

SANDY POINT DOMAIN

Management Plan

2013

Environmental Reserves

Parks

Invercargill CITY COUNCIL

RESERVES ACT 1977

Section 41

The Management Plan for Sandy Point Domain was approved by the Invercargill City Council by resolution passed at its meeting held on 5 March 2013. All submissions, objections and suggestions relating to the Management Plan had been disposed of and suggestions allowed.

The Management Plan shall come into operation from 31 July 2013 and shall remain operative for a period of ten years.

Dated at INVERCARGILL this 29th day of July 2013.

CITY OF INVERCARGILL, N.Z. COMMON SEAL

.....
Mayor of the City of Invercargill

.....
Chief Executive Officer

MANAGEMENT PLAN

SANDY POINT DOMAIN

July 2013 – July 2023

PREFACE

The Sandy Point Domain Management Plan has been prepared in compliance with Section 41 of the Reserves Act 1977.

The purpose of this Management Plan is to provide for and ensure the use, enjoyment, maintenance, protection and preservation as the case may require and, to the extent that the administrating body's resources permit, the development of the reserve for the purposes for which it is classified; and shall incorporate and ensure compliance with the principles set out in the appropriate section of the Act.

This Plan shall be held under regular review to ensure that it remains relevant to changing circumstances and demands.

R J Pagan

PARKS MANAGER

31 July 2013

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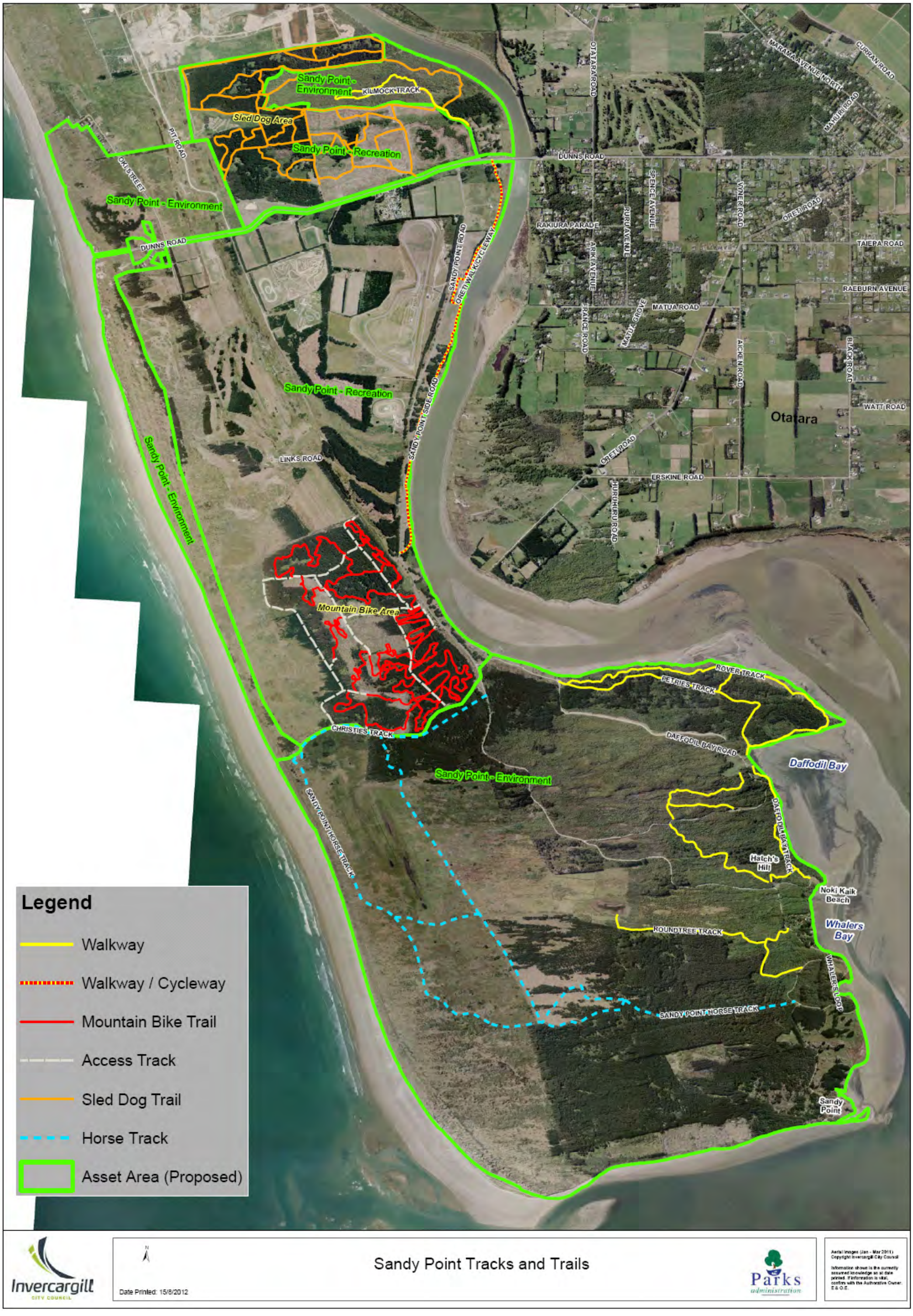
23	The Cabbage Tree
24	Southland Landrover Club

Invercargill City Council

Date Printed: 17/8/2012

Sandy Point Lease Areas

Parks administration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Sled Dog Area
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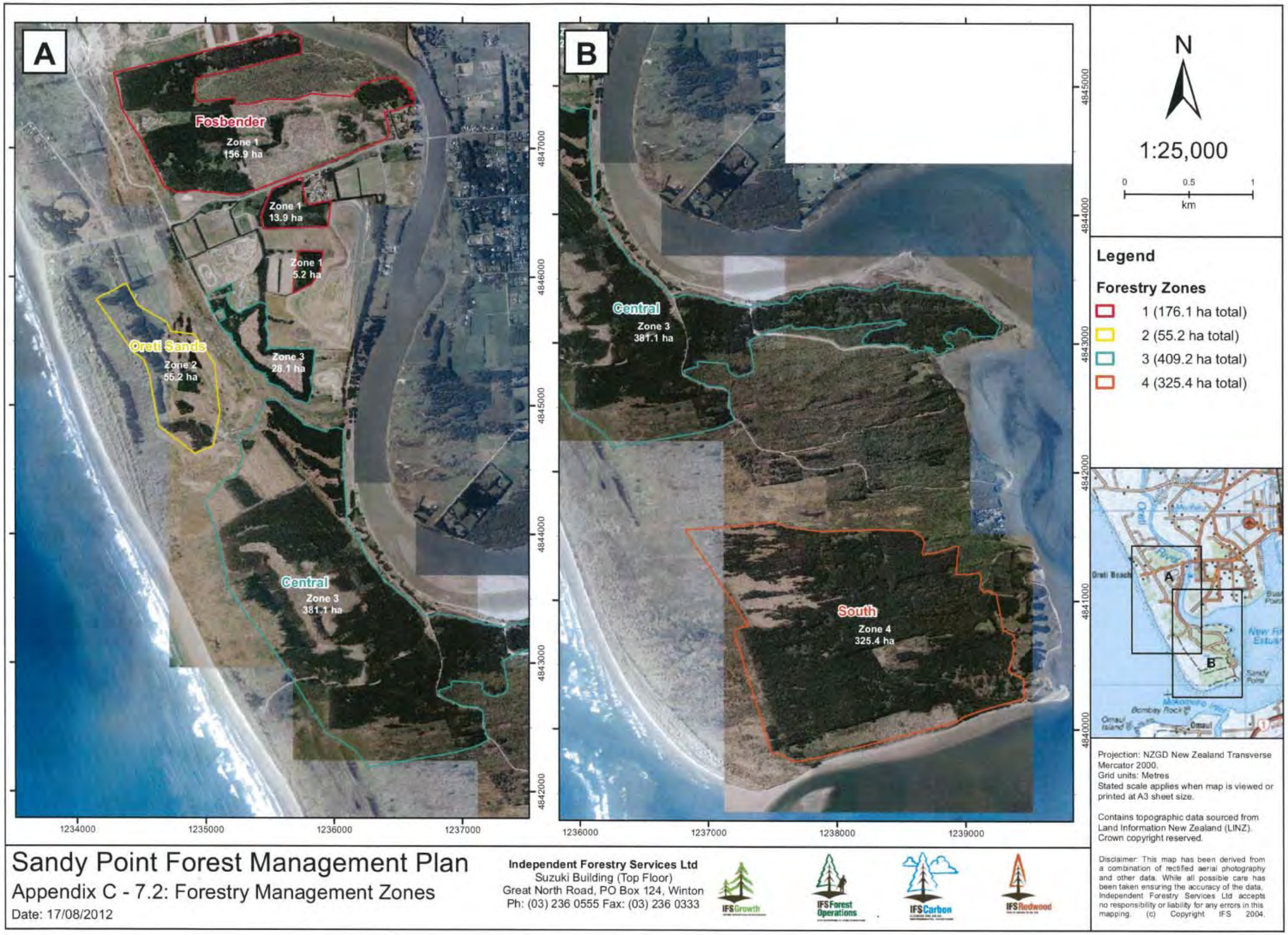


Sandy Point Forest Management Plan

Appendix C - 7.2: Forestry Management Zones

Date: 17/08/2012

Independent Forestry Services Ltd
Suzuki Building (Top Floor)
Great North Road, PO Box 124, Winton
Ph: (03) 236 0555 Fax: (03) 236 0333

IFS Growth · IFS Forest Operations · IFS Carbon · IFS Redwood

1.0 INTRODUCTION

As one of the few remaining native forest areas within the Invercargill urban environment, Sandy Point Domain offers the Invercargill community an important environmental and recreational resource providing opportunities for picnicking, play, walking, running and as an educational 'classroom'.

Sandy Point Domain has been classified as an Environmental Reserve within the Invercargill City Council Park categories. Environmental Reserves are managed for the purpose of environmental protection and passive recreation. They are made up of predominantly natural areas and may contain remnants of forest, tussock or grassland, wetlands or sand dunes. They may have special scenic, historic, or environmental values that set them apart from other "recreational" type reserves.

Other Environmental Reserves include Metcalf Bush, Seaward Bush and Omaui Reserve. Parks are categorised according to their dominant characteristics and these assist Council with setting management objectives and assessing funding requirements for each reserve.

This Management Plan is a full review of the Sandy Point Domain Management Plan which was prepared in 2000. While much of the Plan remains the same, parts of it have been updated with current information about the Domain. Management policies in the Plan have been revised to reflect the needs of current and future users and to be consistent with current 'best practice' management procedures.

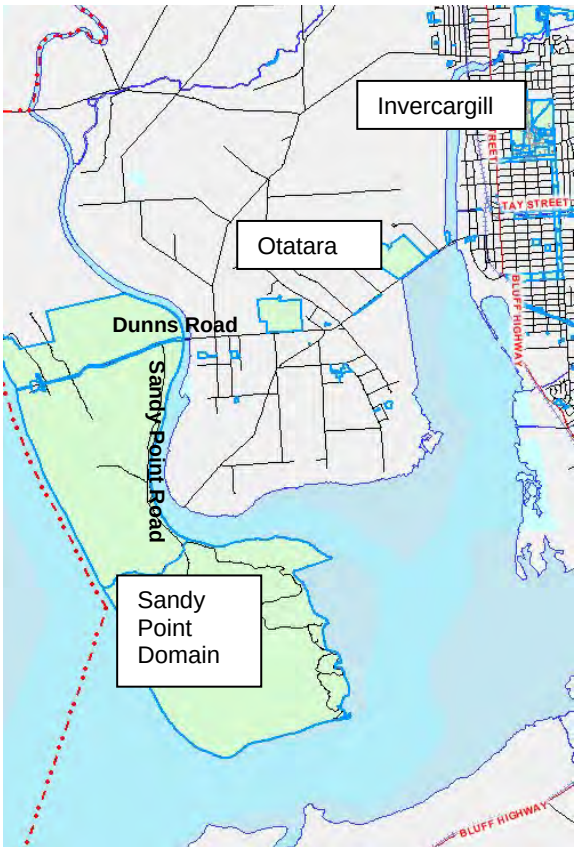
1.1 LOCATION

Sandy Point Domain is a large sand and shingle peninsula formed at the mouth of the Oreti River in Southland.

On the east, it is bounded by the lower reaches of the Oreti River and the New River Estuary, and on the west bounded by the waters of Foveaux Strait.

Its southern end lies opposite the volcanic and metamorphic rocks of the Mokomoko headland and Omaui Hill, to form the mouth of the estuary.

The Peninsula lies in an approximately northwest/ south-easterly direction, and its northern end is bounded by the private property of the Fosbender estate.
It is entirely within the Invercargill District.



1.2 ACCESS

Sandy Point Domain is seven kilometres from Invercargill, with the only road access being via Dunns Road. Boat access is possible from the New River Estuary, Oreti River or Foveaux Strait.

1.3 ADJOINING LAND USE

Sandy Point Domain is bounded on three sides by water. The only adjoining land is on the northern boundary. This was previously known as Fosbender Estate but it has since been sold to various gravel extraction companies for mining. This is a continuation of the extraction that took place in the northern portion of the Domain and leaves a rather devastated landscape.

The sand and gravel companies have been granted access through the Domain to the gravel workings in return for maintenance of the access road. However, this agreement needs to be formalised and legalised as required in this Plan in Policy 4.4.5.

