

*Castlecliff
Coastal Reserve*

**WANGANUI DISTRICT
COUNCIL**

**MANAGEMENT
PLAN**

Note: This Plan is subject to further amendments before becoming an official plan under the Reserves Act 1977



**August
2005**

Preface

Castlecliff Coastal Reserve is an important reserve for people of the Wanganui District as it comprises a significant part of the coastal environment north of the Whanganui River mouth. The reserve occupies approximately 35 hectares of land and extends 3.1 kilometres in length along the coast. It includes the Castlecliff Domain and adjoining areas of land which are predominantly under the control and management of the Wanganui District Council.

Under Section 41(4) of the Reserves Act 1977 the Wanganui District Council is required to keep its management plans under continuous review. This Plan builds on the work carried out to develop the 1994 Castlecliff Coastal Reserve Management Plan. It provides a basis on which future development and decision making on the Reserve can be made.

A wide ranging public consultation process has been undertaken in the development of this Plan. The Plan contains background material inclusive of resource data and current practices, identifies management issues and conflicts, analyses resources and develops management objectives and policies. The proposals within the Plan reflect not only the immediate needs and wants of Wanganui people for the Reserve and surrounding areas but includes medium term and longer term aspirations so that the things that are important about the Reserve are maintained and improved. This Plan differs from the 1994 Plan in the following ways:

1. There is a greater emphasis on the moles – particularly the North Mole.
2. The Council has, through its Long Term Council Community Plan, provided a funding stream for development in the reserve meaning progress has been made on a number of the 1994 Plan's objectives. The continued funding stream already set aside by the Council will ensure that the objectives in this Plan will also happen.
3. The Management Plan boundary has been widened to include the fishing platforms and related areas to the southeast which were previously zoned Manufacturing.
4. Citizens' groups have been actively involved in carrying out improvements in the Reserve. This is a reversal of the trends of low maintenance evident for a long time in many parts of the Reserve and the suburb of Castlecliff. Castlecliff suburb has recently seen economic growth. This document acknowledges that the coastal reserve is an important feature for the suburb that needs to be maintained and enhanced to create pride in the suburb and attract newcomers.

Cover photo: A Castlecliff Sunset. Photo: L J Douglas

Acknowledgement

The Wanganui District Council wishes to thank all the people and organisations who have given time and advice during the review of this Plan.

A number of Wanganui residents and Reserve users provided valuable comments both verbally and through written submissions.

Thanks is given to them and also to the following groups:

- Castlecliff Linking Group
- Wanganui Beach Society
- Castlecliff Residents Committee
- Friends of the Shoreline
- Ocean Terminals Limited
- Port Bowen Trust Incorporated
- Progress Castlecliff Incorporated

The emergence and strengthening of local citizens' groups since the 1994 Plan has meant that local interest and contribution to this review has been considerable and freely given by many groups and individuals.

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1

Introduction

1. Introduction

1.1 Context and Location

Castlecliff Coastal Reserve is located at the western-most edge of the Wanganui Urban Area, facing the Tasman Sea (see map in Appendix 4). The Reserve extends 3.1 kilometres northwards from the mouth of the Whanganui River and comprises an area of approximately 35 hectares. It consists predominantly of dune land and wetland located between Mean High Water Springs (MHWS) and road reserve.

1.2 Description

Castlecliff Coastal Reserve is made up of two main areas:

- Castlecliff Domain Recreation Reserve
- Former Harbour Board Endowment Lands

Castlecliff Domain Recreation Reserve is owned by the Crown and administered by the Wanganui District Council in terms of the provisions of the Reserves Act 1977. It comprises a total area of 25.0905 hectares. The former Harbour Board Endowment land (approximately 10 hectares) is also administered by the District Council.

The beach below MHWS (Mean High Water Springs) does not form part of the Reserve, however, it does form an important part of the coastal environment and it interrelates directly with the Reserve. The beach area is perceived by the public as being inseparable from the Reserve land (dune areas) and therefore the objectives, policies and management proposals in this Plan will cover the foreshore areas of the coastal environment where appropriate. Further, the Plan also considers use and maintenance issues relating to the moles, particularly the North Mole, and the fishing platform area which was developed in the mid 1990s and is a significant recreational asset to the area.

1.3 Classification

In 1981 Castlecliff Domain was classified as a recreation reserve in terms of Section 16 of the Reserves Act 1977 (Gazette Notice No. 67, 28 May 1981). Classification for recreation purposes means the management principles provided in the Reserves Act should be recognised in this Plan.

Section 17 of the Act refers to the purposes of a recreation reserve classification and the relevant extracts are contained in Appendix 1 of this Plan.

Other land outside of the Domain, but included within the boundaries of the Coastal Reserve area, is not classified. Including it within the Reserve for management purposes does not affect the status of the land.

1.4 Relationship to Adjacent Places and Activities

The majority of land adjacent to the Reserve is zoned Residential and contains residential housing. The proximity of the housing means the Reserve serves as a major recreational asset to Castlecliff suburb.

The use of nearby land for residential purposes, existing and future, can have a negative impact on any Reserve. Weed infestation, rubbish dumping and destruction of the dunes by vehicles and horses are already a problem.

Adjacent to the southern end of the Reserve (behind properties on the South side of Tregenna Street) is an area of land now zoned Reserves and Open Space. This land is currently owned by the Council and under lease to the Port Company. Since the 1994 Plan the zoning of this land has changed from a Manufacturing zone to Reserves and Open Space which now provides more protection and limits development of the area for commercial and manufacturing purposes. As part of its responsibilities the Port Company (River City Port Limited) maintains the Port, wharf structures and the river channel.

The North and South Moles are not located within the Reserve, but are the reason much of the beach of the Reserve has established. The North Mole created a trap effect which enabled sand to build up behind it and gradually form the Reserve. The maintenance of the North Mole is essential to the future of the Reserve. The Council has moved in recent years to control more rigidly the kinds of rubble and debris used to “maintain” the Mole structure. In the last few years the Council has commissioned reports on how best to manage and maintain the Mole. The findings of these reports are discussed further in a later chapter of this Plan.

There are also a number of land and water activities adjacent to the Reserve, and in the general vicinity, which have the potential to impact significantly on the Reserve. This in turn has implications for the management of the Reserve. Off-shore oil exploration in the Tasman Sea is one activity which could potentially impact on the Reserve. The Port also has an influence both visually and because of the potential for water pollution and the deposition of waste material onto the beach.

The Beach Road pumping station operating as part of Wanganui’s sewage treatment plant is positioned on the true right bank of the Whanganui River immediately upstream of the Reserve.

The positive effects on water quality in the river and the sea around the Reserve, resulting from the work done as part of the Wanganui wastewater scheme, will continue to benefit the quality of the environment and the visitor experience at the Reserve. Further, the stormwater separation process

currently being undertaken suburb by suburb in Wanganui will complete this environmental upgrade.

The Reserve lies beneath the flight path to the Wanganui Airport. Although the Airport is situated on the opposite side of the river, noise from incoming and outgoing planes has some impact on people using the Reserve. There is also the potential for greater impact in the event of aircraft dumping surplus aerial top-dressing loads prior to landing.

The Reserve overlaps with the esplanade areas adjacent to the Whanganui River. With significant progress being made on a walkway network along the riverbank during the last decade, it may now only be a year or two before a physical link with the Reserve for both walkers and cyclists exists. Large sections of the riverbank walkway from Aramoho through Kowhai Park and down as far as the City Bridge were completed some years ago. This walkway has recently been extended to the end of Taupo Quay. Beautification work along the river behind the freezing works and extending from Beach Road currently provides a visual and physical representation of what the link to the Castlecliff Reserve could look like.

1.5 Management Planning

A Management Plan is required to be prepared for the Castlecliff Domain Recreation Reserve under Section 41 of the Reserves Act 1977. Section 41 of the Reserves Act states:

“The management plan shall provide for and ensure the use, enjoyment, maintenance, protection and preservation, as the case may require, and, to the extent that the administering body’s resources permit, the development, as appropriate, of the reserve for the purposes for which it is classified.”

This Management Plan recognises the principal purpose of the Domain area as being for recreation. It also recognises the existing recreation areas of the adjacent land controlled by the Council. At the same time it is acknowledged that the coastal margin is part of a natural environment which requires careful management and control to ensure it is adequately protected in order that it may be enjoyed by future generations.

In the interests of integrated and improved management of the Coastal Reserve area, the adjoining areas of land under the control and management of the Council have been included in the Plan.

The Management Plan sets out what Council hopes to achieve, how this will be done, and the development proposals which may be necessary to implement policy. Some of the decisions are difficult but the framework created by this Plan will enable future decisions to be made in a planned, efficient and co-ordinated manner.

1.6 Wanganui District Plan

The land within the Reserve is zoned Reserves and Open Space in the Wanganui District Plan.

The following objectives and policies from the District Plan are relevant to the Castlecliff Management Plan:

Environmental Objective One

- An ecologically healthy natural environment.

Policy One

- Promote understanding within the community about effects of activities on the health of the natural environment.

Policy Two

- Adopt a conservation approach to natural environment resource management decision making.

Policy Three

- Monitor the health of the natural environment and revise management as appropriate.

Environmental Objective Two

- Landscape with high quality.

Policy Four

- Identify the landscape characteristic of the Wanganui District.

Policy Five

- Encourage the maintenance and enhancement of the environment.

Environmental Objective Three

- Natural environment features of particular significance are protected.

Policy Six

- Identify and protect the sites or areas of significance according to set criteria.

Policy Seven

- Maintain or enhance where appropriate, the natural character of the district's waterways (coast, wetlands, lakes and rivers) and their margins, and protect them from inappropriate subdivision, use, natural character, ecological values and the extent to which adverse effects are avoided, remedied or mitigated.

Infrastructure Objective One

- Infrastructure development which is co-ordinated, cost effective and efficient in the use of natural and physical resources to meet present and foreseeable future needs of the District.

Policy Five

- Ensure adequate provision, distribution and utilisation of recreational facilities and opportunities, and define reserves and open spaces where the following characteristics are maintained:
 - a. Appropriate distribution of Reserves, open spaces and facilities throughout the district based on population characteristics;
 - b. Facilities on Reserves are located and designed in an integrated manner;
 - c. The scale, vegetation and design of Reserves and open spaces contribute to character of surrounding areas;
 - d. Safe design of Reserves, open spaces and accessways;
 - e. Retention of natural and cultural heritage features.

1.7 Long-term Council Community Plan

In 2003 the Wanganui District Council consulted with the community and developed community outcomes to be incorporated into the Long Term Council Community Plan (LTCCP). One of the outcomes identified by the community was:

“Development of amenities and recreational opportunities”.

This outcome was expanded to include the following statements of relevance:

- Development of activities and facilities for youth.
- Development and positive management of existing parks, walkways and reserves.
- Development and positive management of existing recreational and sport facilities.
- Enhancement of the ecological and scenic values of the coastal environment and the recreational use of the beach.

1.8 Other Plans

There are other plans and statements which relate to the coastal environment. These include the New Zealand Coastal Policy Statement, the Regional Policy Statement, the Regional Coastal Plan, and the Land and Water Regional Plan.

The Regional Coastal Plan and Land and Water Regional Plan have been prepared by Horizons – the Manawatu-Wanganui Regional Council - as part of its responsibilities under the Resource Management Act. The Coastal Plan deals with the “wet” parts of the coast from the outer limits of the territorial sea to Mean High Water Springs (MHWS). Therefore, the wet part of the beach at Castlecliff is covered by this Plan. The Land and Water Regional Plan covers discharges to land, discharges to surface water, taking and using surface water and groundwater, and soil disturbance and vegetation clearance on the rest of the Reserve.

2

History

2. History

2.1 Maori History

Maori history gives credit for the discovery of New Zealand to Kupe, the renowned chieftain of Hawaiki.

To the early Maori the coast to the north of the mouth of the Whanganui River was known as Kai Hau O Kupe.

Smart and Bates (1972, p.20) in their book “The Wanganui Story” describe Kupe’s discovery of Wanganui.

“After a short stay in the shelter of what is now Wellington Harbour, Kupe continued his journey up the West Coast of the North Island passing between the mainland and the islands of Mana and Kapiti, until he eventually passed the mouth of a large river (now the Wanganui) which he knew would give him access to the interior of the land. Kupe decided to land on the north bank of the river but the rough water of the river mouth made a crossing of the bar too hazardous to attempt so he and his crew were confined to the coast for several days.

It was during this enforced stay that Kupe found some difficulty in obtaining supplies of food for his crew. From this fact Wanganui received its first place name ‘Kai Hau O Kupe’; a literal translation gives the meaning as “the place where Kupe ate the wind”.

2.2 Early Maori Occupation

Before European arrival and settlement, Maori had a set routine of seasonal occupation of the tidal estuary. Smart and Bates (1972) produced a map of Pa Sites on the Lower Whanganui River. Pungarehu is shown on the north bank of the Whanganui River very close to the coast and is described as:

“The most seaward fishing Pa of the Ngarauru tribe, and often referred to in the Land Court records of the 1860’s as sited near the Pilot Station at Castlecliff so it would have been near the intersection of Morgan and Tregenna Streets. No visible evidence of this rather exposed fishing village has been discovered, but its importance to the Waitotara Maori was significant and its quick access to the ocean fishing grounds was an added advantage.” Smart and Bates (1972, p.30)

A limited number of artefacts of archaeological significance have been discovered at Castlecliff. One, an adze found near Thatcher Street, has been dated between 500 and 1000 years old, and is of the early ‘Moa Hunter’ type.

The significance of this in terms of very early settlements has yet to be established.

The importance of Castlecliff Reserve for access to traditional Maori fishing grounds and other resources continues today as it has since long before European occupation of New Zealand.

2.3 European Settlement of the Area

Kirk (1989, p.33), in his book “Streets of Wanganui”, states:

“The European name of Castlecliff first appeared in 1853. In that year a notice appeared in the Wellington newspaper advising mariners that the entrance to the Wanganui River could be picked up from the open sea by observing the castle-like cliff to the north of the entrance to the river. Indeed a high cliff did exist there at one time, but over the years it has been eroded by the sea.

In 1881 a meeting of residents of Wanganui was held to discuss a proposal that a railway should be constructed to Castlecliff. After discussion it was agreed to form a railway company. After the formation of the company in 1882 the township of Castlecliff was laid out. In January 1883 the lease of 98 sections was offered by auction. With the sale of these sections Castlecliff was established although it was 1885 before the first passenger trains ran between Wanganui and Castlecliff.”

The Castlecliff Town Board was established in 1909. In 1911 it received a considerable boost when the following decision was made: *“In the 1911 Wanganui Harbour Board election the party favouring an overseas port at Castlecliff was elected over the opposition of several influential merchants who wanted the Town wharf developed.”* This decision resulted in the original wharf at Castlecliff being rebuilt along with further extensions of the moles and the construction of a wall to form a floating basin.

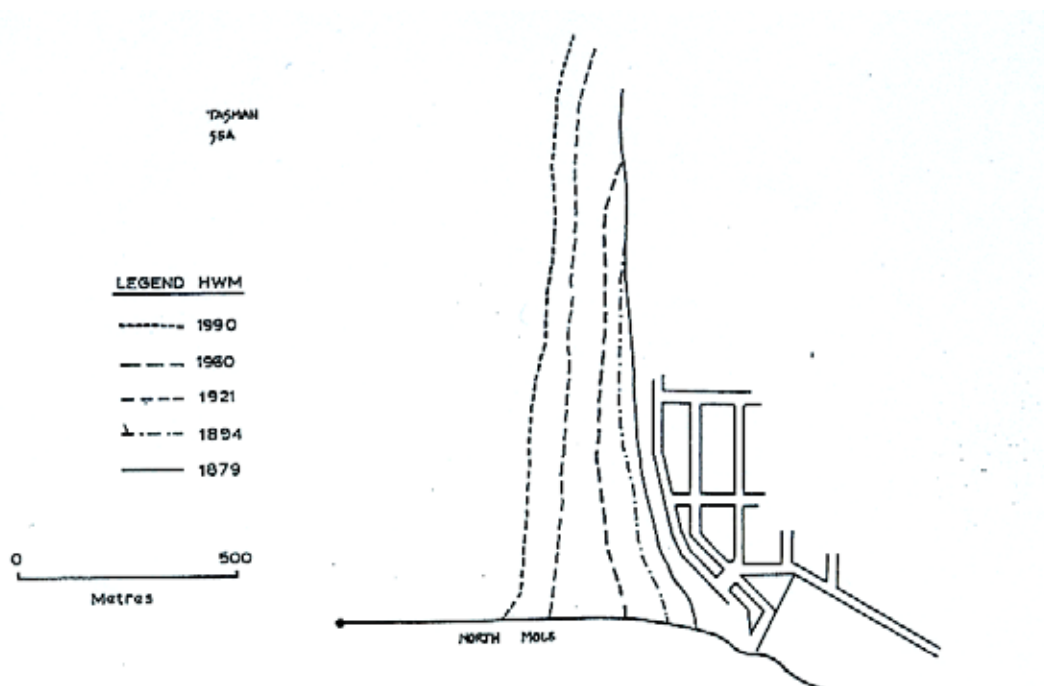
The Harbour Board, and the development of the Port at Castlecliff was very important in the development of the young township. This can be seen in the selection of street names. *“The names selected for the streets in the new township were the surnames of the members of the first Harbour Board, which had been elected in 1877... the first block of streets were Bamber, Tod, Bryce and Morgan Streets. The second series of streets laid out were named after the members of the 1881 Harbour Board, Cornfoot, Polson, Laird, Cross and Thatcher Streets.”* Kirk, (1989, p.33)

The Castlecliff Town Board existed until 1924 when it amalgamated with the Gonville Town Board and the Wanganui Borough Council to form the Wanganui City Council. The suburb of Castlecliff continued to grow. By 1991 it had a population of 4044 people and 1391 occupied dwellings.

2.4 Reserve Creation

The area of land comprising the Castlecliff Domain Recreation Reserve is primarily land which has been formed over the past 100 years as coastal processes adjusted to port developments. Mole structures were constructed on the North and South heads in 1877 to aid navigation at the river entrance by improving river depth and channel stability. The moles were later extended in 1911. The structures have resulted in accretion of sand as it becomes trapped by a dominant net north to south littoral drift. The greatest change occurred adjacent to the North Mole where the coastline moved approximately 600 metres seaward between 1880 and 1993. The rate of progradation decreases in a northerly direction.

The Castlecliff Domain was identified as a Reserve in 1918 when an area of 12 acres (4.9 hectares) of beach and dune land was reserved for the purposes of a “Public Recreation Ground”. A further 50 acres (20.2 hectares) of accreted land was added to the Reserve in 1957.



2.5 Development within the Reserve

Wanganui townspeople have been travelling to Castlecliff to fish and swim since 1885 when the Wanganui Heads Railway Company commenced operation. Passenger rail transport between Wanganui and the township of Castlecliff continued until the extension of the tramway service to Castlecliff in 1912 seriously reduced the number of passengers travelling by train.

The early 1900s was a time when many townspeople were either camping or building bachs at Castlecliff, with many travelling to and from work throughout the summer months.

Interest in the beach environs grew during this period and in 1911 the Castlecliff Surf Bathers and Life Saving Club was formed. The club reformed as the Castlecliff Ladies Surf Lifesaving Club, then became the Castlecliff Surf and Life Saving Club, and is now known as the Wanganui Surf Lifeguard Service.

The New Zealand Places Trust report that in 1912 a Tea Kiosk was built at the beach. This building was subsequently relocated out of the Reserve in 1935 to Puriri Street where it now serves as clubrooms for the Braves Softball Club. The building is part of Castlecliff's history as it is registered as a Category II Historic Place under the Historic Places Act 1993.

The increasing interest in the beach sparked off a series of development schemes which included the erection of the Castlecliff Bathhouse in 1918, permanent shelters in 1923 and a beach pavilion in 1957.

The organisations responsible for the implementation of many of the major beach improvements which have been seen over the years up until the publication of the 1994 Management Plan were:

- The Castlecliff Improvement Society
- The Castlecliff Surf Bathers and Life Saving Club
- The Castlecliff Ladies Surf Life Saving Club
- The Castlecliff Surf and Life Saving Club
- The Wanganui Junior Chamber of Commerce
- The Wanganui Beach Society.

Between 1994 and 2003 several other groups have been involved in the promotion and development of both the Castlecliff suburb and the Reserve. These groups include:

- The Castlecliff Residents Committee
- Progress Castlecliff Incorporated
- Castlecliff United
- Port Bowen Trust Incorporated

The above, and other interested groups and individuals, have formed the Castlecliff Linking Group – which has undertaken many improvements to the Reserve and now provides direction in the spending priorities for development money for the suburb and Reserve.

Historically there have been a number of development proposals submitted to Council. Past achievements include the construction of the Duncan Pavilion, public toilets, car parking areas and the children's playground.

During the Second World War at least five emplacements (pill boxes) were built near the coast. Of these, two are located adjacent to the Wanganui Surf Lifeguard Service building (now sand covered), two in the dune land of the Reserve, and the fifth was located by the Morgan Street toilets, however, it

was destroyed by the Army in 1973. Initially these boxes were placed so a view of the sea and beach area was available, but natural processes at the coast have resulted in the dune sand moving and building around them.

The earth mound has since been removed, and the sail is stored in the Castlecliff Lifeguards Pavilion and is available for use in the domain during times when events are being held.

A planting programme involving the public was held during Conservation Week in 1988. Over 1000 trees were planted along the reserve fronting Seafront Road. In November 1988 an earth mound entertainment stage with a portable 'sail' backdrop was erected in the children's play area.

In 1991 efforts to improve the appearance of the Reserve with a 22-point plan saw significant improvement in the visual appeal of the Reserve on arrival at the Rangiora Street entrance, with a number of planting beds being put in place. These beds were irrigated using trickle feed, and have stood the test of time and are now well established. They could benefit by some thinning and replanting but overall show what can be grown in a harsh, sand environment.

Recent developments in the Reserve include:

- Upgrade of Rangiora Street toilets and refurbishment to Art Deco period style
- Fencing and barrier placement as per the 1994 Plan recommendations
- BBQ installation
- Seat and picnic table installation
- Construction of the fishing platform along the river edge at the eastern boundary of the Reserve
- Significant upgrade and redevelopment of the playground and equipment
- Development of new accessible toilets on the upper storey of the Duncan Pavilion, and demolition of the rear toilets
- The adoption of a policy to open the changing rooms and toilets under the Duncan Pavilion each day during the summer months.
- Continuous landscaping and planting in the Domain.

The Council and community are fortunate in having groups within Castlecliff actively working in the Reserve to improve the physical condition of the area.

3

*Resource
Inventory*

3. *Resource Inventory*

3.1 Natural Resources and Processes

3.1.1 The Coastal Environment – Geology and Landform

While the landforms of the Castlecliff Reserve have been formed over the last 100 years, the sedimentary rocks into which the sea cliff (visible to the north-west of the Reserve) has been cut are hundreds of thousands of years old.

Over the past two million years (Pleistocene), the earth's climate has fluctuated between the present levels and cold periods when sea level was approximately 130 metres lower and a land bridge existed to the South Island. During periods of sea level rise sediments were deposited offshore. Extensive uplift (30 to 40 metres over the last 120,000 years) and erosion (over the last 10,000 years) along the northern coast resulted in the present cliffs being cut into the Pleistocene sediments. The cliffs comprise successive formations of sandstone, siltstone and shellbed (containing fossils), each laid down during different sea level rises.

At a height of 30 to 45 metres the cliffs between Castlecliff and Nukumarū form a very dominant feature of this coastline. The cliffs are generally south-west facing. They therefore remain damp in some places for much of the year and are exposed to weathering by salt spray. The rock is relatively young and easily eroded by wave action and wind.

3.1.2 Dune Development

Foredune development on prograded land (land formed through silt depositing because of the existence of the mole) immediately north of the River is the result of the erection of the moles. Prior to the erection of the North Mole this coast had a sediment deficit which resulted in continual erosion to the cliffs rather than dune development.

In 1877, in an attempt to improve river depths and stability at the entrance to the Whanganui River for shipping, the North and South Moles were constructed. The training walls (jetties) were filled with shellrock and concrete to trap and deflect littoral drift of sand, minimising the formation of a sand bar at the mouth. The result was a rapid buildup of the foreshore area north of the rivermouth.

Extensions to the walls and raising them to the present height continued between 1877 and 1930 by which time the North Mole measured 865 metres in length and the South Mole 1010 metres.

As the length of the North Mole was extended, the width of the prograding (advancing) foreshore to the north increased. Originally, the impact from the mole construction was in the area closest to the mouth, whereas subsequent

extensions have aided progradation for several miles northwards. Today sand accumulation is occurring to within 3km of the Mowhanau Stream.

Sand is the most significant deposition material in the Reserve. This is sourced mainly from the erosion of cliffs to the north-west of the Reserve, and Mts Taranaki/Egmont and Ruapehu. It is transported by rivers and wave action to reach the foreshore adjacent to the Reserve. Silt and driftwood also reach the coast, especially during river floods.

Waves and wind move sand from the foreshore to the top of the beach. Wind then transports it further inland where dunes form as the sand accumulates around driftwood and vegetation. As the vegetation grows higher and/or seaward, sand deposition accompanies it. Winds of greatest speed on this coast come from the west and north-west. During a build up of sand deposits the dunes rise in height closest to the coast. As part of the natural cycle of coastal development the wind blows through the frontal dune (this is described as a blowout) and pushes this sand to the rear.

The dunes are identified as foredunes and rear dunes. The foredune is a continuous landform stretching the length of the Reserve and located next to the beach. The foredune is therefore oriented parallel to the beach and is an area of active dune formation. It is punctuated by localised areas of erosion (blowouts) usually associated with discontinuous or lack of vegetation cover which may result from natural causes or human activity. Landward of each erosion site is a corresponding deposition zone which can rise above the level of the foredune. This type of dune can grow to considerable size and move inland. It is called a parabolic dune. These dunes will self-arrest if left alone and should be viewed as a natural part of dune processes. Problems can occur, however, when they extend inland far enough to affect amenities or residences and stabilisation works may be required.

Behind the foredune there is a complex system of rear dunes. These make up the greatest area of the Reserve. The stability of the rear dunes increases inland. Between the rear dunes and the 1875 shoreline, areas of swamp exist. These areas formed in response to the new beach and dunes preventing drainage water reaching the sea. The combined landforms of the Reserve make up what is referred to as a 'coastal barrier beach system'.

The natural dunal character of the area has been altered by the erection of structures and other activities. In the Rangiora Street vicinity the buildings and car parks have altered the rolling dune character and regular beach grooming prevents foredune development in this location. Sand extraction in the Morgan Street area has levelled and/or hollowed a large area of the rear dunes. In some areas dune blowouts have been assisted by human activity, mainly horse riding, motorbikes and off road vehicles.

3.1.3 Dune Vegetation

The dune system supports a small group of highly specialised plants. These sand binding species must be strong and hardy as they need to resist

desiccation by unchecked onshore winds, withstand the burning effects of salt spray, cope with drifting sand and struggle against burial and undermining. As well, they must tolerate the high temperature of sand, high reflectivity, low nutrients and low water retention.

Vegetation is necessary for dunes to form and also to prevent later erosion. Both native and introduced vegetation currently play a role in dune stabilisation in the Reserve. The native sand binding grasses are typical of those found in many west coast North Island beach environments. Spinifex dominates the foredune with some patches of pingao present. Airborne sand is trapped in the spreading shoots of both plants. They grow upwards so as not to be buried and sand gradually accumulates around them. By this process a dune builds.

Spinifex and pingao are unable to survive in the more stable sand-starved rear dunes. Marram grass, an exotic sand binder often planted for erosion control purposes, is also found on the foredune. It spreads much more slowly so is often associated with hummocky dunes compared with the more even 'dome-like' spinifex covered areas.

The rear dunes support the most diverse range of plant species. The dunes closest to the foredune area are dominated by marram grass, in some places smothering the native species. Sand daphne and *Cassinia* are present in small numbers, and garden species have naturalised from local residences including *Alyssum*, succulents and *Senecio*. The inland rear dunes are dominated by exotic and non-indigenous species including wattles, taupata, Australian ngaio and boxthorn.

Both pingao and sand daphne have a status of "gradual decline", de Lange et.al (2004). This means the species are predicted to decline by 5-30% over the next 10 years. Whilst considered nationally rare, there is representation of both species in the nearby Foxton Ecological District.

3.1.4 Cliff Vegetation

The cliff vegetation differs from the dune vegetation. The dampness in the cliff face varies depending on strata. Siltstone layers are impermeable and act as aquifers. Vegetation often accumulates in these zones. The cliff also creates an unusual microclimate, and some wind protection which provides for a range of vegetation. Cliff face plant species include New Zealand iceplant, boxthorn, glass wort, and Buck's Horn Plantain.

Species amongst the cliff rubble include *Coprosma kirkii*, gorse, club grass and inkweed.

A list of the vegetation species found in the Reserve is included in Appendix 3.

3.1.5 Swamp or Wetland Environments

A build up of sand resulting from the construction of the mole created a swale along the base of the original shoreline. At the rivermouth end of the Reserve, where the cliffs were not prominent, the wetlands were shallow. Most of this area has filled in and developed except the block surrounded by Bamber – Carson and Egmont Streets.

At the base of the cliff behind Karaka Street the much deeper wetland remains, although significantly modified. The wetland forms part of adjacent residential properties and is not included in the Reserve.

Small areas of wetland are present at the base of almost the entire length of the cliffs to Mowhanau. Moving northwards, these become increasingly shallow and brackish. These wetlands are much younger, which is in keeping with the more recent beach progradation (advancement), and are dominated by colonising species. The establishment of wetlands is part of the natural processes taking place at the coast. For example, wetlands can form as dunes develop and trap groundwater which naturally flows towards the sea.

The Egmont Street wetland is dominated by invasive exotic species including elm and willow. However, the area also contains a variety of native wetland species. It is easily accessed and provides a contrast to the rest of the Reserve.

The area known as the Karaka Street wetland is the oldest area of wetland in the coastal environment. It is distinguished by its advanced species and greater water depth. A drain skirts the southwest edge of the wetland although its effectiveness is reduced by the damming effect of the beach sand. This has lowered the water table permitting flax to dominate over Raupo. Parts of this wetland have been filled in by residents and developed as gardens. A variety of exotic plants have been established, including garden plants such as willow, honeysuckle and arum lily.

3.1.6 Landscape Character

The Reserve is dominated by the Tasman Sea, instilling a sense of isolation and wildness. The many moods of the sea created by the tides, waves and weather provide escape from the nearby City. Cloud formations and sunsets are dramatic and the horizon line creates a sense of infinity. Black iron sand strewn with driftwood typifies the ruggedness of a west coast beach.



The Castlecliff Reserve's Rugged Beauty – Photo: L J Douglas

3.1.7 Climate

The climate is temperate, with warm summers and mild winters. The average annual rainfall is 906 mm, mean annual sunshine hours are 2087 and the average daily maximum temperature is 17.5 degrees Celsius (average daily minimum temperature is 9.6 degrees Celsius).

The Reserve is exposed to the Tasman Sea and subject to the prevailing west, north-west and southerly winds. Salt-laden westerly winds, often of high speeds, are common in spring and summer when most sand binding occurs. These winds impact on the use of the Reserve and beach area, and also the residences adjacent to the Reserve.

Climate also influences the vegetation found in the Reserve, which needs to be salt and wind tolerant.

3.1.8 Fauna

A survey of fauna found in the Reserve was carried out for the 1994 Plan by the Department of Conservation. It concluded that the Ashton Terrace wetland is recognised as being highly modified with little or no open water. Spotless crane *Porzana tabuensis plumbea*, a small wading bird often found in wetland areas, is not present and the results of the survey indicated that the area does not appear suitable for this species or any other wetland species of note.

The stream at the southern boundary of the Karaka Street wetland, which is regularly dug out and cleared, has been identified as containing eel *Anguilla sp.*, common bully *Gobiomorphus cotidianus* and inanga (adult whitebait). The presence of the latter species indicates that the stream is probably used by this species for spawning, and has some value for recreational whitebait fishing.

The Reserve is regularly used by a range of birdlife. Of note are game birds such as pheasant *Phasianus colchicus* and California quail *Lophortyx californica brunnescens* in the scrubby hind dune areas. The common skink *Leiopisma nigriplantare polychroma* and common gecko *Hoplodactylus maculatus* are also found in the fore and hind dune area. The Katipo spider *Latrodectus katipo* is found in the foredunes and beachfront. The habitat of the katipo spider is under threat from the introduced spider species *Steatoda capensis*, introduced from South Africa.

Marine mammals and other birds are also seen in the Reserve from time to time. Wanganui Conservancy of the Department of Conservation reports that little blue penguin, New Zealand fur seal, and leopard seal are occasionally seen on Castlecliff Beach.

Bird life likely to be seen in the area include white fronted terns and skua (seasonally and in large numbers); *Caspian terns*, red billed and black backed gulls with a variety of southern sea birds, for example, prions, sooty sheer waters, giant petrels, and albatross sometimes damaged or injured during periods of inclement weather.

The area has also seen a variety of marine mammal strandings. For example, common dolphin and whales of various types can occasionally be found dead or dying on the beach. A very rare hectors beaked whale was collected from the immediate vicinity of Castlecliff Beach in recent times.

There are also a wide variety of pests that impact on the dunes, including feral and domestic cats, dogs, mustelids, rats and mice.

3.2 Built or Man-Made Resources

3.2.1 Buildings, Structures and Facilities

Introduction

The public generally use the Reserve for the beach and its other natural features. Buildings on the Reserve are relatively few. Two factors that most of the buildings have in common are that they tend to serve the recreational needs of the community (i.e. Duncan Pavilion, Wanganui Surf Lifeguard Service building and toilets), and they do not especially contribute to the overall character of the Reserve. The exceptions would be the two World War II pill boxes and the North Mole structure which protects the entrance to the Port of Castlecliff.

The majority of buildings and facilities within the Reserve are owned and maintained by the District Council. The exception to this is the Wanganui Surf Lifeguard Service building.

3.2.1.1 Duncan Pavilion

The William McAlpine Duncan Pavilion, known as the Duncan Pavilion, is a distinctive two-storeyed 12-sided building located at the southern end of the beachfront carpark off Rangiora Street.

The building is considered an icon of Castlecliff by some groups and the New Zealand Historic Places Trust consider it an important part of the cultural history of the area. It should also be noted that this building is associated with William McAlpine Duncan who has contributed much to Wanganui's Community Development.

The Pavilion was built in 1966. It is currently leased to Progress Castlecliff Incorporated who have in recent years refurbished the building extensively. The group's work has seen a wheelchair ramp built, changes to the balcony and exterior of the building to reduce vandalism, and significant interior redecoration

The wooden pavilion provides men's and women's changing facilities, showers and office accommodation on the ground floor and a large meeting area and associated kitchen, entrance lobby and toilets on the first floor. A deck extends along three sides facing the sea. The two floors are not connected internally.

The changing rooms are in the concrete basement and they have been extensively upgraded by the District Council to include toilets as well as changing facilities and showers. The dilapidated changing rooms/toilets behind the pavilion have been demolished.

3.2.1.2 Wanganui Surf Lifeguard Service Building

Although the Surf Club was established in 1909 and represented the first such club in New Zealand, the building for the Club was only completed in 1956. It was designed by Michael Talboys and built by McClintock and Oliver for a cost of 6,900 pounds. In 2001 Talboys expressed surprise that the building was still standing due to its proximity to the sea and prevailing weather. He added that a great deal of research went into the substructure of the building to ensure that it would withstand adverse conditions. The depth of the piles is substantially deeper than those of an equivalent building built on solid subsoil.

The building is located near the beach and separates the two halves of the beach carpark. The building is generously proportioned with utility areas downstairs, which include a boatshed, showers, wet areas and storage whilst the upstairs is mainly a social space with kitchen facilities. The building was extended in the 1960s to provide additional storage space for equipment.

It is described as a modernistic building using the 'elegant lean to' or barn style for its overall form. Originally it was smartly clad in black-creosoted weatherboard. These have been replaced in recent years.

Generously sized windows with large spaces between mullions allow a view of the Tasman Sea aided by a small viewing deck accessed from the hall. A large clock was incorporated into the upper front wall.

The building is well built structurally with the upper floor supported by massive rough sawn Oregon beams. All the flooring appears to be 75mm heart Matai and most of the original windows still remain intact.

Almost 50 years on the building has an uncelebrated graceful and refreshing elegance true of many modern buildings and houses of this era. Justine Clark and Paul Walker, 'Looking for the Local' mention the building in the New Zealand book on Modernist architecture.

3.2.1.3 Public Toilets

The public toilets adjoin the children's playground in Rangiora Street and are administered by the Wanganui District Council. The facilities include three flush toilets and a hand basin in the women's toilet, and three urinals, flush toilet and hand basin in the men's toilet. Access to the women's facility is via a step, although access to the men's toilet is virtually flat enabling wheelchair entry. In 2003 the Council undertook a significant upgrade of the toilet and hand basin facilities, and restored much of the Art Deco design style to its original state.

Toilets previously located in Morgan Street were demolished in the 1990s due to ongoing vandalism. A modern toilet has been placed in a public area adjacent to the fishing platform and provides the general public and fishing platform users with clean, well maintained facilities.

3.2.1.4 World War II Pill Boxes

Three pill boxes dating from the Second World War are visible from the Reserve today. The three remaining pillboxes are important heritage and landscape features. They are solid concrete structures and appear as a sculpture within the dune landscape. These historic relics of the Second World-War have the potential to remain as markers of social conflict, and war memorials for future generations. The pillboxes are recorded by the New Zealand Archaeological Association as archaeological sites. They are located in the dune land adjacent to Morgan Street. Two others are situated close to the Wanganui Surf Lifeguard Service building, but are covered with sand. The visible pill boxes are the responsibility of the Wanganui District Council. Another pill box is located outside the Reserve area and has been used as the foundation for the Coastguard Control Centre at the end of Short Street near the Port.

3.2.1.5 Children's Playground

The playground is bound by vegetated dunes on one side, and Seafront Road and Rangiora Street on the other sides.

In 2002 the Castlecliff Linking Group and Port Bowen Trust Incorporated upgraded the playground. A significant amount was spent on providing modern safe play equipment. This effort was funded by the Wanganui District Council with other resources required to complete the work provided by the Linking Group and the community.

3.2.1.6 North Mole

The North Mole adjoins the Reserve boundary and provides a retaining wall for the Whanganui River. The significance of the mole in the creation of the Reserve area has been identified in the previous section. Located at the end of the mole is a navigational light for the Port of Castlecliff. The mole structure is essential for the continued operation of the Port. There is considerable ongoing interest from the community about the maintenance of the mole. Over the years various reports have been commissioned by the Council looking at elements relating to the mole and its future maintenance. These include:

1. An engineering report by Opus looking at options for the shape of the mole in the future.
2. A landscape report by Boffa Miskell looking at landscaping in the Castlecliff area including options for around the mole.

The future development and care of the mole will not be resolved by this Management Plan. However, the process of public consultation carried out during preparation of the Draft Management Plan will, when added to the other technical reports, provide decision makers with better decision making guidelines when allocating scarce resources.

The mole is used for a variety of activities from fishing to sightseeing and walking. The top structure is wooden. The stone foundation and main bearers of the railway which were used to transport limestone to construct the mole are still in place and appear sound. Mole maintenance work is required from time to time and this is currently the responsibility of River City Port Limited, as Port operator. The mole is a considerable recreational asset to the Wanganui people. Although it is not located within the Reserve boundaries, it forms part of the coastal environment in this location and impacts on the Reserve.

3.2.1.7 Karaka Street Beacon

This beacon is high on a cliff face and forms part of the navigational roadstead for the Port of Wanganui as an unlit beacon. The beacon is on land owned by the Harbour Endowment Trust. The beacon was originally an anchorage beacon with a large acetylene light converted to electricity in the 1960s. The actual glass light is now located in the Maritime Section of the Wellington City and Sea Museum. Large overseas vessels would anchor in deep water in this vicinity and be loaded by lighters from the Port of Wanganui.

3.2.1.8 Chequer Board

The Chequer Board is a lit beacon and assists in the navigation of vessels entering through the Heads at night to enter the Port basin. The light is attractive and plays an important safety role.

3.2.1.9 SS Te Anau

While this structure is not within the reserve boundary, the Plan should make reference to it. The SS Te Anau was built between 1878 and 1890 as a 1750-2000 ton vessel. It was a passenger ship used on the Tasman-Wellington/Christchurch circuit routes. In the early 20th century the ship was sunk to form part of the protective works for the inner Harbour basin.

3.2.1.10 Pilot House

This structure is also outside the defined boundary. The house was relocated and placed on top of a World War II gun emplacement after the end of the war. While modern radio communications have made it redundant, it is an important part of Castlecliff's history and is valued by the Castlecliff community.

3.2.1.11 Archaeological Sites

A number of artifacts of archaeological and cultural significance have been discovered at Castlecliff. There is potential for unrecorded archaeological sites to be present in the area. These sites could include midden (rubbish heaps) and ovens and could be buried underneath layers of younger dunes.

3.2.2 Access and Car Parking

There are three main access points to the Reserve – Rangiora Street, Morgan Street extension and Seafront Road (north extension). Each provides vehicle access to different parts of the Reserve and each attracts different user groups.

In general, car parking has developed on an ad-hoc basis and there has been little consideration of its impact on the overall management of the Reserve.

3.2.2.1 Rangiora Street

Rangiora Street is the primary and most popular entrance to the Reserve. It provides access to the Duncan Pavilion, the Wanganui Surf Lifeguard Service building, the playground, beach and car parking areas. At this entrance there are three distinct car-parking areas. These are described as the upper, lower and beachfront parks. Additional on-street parking opposite the playground provides angle parking for approximately 60 cars.

(a) Upper Carpark

The upper carpark located on top of a series of foredunes provides parking for 100 cars. It is linked to the Rangiora Street entrance by a short steep drive and is formed and sealed. The carpark offers expansive views over the shoreline and dunes both in a northerly and southerly direction.

(b) Lower Carpark

The lower carpark is arranged as three distinct terraces. In total approximately 180 spaces are provided. A drive links the terraces and a low post and rail fence clearly demarcates each level.

(c) Beachfront Carpark

This is the largest parking area catering for over 300 vehicles. It is situated in front of the foredune. The park is divided in two, separated by a barrier and the Wanganui Surf Lifeguard Service building. Vehicles entering the carpark are required to reduce speed due to the presence of speed humps. A concave shaped retaining wall of concrete construction located at the very front of the carpark, along the beachfront, separates the carpark from the beach area. This stands approximately 1.6m high and is designed to reduce the deposition of sand onto the carpark.

3.2.2.2 Morgan Street

Morgan Street is still the second most popular access to the Reserve. It extends to the beachfront via a sealed access road. This extension to Morgan Street is not legal road, but its importance in allowing people to access this part of the beach saw the Council seal it in 1999.

This carpark which is also sealed provides access to the area of the north mole. The parking area is encroached by sand which makes parts of the parking area inaccessible for vehicles from time to time. However, given its importance as an access point for surfing, fishing, swimming and walking, the Council has maintained the area to a reasonable standard.

3.2.2.3 Seafront Road

This road extends in a line adjacent to the coast from Bamber Street in the east to a point approximately 2.68 kilometres west. The northern end of Seafront Road is identified in the Wanganui District Plan as Reserves and Open Space zone. This applies to the unformed portion of the legal road from 70 metres west of Ngaio Street.

At the end of the current formed road Seafront Road leads into a unformed, narrow track which follows the wetland area at the base of the Karaka Street cliffs and ends with a small turning area by the stream. From this point four-wheel drive vehicles have carved a circular route through the dunes to the

beach. Several smaller tracks run from the access on the west side through the dunes and onto the beach.

3.2.3 Pedestrian Access and Walkways

While it may be reasonable to assume that most people using the Reserve for walking do so after they have driven to the Reserve, there are a number of walking tracks leading into the Reserve.

One track runs parallel to the Whanganui River mouth and has access from Tregenna Street. Immediately past the Castlecliff Pump Station a track runs between the rear of residential properties in Tregenna Street and the River. This track is the main entry point to the fishing platform. Another track links the access with Morgan Street extension while an unsealed track continues to the north mole.

Other informal routes cross the Domain and continue through the dunes to the beach. A shellrock track has been created opposite the Motor Camp which provides access to the Domain from the Motor Camp.

Four public walkways traverse the cliff face from Taupata Street and Longbeach Drive. The northern most path, leading from Longbeach Drive, is formed to the cliff face and is bordered by an area planted by the Council. Angle parking for approximately 20 cars is available on Longbeach Drive.

In the northern part of the Reserve, a number of small informal paths lead from local homes situated in Karaka Street and Longbeach Drive to the beach. These cross to the wetland area and many have small bridges linking those homes and gardens to the Reserve. These bridges were the subject of recent discussions between the owners, Council and the Department of Conservation on their maintenance requirements, safety and ownership. The outcome of these discussions has seen an agreement reached where these structures are removed and replaced with culverts.

Within the Reserve formal paths tend to focus on the beach environment, providing access from the Domain over the dunes and onto the beach. A large proportion of users walk within the Reserve, forming their own tracks. Most lead to the beach, but some link with features within the Reserve, such as the World War II Pill Boxes.

4
*Resource
Use &
Assessment*

4. Resource Use & Assessment

4.1 Introduction

The natural and built resources within the Reserve are used by many people for a wide range of recreational and leisure activities. The majority are passive in nature, but others are active. The various activities are identified and discussed in this section.

4.2 Natural Environment

The activities taking place in the Reserve based on natural features include walking, running, swimming, fishing, surfing, picnicking, bird watching, dog exercising, horse riding and exercising, sitting, watching, driving and playing.

These activities all have one thing in common. They are not reliant on the provision of services, facilities or man-made structures. They rely on access to the coast being available to enable continued enjoyment of this part of the District. A major reason for people visiting the coast has to do with the 'visual experience' and atmosphere. This changes significantly throughout the Reserve and is typified by the influence of the sea. Its vastness, ever-changing colours and moods offer different visual appeal from day to night and from season to season.

From within the Reserve views of Mt Taranaki, Mt Ruapehu, Kapiti Island and the South Taranaki coastline are available. The black sands, driftwood and pumice provide a unique appeal along the beachfront.

The Community Views Survey undertaken between 1993 and 2000 identified the following:

- The majority of people who use the beach do so to walk or run.
- Other uses included fishing and walking the dog.
- Castlecliff Beach was identified as having the lowest satisfaction rating of all facilities surveyed.
- The main reason for dissatisfaction was that the beach looked untidy and uncared for.
- The surveys indicated that 5% to 6% of Wanganui's population use the beach and reserve area.

Horse riding and exercising horses at the southern end of the beach have been occurring for a long period of time. Access is generally via Morgan Street. Although not officially sanctioned at present the use of the beach area for this activity appears reasonable. However, where riding is carried out through the dune system there is potential for damage to vegetation. Horse riding can also conflict with other beach users if not carried out responsibly.

The southern end of the Reserve has also been used by people for exercising dogs, swimming, surfing and fishing. Traditionally, dogs on the beach have been permitted, but not in the Recreation Reserve. As with horses this has not been formally recognised. The potential for disturbance to the environment and people's safety comes from roaming dogs. This is generally not the result of people exercising their dogs within the Reserve or on the beach, but is more likely a result of uncontrolled and wandering dogs. Banning dogs from the Reserve is unlikely to improve the situation. Signage indicating the appropriate places for dog exercising within the Reserve, public education to make the public more aware of their responsibilities regarding ownership of dogs, and the continued monitoring and policing of wandering dogs by the Council's Dog Control Officers will continue to be the most effective solution in the long term.

The beach, below Mean High Water springs (MHWS), is outside the control of the Wanganui District Council. It is controlled through plans and statements produced at a national and regional level. Regionally, the Manawatu-Wanganui Regional Council has a Regional Coastal Plan which includes policies for the wet areas of the coastal marine area. Although the Plan does not limit the use of the beach area, it also does not include specific policy with respect to Castlecliff Beach that can be applied to everyday management and development.

When discussing the Coastal Reserve and the activities taking place on this land, the beach is an integral part of the environment. Also, people's perceptions are not of the Reserve on its own, but always in association with 'the beach' and all it signifies. For example, people access the beach through the Reserve, parking in the Reserve or close by, walking across the dunes to the sand and the sea. To develop a Management Plan without reference to the beach itself because MHWS divides responsibility for the coast does not make sense.

4.3 Use by Maori People

The natural part of the coast is used for a variety of purposes by local Maori people. In particular, pingao and native vegetation are used for traditional weaving and tukutuku panels. Observations made by local experts on the pingao suggest that the natural population of pingao on the dunes at Castlecliff has declined since 1994.

4.4 Dune Stability

Due to fine vegetation cover and full exposure to coastal winds, the foredunes are constantly shifting. Where the ridge of a foredune is broken, wind will begin to funnel through to the hind dune. This will increase and eventually form a *blowout* where large quantities of sand are shifted inland. This is a natural coastal process which will reach a point of equilibrium where sand stability will enable vegetation to re-establish. Dunal instability continues and is of concern, particularly as it creates a sand nuisance for the local residential neighbourhood. Research on cultural coastal processes shows that if unchecked the dunes will become steeper and far less stable.

The dunes at Castlecliff are particularly vulnerable to erosion. They are relatively young and were formed rapidly by an artificial process and because of this they tend to be less stable. In addition, marram grass has allowed high craggy dunes to form, which are more vulnerable to blowout than the lower, rounded dunes held by native grasses.

The instability of the dunes is exacerbated by recreational use of the Reserve, including walking, motorbiking and horseriding. The fine vegetation cover on the foredune ridges is broken, allowing wind to funnel through, creating areas in the hind dune denuded of vegetation. If left undisturbed these areas may stabilise but continued tracking will increase the problem. Eventually, large hollows of sand will be created as the dunes are pushed inland.

Where recreational activities are undertaken without regard to formed accessways and tracks, the potential to damage rejuvenating vegetation and newly established dunes is significant. Achieving a permanent solution will take time and patience and the Management Plan may play a role in identifying an alternative venue or venues. The District Council has continued to seek alternative areas for off road vehicles.

The lower carpark at Rangiora Street has significantly impacted on the foredune. Regular sand clearance has prevented the build-up of a foredune and as a result the hind dune is fully exposed to coastal winds. However, shelter barriers and planting have allowed the hind dune to begin re-establishment.

4.5 Re-establishing Dunal Blowouts

Dunal blowouts can re-establish without assistance. Driftwood will create accumulation of sand on the leeward side in which spinifex or pingao can establish. Sand trapped by these grass-like plants will continue to build up the floor and sides of the blowout until a point of equilibrium is reached.

This process can be artificially initiated. One of the most cost effective methods is the deposition of driftwood at the base of the blowout. This process can be sped up by replenishing the driftwood as the sand builds up, and planting the sides of the blowout with spinifex. Another method involves the use of retaining screens. Experience has shown that screens or other

formal structures in the dunes are subject to theft and vandalism. This method is expensive, and similar results can be achieved by regular building up with driftwood.

A number of areas have successfully been re-established with this driftwood technique; however, a more structured programme of inspection and action would see blowouts addressed when they are small.

4.6 Significance of the Reserve

The Reserve is not included in the Foxton Ecological Survey and therefore cannot be considered as environmentally significant either nationally or regionally. The Survey classified the cliff section as “B3” with B meaning “site of national scientific or educational importance, or public interest,” and the 3 meaning, “feature unlikely to be damaged by human activity, and for which no action is warranted at present.”

Although not significant in the Ecological Survey, the dunes themselves are considered significant as a buffer to the adjacent residential suburb. They are vulnerable to damage and if disturbed have the potential to threaten activities and cause a nuisance. The hind dunes provide a sheltered, accessible environment with many interesting plants, both native and exotic.

The Reserve is recreationally significant, providing a wilderness environment that is close to the city and easily accessed. Situated where the city, sea and river converge, the Reserve provides the opportunity to experience a range of environments and recreational activities.

4.7 Built Environment

4.7.1 Duncan Pavilion and Changing Rooms

Council records show that the Pavilion was built by the Beach Society as a tearoom/restaurant with assistance from the Duncan Trust, Golden Kiwi funds and other fundraising activities. The Council met the costs of the toilets adjacent to the Pavilion.

The Pavilion was administered and controlled for a number of years by the Beach Society. During this time the Council maintained, insured and paid for the security of the building. No formal agreement was entered into and in 1990 the Beach Society sought that this arrangement continue with any license to occupy being set at a nominal level.

Between 1983 and 1990 little use was made of the Pavilion. During the summer of 1990/91 increasing vandalism led to boards being placed over the windows to reduce the potential for further damage. The changing facilities were not opened as these were also the subject of vandalism.

Administratively, the building is located on Recreation Reserve and controlled under the provisions of the Reserves Act 1977. As such, licenses to occupy

land within the Reserve are required. All buildings in Recreation Reserve are required “to be necessary for the operation of the reserve and its enjoyment for recreation purposes by the public”.

Since the 1994 Plan the use and future of the Duncan Pavilion seems to have been settled by the community. The presence of a strong and active Linking Group using the facility regularly has seen a number of positive outcomes. These include:

- A focused effort to renovate the building meaning its appearance both interior and exterior has improved greatly.
- A minor redesign of the building’s exterior staircase and balcony has meant that the vandalism and the resulting breakage of windows in the building has reduced.
- The Council now has confidence that the building has a continued place and use on the Reserve and as such it has released money over the past few years to carry out necessary structural and other repairs.

At the time of writing the 1994 Plan the prospect that the building may be removed and relocated away from the Reserve was very much alive. There is now little or no discussion in the community about relocating the building to another site. This has added to the desire of the community to put resources into repairing, upgrading, maintaining and using the building.

4.7.2 Wanganui Surf Lifeguard Service Building

This building is located in direct line with the foredune in a similar location to the Duncan Pavilion, but at the northern end of the lower carpark. It is well used and appears adequate for the needs of the Club. Recently it was upgraded, including recladding the exterior and roof repairs.

The building is mostly used during the summer months when lifeguards patrol the beach. Some difficulties are experienced on occasions getting life saving equipment on to the beach from the clubrooms and this has generally been attributed to the build up of sand on the lower carpark. The building’s location means it will always require expenditure to keep the area free from sand.

Given that Castlecliff Beach is still one of Wanganui’s most popular beaches, the need for the clubrooms is still as relevant as it was when the building was built.

4.7.3 Car Parks

Rangiora Street

The Rangiora Street carpark is large and was designed to meet the requirements at peak times. The 1994 Plan discussed the concept of allowing part of the bottom car park to cover over with sand and allow the dunes to

reform. This Management Plan leaves the option open to allow for a reduction in the bottom car park by allowing the sand to build up and the dune to re-establish on the car park on the western side of the surf club building. Until a final decision is made on the size of the car park there is a continual need to maintain the lower carpark by constantly removing sand. This sand removal ensures that 365 day a year drivers and pedestrians have access to the Duncan Pavilion.



Morgan Street provides access to the North Mole area enjoyed by surfers on a regular basis – Photo: L J Douglas

Morgan Street

The Morgan Street carpark is constantly affected by wind blown sand. This area is important for access to the North Mole by recreational users and access to the southern end of the beach and sea. It is a popular parking spot for surfers. The carpark is still adequate in size to cope with demand. However, the area is generally devoid of any landscaping and planting and is not particularly appealing. The draft landscape proposals commissioned by the Council and drawn by Boffa Miskell offer some suggestions for relief here. The track adjacent to the River leading to the mole forms an integral link to the Reserve and coastal environment and its use could be reinforced through additional planting.

Seafront Road

Access to the coast in this locality is via a walking track off the end of the formed road. It is suggested that this access be maintained and upgraded and that vehicular access be restricted as at present. In addition, a small carpark and turning area could be developed to formalise this access. The access point also reinforces the fact that this is an authorised vehicular entrance point to the

beach. This will help the process of controlling unauthorised use of other beach access points, and the dune areas. Careful thought should be given on how best to manage any changes to this access point onto the beach as there are potential safety issues between vehicle and pedestrian users, particularly children playing at the edge of the stream next to where the track exits the dunes onto the beach. Discussions on how best to manage this issue should be held between Council and users to ensure the best outcome.

4.7.4 Walkways

The existing tracks providing access to the Reserve and beach areas are maintained to various standards but are essential for the recreational enjoyment of people using the area. Generally, the existing tracks have little impact on the ecosystem of the Reserve. The walkways through the dunes could be enhanced by marking the tracks with some kind of marker system. Driftwood markers could be used at intervals to define the tracks. These would be a simple and cheap way to enhance the tracks' use. Boardwalks could also be used to define significant entry and exit points in the walkways system. They would be a simple construction and only continue for a few metres along the track.

A defined walkway system that included interpretative signs would provide a broader use and experience of the Reserve. The walkway could incorporate historic features such as the World War II pill boxes and the 1876 high water line, including the location of known shipwrecks. Important vegetation features and significant viewpoints could also be included. These walkways will eventually join the Riverbank walkway system following the River from Aramoho and linking with Castlecliff Beach.

4.7.5 Rangiora Street Entrance

A grassed area, a playground and planting beds at the Rangiora Street entrance create a landscape character unlike the rest of the Reserve. Mature Norfolk Island Pines are a theme of the area and many Pohutukawas have been planted and are now semi-mature.

The entrance driveway and retaining walls have been upgraded in recent years and pingao has successfully been established. Large timber planting boxes containing shrubs have also been installed in the car park.

4.7.6 New Zealand Property Boom

New Zealand is currently experiencing a property boom. Dolf de Roos, a well-known New Zealand property expert, commented on New Zealand coastal property in a recent article in his newsletter titled 'Life is a Holiday by the Seaside':

“The allure of the seaside is varied and deep seated by those in the work force who are no longer shackled to their place of employment and may seek to live by the seaside. Another

category may also want to move there: the vast and burgeoning masses of retired people including the bulge of baby-boomers who are headed for retirement. Therefore it is my contention that in the coming years, the value of seaside real estate is going to rise much faster than the comparable value of inland real estate. And this trend has already started to happen worldwide. In the United States the top 100 seaside counties have had population growths 50% higher than the national average since 1993. I imagine the statistics are similar in other countries”.

Given the increasing popularity of coastal real estate and the number of people nearing retirement in New Zealand in the next few years, it would seem logical that the quality of the amenities that Castlecliff Reserve has to offer could play a key part in the future popularity of Wanganui’s largest seaside suburb.

This Management Plan has, through the development of additional management principles, policies and objectives, sought to provide the kind of framework that will enhance the use and enjoyment of the Reserve for both the existing and future population.

5
Management
Issues

5. *Management Issues*

5.1 **Extent of the Reserve**

5.1.1 **Reserves and Open Space**

The whole of the Castlecliff Reserve is zoned Reserves and Open Space in the Wanganui District Plan. The Reserve is made up of land that is partly gazetted under the Reserves Act 1977 as “Castlecliff Domain Recreation Reserve”, with the remainder being former Harbour Board Endowment land. In terms of management of the Reserve, the status of the land is largely immaterial, as the land will be managed in the same way.

5.1.2 **Wetland Area**

The 1994 Plan suggested the inclusion of the wetland at the northern end of the Reserve. Part of this land is in private ownership, part is unformed legal road (some of this area is occupied by adjoining residents) and part is beach accretion. To date the Council has not taken action to change this situation and acquire this land.

The way forward in this Plan is to ensure that the wetland is preserved through discussion with the private landowners. This action could lead to the use of volunteer labour or work schemes to maintain the area, and carry out important conservation work such as the removal of invasive exotic plants.

The wetland’s importance to the coastal environment still remains unquestioned. It offers different recreational experiences and opportunities from those available on the adjoining Reserve. This area is dominated by Raupo but a number of exotic species are also present. Visually it is significant to the adjacent Reserve, even though it does not legally form part of it. It also provides a habitat for a number of birds.

Ultimately the community needs to work together to ensure that this wetland area is maintained and enjoyed. Private landowners may be happy to see a boardwalk built across the wetland so that the community can enjoy the area more intimately without damaging it. One option for construction of a boardwalk would be from the Karaka Street Beacon site.

5.2 **Integrated Decision-Making and Resource Use**

The coastal environment is one where a number of authorities have management responsibilities defined by a line at MHWS, or by the current legislation. Those with responsibilities include the Department of Conservation, Horizons – the Manawatu-Wanganui Regional Council - and the Wanganui District Council. The levels of responsibility are created by the Resource Management Act 1991 and the plans which are required to be prepared under that Act and administered by the various authorities.

The New Zealand Coastal Policy Statement sets national policy for the whole coast and parameters for development and use of the coastal environment. It guides Regional Policy Statements and Regional Plans prepared by the Regional Councils throughout the country. The difference between these two is that the Policy Statement sets policy (excluding rules) and general principles for the whole region, and the Regional Plans implement the policy through rules and other methods.

At the next level, the management plan regime under the Reserves Act deals with specific land and the development, use and protection of that land in a general way and on a day-to-day basis. The Management Plan aims to provide the framework for decisions and guide everyday development.

Since the publication of the 1994 Management Plan a more comprehensive approach to management of the Reserve has been undertaken through the creation of a working party that includes representatives of the two councils and the Department of Conservation.

This Management Plan for the Castlecliff coastal area proposes management policy and implementation relating to the whole coast, including the beach, the Recreation Reserve and areas outside the Reserve that are linked to the coast. It also proposes certain policy relating to the water and the safety of people using it. The reason for this is that there is seldom any differentiation between the land and water parts of the beach by the people using this Reserve.

A continuation and strengthening of this combined approach to the management of the coastline can only improve the management and protection of the Reserve and surrounds.

5.3 Environmental Values and Recreational Opportunities

Castlecliff Reserve is a natural environment impacted upon by man's recreational requirements. The major reason the coast is popular for a range of recreational activities is its natural features. Some recreational activities have the potential to impact on the environment in an adverse way and this needs to be addressed.

In particular, motorcyclists and other off road vehicle users driving over dunes and the beach is continuing the damage and erosion of the dunes evident when the 1994 Plan was written. The effects of this are dune blowouts and drifting unstable sand, which has the potential to significantly affect private property. These activities create noise which impacts on people's enjoyment of the Reserve for other recreational pursuits, such as:

- Swimming
- Fishing
- Surfing
- Picnicking
- Walking
- Sun bathing.

Noise from motorists on the beach also affects the enjoyment of residential properties nearby, and has the potential to cause injury to unsuspecting members of the public.

There is also some potential for conflict between different recreational activities. For example, motorists using the beach can conflict with horse riders. In the past this has occurred at many locations. It is recognised that people using the beach and the Reserve for these activities do so because the dune environment offers a recreational opportunity that they value. Limited formal opportunities exist for these activities in other parts of Wanganui and at this stage it is not considered that outright prohibition is justifiable. In the past the Wanganui District Council has resolved to allow motorised vehicles and motorbikes to use the former sand extraction area adjacent to Morgan Street. In the absence of any other more suitable areas, this is probably still appropriate as one area for Wanganui people to “let off steam” in an area where there is now limited ecological value. This, however, should be viewed as a temporary “stop gap” until more appropriate sites away from the beach are made available to off road vehicle users.

As with the 1994 Plan, access to the beach for motorised vehicles will continue to be limited to Morgan Street and Seafront Road. Education, policing, and signage for beach access will be discussed in a later section of this Plan.

5.4 Efficient and Appropriate Use and Development of Buildings

The erection of buildings on the Reserve is mentioned in the Reserves Act and some control on the management of such facilities is provided by the Act. Other controls relate to the type of buildings and the use of these. Buildings on recreation reserves are supposed to relate to those necessary for the continued enjoyment and use of the Reserve by the public. Buildings that do not fulfil this purpose are not justified. The same applies to other structures.

The buildings and structures situated on the Reserve are generally located in an enclave at the end of Rangiora Street. These are noted in the previous section and include the Duncan Pavilion, the Wanganui Surf Lifeguard Service building, the carparks and the children’s playground. These buildings have taken on a more permanent use in the minds of community groups since the 1994 Plan was written. There is a desire by a number of submitters to the 2004 Plan to see more development of recreational facilities that will improve the suburb and Wanganui in general.

Other buildings located on the Reserve include the World War II pill boxes and toilet blocks.

6

Management Principles

6. *Management Principles*

Management principles are those principles that underpin the basic philosophy of a management plan. The principles that underpinned the 1994 Plan were an amalgam of the public comments gathered during the information collection phase of the Plan's preparation, combined with information from a number of existing documents that provided history and other relevant information about the Coastal Reserve and surrounding areas. The 2004 update again draws upon these kinds of information sources and combines data gathered through written submissions, public meetings, interviews and surveys of users.

The 2004 Plan continues to uphold the Council's management responsibilities for Crown land under the Reserves Act 1977 and under which the Reserve is classified.

Overall, the 1994 Plan's philosophy has been endorsed by the Wanganui and Castlecliff communities and the changes in 2004 seek to reinforce this direction rather than provide major change. The following components have been identified as integral to the management of the Reserve through the information gathering process for the 2004 Plan:

1. Acknowledgement that although man has intervened with the Reserve, the environment has a rugged uncultivated appeal that should be largely retained.
2. Understanding that setting aside some small areas for more intense use and further development will enhance the use, enjoyment and marketability of Wanganui and its seaside suburb.
3. Recognition of the potential that the beach and Coastal Reserve have in marketing Wanganui and the Castlecliff suburb.
4. Recognising the existing and future commitment by the Wanganui District Council to provide much of the resource and expertise in conjunction with the strong and active local resident groups to maintain and improve the important values that make the Reserve a unique place in Wanganui.
5. Recognition that for the Reserve's long term betterment and retention the Council needs to more actively manage the coastal processes and human activity affecting the sand dunes. This will include the need to administer its District Plan prohibition of vehicular use of the sand dunes in order to avoid loss of the existing "stable" environment and ecosystems. It will also require a focus on better understanding of the requirement to maintain the moles, particularly the North Mole.

6. Undertaking a programme to remove exotic species on the dunes, replacing them with more appropriate native species.
7. Adopting a philosophy and objective of high quality throughout the Reserve. This means ensuring high quality materials appropriate to the Reserve are used for all aspects - from signage, planting, painting, to building renovation and fencing. In this way all work done will stand the test of time, and will be built in a way that will endure the wear and tear that can occur in this harsh coastal environment. All work on facilities should be carried out to a standard that Wanganui people can be proud of.
8. The recognition and protection of cultural heritage landscape and environment.

7

Management Policies

7. *Management Policies*

One of the key roles of this Management Plan is to deliver a policy framework under which the Council and the public can guide future management decisions for the Reserve. The management policies are designed to guide the day-to-day management of the Reserve.

7.1 **Development and Use**

7.1.1 **Recreation Opportunities**

1. Encourage and promote a wide range of outdoor recreational opportunities within the Reserve including swimming, surfing, fishing, canoeing, painting, walking, sightseeing, fossicking, picnicking, bird watching, playing, sunbathing, running, and so on.
2. Reduce the likelihood for conflict between recreation users in the following manner:
 - (a) Allowing access to the beachfront in the vicinity of Morgan Street and Seafront Road extension for horse riding, and exercising and walking dogs.
 - (b) Acknowledging the Rangiora Street area as the main activity area, and the beach in this locality as the main swimming area.
 - (c) Identify the Mole area and the northern beach as the main areas for fishing.
 - (d) Developing access points in a manner which discourages access by vehicles across the dunes at any location.
3. Maintain the use of the Reserve at a level to ensure there is no reduction in environmental amenity within the Reserve. Undertake consultation with the community and community groups such as the Linking Group to ensure achievement of this policy.

7.1.2 **Pedestrian and Vehicular Access**

1. Allow and publicise public vehicular entry of the beach Reserve via Morgan Street and Seafront Road extension. Limit access to the beach from Rangiora Street to emergency vehicles only.
2. Explore the development of coastal heritage walks and trails.
3. Enhance pedestrian access to the Reserve and walkways within the Reserve.

4. Investigate the need for speed humps in Morgan Street and Rangiora Street, and install if warranted.

7.1.3 Existing Structures/Activities and Uses

1. Encourage and promote the use of the Reserve for special recreational, cultural, educational and social events compatible with the overall philosophy of the Plan. For example, the Wanganui Intermediate School project studying the wetland areas in and adjacent to the Reserve, and some of the initiatives to promote use of the Reserve by the Linking Group and other Castlecliff Groups.
2. Prohibit the use of motorised vehicles in the Reserve – under the Coastal Environment Special Management Zone in the District Plan this activity is described as a prohibited activity.
3. Allow motorised vehicles access to the beach in the following manner:

By both the Council and community ensuring beach access is via two entrances only - Morgan Street and north Seafront Road.
4. Ensure the North Mole structure is maintained using materials that will ensure the future stability of the Reserve. Continue the prohibition on the dumping of material on the mole structure.
5. Acknowledge the historic value of the World War II pill boxes and carry out maintenance work.

7.1.4 New Development/Activities and Structures

1. Promote and encourage the use of the Reserve for community based recreation and limiting the use of land and buildings within the Reserve for use by non-recreational community organisations. Please refer to Appendix 1 for provisions of the Reserves Act (Recreation Reserves).
2. Control the establishment of commercial activities within the Reserve to those which are reasonably necessary for the continued enjoyment of the Reserve for outdoor recreation.
3. Require initiatives by community organisations and individuals for commercial activities in the Reserve to be considered on an independent basis and carry out effective consultation with the community.
4. Allow further development of the children's playground based on further demand.
5. Investigate the construction of offshore reefs to protect and stabilise the beach area near the North Mole.

6. Provide for new users and buildings only where these are compatible with the overall philosophy, objectives and policies of this Plan. Ensure any future buildings are sited so as to blend in with the natural environment and ensure building style, colour, form, and materials integrate with the environment.
7. Subject to public discussion allow for appropriate developments on the land formerly zoned manufacturing adjacent to Morgan Street. Such developments should enhance public use of this area in the same way that the fishing platforms built in this general area since the writing of the 1994 plan have enhanced recreational opportunities in Wanganui.

7.1.5 Animals

1. Continue to allow the exercising of dogs and horses on the beach in compliance with the following general requirements:
 - (a) Relevant bylaws of the Council (in particular the restriction of animals in the Rangiora Street area of the beach).
 - (b) Access to the beach is limited to the Morgan Street entrance and north Seafront Road.
 - (c) Riding of horses over the dunes is not permitted.

7.1.6 Other Facilities

1. Encourage the use of locally made products for facilities such as signs, seats, picnic tables and barbeque facilities, rubbish receptacles and fences (including barriers) within the Reserve.
2. Provide as required, and as a result of demand, Reserve furniture such as seats at viewpoints along the walkways, picnic tables, seats and permanent barbeques in the children's playground.
3. Develop an integrated series of signs (using the existing powder coated steel and colourful design elements) and sensitively locate these throughout the Reserve. Signs to include:
 - (a) Improved directional signs from the City to the Reserve.
 - (b) Information sign at the main entrance to the Reserve at Rangiora Street identifying facilities, walkways, views and features of interest.
 - (c) Information signs at the other entrances to the Reserve at Morgan Street and north Seafront Road.
 - (d) Interpretative signs along the walkways.

- (e) Other signs that provide useful interpretation information on the use of the Reserve.
- (f) Signs at appropriate spots stating the rules for use within the Reserve such as restrictions on motorbike use, dogs and horses, vegetation removal, and keeping to pathways.

7.2 Enhancement and Protection of Natural Values

7.2.1 Landscape and Vegetation - General

1. Retain and enhance where possible the natural values associated with the location of the Reserve and its proximity to the coast and sea, including views.
2. Protect and re-establish the foredune where this has been affected by erosion (particularly blowouts).
3. Promote the use of native coastal species in any re-vegetation and landscaping development work carried out within the Reserve.
4. Protect species and areas within the Reserve that are important to the character of the Reserve and are vulnerable to damage.
5. Increase public awareness of the importance of keeping to existing and newly formed accessways, restrictions on the use of vehicles, and the importance of not damaging (by removal, cutting or trampling) vegetation and natural features.
6. Allow appropriate development of the domain area using the concept plan attached as Appendix 5.

7.2.2 Landscape and Development of Views

1. Using Boffa Miskell plan concept (from Wanganui Gateways Enhancement Concepts, prepared February 2003) undertake landscaping, both planting and structures, around the North Mole and River mouth and environs to reduce the impact of any future industrial development in the vicinity of the Port and land currently leased to River City Port Limited.
2. Require all future development of the Reserve to consider and maintain the existing views from the Reserve towards Mt Taranaki and the northwest coastline, Kapiti Island and the south west coast, South Mole and South Beach, Mt Ruapehu and the Tasman Sea.
3. Develop an agreed and integrated management programme for the land in the wetland area to the north of the Reserve by negotiating with the landowners to manage this area in a manner consistent with the policies in this Plan.

7.3 Cultural Heritage

7.3.1 Preserving our Culture

1. Ensure an archaeological survey is carried out before any major earthworks are undertaken and that any archaeological sites are identified and protected. Any pre – 1900 archaeological sites are protected under the Historic Places Act 1993 and an authority from the Historic Places Trust is required to destroy, damage or modify any archaeological site.
2. Maintain and preserve the Karaka Street Beacon in a manner that retains and enhances the heritage status of the structure and explore the development of a public viewing platform with an informative interpretation panel.
3. Consult the Castlecliff community about the future of the Chequerboard in view of the strong local interest in this site.
4. Maintain and preserve the World War II pillboxes. Ensure that the pillboxes are cleaned on a regular basis and sealed by a waterproofing agent. Explore the installation of an informative interpretive panel to enhance the public’s appreciation of these heritage sites.
5. Maintain and preserve the pilot house and explore the installation of an informative interpretation panel that would include a drawing of the masked yard and suspended balls.



*Chequerboard North Mole.
Photo: L J Douglas*

7.4 Management

7.4.1 General

1. Assess any new applications for lease arrangements in terms of the overall philosophy, objectives and policies contained in this Plan and the provisions of the Reserves Act 1977.
2. Require formal lease arrangements to be entered into where land is being, or to be, occupied.
3. Consider priorities so that adequate financial resources are set aside through the Council's budget for ongoing maintenance and capital projects and works associated with the implementation of this Plan.
4. Undertake the management of the Coastal Reserve with a holistic approach to the whole coastal environment including recognition of the range of activities in close proximity to the Reserve and the effects of these activities on the Reserve.
5. Support the acquisition of additional land into the Reserve where this will protect important environmental features which may otherwise be threatened with damage and to do this in consultation with, and agreement of, affected parties.



The Wanganui Inner Basin with wreck of "Te Anau". Although not part of the Reserve, the Basin has a close association with the Reserve, the landforms and history of the area.

Photo: Tony Woodbury

7.4.2 Maintenance

1. Ensure Council's financial allocation is sufficient to maintain the level of service and maintenance which ensures the facilities within the Reserve area are retained in a useable fashion at all times. This should include the appropriate management and or removal of sand from the car park, removal of rubbish, debris and dead animals washed up on the beach.
2. Continue discussions on the possibility of allowing part of the bottom car park to revert in a managed way to sand dunes.
3. Adopt a policy of zero tolerance to vandalism by working with the Police to prosecute offenders. Ensure any damage is repaired and graffiti removed promptly.

7.4.3 Monitoring

1. Monitor the progress of this Plan each year and report to Council as required.
2. Engage with community groups in the following ways in order to leverage resources and achieve the outcomes for the Reserve and Wanganui's seaside suburb by:
 - (a) Maintaining communication with Castlecliff community groups (such as Castlecliff Linking Group).
 - (b) Consider offering development and maintenance work in the Reserve to community groups. Ensure they can carry out work at market rates in a professional way.

7.5 Review

1. Ensure the Management Plan is kept under review to enable changes to be made (through the public consultation process) so it is always relevant to the Reserve and the needs of the people of Wanganui.

8
Management
Policies
&
Implementation

8. *Management Policies & Implementation*

One of the key roles of a Management Plan is to set a policy framework so that both the public and the local authority have clear direction on the operation and management of a Reserve. In addition, this section of the Plan introduces some new ideas and specific objectives and combines them with existing ideas, costing the process along the way.

The objectives in this section are a specific response to the public consultation process. They develop a programme of works for the Reserve designed to improve the overall quality, usability and enjoyment by the general public over the next 5-10 years. The specific objectives have been set with a pragmatic understanding that the Council does not have an unlimited budget for Castlecliff and the Castlecliff Reserve.

Since the year 2001 there has been significant funding approved for capital works and improvements over and above the maintenance budget. This amounted to a total of \$250,000 from 2001 to 2004. In the 2004/05 financial year, \$50,000 was allocated to the Castlecliff Domain. The Service Management Plan budget document for the Council showed \$50,000 in 2004/05 for Castlecliff urban landscape improvements. The 2005/06 Annual Plan sets aside \$125, 000 for Castlecliff Reserve allocations have earmarked \$50,000 for the Castlecliff Domain and \$50,000 for landscape improvements. An additional \$25, 000 per annum is also allocated for sand clearance on the beach.

Aside from the \$25, 000 for sand clearance, Council has allocated a general pool of funding for Castlecliff as indicated above. The works listed in this document form a priority list and direct spending of the Council funding allocations. Alternative funding including the facilities development fund may be another source of financing some of these works.

8.1 **Objective: Dune Stability**

To carry out the necessary care of the dune system in order to retain its stability and avoid the long-term problems that unstable sand dunes present to the community.

Justification

The dune system that largely formed during the second half of last century is fragile and susceptible to erosion. The rugged appeal of the Reserve will be lost and wind blown sand will cause havoc in the Domain and residential area if the dunes are not more actively managed.

8.1.1 Implementation

1. Signpost both entrance points (Seafront Road extension and Morgan Street) for vehicle access to the beach.
2. Actively police by committing Council resources, and prosecute horse riders, motorbike riders, and off-road vehicles users for damage to dunes.
3. Implement education programmes about the damage to dunes by misuse, preferably by engaging with local community groups to carry out this task.
4. Pursue and develop alternative sites for off-road vehicle use.
5. Monitor natural coastal processes that relate to and affect the Mole, coastline and sand dunes – and make this information available by written report to decision makers every three years starting 2005. This discussion needs to include re-introduction of brush fencing as a means of controlling sand build-up.
6. Undertake a regular programme of stabilisation works on the dunes and replant using pingao spinifex or other appropriate native plants.
7. Review the management of windblown sand on the beach frontage that results in sand building around the “groomed” area that is “maintained” along the length of the carpark. This will require discussions with Horizons Regional Council and the community.

Costs

| | Task | Cost Breakdown | Total |
|----|---|---|--------------------------|
| 1. | Signpost entranceways and emergency tracks. | 4 signs @ \$2,000 = \$8,000 (one off cost) | \$8,000 |
| 2. | Policing dunes and prosecution | (200 hours @ \$50 per hour = \$10,000) – (already included in Council’s Environmental Health budgets) | No extra cost to budgets |
| 3. | Implement educational programmes on dune damage. Include development of educational material on the Reserve for | \$3,000 per annum | \$3,000 |

| | | | |
|----|--|---|---|
| | schools. | | |
| 4. | Pursue alternative sites for off-road vehicle use | Officer time already included in existing budgets | No extra cost to budgets |
| 5. | Monitor coastal processes. Research into coastal reef to protect Morgan St area. | \$2,000 per annum | \$2,000 |
| 6. | Undertake regular programme of stabilisation of dunes | \$5,000 per annum | \$5,000 |
| 7. | Council Officers coordinate with Horizons and the community | Officer time included in existing Council budgets | No extra cost for consultation allowed. Physical costs of any sand clearance already discussed in this plan |
| | | Total | \$18,000* |

*Note: (of which \$10,000 is per annum and \$8,000 is a one off cost).

8.2 Objective: Facilities, Landscaping, Development and Maintenance

To properly maintain the existing structures and facilities and allow further development of facilities in the Reserve that enhance the use of the Reserve and add to the attraction of Wanganui's seaside suburb. To allow for further landscaping within the Reserve and surrounding areas.



Wanganui Port navigation markers and recreational fishing platform on North Mole.
Photo: Tony Woodbury

Justification

The beauty of the Reserve is not only the rugged land form of the dunes and the beach and recreational opportunities offered by these areas and the sea. The built areas and man-made structures in the Reserve are more formal and provide for a different range of experiences and potentials. For example, the structures cater for recreational activities and functions. They also have historical and cultural value. Whilst the consultative process showed that views differed about the extent of further development, there is potential to provide more facilities that can be used to promote Wanganui. Further the upkeep and maintenance of the built areas needs to be improved to reflect a desire for greater quality in these areas.

8.2.1 Implementation

1. Continue to maintain Duncan Pavilion. Maintain Rangiora Street toilets to a higher quality and support the Surf Club efforts to maintain their building to the highest possible standard.
2. Increase regularity of sand clearance from the beach carpark area over the entire year. Keep sea wall clear of sand build up and groom beach frontage across the face of the car park area, removing driftwood on a continuous basis. The clearance of sand on the beach frontage seaward side is subject to a resource consent. The final shape of the consent conditions are a matter of ongoing debate between the Wanganui District Council and Horizons Regional Council. The allocation of an additional \$25,000 per annum for undertaking this work reinstates the sum for this work which was removed during the 1990s when the Parks budgets were cut back..

Consult with the public on allowing part of the bottom car park to revert to sand dunes in a managed fashion. If the decision is made to allow dune build up on part of the car park, then part of this maintenance budget should be used to manage the dune re-establishment and stabilisation.



Members of Historic Places Trust Committee at site of Karaka St, navigation beacon and marker, Castlecliff, Wanganui (beacon to left). Photo: Tony Woodbury

3. Continue the process of maintaining the North Mole in a way that is environmentally friendly but provides for the needs of:
 - Dune stability.
 - River mouth stability and port depth considering the needs of surfers, swimmers, fishermen and other user groups in the Reserve.
4. On an annual basis address the issue of tidying up the look of the concrete faces of the North Mole using shellrock pieces. This can be done by raising the matter each year at budget time so that it can be considered in discussions along with other community priorities.
5. Upgrade the fishing platform and/or Mole shelters and landscape according to the Boffa Miskell concept plan.
6. Consider the use of decking, steps, rocks and special features such as shells and sculptures within the Reserve.
7. Ensure that historical structures are maintained in perpetuity. This includes the following structures.
 - (a) World War II pill boxes (Council responsibility).
 - (b) Karaka Street Beacon (Council responsibility).
 - (c) Chequerboard navigational device (River City Port Ltd responsibility).
 - (d) Pilot house adjacent to the port (River City Port Ltd responsibility).

The Council and River City Port Ltd will be able to achieve optimum outcomes for the maintenance of these facilities by including them on their property maintenance schedules (if this is not already the case).

8. Ensure that the Karaka Street section containing the beacon is accessible to the public. Manage the land and beacon as part of the Reserve. Carry out maintenance to the navigational beacon structure so that it is structurally safe and visually appealing. Although the beacon in Karaka Street is no longer a working piece of navigational equipment, and the land that it sits on is not formally part of the Reserve (the beacon is on Harbour Endowment land and leased to the Council), submissions to the Plan focused on the importance of retaining and maintaining the Beacon structure and including the land as part of the Reserve.

Costs

| | Task | Cost Breakdown | Total |
|----|---|--|----------------------|
| 1. | Maintenance of the Duncan Pavilion and Rangiora St toilets. | Already included in Council's Property budget. | - |
| 2. | Clear sand and driftwood from car park and Rangiora Street beach frontage as required. Manage the process of dune re-establishment on the bottom car park if this is the desired outcome after further public consultation. | \$25,000 per annum | \$25,000 |
| 3. | Maintenance of North Mole. | \$7,000 from existing costs \$3,000 per annum additional spending | \$3,000 ² |
| 4. | Forward \$100,000 allocations for consideration to the Council's budget planning process each year for armouring the faces of the North Mole using shellrock** | | \$100,000 |
| 5. | Upgrade fishing platform and/or Mole with shelters and landscaping as per the Boffa Miskell concept. | \$20,000 one off cost. ¹ | \$20,000 |
| 6. | Upgrade the domain area and surrounds as per the Frederikse landscape concept (Appendix 5). | \$20,000 one off cost. ³ | \$20,000 |
| 7. | Maintain historical structures – clean up two pill boxes. | \$3,000 one off cost. | \$3,000 |

^{1,2,3} Funding could be from the Facilities Development Fund in order to reduce the burden on rates. Additional works

such as sculptures may be funded using alternative funding sources also.

** Note: the suggestion of \$100,000 per annum will need to be raised on an annual basis and will have to be prioritised against other needs of the plan and other Council spending priorities.

| | | | |
|----|------------------------------------|--|-------------------|
| 8. | Lease beacon land in Karaka Street | \$8,500 per annum (likely to rise due to increasing land prices) | \$8,500 |
| | | | |
| 9. | Upgrade historic Beacon structure. | \$10,000 one off cost. | \$10,000 |
| | | | |
| | | Total | *\$189,500 |

*Note: Of which \$153,000 is one off cost, \$36,500 is cost per annum



*Navigation marker/light at Karaka Street, Wanganui (Castlecliff) from seaward.
Photo: Tony Woodbury*



*Close-up of the structure of the marker beacon at Karaka Street, Castlecliff, Wanganui (rear view).
Photo: Tony Woodbury*

8.3 Objective: Developing Pride in Castlecliff - Wanganui's Seaside Suburb

To promote Castlecliff Reserve as an attractive place to visit. Encourage the people of Castlecliff to take pride in the Reserve.

Justification

Improvements in the Reserve and surrounds have the ability to generate a significant positive effect on marketing and promotion of Castlecliff. The improvements also have a flow on effect on the community's pride in the Reserve.

8.3.1 Implementation

1. To encourage development of a positive attitude within the real estate industry about the benefits of living in Castlecliff, including promoting the recreational facilities and opportunities of the Reserve.
2. Encourage the community of Castlecliff to take some ownership of the Reserve by becoming involved in development and maintenance projects within the Reserve.

Costs

| | Task | Cost Breakdown | Total |
|----|--|---|---|
| 1. | Encourage a positive attitude within the tourism and real estate industries about the value of "Wanganui's seaside suburb" and Castlecliff Reserve. | Officer time already included in existing budgets | - |
| 2. | Council officers advise Castlecliff groups of upcoming development and maintenance projects which they could be involved in. Consider incentives to encourage local participation. | Officer time already included in existing budgets | - |
| | | Total | Nil or no additional costs to the existing budget |

No addition in rates dollars required.

8.4 Objective: Landscaping and Weed Removal

To carry out in a gradual systematic way, the removal of weed species and exotic species in the dunes and replace them with more appropriate native species. To continue the programme of landscaping in the Domain Reserve using appropriate coastal tolerant species.

Justification

The 1994 Plan continually referred to Castlecliff Reserve and its “natural” features. This 2004 update has used the term “rugged” (as in rugged beauty) as it more accurately defines the area. The existing coastline is not natural when compared to pre-European settlement. The intention of this objective in the Plan is not to return the area to the way it was prior to European settlement. However, opportunities do exist to improve the area through the gradual removal of invasive vegetation such as boxthorn, wattle and scenecio. These invasive plants could be replaced with native pingao, spinifex, Coprosma and other species which are endemic to the area or other suitable native species found in the New Zealand coastal environment.

A further benefit in the gradual removal/replacement of exotic plant material is the ability to retain the sea views. These important views are gradually being lost, partly through the increasing height of the dunes, but also due to the existing vegetation growing up. There has already been pressure on the Wanganui District Council to take some action over this issue and the problem will only increase over time. However, there is the risk that by removing vegetation the sand dunes are more exposed to wind, and sand may get blown onto nearby properties. Therefore, great care should be taken to ensure that the process of removal and replacement of vegetation is gradual, and that the removal work is done in winter so that replanting can occur at a time that ensures the highest survival rate of newly planted native species.

Note: The Department of Conservation report that a more radical approach to the gradual growth in height of the sand dunes has been managed in other Coastal environments in New Zealand and other parts of the world by significantly reducing the size of the dunes and recontouring them. Whilst this course has not been seriously debated by the community during the course of writing this plan it does have features that would appeal to some stakeholders. Firstly it would allow better management of the growth in the dune height and overall stability of the dunes. Secondly it would provide an opportunity to completely replant large areas of the dunes with more suitable native species, and, lastly it would provide better views of the sea to many residents. However, any change to the current policy of gradual change to dune vegetation and shape need further public input and debate.

8.4.1 Implementation

1. Begin gradual removal of non-native and weed species in the dunes and replace with appropriate native species. Use pingao and spinifex grass in the foredunes, and plants such as NZ sand convolvulus, *Coprosma* and

similar endemic species in the intermediate areas. Pohutukawa, karo, *Gnio* and *Coprosma repens* are to be used in more modified areas.

2. Encourage and support community groups to remove species such as pink scenecio weed, *Scenecio glastifolius*.
3. Target conservation grants to support the process of weed and non-native plant removal and replanting programmes so that the process occurs at little or no cost to the Wanganui ratepayer.
4. Contract local nurseries to propagate pingao grass, spinifex and other native endemic plants through the collection of seed and cuttings from the Reserve.
5. Continue landscaping within the Reserve on established dunes, the Domain and in other areas, using appropriate coastal tolerant plantings.

Costs

| | Task | Cost Breakdown | Total |
|----|---|---|---------------------|
| 1. | Removal of exotic plants by contracted groups. | \$5,000 (per annum) | \$5,000 |
| 2. | Encourage volunteer groups to remove easier weed species. | no extra cost to Council | - |
| 3. | Contract local nurseries to provide locally sourced native materials and propagate cuttings from the Reserve. | \$10,000 per annum, divert from existing landscape budget. | - |
| 4. | Planting and landscaping throughout the Reserve and surrounding areas. | Redirect money allocated to plant purchase within the existing Council budgets. | - |
| | | Total | \$5,000 p.a. |

8.5 Objective: Emergency and Public Vehicle Access

To provide easy public vehicular access to the beach frontage at Morgan Street and Seafront Road extension, and maintain an additional emergency access point to the beach at Seafront Road.

Justification

It is widely believed that part of the answer to excluding vehicles and horses from the dunes is having several limited access points for accessing the beach

frontage. This will also help in policing the Reserve. This Plan also highlights the need to have properly delineated and identified access points for emergency vehicles to enable quick access to the beach frontage for emergency rescue purposes.

8.5.1 Implementation

1. Improve the north Seafront Road entrance and maintain it so that recreational and emergency vehicles can access the beach through this entrance at all times. An important part of this access will include the development of a car turning bay and parking area at the end of Seafront Road by the stream next to the beach. The upgrade should be in keeping with the beach feel and should not be sealed. However, the design should include forming the area so as to encourage proper drainage, – and resowing as necessary with appropriate grass to bind the sand onto the road surface. The design should also take care that it allows and caters for use of the track and stream by pedestrians, families and children using the shallow stream and surrounding area for recreation.

Costs

| | Task | Cost Breakdown | Total |
|----|--|---|------------------|
| 1. | Upgrade northern Seafront Road entrance for vehicular access. | \$20,000 (one off cost). Annual maintenance included within existing Recreation & Culture budget. | \$20,000 |
| 3. | Investigate the need for speed bumps at Morgan Street and Rangiora Street. | Officer time already allocated in the budget. | - |
| | | Total | \$20,000* |

*One off cost

8.6 Objective: Pedestrian Access

To enhance pedestrian access throughout the Reserve by building a walkways network.

Justification

There are a number of significant historical and natural features throughout the Reserve and adjoining areas. A simple low cost network of walkways using local materials such as driftwood to mark the pathways would add to the existing network of interesting walkways in Wanganui. It would link with the riverbank walkway which has advanced to the end of Taupo Quay. The riverbank walkway project should reach Morgan Street – the outside boundary of the Castlecliff Reserve - in the next 5 years. The walkway could then extend through the Reserve and take in features like the World War II pill

boxes, the wetlands, the dune environment, and significant views along the way.

8.6.1 Implementation

1. The walkway system needs to be marked using appropriate materials such as driftwood and/or shellrock. At significant entrance points of the walkways small sections of boardwalk could also be built to signify the start points. Start points treated in this way would include Morgan Street, Rangiora Street, Kapiti Terrace and so on.

Costs

| | Task | Cost Breakdown | Total |
|----|--|-----------------------|---------------------|
| 1. | Develop walkway system throughout the Reserve. | \$10,000 per annum | \$10,000 |
| | | | |
| | | Total | \$10,000 p.a |

9
Expenditure
&
Priorities

9. Expenditure & Priorities

The 1994 Management Plan included the following plan of works. For each task, the table below records whether it was achieved.

| Year & Tasks | Achieved | | | Comments |
|---|-------------|-----|----|--|
| | | Yes | No | |
| 1994/1995 Financial Year General maintenance and planting, and development of a landscape plan. | \$10,000.00 | ✓ | | Plan developed and still in use |
| Signs at Morgan Street area, north Seafront Road and in Reserve. | \$5,000.00 | ✓ | | Quality signs erected throughout Reserve |
| | | | | |
| 1995/1996 Financial Year General maintenance and planting. | \$10,000.00 | ✓ | | Planting ongoing |
| Survey of users. | \$2,000.00 | | ✗ | Not done |
| Development of options for the Pavilion and associated public consultation. | \$15,000.00 | ✓ | | Pavilion use now achieved and future now secure |
| | | | | |
| 1996/1997 Financial Year General maintenance and planting. | \$10,000.00 | ✓ | | Ongoing |
| Begin development of walkway. | \$3,000.00 | | ✗ | Not done |
| Initial signs for walkway. | \$2,000.00 | | ✗ | Resources used in other areas such as play area. |
| Information brochure/pamphlet. | \$2,000.00 | | ✗ | |
| | | | | |
| 1997/1998 Financial Year General maintenance and planting. | \$5,000.00 | ✓ | | Ongoing |
| Completion of walkway. | \$5,000.00 | | ✗ | Not done. |
| Signs along walkway. | \$1,000.00 | | ✗ | Not done. |
| | | | | |
| 1998/1999 Financial Year General maintenance and planting. | \$5,000.00 | ✓ | | Ongoing |
| Continued signage as required. | \$1,000.00 | ✓ | | Upgrades have been done on signage |

Appendices

Appendix 1

Reserves Act provisions relating to recreation reserves and establishing the principles of management.

Reserves Act 1977

Reserves are classified in terms of Section 16 of the Act to ensure the control, management, development use, maintenance, and preservation for their appropriate purposes. Classification is carried out accordingly to the principal or primary purpose of the Reserve.

Recreation Reserves

Section 17 of the Act provides the purpose of these Reserves as follows:

“...providing areas for recreation and sporting activities and the physical welfare and enjoyment of the public, and for the protection of the natural environment and beauty of the countryside, with the emphasis on the retention of open spaces and on outdoor recreational activities, including recreational tracks in the countryside.”

The remainder of the Section provides for specific management principles as follows:

“(2) It is hereby further declared that, having regard to the general purposes specified in subsection (1) of this section, every recreation reserve shall be so administered under the appropriate provisions of this Act that –

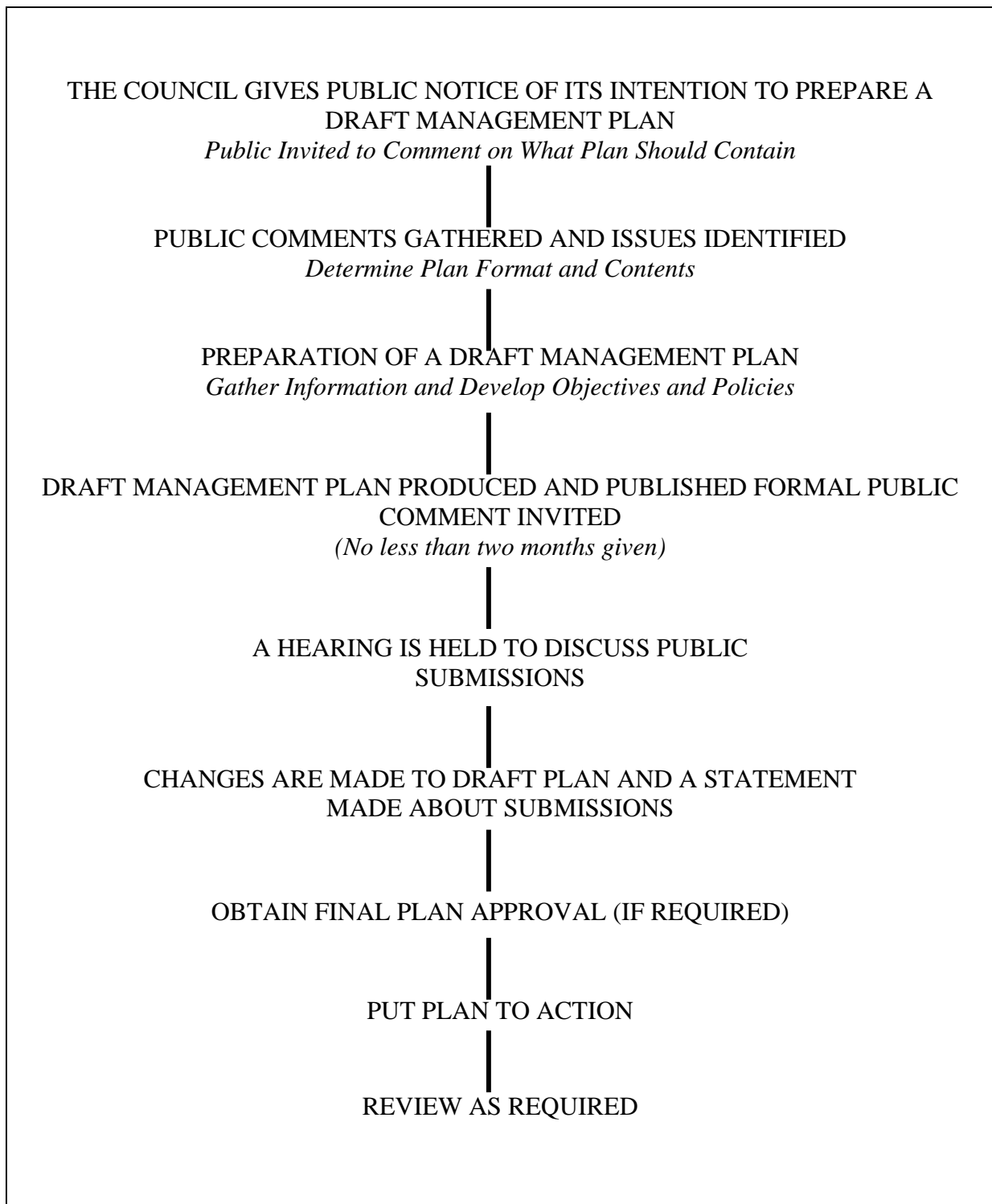
- (a) The public shall have freedom of entry and access to the Reserve, subject to the specific powers conferred on the administering body by sections 53 and 54 of this Act, to any bylaws under this Act applying to the Reserve, and to such conditions and restrictions as the administering body considers necessary for the protection and general well-being of the Reserve and for the protection and control of people using it:*
- (b) Where scenic, historic, archaeological, biological, geological, or other scientific features or indigenous flora and fauna or wildlife are present on the Reserve, those features or that flora or fauna or wildlife shall be managed and protected to the extent compatible with the principal or primary purpose of the Reserve;*

Provided that nothing in this subsection shall authorise the doing of anything with respect to fauna that would contravene any provision of the Wildlife Act 1953 or any regulations or Proclamation or notification under that Act, or the doing of anything with respect archaeological features in any Reserve that would contravene any provision of the Historic Places Act 1993;

- (c) *Those qualities of the reserve which contribute to the pleasantness, harmony, and cohesion of the natural environment and to the better use and enjoyment of the Reserve shall be conserved;*
- (d) *To the extent compatible with the principal or primary purpose of the Reserve its value as a soil, water, and forest conservation area shall be maintained.”*

Appendix 2

Management Plan procedure under the Reserves Act 1977



Appendix 3

Wanganui Plant List 4

Vascular Plants of Castlecliff Beach Reserve, Wanganui.

Based on surveys by Wanganui Museum Botanical Group on 2 May 1981, 29 May 1993, 9 October 1993, & by CO 31 October 1997; CO, Jo Priestley, Robyn Ogle, Jocelyn and Ian Bell in October 1998; Jo Priestley 9 Aug. 1999; Wanganui Botanical Group 31 Oct 1999; Graeme La Cock & Simon O'Connor 16 March 2000; CO, GLC, & Keith Beutrais 21 July 2000; CO & Jim Campbell with Wgtn Bot Soc 15 April 2001 & with Wanganui Bot. Group 1 Dec 2001.

Last updated 1 Dec 2001

Colin Ogle²

Department of Conservation

Wanganui

- * adventive species (including native species naturalised from planted specimens)
- ** significant adventive species not recorded in 1994 or earlier but present Oct. 1997.
- p planted or possibly planted

List excludes species present as planted specimens which are not naturalising, eg: pohutukawa, Tasmanian ngaio, Norfolk pine, *Cupressus macrocarpa*, She-oak (*Casuarina cunninghamiana*), *Leptospermum laevigatum*. Numerous "garden escapes" in WD (dunes west of the urban area) probably started as plantings by some person with a passion for South African plants, in particular (when?). Some have barely naturalised (e.g., *Gladiolus carneus*) but others have spread widely (e.g., *Gazania rigens*, *Lampranthus glaucus*, *Freesia refracta*).

One patch extending becoming extensive, by layering from 2 planted bushes

Habitats: For the dune area in front of urban area (Castlecliff Recreation Reserve etc.)
FD = foredune; RD = reardune; WW = WW2 pillbox waste area; WS = western swamp; ES = eastern swamp (Bamber St)
For the dunes and cliffs west of urban area i.e. from west of walkway down from Longbeach Drive, WD = western dunes; CF = cliff-face; CR = cliff rubble (talus); SW = swamp & stream between base of cliffs and hind dune

² Dept of Conservation until Feb 2001; now 22 Forres St Wanganui; robcol.ogle@xtra.co.nz

Trees, Shrubs, Lianes

| | FD | RD | WW | WS | ES | WD | CF | CR | SW |
|--|----|----|----|----|----|----|----------------|----|----|
| * Acacia longifolia (Sydney golden wattle) | | X | | | | | | | |
| * Acacia sophorae (sand wattle) | | X | | X | | X | | | |
| * Aloe ciliaris (climbing aloe) | | X | | | | | | | |
| ** Anredera cordifolia (Madeira vine) | | X | | | | | | | |
| * Artemisia arborescens (hedge artemisia) | | X | | X | | | | | |
| * A. verlotiorum (mugwort) | | | | X | | | | | |
| ** Atriplex halimus (salt-bush) | | X | | | | | | | |
| Calystegia sepium agg. (pink bindweed) | | | | X | | | | | |
| *? Calystegia sepium agg. (white bindweed) | | | | | | X | | | |
| C. soldanella (sand convolvulus) | X | X | | | | X | | | |
| Cassinia (Ozothamnus) leptophylla (tauhinu) | | X | | | | X | | | |
| * Chamaecytisus palmensis (tree lucerne) | | p | p | | | | | | |
| * Clematis vitalba (old man's beard) | | | X | | | | | | |
| * Coleonema pulchellum (breath of heaven) | | | X | | | | | | |
| Coprosma acerosa (sand coprosma) | X | X | | | | X | | | |
| C. repens (taupata) | | X | X | X | X | X | X | | |
| C. acerosa x C. repens [= C. kirkii] | | | | | | X | | X | |
| Cordyline australis (cabbage tree, ti kouka) | | X | p | X | X | | | | |
| * Correa alba | | X | | | | | | | |
| * Cytisus scoparius (broom) | | | | | X | | | | |
| * Euonymus japonicus (Japanese spindleberry) | | X | | X | X | | | | |
| * Hydrangea macrophylla (hydrangea) | | | | X | | | | | |
| * Ipomoea indica (morning glory) | | | X | | | | | | |
| * Lavatera arborea (tree mallow) | | X | X | | | X | | | |
| Leptospermum scoparium (manuka) | | | | X | X | X | | | |
| * Lonicera japonica (Japanese honeysuckle) | | X | | X | | | | | |
| * Lupinus arboreus (shrub lupin) | X | X | X | | | X | | | |
| * Lycium ferocissimum (boxthorn) | | X | X | | X | X | X | | |
| * Malus X domestica (apple) | | | | | | X | | | |
| Muehlenbeckia complexa (pohuehue) | | X | | X | X | X | | X | |
| Myoporum laetum (ngaio) | | X | | | | | | | |
| Olearia solandri | | X | | | | | X | | |
| * Osteospermum ecklonis (dimorphotheca) | | | | | | X | | | |
| * O. jucundum | | X | | | | | | | |
| * Paraserianthes lophantha (brush wattle) | | X | | | | | | | |
| Pimelea arenaria (sand daphne) | X | X | | | | X | | | |
| P. sp. unnamed (aff. P. prostrata; P. "Turakina") | | | | | | | X ³ | | |
| * Pittosporum crassifolium (karo) | | X | | X | | X | | | |
| * Populus alba (silver poplar) | | X | | X | | | | | |
| * P. yunnanensis? | | | | X | | | | | |
| * Quercus robur (oak) | | | | | | X | | | |
| ** Rhamnus alaternus (evergreen buckthorn) | | X | | | X | | | | |
| * Pseudopanax crassifolius x P. lessonii | | | | | X | | | | |
| * Rubus fruticosus (blackberry) | | | | | X | | | | |
| ** Rumex sagittatus (climbing dock) | | | | | | | | | X |
| * Salix cinerea (?) (grey willow) | | | | X | X | | | | |
| * S. fragilis (crack willow) | | | | X | X | | | | X |
| * Salpichroa organifolia (lily of the valley vine) | | X | | | | | | | |
| * Senecio angulatus | | X | X | X | X | | | | |
| * S. mikanioides | | X | X | X | | | | | |

³ One patch of 20 flowering + 20 non-flowering plants, 15.4.01; another patch of 14 flowering + 30 non-flowering plants found 1.12.01.

| | FD | RD | WW | WS | ES | WD | CF | CR | SW |
|--|----|----|----|----|----|----|----|----|----|
| * Tamarix chinensis (Chinese tamarisk) | | | | | | | | | X |
| * Ulex europaeus (gorse) | | X | X | X | X | X | X | X | |
| * Ulmus x hollandica (suckering elm) | | | | | X | | | | |
| * Vinca major (periwinkle) | | X | X | X | | | | | |
| Grasses | | | | | | | | | |
| * Agrostis stolonifera (creeping bent) | | | | | X | X | | | |
| * Ammophila arenaria (marram) | X | X | X | | | X | | | |
| * Arundo donax | | X | X | | X | | | | |
| * Briza major (quaking grass) | | X | | | | X | | | |
| * Bromus diandrus (rip-gut brome) | X | X | | | X | X | | | |
| * B. willdenowii (prairie grass) | | X | | X | X | X | | | |
| Cortaderia fulvida (cliff toetoe) | | | | | | | X | X | |
| * C. selloana (pampas) | X | X | | X | X | X | X | | |
| C toetoe (swamp toetoe) | | X | | | X | | X | X | X |
| * Cynodon dactylon (Indian doab) | | X | X | | X | | | | |
| * Dactylis glomerata (cocksfoot) | | X | X | X | X | X | | | |
| * Ehrharta erecta | | | | | | X | | | |
| * Eleusine indica (crow's foot) | | | X | | | | | | |
| * Elytrigia repens (couch) | | X | | | | | | | |
| * Festuca rubra ssp. commutata (Chewing's fescue) | | X | X | | | | | | X |
| * Glyceria declinata (floating sweetgrass) | | X | X | X | X | X | X | X | X |
| * Holcus lanatus (Yorkshire fog) | X | X | | | | X | | | |
| * Lachnagrostis billardierei (sand bent) | X | X | X | | | X | | | |
| * Lagurus ovatus (hare's tail) | | | | | X | | | | |
| * Lolium multiflorum (Italian ryegrass) | | X | | | | | | | |
| * Lolium perenne (perennial ryegrass) | | X | X | X | X | X | | | |
| * Pennisetum clandestinum (kikuyu grass) | | X | | | X | | | | |
| * Poa annua (annual poa) | | X | X | X | X | X | X | X | X |
| * Schedonorus phoenix [Festuca arundinacea] | | X | X | | | X | | | |
| | X | X | | | X | X | | | |
| | X | | | | | X | | | |
| Spinifex sericeus (spinifex) | | | | | | | | | |
| * Sporobolus africanus (rat's tail) | | | | | | | | | |
| * Stenotaphrum secundatum (buffalo grass) | | | | | | | | | |
| * Vulpia bromoides (vulpia hair-grass) | | | | | | | | | |
| Sedges | | | | | | | | | |
| Bolboschoenus caldwellii (CHR) | | | | | | | X | | |
| Carex flagellifera? (CHR 526023) | | | ? | X | | | | | |
| C. lessoniana | | | | | X | | | | |
| C. maorica | X | | | | | X | X | | |
| C. pumila (sand carex) | | | | X | ? | | | | |
| C. secta | | | | X | X | X | X | X | X |
| Cyperus ustulatus | X | X | | | | X | | | |

| | FD | RD | WW | WS | ES | WD | CF | CR | SW |
|---|----|----|----|----|----|----|----|----|----|
| Desmoschoenus spiralis (pingao) | | | | | | | X | | X |
| Isolepis cernua | | X | | | X | X | X | X | |
| I. nodosa (club rush) | | | | | | | X | | |
| Machaerina sinclairii (tuhara) (CHR) | | | | | X | | | | X |
| Schoenoplectus pungens (three-square) | | | | | X | | | | |
| S. tabernaemontani (kapungawha) | | | | | | | X | | |
| Schoenus nitens (CHR) | | | | | | | | | |
| <u>Rushes</u> | | | | | | | | | |
| Apodasmia (Leptocarpus) similis rush) | | | | | | | X | X | |
| * Juncus articulatus (jointed-leaved rush) | | X | | | X | | X | | X |
| * Juncus bufonius (toad rush) | | | | X | | | X | X | |
| J. caespiticius | | | | | | | X | X | |
| J. gregiflorus | | | | | X | | | | X |
| J. pallidus | | | | | X | | | | X |
| * J. tenuis | | | | | | | | | X |
| <u>Monocot herbs other than grasses, sedges, rushes</u> | | | | | | | | | |
| * Amaryllis belladonna (belladonna lily) | | | | | | X | | | |
| * Arum italicum (Italian arum) | | | | | X | | | | |
| * Agapanthus orientalis (agapanthus) | | X | X | | | X | | | |
| * Asparagus asparagoides (smilax) | | X | X | | X | | | | |
| * Allium triquetrum (wild garlic) | | X | | | X | | | X | |
| * Babiana secunda? (baboon flower) | | | | | | X | | | |
| * B. stricta (baboon flower) | | | | | | X | | | |
| * Canna sp. (canna lily) | | | | | X | | | | |
| Corybas sp. (C. rivularis agg.) (spider orchid) | | | | | | | X | | |
| * Crocosmia x crocosmiiflora (montbretia) | | X | X | | X | | | X | X |
| * Freesia refracta (freesia) | | | X | | | X | | | |
| * Gladiolus carneus (gladiolus) | | | | | X | X | | | |
| * Hedychium sp. (wild ginger) | | | | | X | | | | |
| * Iris foetidissima (stinking iris) | | | | | | | | | |
| * Ixia maculata (ixia) | | | | | X | X | | | |
| * Kniphofia sp. (redhot poker) | | | | | X | | | | |
| * Lachenalia pendula? [red flowers] | | X | | | | | | | |
| Lemna sp. [L.. min or auct. NZ] (duckweed) | | | | X | X | | | | X |
| * Leucojeum aestivum (snowflake) | | | | | X | | | | |
| Microtis unifolia (onion-leaved orchid) | | | | | | X | | | |
| * Narcissus tazetta cv 'Soleil d'Or' (jonquil) | | | | | | X | | | |
| * N. sp. (unidentified) | | | | | | X | | | |
| Phormium cookianum (wharariki, mountain flax) | | | p? | | | | ? | | |
| P. tenax (harakeke, NZ flax) | | p? | X | X | X | | X | X | X |
| * Scilla non-scripta (blue-bell) | | | | | X | | | | |
| * S. peruviana (Cuban lily) | | X | | | | X | | | |
| * Tradescantia fluminensis (wandering Jew) | | X | X | | X | | | | |
| * Tritonia crocata | | | | | | X | | | |
| * T. lineata | | | | | | X | | | |
| Typha orientalis (raupo) | | | X | X | X | | X | X | X |
| * Watsonia sp. 1 (W. meriana?) [white to deep pink flowers, petal lobes=tube length; Oct-Nov] | | | | | | X | | | |
| * W. sp. 2 (W. beatricis?) [pale pink flowers, narrow tube & short petal lobes; Oct-Nov] | | | | | | X | | | |
| * W. sp. 3 (W. angusta?) [scarlet flowers, petal lobes almost =tube length; Aug-Nov] | | X | X | X | | | | | |

| | FD | RD | WW | WS | ES | WD | CF | CR | SW |
|--|----|----|----|----|----|----|----|----|----|
| * <i>Yucca gloriosa</i> | | X | X | | X | | | | |
| * <i>Zantedeschia aethiopica</i> (arum lily) | | | | | | | | | |
| Dicot herbs | | | | | | | | | |
| <i>Acaena anserinifolia</i> | | | | | | | | | X |
| * <i>A. novae-zelandiae</i> (bidibidi) | | | | | | | | X | |
| * <i>Acanthus mollis</i> (bear's breeches) | | X | | X | | | | | |
| * <i>Aeonium haworthii</i> | | X | | | | | | | |
| * <i>A. sp.</i> | | | | | | X | | | |
| * <i>Anagallis arvensis</i> (scarlet pimpernel) | | X | | | | X | | | X |
| * <i>Angelica pachycarpa</i> (false angelica) | | | | | | | X | | |
| <i>Apium prostratum</i> subsp. australe (sea celery) | | | | | X | | | | X |
| * <i>Arctotheca calendulacea</i> (Cape daisy) | | X | X | | | | | | |
| * <i>Arctotis stoechadifolia</i> (arctotis) | | | | | | X | | | |
| * <i>Aster subulatus</i> (sea aster) | | | | | X | | | | |
| * <i>Atriplex prostrata</i> (orache) | | X | | | | | | | |
| * <i>Brassica sp.</i> (wild turnip) | | X | X | | | | | | |
| * <i>Calendula officinalis</i> (marigold) | | X | | | | | | | |
| * <i>Callitriche stagnalis</i> (starwort) | | | | X | | | | | X |
| * <i>Carpobrotus aequilaterus</i> (iceplant) | | X | | | | | | | |
| * <i>C. edulis</i> (iceplant) | | X | X | | X | | | | |
| * <i>Centaurium erythraea</i> (centaury) | | | | | | | X | | |
| * <i>Cirsium arvense</i> (Californian thistle) | | | | | | | | X | |
| * <i>C. vulgare</i> (Scotch thistle) | | | | | X | | | X | |
| * <i>Conium maculatum</i> (hemlock) | | | | | | | | | X |
| * <i>Conyza albida</i> (fleabane) | | X | X | X | X | X | | X | |
| * <i>Coronopus didymus</i> (twin cress) | | X | X | | | | | | |
| <i>Cotula australis</i> | | | | | | | | | X |
| <i>C. coronopifolia</i> (batchelor's button) | | | | | | | X | | X |
| * <i>Cotyledon orbiculata</i> | | X | X | | X | | | | |
| <i>Crassula sieberiana</i> | | | | | | X | | | |
| * <i>Crepis capillaris</i> (hawkbit) | | X | | | X | | | | |
| <i>Disphyma australe</i> (NZ iceplant) | | | | | | | X | | |
| * <i>Echium plantagineum</i> (Paterson's curse) | | X | | | | | | | |
| <i>Epilobium billardierianum</i> (willowherb) | | | | | | | | | X |
| <i>E. komarovianum</i> (willowherb) | | | | | | | X | | |
| <i>E. nerteroides</i> (willowherb) | | | | | | | | | ? |
| * <i>E. parviflorum</i> (willowherb) | | | | | X | | | X | |
| * <i>Euphorbia peplus</i> (milkweed) | | X | X | | X | | | | |
| * <i>Foeniculum vulgare</i> (fennel) | | X | X | | X | X | | | |
| * <i>Fumaria muralis</i> (fumitory) | | X | X | | X | X | | | |
| * <i>Galeobdolon luteum</i> (aluminium plant) | | | | X | | | | | |
| * <i>Galium aparine</i> (cleavers) | | X | | | X | X | | X | |
| * <i>Gazania rigens</i> | | X | | | | X | | | |
| * <i>Geranium molle</i> (soft dove's foot) | | X | | | | | | | |
| * <i>Helianthus tuberosus</i> (Jerusalem artichoke) | | | | X | | | | | |
| <i>Hydrocotyle heteromeria</i> (waxweed) | | | | X | X | | | | |
| * <i>Hypochoeris radicata</i> (cat's ear) | X | X | X | | | X | | | |
| * ? <i>Kalanchoe sp.</i> | | X | | | | | | | |
| * <i>Lactuca sp.</i> (wild lettuce) | | X | | | | | | X | |
| <i>Lagenifera pumila</i> | | | | | | | X | | |

⁴ Castlecliff is the type locality (Lloyd 1972)

⁵ Seen at 'ES' in 1994 or earlier; not seen in dunes (RD) until 1997.

| | FD | RD | WW | WS | ES | WD | CF | CR | SW |
|---|----|----|----|----|----|----|----|----|----|
| * Lamium purpureum (red deadnettle) | | X | | | | | | | |
| * Lampranthus glaucus (a shrubby ice plant) | | | | | | X | | | |
| * Lathyrus latifolius (everlasting pea) | | X | X | | | | | | |
| * Leontodon taraxacoides (hawkbit) | | X | | | | X | X | X | |
| Leptinella dispersa ssp. rupestris ⁴ | | | | | | | X | | |
| Limosella lineata | | | | | | | | | X |
| Lobelia anceps | | | | | X | | X | X | X |
| * Lobularia maritimum (alyssum) | | X | X | | X | X | X | X | |
| * Lotus pedunculatus (lotus major) | X | | | | X | | | | |
| * Medicago arabica (spotted burr medick) | | X | X | | | | | | |
| * M. lupulina (black medick) | | | | | X | X | | | |
| * M. nigra (bur medick) | | X | X | | | X | | | |
| * Melilotus indica (King Island melilot) | | X | X | | | X | | | |
| * Mentha x piperita (eau de Cologne mint) | | | | X | | | | | |
| * Mimulus guttatus (monkey musk) | | X | | X | | | | | |
| * Modiola caroliniana (creeping mallow) | | X | | | | | | | |
| * Myosotis laxa (water forget-me-not) | | | | | X | | | | |
| * M. sylvatica (garden forget-me-not) | | | | X | X | | | | |
| * Opuntia vulgaris (prickly pear) | | X | | | X | | | | |
| * Orobanche minor (broomrape) | X | X | X | | | X | | X | |
| * Oxalis articulata (sourgrass) | | X | | | X | X | | | |
| * O. incarnata (lilac oxalis) | | | | | | X | | | |
| * O. pes-caprae (Bermuda buttercup) | | X | | | | | X | | |
| O. rubens | X | X | | | | X | | | |
| * Phytolacca octandra (inkweed) | | X | | | X | | | X | |
| * Picris echioides (ox-tongue) | | | | | X | | X | X | |
| * Plantago coronopus (buck's horn plantain) | | | | | | | X | X | |
| * P. lanceolata (narrow-leaved plantain) | | | X | | | | | | |
| * P. major (broad-leaved plantain) | | | | | | | | | |
| * Polycarpon tetraphyllum (all-seed) | | | | | | X | | | |
| * Polygonum aviculare (wireweed) | | | | | X | | | | |
| * P. hydropiper (water pepper) | | | | X | | | | | |
| P. salicifolium (NZ willow-weed) | | | | | X | | | | |
| Ranunculus acaulis (sand buttercup) | | | | | | | X | | |
| * R. ficaria ssp. ficariiformis (celadine) | | X | | | | | | | |
| * R. repens (creeping buttercup) | | X | | X | X | | | | X |
| * R. sceleratus (celery-leaved buttercup) | | | | X | | | | | X |
| * Raphanus raphanistrum (wild radish) | | X | | | | | | | |
| * Rorippa microphylla (one-rowed watercress) | | | | X | ? | | | | X |
| * Rorippa nasturtium-aquaticum (two-row) | | X | | X | X | | | X | X |
| | | | | | | | | X | |
| | | X | X | X | X | X | | | X |
| | | | | | | | X | X | |
| | | | | | X | X | | | |
| * Rumex crispus (curled dock) | | | | | X | | | X | |
| * R. obtusifolius (broad-leaved dock) | | | | | X | | | X | |
| * Sagina apetala (pearlwort) | | X | | | X | X | | | |

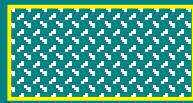
| | FD | RD | WW | WS | ES | WD | CF | CR | SW |
|---|----|----|----|----|----|----|----|----|----|
| * <i>S. procumbens</i> (procumbent pearlwort) | | X | | X | | | X | | |
| <i>Samolus repens</i> (sea primrose) | | | X | | | | | | |
| <i>Sarcocornia quinqueflora</i> (glass wort) | | | | X | X | X | | X | |
| * <i>Sedum praealtum</i> | | | | | X | | | | |
| * <i>S. spectabile</i> | | X | | | X | | | | |
| <i>Selliera radicans</i> (half-star) | | | | | | | X | | |
| * <i>Senecio elegans</i> | | X | X | | X | | X | X | |
| * <i>S. glastifolius</i> (pink ragwort ⁵) | | X | | | X | | | | |
| * <i>S. jacobaea</i> (ragwort) | | | | | | X | | | |
| <i>S. minimus</i> (fireweed) | | | | | | X | | | |
| * <i>Silene gallica</i> (catchfly) | | X | X | X | | | | | |
| * <i>Silybum marianum</i> (variegated thistle) | | | | | | X | | | |
| * <i>Sisymbrium officinale</i> (hedge mustard) | | X | | | | | | | |
| * <i>Solanum chenopodioides</i> (velvety nightshade) | | X | X | | X | X | | | |
| * <i>S. nigrum</i> (black nightshade) | | | | | | X | | | |
| * <i>S. tuberosum</i> (potato) | | | | | | | | | |
| <i>Sonchus kirkii</i> | | | | | | | | | |
| * <i>S. oleraceus</i> (puwaha) | | | | | | | | | |
| * <i>Stellaria media</i> (chickweed) | | | | | | | | | |
| * <i>Trifolium arvense</i> (haresfoot trefoil) | | | | | | | | | |
| * <i>T. glomeratum</i> (clustered clover) | | | | | | | | | |
| * <i>T. repens</i> (white clover) | | | | | | | | | |
| * <i>Vicia disperma</i> (small French tare) | | | | | | | | | |
| * <i>V. hirsuta</i> (hairy vetch) | | | | | | | | | |
| * <i>V. sativa</i> (vetch) | | | | | | | | | |
| * <i>Viola ? odorata</i> (violet) | | | | | | | | | |
| <u>Ferns</u> | | | | | | | | | |
| <i>Adiantum cunninghamii</i> (maidenhair fern) | | | | | | | X | | X |
| <i>Asplenium flaccidum</i> (hanging spleenwort) | | | | | X | | | | |
| <i>A. oblongifolium</i> | | | | | | | | | X |
| <i>A. polyodon</i> | | | | | | | | | X |
| <i>Azolla filiculoides</i> | | | | | | | | | X |
| <i>Blechnum discolor</i> (crown fern) | | | | X | | | | | |
| <i>B. minus</i> [of NZ authors] (swamp kiokio) | | | | X | | | | | X? |
| <i>B. novae-zelandiae</i> (kiokio) | | | | | | | X | X | |
| <i>B. triangularifolium</i> (cliff kiokio) | | | | | | | X | X | |
| <i>B. novae-zelandiae</i> X <i>B. triangularifolium</i> | | | | | | | | X | |
| <i>Cyathea dealbata</i> (ponga) | | | | | | | | X | X |
| <i>C. medullaris</i> (mamaku) | | | | | | | | X | X |
| <i>Dicksonia squarrosa</i> (wheki) | | | | X | | | | | X |
| <i>Diplazium australe</i> | | | | | | | | X | |
| <i>Histiopteris incisa</i> (water fern) | | | | X | | | | | |
| <i>Hypolepis ambigua</i> | | | | | | | | X | |
| <i>Microsorium pustulatum</i> (hound's tongue) | | | | X | X | | | | |
| <i>Paesia scaberula</i> (ringfern) | | | | | | | | X | |
| <i>Polystichum richardii</i> (hard shield fern) | | | | | | X | | | |
| <i>Pteridium esculentum</i> (bracken) | | X | | X | X | X | | | |
| <i>Pteris pendula</i> [<i>P. macilenta</i> auct NZ] | | | | X | | | | X | |
| <i>P. tremula</i> | | | | | X | X | | X | |
| <i>Pyrrosia eleagnifolia</i> (leatherleaf fern) | | | | | X | | | | |

Appendix 4

MAPS



Residential



Reserves and Open Space



Coastal Reserve Boundary (Management Plan)



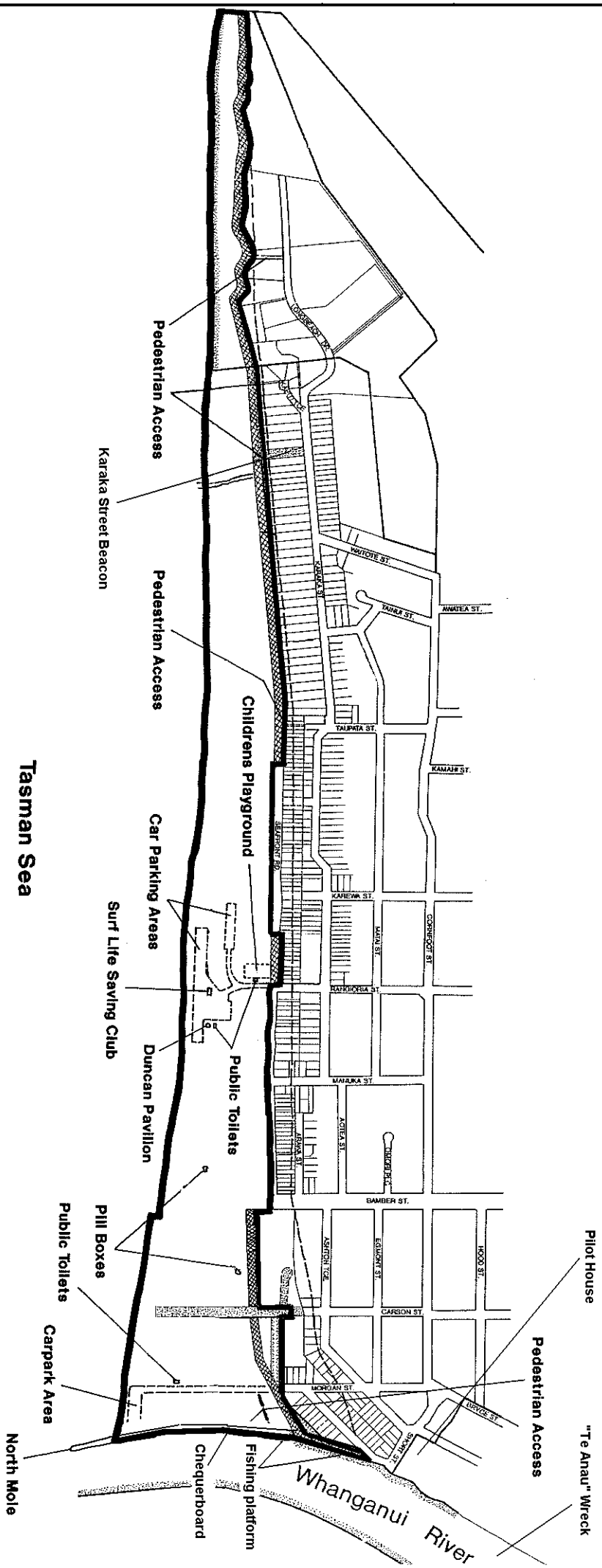
Digital map data supplied by Critchlow Associates Ltd. Sourced from Land Information New Zealand.
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 Wanganui District Council's databases and maps.
 It is made available in good faith but its accuracy or completeness is not guaranteed.

NORTH

Not to Scale

Printed: 05/02/2004

Structures, Facilities and Walkways Within the Reserve



Tasman Sea

North Mole

Whanganui River

Appendix 5

LANDSCAPE PLAN

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