose of this document is to:

- Describe the development zones and site context.
- Outline the proposed development concepts.
- Provide sufficient information to assist the Director General of the Department of Planning (DoP) to define the Environmental Assessment Requirements (DGRs) that need to be addressed in the Concept Plan Application.

The development zones are situated within the Killalea State Park. The Park was proclaimed a State Recreation Area in 1984 with an additional, northern area proclaimed in 1986. The Park, covering 265ha, was subsequently designated a Crown Reserve for the purpose of Public Recreation under the Crown Lands Act 1989.

The Park is managed by the Trust which operates as the Trustee for the Department of Lands. The Park is managed in accordance with the management objectives which apply to all State Parks in NSW, these are to:

- *provide a range of recreational opportunities dependent upon the scenery and natural and cultural values of the State Park;*
- *protect the scenic values of the State Park; and*
- *protect the special natural and cultural resources of the State Park.*

The management objectives specific to the Killalea State Park are:

- *maintain the natural beauty and scenic quality of the park;*
- *conserve items of cultural heritage and protect areas of high conservation significance including Minnamurra Spit, Killalea Lagoon, estuarine wetlands and Stack Island;*
- *protect native remnant vegetation;*
- *extend planting and promotion of native vegetation;*
- *improve walking accessibility to key features (Killalea Beach and Lagoon);*
- *provide a variety of low key recreation opportunities in keeping with protection of the natural and cultural heritage;*
- *provide environmental education opportunities (or encourage use);*
- *protect the high scenic value of the ridge. Facilities and structures in the area will be located, designed and landscaped to minimise their impact on the scenery as viewed from Killalea and Mystics Beach;*
- *maintain the facilities provided in the park to a suitable standard; and*
- *to plan for the coordinated provision and management of new facilities.*

Within the framework of the Park two zones totalling 8.6ha have been identified for the development of tourism and recreation facilities. The zones are:

- The Farm (Area A) which includes:
 - 81 accommodation lodges.
 - Pool, gym and spa.
 - Conference facilities.
 - Showers/amenities.
 - Restaurant, café and kiosk.
 - 311 car parking spaces.
- The Crest (Area C) which includes:
 - 25 accommodation lodges.
 - Access trails.
 - Activities centre and communal facilities.
 - Restaurant, café and kiosk.
 - 45 car parking spaces.

At the time of the Ministerial Order, 13 March 2009, under Section 75B of the Environmental Planning and Assessment Act 1979 (EP&A Act), the proposed development fell within the definition set out in Schedule 2 - Part 3A projects - specified sites Clause 1 Coastal Areas of the SEPP Major Projects as follows:

- (1) Development within the coastal zone for any of the following purposes:*
- (f) recreational or tourist facilities (other than internal refits of, or minor alterations or minor additions to, existing facilities or a change of use of a building by which the building becomes a recreational or tourist facility):*
- (ii) in the case of facilities wholly or partly in a sensitive coastal location in the metropolitan coastal zone-that provide accommodation (or additional accommodation) for 100 persons or more.*

It is noted that the SEPP Major Projects was amended on 1 July 2009 and is now referred to as the SEPP Major Development. The proposed development would fall within the definition of Regional Development under the amended SEPP.

However given the Ministerial Order under Section 75B of the EP&A Act, the provisions of the SEPP Major Development do not apply. Accordingly it is recommended that the Director General of the Department of Planning issue the Environmental Assessment Requirements to be addressed as part of a future Part 3A Concept Plan Application.

Part 1 - Introduction

Killalea State Park was proclaimed a State Recreation Area in 1984 with an additional, northern area proclaimed in 1986. The Park was initially designated a State Recreation Area under the National Parks and Wildlife Act 1974 but following the gazettal of s.47N the status of Killalea State Park was revoked and the land dedicated for the purposes of public recreation under Part 5 of the Crown Lands Act 1989.

In 2003 the Trust called for Expressions of Interest for projects compatible with the management objectives contained within the Killalea State Park PoM. KCI lodged a successful bid and subsequently entered into a Development Agreement with the Trust.

The Agreement provides for the development of up to 202 accommodation lodges and associated facilities such as swimming pools, conference centres, restaurants and cafes located in three development zones set within the framework of the Park. The three development zones cover a total area of 17.6ha within the 265ha Park.

However, following the design review, one of the three development zones was deleted and the number of accommodation lodges reduced from 202 to 106. The total development area was reduced from 17.6ha to 8.6ha.

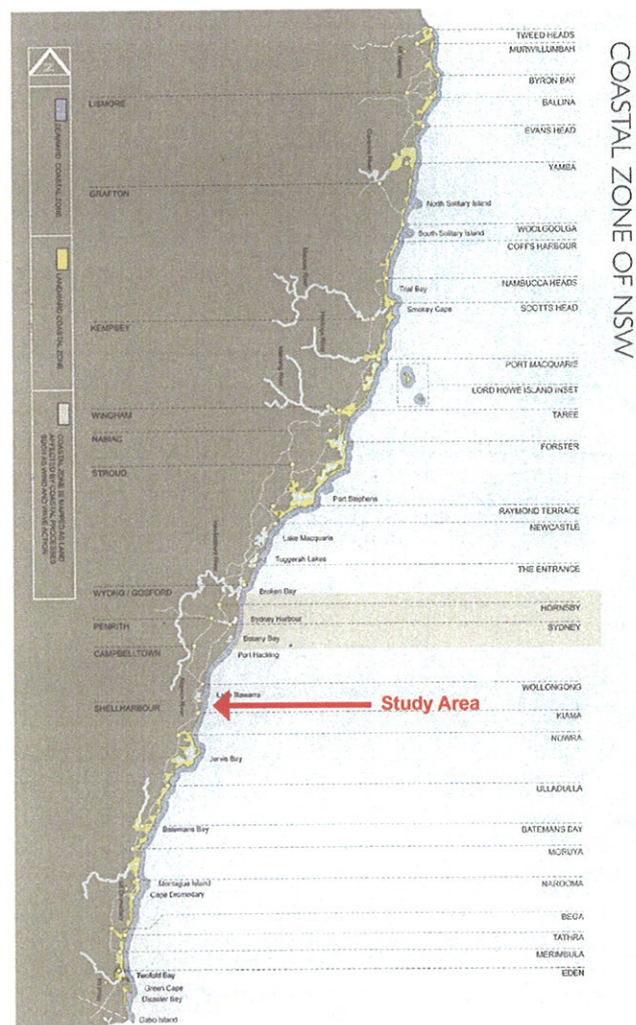


Fig. 02 - Study Area Location and Context

Part 2 - The Environment

2.1 Subject Land

The two development zones are located within the Killalea State Park, as shown in Fig. 01, and within the Coastal Zone of NSW, as shown in Fig. 02.

2.2 Title Details and Ownership

The development zones fall within land held by the Trust in fee simple as Trustee for the Crown. The Trust is a reserve trust which has been constituted pursuant to s.92 of the Crown Lands Act 1989 for the purposes of public recreation. The Trust is charged with the care, control and management of the property.

On 30 April 2007 the Trust signed a Development Agreement with KCI. Pursuant to that Agreement, KCI acquired development rights in connection with three development zones.

The Farm (Area A)	5.3ha
The Valley (Area B)*	9.0ha
The Crest (Area C)	3.3ha

*The Valley (Area B) was deleted following the design review.

2.3 Development Rights

The Development Agreement grants Development Rights to carry out development in accordance with a Concept Plan and to operate and manage an eco-tourism resort upon completion.

The Development Agreement allows for the lodgement of a development application/project application to construct, operate and manage an eco-tourism resort upon completion of the development. The deed provides for the granting of leases in accordance with the Strata Leasehold Act.

2.4 Existing Land Use

Killalea State Park is currently used for the purpose of public recreation. Facilities within the Park include barbeques, picnic areas, camping facilities, and a kiosk.

Additional land uses within the Park include education and training facilities at the Illawarra Environmental Education Centre (NSW Department of Education and Training), and the Killalea Training Centre which is a Registered Training Organisation specialising in training and assessment for WorkCover, OH&S, Plant Operators and RTA Traffic Control and is located within the Park entry/office building.

Surrounding land uses include the Shell Cove residential development and golf course to the north and west and a substantial quarry operation to the north east.

Land uses to the south and south west include the village of Dunmore, Dunmore Recycling and Waste Disposal Depot, a sand quarry and the suburb of Minnamurra.



Fig. 03 - DP and Zoning

2.5 Current Zoning

The Park is zoned under the Shellharbour Local Environmental Plan 2000 (SLEP) as follows (see Fig. 03):

- Zone 7(a) – Environmental Protection (Wetlands) applies to Killalea Lagoon which occupies part of Lot 17 and 18 in DP3710 and Lot 21 in DP1010797. The objectives of Zone 7(a) are:
 - To protect and enhance wetland areas which provide important habitats for species of wetland flora and fauna.
 - To maintain and enhance wetland environments which provide limited recreational and aesthetic opportunities for the public.
- Zone 7(f)(2) – Environmental Protection (Foreshore Protection) applies to the balance of the Park. The objective of the Zone 7(f)(2) is:
 - To protect prominent foreshore areas which are generally undeveloped and which provide aesthetic and recreational opportunities for the public.

The two development zones are located within Zone 7(f)(2). Tourist facilities are permissible with consent within the 7(f)(2) zone and the proposed development is consistent with the definition of 'Tourist Facilities' in the SLEP. Clause 58 of the SLEP requires that development consent for the purpose of tourist facilities in Zone 7(f)(2) has the concurrence of the Director.

The proposed development will incorporate tourist accommodation, supporting facilities, recreational areas and associated infrastructure. The additional recreation opportunities will be designed and located to protect and enhance the visual and environmental qualities of the Park.

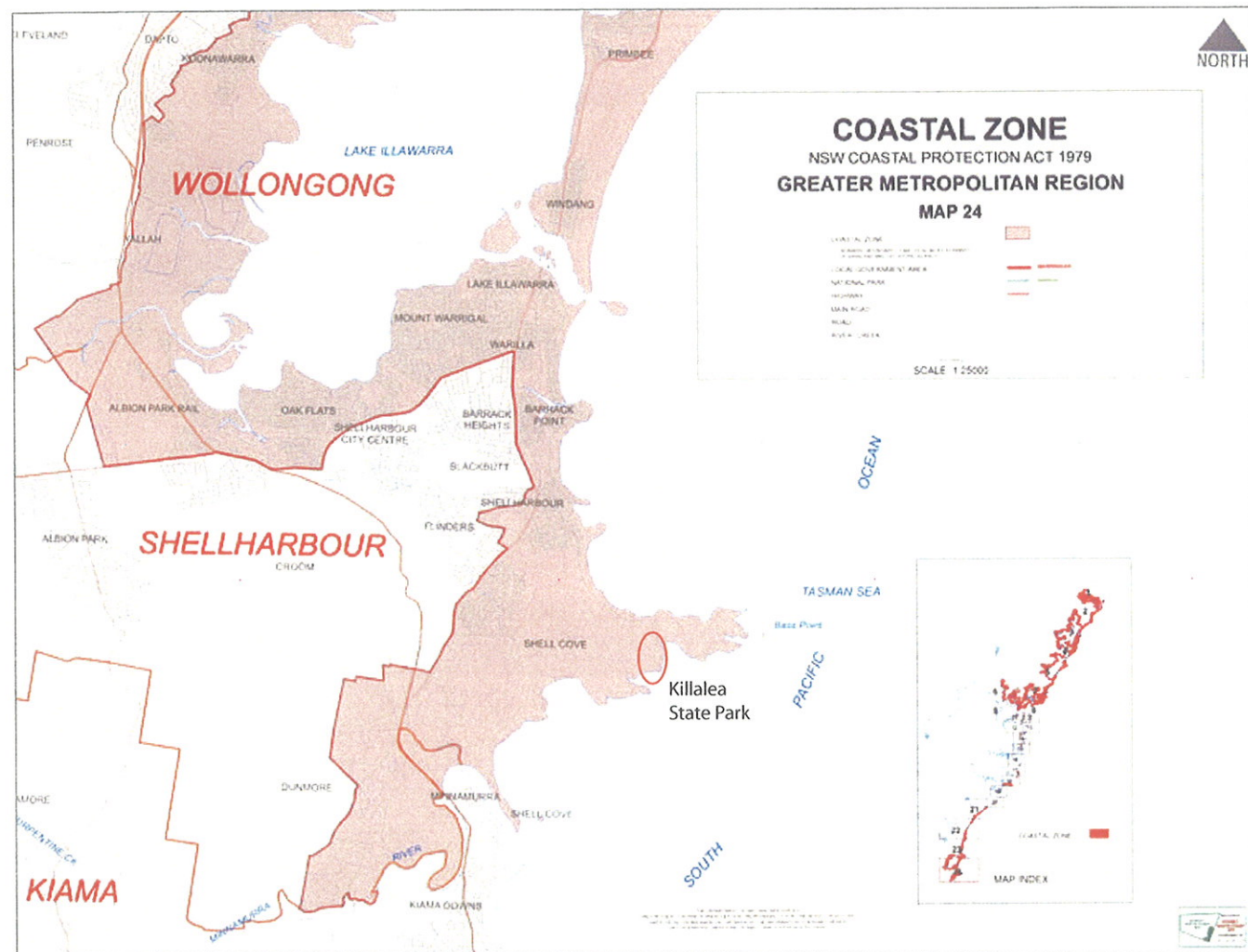


Fig. 04 - Coastal Zone Map 24

2.6 Planning Matters

State

State Environmental Planning Policy (Major Development) 2005

The proposed development is a development which was ordered a Major Project by Ministerial Order under section 75B of the EP&A Act, pursuant to Schedule 2, Clause 1(1)(f)(ii) of the SEPP Major Projects for the following reasons:

- The development is located within the Greater Metropolitan Coastal Zone as defined by Map 24 of the Coastal Protection Act 1979 (see Fig. 04).
- The proposed development is a 'recreational tourist facility' and falls under the definition in Schedule 2 of the SEPP Major Projects.
- The development is for 106 lodges which will vary from 2 to 5 bedrooms. Estimates of the number of occupants range from 3, for a 2 bedroom lodge, to 5.5 people for a 5 bedroom lodge, resulting in an estimated average annual occupancy rate of approximately 214 people per night. The development will therefore accommodate more than the required threshold of 100 persons under Schedule 2 Clause 1(1)(ii).
- The development is permissible under the SLEP.

It is noted that following the Ministerial Order the SEPP Major Projects was amended on 1 July 2009 and is now referred to as the SEPP Major Development.

Environment Protection and Biodiversity Conservation Act 1999

An Environment Protection and Biodiversity Conservation Act 1999 (EPBC) Protected Matters Report was obtained for the area around Killalea State Park. The results are summarised in Table 01.

Protected Matter	Relevant results
World Heritage Properties	None
National Heritage Places	None
Wetlands of International Significance	None
Commonwealth Marine Areas	Relevant
Threatened Ecological Communities	None
Threatened Species	41
Migratory	37

Table 01: EPBC Protected Matters: Killalea State Park

In addition to the results the search also revealed three relevant listings on the Register of the National Estate, 55 listed marine species, twelve whales, one Commonwealth Reserve, one State/Territory Reserve and one Regional Forest Agreement of relevance to the area.

Crown Lands Act 1989

The Killalea State Park Plan of Management 1998 and the Killalea State Park Plan of Management Addendum 2006 have been developed in accordance with Part 5 of the Crown Lands Act 1989. The Park is dedicated as a reserve for the purpose of 'public recreation'.

Regional

Illawarra Regional Environmental Plan No. 1 2008

The IREP is relevant to the proposed development as it establishes the regional importance of the development and its location. Part 13 of the IREP outlines the objectives relating to coastal lands, wetlands and other water bodies:

- (a) to protect beach systems and conserve their scenic, recreation and natural values,
- (b) to maintain and improve public access to waterways, lakes and the sea front, and
- (c) to protect the productive ecosystems and natural habitats of the region's estuaries, wetlands, lakes and lagoons and their scenic attributes.

The additional walking trails, public access and viewing platforms will improve public access to the waterway, Killalea Lagoon and the beach itself.

Clause 107 states that:

'In deciding whether to grant consent to a development application to carry out development on land adjacent to, or in close proximity to, a lake, lagoon, river or the coast, the consent authority shall take into consideration the need to facilitate public access to the waterfront by requiring dedication of appropriate land, for open space purposes.'

The proposed development will promote and improve public access to coastal areas, offer a wide range of leisure opportunities, conserve and promote the region's natural features and preserve access to natural resources and public lands which have recreational value in accordance with the IREP.

Illawarra Regional Planning Strategy 2007

The Illawarra Regional Planning Strategy establishes the planning framework for the Illawarra Region including economic and population growth within a framework of environmental sustainability.

It is noted that the anticipated population growth from 281,000 to 328,600 by 2031 will result in increasing demands for access to recreational facilities.

It is also noted that the Strategy refers indirectly to Killalea State Park, that is, *"Future development in the Minnamurra catchment will also be strictly controlled to avoid impacts on this nationally significant estuary."*

Southern Rivers Catchment Management Authority

Killalea State Park is located within the Southern Rivers Catchment Management Authority (SRCMA). The Southern Rivers Region covers more than 29,000sqkm and extends three nautical miles offshore. It is bounded by Stanwell Park to the north and includes all coastal catchments to the Victorian border. Approximately 65% of the SRCMA is publicly managed land including National Parks, State Forests and Crown Lands. The population of the region is approximately 450,000 but this doubles during peak holiday periods. The landscape of the SRCMA is dominated by numerous river systems including the Minnamurra.

Local

Shellharbour Local Environmental Plan 2000

The principal local environmental planning instrument applying to the area is the Shellharbour Local Environmental Plan (SLEP). Under the SLEP Killalea State Park is zoned 7(f)(2) Environmental Protection (Foreshore), with Killalea Lagoon zoned 7(a) Environmental Protection (Wetlands). (See Current Zoning in Part 2 above).

Killalea State Park Plan of Management 1998

The Park PoM 1998 provides a summary of the plan of management process, highlights the important environmental, recreational and cultural values of the park, and outlines management objectives, strategies and key opportunities for development as set out in the plan. (The objectives are listed in the Executive Summary above).

In particular it provides guidelines for the use and protection of the Park's resources and for the provision of facilities and services. No operations may be undertaken in the Park unless they are in accordance with the plan. The development described in Part 3 has been proposed in accordance with the plan.

Shellharbour Development Control Plans

The standards of Shellharbour Council's Development Control Plans (DCPs) may not be strictly applied in the assessment of the project as it is to be assessed under Part 3A. Similarly, the PoM notes that there are no DCPs which apply to the site.

However, in reflection of the importance of the area and the nature of the development, the relevant standards of the Car Parking Policy DCP, Landscape Guidelines DCP and Waste Minimisation & Management DCP were reviewed, and the proposed development would be generally consistent with the objectives of these plans.

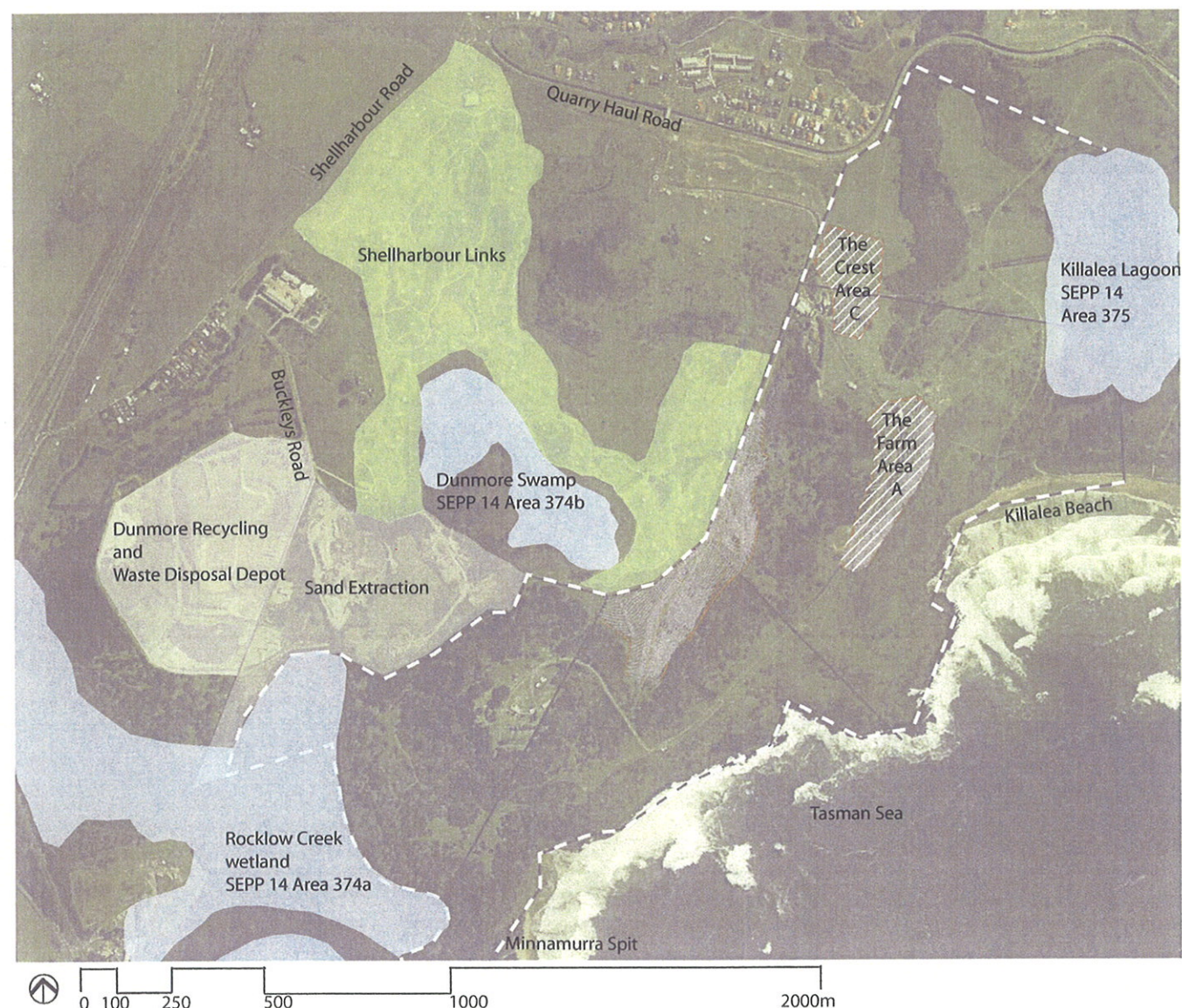


Fig. 05 - Development Zones

Part 3 - The Proposal

The Trust and KCI have entered into a Development Agreement which is consistent with the following objectives for the Park:

- Long term sustainability and viability.
- Improved public access and facilities.
- Long term conservation of sensitive areas, species and ecological communities.
- Protection of scenic values including sightlines and ridgeline.
- Provision of a range of recreational and nature study opportunities.
- Conservation of cultural heritage.
- Habitat protection for flora and fauna.

The KCI proposed development is focused on two development zones and supporting infrastructure. The zones are:

The Farm (Area A)

- Located on the broad eastern ridge currently occupied in part by the existing kiosk and car parking facilities.
- Includes:
 - 81 accommodation lodges.
 - Pool, gym and spa.
 - Conference facilities.
 - Showers/amenities.
 - Restaurant, café and kiosk.
 - 311 car parking spaces.

The Crest (Area C)

- Located on the broad ridgeline to the north and defined to the west by the Stage 6 Residential Development within Shell Cove, and the Park entry road.
- Includes:
 - 25 accommodation lodges.
 - Access trails.
 - Activities centre and communal facilities.
 - Restaurant, café and kiosk.
 - 45 car parking spaces.

Development Options

The initial development options included a potential third development zone (outlined in the original PEA of November 2007) referred to as The Valley (Area B). The Valley was 9.0ha and contained 91 accommodation lodges and associated facilities. The Valley was located within 100m of an identified Coastal Wetland as well as within the catchment of a Coastal Wetland Area.

However a review of the design was undertaken during which it was deemed that The Farm (Area A) and The Crest (Area C) would provide sufficient accommodation and that development within these zones only would best fulfil the management objectives of the Park. The review process confirmed The Farm and The Crest as the preferred development zones and led to the deletion of The Valley.

Staged Implementation

The proposed development is planned to be constructed in five stages over a period of three years as follows:

- The Farm (Area A)
 - Stage 1: Infrastructure works.
 - Stage 2: Public facilities and 40 lodges (to the north of the zone).
 - Stage 3: Public facilities and 41 lodges (to the south of the zone).
- The Crest (Area C)
 - Stage 4: Public facilities and infrastructure works.
 - Stage 5: 25 lodges.



Fig. 06 - The Farm (Area A) (NTS)

3.1 The Farm (Area A)

The Farm is located on the broad eastern ridge of the site. Individual lodges are typically orientated towards the east to take advantage of coastal views however those in the northern most part of the zone tend toward the north to maximise solar gain whilst also enjoying views of the Park.

It is intended that The Farm will service the conference market and facilities such as a conference centre, restaurant and cafe have been provided in support of the associated functions.

The lodges will be prefabricated by a local manufacturer and will comprise 2 and 3 bed configurations. These bed numbers support the conference function by enabling cost effective accommodation options for groups of attendees. A small number of 5 bed lodges have been provided to cater for larger groups.

Public access will be provided at various points through The Farm to enable surrounding facilities, such as lookouts, pedestrian trails and picnic areas, to be reached.

(See Figs. 06 and 07).

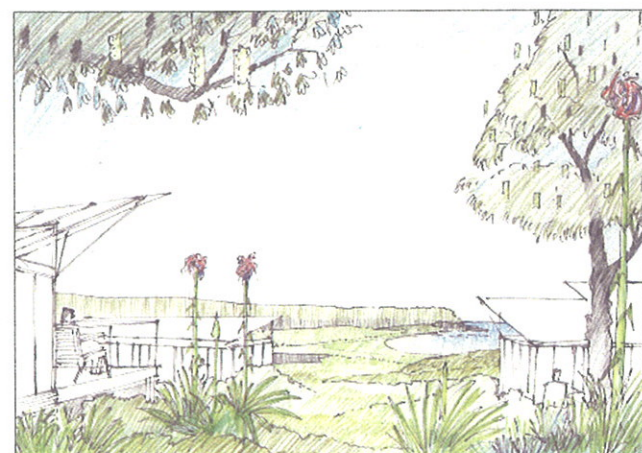


Fig. 07 - Eco-lodges Illustrative Perspectives



3.2 The Crest (Area C)

The Crest is located on the broad ridgeline in the north of the site. Individual lodges are typically orientated towards the east to take advantage of coastal views as well as those of Killalea Lagoon. The lodges in the northern most part of the zone tend toward the north to maximise solar gain whilst also enjoying park and district views.

It is intended that The Crest will service the family market and facilities such as tennis, basketball and volleyball courts as well as a pool and playground have been provided in support of the associated functions.

The lodges will be prefabricated by a local manufacturer and will comprise 2, 3, 4, and 5 bed configurations. The bed numbers support the family market by providing flexible accommodation options for varying family sizes.

Public access will be provided at various points through The Crest to enable surrounding facilities, such as pedestrian trails and historic sites, to be reached.

(See Figs. 07 and 08).

Fig. 08 - The Crest (Area C) (NTS)

Part 4 - Environmental Assessment

4.1 Introduction

The following section sets out the key issues as part of the PEA for the proposed development of eco-tourism facilities occupying two zones within Killalea State Park.

The assessment is intended as a guide to the Part 3A planning process in determining the DGRs.

The key issues are categorised into three core areas:

- Heads of Consideration
 - Suitability of the Site
 - Social and Economic Issues
 - Public Interest
- Statutory Planning Context
 - Relevant Planning Instruments and Controls
 - Non-applicable Planning Instruments and Controls
- Key Issues
 - Topography
 - Coastal Processes
 - Hydrology/Drainage
 - Flooding
 - Geology and Soils
 - Acid Sulfate Soils
 - Contamination
 - Archaeology and Heritage
 - Flora and Fauna
 - Flora
 - Fauna
 - Aquatic Habitats
 - Bushfire Prone Land
 - Traffic and Parking
 - Infrastructure
 - Built Form and Urban Design
 - Planning and Design Principles
 - Public Domain

4.2 Heads of Consideration

Suitability of the Site

The proposed development of eco-tourism facilities within Killalea State Park will deliver valuable social and economic outcomes for the region in accordance with the Park PoM. In particular the proposal will provide a broader range of tourism, accommodation and conference facilities.

The proposed development acknowledges the Park's state and community significance by sensitively addressing the requirements of the SEPP Major Development, the IREP, the Illawarra Regional Strategy and other relevant planning controls.

Social and Economic Issues

The proposed development will have a beneficial social and economic impact by generating increased economic activity in the region, and providing recreational and tourist facilities to meet the increased demand arising from the projected population growth – an increase of 47,600 people by 2031 (as predicted in the Illawarra Regional Strategy).

Public Interest

The issues of public interest pertaining to the proposed development include:

- Promoting and improving public access to coastal areas.
- Preserving access to natural resources and public lands which have recreational value.
- Promoting a range of leisure opportunities.
- Conserving and promoting the region's natural features.
- Preserving a public recreation area that is state and regionally significant for its cultural, recreational, educational and environmental values.

4.3 Statutory Planning Context

Relevant Planning Instruments and Controls

For details of the planning instruments and controls applicable to the proposed development, as listed below, see Part 2.6 Planning Matters.

- State Environmental Planning Policy (Major Development) 2005
- Environment Protection and Biodiversity Conservation Act 1999
- Crown Lands Act 1989
- Illawarra Regional Environmental Plan No. 1 2008
- Illawarra Regional Planning Strategy 2007
- Southern Rivers Catchment Management Authority
- Shellharbour Local Environmental Plan 2000
- Killalea State Park Plan of Management 1998
- Shellharbour Development Control Plans

Non-applicable Planning Instruments and Controls

State Environmental Planning Policy No. 14 – Coastal Wetlands

Killalea State Park includes two SEPP 14 – Coastal Wetlands: areas 375 and 374a, and is immediately adjacent Area 374b (see Fig. 09). In previous applications The Valley (Area B) was identified as being within 100m of area 374b and within the catchment of Coastal Wetland area 374b. However The Valley has since been deleted therefore SEPP 14 – Coastal Wetlands does not apply.

State Environmental Planning Policy No. 26 – Littoral Rainforests

SEPP 26 – Littoral Rainforests identifies an area located north of Killalea State Park at Bass Point (SEPP 26 – Littoral Rainforests, Amendment No. 2, Area 173A). The proposed development is not located near to this area therefore SEPP 26 – Littoral Rainforests does not apply.

State Environmental Planning Policy No. 44 – Koala Habitat Protection

SEPP 44 – Koala Habitat Protection encourages the conservation and management of natural vegetation providing habitat for Koalas, to ensure a permanent free-living population over species' present range and to reverse the current trend of Koala population decline.

SEPP 44 – Koala Habitat Protection applies to the Shellharbour LGA, which encompasses Killalea State Park, however no Schedule 2 Koala food trees occur within the proposed development zones therefore the zones are not 'potential Koala habitat'.

State Environmental Planning Policy No. 71 – Coastal Protection

SEPP 71 – Coastal Protection lists Killalea Lagoon in Schedule 1 – Coastal Lakes and as such the lagoon and land within a 100m radius is characterised as a 'sensitive coastal location'. The proposed development is not located within 100m of Killalea Lagoon therefore SEPP 71 – Coastal Protection does not apply.

NSW Threatened Species Conservation Act 1995

No area of Killalea State Park has been identified as containing critical habitat under the Threatened Species Conservation Act 1995.

Some areas of Killalea State Park contain remnant Illawarra Subtropical Rainforest and Melaleuca armillaris Tall Shrubland both of which are defined as an 'endangered ecological community' under the Act. Neither of these ecological communities are identified as being located within the proposed development zones.

Fisheries Management Act 1994 No. 38

The Fisheries Management Act 1994 No. 38. is applicable to Bushrangers Bay Aquatic Reserve which is located 1.5km from the Killalea State Park boundary. The Act does not apply to any areas within the Park therefore the proposed development zones are not subject to the provisions of the Act.

National Parks and Wildlife Act 1974 No. 80

Killalea State Park was initially designated a State Recreation Area under the National Parks and Wildlife Act 1974 No. 80. Following the gazettal of s.47N relating to certain state recreation areas the status of Killalea State Park was revoked and the land dedicated for the purposes of public recreation under Part 5 of the Crown Lands Act 1989. The NPWS Act no longer applies.

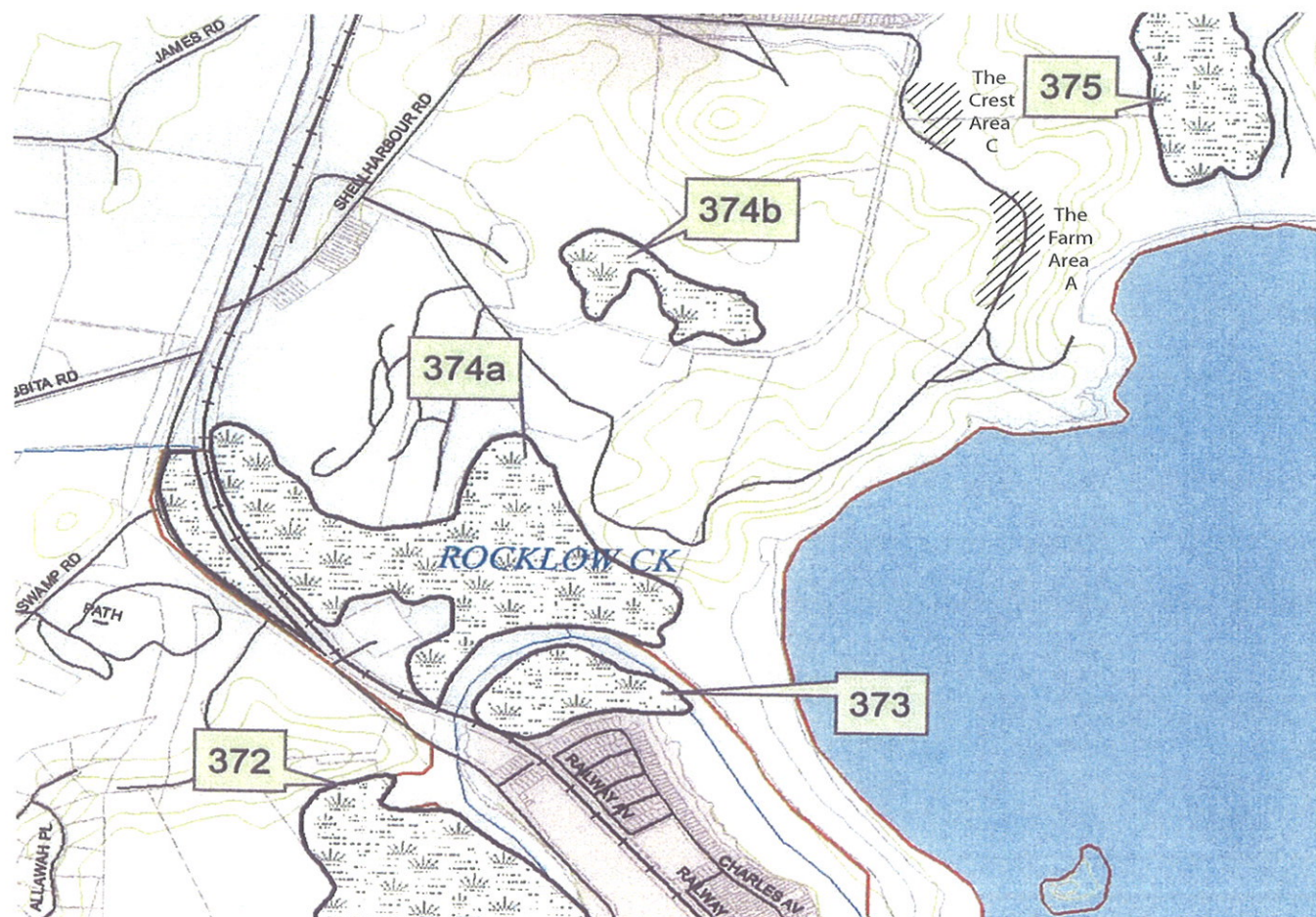


Fig. 09 - Portion of SEPP No 14 - Coastal Wetlands Amendment No. 15 Map 57 of 82

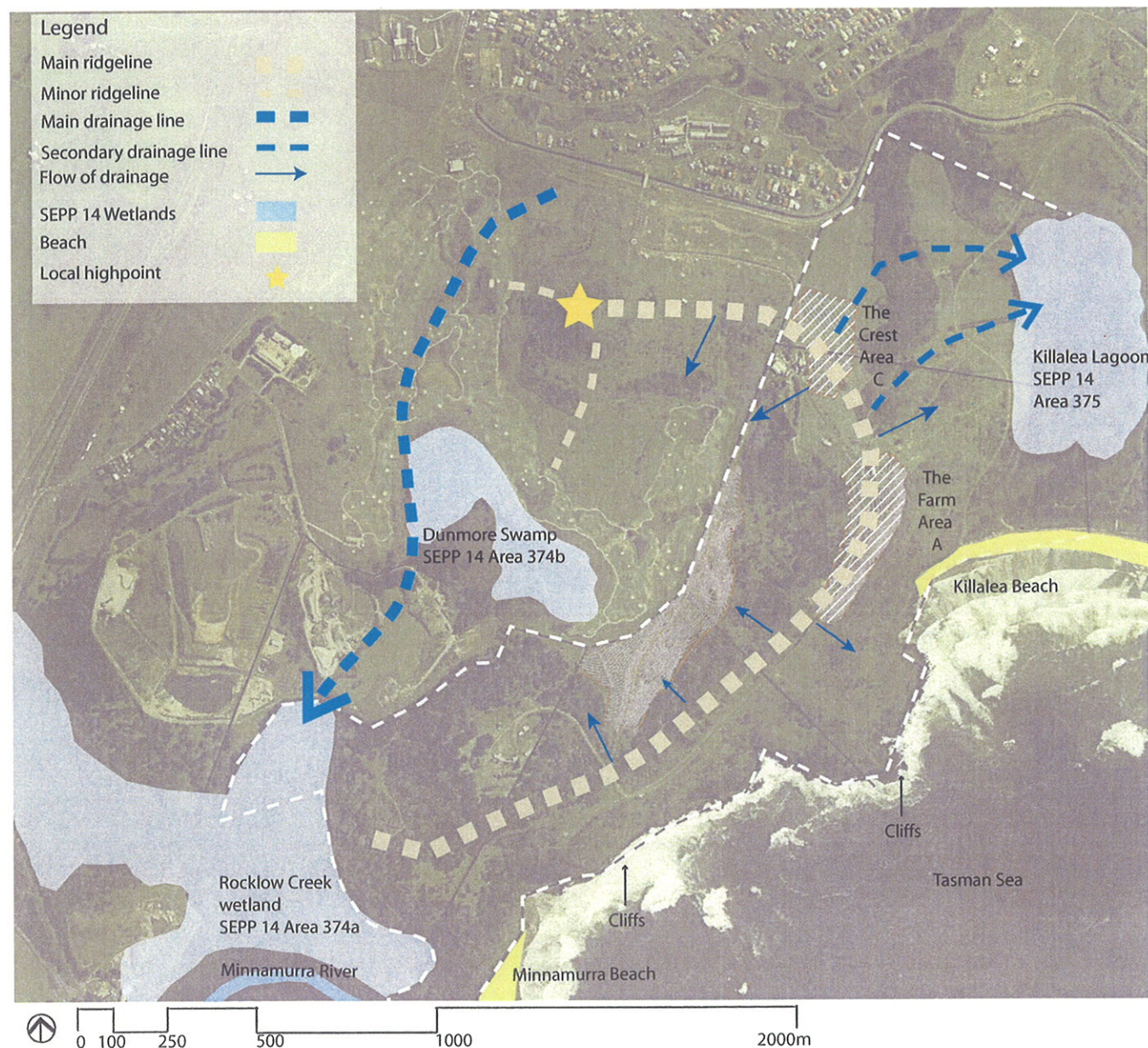


Fig. 10 - Topography and Drainage

4.4 Key Issues

Topography

The topography within the Park varies significantly and includes rocky coastal edges adjacent to the major quarry, the valley within which is located the Killalea Lagoon, the broad headland within which are located the two development zones, and the southern Minnamurra Beach extension which is a narrow peninsular defined by the Minnamurra River. (See Fig. 10)

The broad headland falls toward the Shellharbour Links Golf Course which surrounds the Stage 6 Residential Development within Shell Cove.

Extensive views from within the western edges of the Park are provided across the golf course to the Illawarra Escarpment. To the east the broad headland is marked by a series of cliffs but also includes the descent to the Killalea Beach area and to the south access to Minnamurra Beach. The existing road within the Park is located on the ridgeline of the broad headland.

The landscape of the area is characterised by low, rolling hills with benched slopes and sea cliffs with extensive rock platforms. The Park is generally flat with a curving ridgeline to the south and areas of relatively steep decline towards the foreshore and beach.

The Park is primarily underlain by Permian volcanic rocks, with extensive sand deposits near the Minnamurra River and at the mouth of Killalea Lagoon.

Coastal Processes

High seas occasionally cause extreme wave erosion at Killalea Beach. The southern end of the beach is relatively stable however the remainder of the beach has been subject to some sediment movement and long term erosion.

The two development zones are located within the ridgeline of the broad headland and will not be subject to any coastal impact.

Hydrology and Drainage

The drainage pattern within the Park is significantly influenced by the ridgeline associated with the broad headland structure which characterises the centre of the Park.

The drainage fall is north towards Killalea Lagoon, and also east. To the south part of the fall is towards Rocklow Creek and the Minnamurra River. To the west of the main ridgeline the fall is towards the Dunmore Swamp, eventually draining to the Minnamurra River (see Fig. 10).

Flooding

Given the relative height of the two development zones above the Q100 events associated with the Minnamurra River, flooding does not represent a development constraint.

Geology and Soils

Acid Sulphate Soils

The Department of Land and Water Conservation Acid Sulfate Soil Sheets indicate that there is potential Acid Sulfate Soil (ASS) within the Park. The maps indicate a high probability of occurrence at depths at or near ground surface for two sites: the Killalea Lagoon, and the area adjacent to Rocklow Creek and Minnamurra River. There are also sites of low probability adjacent to these sites at depths ranging from greater than 3m to within 1m of the ground surface.

The two development zones are located in elevated areas removed from the identified potential ASS areas. Accordingly it is not anticipated that ASS will represent a constraint.

Contamination

Soil sampling undertaken during the preparation of the Park PoM indicated that some contamination of Killalea Lagoon may have occurred due to previous land use practices including a copper works site located to the east of Killalea Lagoon. Analysis of soil in a drainage line from the copper works site to Killalea Lagoon found excesses of copper and zinc as well as manganese and tin.

The two development zones are elevated above Killalea Lagoon and located to the south. Accordingly it is not anticipated that contamination will represent a constraint.

Archaeology and Heritage

The Park PoM notes that the Park lies within a region previously inhabited by the Wodi Wodi (Wadi Wadi) language group. The National Parks and Wildlife Service Aboriginal Sites Register lists six archaeological sites within the Park including five middens located on Minnamurra Spit, Minnamurra Beach and Killalea Beach. The sixth comprises an open camp site.

There are no known sites of archaeological significance located in the development zones.

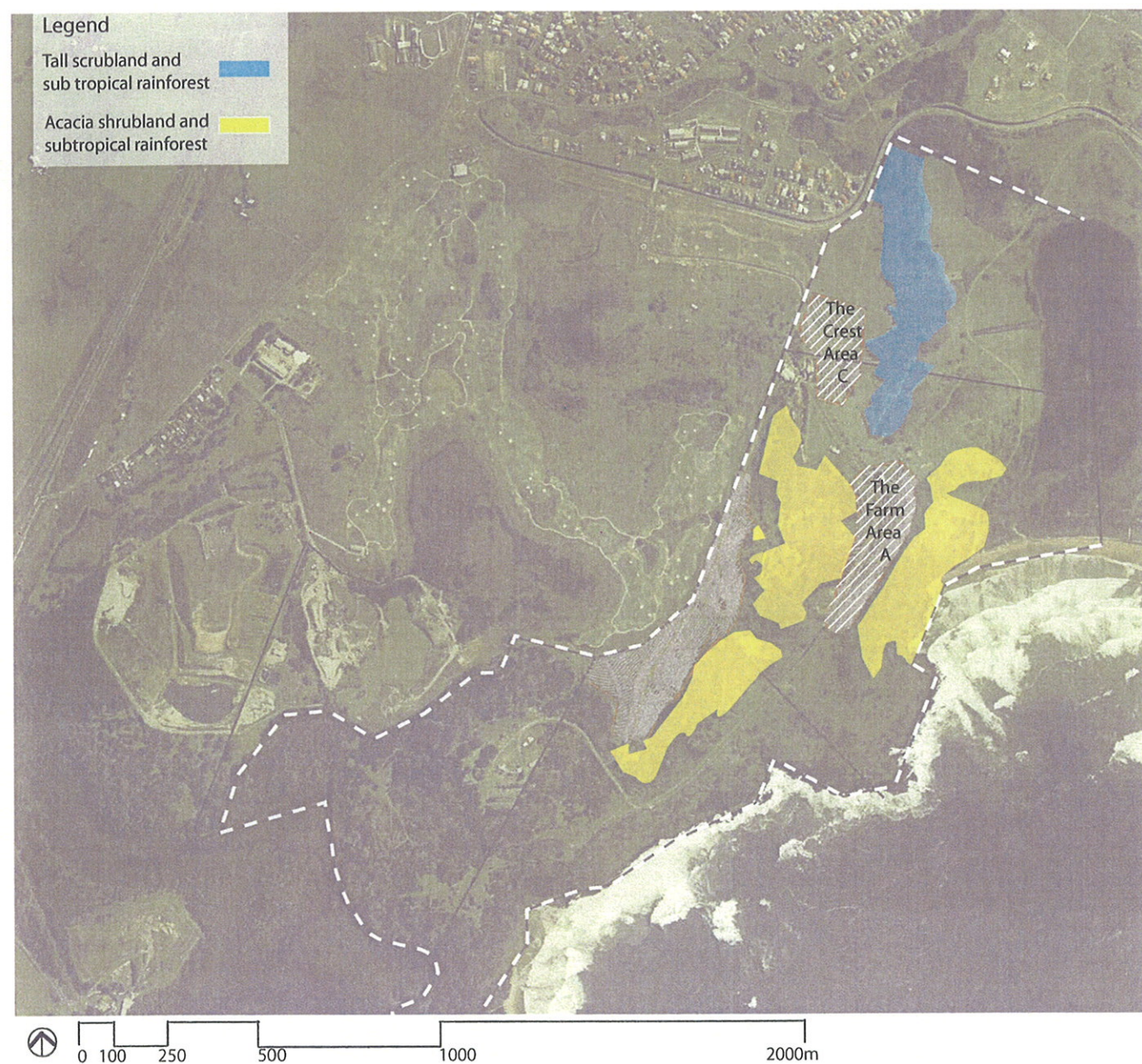


Fig. 11 - Vegetation

Flora and Fauna

Flora

Killalea State Park consists largely of open, grassed areas which have been cleared for grazing with some areas of scattered trees and shrubs. Prior to clearing in the 1850s (or earlier), the area of the Park would have been vegetated with Subtropical rainforest. Other vegetation types in the Park include Tall Paperbark Shrubland, coastal forest and freshwater wetlands. The majority of the Park is now covered by exotic grassland, dominated by Kikuyu (*Pennisetum clandestinum*) and thickets of regrowth wattle, particularly Golden Wattle (*Acacia longifolia*) and/or Lantana (*Lantana camara*). Remnant native vegetation tends to occur in discrete, separated stands on the steep and often rocky terrain.

A search of the NPWS database indicates that nine species of threatened flora and 34 species of threatened fauna have been recorded within the Shellharbour LGA.

The Park PoM identifies seven vegetation communities within the Park, some with regional significance, including the only remnants of subtropical rainforest conserved in the Illawarra region.

Killalea State Park contains several features of high ecological conservation value these include threatened plant species, endangered ecological communities and mapped coastal wetlands. The area also supports regionally significant plants and vegetation types, as well as significant vegetation. Three endangered ecological communities occur adjacent to the development zones, these are: the Illawarra Subtropical Rainforest, the Swamp Oak Floodplain Forest and the Melaleuca armillaris Tall Shrubland. (See Fig. 11).

The following threatened plant species occur in or near the Park but were not found in either of the development zones:

- *Cynanchum elegans* White Cynanchum
- *Pimelea spicata* Spicate Rice-flower
- *Zieria granulate* Illawarra Zieria

Fauna

The Park PoM indicates that small ground mammals may be present in the undergrowth of remnant vegetation. Many species of conservation significance have been recorded within the Park.

Killalea State Park includes and is adjacent to a number of areas which have important biodiversity values. The Park is located adjacent to the Batemans Shelf Bio-region as defined by the NSW Marine Parks Authority and the National Heritage Trust which extends from Shellharbour to Wallagoot Lake.

The primary habitat in the two development zones is mown grassland, a habitat that attracts only a few adaptable native animals and grassland species. The significant habitats found near the two development zones are remnant rainforest, shrublands and wetlands.

Aquatic Habitats

Minnamurra River Estuary

The Minnamurra River Estuary is listed in the Directory of Important Wetlands in Australia (ANCA, 1996) and includes the Minnamurra River and its adjacent wetlands. The main estuarine channels are typically less than 3m deep and the River is tidal for approximately 10km upstream. The Minnamurra River drains to the Illawarra Escarpment and flows across the coastal plain, entering the ocean adjacent to the northern side of Minnamurra Point.

The NSW Department of Natural Resources describes the estuary as, "*A largely undisturbed estuarine wetland which supports the largest area of mangrove forest (0.5km) between the Georges River and the Shoalhaven River.*"¹

A portion of Killalea State Park is identified as being within the Minnamurra River Estuary.

The Minnamurra River is an important wetland with significant mangrove and saltmarsh communities supporting vulnerable bird species such as the Australasian Bittern (*Botaurus poicilopus*) and the Sooty Oystercatcher (*Haematopus fuliginosus*). Seven JAMBA/CAMBA species also occur at the river and include:

- Great Egret (*Ardea alba*).
- Cattle Egret (*Ardea ibis*).
- Glossy Ibis (*Plegadis falcinellus*).
- White bellied Sea-Eagle (*Haliaeetus leucogaster*).

It is also noted that the Illawarra Regional Strategy states that, "*Future development in the Minnamurra catchment will also be strictly controlled to avoid impacts on this nationally significant estuary.*"²

¹ <http://www.dnr.nsw.gov.au/estauries/inventory/minnamurra.shtml>
² Illawarra Regional Strategy, 2006, pp 29

Killalea Lagoon

Killalea Lagoon is listed in the Directory of Important Wetlands in Australia (ANCA, 1996). It is located some 250m from the ocean at Killalea Beach and is a freshwater to brackish lagoon of up to 1m in depth. Sedges and aquatic herbs fringe the margins and provide habitat for a diversity of species. The lagoon is a breeding habitat for large numbers of Black Swans and vulnerable species including the Pied Oystercatcher, Comb-crested Jacana, the Blue-billed Duck and the Australasian Bittern. Species listed under JAMBA or CAMBA are also known to inhabit the lagoon and its environs. A seasonal connection between the lagoon and the ocean occurs but generally the entrance to the lagoon is blocked by a sand barrier.

Killalea Lagoon is listed in Schedule 1 - Coastal Lakes of SEPP 71 - Coastal Protection and has been identified as being in a "*Highly Modified Condition*".

Bushrangers Bay Aquatic Reserve

Bushrangers Bay Aquatic Reserve is listed on the Register of the National Estate. It is located approximately 3.5km north east of the development zones and, "*Is a small, rocky semi-enclosed oceanic bay which includes boulder, reef and sand habitats.*"³ The Aquatic Reserve is managed by the NSW Department of Primary Industries under the Fisheries Management Act 1994.

Bass Point

Bass Point is located adjacent to both Bushrangers Bay and Killalea State Park. The Bass Point area includes, "*Relatively undisturbed examples of high diversity, fringing reef, intertidal pool and boulder field communities...not commonly found in the Illawarra region.*"⁴ The locality has been identified as critical habitat for the endangered Grey Nurse Shark.

³ Breen et al, 2005, pp 115
⁴ Ibid

Bushfire Prone Land

A Bushfire Hazard Assessment was undertaken during the preparation of the Park PoM. Pockets of land within the Park may be subject to high bushfire risk however those pockets are self contained and overall the risk is low. Bushfire is not expected to pose a significant constraint to the proposed development zones.

Traffic and Parking

The proposed development will result in the generation of additional traffic and the need for increased parking areas. The Park has a series of existing roads and pedestrian tracks as well as a number of parking bays which will be redeveloped. Public access will be maintained along the ridgeline. Access, traffic and parking have been examined and are not considered to pose a significant constraint to the proposed development.

Infrastructure

A review of available infrastructure was previously undertaken. The study revealed that there is minimal existing infrastructure in the proposed development zones, in particular:

- The hydraulic and electrical services are sized to cater only for the existing on-site amenities and Education Centre.
- There is no stormwater system. Drainage within the Park is currently via natural overland flow.
- There are no gas services. The closest connection point for reticulated gas services is in Stradbroke Avenue which services the adjacent housing development.
- A water town main of 150mm diameter is available approximately 100m north of the Park main entrance. There is no potable water main to the on-site buildings. The water used in the amenities is bore water.
- A sewer main of 150mm diameter is located outside of, and adjacent to the western side of the Park main entrance. The on-site amenities and Education Centre are provided with sewer drainage. The sewer service for the amenities extends in uPVC pipework to the local septic tank system located adjacent to the buildings.

Overall the existing infrastructure will not adequately service the proposed development. The provision of supplementary and new services will occur in discussion with Sydney Water, AGL and Integral Energy.

Built Form and Urban Design

Planning and Design Principles

Environmental Planning

The two development zones have been carefully selected to avoid areas of high conservation significance and ecological value. Development locations are primarily confined to areas of existing or previous disturbance or where weed species are present.

Landscape and Visual Amenity

The scenic values of Killalea State Park are identified in the PoM and include rolling hills, Killalea Lagoon, Minnamurra Spit, the beaches and cliffs. The proposed development reflects the importance of maintaining key sightlines within the Park and the visual amenity of the area.

Built Form

The proposed development provides for a total of 106 accommodation lodges as well as the development of additional public domain facilities within two development zones. Lodges and other built facilities will be sited to maximise the potential of the coastal setting whilst minimising visual impacts upon the surrounding areas. The built form of the proposed development will be sensitive to the visual qualities of the site by adopting scale, colour, form and texture appropriate to the site's coastal characteristics.

Public Domain

The existing Education Centre and public facilities located within the Park will be supplemented with a new environmental school building and additional public amenities including parking, playground and picnic areas. A new access road will also be developed, as will public walking trails and viewing areas within each of the development zones.

Part 6 - Conclusion

In accordance with Part 3A of the Environmental Planning and Assessment Act 1979 and associated guidelines, this Preliminary Environmental Assessment has been prepared to provide an overview of the proposed development at Killalea State Park and to inform consultation with relevant agencies.

The key conclusions of this report are that overall the impacts of the proposal together with the principles guiding the future development of the site will result in significant positive social, environmental and economic outcomes for Killalea State Park.

In conclusion, the site is considered suitable for the proposed development outlined in Part 3 and the implementation of an eco-tourism facility is consistent with the objectives contained in the Park Plan of Management. Accordingly, it is requested that the Director General consider the information provided and prepare the Director General's Environmental Assessment Requirements as the basis of a future Concept Plan Application.



subject land & development zones



July 2009

0 250 500 1000m

Scale 1:4000 @ A3

killalea state park project
shell cove