1.4 CLASSIFICATION AND LAND DESCRIPTION

1.4.1 *Historic Classification Information*

Derived from Crown land, Sandy Point Domain was originally set aside as a Recreation Reserve (temporarily in 1888 and then permanently in 1889) with control vested in the Borough of Invercargill, the Council being the Domain Board. In 1906, the vesting was changed from recreation reserve to an endowment for the benefit and improvement of the New River Harbour. In 1921 the vesting was again changed to an endowment for the benefit of the Borough of Invercargill.

In 1992, the entire area known as Sandy Point was gazetted as a Recreation Reserve under the Reserves Act 1977 and is known as Sandy Point Domain Reserve.

1.4.2 *Classification*

Reserves are classified under the Reserves Act 1977 according to their dominant characteristics, use and current and future values. Reserves are classified to ensure their control, management, development, use and preservation is for the appropriate purposes.

Sandy Point Domain is classified as a Recreation Reserve pursuant to Section 17 of the Reserves Act 1977.

1.4.3 *Area and Land Titles*

Sandy Point Domain covers a total area of **2217.3086 ha**. The land description is as follows:

- Certificate of Title: 1A/345
  Legal Description: Part Section 7A, 31 Block XV New River Hundred
  Area: 29.5952 ha

- Certificate of Title: 6086
  Legal Description: Lot 1 DP 301427
  Area: 0.8983 ha

- Certificate of Title: 6087
  Legal Description: Lot 2 DP 301427
  Area: 5.2050 ha

- Certificate of Title: 570459
  Legal Description: Lot 1-2 DP 13010 and Part Lot 1 DP 10682 and Part Lot 1 DP 9130 and Part Section 6 Block XXIII New River Hundred and Section 1-2 Survey Office Plan 439600
  Area: 1952.9467 ha

- Certificate of Title: 5D/747
  Legal Description: Lot 2 DP 9927
  Area: 8.9100 ha

- Certificate of Title: 5D/746
  Legal Description: Lot 1 DP 9927
  Area: 101.3000 ha

- Certificate of Title: 1A/390
  Legal Description: Part Section 1 - 2, Block XXIII New River Hundred
  Area: 4.1184 ha

- Certificate of Title: 1A/850
  Legal Description: Section 82, Block XXIII New River Hundred
  Area: 8.0937 ha

- Certificate of Title: 1A/849
  Legal Description: Section 3, Block XXIII New River Hundred
  Area: 22.7636 ha

- Certificate of Title: 1A/380
  Legal Description: Section 4, Block XXIII New River Hundred
  Area: 3.2374 ha

- Certificate of Title: SL142/9
  Legal Description: Lot 1-14 and Lot 16-24 Block I DP 2989 and Lot 1-19 and Lot 21-32 Block II DP 2989
  Area: 4.6273 ha

- Certificate of Title: SL1A/285
  Legal Description: Section 8A Block XV New River Hundred
  Area: 35.6123 ha

- Certificate of Title: SL6B/781
  Legal Description: Lot 1 DP 10490
  Area: 0.0341 ha

- Certificate of Title: 1A/286
  Legal Description: Pt Section 7A Block XV New River Hundred
  Area: 31.9778 ha

- Certificate of Title: 82/107 (cancelled)
  Legal Description: Lots 15 and 33 Block I and Lots 20 and 33 Block II DP 2989
  Area: 2.5356 ha

- Certificate of Title: 82/96 (cancelled)
  Legal Description: Lot 34 Blk 1 DP 2299, Lot 20 Blk II DP 2299
  Area: 0.5453 ha

All of the above certificates of title are subject to various encumbrances or agreements which are shown on the various titles.

1.4.4 *Lease Holders at Sandy Point*

1.4.4.1 *Sport and Recreation Leases*

Although various forms of recreation are carried out over a large portion of the Domain, there is a distinct Recreation Zone at the northern end used by clubs and organisations for specific activities.

This area is dominated by large open fields and shelterbelts. Clubrooms and buildings are scattered throughout the area in varying states of repair. The area is highly modified and shows little signs of the landscape that originally clothed the area. The area generally lacks scenic and ecological values.

Activities range from active sports such as soccer, hockey, rugby, football and golf, to motor racing of various kinds, shooting, equestrian, boating and rowing.

Sport and Recreation Leases:

Georgetown Scouts - lease 2.4291ha.
Invercargill Kart Club - lease 5.4775ha.
Invercargill Pistol Club - lease 2.3770ha.
Invercargill Rowing Club - lease 1.2285ha.
Jellicoe Sea Scouts - lease 0.4395ha.
Oreti Surf Lifesaving Club - lease 0.3755ha.
Rakiura Rides - lease 7ha.
Rugby Southland Incorporated - lease 16.5921ha.
Southern Paintball Club - lease 5.4415ha.
Southland Archery Club - lease 1.5321ha.
Southland Clay Target Club - lease 14.7630ha.
Southland Golf Club - lease 67.9805ha.
Southland Landrover Club - lease 1.4090ha.
Southland Motorcycle Club - lease 16.1575ha.
Southland Pony Club - lease 11.41ha.
Southland Power Boat Club - lease 0.8450ha.
Southland Rodeo Association - lease 4.8865ha.
Southland Sports Car Club - lease 70.97ha.
Southland Stock-Car Drivers Association Inc - lease 7.2510 ha.
Waihopai Rowing Club - lease 0.4395ha.
Water Ski and Runabout Club - lease 0.8190ha.

Other Ad Hoc Recreational Users (Seasonal or No Formal Lease Area)

Birchwood Hunt Club.
Southland District Rugby League.
Southland Football Association.
Southland German Shepherd Dog Club.
Southland Mountain Bike Club.
Southland Orienteering Club.
Southland Sled Dog Association.
Southland Triathlon and Multisport Club.
Southland Harriers.
St Pauls Harriers and Athletics Club.

Refer to Appendix 6 for more information on sports and recreation clubs and organisations using Sandy Point.

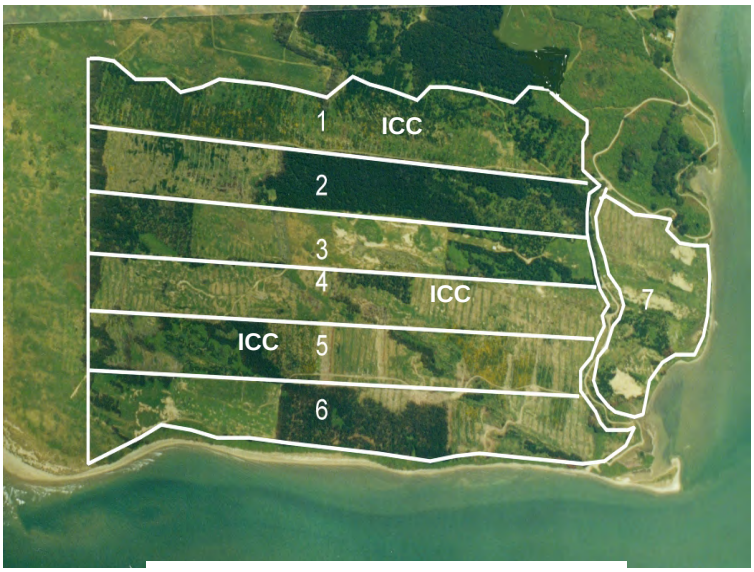
1.4.4.2 *Forestry*

From small beginnings as a means of erosion control and the provision of shelter, forestry is now a major management area of the Domain, covering approximately 500 ha.

Clear felling visible from Sandy Point Road leaving a void in the landscape.

In 1924, C M Smith produced a report emphasising the suitability of Sandy Point for exotic afforestation.

"Once shelter, from the salt winds, has been provided the climate of Sandy Point Domain is ideal for exotic afforestation and logs of very good quality are produced."



Private Lease Areas expiring in 2016

This has proved to be generally true with almost 500ha of Sandy Point Domain presently planted in *Pinus radiata* or *Macrocarpa* for either timber or shelter. These plantings have had a major impact on the local character, providing new habitats and changing localised weather conditions.

The plantations have had a major impact on the landscape character of the Domain, creating single species forests that are significantly taller than the indigenous forest. Pine forests allow some native undergrowth to occur but generally the resultant acidic soil conditions are not conducive to the establishment of native bush. In the shelter of the plantations, rapid regrowth of native species occur.

Clear felling techniques have also had an effect on the amenity of the reserve, leaving a scar on the landscape and visitors with a lessened impression of the Domain.

A common misconception is that the plantations were planted for shelter and sand stabilisation purposes only. That was true of the early plantings, but all plantings since 1946 have been for the production of forest. Experience over the past 30 years has shown that afforestation is quite compatible with the management objectives for the Domain.

For the aesthetic values of the Domain to be retained, it is important that forestry operations are not in full public view.

The impact of silviculture practices and the strong visibility of the trees itself can be reduced by the positioning of buffer zones, preferably native, between areas of the public and the plantation. As well as softening the impact of the forestry operations, the strips act as fauna linkages helping to enhance the biodiversity of the Domain.

Sound forestry management over recent years has greatly improved the quality of the timber produced in the plantations.

Exotic forest plantations are increasingly being used for recreational use in the form of walking and mountain bike tracks as they are ideally suited for these pursuits. These uses are now primary to forestry production and are increasingly becoming important in the management of these areas. Some forestry activity may limit use to orienteering.

Exotic forestry is an important aspect of Sandy Point Domain as it assists with soil conservation, provides shelter and recreational opportunities, enhancing the scenic values of some parts of the Domain and, no less importantly, provides revenue for the benefit of Invercargill citizens.

Most of the forestry area is already planted with exotic plantations but some areas are still to be planted as they are considered to have no conservation or ecological values. This area also includes the private forestry leases which terminate in 2016 and are not renewable. If the opportunity arises before then, these leases should be resumed prior to this date.

Private Forestry Leases

In 1966, as the result of representations from a group of private individuals, Council leased some 210 ha at the southern end of the Domain for private forestry purposes.

The area is leased for a 50 year non-renewable term. Over the 50 years of the lease, the City would receive an average income of $571.78 per annum for the whole 210 ha. The 210 ha are divided into seven individual leases.

Once these private leases come into production they will create a great deal of wear and tear on the roads with little return to cover the cost.

The existence of these private forestry leases is an anomaly in the management of the Domain and should be corrected when the opportunity occurs with the Council resuming any leases that become available.

1.4.4.3 *Commercial Activities*

The majority of users of the Domain are voluntary but there are an increasing number of commercial activities operating in the Domain that provide a service for the public. While commercial activities are an important part of the reserve, it is important that their presence is conditional to the approval of the Parks Manager and this Management Plan. This will ensure that the operation is an activity provided for public benefit as well as being in keeping with the character of the Domain.

Commercial Leases

- *Beach Road Motor Camp*

  The Beach Road Motor Camp was established in the late 1950s-early 1960s and included a few caravans and a community block over 5.26 ha of land. The camp has now developed into an area of cabins, community kitchen, lounge, laundry and electricity, a large area for tents and sites for campers. It leases an area of 5.2050 hectares.

- *Cabbage Tree Restaurant*

  Around 1965 a modern shop and milk bar was added to the Domain to serve campers and the sporting community of the Sandy Point area. It was redeveloped in 1995 into a licensed bar and restaurant.

  The well known old Beach Store was mostly demolished in the year 2000 and rebuilt with extensive alterations and add-on buildings to achieve the style and décor of today.

  The Cabbage Tree Restaurant contains many dining rooms and children's play areas for visitors. It leases an area of 0.8983 hectares.

1.4.4.4 *Non-Conforming Residential Sites*

Within the boundaries of the Domain, there are two areas of residential buildings that are non-conforming with the management policies of the area. These are

located immediately to the south of Dunns Road at Oreti Beach and at Cooper's Creek on the eastern coast of the Domain.

The aim is to eventually phase out these residences and weekend cribs as they are located in the environmental area of the Domain.

The crib sites at Cooper's Creek are well integrated into the surrounding landscape and are not visible from the road. The cribs at Oreti Beach are more visible as they lack any protection from vegetation or elements to blend the buildings into the landscape.

The only residences permitted should be those necessary for ranger staff and for the management of the commercial activities.

Originally, crib owners at Oreti Sands were granted 21 year leases. There are a total of five cribs remaining along Dune Crescent/Pacific Avenue area.

The remainder of the cribs are concentrated in the Cooper's Creek area, totalling to 17.

The original intention of permitting cribs in Sandy Point Domain was that they were to be used as holiday or weekend homes. However, over the years, a few people have gone beyond that concept. Some buildings have been considerably upgraded past the modest crib and are now used as permanent places of residence. Inevitably, this creates various problems.

Those holding a Licence To Occupy experience difficulties with selling their cribs because the prospective purchasers are unable to raise mortgage finance.

Permanent residence creates a demand for upgrading facilities such as the provision of electric power, telephones and improved roading. If acceded to, those demands would help to destroy the very features that make the area so attractive.

All crib sites, other than some at Oreti Sands, are on a yearly Licence To Occupy. Present philosophy manages Sandy Point as recreation reserve under the Reserves Act 1977. However, the anachronism of having small groups of cribs situated in the heart of Sandy Point Domain must be seriously examined and a suitable policy towards them adopted.

<u>Residential Leases</u>

Coopers Creek cribs
Oreti Beach cribs

A crib at Oreti Beach contrasting with the surrounding natural environment.

1.5 MANAGEMENT AREAS

Sandy Point Domain can be separated into three distinct Zones. There are areas of overlay as more of the reserve is developed and utilised for various activities.

The proper management of these Zones will allow the Domain to be utilised to its potential, ensuring that conflict between users and use is minimised.

The areas occupied by residential cribs are classified as non-conforming within the management policies of the Domain and are therefore treated separately.

Management of Sandy Point has been divided into the following management zones, with passive recreation being predominant over most of the area:

- Recreation.
- Environment.
- Forestry.

1.6 GENERAL PARK USE

1.6.1 *Recreation*

Ever since road access to Oreti Beach was first provided, Sandy Point Domain has increasingly been used as a recreational area and its environs provide visitors with a wide and diverse range of recreational activities and opportunities.

Improved access, upgrading of facilities and the provision of walking tracks has helped to increase visitor use of the Domain.

Activities that damage the environment or disturb the tranquillity of the area, such as four-wheel driving or trail bike riding are not permitted or are confined to specified areas.

Recreation, such as fishing, walking, bird watching, picnicking, mountain biking and general appreciation of the environment, occurs throughout the Domain. These activities are not confined to the Recreation Zone but are possible throughout all Zones, except for the private forestry leases at the southern end of the Domain.

Les George Oval - typical of the Sandy Point Recreation Zone

It must be remembered that although these facilities are open to the public freely, they are

not always the primary use of that Zone and are required to meet the policies and objectives of that area.

The recreation area, because of its high level of modification, can accommodate changes easily without disturbing its character or amenity. However, it is recommended that buildings are located where they do not impose on the landscape and that they are suitably integrated into the area.

Recreation is an important use of the environmental area, but any development should be unobtrusive and not affect the ecological value of the area.

Tree plantings in the recreation areas have been predominantly exotic in formal shelter lines with shrub areas of native species such as *Phormium tenax* and *Cordyline australis.* Native species should be planted wherever possible to create a unifying character throughout the Domain.

The possible reduction of roadside grass verges is also suggested as these are not useful strips of land, which require large amounts of maintenance. Facilities may be provided or permitted providing they are necessary for the particular use of the area.

1.6.2 Playgrounds

1.6.2.1 *Fosbender Park Playground*

The original playground at Fosbender Park was constructed in 1972 by the Invercargill Lions Club as part of an ambitious plan to develop the area. It was replaced years later due to deterioration from the weather. A paddling pool also existed at that time and it was later filled in.

Play equipment at Fosbender Park includes a swing, climbing frame, tyre swing and seesaw. Hidden behind a cluster of trees near the waterfront are a picnic table, seesaw and swings.

1.6.2.2 *Playground Next to the Water Ski Club*

A playground and paddling pool were originally constructed by the Water Ski Club in the 1960s and since then had become dated and the playground replaced. The paddling pool was filled in.

In 2007 the play equipment was upgraded by the Invercargill City Council Parks Division. Vegetation was planted and a car park defined to beautify the area.

Play equipment includes: two swing sets, a play module, balance beam, flying fox, seesaw, slide and roundabout.

1.6.3 *Auxiliary Facilities*

1.6.3.1 *Park Ranger's Residence*

The Park Ranger's residence was originally used as a house at Blake's Nursery on Bainfield Road. It was moved to the site at Sandy Point in the 1970s.

The residence was fully funded and is owned by Council.

With the residence on site the Ranger provides security and is able to respond to emergencies within the Domain.

1.6.3.2 *Sandy Point Visitor Centre*

The Sandy Point Visitor Centre opened on 9 December 1996. The building was originally bought by Council in 1984 and was used as a Caravan Court Office in North Road prior to being flooded. It was then used as an administration office for Parks Division PEP and Works Schemes until closure in 1992.

The building was transferred to Sandy Point in 1993 to be used as a Visitor Centre.

Cathy MacFie produced the initial design for the centre and conservationists Lloyd Esler, Paul Gay and Les Ryan played major roles in the development of the centre, freely providing their time and experience.

The Visitor Centre contains a series of displays and interpretive material covering Sandy Point Domain and the vegetation and wildlife found within the grounds.

This facility is available for individual and organised groups to gain a better understanding of the uniqueness of the coastal area of Sandy Point Domain.

1.7 PRESENT MANAGEMENT

Sandy Point Domain is under the control and management of the Invercargill City Council Parks Division. The Parks Division is responsible for the development, maintenance and general management of the reserve.

2.0 BACKGROUND

Sandy Point Domain is recognised as an outstanding natural feature and landscape within the Invercargill City District. In ecological terms, Sandy Point is considered an area of national importance, as one of the few remaining examples of dune development and vegetation sequence left in the country.

While the area has been severely modified by humans in the last hundred years with only a few original, mature trees remaining, the native vegetation is exhibiting strong regenerative qualities and it is hoped that the bush will eventually return to something near its original state.

With suitable management objectives and treatment, these areas of indigenous vegetation will have an important conservation and ecological value to the City in preserving flora, fauna, historic, wetland and landscape values for future users of the Domain.

Recognising Sandy Point's fragile existence in terms of erosion mitigation is important to maintaining the area as an asset to the city. Maintaining a healthy vegetation cover is a prime management objective and why farming was so unsuited to the area. As well as retaining soil to the area, the existence of a healthy vegetation cover is essential to the well being of fauna.

Regenerating native Phormium tenax and Cordyline australis on the banks of Silver Lagoon

Apart from those areas that have been so heavily modified that all trace of their original character has disappeared, any proposed development and usage must have regard for the conservation of any natural features in the Domain.

Consequently, any necessary installations or developments should be sited so that their impact does not lower the quality of the resource. Development and usage should be controlled and guided so that the area's values are not compromised.

The usage of Sandy Point Domain must be continually monitored and controlled so as to ensure that the resource is wisely used and that its development and sustainability is in the best interests of the community, the wider public and the environment.

2.1 ENVIRONMENTAL

Sandy Point contains nationally important ecological areas that are vital to the health of the Domain. With the removal of farming practices from the Domain,

these areas are increasing as native vegetation re-establishes itself in previously grazed areas. Maintaining and increasing the size of these areas is important as the native vegetation cover acts to protect the Domain from erosion as well as providing a habitat for native wildlife. Environmental areas are also important for education.

2.1.1 *Sand Dunes*

The Environmental Zone of the Domain can be separated into two distinct areas. Each is equally important to the diversity of the area. Originally, as described in Smith's account of the local vegetation in 1924, a large amount of the Domain was covered in native bush and grasses as well as a number of natural lagoons. With the clearance of native bush and the introduction of rabbits and farming practices, erosion became a major problem. The sand dunes that had been kept intact by vegetation were blown across the peninsula to the east and into the estuary.

The introduction of marram grass and the stabilisation of these dunes has resulted in an environmental area on the western edge of the Domain which is highly vulnerable to any development changes.

Sand Dunes at Oreti Beach covered with Marram Grass

Although marram grass is not originally native to the area (likely to have replaced *Pingao*), marram plays an important part in the stability of the entire peninsula. This is namely the littoral dune system, between 100-200 meters wide, running the entire length of the Domain between Oreti Beach and the rest of the Domain.

Oreti Surf Club showing the vulnerability of the landscape in this area

Towards the northern end of the Domain the littoral sand dunes are as high as 10 metres in places. The dunes slowly decrease in size as they run south.

Without the marram grass to hold the dunes in place, the dunes would have continued to erode as they had in the past.

The area is highly vulnerable to any development, as the removal of any cover can result in a blow out with a hole created in the dune wall, allowing sand to travel east for some direction. This can have a marked impact on activities and vegetation within the Domain.

It is important that any activity that may be allowed in this area is controlled and managed so as not to have any detrimental effect on the area. The low habitat of

any vegetation and the openness that this creates makes any buildings or structures highly visible for some distance.

From the top of some dunes, considerable views can be gained of the surrounding landscape. There are clustered groups of windblown *Pinus radiata* and *Macrocarpa* scattered within this zone, but the plants are often restricted to growing along the ground because of the strong coastal winds that are experienced here.

2.1.2 *Native Bush*

In stark contrast to the open character of the coastal sand dunes, the native bush in the Domain creates a sheltered calm environment for a variety of flora and fauna. The remaining stands of native vegetation at Kilmock Bush and around Daffodil Bay are of high environmental importance, improving the stability of the Domain.

These forests are dominated by regenerating Totara stands but, as they return to their original state, the biodiversity of the area is increasing to include a number of other species.

The domination of totara in the forest is something that is relatively unique to the Southland coast and gives the landscape a local character. Many of the trees have been wind blown, growing almost horizontally in a tortured habit.

From viewing platforms, such as at Hatch's Hill, the bush canopy can be seen as a thick, impenetrable layer sculptured by the wind into a smooth surface. Below the canopy, the climatic conditions are markedly different with less wind and higher humidity levels.

Totara dominated native forest (Kilmock Bush)

The ground surface appears lush with ferns and seedlings present between the trunks of the Totara trees. The surface is undulating and the original dunes can still be made out beneath the cover of the vegetation.

It is important that holes in the canopy layer are not created as they can change the sub-canopy conditions as well as increasing the opportunity for wind throw.

The regenerative qualities of the bush are strong with the bush line continually moving outwards.

2.1.3 *Ex-Farm Lease Land*

Since 1989 all farm leases have been removed from the Domain. Of these leases, the Lawton Lease was the largest, covering approximately 250 ha of the interior of the Domain. The grazing practices at the time resulted in the land being removed of any large vegetation and grasslands being prevalent. The area is generally open and windswept, being exposed to coastal winds with little shelter available. The land is undulating, characterised by sand dunes and slacks covered by grass.

Silver Lagoon was included in this area and a number of plantings have occurred to re-establish the bush around the largest remaining lagoon in the area.

Silver Lagoon and additional plantings on edges

A number of smaller lagoons also exist in the old farm lease and it would be desirable to create vegetation linkages between these areas.

Here, the vegetation type is predominantly *Cordyline australis* and *Phormium tenax*. They provide excellent habitat protection for wading birds.

A number of old water-filled gravel pits have since been developed into a wetland area, providing a new habitat for wading birds along Pit Road. With further plantings, these wetland areas will start to develop a natural character, becoming an asset to the Domain.

With the removal of grazing stock and farming practices from the area in the past, areas that had previously been unable to revegetate are showing excellent signs of recovering.

Some areas are becoming covered in a mix of bracken ferns and *Muehlenbeckia*, providing good nurse crop conditions for native seedlings. *Muehlenbeckia* may act as a weed in some circumstances. The ex-farm lease land has become a mix of areas used to amenity forestry and environmental protection and enhancement.

Ex-farm lease land looking southwest from Silver Lagoon

By converting the area containing the majority of the lagoons into an environmental area, it is hoped to create a network of vegetation corridors connecting each lagoon to another. In time, and with assistance, the area will regenerate into an important wildlife site as well as increasing the biodiversity.

2.1.4 *Climate*

2.1.4.1 *Rainfall*

It is probable that, because of its exposure to westerly weather from Foveaux Strait, Sandy Point Domain experiences a slightly higher rainfall than Invercargill.

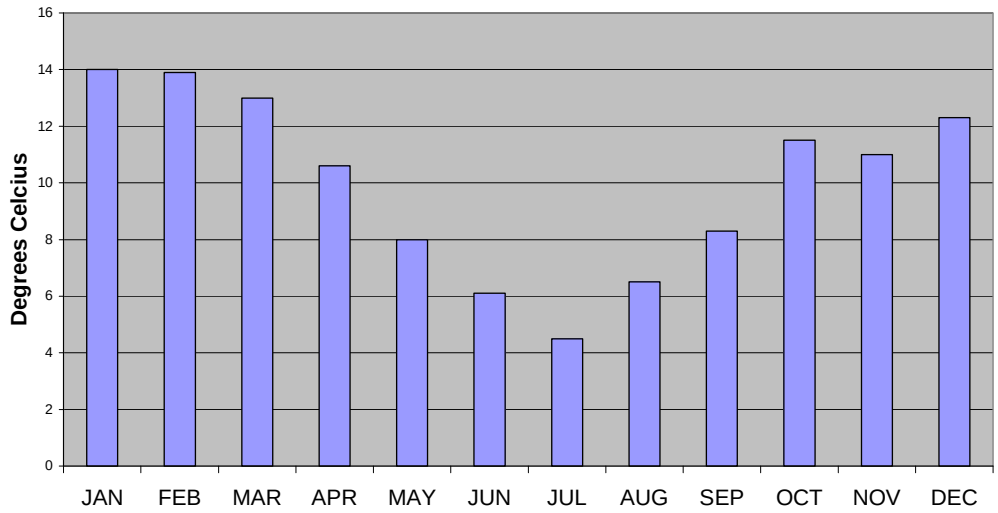
Invercargill's average annual rainfall is 1,042mm, which falls on an average of 156 x 1mm rain days per year. A 1mm rain day is a day when 1mm or more of rain falls.

In spite of an equably distributed rainfall, dry conditions can occur quite quickly due to the light sandy or stony nature of the soil in this area and the drying influence of the prevailing westerly winds.

2.1.4.2 *Temperature*

As Southland is the southernmost part of New Zealand, its temperatures are cooler than for most other parts of the country. This particularly applies to southern regions which come under the influence of a coastal cloud belt.

Monthly mean temperatures



While summers may be cooler than other parts of New Zealand, the winters are frequently milder than might be expected. Smith's recordings give an annual mean temperature of 9.97ºC, with the maximum being 30ºC and the minimum being -7.2ºC. The annual mean temperature approximates that for Invercargill, which is 9.7ºC. The following graph outlines the mean monthly temperatures as recorded by Smith.

In areas sheltered from the wind, temperatures increase markedly and produce very favourable growing conditions. Apart from that, it would appear that temperatures for Sandy Point Domain are very similar to those of Invercargill.

2.1.4.3 *Sunshine*

There is no reason to believe that Sandy Point receives significantly more or less sunshine than Invercargill experiences. The average for Invercargill is 1,612 hours per annum, with the maximum being 1,789 hours per annum and the minimum being 1,333 hours per annum.

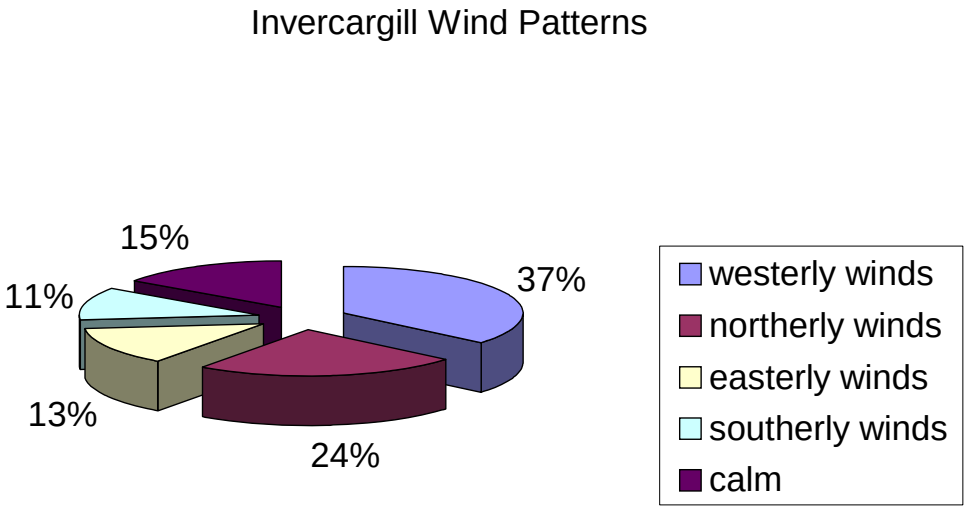
This is significantly less than most other areas of New Zealand and is about 25% less than eastern areas of the South Island, north of Dunedin. The effect of such low sunshine levels is most marked on plant growth.

2.1.4.4 *Wind*

Wind has a very pronounced effect on Sandy Point Domain, resulting in high evaporation rates, high transpiration rates on plants and the distinctive sculpturing effect on plants. The heavily salt-laden westerlies are very damaging to plant growth. It also affects the stability of sand dunes - severe winds causing "blow-outs" in the littoral dunes.

Wind imposes limitations on the uses to which the Domain can be put and public activities.

Sandy Point Domain lies fully exposed to Foveaux Strait and consequently westerly winds can be expected to be more than in Invercargill.



The prevailing winds are from a westerly quarter with northerly winds also being a dominant factor. Over the past few years there has been a tendency for easterly winds to be of greater frequency.

Most wind occurs from September until January, with another windy period around the autumn equinox. During the winter months northerly winds and calm conditions predominate. The funnelling effect of Foveaux Strait influences the incidence and force of westerly winds. Apart from recording stations such as Puysegur Point, the Invercargill area tends to have the strongest winds in the region.

Vegetation at Sandy Point showing the effects of the predominant winds

2.1.4.5 *Frost*

Southland, including Invercargill, Is generally much frostier than other lowland parts of New Zealand. For example, Invercargill experiences an average of 111 days of ground frost per annum. In comparison, Christchurch only experiences an average of 89 days of ground frost.

Frosts at Sandy Point would closely approximate those of Invercargill. Ground frosts are measured with a thermometer horizontally positioned 2.5cm above closely-mown grass and they occur when the temperature falls below -1.0ºC.

Apart from limitations on plant species, which might be expected to occur on Sandy Point Domain, frost does not appear to exert any obvious influence on the area.

2.1.4.6 *Snow*

The occurrence of snow is not of any great concern at Sandy Point. Snow storms occur on an average of three to five days per year, but snow seldom lies on the ground for more than two or three hours.

2.1.5 *Geology and Geomorphology*

In geological terms, the Sandy Point peninsula is of very recent origin and was probably formed mainly within the last 6,000 years. It is believed that the greatest influences on the formation of Sandy Point and the surrounding area have been the two high sea levels of the Pleistocene period. These two sea levels were approximately eight meters and two meters above the present day mean sea level.

Possible evidence of the eight meter sea level is visible in the deposit of bedded gravels which forms the high bank on the eastern side of the Oreti River in the vicinity of the Dunns Road Bridge.

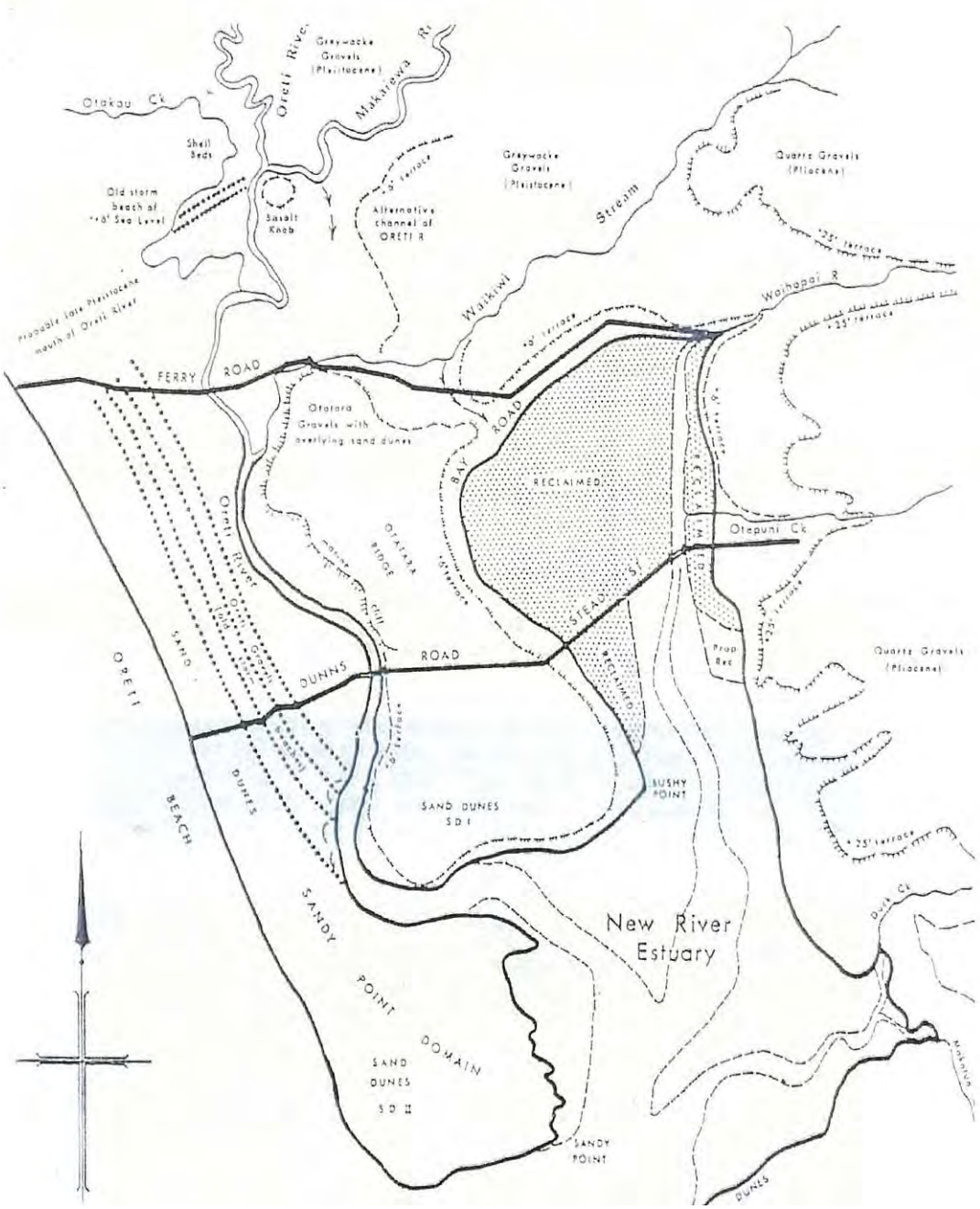
After the Otatara gravels were deposited to form the Otatara peninsula, it is believed that there was a steady and protracted lowering of the sea level.

Later the sea again rose to around the two meter level and that rise was probably responsible for the cliffing of the Otatara bank of the Oreti River. Evidence of the two meter rise in sea level may be seen in Invercargill in the vicinity of the intersection of Tay Street and Clyde Street.

The radiocarbon dating of shells, found in a shell bed at Otakau Creek near West Plains, puts the date of this two meter sea level at somewhere in the vicinity of 4,600 years. It is probable that during that period the formation of Sandy Point commenced, as an off-shore bar, at the mouth of the Oreti River. A subsequent lowering of the sea level is assumed to be responsible for the deposition of the storm-beach sequence of Oreti shingles, which occurs in the northern part of the Domain.

Radiocarbon dating of shells taken from gravel beach ridges to the north of the Domain gave ages varying from about 1,300 to 4,000 years. At about one meter above mean sea level the age varied from 1,305 (±65) to 1,345 (±70) years. Another sample taken from about 2.1 meters above mean sea level had an age of 4,060 (±40) years.

The Diagram shows the formation of the New River Estuary as a 'shoreline of emergence' (after Emmons et al, 1949)
A – Otatara gravels, an old off-shore bar
B – Oreti gravels, a younger bar, probably related to a Pleistocene sea-level 2 metres above present m.s.l.



The shingles of Sandy Point Domain are mainly greywacke with some quartz and small quantities of granite and other pebbles of Fiordland origin. Some of the old storm beach shingles contain numerous shell fragments. The sands of Oreti Beach are medium to fine while the wind deposited sands inland are mainly fine sands.

At low tide, extensive mud flats are exposed in the New River Estuary along the eastern shore of Sandy Point Domain. These mud flats consist of soft, viscous organic sediments to sandy sediments. In shallow embayments, where there is estuarine vegetation such as *Scirpus* or *Leptocarpus,* there may be a surface layer of black anaerobic mud.

The general structure of the peninsula is characterised by a series of parallel shingle ridges which finally threw out irregular hooks towards the land to form, roughly, a letter “j”. The shingle ridges are the old storm beaches and they run in a north-westerly direction from what may be called the “neck” of the peninsula,

which is in the vicinity of the present Waterski Club. An aerial photograph taken in 1947 shows these storm beaches very clearly. They form a distinct band behind the fore dunes and, beyond them to the east, the shingle deposits are overloaded with sand dunes. Any shingle deposits south of the Waterski Club are, in most instances, heavily overlaid with sand.

A littoral or transverse dune system extends for the entire length of Oreti Beach, but becomes progressively smaller at its southern end. Behind this littoral dune system a series of lateral dunes extend across the peninsula.

The lateral dunes are mostly marked on the eastern half of the peninsula, particularly in the area north of Dunns Road and south of the Waterski Club. They attain their greatest development in the vicinity of Daffodil Bay.

To the north of the "neck" of the peninsula the sequence of storm beaches separates the lateral dunes from the transverse dunes. This feature does not occur elsewhere on the peninsula.

The lateral dunes attain their greatest heights at their eastern extremities where they terminate fairly abruptly near the Estuary shore.

Behind the littoral dune system, and between the lateral dunes, lagoons and ponds used to be common. Lagoons also occurred in the troughs between the old storm beaches. Some of the lagoons were quite extensive, being several hectares in area. Unfortunately, with the severe erosion which commenced in the 1880s and continued up until the 1920s or later, many of them were filled in with wind-blown sand. Lagoons in the troughs of the old storm beaches were also destroyed by shingle extraction operations.

The largest remaining lagoon is that known as Silver Lagoon, which is situated in the central part of the Domain. A number of the old gravel pits have now become filled with water to form permanent ponds. They supplement the natural ponds and provide valuable flora and fauna habitats.

An old lagoon in the bush behind Daffodil Bay in 1924. Drifting sand later caused it to disappear

Hundreds of years of vegetation cover produced a top layer of black sandy humus which was very fertile. Unfortunately, from the 1880s onwards, most of that top layer was stripped away by wind erosion. With the protection which has been afforded to the Domain since the 1940s, this humus layer is once again becoming evident.

Apart from 1917-1919, no climatological information on Sandy Point Domain is available. Consequently, it is necessary to use the data from the adjacent Invercargill Airport in order to gain approximation of the climate of the Domain.

C M Smith* kept rainfall and temperature records for three years from 1917 until 1919 and, while the recordings were not taken over a long enough period to be conclusive, they do provide the basis for some comparison with Invercargill.

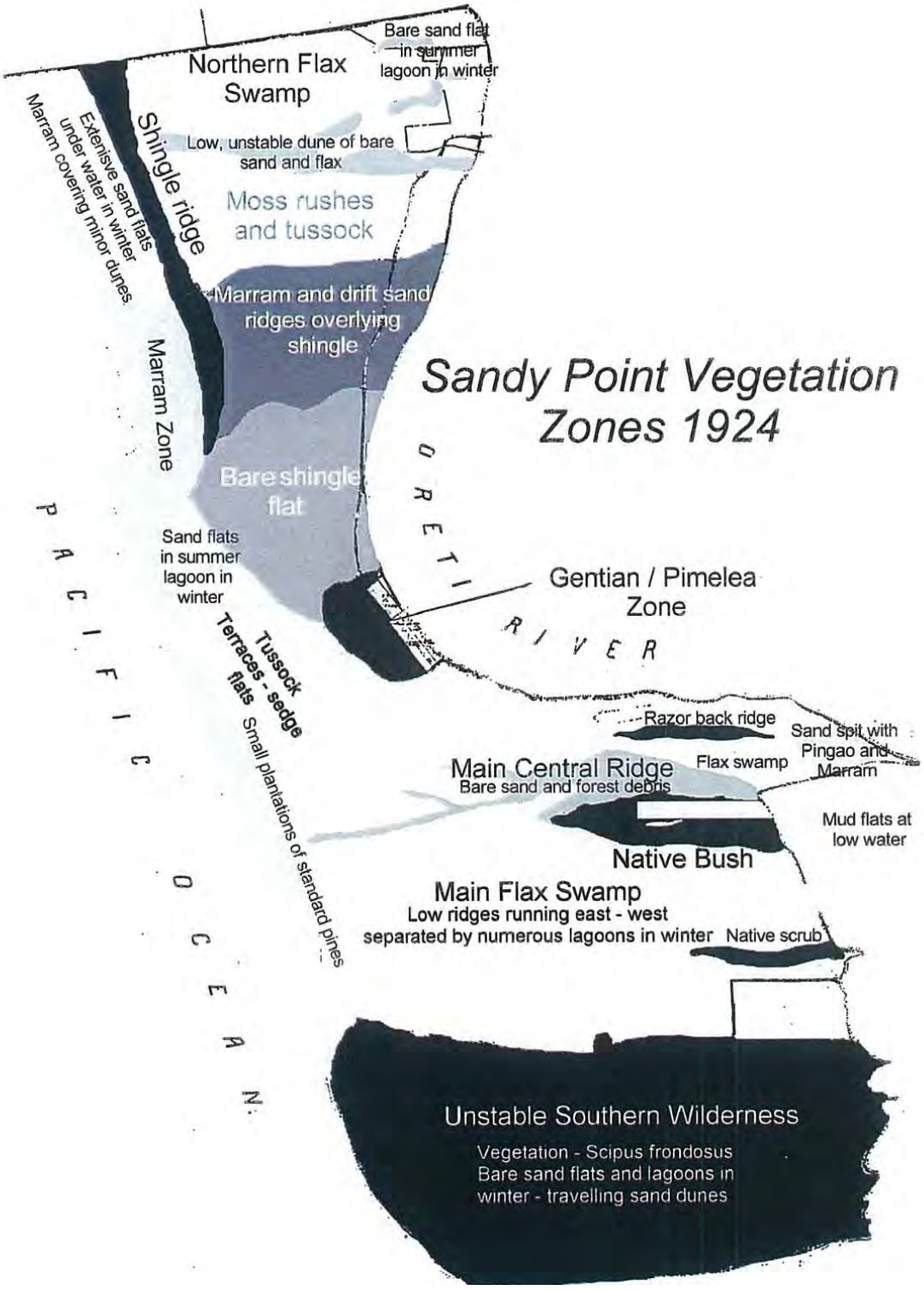
With the exception of wind, which can be very severe, the climatic conditions of Sandy Point Domain are not extreme. In general, Southland (being the most southerly and westerly part of New Zealand) is the first area to be influenced by the weather systems which move on to the country from the south or west. Because of its location, Sandy Point Domain is no exception.

** Report on Sandy Point Domain Afforestation Scheme, 1924*

Originally lagoons such as this were common all over the Domain. A rising water table is causing a number of lagoons to re-appear

2.1.6 *Flora*

Sandy Point Domain is rich in indigenous plant species and it also contains an interesting and varied selection of vegetation habitat zones. Although little of its botany was recorded in earlier years, it is fortunate that CM Smith (1924) made the first detailed records of the main vegetation zones existing at that time. These are shown on the map below:



The vegetation zones as defined by Smith are as follows:

(i) Marram Zone.
(ii) Northern Flax Zone.
(iii) Sand Fescue and Moss Zone.
(iv) Sand and River Gravel Zone.
(v) Shingle Zone.
(vi) Gentian and Pimelea Zone.

(vii) Tussock Terraces Zone.
(viii) Main Central Ridge Zone.
(ix) Native Bush Zone.
(x) Flax Swamp and Lagoon Zone.
(xi) Pingao Zone.

Smith based these zones upon topography as well as vegetation because the two, in some instances, are inseparable and there is also an overlap of vegetation types between some zones. Dr J E Holloway made a brief survey some time about 1936.

In earlier years only casual references to vegetation were made so that it is only possible to reconstruct the nature of the vegetation from what evidence there is of past conditions, what exists today and a certain amount of educated conjecture.

Suffice to say that the vegetation in pre-European times was vastly different from what it is today. On the basis of evidence recorded by Smith, it is evident that the forest cover was far more extensive in pre-European times. This is evidenced by old forest remains recorded in the soil profile along the riverbank in the vicinity of what was the old flax mill.

A careful study of existing forest areas indicates that, formerly, the native forest was particularly luxuriant. In certain favoured sites there is evidence that this luxuriance is now gradually returning.

Some of the forest areas have now been virtually undisturbed for over thirty years and the effects of that continuing protection are becoming more apparent.

The increasing number of bryophytes and ferns, the luxuriance of the latter, and the more continually moist conditions in the deeper recesses of the forest are dramatic evidence of what happens when a rather severely degraded piece of native forest is given adequate protection and allowed to naturally regenerate.

Other areas have been greatly modified by burning, erosion, land drainage, sand and shingle extraction, the invasion of alien plants such as lupin, broom and elder, farming operations, the planting of forestry plantations and the conversion of areas for recreational use.

In spite of all that, sufficient still remains of various vegetation types to warrant their continuing protection.

2.1.6.1 *Marram Zone*

This zone is still very much as it was in Smith's day. In some places there has been some invasion by the tree lupin (*Lupinus arboreus*) and attempts have been made to establish pine trees on the leeward side of some of the sand dunes. Pines grow well until they reach the wind and then they become affected by wind shear, with the result that growth tends to be horizontal rather than vertical.

The marram zone is the foremost protective area for Sandy Point Domain and every effort must be made to ensure its continuing stability. *Note* - marram is an introduced species.

2.1.6.2 *Northern Flax Swamp Zone*

The northern flax swamp zone extended from what was in 1924 the northernmost part of the Domain southwards to the northern part of Teretonga. Over the intervening years it has been heavily modified by land clearance for farming and recreational pursuits so that there is now no indication of what it formerly was.

2.1.6.3 *Sand Fescue and Moss Zone*

Like the northern flax swamp zone, it has been completely modified and no trace of it remains. The area is occupied by various recreational organisations, including the Southland Sports Car Club, Southern Motorcycle Club and the Invercargill Kart Club.

2.1.6.4 *Sand and River Gravel Zone*

Again, this zone has been completely modified. Gravel extraction and farming have been the prime modifying agents. The area is dominated by recreational organisations and forestry plantations with an isolated pocket of native vegetation remaining along Pit Road. It contains what is probably the last remaining remnant of *Netera balfouriana*, a plant which was formerly abundant in the sand fescue and moss zone. This pocket of native vegetation should be protected.

Sand and shingle area in 1924

2.1.6.5 *Shingle Zone*

Like the preceding zones, the shingle zone has been completely modified, principally because of the extensive shingle extraction which took place in the 1960s and 1970s. It is now occupied by forestry plantations and some farming.

2.1.6.6 *Gentian and Pimelea Zone*

This small zone has also been completely modified and absolutely no trace remains of the two plants after which it was designated. It is partly occupied by forestry plantations, with the balance constituting an esplanade strip along the riverbank. At what used to be the site of an old loading jetty for gravel, some native vegetation has re-established itself in a small area. This area of native vegetation should, if possible, be protected.

2.1.6.7 *Tussock Terraces Zone*

The tussock terraces zone has also been completely modified and is now mainly occupied by forestry plantations with an area on the westerly side under farm lease.

2.1.6.8 *Main Central Ridge Zone*

Forestry plantations occupy a large portion of this zone. On its northern side, the only near original native vegetation is a tract of scrub and flax swamp along the riverbank. As there has been considerable accretion along that section of the riverbank since 1924, it is most unlikely that the original flax swamp (as recorded by Smith) is still in existence as wind-blown sand has probably filled it in.

Running down the middle of the zone, in a west-east direction, is a prominent dune ridge known as the razorback. On its southern side there is a comparatively large area of thickly tangled scrub comprising mainly elder (*Sambucus niger*) and *pohuehue* (*Muehlenbeckia australis*). This area contains regenerating native vegetation. The actual main central ridge is largely covered with regenerating native forest and is contiguous with the native bush zone.

2.1.6.9 *Native Bush Zone*

This is one zone which is still primarily clad with its original vegetation cover. In Smith's day the native bush covered some 83 ha. However, since then, it has increased in size and as contemplated today, the zone embraces a much larger area.

For the purpose of classification, Kilmock Bush is now included in this zone. As previously stated, the recovery in the quality of the forest over the past 30 to 40 years has been quite dramatic and, with the protection which it enjoys today, it can be expected that the improvement will be even more rapid.

The regeneration of trees, shrubs and other plants is evident in most areas, while in the heart of the bush there are moist gullies and hollows in which tree ferns flourish along with dense colonies of the crown fern (*Blechnum discolour*). In these moist recesses of the forest, mosses and lichens are starting to become a more prominent part of the vegetation and are indicative of the increasing and more permanent humidity.

Totara dominated native forest

As stated in the historical summary, the native forest of Sandy Point Domain is rather unique in that it occurs on sand dunes. It is also greatly influenced by strong, salt-laden winds which modify the exterior of the forest and induce some unusual tree forms. Few examples of this kind of forest now exist in New Zealand and, for that reason, the continuing conservation of the remaining areas in forest in Sandy Point Domain is important.

The Sandy Point forest is Podocarp-mixed broadleaf and it contains all of the principal forest Podocarps. The totara (*Podocarpus totara*) is the principal regenerative tree and in places it forms dense thickets. Matai (*Podocarpus spicatus*) is the next common tree, although it is confined mainly to older specimens and is not showing the same capacity for regeneration.

In the heart of the forest behind Daffodil Bay, a few mature miro (*P ferruginens*) remain and there are also a number of fine young regenerating miros.

Rimu (*Dacrydium cuppressinum*) was apparently formerly abundant but was decimated by timber cutting in the late 1800s and in the early 1900s by fishermen stripping the bark from living trees so that they could tan their nets and sails. No mature rimus remain and there are now only a few young trees.

The totara trees on Sandy Point suffered a similar fate.

After the timber cutting ceased, the remaining mature trees were regularly stripped of their bark which was used for making bags or pohatiti for titi or mutton birds. This was a traditional Maori activity at the time of gathering the titi but, in former times, was controlled by long-standing custom.

In past years the stripping of totara bark became an uncontrolled activity, as traditional customs became forgotten and many trees suffered severe damage. Some thin-bark totara (*Podocarpus hallii*) also grows on Sandy Point but it is not common.

Hybrids between this species and the common totara also occur. Kahikatea (*P dacrydiodes*) still exists as a few mature trees escaped axe and fire and, no doubt, as time progresses it will commence regeneration.

The present dominance of totara in the regenerating forest can be directly related to totara's ability to quickly regenerate after a disturbance. It is estimated that the original vegetation of Sandy Point (prior to human disturbance) occurred in a sequence of plant communities. A variety of shrubland species, such as Coprosma sp., *Cordyline australis* and *Pittosporum tenuifolium* invaded the open herbaceous communities on young dunes, which in turn was invaded by totara.

Totara begins by invading the drier dunes with angiosperms present in the wetter slacks. As the canopy develops, shade tolerant matai starts to appear. Without the occurrence of catastrophic disturbances to disrupt the increasing development of fertile forest soils, other podocarps and angiosperm species begin to establish in the forest increasing the diversity of the bush. Eventually as the make up of the soil changes, the forest will change from totara-matai dominance to mixed podocarp dominance (Norton, 1996).

Other large forest trees such as kamahi (*Weinmannia racemosa*), pokaka (*Elaeocarpus hookerianus*) and the lowland ribbonwood (*Plagianthus betulinus*) now only exist in limited numbers.

The forest is rich in ferns, both in quality and the number of species. Some 26 different species of forest dwelling ferns have been recorded. Two species of club moss *Lycopodium* occur, and it is noteworthy that the botanically very interesting *Tmesipteris* is also present.

Lianas abound, but only three species are common. The pohuehue (*Muelenbeckia australis*) is ubiquitous and, particularly in scrub areas, has a smothering effect on the vegetation. In the more mature forest its effects are harmless. Native clematis (*Clematis paniculata*) and the so-called New Zealand jasmine (*Parsonia heterophylla*) are very common and delight the eye when they flower in the spring.

Shrubs and smaller trees, such as *Coprosma lucida* and *Melicytus lanceolatus*, which must have been formerly abundant, are distinctly on the increase and, with it, are changing the character of the forest. In the Daffodil Bay area the same applies to the two species of tree fern *Dicksonia fibrosa* and *D squarrosa*. They are gradually increasing and consequently give the interior of the forest a luxuriant aspect. They are also helping to change the ecology of the forest.

The litter provided by the fallen fronds of *D squarrosa* in the dense investment of dead fronds around the trunks *of D fibrosa* creates specialised habitats for certain forest dwelling animals.

The most pleasing thing relating to the indigenous forest on Sandy Point is the way in which areas outside the perimeters of the present forest are regenerating back into the forest. This is most marked immediately to the south of Daffodil Bay and it is only a matter of time before there is a continuous area of forest from Daffodil Bay to Noki Kaik Beach.

2.1.6.10 *Flax Swamp and Lagoon Zone*

Although much of this zone has been severely modified by drift sand, drainage, cultivation and farming, sufficient still remains to give an idea of how the whole area once appeared. Formerly it was the largest flax area in the Domain.

The topography is of low ridges which once separated the numerous scattered lagoons. Now only a few lagoons remain and most of those are very shallow so that under dry conditions they may lose all of their water.

To the south-west of the native bush zone, a fine example of flax (*Phormium tenax*) and cabbage tree (*Cordyline australis*) swamp still exists where Daffodil Bay Road joins to Sandy Point Road.

Rather dense stands of cabbage trees give credence to early accounts which stated that cabbage trees were very numerous. Following Cooper's Creek inland, there are other remnant areas of flax and cabbage trees which are still significant.

The largest lagoon in the Domain is Silver Lagoon, which feeds Cooper's Creek. It is approximately 3 ha in area and is one of the most important wetland habitats on Sandy Point.

There are also significant areas of red tussock/flax swamp communities to the north-west of the Domain.

2.1.6.11 *Pingao Zone*

This zone formerly occupied the whole southern portion of the Domain and its name was derived from the pingao (*Desmoschoenus spiralis*), a sand binding plant which was the predominant vegetation of that area.

Marram grass, tree lupin and elder have, sadly, all but eliminated the pingao.

In 1966 a large portion of this zone was leased out to various individuals for private forestry purposes and since then most of the leased areas have been planted with pine trees.

In addition to the vegetation zones described by Smith, there are other areas of consideration. In various places around the shores of the New River Estuary there are salt flat areas which support a distinctive vegetation of plants which can tolerate a saline soil and not infrequent immersion by high tides. The principal plants on these salt flats are *Selliera radicans*, *Samolus repens* and *Salicornia australis*. In some parts *Mimulus repens* and the salt grass *Puccinellia stricta* may occur.

Salt marshes also occur along the estuary shoreline, the principal plants being the three-square rush (*Scirpus pungens*) and the jointed rush (*Leptocarpus simplex*). *Triglochin striatum* is a component of the salt marsh vegetation, which is not always noticed. On the shore line bordering the salt marsh the shore ribbonwood (*Plagianthus divaricatus*) usually grows.

Conclusion

From various points of view, the native vegetation of Sandy Point Domain is important. Basically it probably constitutes the richest area within close proximity to Invercargill and more than 220 different native plants have been recorded there. From this point of view, it is also important because of the variety of plant habitats and the nature of the area in which they occur.

The proximity of Sandy Point Domain to Invercargill (no more than 15 to 20 minutes) makes it a valuable educational resource. It is within easy reach for school parties for outdoor education, thus avoiding the necessity to make long journeys for the purposes of studying plant ecology. It also provides the public at large with varying areas of native vegetation, which can be enjoyed by the simple pleasures of walking or just sitting and observing.

Some of the plants which grow on Sandy Point do not occur elsewhere in the Invercargill district, while others are uncommon. Sandy Point was the type of habitat for *Gunnera albocarpa* which was discovered by Thomas Waugh in February 1895. This species was not present when inspected on site in 2012.

All native plant areas which have a significant value should be rigidly protected and, where possible, enhanced through the control of alien vegetation and the replanting of suitable species.

Only those native plants which are indigenous to the Sandy Point area should be used for planting in native plant areas.

See Appendix 1 for a detailed list of plant species present in Sandy Point.

A photo of Sandy Point around the 1920's showing the formation of lagoons and sand drift

2.1.7 *Fauna*

While the botany of Sandy Point Domain has been very well documented, the same cannot be said for its fauna. The avifauna, as would be expected, has been well documented, principally because birds are so relatively easy to observe and record.

The fish have been reasonably well recorded, but the rest of the marine fauna, apart from mollusca, is virtually unknown.

The same applies to the terrestrial invertebrates.

What work has been done is sufficient to indicate that Sandy Point would be quite rich in species.

See Appendix 2 for more detailed information on invertebrates, insects and habitat areas including information obtained by way of previous studies.

2.1.7.1 *Vertebrates*

The vertebrate fauna of Sandy Point has, in the main, been reasonably well documented, although not so much is known of the introduced vertebrates.

Fish

Some 14 species of fish have been recorded from the waters on and around the Domain. Most occur in the New River Estuary with only one or two fresh-water species occurring. If the waters off Oreti Beach are taken into account, the numbers of marine fish would no doubt be extended.

Some of these fish play quite an important part in the recreational activities of the area - however, the effects of pollution in the estuary probably deter quite a number of people from fishing in those waters.

Flounder fishing is reasonably popular in the cleaner waters towards the mouth of the estuary, at the southern end of Sandy Point Domain and off parts of Oreti Beach.

Fishing for estuarine and sea-run brown trout occurs in the Oreti River and, at a bend just north of the Water Ski Club, fishermen can be seen at most times of the year.

During the late spring and early summer months, yellow-eyed mullet swim up the river. A favourite fishing spot for them is in the vicinity of the Dunns Road bridge.

Whitebait travel into Cooper's Creek and possibly one or two of the side channels which drain the Oreti River.

Eels also exist in Silver Lagoon.

Bradley* recorded that at certain times of the year red cod could be caught in large numbers downstream from the Dunns Road Bridge. He also stated that barracouta are sometimes caught in the same area.

**Southland Catchment Board comments on Management Plan, 31 August 1989.*

See Appendix 4 for a detailed list of Fish species.

Amphibians

Two species of introduced frog occur and they form quite an important part in the ecology of the area.

The golden bell frog (*Littoria raniformis*) is found mainly in the ponds in the northern part of the Domain and, together with its tadpoles, probably provides one of the principal sources of food for the bitterns which frequent the area.

The brown tree frog (*Littoria ewingii*) occurs in practically all parts of the Domain and it is found wherever there is sufficient moisture for the adults to survive. At night and on rainy days, the chirping of the adults is a distinctive feature. The tadpoles of the brown tree frog and, probably to a lesser extent the adults, form part of the bittern's diet.

A skink and two gecko species, including the green tree gecko, are said to occur (L Ryan *pers. comm.).*

2.1.7.2 *Birds*

The birds which occur on and around the vicinity of Sandy Point Domain have been well documented; although with the migratory species there is no doubt that continued observation will provide recordings of additional species. There is no doubt that for the nature lover, birds are one of the main attractions of Sandy Point and its environs.

A good variety of land birds and waterfowl occur at most times of the year, but it is around the shoreline and on the waters of the New River Estuary that the greater number of species may be observed.

The Southland Acclimatisation Society [now *Fish and Game New Zealand Southland Region*] pointed out the importance of Sandy Point as a wildlife habitat, particularly as a wetland area, in a submission for the 2001 Sandy Point Management Plan. The submission emphasised the richness and abundance of the waterfowl and other wetland species of birds, and made a strong plea for the

retention of the present habitat areas and the restoration of the Silver Lagoon area.

Silver Lagoon was situated on a large area of farm lease and in the late 1960s was largely drained as part of farming operations. Since the Society made its submission, Silver Lagoon has been taken out of the leasehold area and has been restored to its former state.

The Sandy Point wetlands are an important breeding ground for the shoveler duck (*Anas rhynchotis*). The shoveler duck is a selected breeder and quite large numbers inhabit and breed in Sandy Point Domain.

Grey Ducks breed there occasionally.

Sandy Point would be one of the few places in New Zealand where bitterns (*Botaurus poiciloptihis*) occur within 15 minutes of a large population centre.

Fernbirds (*Bowdleria punctata*) used to occur in the flax swamp in the vicinity of Silver Lagoon but it is understood that they were exterminated by an accidental fire which commenced on the farm lease in 1964. This flax swamp has made a very good recovery and as it has now been removed from the leasehold area; strong efforts should be made to re-introduce fern birds into it.

At least 86 different species of bird have been recorded in the Domain itself or on the surrounding waters. Consequently, the importance of Sandy Point Domain as a wildlife habitat cannot be over-stressed. All existing habitat areas should be retained and, where necessary, enhanced by planting with suitable vegetation.

Particular attention should be paid to the old shingle pit areas where there is a great deal of scope for enhancement so that the wildlife values of those areas are improved.

Where possible, significant wildlife habitats in areas of leasehold land should not only be protected from the damaging effects of grazing animals but also efforts should be made to improve the quality of such habitats.

See Appendix 3 for a list of bird species recorded in Sandy Point Domain and adjacent waters.

2.1.7.3 *Mammals*

All of the land mammals which occur on Sandy Point Domain are introduced and one of the earliest (the rabbit) had a disastrous effect on the area. Today, naturalised land mammals are not particularly conspicuous, although two may be regarded as being relatively serious pests - opossums and cats.

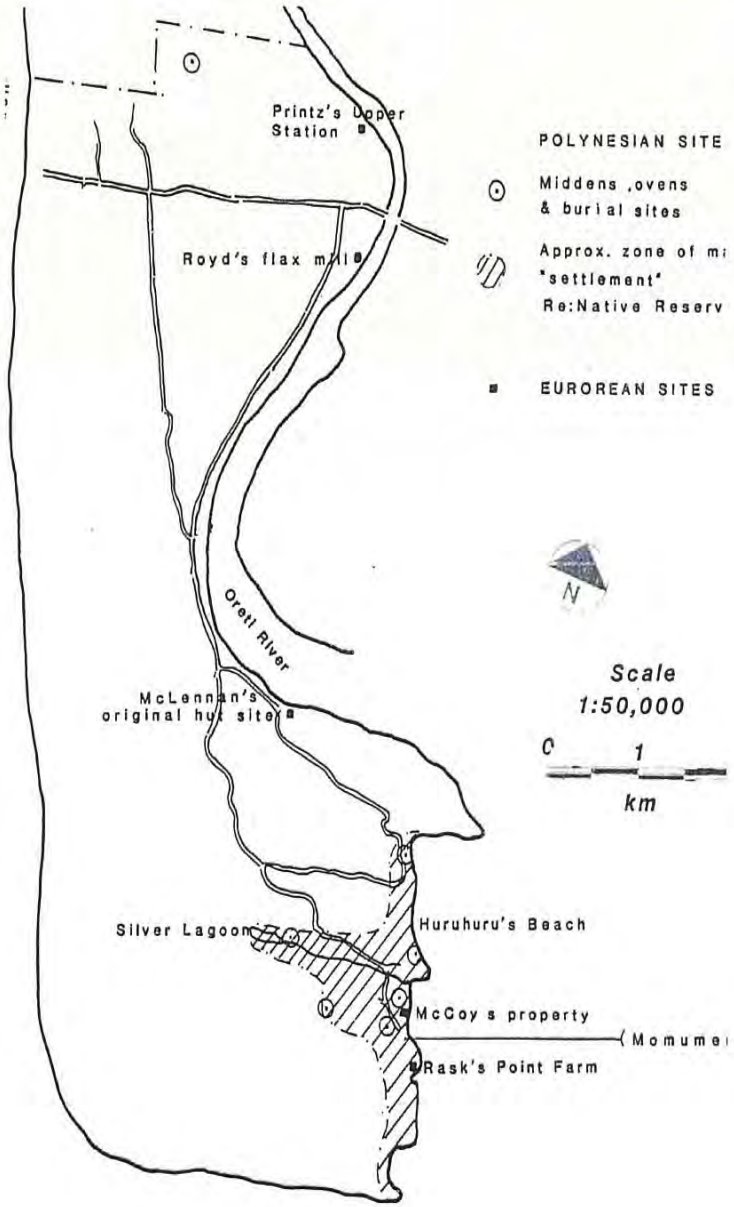
The establishment of a shore whaling station about 1836 probably saw the introduction of rats and mice - however, the rabbit was the first recorded land mammal to be deliberately introduced to the Sandy Point area, apart form domestic animals.

See Appendix 5 for a detailed list of mammals present in the Domain.

2.2 HISTORY

2.2.1 *Maori History*

The history of Sandy Point Domain is too detailed to deal with at length in this document and consequently only a summary of it will be presented. Maori history has unfortunately been very poorly documented and much of it can only be surmised.



Historical Sites

For want of any archaeological evidence the length of Maori occupation on Sandy Point Domain can only be deduced. However, other areas from the Catlins southwards were occupied some 700-800 years ago and it is likely that the Maori history of Sandy Point Domain extends over a similar period.

The presence of moa may well have been an attraction, along with the other birdlife of the area, abundant shellfish and sea fish. In earlier years large quantities of moa bones were uncovered by the shifting sands as well as small piles of crop or gizzard stones. It is recorded that a complete moa skeleton from the Domain is in the National History Museum, London.

Two small kaika, or villages, formerly existed when the first Europeans visited the area. The larger one was Oue, while the smaller one was known as Noki Kaika. In an article written in 1895, Thomas Waugh stated that the Maoris were at one time numerous at Sandy Point. However, in his 1852 census, Mantell records only twelve Maoris living at the village of Oue. According to an early map, Oue (the principal kaika) was in the vicinity of Cooper's Creek near where the cribs are currently situated.

Maori burials were purportedly carried out in this area although it is stated that Oue was abandoned by 1862 and so Waugh's statement that the Maoris were at one time numerous, could have been based only on hearsay. Mantell's 1852 census reveals the following information concerning the Maori population at Oue:

Males over 14 years	8	
Females over 14 years	4	
Religion - Episcopalian - Wesleyan	 1 11	
Moral condition - Married legally - Married not legally	 2 4	
Read and Write	3	
Houses, native style	2	*The fact that there were only two houses recorded at Oue in 1952 indicates that the kaika was not of any great size*
Stock - pigs, tame	10	
Wheat (acres)	1	
Potatoes (acres)	3	
Boats	1	

Mantell took a further census in 1853 and his list not only gives the names of the Maoris living at Oue, but also gives their tribal affiliations:

Name	***Sex***	***Tribe or Hapu***
Huruhuru	M	Ngatihuirapa
Heneri Huruhuru	M	Ngatihuirapa
Taniera te Hauotu	M	Ngatihuirapa
Hamaona Ketu	M	Ngatimaru
Noa te Pakeke	M	Ngatimaru
Heneri Matene Maioi	M	Ngatimaru
Te Marama	M	Ngatimaru
Tetueira	M	Ngatimaru
Inetearíari	F	Ngatituhauriri
Pokuru	F	Ngatihuirapa
Motoitoi	F	Ngatihuirapa
Tiraia Kokopu	F	Ngatiwera

In the past there has been speculation as to the actual site of the kaika and the discovery of two large middens, in towards the centre of the Domain, prompted one author (J Hall-Jones) to state that they indicated the site of Oue. However, historical records (particularly in the form of official maps) leave no doubt as to where the kaika were sited. A survey carried out by J T Thomson and A Garvie in 1856 clearly shows Oue kaika situated in the south-eastern corner of the native reserve.

Up until the 1870s the second kaika had existed on a native reserve in the vicinity of Hatch's Hill and Huruhuru's Beach. It was apparently quite small. A note on a survey plan written by Alexandere Mackaqy in 1874 stated that the land had become a mere rabbit warren and that it was proposed to give up the land in exchange for another site. Although not stated on the plan, the land offered in

exchange was a site at Omaui and the second village was merged in with the rest of Sandy Point Domain.

Huruhuru was once Chief of Oue and his name is commemorated at Huruhuru's Beach. The site of this second village is now known as Noki Kaika. This name cannot be verified or an appellation given later. Possibly it is a corruption of nohi kaika which translates as "little village".

Evidence of Maori occupation exists in various parts of the Domain and, fortunately, most archaeological sites are within the boundaries of the main area of Environmental Zone. Some archaeological sites occur in other Zones and no doubt others have yet to be found.

All known archaeological sites are recorded with the New Zealand Historic Places Trust. Most of these sites consist of middens and ovens which were probably only camping or stopping places occupied for short periods and they do not necessarily indicate permanent habitation.

Midden site.
Middens are the most common evidence of the Maori occupation of Sandy Point.

While the abundant supplies of birdlife, fish and shellfish were obviously the main attractions to the Maori inhabitants, there was also another factor which was important to southern Maori. This was the totara bark which was used for making kits or poha titi in which the mutton birds (or titi) were stored and transported. The titi were packed in inflated kelp bags which were strengthened with splints of totara bark tied around the outside.

Although the taking of totara bark was supposed to be carried out with all due regard for the environment, Mantell records that every year the Maoris destroyed large numbers of totara trees by stripping the bark, not only for making the poha

titi but also for covering their houses. Charles Rask, whose family settled at Sandy Point in the early 1870s and lived there for almost six decades, said he had seen the Maori build canoes out of totara trees and the Maori children also built handsome little canoes out of totara bark. He also commented he had seen Maori wrap the bodies of their deceased in totara bark for burial.

It is recorded that totara trees in the forest were used for the supply of this bark for many years after the two villages were abandoned. From this, it may be deduced that the totara was always an abundant tree on Sandy Point. One or two old mature totaras still exhibit prominent scars where the bark was stripped in bygone years and because of that they have a historical significance.

2.2.2 *European History*

The European history of Sandy Point Domain is very interesting and pre-dates that of Invercargill by quite a number of years. The first Europeans known to have visited or settle on Sandy Point were whalers.

The oldest half-caste at Oue recorded by Mantell in 1852 was 22 years and, while not conclusive, indicates that Europeans very likely visited the area at least as early as 1830.

In 1836 a shore whaling station was established at Sandy Point by Joss and Williams. This whaling station was said to have been in the vicinity of the Maori Village of Oue. A second whaling station was established at Omaui in the same year by Brown and Carter. In 1838 both stations were bought by the well known Johnny Jones who closed them down and removed the plant to Riverton.

The try pot on display at McCoy's Beach is often thought to have been one of those used at the Oue station. It is now believed to have come from Lewis Ackers' property north of the Dunns Road Bridge.

At least one of the hands employed at Oue - namely, Owen McShane - eventually took up land on Sandy Point. Henry McCoy is said to have settled at the Maori kaika at Oue in 1841, while McShane settled in 1836 or thereabouts.

Owen McShane, known as "the Cooper" because of his trade, gained a notorious reputation because he distilled a kind of rum from the cabbage trees that were plentiful in the area.

In 1851, W B D Mantell recorded that McShane had a large still for distilling spirit from ti (cabbage tree) and that large quantities of refuse around it showed that it had been used considerably. About two months later (on his return journey) Mantell also records that he cautioned McShane about his distilling. In fact it can probably be claimed that he was the first distiller of illicit spirits in Southland.

McShane's cabbage tree "rum" is popularly associated with the wreck of the "Lynx" in 1837, which ran aground when leaving the estuary with a cargo of whale oil. The wreck is said to have occurred because of the drunken state of

the crew. However, a Sydney newspaper's report of the wreck makes no mention of the crew being drunk.

One of the old anchors displayed at McCoy's Beach is popularly supposed to have come from the wreck of the Lynx. However, information from the Maritime Museum in Wellington proves that neither of the two anchors could have come from the Lynx.

The Lynx was constructed in 1815 and most anchors from ships of that period had wooden stocks, which were common up until about 1850. The stock on the anchor in question was of a later pattern which did not become common until around 1860.

It is more likely to have come from a ship which had to slip its anchor and was unable to retrieve it, or an anchor which was lost because of a broken shackle.

In his diary, W B D Mantell records his visit to Oue (Sandy Point) on 22 December 1851 and states "Topi urged me to represent the cases of McCoy and Prince (*Printz*) to each of whom he has given land". Topi refers to the principal Maori Chief in the south at that time who was from Ruapuke. Mantell's diary entry would infer that, while McCoy and Printz had been given some land at Oue by Topi, they did not have legal title to it. Henry McCoy had his house and boatshed down near the south-eastern corner of the Environmental Zone.

George Printz settled at Sandy Point some time about 1842 when he joined Henry McCoy. Printz married Pokuru, a daughter of chief Huruhuru of Oue but there were no children. After the death of his first wife he married Catherine Acker, who bore him a number of children and, after her death, he married Matilda, daughter of John Howell of Riverton.

George Printz apparently had two lots of land on Sandy Point and they were referred to as "Printz's lower station" and his "upper station". The lower station was at Printz's Point; the upper station was managed by his brother Harry Printz and was situated approximately 1.5 km upstream from the Dunns Road Bridge on the western bank of the Oreti River. It later became known as the "gum trees" and the site can be identified today by some *Eucalyptus globulus* which still grow there. When Henry McCoy moved from Sandy Point about 1856, his property was sold to George Printz. Printz left Sandy Point in the late 1850s.

In his 1852 census, Mantell also recorded the Europeans and half-castes living at Oue, together with the following information:

Name - Oue	Sex	Age	Native of	Read	Write	Persuasion	Occupation or Relation	Years Resident
Henry James McCoy	M	44	VDL	R	W	C of E	Mariner	10
Anne, his wife	F	22	Half-caste				Wife	
Jacob Newton	M	8	Half-caste				Brother-in-law	
Isaac Newton	M	6	Half-caste				Brother-in-law	
Caroline Newton	F	4	Half-caste				Sister-in-law	
Owen McShane	M	37	Ireland	R	W	Catholic	Cooper and boat builder	15
George Printz	M	26	Ireland	R	W	C of E	Whaler	9
Henry Whitelock	M	6	Half-caste				In care of George Printz	
Maggie	M	8	NZ				Ditto, native orphan	

	Acres in Crop	Cattle	Horses	Pigs	Horses	Out-Houses	Tenure and Remarks
Henry James McCoy Annie, his wife	Wheat, 1.5 Potatoes, 1.5	65	2	40	1	2	
Owen McShane	Wheat, 1	7		40	1	1	Has a large spirit still
George Printz	Potatoes and barley, 3; wheat and potatoes, 1	30	1	20			Has a large spirit still

Kenneth McLennan is credited with being one of the first run holders in Southland and his "Sandy Point Station" was the first officially leased run on the Domain. The lease was granted in 1889. His house was located on the banks of the Oreti River in the vicinity of where the Water Ski Club's building now stands. It appears that Kenneth McLennan was forced to give up his run because of the rabbit problem.

In 1902 a Mr Cuthbert Royds took over McLennan's lease. In 1904 Mr Royds transported McLennan's old cottage up river to a site just south of the bridge. The cottage was loaded onto two lighters, lashed side by side for transportation up the river. The building remained there until the early 1990s when it was destroyed by fire.

Kenneth McLennans cottage on the old flaxmill site in 1987, shortly before it was destroyed by fire

In 1913 Cuthbert Royds constructed a flax mill on the banks of the Oreti River, just a little south of where the old cottage stands. This mill was later shifted south to McLennan's Flat where it operated for a year or so before being shifted back to its original site.

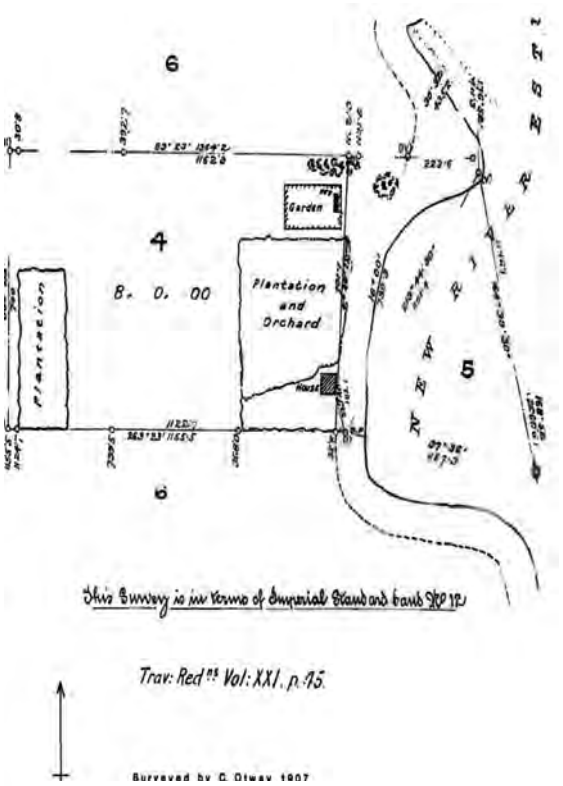
Under various owners, this flax mill continued operating until it closed in 1970. The various owners had flax-cutting rights over the extensive flax swamps of the Domain.

Flax less than four feet in length was not allowed to be cut, nor was it permitted to cut flax that was growing on the tops of sandhills. The lessee was not allowed to cut flax during severe continuous frosts or during the months of June and July.

Before the Dunns Road Bridge was constructed across the Oreti, the flax mill operated a lighter for carting flax and firewood to the mill and the fibre to Invercargill.

Carl Rask arrived at Sandy Point about 1882 or thereabouts and took up 3.3 ha of land in the vicinity of Rask's Point. His land became known at Rask's Point Farm and he lived there for many years. Rask's Point Farm became well known around the district for its fruit and produce. It is recorded that he grew a variety of fruits from plums and pears to oranges to hazels. His farm was also renowned for its vegetables and, in particular, the quality of its potatoes.

Carl Rask's farm owed its existence to the numerous trees he planted for shelter, particularly pines, Monterey cypress and eucalyptus. Many of these trees still survive and quite a number are very fine specimens.



Plan of Rask's Point Farm

2.2.3 *Farming*

Farming has played a major part in Sandy Point's history since 1938 when early whalers took to life ashore to graze sheep and cattle. Initially farming activities were confined to a relatively small area but in 1889 much of the Domain was let to Kenneth McLennan, who appears to be the first official lessee taking up the 'Sandy Point Run'.

Heavy grazing, together with associated activities such as burning off and the introduction of rabbits in no small part were responsible for accelerated erosion, which proved to be so devastating for many years. As the land became more impoverished, grazing was virtually confined to sheep.

In 1913 the cutting of flax was added to farming activities. From 1889, virtually the whole Domain was let under one lease until the 1960s. This coincided with the decline in flax milling operations at Sandy Point and the Domain was no longer an important source of flax.

From the late 1940s onwards, as the Domain began to be developed for recreation and planted with forestry plantations, farming activities became confined to specific leases. In the 1950s and 1960s, the Town Clerk at the time was convinced that the rental income from farm leases would more than equal any possible income from forestry and during that period, quite a number of farm leases were granted. However, as later events were to prove, such income could not match the returns from forestry.

From 1964 to 1967, five additional farm leases were granted. The original flax mill lease was reduced to 16.6 ha, although the flax cutting rights over the whole Domain were still retained until the mill closed in 1970.

The largest farm lease granted was of 325 ha to W and R Fletcher Limited. This lease was granted for a 30 year period from 1 December 1964. The lease lay central to the Domain and, until recently, almost divided that part of the Domain into two portions. Under the terms of the lease, the Council was entitled to progressively resume 62.5 ha over the last 15 years of the lease.

For some time the Sandy Point Development Association had been urging the Council to take the Silver Lagoon and some 31 ha of land to the east out of the leasehold area.

Ex-farm lease land looking Southwest from Silver lagoon

In 1979 the Council commenced negotiations with W and R Fletcher Limited and eventually agreement was reached to take the whole entitlement out of the lease at the one time. Unfortunately that did not include Silver Lagoon because the company wanted it for stock watering purposes. However, the area east of Silver Lagoon contains a fine association of red tussock (*Chionochloa rubra*) and cabbage tree (*Cordyline australis*) - flax (*Phormium tenax*) swamp.

In 1982 W and R Fletcher Limited assigned their interest in the lease to A J and W A Lawton Limited. At the same time it was negotiated that Silver Lagoon would be removed from the lease. Silver Lagoon is the largest remaining single area of water on the Domain and it is very important as a wildlife habitat. Over the years its effectiveness was reduced because of land drainage but its resumption has permitted the water to be raised to its original level. That has resulted in a tremendous improvement in the whole area. It was being further improved with enhancement plantings of suitable indigenous trees and shrubs.

Development of Sandy Point Domain over the past 30 years for recreation, forestry and conservation has shown that farming activities per se are not appropriate. The impact of fencing and management practices on the landscape and on recreational opportunities all mitigate against farming.

Since 1964 the principal farm lease was used intensively for cattle grazing and their impact on the rather fragile terrain has been quite severe. The difficulty of containing them within fenced areas and their destructive influence on the vegetation proved unacceptable.

Intensive cattle grazing by lessees have caused considerable degradation of the area and most of the remaining red tussocks (*Chionochloa rubra*) have been browsed almost to extinction. Cattle are also extremely damaging to the New Zealand flax (*Phormium tenax*).

At the commencement of the 1989 Management Plan, 344.98 ha were leased for farming practices but since then farming leases have been relinquished and this area is now back in the control of the Council. Of the original Lawton lease, the drier areas to the north and the south of Silver Lagoon can be used for afforestation, while the wetter area around Silver Lagoon and to the west should be incorporated into a wetland system.

2.2.4 *Erosion and Erosion Control*

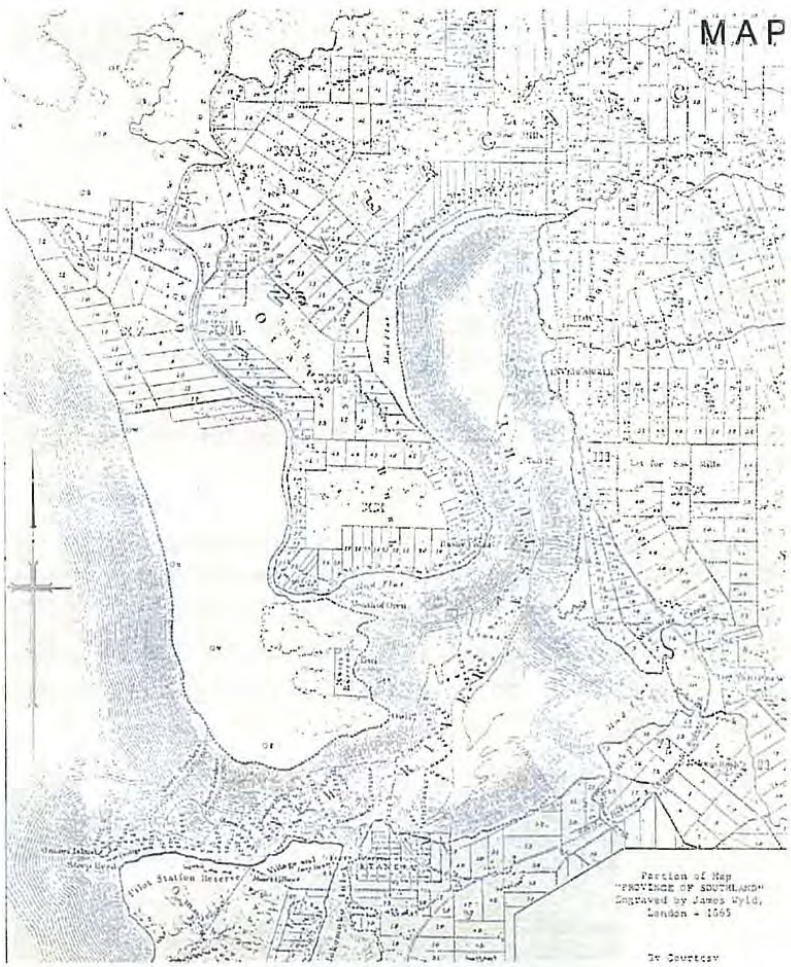
The introduction of rabbits into Sandy Point Domain produced disastrous consequences which could not have been foreseen at the time. The sandy country suited them admirably and they multiplied at a very rapid rate. The effects of thousands of rabbits burrowing into the sand and eating the top cover soon commenced, causing erosion problems.

Thomas Waugh, the first borough gardener, records that between 1862 and 1886 the change in Sandy Point was striking. The original black surface sand had wholly disappeared from thousands of acres, leaving only a few detached flats here and there with the original surface upon them.

The sand blew before the westerly and sou-westerly winds, filling lagoons, burying forest and shrublands and threatening to fill in the estuary. In 1886 Captain Clare the harbourmaster resorted to the Invercargill Borough Council that the river was being injured by the immense quantities of sand being blown into it.

Early records indicate that in pre-European times there was quite a good depth of water in the New River Estuary. C M Smith (1924) records that John Rask (son

of Carl Rask) informed him that his father could remember when there were 40 feet of water in the estuary, where shell banks are now exposed at low water. A map dated 1865 shows soundings of the water in the main channel of the estuary and the deepest recording is 19 feet. It would appear that hearsay accounts of the depth of water in the estuary very much over-estimated its depth.



Historical Map showing the old estuary before reclamation and filling

Smith also states that, according to local fishermen, in 1914 a jetty at Printz's Point had eight feet of water alongside it at low tide. By 1924 the jetty was only just awash at high tide. While this illustrates the degree of silting which took place in the estuary in those days, it is based on hearsay and the depths of the water may well be exaggerated. Early maps do not support the view that there were such depths of water.

As well as general erosion over the whole Domain, serious erosion also occurred along the foreshore of Oreti Beach where a large section of fore dune, some two kilometres long, eroded away. That erosion occurred some time between 1865 and about 1880. The sea washed in and created a large bight south of what is now the main entrance to the beach.

As early as 1886, concern was expressed that the sea might break through to the Oreti River at that point and turn Sandy Point into an island.

It was in that area that Thomas Waugh concentrated so much of these marram grass plantings in order to stabilise the dunes and prevent further encroachment.

It was not until the early 1920's that moves were taken, which resulted in the fore dune being restored to its original line. Brush fences of stakes driven into the sand and with manuka woven through them were constructed along the original line of the fore dune.

Early attempts at erosion control with the contruction of brush fences to catch the sand - 1924

Photographs taken at the time show the remarkable build-up of the new dune formation. Within two days of westerly weather the young dune had built up to one metre tall.

The manuka for the construction of this fence came from Otatara and the Mokomoko, the latter being ferried across the estuary on lighters. Nowadays it would never be realised that the fore dune in this area had been started artificially.

Thomas Waugh was given the job of experimenting with various plants in order to find those best suited to combat the erosion taking place on Sandy Point. Some of the species he tried were *Pinus pinaster, P muricata, P austriaca, Cytisus scoparius, Lupinus arboreus, Sambucus nigra, Poa pratensis, Cynodon dactylon,* Johnston grass, *Amophila arenaria* and several other species. In the end it was *Amophila arenaria* or marram grass which saved the day.

In the late 1880s and the 1890s thousands of marram grass plants were planted in various parts of the Domain and considerable quantities of seed were sown. Initially success was limited and sometimes the results were quite discouraging – however, gradually the marram began to take over and hold the sand.

Early Sand dunes planted with marram grass

As well as the rabbits, the occasional fire, overstocking and the removal of trees for timber and firewood all contributed towards the erosion. Apart from marram grass the most successful of Thomas Waugh's introductions were the tree lupin (*Lupinus arboreus*), broom (*Cytisus scoparius*) and the elder (*Sambucus nigra*), all of which do so well in the Domain.

Erosion continued to be a problem. The sand moved with the wind, dunes formed and reformed, forest was buried or partly buried by wandering dunes and the dead remains of earlier buried forests were uncovered. Various attempts were made to plant trees for protection purposes but it was only from about 1946 onwards that there was any system to the tree planting.

Even in 1947 aerial photographs show that there was still a considerable amount of moving sand. Most of the native forest was rather sparse and it is against such evidence that the recovery of the area can be gauged.

2.2.5 *Sawmilling*

Some time in the early 1880s the then Land Board gave the best piece of bush to sawmillers. This was the bush at Daffodil Bay and, although most of the large trees were removed, sufficient still remains to give an indication of what the appearance of the area once was.

The sawmillers were said to have been Messrs Roff (Ruff) and Ackers. They cut totara and matai for sleepers and rails for wooden railway.

Kilmock Bush was also milled but nothing appears to be known of its history.

2.2.6 *Shingle Extraction*

For many years, Sandy Point Domain was a source of shingle and, in the early days of Invercargill, it made a considerable contribution towards the building of the town.

Shingle was used for roading and the manufacture of concrete. Shingle pits were opened up at the southern end of the old storm beaches and shingle was transported by lighters across to Invercargill.

Some of the early operations were by Hodge and Sons and George Peterson.

A cutting in the riverbank about 800 metres north of the Water Ski Club marks one of the landings where shingle was loaded onto the lighters. The lighters were either loaded by wheelbarrow or by small tip trucks which were pushed by hand along wooden rails.

The prisons department was also one of the early operators in the area.

The actual shingle workings are marked by a series of depressions and ponds which follow the old storm beaches and extend northwards from the Water Ski Club to Dunns Road.

Approximately 90 ha were worked over for shingle in this area.

Old gravel pits have been developed into wetland areas with the rising water table

With the construction of the Dunns Road Bridge, transport by motor truck enabled the area to the north of Dunns Road to be worked for shingle. About forty ha in this area was worked over.

Unfortunately, shingle extraction has laid waste in quite large areas, although one small benefit has been the ponds that were created. Some of them have become quite good wildlife habitats and, with future sympathetic treatment and plantings, they can be further enhanced. In fact, the area on the northern side of Dunns Road is naturally revegetating the old shingle workings with the original type of plant cover becoming predominant.

2.2.7 *Forestry*

Apart from the trees planted by Carl Rask, none of the early tree plantings appeared to have survived.

In the 1920s the Invercargill City Council undertook further tree plantings on an experimental basis for sand fixation. Various species were used but none proved successful in the extreme conditions close to Oreti Beach.

In 1924, at the request of the Invercargill Borough Council, C M Smith (a ranger with the New Zealand Forest Service) prepared a report on *Sandy Point Domain Afforestation Scheme*. Among other things, this report provides valuable historical data and photographs of the Domain as it was then. It deals with erosion control, which was undertaken at that time and foreshadowed the forestry development in the Domain, particularly of the last 20 years. In this report, Smith recommended that there should be three permanent staff, including a head forester, a forester and an apprentice forester, to manage the area. All other work was to be done by casual labour.

The Sandy Point Development Association recognised this fact when, in a 1978 submission to Council, it recommended that there be an “officer in charge” under the Director of Parks and Recreation, who could co-ordinate, direct and supervise all policies and activities within the Domain.

In the 1930s an experimental plantation of *Pinus radiata* was planted in what is now the Oreti Sands Golf Course. It was enclosed in a rabbit-proof fence because rabbits and wandering stock had ruined practically all earlier attempts to establish trees on a large scale. Some of this experimental plantation is still in existence.

Before the construction of the bridge over the Oreti River, planting gangs crossed the river by boat and then camped in the area for up to a week at a time.

It appears that the first successful large scale plantings were undertaken by William Stapleton, who was Superintendent of Reserves from 1946 to 1953. The first plantation area to be established was to the west of the area known as Fosbender Park. This was followed by more concentrated plantings in the vicinity of the Water Ski Club.

The area planted each year has varied but there has been, more or less, a continuous expansion of the plantations since then.

In 1967, recognising a growing asset in forestry, the City Council appointed a forestry officer to supervise work in the management of the plantations. The stimulus provided by the forestry officer brought about a more positive attitude towards forestry and resulted in greater attention being paid to silviculture, as well as the increase of the annual planting rate. The forestry officer retired in 1975 and for financial reasons it was decided to leave the position vacant for the time being.

The City Council reaffirmed its commitment in commercial forestry consultants to advise on and manage Council's plantations under the Director of Parks and Recreation. The consultants were also to handle the marketing of the forest produce.

Forestry on Sandy Point is a valuable resource from several points of view. Economically it provides a source of income which, in turn, will assist the City's ratepayers by lessening the amount of revenue required through rates.

Mature forestry plantings on the edge of the estuary

Plantations have materially assisted with sand stabilisation and the protection of the Domain. From an amenity point of view they provide valuable shelter for users of the area and they contribute to the recreational opportunities of the area.

Forestry tracks are able to be used as walking tracks; horse trail clubs use them for organised horse riding and the plantations are also used for orienteering.

It is envisaged in the future that recreational activities in forestry areas will increase.

One side benefit from forestry is the upgrading of the Sandy Point roads. As the plantations come into production and logging traffic becomes more frequent it will be necessary to improve the roads. That will have to be paid for from forestry income and it will greatly benefit all users of Sandy Point Domain.

Funds derived from forestry operations on Sandy Point Domain will be retained for reserve purposes.

2.2.8 Recreation

In 1928 the Oreti Beach Association was formed. It organised carnivals on the beach and the money raised was used for constructing shelter sheds and conveniences.

The Oreti Beach Association slowly began to assume a wider interest in the area and in 1963 it became the Sandy Point Development Association. Its aims are to act as a unifying body for the various organisations and people who use the area and to maintain a watching brief over the development of the Domain.

BATHING BEAUTY CONTEST AT ORETI BEACH CARNIVAL ON SATURDAY.—Left: Dr J. A. Pottinger, president of Oreti Beach Association, places the sash on Miss Mavis Todd, winner of the "Miss Oreti 1940" contest. Right: The six competitors. From left—Miss Todd, Miss K. Hancock, Miss D. Cag, Miss P. Day (last year's winner), Miss D. Robertson, