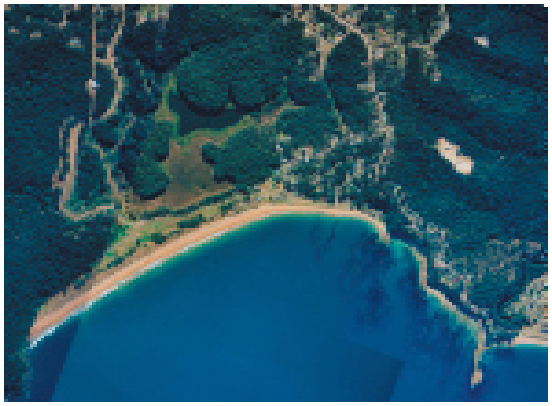
LONGBEACH FORESHORE AND WETLANDS RESERVE

Plan of Management



Prepared for
Eurobodalla Shire Council
and
the Longbeach Improvement Group

funded by Coastcare

December 2002

Prepared by

O C U L U S
landscape architecture urban design
environmental planning
& Eurobodalla Shire Council

Amendments:

No	Date	Details
1	28 October 2003	• Addition of two pathways to 2.3.2 Table of Land included in this Plan of Management (Pin Nos 30465 & 30466). • Amendment of Illustration 07 to indicate Pin No 30465 as a "Pathway".

CONTENTS

EXECUTIVE SUMMARY

Background

In 2000, Eurobodalla Council in conjunction with the Long Beach Improvement Group (LBIG) received *Coastcare* funding for the preparation of a Plan of Management (POM) for the public open space recently set aside along the beach and Reed Swamp Lagoon in Long Beach at Batemans Bay.

The Plan of Management for the Long Beach Foreshore and Wetlands Reserve follows on from Eurobodalla Shire Council's generic *Natural Area and Undeveloped Reserves Plan of Management 1997*, as part of Council's program to prepare single Plans of Management for individual reserves. The aim of the Plan of Management was to prepare a document, which would provide guidelines for a cohesive and ecologically sustainable approach to future development and environmental management. It focuses on the conservation of Reed Swamp Lagoon, the natural dunes and bushland and whilst facilitating appropriate recreational use of the Long Beach Foreshore and Wetlands Reserve in line with relevant legislation guiding the preparation of Plans of Management.

Document Structure

This Plan of Management is structured into six sections. They contain a general overview of the physical environment and related management and land use issues and an action plan and Landscape Masterplan providing recommendations for the appropriate development and sustainable management of the Reserve.

Sections 1 provides a general introduction to the POM and the Long Beach Foreshore and Wetlands Reserve and outlines the objectives and the background of this Plan of Management.

Section 2 is a summary of the landscape analysis process describing the physical qualities of the natural environment, site context, recreational facilities (including current access and circulation) and various influences affecting the development and management of the land in the Reserve.

Section 3 presents an overview of the issues and opportunities related to the reserve at the time of the study. This was compiled based on liaison and consultation with Eurobodalla Council, LBIG representatives, representatives from NPWS, Coastcare and the Coastwatchers Association and interested members of community. Analysis of this information and the physical aspects of the land revealed the key issues and opportunities for the management of Long Beach Foreshore and Wetlands Reserve. The main issues can be summarised as follows:

- There is a need for additional and improved recreational facilities to accommodate the needs of increasing numbers of local residents and visitors at the beach reserve. This would include the provision of visitor parking, picnic facilities, toilets, and showers. Adequate facilities should therefore be provided in the most suitable location in the reserve, as proposed in the accompanying Landscape Masterplan.
- There is an urgent need to introduce mechanisms to protect Reed Swamp Lagoon which is a wetland of State significance, and its associated unique natural environment from the adverse effects of adjacent urban development and clearing of bushland within the wetland's catchment. This involves the protection of the lagoon's catchment through appropriate zoning, development controls and covenants, the establishment of an adequate buffer zone around the wetland's edge

dedicated to environmental protection and the prevention of inappropriate recreational use.

- There is a need to protect and conserve the pristine, natural environment and landscape amenity, biodiversity, bushland and wildlife habitat which is presently threatened by urban development and associated clearing. Protection should involve a two-fold approach combining effective on-site management such as fencing and establishment of appropriate facilities with planning mechanisms such as appropriate zoning, development controls, limitations on clearing and coherent masterplanning, to ensure that biodiversity in the area is maintained and habitat links to surrounding natural environments are retained.
- There is a need to improve access to and within the reserve, namely the provision of a safe and widely accessible path system and signage to all parts of the reserve.

Section 4 is the action plan for future management and contains targets and recommended actions to achieve the appropriate development and management objectives for the reserve. It also includes recommendations for more effective planning controls for the environmentally significant land in the catchment of Reed Swamp Lagoon. The action plan is presented as a set of four tables addressing:

- recreational use,
- access and circulation,
- biodiversity conservation, protection of wetland, dunes, vegetation and wildlife habitat,
- visual and scenic amenity.

Section 5 lists relevant references and legislation that provide background information and were referred to in the preparation of this Plan of Management.

Section 6 contains the appendices including a list of local flora, principles of Ecologically Sustainable Development (ESD), summaries of community consultation processes and the Landscape Masterplan.

Main Findings

The consultation process and site investigation revealed that Reed Swamp Lagoon and the land in its catchment contains native bushland and wildlife habitat in pristine conditions. The natural areas of Long Beach contain significant biodiversity and are highly appreciated by local residents and visitors for their natural beauty and scenic amenity.

However, as a result of recent subdivisions and construction activities and future plans for residential development in the catchment, the majority of the survival of natural bushland and wildlife is threatened by clearing of native bushland and environmental degradation.

It was also found that there is a lack of appropriate nature based recreational facilities and that residential development is having an increasingly negative effect on the natural environment, scenic quality and the use of the beach and dunes.

Proposals

The Action Plan comprises of Objectives, Performance Targets, Means to achieve Targets, Priorities and Assessment of Targets that would facilitate the appropriate management of the land in accordance with relevant legislation and community aspirations.

The plan focuses on sensitive development and implementation of planning tools that would ensure the protection of the natural beauty, diversity and biodiversity of the land whilst allowing nature based recreational use of the public open space.

The recommendations also address issues related to private land in the catchment as future development and associated environmental degradation could significantly affect the ecological integrity of the wetland and bushland in the catchment and on the dunes.

The major means for best practice management identified in the plan are summarised below:

The plan aims to ensure that the natural environment of the Lagoon and dunes is protected whilst catering for a wide range of appropriate nature based recreational activities. This includes the development of a new picnic area with amenities and visitor parking. The wetland and Lagoon need to be protected from the negative impact of boating and fishing. It is recommended that visitors will be able to enjoy its scenic beauty and waterbirds from a walking track and a series of jetties.

Access into and within the Reserve will be formalised and improved through signage and a network of walking tracks leading through the dunes and through bushland around the Lagoon's foreshore.

The biodiversity of the land needs to be thoroughly surveyed, recorded and assessed in order to identify effective mechanisms for the protection of the wetland of State significance, native vegetation and wildlife. The natural areas on public and private land in the catchment need to be protected from clearing and the impact of future development. This can be achieved by means of appropriate rezoning, categorising of land in accordance with the Local Government Act and sensitive on-site management accordingly.

The Department of Land and Water Conservation needs to be consulted to enact the revision of the Crown Purposes for Crown land included in the study area.

The re-categorisation of Community Land is recommended and Eurobodalla Shire Council will need to hold a Public Hearing for the re-categorisation of some land.

1 LONG BEACH FORESHORE AND WETLANDS RESERVE PLAN OF MANAGEMENT

1.1 INTRODUCTION

Under the *Local Government Act* (LGA) *1993* and the *Local Government Amendment Act 2000,* Eurobodalla Shire Council is required to prepare Plans of Management for all community land administered by councils. The Act provides councils with a specific approach to the classification, categorisation and management of *community land*. Community land is defined as land that should be kept for the use by the general public. Community land must not be sold (except in the limited circumstances as per Section 25 (4) of the LGA 1993), and can not be leased for more than 21 years.

Eurobodalla Shire Council is currently in the process of reviewing its generic Plan of Management for its natural areas and undeveloped reserves. Council is also developing single area Plans of Management for individual areas and reserves in accordance with the LGA and community requirements.

To ensure that the community land is managed in a sustainable manner, the Long Beach Improvement Group has successfully applied for a *Coastcare* Grant, which is to be used for the preparation of a Plan of Management for Long Beach Foreshore and Wetlands Reserve.

A new residential development adjacent to Reed Swamp Lagoon situated behind Long Beach has resulted in new open space contributions to be managed by Council. These consist of a narrow buffer zone around the eastern shores of Reed Swamp Lagoon and foreshore areas along Long Beach. The reserve also includes Crown land which is located in a central area of the Lagoon and as a long narrow strip of land behind the beach.

The developer of Long Beach Estate dedicated to Eurobodalla Shire Council free of cost much of the land within the Long Beach Foreshore and Wetland Reserve.

Council had granted development consent for the subdivision of Long Beach Estate which included the dedication of reserves to Council as conditions of consent. The approved plan was consistent with the Long Beach Development Control Plan.

The developer granted this land free of charge to Council in recognition of the environmental sensitivity of the wetland and the greater community desire for foreshore access in accordance with the conditions of consent and the requirements of the Long Beach Development Control Plan.

The gifting of this land represents a significant land contribution to the public ownership of natural areas around the foreshore and wetlands of Long Beach.

This Plan of Management applies to both Council-owned community land and Crown land. It includes Long Beach and its adjacent dune environment; open space contained in the reserve; the open space and Crown land containing the lagoon and the creek which links the beach and wetland; and, the public reserve on Crown land along the beach at Bay Road and behind Sandy Place (refer Ill.01).

1.2 STUDY PROCESS AND CONSULTANTS

Eurobodalla Shire Council worked closely with representatives of the Long Beach Improvement Group (LBIG) on the preparation of the Landscape Masterplan and Action Plan. The Long Beach Improvement Group is made up of local residents concerned with the sustainable and appropriate development and management of the Long Beach area. The group has received a *Coastcare* Grant, which was used to prepare this Plan of Management for Long Beach Foreshore and Wetlands Reserve.

Following the successful application for the *Coastcare* grant, Council engaged the environmental planning firm OCULUS to undertake the preparation of the Plan of Management and associated consultation with the local community.

OCULUS environmental planning section is led by environmental planner Birgit Seidlich and is well known for its progressive planning work. It is characterised by a strong commitment to environmental protection and enhancement. Its work is based on the principles of ecological sustainability and a thorough understanding of natural systems and ecological processes. The firm has prepared a series of Plans of Management, Landscape Masterplans and other environmental planning and design documents for State and Local Government in the Sydney Region. The Planning section has a special focus on the conservation of remnant natural vegetation and biodiversity, and specialises in the rehabilitation of creeks, wetlands and wildlife habitat.

In the preparation of this Plan of Management, OCULUS worked closely with representatives of both Eurobodalla Shire Council and the Long Beach Improvement Group (LBIG). Close liaison with representatives of the LBIG in particular was undertaken, as the group made a significant contribution to the funding and commencement of the Plan of Management.

The study process involved several site visits, landscape analysis and investigation, background research and review of documents, as well as several community meetings and the distribution of a community questionnaire to receive further input from the broader community. As a result of this, the POM largely represents the issues associated with Long Beach Foreshore and Wetlands Reserve as they were presented to the consultants by local residents and representatives of LBIG. The draft plan was reviewed and endorsed by the NPWS, *Coastcare* and the Costwatchers Association. The findings of all the investigation processes outlined above were then compiled by OCULUS to produce this Plan of Management.

1.3 AIMS AND OBJECTIVES

The main aim for the Long Beach Foreshore and Wetlands Reserve Plan of Management is:

To develop a Plan of Management and Landscape Masterplan that

- *ensures the conservation of the natural environment, wildlife habitat and associated ecological processes of Reed Swamp Lagoon and the dune environment*
- *facilitates appropriate nature based recreational use of the council managed public land, and*
- *enhances and protects the overall appearance and natural qualities of Long Beach Foreshore and the Wetland Reserve.*

The objectives of the Plan are:

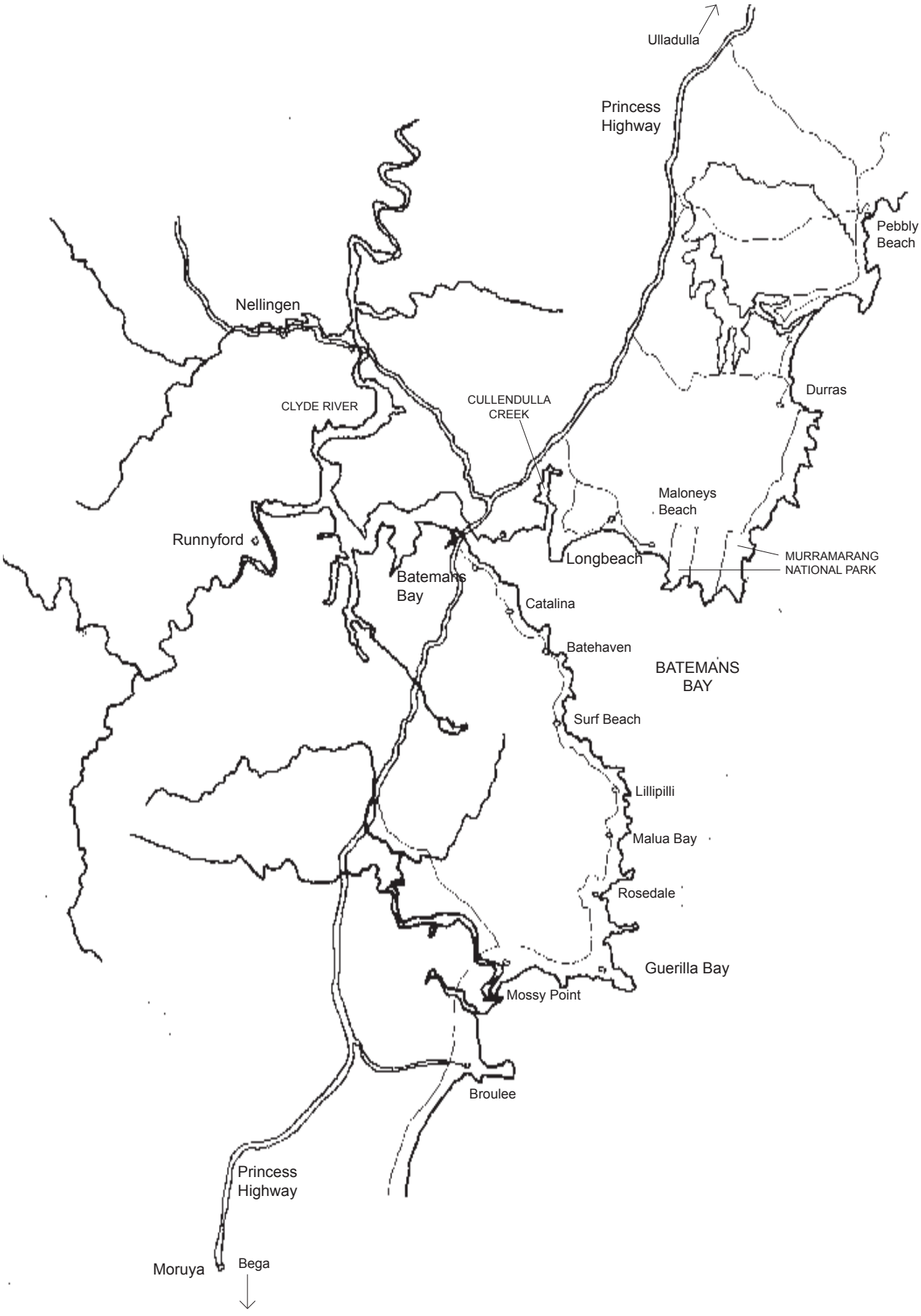
- To prepare a Plan of Management in accordance with the *Local Government Act 1993, the Crown Lands Act 1989,* the *Rivers and Foreshores Improvement Act 1948*, and other relevant policies such as the *State Environmental Planning Policy No. 14: Coastal Wetlands*, *Coastal Policy 1997* and Council's local strategies and policies;

- To prepare and implement a Landscape Masterplan, which integrates recreational use and public access for the local community and visitors with the Reserve's role in the greater context of natural eco-systems, wildlife corridors and open space networks of the Batemans Bay area;

- To develop a set of performance targets and management actions which identify and cater for the future recreational needs of the community while protecting and enhancing the overall environmental quality, indigenous flora and fauna and ecological processes of the Reserve.

Illustration 1

Refer to separate document


Ulladulla
Princess Highway
Pebbly Beach
Nellingen
CLYDE RIVER
CULLENDULLA CREEK
Durras
Maloneys Beach
Runnyford
Batemans Bay
Longbeach
MURRAMARANG NATIONAL PARK
Catalina
Batehaven
BATEMANS BAY
Surf Beach
Lillipilli
Malua Bay
Rosedale
Guerilla Bay
Mossy Point
Broulee
Princess Highway
Moruya
Bega

Longbeach Foreshore and Wetlands Reserve

DRAFT

PLAN OF MANAGEMENT

ILLUSTRATION 03
Natural Environments found at Longbeach Reserve

- Natural Vegetation
- Wetland Lagoon
- Channelised Creek
- Dune and Foreshore
- Natural Drainage Line
- Backbeach Areas

10m Contours

Scale 1:10,000

EUROBODALLA SHIRE COUNCIL

prepared by

OCULUS

landscape architecture urban design
environmental planning

May 2001

All GIS base data provided by
Eurobodalla Shire Council

1.4 STUDY AREA

Long Beach Foreshore and Wetlands Reserve is situated on the foreshore of Batemans Bay at Long Beach, in the Local Government Area (LGA) of Eurobodalla Shire Council. The study area is located approximately 5 kilometres due east from the Batemans Bay Bridge, east of Square Head. By road it can be reached via Long Beach Road or Blairs Road. Blairs Road and Long Beach Road turn off Cullendulla Drive, which connects to the Princess Highway about 5 km north-east of Batemans Bay.

The beach itself is part of the larger Batemans Bay, on the South Coast of New South Wales, and forms a south-facing arc between Square Head and Maloneys Head. The site of Long Beach Foreshore and Wetlands Reserve is bounded to the north by a recent subdivision and rural properties, including rural residential properties. To the west, it is bound by Cullendulla Creek Nature Reserve at Square Head, which is administered by the National Parks and Wildlife Service (NPWS).

To the east it is bound by the cliff at the end of the beach. To the south, the low water mark of the Bay forms the limit of the reserve. It is comprised of 48.06 ha, consisting of 39.56 ha Council-owned Community Land and 8.495 ha of Crown Land (refer to Illustration 01).

The site features a sensitive and diverse natural environment including the beach and associated back dunes, open space with remnant stands of Coastal Banksia and Bangalay Forests, riparian vegetation associated with Reed Swamp Lagoon, the Lagoon itself and open grassed areas along the beach at Bay Road. The Lagoon is set amongst highly intact Spotted Gum dry sclerophyll forest, which extends to the rural properties and uncleared residential land currently surrounding the lagoon. The land zoned (6a) public open space as well as the privately owned land zoned (1c) shown on Eurobodalla Shire Council's Rural LEP surrounding the wetland is still covered in natural bushland. This contributes greatly to the pristine natural state and rich wildlife of the wetland and associated bushland.

Long Beach Foreshore and Wetlands Reserve is currently categorised as a natural area, according to Council generic Plan of Management for Natural Areas and Undeveloped Reserves.

1.5 LAND OWNERSHIP

A number of lots of land make up the Reserve to which this Plan of Management applies (refer to Illustration 01). These are either community land under the ownership of Eurobodalla Shire Council or Crown Land managed by Eurobodalla Shire Council on behalf of the Minister for Crown Land. The principles that govern the management of Crown are described in more detail in section 2.3.2 of this document (refer: The Crown Lands Act 1998). Much of the lagoon is abutted by private land, and any development or activity on this land in the lagoon's catchment will highly impact on the fragile wetland eco-system.

1.6 SITE CONTEXT

Long Beach Foreshore and Wetlands Reserve forms part of the coastal environments and natural ecosystem of Batemans Bay. Significant natural components of the reserve include the dunes along the beach, stands of remnant *Banksia* and *Casuarina* coastal forest on the back dunes, and most significantly Reed Swamp Lagoon which is a freshwater wetland listed as having State significance. An outlet and easement links the Lagoon to the beach. Reed Swamp Lagoon forms part of a large number of significant coastal wetlands located around

Batemans Bay and in the estuarine environments of the Clyde River and Cullendulla Creek. It is one of the most significant wetlands in the area. The location plan (refer to Illustration 02) shows the relationship between Long Beach Foreshore and Wetlands Reserve to other dune environments and wetlands nearby. On the headlands and ridges beyond the immediate coastal foreshore, dry sclerophyll forests of tall Spotted Gums and Burrawangs, typical of the NSW South Coast, are in very close proximity to the beach and form a natural backdrop to the small township of Long Beach.

The reserve provides public open space on the beachfront and, being a popular swimming and surfing location, offers important recreation opportunities for both the local community and for regional visitors during the tourist season. Being located in an area that has not been cleared until only recent urban development, the Long Beach Foreshore and Wetlands Reserve is rich in species, both flora and fauna, likely to encompass a range of threatened or endangered species utilising the wetland. It provides important habitat and the potential for ecological protection and use as an educational resource, as well as being a habitat link and refuge.

Currently, Long Beach Foreshore and Wetlands Reserve contains few facilities, and access and circulation in the reserve is largely unstructured, which leads to some conflicts during peak holiday seasons when the area experiences a large influx of visitors. Further, the growing population as a result of subdivision poses increased demands for the provision of facilities and a useable and more coherent structure of the reserve, in order to avoid conflicts between residents and reserve users.

The vegetation profile as found on the foreshore and in backbeach areas in Long Beach is becoming increasingly rare today, as a result of increased urban development on the coastal fringes of southern NSW. Some of the stands of Banksias consist of very old specimens and fencing to encourage re-generation could help in preserving this type of vegetation. The dune environment in the reserve has suffered in the past as a result of clearing for development and grazing, and several attempts to restore dune vegetation have been only partially successful. Despite past modifications and some weed infestation, however, the environments of the dune and beyond support native plant species and are of ecological value. This indicates the opportunity for ecological restoration of these environments through enhancing the site with additional dune and coastal planting to complement existing stands.

The area surrounding the Reserve consisted up until recently of uncleared land covered by impressive Spotted Gum Forests. Clearing was mainly concentrated on the township of Long Beach which is comprised of about 500 dwellings, being a mix of temporarily inhabited holiday houses and permanently inhabited residential dwellings. Many of the older homes where built amongst stands of remnant trees, which gives the area a natural, low density appearance. In recent years, Long Beach has been rezoned to become part of the Batemans Bay urban expansion area and much of the land has been, or is in the process of being, cleared and subdivided.

Recent clearing of Spotted Gum Forest and construction of new dwellings in the Lagoon's Catchment and near the beach are showing signs of adverse impact on the natural environment. The realisation of subdivisions approved to date, will continue to have a significant impact on the Long Beach Foreshore and Wetlands Reserve, and could significantly degrade the natural ecosystem and visual amenity of the area as a whole (refer to Illustrations 04-06). Large tracts of bushland are being cleared as part of the subdivision process. This alters the natural character of the area, replacing bushland with residential development and potentially affecting the biodiversity of the area. This will significantly reduce the extent and diversity of flora and fauna seen in the area. In addition, new dwellings tend to be of much more substantial nature than the existing housing stock in Long

Beach, being mostly two-storey dwellings, designed to capitalise on the spectacular views afforded of the Bay through clearing of vegetation.

Plate 1: View of Reed Swamp Lagoon from its eastern edge, near the overflow area into the creek.

Plate 2: Taller reed species growing in the centre of the wetland offer good nesting opportunities for waterbirds.

Plate 3: The dense riparian edge at the wetland's eastern edge forms the ecological transition to Dry Sclerophyll Forest on higher ground.

Plate 4: Reed beds are integral components of wetland systems, yet they are sensitive to changes in their environment, such as in water quality, turbidity or wave action and physical damage.

Plate 5: A stand of Spike Rush (*Eleocharis sphacelata*) with Swamp Oaks (*Casuarina glauca*) on the damp wetland foreshore in the background.

Plate 6: The clear waters of the lagoon are under threat from increased runoff and turbidity, caused by clearing and subsequent development in the catch-

Plate 7: Slopes surrounding the wetland are dominated by the beautiful mottled trunks of Spotted Gums (*Corymbia maculata*).

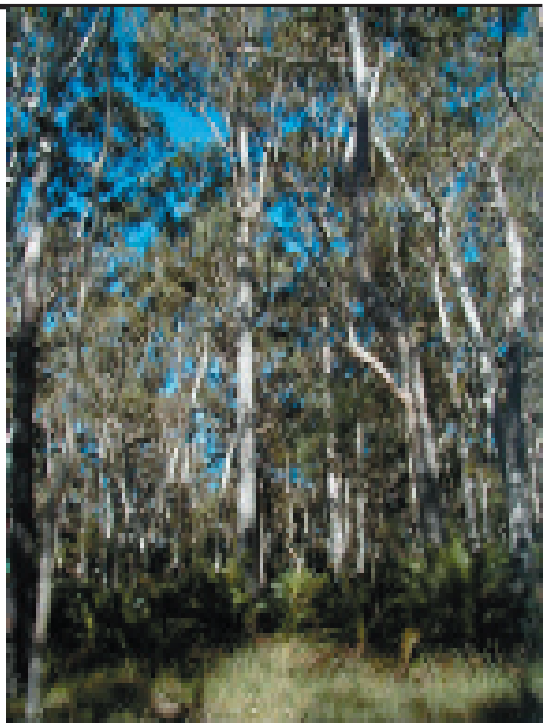


Plate 8: The understorey of Spotted Gum Dry Sclerophyll Forest typically consists of Burrawangs (*Macrozamia communis*).

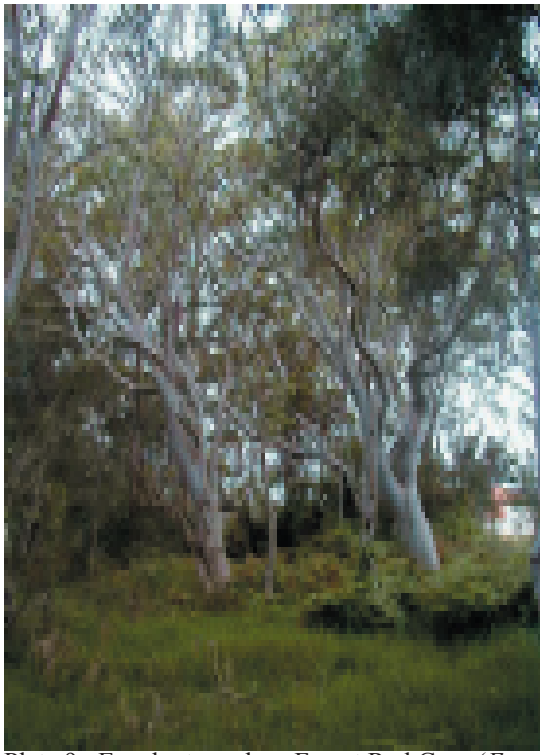


Plate 9: Eucalypts such as Forest Red Gum (*Eucalyptus tereticornis*) can be found on the lower-lying ground of the riparian edge surrounding the wetland.

Plate 10: Saw Sedge (*Gahnia sp.*) is a common plant around the fringes of the wetland and in the transition zone to Dry Sclerophyll Forest.

Plate 11: Extensive stands of reed beds such as these offer great shelter, nesting and feeding habitat for local and migratory bird species.

Plate 12: Increased polluted runoff poses threats to wetland vegetation as it decreases water quality and clarity and causes siltation of the Lagoon.

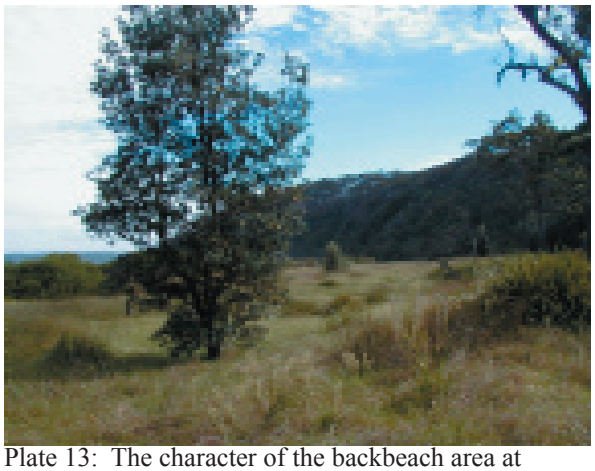


Plate 13: The character of the backbeach area at the western end of the reserve is meadow-like with small stands of trees such as Coast Banksias (*Banksia integrifolia*).

Plate 14: Eastern section of the Lagoon north of the YMCA camp.

Plate 15: Panorama of the south-western part of the wetland. Much of the vegetation in the background is under threat to be cleared for a new subdivision. Only a thin buffer strip of trees will remain, which could fall victim to clearing for the creation of views of the Lagoon for new residents.

Plate 16: Dry Sclerophyll Forest with Spotted Gums (*Corymbia maculata*) and Burrawangs (*Macrozamia communis*) in the reserve behind the western end of Longbeach, between SandyPlace and Michener Court.

Plate 17: Burrawangs together with ferns on the lower slopes dominate the understorey of the reserve between Sandy Place and Michener Court.

Plate 18: A dense stand of ferns, Lomandra and Dianella species in damp and shady areas at the foot of the hill in the western backbeach area.

Plate 19: Square Head forms the reserve's visual and physical boundary to the west.

Plate 20: Looking west along Longbeach from existing picnic area at the beach in Bay Road.

Plate 21: The open grassy area in the central part of the reserve is favoured by residents as future recreational area away from residential dwellings.

Plate 22: Dense stands of a diversity of native reeds give the lagoon its name. They reflect a high biodiversity and a fragile wetland ecosystem sensitive to disturbances and the impact of development.

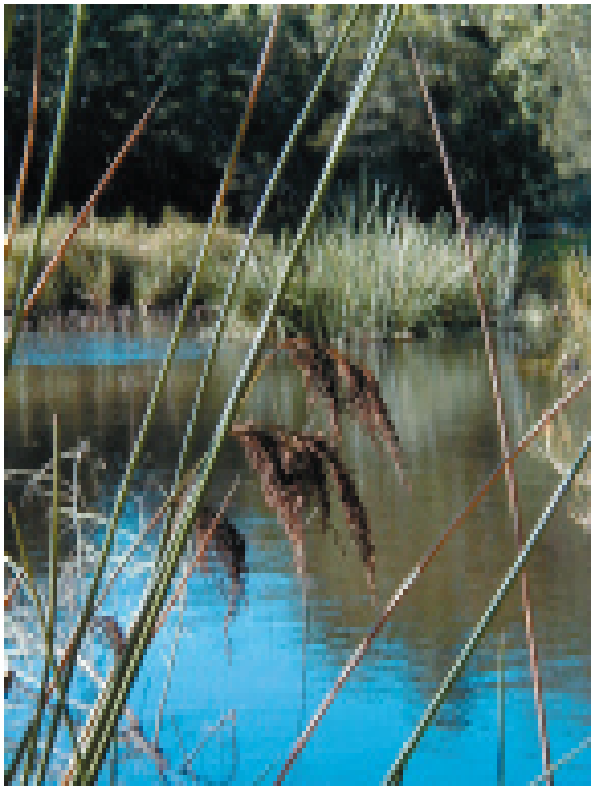


Plate 23: Jointed Twig Rush (*Baumea articulata*) is only one of the many and diverse species found in the wetland and around the Lagoon's foreshore.

Plate 24: Groves of indigenous Coast Banksias (*Banksia integrifolia*) are typical of backbeach areas in the central and western part of the reserve.

2 LONG BEACH FORESHORE AND WETLANDS RESERVE INVENTORY

2.1 EXISTING RECREATIONAL FACILITIES

2.1.1. Access, Circulation and Parking

The Foreshore Reserve can be accessed from Bay Road and from several easements which provide pedestrian points between private blocks along Sandy Place. As a result of the new subdivision and construction of housing along the eastern end of the beach, overall access is currently unstructured and way-finding and orientation can be difficult.

Car access to the beachfront is only possible at Bay Road, where formal parking is provided near the corner with Long Beach Road. During peak holiday seasons, car parking can be insufficient, which results in people parallel parking their cars along Bay Road. Occasionally, this also leads to infringements on private properties, with visitors parking across driveways or front lawns of residences. This situation is aggravated by the far eastern end of the beach being used as an informal boat ramp for small recreational boats. This can result in increased traffic activity making it difficult to negotiate, as the areas is not designed for this. This end of the beach is more protected and the resulting calm waters makes it an ideal place for entering boats into the water.

At the western end of the beach, cars frequently enter the reserve, via a number of dirt tracks leading over currently undeveloped blocks of land and public open space. This area has also been used by 4-wheel-drive vehicles to access the beach at the western end. Noting this, there is some provision for parking at the western end of Sandy Place. Both kinds of vehicle access are undesirable as they cause damage to the reserve's vegetation, structures (such as fences), contribute to dune erosion and are often associated with other destructive activities such as littering, wilful destruction of structures and burning of vegetation. The closing of Long Beach Foreshore and Wetlands Reserve for private vehicles is therefore consistent with Council's general policy not to provide vehicular access to areas such as these.

The foreshore reserve currently only has an informal path system that accommodates for walking or strolling. The only formalised provisions are the stabilised access points to the beach fitted with timber treads to prevent erosion of the sensitive dune environment.

The dirt tracks formed by vehicles currently also provide pedestrian access into the western section of the reserve behind Sandy Place, particularly where tall stands of grasses prevail. Pedestrians can further access the reserve and beach from anywhere along Bay Road and the central section of Sandy Place. The creek corridor has been used by tenants of the YMCA as a link to the beach, which has caused some trampling of vegetation along the creek and amongst the dunes, where goat tracks have been formed as a result of the lack of formalised access to the beach. There is also no means of crossing the creek when it is full or flooded. In other sections, dunes are fenced off to protect them from trampling and in the attempt to stabilise them through re-vegetation. However, gaps in the fence where access to the beach is possible are not clear from Sandy Place. Along Sandy Place in Long Beach Estate two easements provide pedestrian access to the reserve between recent dwellings. However these easements connect with no further path or access point to the beach, so that overall, access is unstructured and the path system uncoordinated.

A further issue for pedestrian access is the lack of an easement on the slope between Sandy Place and Michener Court. As a result, people are cutting through the Spotted Gum and

Burrawang forest on this hill, creating goat tracks and trampling vegetation. This could lead to the degradation of this stand of native vegetation through wide-spread trampling and increased weed invasion.

Apart from grass parking in Bay Road and an informal parking bay off Sandy Place in the central section of the reserve, there are currently no further parking facilities. However, Bay Road being the area of most immediate proximity to the beach, and the most easily found, the majority of visitors currently gravitate to this part of the reserve.

2.2 NATURAL ENVIRONMENT

2.2.1. Landform and Drainage

In general, Long Beach Foreshore and Wetlands Reserve is located in the outer bay area of Batemans Bay. The bay itself is the drowned entrance to the Clyde River, which, with a catchment of about 1,800 square kilometres, forms one of the largest rivers on the NSW South Coast. The bay is funnel-shaped, approximately 8km long and varying in width from 800m near the Princes Highway to 5.7km at its mouth (Eurobodalla Shire Council 1996, p.5).

The reserve can be divided into a number of distinct, but closely linked environments.

Coastal dunes and bay foreshore

Long Beach is a narrow but long south to south-east facing sandy beach stretched between the headlands and associated rock platforms at Square Head and Maloneys Head. According to the *Batemans Bay Coastal Management Study*, the foreshore experiences beach erosion during storm events which is most severe around the middle section of the beach. Sand lost during such storms is generally deposited back in quiet periods following the event. There is however some permanent loss of sand as part of shoreline recession processes, which are associated with future climate change induced rises in sea levels and storm 'bite', currently occurring at a rate of 8 metres over a period of 50 years (Webb, McKeown & Associates 2001). This is an involved process and a highly specialised area of study and the referenced report should be referred to for further elaboration on this issue.

The dune environment consist of only one low dune, parallel to the low water mark. In the western and middle sections of the beach, the dune is about 5m high, whereas at the eastern end it is only 3-3.5m high (Webb, McKeown & Associates 2001). Here, the dune has been reduced to a small drop in levels from Bay Road to the beach and is hardly recognisable as a dune anymore. The dune is backed by a steep headland at Square Head in the west, the subdivision in the middle and existing urban development in the east (Eurobodalla Shire Council 1996).

The geology of the coastline in Batemans Bay is dominated by metamorphic rocks on the headlands, which are referred to as the Wagonga Beds. On the beaches, they tend to develop gently sloping platforms which descend from high tide level to beneath low tide level. Inshore sediments are medium to coarse calcareous sands with iron staining of both carbonates and quartz (Eurobodalla Shire Council 1996).

Wetland depression and creek

The land behind the dune is largely flat and low-lying. It contains some small localised swamps and other localised drainage depressions, the biggest one being the wetland in Reed Swamp Lagoon.

The wetland is of major significance in the Shire, with a surface area of about 36 hectares, protected under *State Environmental Planning Policy 14: Coastal Wetlands*. However, about half of the wetland catchment is now zoned for general residential use 2(g) as part of Batemans Bay's urban expansion. Clearing, subdivision and development of land in the catchment may have impacts on the water quality, flora and fauna diversity and abundance found within and along the perimeter of the wetland. Additional soil and sediment control devices have been planned for future stages of the development.

The wetland is drained and linked to the dune and beach environment by a small creek, whose meander breaks through the dune about halfway along the beach, about 100m west of Bay Road.

Reed Swamp Lagoon wetland itself occurs in a back barrier depression separated from the ocean by the low dune system. The dune system consists of subtle rises to 2-3m, which are described as "subdued beach ridges between the beach and major beach ridge" (Lance 1987, as quoted in Eurobodalla Shire Council 1996, p. 9). The depression in which the wetland is located, is likely to be a drowned estuarine embayment, which was cut off from the ocean by this dune system, with a backshore inundation level of 3.5m AHD (Eurobodalla Shire Council 1996, p.8, Webb, McKeown & Associates 2001).

Hills and headlands

Aerial photography of the site shows that the surrounds of Long Beach Foreshore and Wetlands Reserve was, up until the early 1990's, completely vegetated by stands of native forests, coastal, swamp and riparian vegetation. While the topography of the site has been altered little as part of the subdivisions, extensive clearing has taken part on the hills and slopes behind the beach, with significant impact on habitat, quantity and quality of water run-off, and significant visual impact from parts of the reserve and other locations around the bay.

2.2.2. Soils and Erosion

Coastal dunes and bay foreshore

Coastal dunes consist of coarse sands and erosion is caused mainly by wave action and trampling as a result of poorly formalised and uncoordinated access.

Management issues are presented by coastal hazards such as beach erosion, climate changes induced recession and coastal inundation, which are most severe around the entrance to Reed Swamp Lagoon (Webb McKeown & Associates 2001). For more detailed information on these issues, refer to the *Batemans Bay Coastal Management Study. Coastal process review and management options assessment*, prepared by Webb, McKeown & Associates.

For the reserve's amenity and use as a recreational resource, shoreline recession is the most important factor, as it leads to a loss of sand over time, at an estimated rate of about 8m over 50 years, as mentioned above. To preserve the beach as a recreational and scenic resource beach nourishment may be considered, however this is not economically justified (Webb McKeown & Associates 2001).

Coastal inundation and beach erosion are less of a management issue for the reserve itself, as they represent a temporary hazard only, with sand being replaced by coastal processes. They do however affect residences along Bay Road, and any mitigative engineering measures would have a strong visual impact on the reserve's foreshore area (Webb McKeown & Associates 2001). While revetment works are not economically feasible, dunes could be protected from erosion through the planting of more deep-rooting and varied vegetation in areas such as the Bay Road foreshore. This kind of planting would protect the beach and dune much more efficiently from the cumulative of constant erosive forces than the current grass cover can achieve.

A Dune Management Scheme would also greatly assist in the prevention of further future erosion and stabilising the dune ecological system in the long term. The implementation of such a scheme was a condition of consent (ref.. condition (G) on page 6) as part of the approval for the recent subdivision at Long Beach. The conditions stated that the design of such a scheme would include the provision for a minimum 5 year ongoing maintenance period for the full frontage of the land to Long Beach, at a cost of the developer. This 5 year maintenance period concluded on 20 September, 1998. Since that time the maintenance of this area has been the responsibility of Eurobodalla Shire Council.

Wetland depression and creek

Erosion in this area affects mainly the creek bed, which forms the overflow channel from the wetland to the beach. The creek's course has been partly re-aligned into a narrow easement between dwellings along Sandy Place. After large rainfall events when flows are high, this leads to scouring of the creek bed and erosion at its mouth. The mouth of the creek at the beach has been observed to shift its location and cause erosion to the dune during large events.

In the past, Council has attempted to prevent this kind of erosion and protect adjacent residences by the installation of boulders at the creek's mouth, and the installation of gabions on either side of the culvert under Sandy Place.

As flooding can be expected to become more severe with increased runoff in the catchment, caused by increased clearing, actions should be taken to further stabilise the creek course and easement. This could be achieved by planting to complement existing boulders. Deep rooted vegetation would be more efficient in stabilising soils than current lawn grasses, and diverse planting would provide a better habitat link along the creek corridor.

Hills and headlands

Up until relatively recently, erosion on the hillsides and slopes around the reserve and the lagoon would have been minimal, as the majority of land was densely vegetated with native vegetation. Erosion would have mainly occurred as a result of clearing for rural activities or in areas cleared as part of fire control measures.

However, with increased amounts of bushland being cleared and soils being disturbed by construction activities, erosion of slopes in and around the reserve and within the wetland's catchment has increased significantly. The reduced surface roughness and vegetation cover results in large quantities of runoff, eroding the unprotected soil surface. Sediment can be observed suspended in the wetland after a significant rain event. A soil and water management plan is in place in order to minimise the risk of turbidity occurring in the wetland after rain events.

2.2.3. Flora

Remnant Vegetation

Remnant natural vegetation is still predominant in many areas adjacent to Long Beach Foreshore and Wetlands Reserve, but is becoming under increasing pressure from new residential developments. The remnants within the reserve should therefore be protected and enhanced as far as possible, while negotiating recreational demands. Remnants in the reserve are the Coast Banksia (*Banksia integrifolia)* dominated vegetation community behind the dune, stands of Spotted Gum Forest on the slopes surrounding the wetland and stands of forest on the wetland fringes including Casuarina Forests, Melaleuca Forest and Coastal Eucalypt Forest with Forest Red Gum (*Eucalyptus tereticornis*) and Swamp Gum (*Eucalyptus ovata*) groves.

The wetland itself is a reed swamp, with normal backshore inundation levels of 3.5m AHD (Webb, McKeown & Associates 2001). It comprises species such as Rushes (*Juncus sp*), Cumbungi (*Typha sp*), Twig Rushes (*Baumea sp* and *Cladium sp*), Spike Rushes (*Eleocharis* sp), Common Reed (*Phragmites australis*) and saw sedges (*Gahnia sp*). Fringing the wetland, some Kangaroo Apples can be found and Casuarina groves (*Casuarina sp*) line the wetland, forming a transition to the steep sclerophyll forest on the adjacent slopes, characterised by Spotted Gum (*Corymbia maculata*), Swamp Mahogany (*Eucalyptus botryoides*) and Burrawang (*Macrozamia communis*) dominated understorey (Eurobodalla Shire Council 1996, p.9).

The area of bushland at the western end of Long Beach is particularly important because of its protection of vegetation in the adjacent nature reserve . It includes a small area of littoral rainforest on the boundary. The NPWS advises that this land should be rezoned to 7(a) Environmental Protection to ensure on-going conservation of the native vegetation and habitat.

Remnants of Coastal Wet Heath Forest also occurs along the edges of the Lagoon. It is restricted to acid sulphate soils above semi saline flats along edges and low lying tributaries of coastal lagoons between Seven Mile Beach and Bermagui. Coastal Wet Heath Forest is low-medium forest up to 10 m tall, dominated by Swamp Oak (*Casuarinas glauca*). Paperbark (*Melaleuca ericifolia*), Boobialla (*Myoporum acuminatum)*, Sydney Golden Wattle (*Acacia longifolia var.longifolia* and *Parsonia straminea* occur in the intermediate shrub layer. The groundcover is variable and includes Cutting Grass (*Gahnia clarkei)*, along with native sedges such as (*Baumea juncea*) and low herbs such as Native Violet (*Viola hederacea)*. This vegetation community is considered vulnerable by NPWS.

The main dune at Long Beach foreshore is fairly well vegetated with Spinifex (*Spinifex sericeus*), some reeds including Knobby Club Rush (*Isolepis nodosa*) and Marram Grass (*Ammophilia arenaria*) (Eurobodalla Shire Council 1996, p.8).

The dune vegetation in the reserve beyond the immediate beach area consists of remnant stands of Coast Banksia (*Banksia integrifolia*), Coastal Wattle (*Acacia sophorae*) and Swamp Oak (*Casuarina glauca)* where it has not been cleared.

The native indigenous vegetation community of the swampy backbeach has been identified as *South Coast Forest Complex* in a survey of terrestrial ecosystems of the Eurobodalla LGA undertaken by the NPWS. South Coast Forest Complex occurs in the upper reaches of major river estuaries and tributaries between Seven Mile Beach and Wallaga Lake. South Coast Forest Complex is a low medium dense forest up to 15 m tall dominated by Swamp Oaks (Casuarina glauca) with Coastal Wattle on sandy dunes (*Acacia sophorae*) and Mangroves in the saline mudflats (*Avicennia marina*). The ground cover is sparse with herbs and

graminoids including *Commersonia cyanea*, Trailing Pratia (*Pratia pupurescens)* and *Rhagodia candolleana*. This vegetation community is considered vulnerable by NPWS.

Sclerophyll Forest can be found adjacent to the site on steep slopes, namely on Square Head, and to the north and north-east of the wetland (Eurobodalla Shire Council 1996, p.9). Much of the Banksia vegetation in backbeach areas behind Sandy Place is now under threat, as some new residents vandalise tree stands in order to improve views from their properties to the ocean. Self-motivated, illegal mowing by residents prevents regeneration and re-growth of young native plants.

Refer to Appendix 01 for an extensive listing of local plant species.

Threatened Species

Eurobodalla Shire supports a number of threatened and endangered species and since a large part of the area covered by this Plan of Management was until recently relatively undisturbed, it is likely that threatened or endangered species may be found within the reserve. This especially applies to the wetland and its catchment. The wetland is one of the major ones in the Shire and supports a large number of both flora and fauna. In order to determine whether any threatened or endangered species occur in the reserve, a detailed study should be undertaken.

Other Vegetation

A large portion of the reserve in backbeach areas has previously been cleared and formed part of pasture land when the site formed part of the Higgins Dairy Farm. As a result, large sections of the backbeach reserve are dominated by pasture grasses and some weedy grass species mixed in with native grasses such as Kangaroo Grass (*Themeda australis*).

Cultural plantings are few and consist mainly of Norfolk Island Pines (*Araucaria heterophylla*) planted at the eastern end of Bay Road, and on the dune in front of properties in Sandy Place. These trees were commonly used as markers along beaches and to protect residences from salt-laden winds.

Horticultural plantings are limited to private gardens and recent landscape works as part of the development of Long Beach Estate. These consist of additional avenue planting of Norfolk Island Pines along Sandy Place, planting of Cabbage Tree Palms (*Livistona australis*) and exotic shrubs and groundcovers in new open space areas and around the new Higgins playground. For their most part, these plantings reflect little of the area's natural landscape character and are a poor substitute for vegetation cleared as part of the subdivision process.

Weed Growth

In backbeach areas, some weedy grasses grow together with native grasses on former pasture land, but do not form a threat yet to native vegetation remnants which are regenerating in areas that are no longer mown or grazed.

A particularly serious weed is Bitou Bush (*Chrysanthemoides monilifera*) which has been planted along many beaches on the NSW coast in the past as a means to re-stabilise dunes after mining. Currently, Bitou Bush is limited to dunes and backbeach areas, but it should be removed and any further spread prevented.

A common weed in many parts of the reserve are Fleabanes (*Conyza sp*), particularly in disturbed areas from where they spread into other parts.

A minor threat in the reserve to date are garden escapees, which consist of horticultural plantings becoming naturalised and colonising the reserve. However, this kind of invasion of bushland and reserves by non-native plants can be expected to significantly increase with development on adjacent land and in the wetland catchment. Weed species propagate and are easily spread by runoff along hillsides, gullies and slopes and will thus easily invade previously intact bushland on the wetland fringe, as well as the wetland itself. The fragmentation and reduction of bushland make it increasingly vulnerable to weed invasion and infestation, with the increase of edge effects, so that few of the narrow corridors of native vegetation in future residential areas can be expected to remain weed free in the medium to long term. It is therefore of great importance to educate the community in regards to utilising native plant species in gardens and the responsibility of community members in protecting and preserving their natural environment.

2.2.4. Fauna

Since the area remained undisturbed by urban development until relatively recently, it is likely that threatened or endangered species may be found within the reserve, particularly in the wetland or its catchment. Nearby Cullendulla Creek Nature Reserve is habitat to at least three vulnerable species and it is possible that several other ones utilise the area as well (Kutzner 2001). The wetland in Reed Swamp Lagoon is within close proximity and is one of the major wetlands in the Shire, supporting a large number of both flora and fauna. A large number of birds in particular can be observed using the wetland and the Shire's wetlands in general provide habitat for species protected by international treaties (Eurobodalla Shire Council 1999). However, no fauna survey has previously been undertaken for the area. In order to determine whether any threatened or endangered species occur in the Long Beach Foreshore and Wetlands Reserve, a detailed study should be undertaken.

2.2.5. Environmental and Water Quality

The Lagoon to date has remained in a mainly pristine state. This is largely due to the predominantly natural condition and undisturbed biological integrity of the ecosystem and general environment in the Lagoon's catchment. The extent of native bushland, the undeveloped nature of the catchment, and the remote location of the wetland in relation to urban development and intensive land use, have minimised human pressure or disturbance of the natural environment. As a result, the biological diversity of native wildlife and plants is rich and of high conservation significance. This is acknowledged by the lagoon's listing as wetland of State significance under State Environmental Planning Policy (SEPP) No 14: Coastal Wetlands.

Presently, no detailed water quality measurements are available for the wetland. Still, the biological diversity and in particular the diversity of amphibians observed living in the wetland, indicates that the water is of high quality. However, since the commencement of construction works for residential development and associated clearing of bushland in the western part of the catchment, extremely high turbidity can be observed in the Lagoon after rainfall events. This has been frequently reported by local residents and has been confirmed as an environmental issue by earlier studies such as the Batemans Bay Vulnerability Study (1996). This can be interpreted as an indicator that water quality has already declined in Reed Swamp Lagoon since the commencement of clearing and residential subdivision. Installed sediment control measures appear to be failing and little has been done to ameliorate the situation, given that the potential for this environmental problem had been recognised at least as early as 1996.

The construction of adequate sediment and erosion control measures was imposed by Council as a condition of consent for the development of Long Beach Estate, in order to prevent the sedimentation of waterways and to control erosion both during construction and in the long term (Eurobodalla Shire Council 1990). The wetland is however already experiencing high turbidity as a result of the large influx of sediments from the cleared areas of the catchment following peak flows. This can be attributed to disturbance in the catchment caused by development and clearing (Eurobodalla Shire Council 1996, p.9). A small set of stormwater treatment ponds has been constructed as part of the new subdivision in a gully to the west of Reed Swamp Lagoon. This facility detains stormwater before it enters the wetland.

Increased turbidity and sedimentation negatively impacts on the wetland in a number of ways. Firstly, turbid waters allow little light to penetrate the water, which has negative implications on the ability of wetland vegetation to photosynthesise. This may result in the vegetation being stressed and could result in degradation or loss of reeds and aquatic vegetation in the wetland. At the same time, weeds are favoured and may out-compete native vegetation which results in loss of habitat, food and shelter for native species. Weeds are further favoured by increased nutrient loads and toxins which could enter the lagoon as run-off from roads and private properties, especially where vegetated buffer zones are of inadequate width, and not enforced or adequately maintained (for example through clearing of vegetation for views). Lastly, suspended sediments in the wetland will settle eventually, which will change the underwater topography and depth of water levels and could lead to the siltation of the lagoon or parts of it in the long term. This will have significant ramifications for the species distribution and composition in Reed Swamp Lagoon. All combined together, these processes will most likely result in the loss of the natural character, biodiversity, habitat value and ecological significance of the wetland, producing an urbanised and irreversibly impoverished and degraded lake .

Therefore, in view of the significant disturbance and extent of changes to the Lagoon's catchment that have already occurred as a result of approved subdivisions, the remainder of the catchment should be protected from further urban development. Clearing and urban development are generally the main causes for degradation processes of natural wetlands, due to the resulting increase in pollution and runoff, as well as through loss of biodiversity.

Much bushland in the catchment has been cleared recently and remaining bushland in the catchment should therefore be protected, in order to conserve this coastal wetland of state significance as a nature reserve and wildlife refuge. To this end, a buffer zone consisting of natural bushland should be maintained around the wetland 's perimeter and should be of sufficient width to ensure the protection of water quality and habitat. Such a buffer zone would further assist in preserving the biodiversity and integrity of local bushland, and provide habitat for native wildlife displaced by loss of habitat through clearing on the wetland's western edge. This would be consistent with the precautionary principle of ESD, and would also assist in protecting coastal vegetation, which is currently in decline along the NSW coastline.

Council needs to ensure the adequate protection of waterways and Reed Swamp Lagoon, which is a significant coastal wetland listed and protected under SEPP 14.

2.2.6. Current Reserve Facilities and Uses

Long Beach Foreshore and Wetlands Reserve currently offers few facilities for visitors. Nevertheless, the area is a very popular holiday destination and experiences large numbers of visitors during the Christmas and Easter Holiday breaks as well as on weekends throughout the warmer months. The reserve's main attraction is the beach which is a popular swimming

and surfing spot. The eastern end of the beach is further used for launching boats and other craft into the bay, as the protected waters in this area make it an ideal location for such activities, even though there are no formal provisions such as a boat ramp or turning circle at the end of Bay Road.

The western end of the reserve is currently used for dog-exercising, which is permitted at certain times of the day and is a popular activity enjoyed by many people from surrounding areas. It is further used for vehicle and Four-wheel-drive access across currently undeveloped block of land, illegal camping and bon-fires.

Fishing and viewing of the water are also popular and pleasant past-times, however, there are very few locations behind the dune from where views can be enjoyed of the beach, apart from Bay Road which has direct visual access to the water. As a result, the majority of the reserve seems like a separate entity from the beach.

At the corner of Long Beach Road and Bay Road, a beach shower, picnic table and grass parking area are provided along the foreshore. Other than that there are no other tables or seats provided in the reserve. Due to the close proximity and visual connection between the beach and the road in this area, it is very popular, yet not much shade is provided for visitors.

A new playground named Higgins Playground has been provided by the developer of Long Beach Estate in open space at the corner of Sandy Place and Blairs Road. It consists of an off-the-shelf play unit, catering mainly for small children and allowing only a limited type of play activities.

In the reserve as a whole, there are no facilities such as toilets and change rooms, lights, shelter, picnic facilities, bins, or a structured and coherent circulation system, linking to residential areas. Despite the stands of remnant Banksias behind the dune, there are generally few shade trees that can serve as relaxation areas. As these Banksia stands are being overlooked by private residents, these shade areas offer little privacy to visitors and therefore not sufficient.

Due to the linear nature of Long Beach Foreshore and Wetlands Reserve, apart from the wetland, the majority of spaces are not very wide and therefore not suitable for organised sporting activities which require large open areas. However, there are many opportunities for informal play, strolling, nature exploration and education.

While the reserve is currently mainly used for water-based activities, it has the potential to play a much more diverse role for the growing community of Long Beach and its increasing recreational requirements.

2.2.7. Visual Character

Local Context

The visual character of the area surrounding Long Beach Foreshore and Wetlands Reserve is comprised of a mix of residential dwellings, the more recent ones generally being double-storey. While older dwellings in the eastern half of Long Beach are generally less obtrusive, new dwellings in Long Beach Estate tend to be much larger and more visually dominating due to the complete clearing of subdivided land, and with no vegetation remaining to lessen the impact of substantial dwellings.

At the eastern end of Long Beach, dwellings that are not on the beachfront are generally set between remnant trees or large re-established planting, so that the ridge along which the township is situated still resembles the vegetated ridges in adjacent nature reserves. Currently, the visual impact of Long Beach on the natural scenery of the beach is minimised. However, as the area is becoming more popular, older style dwellings are increasingly being replaced by much larger ones and additional trees are being cut, resulting in a less natural outlook and increased visual impact of dwellings on the foreshore reserve and beach.

While the impact of residential dwellings on the beach is reduced at the very eastern end of Bay Road through a row of established Norfolk Island Pines, the beach style character of dwellings along the majority of Bay Road should be preserved in order to prevent construction of new and more substantial suburban dwellings that could come to dominate the foreshore in this open location.

In the new subdivision of Long Beach Estate, there are few landscape elements and these generally acknowledge little of Long Beach's natural environment. Most private landscape works are dominated by introduced species which could pose a threat to the reserve as garden escapees. Public landscape works correspond little to either the dune or wetland landscape and vegetation character, or to the Spotted Gum Forests found on neighbouring hills and in nature reserves. There is therefore a poor visual connection and coherence between the landscape elements introduced in Long Beach Estate to the reserve's natural landscape character.

Along Sandy Place in Long Beach Reserve, new dwellings overlook the public open space behind the dune environment which could lead to user conflicts between reserve visitors and residents. A further issue in this location is the appropriation of public open space for private purposes, as apparent in private horticultural planting, mowing of grass and pruning of trees in the reserve adjacent to residential properties, often undertaken to the benefit of occupants. These activities have direct visual impact on the reserve by removing trees and shade, and giving visitors a feeling of trespassing or being watched, despite them being on publicly owned land.

Visual Character of Long Beach Foreshore and Wetlands Reserve

The visual character of the reserve's beachfront is largely determined by the scenic qualities of Batemans Bay and the Tollgate Islands. The visual character of the beach on the western end is very different from that of the eastern end, with the latter having a direct visual relationship with residential dwellings in Bay Road. In contrast, at the western end of the beach no houses directly face onto the beach. The slight elevation of the dune and remnant trees beyond it provide a visual barrier to dwellings, and give the beach a much more remote character. The far western end is visually more dramatic with the sharp elevation of Square Head forming its backdrop, contrasting with the otherwise gentle topography in the reserve.

The visual character of the open space area behind the dune varies between being dominated by new dwellings along Sandy Place and being influenced by the coastal environment of the dunes and associated vegetation remnants, with occasional views being afforded to the beach at access points.

The visual character of the wetland lagoon is in stark contrast to the open and expansive views enjoyed from the beachfront. Here, the reserve is dominated by the wetland's large water surface, interrupted by stands of riparian and aquatic vegetation and surrounded entirely by stands of trees shading the water's edge, and sclerophyll forest on the slopes of the catchment. The trees enclose the wetland, separating it from the remainder of the reserve and residential dwellings to give it the character of a refuge. However, this character is unlikely to prevail with subdivisions already approved on the western side of the lagoon

which will come to dominate the view across the water body, when seen from public reserves around the wetland's foreshore.

Illustration 4

Refer to separate document

Illustration 5

Refer to separate document

Illustration 6

Refer to separate document

2.3 INFLUENCES AFFECTING DEVELOPMENT

2.3.1. Ownership

Long Beach Foreshore and Wetlands Reserve is comprised of a number of lots, as mentioned above. The majority of these are Council-owned Community land and Crown land. Information from the Land Titles Office indicates that the original parcel of land that now contains Long Beach Foreshore and Wetlands Reserve is registered in the County of Benandarah in the Northern District, and within Eurobodalla Shire Council and the Locality of Long Beach. The major lots and their ownership are briefly described below (refer to Illustration 01 for boundaries). The table (Section 2.3.2) *"Land included in this Plan*" provides more detailed information about the various lots to which this POM applies.

DP 755904 Lot 7007, Crown Reserve No:72057 Part Long Beach Reserve, Bay Road

This land is a strip of Crown Land approximately 30.4m wide, along the beach frontage of Maloneys Beach and Long Beach at Bay Road. The land comprises about 8.5 hectares and is managed by Council on behalf of the Crown. The land is categorised as Natural Foreshore area (LGA 1993) and is dedicated for Public Recreation & Resting Place for Crown Purposes. Its land use is zoned as 6(a) Public Open Space under Council's LEP. The land is subject to flooding. Only the part of the Reserve located in Long Beach is covered by this Plan of Management.

DP 849895 Lot 55, Sandy Place, Long Beach

This land is Council-owned community land, covering the lagoon and backbeach areas behind Long Beach at Sandy Place, Long Beach. It comprises of 38.8 hectares, the majority of which are contained within the wetland. Part of the land formerly belonged to the Higgins Dairy Farm. It is zoned as 6(a) Public Open Space and 7(a) Environmental Protection: Wetlands and should be categorised as Natural Area: Wetland in accordance with the LGA 1993. *SEPP 14: Coastal Wetlands* applies to the wetland known as Reed Swamp Lagoon. The land is subject to flooding and tidal inundation.

DP 23560 Lot 85, Sandy Place, Long Beach

This land is Council-owned land containing the creek channel linking the wetland to the beach. It is comprised of about 696 m^2 and zoned as 6(a) Public Open Space. It is dedicated community land and should be categorised as Natural Area: Watercourse in accordance with the LGA 1993.

DP 23560 Lot 84, Sandy Place, Long Beach

This land is Council-owned land containing the creek linking the wetland to the beach and is a water outlet to the ocean . It is comprised of about 696 m^2 and is zoned as 6(a) Public Open Space. It is dedicated community land and allocated to drainage and should be categorised Natural Area: Watercoures in accordance with the LGA 1993. The land further includes an easement for access and sewer pipeline. The land is subject to flooding and tidal inundation.

2.3.2. Table of Land included in this Plan of Management

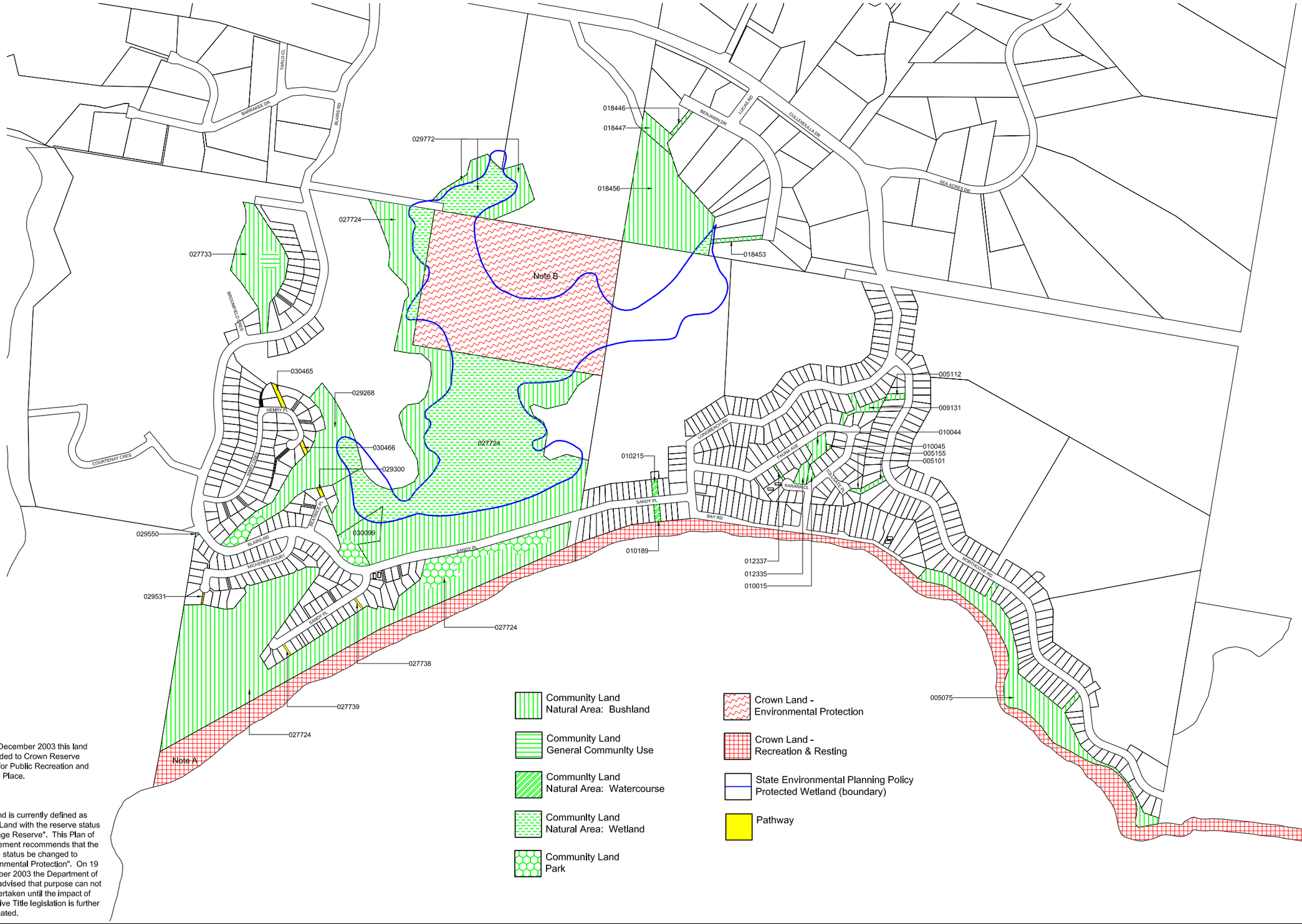
PIN No	Reserve Owner	Reserve Name	Area (ha)	Legal Definition	Existing Reserve Categorisation (ESC Land) or Purpose (Crown Land)	Categorisation (ESC Land) as at date of adoption of this Plan or Proposed Purpose (Crown Land)	Street Name	Locality	Current Zoning	Restrictions & Environmental Protection
Not required	Crown Land	Unnamed	0.133	Located between PIN 30551 & Sandy Place	Public (Council) Road	Public Recreation & Resting Place	Sandy Pl	Long Beach	6(a) 1	Flooding or Tidal inundation - YES
005075	Eurobodalla Shire Council	Unnamed	3.515	Lot/Por: 131 DP: 222540	Natural Foreshore	Natural Area: Bushland	Northcove Beach Rd	Long Beach	6(a)1	
005101	Eurobodalla Shire Council	Unnamed	0.873	Lot/Por: 128 DP: 222540	General Community Use - Undeveloped	Natural Area: Bushland	Northcove Beach Rd	Long Beach	6(a)1	
005112	Eurobodalla Shire Council	Unnamed	0.727	Lot/Por: 127 DP: 222540	General Community Use - Undeveloped	Natural Area: Bushland	Northcove Beach Rd	Long Beach	6(a)1	
005155	Eurobodalla Shire Council	Unnamed	0.028	Lot/Por: 30 Dp: 250240	General Community Use - Undeveloped	Natural Area: Bushland	Tollgate Pl	Long Beach	6(a)1	
009131	Eurobodalla Shire Council	Unnamed	0.2601	Lot/Por: 31 DP: 250240	General Community Use - Undeveloped	Natural Area: Bushland	Long Beach Rd	Long Beach	6(a)1	
010044	Eurobodalla Shire Council	Unnamed	0.246	Lot/Por: 169 DP: 247401	General Community Use - Undeveloped	Natural Area: Bushland	Fauna Ave	Long Beach	6(a)1	
010045	Eurobodalla Shire Council	Unnamed	0.165	Lot/Por: 170 DP: 569136	General Community Use - Undeveloped	Natural Area: Bushland	Fauna Ave	Long Beach	6(a)1	
010189	Eurobodalla Shire Council	Unnamed	0.07	Lot/Por: 85 DP: 23560	General Community Use - Drainage	Natural Area: Watercourse	Sandy Pl	Long Beach	6(a)1	Flooding or Tidal inundation - YES
010215	Eurobodalla Shire Council	Unnamed	0.07	Lot/Por: 84 Dp: 23560	General Community Use - Drainage	Natural Area: Watercourse	Sandy Pl	Long Beach	6(a)1	Flooding or Tidal inundation - YES
012335	Eurobodalla Shire Council	Unnamed	0.15	Lot/Por: 14 DP: 261461	General Community Use - Undeveloped	Natural Area: Bushland	Karana Cl	Long Beach	6(a)1	
012337	Eurobodalla Shire Council	Unnamed	0.027	Lot/Por: 15 DP: 261461	General Community Use - Undeveloped	Natural Area: Bushland	Karana Cl	Long Beach	6(a)1	
018447	Eurobodalla Shire Council	Unnamed	0.373	Lot/Por: 7 DP: 735061	Natural Bushland	Natural Area: Bushland	Benjamin Dr	Long Beach	1(c)	
018456	Eurobodalla Shire Council	Unnamed	4.498	Lot/Por: 13 DP: 717699	Natural Bushland	Natural Area: Bushland & Natural Area: Wetland	Benjamin Dr	Long Beach	7(a) 1(c)	SEPP 14 Wetland Applies Flooding or Tidal inundation - YES
018466	Crown Land	Unnamed	20.23	DP: 755904	Village Reserve	Environmental Protection		Long Beach	6(a) 7(a)	SEPP 14 Wetland Applies Flooding or Tidal inundation - YES

PIN No	Reserve Owner	Reserve Name	Area (ha)	Legal Definition	Existing Reserve Categorisation (ESC Land) or Purpose (Crown Land)	Categorisation (ESC Land) as at date of adoption of this Plan or Proposed Purpose (Crown Land)	Street Name	Locality	Current Zoning	Restrictions & Environmental Protection
027724	Eurobodalla Shire Council	Unnamed	38.8	Lot/Por: 55 Dp: 849895	Natural Wetland	Park & Natural Area: Bushland & Natural Area: Wetland	Sandy Pl	Long Beach	7(a) 6(a)1	SEPP 14 Wetland Applies Flooding or Tidal inundation - YES
027733	Eurobodalla Shire Council	Unnamed	2.561	Lot/Por: 56 DP: 849895	Natural Bushland	Natural Area: Bushland & General Community Use (Water Tower area)	Blairs Road	Long Beach	6(a)1	
027738	Eurobodalla Shire Council	Unnamed	0.013	DP: 849895	General Community Use	Pathway *	Sandy Pl	Long Beach	2(g)	
027739	Eurobodalla Shire Council	Unnamed	0.013	DP: 849895	General Community Use	Pathway *	Sandy Pl	Long Beach	2(g)	
028052 Crown Reserve No: R72057	Crown Land (ESC Trust Manager)	Long Beach Reserve - Part	8.49	Lot/Por: 7007 DP: 755904	Public Recreation & Resting Place (Crown Purpose)	Public Recreation & Resting Place	Northcove Rd/Bay Rd	Long Beach	6(a)1	Flooding or Tidal inundation - YES
029268	Eurobodalla Shire Council	Unnamed	3.49	Lot/Por: 58 DP: 880731	Natural Bushland	Park & Natural Area: Bushland & Natural Area: Wetland	Blairs Road	Long Beach	2(g) 7(a)	SEPP 14 Wetland Applies Flooding or Tidal inundation - YES
029300	Eurobodalla Shire Council	Unnamed	0.026	DP: 880731	Pathway	Pathway *	Blairs Road	Long Beach	2(g)	
029531	Eurobodalla Shire Council	Unnamed	0.021	DP: 1005193	General Community Use	Pathway *	Michener Court	Long Beach	2(g)	
029550	Eurobodalla Shire Council	Unnamed	0.008	Lot/Por: 134 DP: 1005193	Natural Bushland	Natural Area: Bushland	Blairs Road	Long Beach	2(g)	
029772	Eurobodalla Shire Council	Unnamed	2.67	Lot/Por: 403 DP: 1011419	Natural Wetland	Natural Area: Bushland & Natural Area: Wetland	Blairs Road	Long Beach	7(a) 1(c)	SEPP 14 Wetland Applies Flooding or Tidal inundation - YES
30099	Eurobodalla Shire Council	Unnamed	0.939	Lot/Por: 133 DP: 1021712	Natural Bushland	Natural Area: Bushland & Natural Area: Wetland & Park	Blairs Road	Long Beach	2(g) 7(a)	SEPP 14 Wetland Applies Flooding or Tidal inundation - YES Drainage easement
30465	Eurobodalla Shire Council	Unnamed	0.068	DP 1033434	Pathway	Pathway *	Henry Place	Long Beach	1(c)	
30466	Eurobodalla Shire Council	Unnamed	0.034	DP 1033434	Pathway	Pathway *	Henry Place	Long Beach	2(g)	
030551	Crown Land	Unnamed	5.916	Lot/Por: 7007 DP: 755904	Public (Crown) Road	Public Recreation & Resting Place	Sandy Pl	Long Beach	6 (a) 1	Flooding or Tidal inundation – YES

* Note that pathways are not included in the definition of Public Land in the Local Government Act 1993 and hence are not Community Land. This is because pathways are declared under the Roads Act. As a result it is not a requirement to include them in this Plan of Management. However, they are included in the plan because of the access they facilitate around the suburbs.

Long Beach Foreshore & Wetlands Reserve

Community Land Categorisation Map



Note A

On 19 December 2003 this land was added to Crown Reserve 72057 for Public Recreation and Resting Place.

Note B

This land is currently defined as Crown Land with the reserve status of "Village Reserve". This Plan of Management recommends that the reserve status be changed to "Environmental Protection". On 19 December 2003 the Department of Lands advised that purpose can not be undertaken until the impact of the Native Title legislation is further investigated.

Illustration 07

File Number 00.4647	Datum	Designed For	
Cad Reference C:\TechData\4000\4490\A - Plan of Management\Categorisation Map	Surveyed	Design Speed	
Job Number	Drawn DLP	Road Width	
	Date December 2002	Lane Width	
	Checked	Pavement Depth	

Reduction Ratio

Scale 1:5000 @ A1 Paper Size

0 100 200 300 400 500m

Technical Services Division

Approved On Behalf Of EUROBODALLA SHIRE COUNCIL

Andrew Parkinson

Technical Services Manager

Date December 2002

No.	Amendment Details	A	B	C	D	By	Appd	Date
1	Correction of Pin 30465 - is a pathway - not Community Land					DP	AP	28/10/03

Development Approval NOT Required

EUROBODALLA SHIRE COUNCIL

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Long Beach Foreshore & Wetlands Reserve

Plan of Management
Community Land - Categorisation Map

Project No. 4490-A

Sheet of 1 | Set 1 | A

Archived

2.3.3. Legislation, Zoning & Planning Controls

State Government

It should be noted that several legislative Acts and planning instruments and their respective objectives govern the management of Long Beach Foreshore and Wetlands Reserve. These include:

- The *Local Government Act 1993* (as amended);
- The *Crown Lands Act 1989*;
- The *Rivers and Foreshores Improvement Act 1948;*
- The *State Environmental Planning Policy 14: Coastal Wetlands*.
- The *Threatened Species Conservation Act 1995*
- *Environment Protection and Biodiversity Conservation Act 1999*
- *Environmental Planning & Assessment Act 1979*
- *Eurobodalla Rural Local Environmental plan 1987*

Other legislation relevant to this Plan include:

- *National Parks & Wildlife Act 19774*
- *Native Vegetation Conservation Act 1997*
- *Noxious Weeds Act 1993*
- *NSW Coastal Policy 1997*
- *NSW Wetlands Management Policy 1996*
- *NSW Coastline Hazard Policy*

The NSW *Local Government Act 1993*

The *Local Government Act 1993* provides for and requires the preparation of Plans of Management for all community land administered by Councils. Plans of Management categorise the land as being within one or more categories as prescribed by the Local Government Act, according to their use, characteristics of the natural environment and significance to the community.

The categories for classification are Natural Area, Sportsground, Park, Area of Cultural Significance and General Community Use. Natural Areas are further classified into Bushland, Wetland, Escarpment, Watercourse, and Foreshore.

Regulations for the categorisation of community land are prescribed by the *Local Government (General) Regulation 1999*.

Section 7 (e) of the Local Government Act "requires councils, councillors and council employees to have regard to the principles of Ecologically Sustainable Development in

carrying out their responsibilities". Refer to Appendix 02 for a summary of the principles of Ecologically Sustainable Development (ESD).

Section 8 of the Local Government Act guides Councils in developing best management practices for the management, development, protection, restoration, enhancement and conservation of land for which it is responsible.

The Act further aims at ensuring public input into the process of developing management practices for community land.

The Local Government Act 1993 further specifies the conditions and requirements under which community land may be leased or licences issued (refer to Part 2; Sections 45-47). It requires that community land be kept free for the use of the general community, that community land must not be sold, and cannot be leased or licensed for more than 21 years.

The NSW *Crown Lands Act 1989*

The part of Long Beach Foreshore and Wetlands Reserve that is Crown Land (refer to Illustration 01) is subject to the conditions as set out in the *Crown Lands Act 1989*. Trusteeship is vested with Eurobodalla Shire Council and as such the land is classified as community land under the *Local Government Act 1993*, providing Council with a specific approach to the management and classification of Crown Land. It prescribes the activities that can be carried out on Crown Land and outlines the procedures for the preparation of a Plan of Management.

The *Crown Lands Act* aims at ensuring that Crown Land is managed for the benefit of the people and that it is reserved or dedicated for public purposes, encouraging the public use and enjoyment of the land and preventing its alienation from the community by private interests. As such, the Act specifies that "the term of a lease of Crown Land (including any option for the grant of a further term) granted by the Minister is not to exceed 100 years".

Principles of Crown land management

For the purposes of the Crown Lands Act, the principles of Crown land management, as listed in Section II of the Act, are:

(a) that environmental protection principles be observed in relation to the management and administration of Crown land,

(b) that the natural resources of Crown land (including water, soil, flora, fauna and scenic quality) be conserved wherever possible,

(c) that public use and enjoyment of appropriate Crown land be encouraged,

(d) that, where appropriate, multiple use of Crown land be encouraged,

(e) that, where appropriate, Crown land should be used and managed in such a way that both the land and its resources are sustained in perpetuity, and

(f) that Crown land be occupied, used, sold, leased, licensed or otherwise dealt with in the best interests of the State consistent with the above principles.

The NSW *Rivers and Foreshores Improvement Act 1948*

This Act aims at improving rivers and foreshores and preventing erosion of land by tidal and non-tidal waters, as well as providing for works to be carried out to remove obstructions from rivers and foreshores.

Under the *Rives and Foreshores Improvement Act 1948*, protected waters are defined as

> A river, lake into or from which a river flows, coastal lake or lagoon (including any permanent or temporary channel between a coastal lake or lagoon and the sea) (Section 22A).

Rivers are defined as

> any stream of water, whether perennial or intermittent, flowing in a natural channel, or in a natural channel artificially improved, or in an artificial channel which has changed the course of the stream of water and any affluent, confluent, branch, or other stream into or from which the river flows (Section 2, RAFIA1948).

The following parts of Long Beach Foreshore and Wetlands Reserve therefore come under the protection from the Act:

- The wetland and the creek linking the lagoon to the beach;
- Banks, shores and beds of the above;
- Land that is not more than 40m from the top of the bank or shore of the above; and
- Material deposited on or under land in the above areas.

Works in these areas therefore have to comply with this Act and consent may have to be obtained for works to be carried out. The current consent authority is the Department of Land and Water Conservation (DLWC).

State Environmental Planning Policy No. 14: Coastal Wetlands

The wetland lagoon in Long Beach Foreshore and Wetlands Reserve is protected under the *State Environmental Planning Policy (*SEPP*) 14 Coastal Wetlands*. The Policy has been implemented under the *Environmental Planning and Assessment Act (*EPAA*) 1979* and aims to ensure that "coastal wetlands are preserved and protected in the environmental and economic interest of the State" (Section 2).

Under SEPP 14, all of the wetland is protected (refer to Illustration 03) and restrictions on development do apply, including restoration works. It is illegal to clear, construct a levee, drain or fill the land to which the Policy applies, except with the consent of Eurobodalla Shire Council (the consent authority under the Policy) and the concurrence of the Director of the National Parks and Wildlife Service. "Clearing, in relation to land, means the destruction or removal in any manner of native plants growing on the land", but is permitted for certain circumstances (refer to Section 7 (4)). Consent from both authorities must also be obtained for restoration works. Consent for development can only be given after consideration of the issues outlined in Section 7 (2). For restoration works, a restoration plan must be prepared in accordance with the guidelines issued by the Department of Urban Affairs and Planning.

The *Threatened Species Conservation Act 1995*

The *Threatened Species Conservation Act* aims to conserve threatened species, populations and ecological communities of plants and animals. It strives to encourage the protection of threatened species, populations and ecological communities directly or indirectly through the protection of their habitat. It further aims to manage the processes by which the species, population or ecological community have become threatened or vulnerable.

Apart from outlining the processes and procedures for listing of a species, population or ecological community as threatened (endangered or vulnerable), it provides the responses to be undertaken to threats to the survival of listed biodiversity and their respective habitats. Roles and responsibilities of local authorities in the protection of biodiversity are outlined and include promoting the recovery of threatened species and the management of key threatening process within a Council's local government area.

Eurobodalla Shire Council

Eurobodalla Rural Local Environmental Plan 1987

The *Eurobodalla Rural Local Environmental Plan 1987* determines the appropriate land use and zoning of the local area in accordance with the Environmental Planning and Assessment Act 1979. It applies to land in public and private ownership in and adjacent to the reserve.

The plan includes a series of objectives which address the orderly and proper development of rural land. They address environmental protection and the management of rural land, provide for heritage conservation and the enhancement of natural places of scientific, Aboriginal or cultural significance, aim at the provision of integrated transport infrastructure, encourage the development of recreational opportunities and tourism facilities and the appropriate development of industry, commerce and public facilities.
The Plan's zoning of land in the Reserve and associated objectives are shown on Illustration 01: *Current Zoning and Ownership* of this document. They are summarized below.
Some of the plan's objectives related to the zoning of land in the Reserve and are of particular relevance to the natural areas of Long Beach:

The objectives of Zone No.7(a) Environment Protection

(a) to protect freshwater and estuarine wetlands and enable them to continue to function as breeding and feeding areas for birdlife, fish and shellfish;
(b) to ensure the ecological, scenic and environmental attributes of functioning wetlands are not altered;
(c) to encourage and promote rehabilitation of previously disturbed wetlands; and
(d) to contribute to the implementation of State Environmental Planning Policy No. 14 - Coastal Wetlands.

The objectives of Zone No.6(a) Public Open Space

(a) to identify land which is owned by Council or the Crown and which has been set aside for use by the public as open space or land in private ownership which is to be acquired by Council for public open space;
(b) to permit a range of uses on land within this zone normally associated with public recreation; and
(c) to ensure that a range of recreational opportunities is provided that is compatible with the natural environment.

The objective of Zone No.1(c) Rural Small Holdings Zone

(a) to provide opportunities for small scale agricultural activity;
(b) to provide residential opportunities while retaining the scenic quality and overall character of the land and the environmental quality of any adjoining waterways, wetlands, rainforest or other environmentally sensitive areas;
(c) to ensure that environmental impacts of development and the impact of development on land or activity in surrounding zones are fully considered in advance of any significant development;
(d) to ensure that development is compatible in scale and density with the level of essential public services and facilities to be provided;
(e) to permit a variety of uses where these are compatible with small scale rural activity or require a location outside urban areas or villages; and
(f) to permit the provision, expansion or maintenance of utility services within this zone.

Eurobodalla Shire Council Zoning Provisions
Under Council LEP, in areas zoned 6(a) Public Open Space, 7(a) Environment Protection Wetlands or (8) National Parks and Nature Reserves, clearing of native vegetation is only allowed after obtaining Council's consent (Eurobodalla Shire Council 1999, p. 15).

The *Natural Areas and Undeveloped Reserves Plan of Management 1997*
This Plan covers the numerous parcels of Council-owned Community Land in the Shire that contain significant natural features (categorised as Natural Areas) and undeveloped urban land in a natural state (undeveloped reserves) and not adjoining large areas of natural areas of Community Land, State Forest or National Park.

Under the Plan, Long Beach Foreshore and Wetlands Reserve is currently categorised as Natural Area – Foreshore, considering the reserve's foreshore to be its most significant natural feature. While the Plan acknowledges the protection of the wetland under SEPP 14, it however failed to recognise the wetland as a significant feature demanding further categorisation of different sections of the reserve. As large portions of the reserve do not immediately form part of the foreshore, classification of the whole of the reserve as 'Natural Area – Foreshore' does not do justice to other significant natural features in the Reserve.

The Management objectives set out for Long Beach Foreshore and Wetlands Reserve in the *Natural Areas and Undeveloped Reserves Plan of Management* are those as set out in Section 36E and 36N of the Local Government Act 1993 (including amendments):

a) to conserve biodiversity and maintain ecosystem function in respect of the land, or the feature or habitat in respect of which the land is categorised as natural area, and

b) to maintain the land, or that feature or habitat, in its natural state and setting, and

c) to provide for the restoration and regeneration of the land, and

d) to provide for community use of and access to the land in such a manner as will minimise and mitigate any disturbance caused by human intrusion, and

e) to assist in and facilitate the implementation of any provisions restricting the use and management of the land that are set out in a recovery plan or threat abatement

plan prepared under the *Threatened Species Conservation Act 1995* or the *Fisheries Management Act 1994;* and

f) to maintain the foreshore as a transition area between the aquatic and the terrestrial environment, and to protect and enhance all functions associated with the foreshore's role as a transition area; and

g) to facilitate the ecologically sustainable use of the foreshore, and to mitigate the impact on the foreshore by community use.

Management objectives specific to the *Natural Areas and Undeveloped Reserves Plan of Management*, and applicable to Long Beach Foreshore and Wetlands Reserve, are:

- to restore, preserve and protect the valuable characteristics of each Natural area of Community Land; and

- to manage passive recreation opportunities that meet the needs of the community in Natural areas consistent with the conservation of natural values of the land concerned; and

- to promote visitor safety, awareness and appreciation of the natural environment.

The Plan further integrates the principles of ecological sustainability, which have to be considered in the preparation of all plans and strategies, as prescribed by the *Local Government Act 1993* and Eurobodalla Shire Council's *Sustainable Living Policy*. Refer to Appendix 02 for a list and definition of the Principles of Ecologically Sustainable Development.

2.3.4. Categorisation of Community Land & Purposes for Crown Land

Community Land:

In accordance with the guidelines set out in the *Local Government Act 1993* and accompanying Regulations, Long Beach Foreshore and Wetlands Reserve should be divided into the following categories of community land (refer to Illustration 07):

- Category natural area – wetlands: all public reserves and open space areas around the Reed Swamp Lagoon;

- Category natural area – foreshore: all land along the beach foreshore

- Category natural area – bushland: all land in open space areas and public open space around the wetland fringe, bushland between Sandy Place and Blairs Road and coastal vegetation in backbeach areas

- Park: land in the central backbeach area and pedestrian links through open space corridors.

The *Local Government Act 1993* further specifies the core objectives for the management of those categories. These objectives should form the general guiding principles for the future management of community land in Long Beach Foreshore and Wetlands Reserve. They will be complemented by specific management issues presented in this Plan of Management.

This Plan of Management proposed to re-categorise some Community Land. Refer to Table 2.3.2 for the categorisation of land as at the date of writing this Plan of Management and the proposed re-categorisation of some of this land. The re-categorisation of Community Land will require a Public Hearing as per Sections 40A and 47G of the Local Government Act 1993.

Crown Land:

There are four parcels of Crown Land included in the study area of this Plan of Management.

This Plan of Management recommends that the current Crown Purposes for this land need to be reviewed and changed.

1. PIN No. 18466 – DP: 755904
   Current Purpose: Village Reserve
   Proposed Purpose: Environmental Protection

2. PIN No. 30551 – DP 755904
   Current Purpose: Public (Crown Road)
   Proposed Purpose: Public Recreation and Resting Place

It is recommended that the Department of Land and Water Conservation is notified of these recommendations in order to commence the process required to change the Crown Purpose.

Objectives for the management of Community Land

Objectives for the management of "Natural Area"

The core objectives for management of community land categorised as a natural area (Section 36E, LGA 1993) are:

a) to conserve biodiversity and maintain ecosystem function in respect of the land, or the feature or habitat in respect of which the land is categorised as natural area, and

b) to maintain the land, or that feature or habitat, in its natural state and setting, and

c) to provide for the restoration and regeneration of the land, and

d) to provide for community use of and access to the land in such a manner as will minimise and mitigate any disturbance caused by human intrusion, and

e) to assist in and facilitate the implementation of any provisions restricting the use and management of the land that are set out in a recovery plan or threat abatement plan prepared under the *Threatened Species Conservation Act 1995* or the *Fisheries Management Act 1994*.

Objectives for the management of "Bushland"

In addition to the general objectives for "Natural Areas", core objectives for management of community land categorised as a bushland (Section 36J, LGA 1993) are:

a) to ensure the ongoing ecological viability of the land by protecting the ecological biodiversity and habitat values of the land, the flora and fauna (including

invertebrates, fungi and micro-organisms) of the land and other ecological values of the land; and

b) to protect the aesthetic, heritage, recreational, educational and scientific values of the land; and

c) to promote the management of the land in a manner that protects and enhances the values and quality of the land and facilitates public enjoyment of the land, and to implement measures directed to minimising or mitigating any disturbance caused by human intrusion; and

d) to restore degraded bushland; and

e) to protect existing landforms such as natural drainage lines, watercourses and foreshores; and

f) to retain bushland in parcels of a size and configuration that will enable the existing plant and animal communities to survive in the long term; and

g) to protect bushland as a natural stabiliser of the soil surface.

Objectives for the management of "Wetlands"

In addition to the general objectives for "Natural Areas", core objectives for management of community land categorised as a wetland (Section 36K, LGA 1993) are:

a) to protect the biodiversity and ecological values of wetlands, with particular reference to their hydrological environment (including water quality and water flow), and to the flora, fauna and habitat values of the wetlands, and

b) to restore and regenerate degraded wetlands, and

c) to facilitate community education in relation to wetlands, and the community use of wetlands, without compromising the ecological values of the wetlands.

Objectives for the management of "Watercourses"

In addition to the general objectives for "Natural Areas", core objectives for management of community land categorised as a watercourse (Section 36M LGA 1993) are:

a) to manage watercourses so as to protect the biodiversity and ecological values of the instream environment, particularly in relation to water quality and water flows, and

b) to manage watercourses so as to protect the riparian environment, particularly in relation to riparian vegetation and habitats and bank stability, and

c) to restore degraded watercourses, and

d) to promote community education, and community access to and the use of the watercourse, without compromising the other core objectives of the category.

Objectives for the management of "Foreshores"

In addition to the general objectives for "Natural Areas", core objectives for management of community land categorised as a foreshore (Section 36N, LGA 1993) are:

a) to maintain the foreshore as a transition area between the aquatic and the terrestrial environment, and to protect and enhance all functions associated with the foreshore's role as a transition area; and

b) to facilitate the ecologically sustainable use of the foreshore, and to mitigate the impact on the foreshore by community use.

Objectives for the management of "Parks"

The core objectives for management of community land categorised as a park (Section 36G LGA 1993) are:

a) to encourage, promote and facilitate recreational, cultural, social and educational pastimes and activities, and

b) to provide for passive recreational activities or pastimes and for the casual playing of games, and

c) to improve the land in such a way as to promote and facilitate its use to achieve the other core objectives for its management.

Leases of community land may be granted in respect of the land only if they are consistent with the core objectives of the categories (refer to section 46, *Local Government Act 1993*).

2.3.5. Community Consultation

Process

The consultation process identified the values, issues and objectives associated with the recreational use, environmental protection and management of Long Beach Foreshore and Wetlands Reserve (refer to Appendix 03).

Two workshops were held as part of the community consultation process. The first, Issues-Raising Workshop, was held on Saturday, 24 March 2001, 3.00pm at the Long Beach Fire Station. This meeting was designed to gain community input on the issues and priorities for the management of Long Beach Foreshore and Wetlands Reserve. The meeting was structured to identify what people liked in regard to the natural environment, recreational facilities and visual character, what they disliked, and what should be done to address these issues. The proposal and consultant's obligations were discussed and people were invited to bring up any issues and ideas relevant to the future use and management of the reserve and foreshore. In addition to these, several meetings were held with representatives of LBIG, to identify issues and management visions the group holds for the reserve.

Following the first community workshop, a first draft masterplan was prepared for Long Beach Foreshore and Wetlands Reserve, which was then presented to the community in a second, Design Reviewing Workshop, held on 11/04/01, 6.00pm at the YMCA, to receive

further community input, feedback and comment. This enabled the community to directly assist with the outcomes and contents of the project. Summaries of the meetings are included in Appendix 03.

To ensure broadly based feedback, a questionnaire (refer to Appendix 03) was prepared so that people unable to attend meetings or uncomfortable about voicing their opinion at public gatherings, still had the opportunity of having an input in the process. Feedback from both the workshop and the questionnaire was then assessed, and amendments made consistently with the outcomes of the consultation. The questionnaire was handed out at both community meetings and was also distributed by Council to public buildings in the Shire. Questionnaires were then evaluated for inclusion in the Plan of Management (refer to Appendix 03).

Illustration 8

Refer to separate document

Plate 25: A new easement for public access to the reserve in Sandy Place. Access has not been formalised into the reserve and new easements are poorly coordinated with currently used beach entrances.

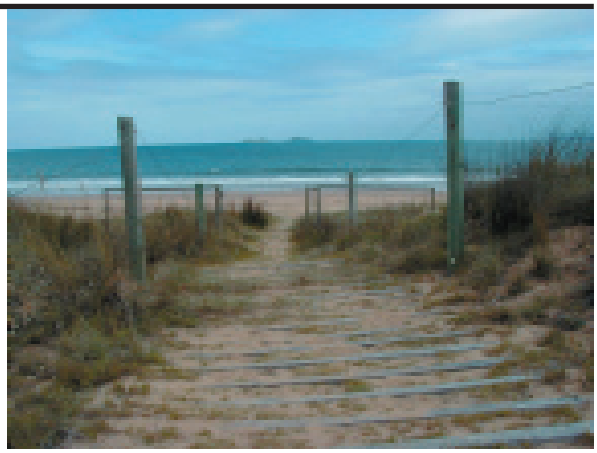

Plate 26: Access to the beach needs to be stabilised to prevent dune erosion and trampling of vegetation. Additional access paths need to be provided in locations that link in with the remainder of the path system.

Plate 27: Access paths will require adequate maintenance and surfaces to ensure they are safe and suitable for a wide range of users.

Plate 28: Backbeach areas in the western beach section are characterised by a mix of Banksia groves and native meadows. The existing old vehicle access track should be maintained for emergency vehicle access to the western end of the beach and the rear of properties.

Plate 29: Vehicular access to the reserve is no longer desirable as it encourages vandalism, rubbish dumping and other illegal activities, which pose increased maintenance problems.

Plate 30: The existing informal vehicular access tracks could be transformed and improved to provide a coherent pedestrian path and circulation system throughout the reserve.

Plate 31: The character of landscape works and plants installed as part of the subdivision poorly reflects and corresponds to the natural environment of Longbeach.

Plate 32: The new Higgins playground provided at the intersection of Sandy Place and Blairs Road offers play for a limited age group and a poor selection of plant diversity.

Plate 33: Parts of the reserve are being used by adjacent residents for their own private purposes and use. This is alienating public open space and discouraging other visitors to the area.

Plate 34: View to the east along Longbeach. The dwellings in Bay Road have a strong visual impact on the landscape and distract from the natural setting of the beach.

Plate 35: The narrow strip of the reserve in Sandy Place, unsuitable for revegetation due to its location under power lines could be used to accommodate overflow parking.

Plate 36: Residents prefer new services and facilities to be located in the central backbeach area to relieve pressure and congestion on Bay Road during holiday season.

Plate 37: Displaced wildlife which lost its habitat as a result of clearing and development, and can increasingly be found grazing near dwellings. The result is increased stress, territorial conflicts, disturbed breeding patterns and risk of injuries from cars and sharp objects including wire fences.

Plate 38: The meadow in the western backbeach area needs to be maintained as ideal grazing grounds for displaced wildlife, with links to bushland and the adjacent nature reserve.

Plate 39: Weeds such as Blackberries can be found in backbeach areas of the reserve and should be controlled before they can establish a stronger foothold. It needs to be taken into account that they currently provide shelter for Bandicoots and small birds.

Plate 40: Holes left in the ground by feeding Bandicoots indicate the reserve's value as habitat for native wildlife. It is important to preserve this kind of habitat as it is becoming increasingly rare.

Plate 41: Recent dune stabilisation and revegetation works have been damaged by trampeling and informal access by vehicles.

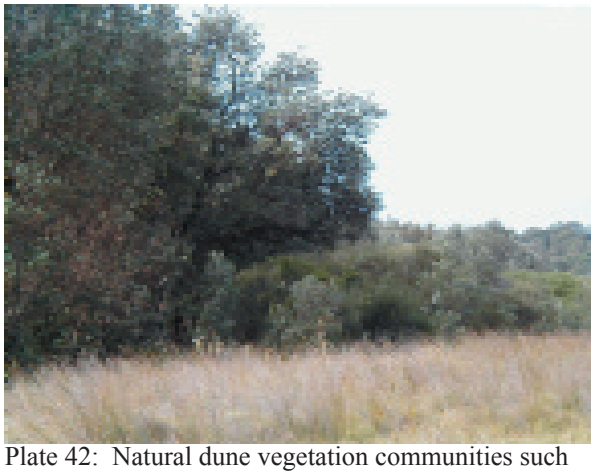

Plate 42: Natural dune vegetation communities such as these Banksia stands are becoming increasingly rare as a result of increasing urban development along the NSW coast. The dedication of a reserve in this area offers the unique opportunity to preserve this vegetation for the enjoymemt of future generations.

Plate 43: For the most of the year, existing car parking facilities at Bay Road are sufficient to accommodate visitors. However, congestion often arises during peak holiday periods when increased numbers of visitors come to the area.

Plate 44: A small picnic shelter and a beach shower at Bay Road are the only facilities currently provided for visitors in the reserve.

Plate 45: The reserve in Bay Road is not adequately protected from vehicular access which sometimes is considered to cause user conflicts with local residents.

Plate 46: The simple beach shower at the corner of Bay Road and Longbeach Road might not be sufficient for the increase in use as a result of tourism and development in the area.

Plate 47: The eastern-most end of the beach in Bay Road is protected and therefore a safe and popular spot for swimming, particularly for small children. It is also used for informal launching of small boat craft.

Plate 48: The reserve in Bay Road is devoid of vegetation, apart from some Norfolk Island Pines. Clearing of vegetation has resulted in the disappearance of all natural dune vegetation and biodiversity and this part of the reserve and lacks in visual interest and

Plate 49: Over time, fences protectying the sensitive dunes have been vandalised or fallen into disrepair. They will need to be repaired and maintained in order to ensure the long-term success of dune stabilisation and revegetation works.

Plate 50: Informal tracks are being formed across dunes at the end of the drainage easement, where the access path is not formally continued to the beach. A continuous stabilised path needs to be installed and the remainder of the dune fenced off and protected.

Plate 51: The extent of current dune fencing finishes behind the western end of Sandy Place, but should be continued all the way along the foreshore to protect dunes from erosion.

Plate 52: The culvert at Bay Road has become deteriorated. Flows after storms cause scouring and erosion to the beach.

Plate 53: Dune vegetation has been largely cleared behind properties along Sandy Place, which has resulted in parts of the dune becoming unstable and being eroded. To prevent the same kind of damage, indigenous vegetation along the western section should be fenced and protected.

Plate 54: The creek outlet in the central part of the beach is very eroded and requires stabilisation to protect adjacent properties.

3. ISSUES AND OPPORTUNITIES

Based on the site analysis, site visits and feedback from LBIG and local residents, questionnaires and consultation meetings, the following issues and opportunities were identified for the management of Long Beach Foreshore and Wetlands Reserve. Relevant planning documents and legislation have also been taken into consideration in identifying issues. These provide the basis for the preparation of the Plan of Management and the Landscape Masterplan for the reserve.

3.1 RECREATIONAL USE

Issues	Opportunities
Lack of formal areas or facilities for recreation other than beach activities.	Provide for a range of nature based recreational opportunities, such as walking, passive recreation, informal play, environmental observation and education, to cater for a broader section of the community.
No change room, showers or toilet facilities.	Provide facilities at a convenient location.
Lack of picnic facilities in the Reserve.	Provide sheltered picnic areas, seats and tables.
Lack of seating, shelter and other furniture throughout the Reserve.	Install seating throughout the Reserve. Provide bins, bubblers, etc. Provide some shelter in strategic locations.
Limited shady areas and protection from sun and wind.	Provide shade trees and/or structures.
Illegal car access resulting in vandalism to fences and remnant vegetation, and rubbish dumping.	Block access points to prevent illegal car access. Install sturdy protective fencing around stands of remnants to prevent trampling and mowing, and encourage re-growth.
Boat launching is not desirable for the wetland, due to the disruption it causes to wildlife and negative impacts on water quality and vegetation.	Encourage passive enjoyment of the lagoon through land-based activities such as the installation of jetties and bird-watching structures.

Few opportunities to launch boats in the Shire.	Allow for the continued use of the eastern end of Long Beach for the informal launching of small boats.
Wildlife and nature enjoyments is one of the key activities in the Reserve, yet is becoming increasingly under threat from development and associated nature degradation.	Provide education about threatening processes and local ecology to create community awareness and prevent further degradation and vandalism.

3.2 CIRCULATION AND ACCESS

Issues	Opportunities
Entrances to the Reserve poorly defined.	Mark entry points to the Reserve and define with small entry features or planting.
No formalised circulation system and no formal paths.	Formalise pedestrian circulation system and provide clearly marked entry points.
Poor pedestrian links through the site between new residential areas, YMCA land and open space/ foreshore areas.	Strengthen links to the surrounding neighbourhood and community facilities.
Links to other open space areas and reserves not formalised and unsafe in parts.	Provide links to other nature reserves and stabilise paths to make safe.
No opportunity to cross the creek, in when accessing the beach through the drainage easement.	Construct a pedestrian bridge or boardwalk structure to facilitate safely crossing the creek when full or flooded and minimise erosion to creek banks through trampling.
Need for car parking during peak holiday times can cause traffic congestion and conflicts between visitors and residents during holiday seasons.	Provide low impact and sign-posted over-flow parking for peak holiday periods. Provide better pedestrian and bicycle access routes to the beach to encourage locals to leave cars at home. Provide bicycle racks.
Few locals utilise transport other than cars to visit reserve.	Encourage alternative means of transport such as walking and cycling to prevent traffic congestion and parking conflicts.
No access formalised for emergency vehicles.	Provide an access path or easement suitable for use by emergency vehicles such as fire engine and ambulance, with appropriate signage.
No signage for the orientation of visitors.	Install adequate signage to make visitors aware of the whole reserve and recreational opportunities.

3.3 BIODIVERSITY CONSERVATION, PROTECTION OF WETLAND, DUNES, VEGETATION AND WILDLIFE HABITAT

Issues	Opportunities
Removal of substantial areas of native bushland and wildlife habitat to make way for new developments. This causes severe loss of native vegetation, exposure and death of native wildlife and impacts on the sensitive Lagoon environment.	Conserve all native vegetation and habitat on public open space as a buffer zone around the Lagoon to minimise degradation and impact from new development. Ensure that the Lagoon's catchment is protected from the adverse impacts of future development and that proposed subdivisions are more environmentally sustainable and conserve native vegetation, wildlife habitat and wildlife corridors.
Future development could cause increased clearing of vegetation and habitat on the northern and eastern sides of the Lagoon and increase environmental degradation of the currently pristine wetland. This could result in irreversible damage to the wetland, which is recognised for its State significance.	Apply and enforce development controls to protect native vegetation on private land as adequate buffer zones for the protection of the Lagoon ecosystem. Require environmental impact statements, water quality studies and monitoring, and flora and fauna surveys as part of new development applications in the Lagoon's catchment. Utilise planning instruments and development controls to protect the remainder of the catchment from clearing, to protect biological diversity and natural bushland and to prevent further urban development.
Removal of vegetation has fragmented habitat and exposed wildlife to disturbance. No suitable vegetation corridor exists that could serve as a wildlife habitat link between the ecosystems of the beach and the lagoon and adjacent natural areas.	Maintain and enhance existing native vegetation and habitat in the Lagoon's catchment and on the back dunes, establish a substantial buffer zone around the wetland and investigate the possibility for a wildlife habitat corridor connecting the beach and lagoon foreshores, as well as to nearby Nature Reserves, National Parks and State Forests.
Open space corridors between developed lands are under threat of being completely cleared and not being functional as habitat corridor between the Lagoon, bushland and Square Head Nature Reserve.	Develop planning, development and landscape design guidelines so that viable green wildlife habitat corridors are maintained and wildlife populations continue to survive in the area.

Fragmentation of habitat at the wetland fringes through clearing on adjacent land, and illegal removal of trees in public open space fringing the wetlands to improve views for private property developers.	Investigate the establishment of habitat links or green corridors to nearby nature reserves such as Square Head. Dedicate public open space on the wetland fringe as Nature Reserves and prevent clearing of native vegetation. Develop Council policies to protect the remainder of the catchment from clearing and inappropriate development to protect wildlife habitat and water quality. Tree removal in public open space only to be approved as part of bush fire hazard reduction.
Degradation of wetland environment and water quality through clearing of adjacent land and associated run-off and sediment loads.	Enforce erosion and sediment control in all new developments and introduce water quality monitoring and pollution control measures to protect and conserve the wetland as a valuable habitat and ecological resource. Enforce guidelines for runoff control and filtering and install sedimentation ponds to treat water before it enters the wetland to prevent high turbidity, which causes wetland degradation. Rezone land to not only protect the wetland, but also adjacent land in the catchment where the majority of impacts on the lagoon originate.
Degraded water quality in the wetland and foreshore.	Council to ensure best practise solutions are put in place for all developments within the wetland catchment, so that the quality of discharged water from neighbouring properties is of the highest possible standard. Protect the catchment from further clearing, subdivision and development. Provide adequate buffer zones around the wetland.

Lack of data about local biodiversity (fauna and flora) in the natural areas. Lack of environmental impact study on the wetland and/or threatened or endangered species.	Undertake a detailed flora and fauna survey of the site in order to determine the biodiversity, conservation significance and existence of any threatened species. Do not approve any further development, subdivision or clearing of land that could provide habitat for threatened species until detailed site investigations have been carried out.
Lack of understanding of the ecological processes and native plants and wildlife	Involve the local community in education, bush regeneration/weed removal activities, ecological restoration and revegetation programs. Provide interpretative signage.
Dieback of trees behind the dune due to trampling, vandalism and wilful damage to create views for private properties.	Protect remnants by fencing off areas large enough to encourage re-growth. Complement mature tree groups by encouraging regeneration and with additional planting.
Loss of a natural understorey layer and increasing weed invasion amongst remnant vegetation behind dunes.	Undertake bush regeneration to remove weeds in the reserve and complement habitat through planting of native shrubs and understorey, to create a variety of habitat and food sources for native fauna and preserve ecological communities for future enjoyment.
Limited success of dune restoration works.	Investigate more successful species and replant. Provide protective fencing around dunes to assist vegetation establishment and prevent trampling.
Lack of native dune vegetation and habitat in the transitional area between Long Beach and Bay Road.	Plant more native plants to enhance visual and environmental amenity for recreational use.
Beach erosion, particularly on the eastern end of Long Beach, results in damage to the dune environment.	Investigate suitable plant species and methods for erosion control along the dune/ foreshore.

Invasion of the natural vegetation and open space area by weeds and garden escapees.	Educate the community about environmental weeds, appropriate plants, local species and vegetation communities.
Weed invasion of drainage lines.	Eradicate weeds and noxious plants by environmentally acceptable methods and replace with native vegetation to provide habitat and amenity and prevent re-establishment of weeds.
Bank erosion in the channelised creek linking the wetland to the beach.	Stabilise creek profile where necessary to reduce erosion and stabilise banks through restoration or revegetation.
Creek currently not visible as link between wetland and bay foreshore	Use vegetation to create awareness of the creek's existence and importance as linking element.
Rubbish dumping amongst remnant vegetation, dunes and wetland.	Provide bins, organise clean-up and education campaigns to promote awareness of keeping waterways and public land clean. Educational programs could be conducted in conjunction with nearby schools or other community groups.
Local interest in maintaining the area's ecological value and interest in participating in improvement programs.	Involve environmental and community groups in planting and bush regeneration activities. These assist in educating users in local ecological processes and instil a sense of care and pride in the Reserve.
Little protection or maintenance of vegetation in reserve to date.	With increased pressures on the reserve as a result of development and increased use, Council's maintenance regime should be adjusted in order to conserve the reserve's ecological, habitat and recreation value.

3.4 VISUAL AND SCENIC AMENITY

Issues	Opportunities
Local residents are illegally clearing native vegetation and destroying habitat so that they can create views from their properties across public land, thus increasing the value of their real estate.	Directly approach offenders and inform them that unauthorised clearing of vegetation on community land is illegal and can be fined. Install signs about the significance of indigenous vegetation and the purpose of public land.
Buildings on Bay Road, Fauna Avenue and Sandy Place have significant visual impact on the reserve and foreshore. Their visual impact becomes greater as dwelling sizes are becoming more substantial and more trees are cleared to make room for them.	Use low shrub planting on dune to assist in screening buildings from the water's edge. Consider policies such as conditions of development consent which regulate tree protection or provide guidance to a minimum of vegetation cover on residential lots in order to reduce visual impact.
Character of new landscaping works by developer and residents does not compliment the landscape's natural character.	Ensure all public landscaping works to use indigenous plant species to maintain the area's landscape character and provide shelter and food sources for native fauna. Provide information about native plants to residents and developers in order to encourage the creation of native gardens and use of native species in planting. Require a Landscape Plan to be submitted and assessed with Development Applications. Inform the community with regard to noxious species and environmental weeds.
Substantial clearing of vegetation around the lagoon is changing its natural appearance and is reducing the diversity of species that can be observed in the reserve and in the area in general.	Consistent with the current legislation's objectives, introduce stricter guidelines on vegetation clearing around the wetland foreshore and in the catchment to prevent it from looking urbanised. Assist in maintaining interesting species diversity and numbers in a natural bushland setting.

Plate 55: Clearing of vegetation is one of the major threats to Reed Swamp Lagoon. It results in increased run-off, water pollution and the loss of wildlife habitat and habitat corridors.

Plate 56: The cleared hillside of Longbeach Estate as seen from the beach. Once the proposed development has been completed, the ridgeline will be cleared and dominated by large dwellings, with the exception of Square Head.

Plate 57: In the process of subdivision, hardly any remnant vegetation is retained. If this practice was to be carried out all around the Lagoon, its ecological value, quality and integrity as habitat would be seri-oulsy threatened and most likely irreversibly damaged.

Plate 58: Dune restoration works are vital for the long-term stability, biodiversity conservation and ecological viability of the dune system.

Plate 59: Views from Blairs Road of the Bay and Reed Swamp Lagoon have been attained through clearing of Spot-ted Gum Forest and riparian vegetation to assist marketing for the new subdivision.

Plate 60: The Spotted Gum Forest shown on this photograph is currently ear-marked for removal, which will severely affect local wildlife presently living in the bush and on the Lagoon. Clearing of forests leaves soils bare and vulnerable to erosion. The lack of vegetation cover further increases surface runoff and runoff velocities. The majority of the catchment drains directly into the wetland. Effective sediment or water quality control ponds must be installed and vegetation retained to prevent long-term threats and degradation.

Plate 61: Heavy sediment loads observed in the wetland after rain are causing highly turbid water. The sediment basin constructed upstream of this section of the wetland is not coping with the increased runoff and sediment loads as a result from clearing. Conditions can be expected to worsen as more forests are cut down. Cleared slopes will be vulnerable to erosion and must be provided with effective sediment control. Turbid water itself poses threats for plants because they are unable to photosynthesise, weeds are favoured due to the increase in nutrients, and habitat value is severely reduced for most native wildlife species.

Plate 62: A drain outlet discharging stormwater just near the wetland. This discharged water receives no treatment before entering the Lagoon, despite the likelyhood of high sediment loads and toxic particles from road runoff being contained in the water.

Plate 63: Garden plants are sometimes planted by residents in the reserve, and some more aggressive horticultural varieties can invade native bushland. While this planting here causes few problems, similar activities if carried out near the wetland fringe can seriously compete with native vegetation and reduce habitat value.

Plate 64: Private residents in Sandy Place have taken it onto themselves to maintain parts of the public reserve adjacent to their properties. This can result in inappropriate management of natural areas for private use, and the alienation of public land from the public by making it appear as part of a backyard.

Plate 65: Mowing edge in the public reserve, maintained by private residents in Sandy Place. Mowing and cutting down regenerating Banksias and other native plants is often undertaken to maintain view corridors for private enjoyment, while jeopardising the amenity of the public in the reserve.

Plate 66: Regenerating Banksias amongst grass in the backbeach areas of Longbeach. Mowing is preventing these Banksias from regenerating naturally in backbeach areas, which would have formerly been covered densely with a dune forest ecological community.

Plate 67: The Tollgate Islands are one of the Bay's most spectacular features. Views of these islands and the Bay itself are highly desired by local residents which leads to tree vandalism or removal of native vegetation on public land.

Plate 68: As a result of clearing Banksias to obtain views, exisiting groves have been thinned out noticably, or are reduced to a few trees. Once mature trees age and die, mowing will ensure that there is no future regeneration of Banksias in the reserve, leaving it barren and void of native habitat and shade.

Plate 69: Mature trees and natural regrowth are often damaged, due to mowing by residents in the reserve. Exisiting Banksia groves need to be protected by fencing to prevent this kind of practice and to ensure the survival of coastal vegetation in the reserve in the long term.

Plate 70: The Lagoon and bushland are central themes in the marketing strategy for the new Longbeach Estate. Yet, with each new stage of the development more of these natural features are being destroyed or threatened through clearing and changes in natural ecological processes.

Plate 72: Reed Swamp Lagoon was once completely surrounded by intact bushland. Gaps are now being created around its edges by the developer and residents, removing riparian vegetation, valuable shelter, food sources and habitat for wildlife.

Plate 71: Spotted Gums have recently been completely cleared. The ridge in the middle ground will be cleared next and remaining bushland will be under threat of degradation from runoff, illegal clearing for views of the lagoon and weed invasion. Habitat corridors from the wetland to other forests will disappear unless they are being planned for.

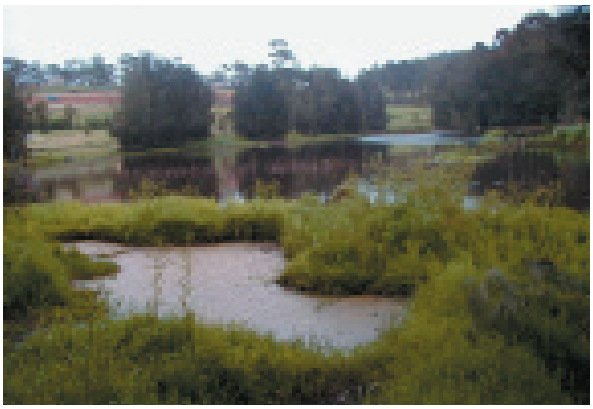

Plate 73: Over a period of a few months of the duration of this study, a decline in native riparian vegetation along the wetland foreshore could be observed as a result of increased clearing. In the future development of open space zones around the wetland, this trend should be prevented at all cost to protect this significant and valuable wetland.

Plate 74: Clearing of riparian vegetation at the wetland edge by adjoining residents will become an increasingly serious threat, as more lots are being developed in close proximity to the Lagoon. Boating should not be permitted on the Lagoon due to the disturbance it would cause to flora and fauna.

Plate 75: Clearing of the Lagoon edge is being undertaken in strategic locations to frame views of the wetland, consistent with the Developer's marketing strategy for the new subdivision.

4. ACTION PLAN

The Action Plan for Long Beach Foreshore and Wetlands Reserve is structured into tables outlining the following:

- Objectives and performance targets
- Means to achieve targets
- Priority
- Monitoring/Assessment of Target

Priorities:

High

Medium

Low

Action Plans:

Many of the targets and actions proposed in the Action Plans will be achieved through volunteer community action. Possible funding opportunities for volunteer community groups include funding under the Natural Heritage Program, which includes Coastcare and seeking funding through Eurobodalla's Landcare Committee.

The Action Plan consists of four parts which address a specific set of management issues which are as follows:

4.1 Recreational Use Action Plan

4.2 Access and Circulation Action Plan

4.3 Biodiversity Conservation, Protection of Wetland, Dunes, Vegetation and Wildlife Habitat Action Plan

4.4 Visual and Scenic Amenity Action Plan

Aboriginal & European Significant Sites:

Prior to any proposed development taking place, investigations must be undertaken to ensure that the development will not impact on any Aboriginal and/or European significant sites. Council's Aboriginal Liaison Officer and the NSW National Parks and Wildlife Service must be contacted prior to any development undertaking.

4.1 RECREATIONAL USE ACTION PLAN

Objectives and Performance Targets

- To provide a wider range of appropriate recreational facilities in the Reserve.

- To cater for the recreation needs of a wide range of the local community and visitors including individual and passive activities with an emphasis on nature based recreation and environmental education.

- To provide equal opportunities for all community members to enjoy all aspects of the reserve in an environmentally sensitive manner.

RECREATIONAL FACILITIES

Means to achieve Targets	Priority	Monitoring/Assessment of Target
1) Ensure that Reed Swamp Lagoon will not be used for inappropriate water-based activities such as boating, water skiing or jet skiing and install signs prohibiting the use of boats, craft and any powered recreational vehicle to protect the sensitive environment, reeds and native wildlife. Canoes and kayaks are appropriate, however launching areas to restricted to designated areas and no craft are to be stored on Council land.	High priority	Lagoon adequately protected and managed for nature conservation. Ranger patrols undertaken.
2) Establish a new picnic and rest area at Sandy Place as the main area for visitors and provide recreation amenities as shown on the Landscape Masterplan. A detailed landscape plan should be prepared showing the location of proposed facilities including access points, toilet block, shelter, car parking located under the overhead power lines, picnic tables and seats, bins, and fencing around remnant vegetation and the dunes.	High priority	Picnic and rest area and recreation amenities successfully installed, sign-posted and used.

3) Upgrade the existing picnic area at the corner of Bay Road and Long Beach Road. Enhance area with planting and upgrade the existing picnic shelter and seats to better cater for the use of the Reserve by visitors. The proximity of neighbouring residents to facilities must be considered.	High priority	Picnic area upgraded and used by local residents and visitors.
4) Maintain a mown grass area at the western end of Sandy Place to provide for informal play and activities (location of area as shown on the Landscape Masterplan). Avoid the use of Kikuyu grass as a lawn as it would invade and cause severe degradation of adjoining natural bushland.	Medium priority	Space set aside for informal games/play and utilised by residents and visitors.
5) Install suitable seating along the backbeach area along Bay Road foreshore to allow people to rest and enjoy the view across the Bay.	Medium priority	Seating installed in the Reserve.
6) Install rubbish bins in convenient places to minimise littering.	Medium priority	Installation of bins completed. Reduction in littering and dumped rubbish.
7) Establish an outdoor nature education area at the proposed picnic facility at Sandy Place. The facility should provide information about the ecology and environment of Reed Swamp Lagoon and Long Beach dunes. The facility should provide an innovative educational resource about local plants and wildlife and their habitat and ecological needs, that can be used in conjunction with local groups, environment groups, schools, tourists, Landcare, NPWS and other environmental groups or institutions.	Medium priority	Installation and use of outdoor educational facilities. Interpretative signage.
8) Install a series of decks and jetties around the wetland shores at pedestrian access points and easements to be used for passive recreation and enjoyment of scenery (refer to Landscape Masterplan for location and design of jetties).	Medium priority	Decks installed and utilised.

4.2 ACCESS AND CIRCULATION ACTION PLAN

Objectives and Performance Targets

- To improve access into and through the Reserve by creating a safe pedestrian circulation system that maximises enjoyment of the reserve for a diverse range of nature based recreational activities.

- To minimise environmental degradation resulting from uncontrolled access.

- To improve and increase temporary parking opportunities for peak holiday times.

PATH SYSTEM

Means to achieve Targets	Priority	Monitoring/Assessment of Target
1) Create a safe, attractive and clearly marked path system through the Reserve, based on locations shown on the Landscape Masterplan. The path should be stabilised to prevent damage and degradation of the sensitive dune and wetland environment by preventing trampling of vegetation and stopping further formation of goat tracks. This might include boardwalks and fencing.	High priority	Paths constructed and in use by public. Environmental degradation reversed.
2) Construct an easily accessible, safe path system for passive recreation and walking in the Reserve and provide easily visible and accessible pedestrian access points to the beach area.	High priority	Path system installed and used by park visitors.
3) Design path system so that it links with adjoining open space, beach access points, picnic facilities, and nearby reserves. This should include links to pedestrian paths and open space in the new estate, viewing platforms at the Lagoon, to Maloneys Beach and to Nature Reserves at Cullendulla Creek and Square Head.	Medium priority	Links constructed and in use by public. Environmental degradation reversed.

4) Construct a bridge or boardwalk at the beach end of the drainage easement across Sandy Place, to facilitate crossing the creek during rain and flooding events	Medium priority	Bridge constructed and used by the public.
5) Use planting and signage to clearly mark entry points and to assist in way-finding and general orientation in the reserve.	Medium priority	Entrances and location of facilities clearly indicated and signs installed.

ROADS AND PARKING:

1) Restrict vehicle access to the reserve to prevent erosion, damage to paths and vegetation, and vandalism. Vehicle entry points to be designed to allow emergency vehicles only. Existing dirt tracks in backbeach area will be repaired and reverted to open space or become part of a formalised walking path system.	High priority	Vehicular access prevented and vehicles are staying out of the natural areas.
2) Maintain emergency access in form of a clearway for fire engine and ambulance access to ensure emergency vehicle access to all backbeach areas and to private property. Formalise a clearway along rear of residential lots to allow for bushfire control, ensure sufficient access for emergency vehicles at all times.	High priority	Emergency access and signs installed.
3) Improve existing parking facilities in Bay Road and by designate temporary grassed overflow parking areas under the power lines along Sandy Place (refer to Landscape Masterplan). Design overflow parking areas that can be used temporarily during peak holiday times and are of low visual impact during the remainder of the year. Install signage that identifies designated visitor parking areas to prevent conflicts with parking requirements of local residents. Install signage to prevent parking in front of private driveways.	Medium priority	Overflow parking areas established and parking conflict during peak holiday season reduced
4) Reduce traffic and the need for parking by encouraging local residents and their guests to walk or cycle to the reserve. Provide formal drop-off areas for visitors in key locations where cars can be unloaded before being parked.	Medium priority	Increased walking to reserve.

5) Provide bollards at the eastern end of Sandy Place to prevent vehicles from entering the reserve.	High priority	No unauthorised vehicular entry to the reserve.
6) Provide facilities for securing bicycles at suitable pedestrian access points.	Medium	Facilities installed and in use.

WAY-FINDING:

1) Improve way-finding and orientation in the Reserve by installing signs displaying information about access and location of facilities. Entrance points and links need to be clearly marked and location of facilities shown on an overall map. Direction signs at entrance roads can direct visitors to facilities.	Medium Priority	Signs installed.

4.3 BIODIVERSITY CONSERVATION, PROTECTION OF WETLAND, DUNES, VEGETATION AND WILDLIFE HABITAT ACTION PLAN

Objectives and Performance Targets

- To protect and enhance the environmental qualities and ecological processes of the dunes and Reed Swamp Lagoon by conserving and restoring indigenous vegetation communities and wildlife habitat.

- To protect the reserve's natural features from degradation and from adverse impacts of development in the catchment.

- To ensure water quality, biological diversity and local wildlife are conserved and maintained in the reserve for future generations.

- To implement and achieve the objectives of SEPP 14: Coastal Wetlands and the NSW and National Biodiversity Strategy.

Means to achieve Targets	Priority	Monitoring/Assessment of Target
CONSERVATION OF INDIGENOUS VEGETATION, BIODIVERSITY AND WILDLIFE HABITAT		
1) Undertake a flora and fauna survey of the catchment to determine the species diversity, ecological communities, the presence of threatened or endangered species and indicator species occurring in the bushland and wetland environment. Indicator species should be identified and continued to be observed as a means of monitoring the environmental quality of the dune and wetland environment (e.g. Presence of bandicoots and owls). Investigate reports of the presence of bandicoots in the reserve and backbeach area and develop management strategies to protect them from loss of shelter, human disturbance, and predation by domestic and feral animals at night. Seek funding under the Natural Heritage Program or similar Funding Program.	High priority	Comprehensive survey undertaken and conservation significance established. Indicator species identified and continued to be observed and monitored in the reserve.

2) Protect, regenerate and restore indigenous plants and wildlife habitat in all areas of the reserve. Install appropriate fences around existing areas of native vegetation and proposed revegetation areas (refer to Landscape Master Plan) to protect plants from mowing, spraying, trampling, cutting and other forms of vandalism. For revegetation areas, select indigenous plant species to recreate the natural vegetation communities and provide a diversity of plant species of varying heights and sizes including groundcovers, grasses, reeds, shrubs and trees to maintain biological diversity and high quality wildlife habitat. Require all new properties to be fenced as part of DA conditions or covenants. Continue to work with the local Landcare Officers in planning and implementing revegetation and regeneration work in the dunes and around the wetland. Liaise with the local Fire Control Officers to advise them of revegetation/regeneration projects and seek their comment in regard to the impact of possible fuel hazard reduction operations. 3) Seek funding under the Natural Heritage Program, Landcare or similar Funding Program.	High priority	Existing remnants successfully protected and rehabilitated by additional planting including indigenous groundcovers, dune vegetation, riparian planting, and trees. Decline and degradation of stands of remnants halted and reversed through successful replanting and regeneration.
4) Require the retention of native vegetation and the protection of native trees in particular, as a condition of future development in the catchment.	High priority	Planning controls implemented and trees retained in new developments. Covenants on trees to protect stands on private property to ensure green corridors are maintained.

5) Create viable wildlife corridor links to other reserves such as Cullendulla Creek Nature Reserve at Square Head and Maloneys Flat and nearby National Parks. Require the design of wildlife corridors in new developments as a standard condition of consent. Wildlife corridors should have a minimum width of 50m to 200m and include dense understorey planting and continuous touching tree canopies. Seek funding under the Natural Heritage Program, Landcare or similar Funding Program .	Medium priority	Wildlife corridors established to neighbouring natural areas. Sufficient canopy cover and native understorey established in public open space corridors and utilised by wildlife to safely traverse urban areas.
6) Revegetate with coastal heath and plant more shade trees for sun and wind protection in the dune areas and along Bay Road.	Medium priority	Planting successfully established
7) Prepare a submission for rezoning and more effective environmental protection controls to the Review of the Rural LEP process based on the recommendations from this POM. Special attention should be given to the control of development on private land containing natural ecosystems and habitat in the catchment of Reed Swamp lagoon. 8) Rezone the area of bushland at the western end of Long Beach to 7(a) Environmental protection so that the protection of vegetation in the adjacent nature reserve and the littoral rainforest is secured.	High priority	Areas of environmental sensitivity are protected from clearing and inappropriate land use through the adoption of effective planning controls in the amended LEP. Vegetation and habitat are effectively protected and retained in the catchment.

WETLAND CONSERVATION AND WATER QUALITY

1) Develop a detailed erosion control and vegetation protection strategy to prevent further decline in water quality resulting from clearing of vegetation and urban development. This needs to include establishment of current water quality values and an assessment of changes and their causes, as well as regular water quality monitoring.	High priority	Water quality monitoring undertaken frequently. Current water quality measured, changes assessed and water quality maintained at good levels.

2) Maintain the open space around Reed Swamp Lagoon as an Environmental Protection Area and buffer zone as a means of protecting the sensitive wetland ecosystem and its resident wildlife. The area should only be used for passive, nature based recreation to minimise impact on the wetland. Protect and retain all existing native vegetation on public land with protective fencing. Regenerate and revegetate areas that have recently been vandalised and illegally cleared as a result of new urban development adjacent to the wetland.	High priority	Sensitive environment around Reed Swamp Lagoon protected by fencing and natural vegetation successfully rehabilitated. No trees or other vegetation further than 5m from private property boundaries removed in reserve areas around the wetland.
3) Prevent any further clearing and subdivision in the Reed Swamp Lagoon's catchment to protect native vegetation, wildlife habitat and water quality associated with this wetland of State significance. Ensure that the objectives of SEPP 14 are achieved and implemented, and that the wetland environment is adequately protected and managed for biodiversity conservation. Conserve the bushland and natural riparian vegetation around the lagoon as a means of protecting the significant wetland and local wildlife from further degradation and disturbance. Natural vegetation should be protected and maintained in the whole catchment on both public and private land. An adequate buffer zone of public open space around the wetland edge, dedicated for bushland conservation and wildlife habitat, should be maintained in all areas adjacent to the Lagoon. The appropriate width of the buffer zone should be determined based on the findings of a comprehensive flora and fauna survey and an environmental impact study of the catchment. Until such a study has been undertaken, a minimum width of 150 metres or wider from the top of the bank as a minimum requirement has been recommended by the NPWS. Establish adequate zones and planning controls to protect Reed Swamp Lagoon's Catchment and associated local flora and fauna on public and private land by zoning existing bushland and riparian vegetation in the catchment and buffer zone 7(a) Environmental Protection -Wetland. To protect the wetland edge from further urban encroachment, no further land in the catchment should be re-zoned from rural 1(c) to residential 2(g). Current zonings should be upheld and only changed in favour of the protection of the wetland's catchment. DA conditions or covenants should be used to restrict clearing and ensure the protection of biodiversity in the catchment. Introduce guidelines for the placement of structures on private land to maintain a minimum	High priority	No further vegetation clearing or vegetation removal in the Lagoon's catchment. Water quality and species diversity maintained.

distance of 100m from water bodies and drainage lines, in order to protect water quality. Establish adequate buffer zones between proposed development areas and natural areas such as the dunes and the wetland to prevent negative impact from adjacent residential development and activities. Require all new properties to be fenced as DA condition or covenants to prevent domestic animals from straying into bushland without supervision of their owners.		
4) Investigate possible incentives for private landowners to retain a bushland buffer zone and protect native biodiversity on their land: The National Parks 7 Wildlife Act 1974 S.69 provides for voluntary conservation agreements on private land. Incentives include reductions in rates whereby the landowner does not have to pay any rates for the land included in the voluntary conservation agreement. Under the Native Vegetation Conservation Act 1997 Part 5, property agreements with the Department of Land and Water Conservation can be made to protect native vegetation and obtain financial assistance. Under the Local Government Act 1993, Section 585-591 other rate reductions may apply.	High priority	Implementation of buffer zones and conservation of vegetation in Lagoon's catchment. Promotion of incentives by Council and Government Agencies.
5) Protect water quality and prevent further siltation and eutrophication of the lagoon and subsequent biodiversity decline in the wetland. This should include measures such as reduced residential development and housing densities, as well as the installation of temporary and permanent sediment and erosion control measures in areas of new and existing development. Private properties are to be fenced. Establish a regular maintenance and monitoring plan for sediment and erosion control mechanisms including regular inspections of the catchment and monitoring of water quality and environmental conditions of the wetland. Retain bonds from developers to ensure efficient implementation of erosion and sediment control measures.	High priority	Prevention of suspended sediments in wetland and successfully functioning sediment controls. Biodiversity and abundance of species maintained. Water quality and clarity restored to and maintained at pre-development levels.

6) Suggest that the Wetland could be an attractive study location for students.	Low priority	Local Universities approached and students undertaking study of the Wetland environment.

WEEDS AND MAINTENANCE

1) Encourage regeneration of native species by establishing no-mow zones around remnant vegetation and hand-weed these areas to remove invasive weeds.	High priority	Remnant trees protected by fencing. Successful regeneration and re-growth of native plants in fenced off areas.
2) Develop guidelines for the use of native plant species in all public landscaping to ensure works are in character with the area's natural setting and benefit the environment by providing wildlife habitat.	High priority	Native species dominate public landscaping works and public open space.
3) Train and brief maintenance staff in best maintenance practices for looking after native, riparian and dune plantings and in understanding the natural environment in the Reserve.	High priority	Successful establishment and survival of planting and wildlife.
4) Eradicate weeds in the reserve by using environmentally sensitive methods and minimise the use of herbicides and other chemicals within water catchments and apply instead mechanical methods and hand-weeding.	Medium priority	Invasive weeds removed mechanically. Frequent monitoring and control to prevent re-establishment of invasive plants.

EROSION

1) Rehabilitate and modify the banks of the Lagoon, drainage lines and dunes where necessary and stabilise against erosion. This should be done in a fashion that recreates a natural environment and primarily uses plant material for erosion control.	Medium priority	No further erosion of banks and dunes, all areas stabilised and re-vegetated.

COMMUNITY PARTICIPATION

1) Continue to support the involvement of community groups and local residents in revegetation and planting programs and cleanliness campaigns.	High priority	Community participating in planting programs and a sense of pride and care expressed by the local community.
2) Run an environmental education and awareness campaign about the value and ecological processes of wetlands, lagoons and natural dune systems and associated vegetation in the Eurobodalla Shire.	Medium priority	Educational program in place. Increased public understanding of the unique nature and value of coastal ecology.
3) Develop an educational brochure to raise the awareness of the environmental issues in the area and advise of ways to minimise impact on the environment. Seek granting funding to assist with development and distribution.	High priority	Grants funds successfully applied for. Increased Community aware of local environmental issues.

4.4 VISUAL AND SCENIC AMENITY ACTION PLAN

Objectives and Performance Targets

To improve the appearance and scenic amenity of Long Beach foreshore and recreational facilities for enjoyment by the public in the reserve.

To preserve and enhance the overall landscape character and scenic quality of the area by reducing visual impact from adjacent development.

To retain and protect the reserve's natural landscape character and reduce the visual impact of built structures on the foreshore environment.

Means to achieve Targets	Priority	Monitoring/Assessment of Target
BOUNDARIES		
1) Clearly mark reserve boundaries of the public land and remove inappropriate private planting, structures and interference from the reserve. Prevent illegal encroachment of private land use onto adjacent public land and write to people who are appropriating public land. Locate paths and emergency vehicle access to assist in clearly marking boundaries. Encourage private residents to fence their land as part of DA conditions or covenants. Design new planting to reduce the visual impact of adjacent housing and fencing on the public land, in consultation with residents.	High priority	Visual impact from adjacent buildings and structures reduced through planting. All land in the reserve cleared from structures and intervention by private landowners.

STRUCTURES

1) Introduce design requirements for new buildings, extensions and landscape plans on private land to minimise the visual impact of adjacent housing and fencing on the public land. Introduce planning controls to prevent structures and buildings on adjacent land from dominating the landscape and compromising the reserve's natural character as conditions of consent for new developments. Establish guidelines for minimum vegetation cover and encourage planting of local species.	Medium priority	Building, landscape and development controls in place to ensure future dwellings are sympathetic to the natural landscape setting and tree cover is maintained on private properties.

ORIENTATION:

1) Use planting and signage to clearly mark entry points and to assist in way-finding and general orientation in the reserve.	Medium priority	Entrances and location of facilities clearly indicated and signs installed.

PLANTING:

1) Develop guidelines to ensure use of native plant species in all public landscaping to ensure works are in character with the area's natural setting and benefit the environment by providing wildlife habitat.	High priority	Policy adopted and implemented by Council. Native species dominate public landscaping works and public open space.
2) Protect natural vegetation in the reserve to maintain the natural character of the area, including the rich mix of flora and fauna that can currently be observed in the reserve.	High priority	Natural landscape character maintained and wildlife continued to be observed utilising natural environments.
3) Ensure that all landscape works in the reserve and in future development areas on private land compliment the natural character of the area and match the indigenous vegetation and landscape.	Medium	Character of future landscape works matches the indigenous

Plant primarily indigenous vegetation to reconstruct the original vegetation community and profile in structure and species combination. This should be carried out in a manner that would rehabilitate the existing vegetation types and enhance and preserve existing wildlife habitat values by providing a diversity of food, shelter and habitat for native fauna. Specific planting design should aim to rehabilitate native species as observed on the site and in nearby natural bushland areas. Require landscape plans at DA and ensure landscape works as Condition of Consent.	priority	landscape and planting design based on native species as observed on the site and in nearby natural areas.
4) In consultation with local residents, re-vegetate with coastal heath plantings and plant more shade trees for sun and wind protection in the backbeach areas and Bay Road.	Medium priority	Establishment of coastal heath, shade trees and shady areas for beach users.
5) Establish street planting along Sandy Place and other streets to reduce visual impact of housing and to re-establish some vegetation that compliments the natural environment. Use planting to create a visual link between the eastern and western end of Long Beach Foreshore and Wetlands Reserve. Species selection and planting location to be confirmed with community consultation.	Medium priority	Street planting established along Sandy Place and other new streets.
6) Revegetate the channelised outlet from the Lagoon to create visual awareness of the link between the wetland and beach.	Medium priority	Creek transformed into a visible connection between the foreshore and the wetland.
7) Enhance the diverse character of existing natural vegetation and landform to create identities for the different areas in the reserve.	Medium priority	Every area of the reserve individually defined through enhancement of characteristic natural features.

5. LEASES AND LICENCES:

This Plan of Management authorises the granting of any lease, licence or other estate on Community Land included in this plan of management, only where the purpose for which it is granted is consistent with the core objectives the categorisation of that land. The granting of the lease, licence or other estate must meet all provisions of the Local Government Act 1993.

Estate includes interest, charge, right, title, claim, demand, lien and encumbrance, whether at law or in equity (as per Interpretation Act 1987 S 21(1)).

The Local Government Act 1993 (as at 1 August, 2002) includes the following provisions regarding leasing and licensing of Community Land:

S46 Leases, licences and other estates in respect of community land—generally

(1) A lease, licence or other estate in respect of community land:

- (a) may be granted for the provision of public utilities and works associated with or ancillary to public utilities, or
- (a1) may be granted for the purpose of providing pipes, conduits or other connections under the surface of the ground for the connection of premises adjoining the community land to a facility of the council or other public utility provider, or
- (b) may be granted, in accordance with an express authorisation in the plan of management and such provisions of the plan of management as apply to the granting of the lease, licence or other estate:
  - (i) for a purpose prescribed by subsection (4), or for a purpose prescribed by any of sections 36E to 36N as a core objective of the categorisation of the land concerned, or
  - (ii) for a purpose prescribed by the regulations, if the plan of management applies to several areas of community land, or
  - (iii) for a short-term, casual purpose prescribed by the regulations, or
  - (iv) for a residential purpose in relation to housing owned by the council,

but may not otherwise be granted.

(2) Despite subsection (1), a lease, licence or other estate in respect of community land may be granted for a purpose mentioned in subsection (1) (b) only if the purpose for which it is granted is consistent with the core objectives, as prescribed in this Part, of its categorisation.

(3) A council must not grant a lease or licence for a period (including any period for which the lease or licence could be renewed by the exercise of an option) exceeding 21 years.

(4) The following purposes are prescribed for the purposes of subsection (1) (b) (i):

- (a) the provision of goods, services and facilities, and the carrying out of activities, appropriate to the current and future needs within the local community and of the wider public in relation to any of the following:
  - (i) public recreation,
  - (ii) the physical, cultural, social and intellectual welfare or development of persons,
- (b) the provision of public roads.

(5) Purposes prescribed by subsection (4) in relation to the matters mentioned in subsection (4) (a) (ii) include, but are not limited to, maternity welfare centres, infant welfare centres, kindergartens, nurseries, child care centres, family day-care centres, surf life saving clubs, restaurants or refreshment kiosks.

(6) A plan of management is void to the extent that it purports to authorise the grant of a lease, licence or other estate in contravention of this section.

S 46A Means of granting leases, licences and other estates

(1) A plan of management is to specify, in relation to the community land to which it applies, any purposes for which a lease, licence or other estate may be granted only by tender in accordance with Division 1 of Part 3.

(2) Nothing in this section precludes a council from applying a tender process in respect of the grant of any particular lease, licence or estate.

(3) A lease or licence for a term exceeding 5 years may be granted only by tender in accordance with Division 1 of Part 3, unless it is granted to a non-profit organisation.

S 47D Occupation of community land otherwise than by lease or licence

(1) The exclusive occupation or exclusive use by any person of community land otherwise than in accordance with:
- (a) a lease, licence or estate to which section 47 or 47A applies, or
- (b) a sublease or other title directly or indirectly derived from the holder of such a lease, licence or estate,

is prohibited.

(2) This section does not apply to:
- (a) the occupation or use of part of the site of a senior citizens' centre or home or community care facility by a duly appointed manager of the centre, or
- (b) the occupation or use of community land by persons, and in circumstances, prescribed by the regulations.

6. REFERENCES:

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Kutzner, A, 2001, *Cullendulla Creek Nature Reserve Plan of Management. Issues papers,* National Parks and Wildlife Service (NPWS)

NSW *Crown Lands Act 1989*

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NSW *Rivers and Foreshores Improvement Act 1948*

NSW *Threatened Species Conservation Act 1995*

NSW *State Environmental Planning Policy 14 Coastal Wetlands*

Sainty and Associates Pty Ltd, 1999, *Guidelines to Management of Wetlands in the Lower South Coast, NSW*, prepared for Eurobodalla Landcare Wetlands Committee

Webb, McKeown & Associates Pty Ltd, 2001, *Batemans Bay Coastal Management Study. Coastal process review and management options assessment.* prepared for Eurobodalla Shire Council

7. Appendices

APPENDIX 01: FLORA OF THE LONG BEACH AREA

This list of plants represents plants observed by the consultants and local resident during the site visits and is not a complete survey. It is highly recommended that a detailed ecological survey by a specialist botanist and zoologist be undertaken as the area appears to contain a high diversity of species and ecological communities.

TREES

Botanical Name	Common name	Notes
Acacia brownii		as shrub
Acacia longifolia	Sydney Golden Wattle	
Acacia longissima		
Acacia mearnsii	Late Black Wattle	
Acacia myrtifolia	Myrtle Wattle	as shrub
Acacia suaveolens	Sweet Wattle	as shrub
Acacia ulicifolia	Juniper Wattle	as shrub
Acmena smithii	Lilli Pilli	
Allocasuarina palludosa	Grey She-Oak	
Allocasuarina littoralis	Black She-Oak	
Alyxia buxifolia	Sea Box	
Angophora floribunda	Rough-barked Apple	
Avicenna marina	Mangrove	
Banksia integrifolia	Coastal Banksia	
Banksia spinulosa	Hairpin Banksia	as shrub
Casuarina glauca	Swamp Oak	
Corymbia gummifera	Red Bloodwood	
Corymbia maculata	Spotted Gum	
Elaeocarpus reticulatus	Blueberry Ash	
Eucalyptus botryoides	Southern Mahogany	
Eucalyptus globoidea	White Stringy-bark	
Eucalyptus ovata	Swamp Gum	
Eucalyptus pilularis	Blachbutt	
Eucalyptus pilularis	Blackbutt	
Eucalyptus sieberi	Silvertop Ash	
Eucalyptus tereticornis	Forest Red Gum	
Exocarpus cupressiformis	Wild Cherry	
Ficus rubiginosa	Port Jackson Fig	

Glochidion fernandi	Cheese Tree
Livistona australis	Cabbage Tree Palm
Melaleuca styphelioides	Prickly-leaved Paper-bark
Myoporum acuminatum	Boobialla
Omalanthus nutans	Bleeding Heart
Persoonia linearis	Narrow-leaf Geebung
Pittosporum undulatum	Sweet Pitttosporum

SHRUBS

Botanical Name	Common name	Notes
Acacia brownsii		
Acacia myrtifolia	Myrtle Wattle	
Acacia sophorae	Coastal Wattle	
Acacia suaveolens	Sweet Wattle	
Acacia unicifolia	Juniper Wattle	
Banksia spinulosa	Hairpin Banksia	
Bossiaea obcordata	Spiny Bossiaea	
Bursaria spinosa	Sweet Bursaria	
Cassine australis	Red Olive Plum	
Cassinia aculeata	Dogwood	
Chrysanthemoides monilifera	Bitou Bush	Introduced
Hibbertia aspera	Guinea Flower	
Indigofera australis	Austral Indigo	
Leptospermum polygalifolium	Tea Tree	
Leucopogon lanceolatus	Lance Beard-heath	
Leucopogon parviflorus	Coast Beard-heath	
Lilium formosanum	Formosan Lily	Introduced
Lomatia ilicifolia	Holly Lomatia	
Macrozamia communis	Burrawang	
Notelaea longifolia	Mock Olive	
Olearia tomentosa	Toothed Daisy Bush	
Ozothamus argophyllus	Spicy Everlasting	
Ozothamus diosmifolius	Everlasting	
Phyllanthus gasstroemii	Shrubby Spurge	
Piemlea linifolia	Rice Flower	
Pittosporum revolutum	Rough-fruit Pittosporum	
Pultanaea daphnoides	Large-leaf Bush Pea	
Pultanaea retusa	Blunt Bush Pea	

Pultanaea villosa	Bronze Bush Pea
Senecio linearifolius	Fireweed Groundsel
Solanum aviculare	Kangaroo Apple
Westringia fruticosa	Coast Rosemary
Xanthorrhoea resinifera	Grass Tree
Zieria smithii	Sandfly Zieria

VINES

Botanical Name	Common name	Notes
Billardiera scadens	Climbing Apple-Berry	
Cissus antarctica	Hairy Water Vine	
Cleamtis glycinoides	Forest Clematis	
Eustrephus latifolius	Wombat berry	
Geitonoplesium cymosum	Scrambling Lily	
Glycine clandestina	Twining Glycine	
Hardenbergia violacea	Coral pea	
Hibbertia dentata	Twining Guinea Flower	
Hibbertia scandens	Climbing Guinea Flower	
Kennedia rubicunda	Dusky Coral-Pea	
Pandorea pandorana	Wonga Vine	
Tylopora barbata	Bearded Tylophora	

HERBS AND SMALL PLANTS

Botanical Name	Common name	Notes
Arthropodium milleflorum	Pale Vanilla Lily	
Caesia vittata	Blue Grass-Lily	
Cakile maritima	Sea Rocket	
Carpobrotus edulis	Pigface	Introduced
Cassytha glabella	Dodder-Laurel - Devil's Twine	
Dianella revoluta	Flax Lily	
Dianella sp	Dianellas	
Dichopogin strictus	Chocolate Lily	
Gahnia melanocarpa	Tall Saw-Sedge	
Goodenia ovata	Hop Goodenia	
Hydrocotyle bonariensis	Pennywort	Introduced
Hypoxis hygrometrica	Golden Weather-Glass	

Isolepis nodosa	Knobby Club Rush	
Lobelia alata	Angled Lobelia	
Lomandra longifolia	Spiny Headed Mat Rush	
Patersonia glabrata	Leafy Purple Flag - Wild Iris	
Pelargonium australe	Austral Stork's Bill	
Pelargonium inodorum	Stork's Bill	
Pennisetum clandestinum	Kikuyu	Introduced
Plectranthus parvifolius	Cockspur Flower	
Poa sp	Tussock Grasses	
Pratia purpurascens	Trailing Pratia	
Pseuderanthemum variabile	Pastel Flower	
Scaevola aemula	Fan Flower	
Schelhammera undulata	Lilac lily	
Stackhousia monogyna	Candles	
Stylidium graminifolium	Trigger Plant	
Tetratheca thymifolia	Black-eyed Susan	
Themeda australis	Kangaroo Grass	
Tricoryne elatior	Yellow Rush-lily	
Veronica plebeia	Eastern Speedwell	
Viola betonicifolia	Purple Violet	
Viola hederacea	Native Violet	
Wahlenbergia communis	Bluebell	
Xanthosia pilosa	Woolly Xanthosia	

FERNS

Botanical Name	**Common name**	**Notes**
Adianthum aethiopicum	Common Maidenhair Fern	
Blechnum australis	Gristle Fern	
Culcita dubia	False Bracken	
Cyathea australis	Rough Tree Fern	
Cyathea cooperei	Scaly Tree Fern	
Doodia aspera	Prickly Rasp Fern	
Doodia caudata	Small Rasp Fern	
Lindsaea linearis	Screw Fern	
Pteridium esculentum	Common Bracken	

WETLAND SPECIES

Botanical Name	Common name	Notes
Baumea articulata	Jointed Twig Rush	
Carex fascicularis	Common tassel sedge	
Cladium procerum	Leafy Twigrush	
Cyperus sp	Sedges	
Eleocharis sphacelata	Tall Spikerush	
Gahnia sp (sieberiana)	Saw sedges	
Juncus sp	Rushes	
Juncus usitatus	Common rush	
Lycopus australis	Austral horehound	
Persicaria sp	Knotweeds	
Philydrum lanigunosum	Frogmouth	
Phragmites australis	Common reed	
Swainsonia procumbens	Broughton Pea	
Typha sp	Cumbungi	

APPENDIX 02: PRINCIPLES OF ECOLOGICALLY SUSTAINABLE DEVELOPMENT

The following is the definition of the principles of Ecologically Sustainable Development (ESD), as it appears in the *Local Government Act 1993*.

Ecologically sustainable development requires the effective integration of economic and environmental considerations in decision-making processes. Ecologically sustainable development can be achieved through the implementation of the following principles and programs:

a. the precautionary principle—namely, that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

   In the application of the precautionary principle, public and private decisions should be guided by:

   i. careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and

   ii. an assessment of the risk-weighted consequences of various options,

b. inter-generational equity—namely, that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations,

c. conservation of biological diversity and ecological integrity—namely, that conservation of biological diversity and ecological integrity should be a fundamental consideration,

d. improved valuation, pricing and incentive mechanisms—namely, that environmental factors should be included in the valuation of assets and services, such as:

   i. polluter pays—that is, those who generate pollution and waste should bear the cost of containment, avoidance or abatement,

   ii. the users of goods and services should pay prices based on the full life cycle of costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any waste,

   iii. environmental goals, having been established, should be pursued in the most cost effective way, by establishing incentive structures, including market mechanisms, that enable those best placed to maximise benefits or minimise costs to develop their own solutions and responses to environmental problems.

APPENDIX 03: COMMUNITY CONSULTATION SUMMARY

- Community Consultation Meetings Summaries
- Survey Evaluation Results
- Community Questionnaire

Issues Raising Community Meeting

For

Long Beach Foreshore and Wetlands Reserve

Sat 23/03/01; 3.00 pm; Long Beach Fire Station

Summary

About 40 community members attended the issues-raising community meeting held at Long Beach Fire Station, 3.00 pm on Saturday 23 March 2001. These included a large number of members of the Long Beach Improvement Group (LBIG).

Most community members present wanted new facilities to be located in the public open space behind the central part of the beach at Sandy Place. The main reason was that it is to be "out of everyone's way". Such facilities should include toilet blocks, seats and picnic facilities, as well as an open area for informal ball games.

The following issues were raised at the public community consultation meeting:

- Unresolved ownership arrangements, lot outlines and zoning around the lagoon;
- Continuing development, subdivision and clearing of native vegetation;
- Impact of development and degradation of the wetland;
- Protection of the wetland and its entire foreshore;
- Boating activities on the lagoon;
- Use and nature of open space around the lagoon;
- Replanting/ regeneration of native vegetation in the reserve and tree vandalism;
- Access to the beach and the whole of the reserve;
- Alienation of public land by residents in Sandy Place;
- Provision of additional facilities and their location;
- Landscape character and nature of new landscaping/ planting works;
- Lack of access for emergency vehicles;
- Dune erosion
- Impact of development and degradation of the wetland

Community members largely agreed on the importance of preserving native bushland from excessive clearing through development and wished for the wetland to remain a pristine ecosystem in the future.

On other issues the community was more divided. This applied to the provision of facilities along the foreshore in Bay Road. Some local residents living directly adjacent to the beach represented their own vested interests such as the protection and creation of views from their properties across public land and attracting visitors away from the Bay Road beach area. For this reason, some people at the meeting vehemently opposed other local community members who suggested that the amenity of the beach area at Bay Road should be improved with better facilities such as seating and revegetation with native plants.

It was stated by some people that they wished to minimise public use of the area and redirect visitors to the backbeach areas at Sandy Place. Disagreements between residents arose over landscape improvement works and possible planting to assist in stabilising dunes against erosion and improve visitor amenity and provide shade at the Bay Road end of the beach. Some attendants' feelings towards visitors and residents from other local areas included sentiments of wanting prime use and enjoyment of the foreshore in Bay Road for local residents mainly.

The following paragraphs represent points that were made at the meeting, grouped by the part of the reserve that they refer to.

Reed Swamp Lagoon

Concern about the YMCA land being sold for a proposed subdivision were raised. A reserve is needed around the entire foreshore of the lagoon so that all of catchment and associated vegetation and habitat can be controlled and protected from clearing and future development.

The community feels that there is a definite need to protect the YMCA site from development and clearing of coastal spotted gum forest so that the lagoon can be protected from adverse impacts and healthy ecological processes be maintained.

A local Councillor advised the meeting, that Council is currently reviewing its Rural LEP and that community members are invited to make submissions (individual letters) or petitions if they feel that the zoning and associated permissible development of certain areas should be changed.

People are disappointed that there is not sufficient land allocated as reserve around the edge of the wetland. The present thin strip is inadequate to protect the wetland all around. The reserve at the western end near the new development is not wide enough.

Community members at the meeting would like to see the land zoned open space along the foreshore of the wetland to be kept as natural bushland and do not wish for it to be cleared or developed in any way.

Attendants at the meeting agreed that they would like the wetland to be kept as a natural system in a pristine state. The Long Beach Improvement Group therefore decided to address Council to provide adequate protection for the lagoon on its eastern and northern side, which would include protecting the catchment of the lagoon from any further development such as subdivision and /or clearing.

Several concerns about the impact of the new development onto the lagoon were raised. Current problems are introduced plants and weeds invading the wetland; increased sediments and polluted run-off has been observed in the lagoon during rainfall. The water is brown from turbidity and heavy sediment loads after rain. Removal of native vegetation to create views of the wetland or private properties are also a problem.

Community members strongly opposed any future boating activities on the lagoon, as these would disturb native animals and negatively impact on the wetland, destroy vegetation and

reed beds, and cause pollution from petrol boats. Boat ramps should not be installed anywhere in the lagoon.

Back-Beach Areas

Back-beach areas (all areas behind the dune) should all be natural vegetation. Present community members felt that Coast Banksia stands should be kept and improved through re-planting/ regeneration. Vandalism in the shape of illegal tree removal and lopping for views on public land was considered wrong, as lots were bought knowing that native vegetation was present in the adjacent foreshore reserve.

Access to the beach should be provided, as well as to the whole of the reserve, which should be equally accessible to everyone. Some community members suggested this could be in the form of a boardwalk through the reserve, commencing from the central area, stretching east and west.

A lot of community members at the meeting raised their concern that much of the public land behind Sandy Place was being encroached on or 'claimed' by mowing , planting and making public access difficult. Incidents were reported such as the digging of trenches or holes along current tracks to create barriers and set traps for pedestrians. A member of the fire brigade pointed out that a 5m mown strip at the rear of private properties was an acceptable fire break where adjoining bushland. However, most community members felt that this should not be extended into the coastal banksia vegetation in the reserve. Some residents however felt that they were doing a service to the community by mowing grass and regrowth that was too tall and not maintained by Council.

The majority of the community members felt that there was a need for a toilet block somewhere in the reserve. It was suggested that all facilities should be located in the back-beach area along Sandy Place behind the central section of the beach, where toilets would be out of the way and not disturb any residents fronting the reserve. Facilities including toilets, picnic tables and benches could serve to attract visitors to this area so that they do not use other beach sectors along Bay Road. Some local residents living on Bay Road felt that no facilities should be provided at Bay Road, so that it would not be used by visitors as it caused to many disruptions to residents. Some residents from beachfront properties also requested that no improvement works will be undertaken along Bay Road and that it should stay exactly as it is.

There was also a request to provide an open area for informal ball games, which should be in the central area as well.

It was mentioned that the Norfolk Island Pines along Sandy Place were apparently installed by the developer with Council approval, but were considered inappropriate by many people. Despite the large number of Norfolk Island Pines along Bay Road and the beachfront along Sandy Place, some community members consider these out of character with the area. Palms installed in the new estate were also considered to be out of character.

It was suggested that local native trees, would be more in character with the area, and should be installed at generous spacings along Sandy Place and Bay Road.

In general, present community members voiced the desire to see the reserve revegetated with the original native vegetation, such as Coast Banksia, Swamp Mahogany and Coast Rosemary for example. Revegetation should be attempted, also in areas where planting has suffered for the creation of views from dwellings in Sandy Place.

A representative of the rural fire brigade voiced concern over the lack of access for emergency vehicles to the western end of the beach, in particular ambulance and fire trucks. He also pointed out that there was no fire truck access to the back of new properties in Michener Court, unless it was provided through the reserve.

Bay Road

Proposed landscape improvements such as new planting of coastal heath plants and the provision of benches along the reserve in Bay Road were very controversial, with attendants being largely divided between residents of Bay Road and other community members.

Additional planting: some residents felt, that all that was needed was grass between the road and the beach. However, other residents thought it was a good idea to use some native planting of low-growing shrubs and some trees to help prevent beach erosion. They felt that the dune seriously needed to be protected and that it should be investigated what plant species would be suitable for this purpose.

Additional works or facilities along Bay Road: residents of Bay Road were very strongly opposed to any works or improvements being carried out along Bay Road as this would attract visitors, to which street residents are opposed. However, other community members felt that some facilities such as improved seating should be provided, in order for people not living in Bay Road to be able to come to this part of the beach and be able to rest and enjoy the scenery.

Other features to be installed along bay Road could include low fencing to protect the dune from car parking (erosion). This could be designed similar to existing low fences which can also be used for sitting on.

Some community members suggested that hardworks should be avoided along the beach in Bay Road, as they could be destroyed again by erosion during storms.

Councillor Pam Green advised the meeting that Council was reviewing boat ramps in the shire and put the question to the community members whether there would be room for one in Long Beach. However, community members, and in particular Bay Road residents felt that the street was unsuitable for a formal boat ramp and associated traffic. The existing informal facility at the eastern end, sufficient to launch small craft should be kept exactly as is. No new ramps were desired and could possibly be destroyed by erosion.

Miscellaneous

Commencement of clearing works for future development north of Square Head has already started to affect Burrawangs in Square Head National Park. Also spraying Bitou Bush is negatively impacting on native understorey.

Many ownership arrangements and lot outlines in the vicinity of the Reserve and around the lagoon in particular remain unresolved.

A buffer or creek stabilisation measures were suggested for the overflow from the wetland where it enters the bay, as erosion here is a problem during floods of the outlet.

Community members were surprised and appalled at the environmental award to the developer, given the massive rate, extent and scale of the clearing of bushland and impact on the water quality of the wetland observed already, despite the sedimentation basin installed.

Draft Landscape Masterplan Reviewing Community Meeting

For

Long Beach Foreshore and Wetlands Reserve

Wed 11/04/01; 6.00 pm; YMCA, Long Beach

Summary

About 30 community members attended the community meeting at the YMCA, which was held to receive community input and feedback to the Landscape Masterplan prepared after the initial round of consultation. Present were a large number of members of the Long Beach Improvement Group (LBIG), local residents as well as Stuart Scobie, Community Lands Coordinator from Eurobodalla Shire Council.

At the meeting, the purposes and procedures for the preparation of a Plan of Management were explained, and the community updated on the progress and status of the project. The evening's main aim was to review the Draft Landscape Masterplan that had been prepared following previous community consultation, site investigation and research and Council and LBIG liaison.

During the meeting the features of the Draft Landscape Masterplan were individually explained and comments invited for discussion. During this process, other large scale issues continued to be brought up.

The result of the meeting was that the Draft Landscape Masterplan prepared was generally supported by the community members present, with some minor amendments.

Landscape Masterplan Review

The Draft Landscape Masterplan was presented to the community and was supported with the following exceptions or amendments:

With regard to access to the reserve and beach, attendants wished to ensure that there were areas of the reserve that would be accessible by less mobile community members, including access to the beach for young mothers with prams.

Fences to protect remnant vegetation were highly desired but it was pointed out that they would need to be sturdy and secure against cutting down and vandalism. Visual impacts of more sturdy fences was seen as less of an issue.

The proposed street tree planting along Bay Road and Sandy Place was questioned, in particular along Bay Road to preserve views from private property across public land. Attendants at the meeting had reservations in regards to the Spotted Gums which they considered a tree known to drop branches. Some community members insisted that they would not grow. This is questionable given the fact that Spotted Gum are the dominant native species in the area and are doing very well. A suitable alternative could not be agreed on and community members insisted that most species would not grow well. It was suggested by some that the tree planting should not be installed in Bay Road. This would

prevent limited Council resources being ill invested into trees that would fail to grow. However, a group of people was proposing the revegetation of the backbeach at Bay Road with the typical coastal native vegetation consisting of Banksias and Casuarinas.

The elements of the Draft Landscape Masterplan supported by the majority of attendants included the following components:

- Protective fencing around Banksia remnants in backbeach areas to regenerate and replant a mix of native tree groves, heath and grassland.
- Restoration of the dune including revegetation in the western and central sections of the foreshore.
- Location of an informal grassed area in the central backbeach area, near the entrance to Long Beach Estate.
- Provision of overflow parking under power lines along Sandy Place, in the central part of the reserve.
- Provision of toilet, shower and picnic facilities and their location in the central backbeach area at Sandy Place.
- Landscaping and dune restoration with native heath and sedge plants on the dune behind properties and at the central beach section.
- The repair and stabilisation of the creek outlet and overflow areas.
- Landscape improvements at Bay Road beach to include small grassed open areas and planting of native vegetation. These feature a map, upgrading of picnic table and shelter near the existing shower facility, more seats along the foreshore and restoration of coastal heath, including landscaping with native heath and sedge plants.
- Erosion control and repair of the culvert entering the beach at Bay Road.
- Provision of protective fencing around remnants in open space areas around the lagoon to protect all remaining bushland from clearing for view corridors, tree vandalism and other activities that would jeopardise the integrity and health of bushland around the lagoon.
- Creek restoration and regeneration in open space corridors, including protective fences to prevent access and create no-mow-zones to encourage re-growth of native vegetation.
- Creation of wildlife habitat corridors in gullies and open space corridors to establish links to other natural areas such as Cullendulla Creek Nature Reserve at Square Head.
- Provision of maps and interpretative signage for orientation.
- Street tree planting of Spotted Gums along Sandy Place and Blairs Road (but not in Bay Road).
- Emergency vehicle access through the reserve and at the back of properties in Sandy Place in the new estate.

Other Issues

In addition to reviewing the masterplan, a range of issues was brought up again by attendants. These included:

One resident voiced his disagreement with the records in the minutes about the issues raised in the previous meeting, in regards to the interpretation of Bay Road residents' views on the upgrading of facilities in the part of the reserve fronting Bay Road. Some residents stated that residents on Bay Road had not strongly disagreed with the proposed improvements, and that their view was being misrepresented. However, other community members remembered the discussion that had taken place in regard to improving facilities in Bay Road, and that the attendants at the meeting had been divided over new planting and seating and stated that the records of the meeting were correct.

A number of attendants voiced that they would like public car access restored to the western end of the beach. This used to be possible via informal tracks but not anymore due to those tracks being closed off in the process of subdivision and to prevent vandalism and rubbish dumping. As a response Stuart Scobie explained Council's general policy not to have car access to public reserves.

Community members were very concerned about the future of the wetland and negative impacts as a result of development in the catchment. The issues specifically mentioned included stormwater runoff, stormwater drains emptying into the wetland, sedimentation and turbidity, sewage and water quality and respective impact on flora and fauna in the wetland and the reserve in general. The community members present felt very strongly about the wetland and felt that there were no adequate answers from Council about how it intended to protect the lagoon. The mayor's response to a letter by the LBIG in regards to this concern, was read out at the meeting.

The lack of environmental studies conducted as part of the subdivision process, despite the fact that the site is located within 5 kilometres of Murramarang National Park.

The location for the disposal of sewage is unclear. However, it would cause problems if released into the wetland, as well as if it was released to the beach which could render water quality unsuitable for swimming and other recreational activities.

Need for wildlife corridors and consideration of animal access and links between natural areas and features. Current zoning plans do not provide for wildlife corridors despite large scale urban expansion and Council has not dealt with the issue yet it any of its documents.

The developer has already cleared sections of the wetland fringe and non-native plants are being used in the open space areas. However, these are of little value to local wildlife and habitat in the area and are of foreign character to the natural landscape of the area.

The possible need for a boat ramp could be an issue in the future with the increase in population as a result of subdivision. The number of people with facilities such as jet skis, boats etc could increase significantly and might require opportunities for launching their craft. However, many community members stated that an increase in motorised boating is undesirable due the noise and danger it would create for other users along the beach. Attendants agreed that there should definitely be no boating activities on the lagoon.

Community Questionnaire Evaluation

For

Long Beach Foreshore and Wetlands Reserve

Summary

A questionnaire was prepared as part of the Community Consultation process for Long Beach Foreshore and Wetlands Reserve. This was to give community members the possibility of voicing their opinion if they could not attend meetings or felt uneasy about speaking up at the public meetings.

Questionnaires were handed out at both public meetings and were available at Council and other public buildings in the Shire, including the local shop at Maloneys Beach.

Only 14 questionnaires were received completed by Council by May 2001. Of these, 9 were completed by local residents, while the remaining 5 were completed by people who do not live in the area, but indicate that they return to it frequently for holiday visits.

The following presents the public view as presented in the questionnaires received.

Question 1: What do you use Long Beach Reserve for?

Of the 14 completed surveys received, it seems that the majority of people use the reserve for walking activities (79%), nature enjoyment (64%) including observation of bird life and kangaroos, swimming (50%)and passive recreation (29%) in general. 21% of participants utilised the reserve for dog exercising and three users also indicated they participate in boating activities in the reserve. Other activities mentioned were picnicking, bush walking, relaxation and contemplation, exercise and informal games, as well as kite flying and bike riding.

Question 2: Which areas do you use most and how do you use them ?

From the survey, it seems that the majority of people (58%) use the beach and foreshore areas more than any other part of the reserve, however, 29% of the people indicated that they use all areas equally well. Walking tracks were the most used parts of the reserve for 21% of users.

Question 3: From your point of view, what needs to be done to improve the reserve ? (For example new landscaping, facilities, boat ramp, showers, paths, (play) equipment, shade, lighting, seating, better access)

The improvements needed most in the reserve according to survey participants are toilets (79%), new landscaping works (43%) (with some people restricting these to low planting because of views), seating (43%), better access and paths or boardwalks (36%), provision of a boat ramp (36%), picnic facilities or shelters (36%) and a commitment to continuing maintenance on behalf of Council (29%). 21% of people requested more shade in the reserve. Three people also suggested better and more diverse play equipment, situated in a

more suitable location away from the road, such as on the beach side of the reserve. Other suggestions were showers, BBQ's, lighting, to leave the reserve as it is, parking, signage, replacement of cut trees, prohibition of clearing and emergency vehicle access.

Question 4: What other activities do you use the reserve for? Would you like the reserve to provide for any other activities (active or passive recreation)? Which ones? Which areas do you consider most suitable for this? What activities do you consider unsuitable?

With the number of completed surveys received, no clear picture emerged of other activities that should take place in the reserve, with a few people not answering the question. However it seems that people did not see the need for any additional activities to what is already provided. Of concern is however, to prevent any further future encroachments on the reserve.

Question 5: Do you think some improvements may only be required on a temporary basis (eg. visitor parking during peak holiday periods)? What facilities or activities should be provided on a permanent basis?

Survey participants did not consider improvements on a temporary basis a necessity. Improvements were to be on a permanent basis, and included parking of some sort in the central backbeach area (29%), which could be grass parking, as well as the need for bins (21%). A couple of people also thought no improvements were necessary and an informal ball games area was mentioned by somebody else.

Question 6: For preserving the area's unique habitat and remnant vegetation, what do you think should be done? For better visitor comfort and more shade, some replacement plantings in the backbeach area are envisaged that would also assist in the regeneration and conservation of remnant plant communities. What are your views on this issue?

The view on these issues that emerged from the survey was that most people do consider replacement plantings necessary, together with the regeneration and conservation of existing vegetation (64%). This includes vegetation damaged or removed since the start of development of Long Beach Estate. It was specifically stated by a number of people (50%) that planting should be native and of a character and nature suitable for the area. The protection of dunes against erosion and dune planting were considered desirable by 43% of survey participants. To prohibit clearing was suggested by 21%. Other suggestions were protective fences, controlled access, the commission of an Environmental Impact Study, routine checks on planting and vegetation in the reserve, re-zoning of rural areas to prevent further subdivisions, the establishment of native vegetation along the creek's banks and the creation of wildlife corridors to surrounding State Forests and Nature Reserves.

Question 7: How do you think the wetland should be used and managed in the future and how would those proposed uses be compatible with the conservation and habitat value?

The survey indicates that community members at large are very concerned about the wetland and its future, including bushland surrounding it. A large majority requested to leave the wetland as it is, in its natural state (71%). The same number of people also voiced their wish to have any future development banned and further encroachments prevented. 21% requested to extend buffer zones around the wetland or to have these areas as conservation zones. Three people also asked that some kind of walking trail be provided in the open

space buffer zone around the wetland. Other suggestions with more than one mention included the protection of vegetation and the total ban of human use and recreation on the wetland.

Question 8: What do think of involving community members in improvement or educational programs such as bush regeneration, weed removal and tree planting activities? Would you personally want to participate in any such activities?

Of the survey participants all except for one thought that community participation and education programs were a good idea, and most people (64%) indicated that they would be willing to participate in such activities.

Question 9: What do you think should be done to prevent the reserve from being alienated by neighbouring land occupiers? How should the reserve be designed to maintain privacy for neighbours and protect public open space and vegetation from being controlled by them?

In response to how alienation of public land by adjoining private land holders should be prevented, the most common solutions were the provision of a public walkway along property fences in the reserve which could double as emergency vehicle access to the western part of the beach (29%). Other solutions were education of neighbours and community members (29%), and their participation or involvement in protective measures for vegetation on public land (21%).

Question 10: How far and how often do you travel to Long Beach? How long do you usually stay?

While 64% of survey participants lived in Long Beach or Maloneys Beach permanently, 29% were visitors coming from Sydney on a fairly regular basis. While locals tended not to specify the duration of their visits to the reserve, visitors indicated the length of their usual stay to be between 2 days and 4 weeks.

Question 11: How do you get to Long Beach (car, on foot, by bicycle) and would you consider alternatives modes of transport if facilities would be provided?

The majority of people travel to the reserve by car (57%) and some indicated they walked (21%), however most locals did not provide an answer to this question. 21% of participants would not consider alternative modes of transport, the view of the remainder of people on this was not clear.

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Question 12: Do you have any other concerns or comments you would like to voice? Please let us know.

There was a wide ranges of issues of importance to individuals, with the one most commonly shared being the one over clearing and development in the area and the catchment (29%). 21% of participants were also in favour of making the reserve accessible for everyone and for the provision of a playground in a safe location such as on the beach side of Sandy Place. Other issues seemed to be more personal and there was little consensus.

APPENDIX 04: FIRE HAZARD MINIMISATION

Long Beach is mapped as high bush fire hazard in the draft Bush Fire Risk Management Plan. However this will have changed due to the amount of vegetation that has been cleared for housing development. According to the Bush Fire Risk Management Plan there are some areas within the development that are also a "major risk to community assets". These areas will be discussed in the revegetation/regeneration section below.

Revegetation/regeneration of remnant bushland

A concern of some residents is the use of native species for revegetation/regeneration of the small gully, wetland foreshores and reserves in general.

Local native vegetation in itself should not be seen as a fire hazard. All plants will burn given the opportunity. Although some of the local native species are highly flammable, there are other species that can be seen as being less flammable and usually have some of the following attributes;

- High salt content in leaves
- High moisture content in leaves
- Low volatile oil content of leaves

Fine fuels, namely grass, leaves, bark and twigs, are the materials which, ignite and burn easily. Heavy fuels, generally more than 6mm in diameter, will not burn unless fine fuels are present to support fire. Fuel includes litter on the ground surface, green leaves and twigs, bark and dead green materials in the tree crown.

Residents should be strongly discouraged from dumping vegetation waste (leaves, sticks, branches and lawn clippings) behind their properties in not only this area but all areas as it can significantly add to the fuel build up and weed infestation of the area behind their property.

Now that the majority of the area has been cleared for housing the land itself can no longer be seen as a fire hazard.

There are however some areas surrounding the development area that are high fire hazards as per the Bush Fire Risk Management Plan. This is adjacent to Cullendulla Nature Reserve and the Council Reserve adjoining it. Any planting in this area should be carefully considered and referred to Councils Fire Mitigation Officer or the NPWS prior to any works being undertaken. Any area within 100 metres of these areas could be considered as being in a bush fire prone area. There are weeds within these areas that may also add to the amount of fuel in the area. Weed control activities by interested landcare groups should take place here to stop the further invasion of the surrounding bushland from noxious and environmental weeds. However future fire mitigation works will probably be necessary here due to the steep slope below the houses and their proximity to the bush and the ridge top.

Regeneration/revegetation of the gullies

The proposed regeneration / revegetation of the gully area will fall mainly outside the area that could now be seen as bush fire prone area. If the following is applied then there should not be any fire issue as the majority of the gully is less than 30m wide. However this depends on the proximity of the dwellings to the boundary.

Appropriate gully/creekline species including *Ficus coronata (*sandpaper fig) which is already present should be used. These will generally have a higher water content and the leaves will be less flammable.

Kikuyu and other long grasses adjacent to the properties in the gully (particularly upslope) should be removed/mowed as it may dry out in summer and cause a small grass fire.

Do not planting directly onto the property boundaries leave access behind properties particularly on the upper side of the gully. Approximately 3-10 metres should be sufficient depending on the proximity of the dwelling to the boundary and the width of the gully. A distance of approximately 20 metres from the dwelling should be sufficient in this area.

Regeneration/revegetation of wetland vegetation

As this area varies so much from slope, aspect, and size of the remnant vegetation and also depends on the setback of future dwellings it is hard to put a general requirement on this area for planting. It should be referred to Council's Fire Mitigation Officer prior to volunteer groups or Council undertaking works in the area. There are however still some basic things that can be done here. It is similar to above and includes

Weed control activities by interested landcare groups should take place here to stop the further invasion of the bushland from noxious and environmental weeds.

Emergency vehicle access

A concern of one of the respondents is the emergency vehicle access to the reserve at the base of Square Head from Sandy Place. One of the submissions suggests that the best and fastest way to access the area would be through the western end of Sandy Place. After consulting with the NSW RFS the preferred area for access for them is through the access/pathways on the Southwestern side of Sandy Place. This is due to the steep slope of the Council Reserve at the end of Sandy Place. The access/pathways are currently blocked by non-removable bollards which restricts access for emergency vehicles and needs to be replaced with removable bollards prior to the last vacant block of land being built on. The emergency vehicles can then utilise the small mown strip behind the houses, which will also act as a firebreak for any small grass fires that may occur

Burning

Any hazard reduction / ecological burning of the reserve should take into consideration the appropriate fire regime.

Australia and Eurobodalla's native vegetation requires appropriate fire regimes to prevent a decline in biodiversity. This depends on the ecosystem present and can vary from fire exclusion for rainforests through to dry schlerophyll forests which, require fires to be not to frequent but also within 30 years. Intensity of fires also needs to be considered to prevent a decline in biodiversity.

Where appropriate and able, all burns or lack of should take into consideration the necessary requirements of each ecosystem present.

However life and property protection needs to be the first priority.

Street tree planting

In terms of fire, street tree plantings are not necessarily a fire hazard if they are individual trees and have no connectivity to surrounding bushland. As long as they are not continuos

with any bushland and they don't overhang any buildings then they generally should not be a problem. Any Eucalypt street tree plantings in a fire prone area should be smooth barked (e.g. spotted gums).

Trees, in order of decreasing resistance to fire, are those with high levels of accumulated salts: deciduous trees; evergreen hardwoods; introduced conifers; eucalypts; and native shrubs.

- No tree is fire resistant.
- Some trees are more flammable than others.
- Given the right conditions, all trees will burn.

APPENDIX 04: LONG BEACH FORESHORE AND WETLANDS RESERVE LANDSCAPE MASTERPLAN

Landscape Masterplan

Refer to separate document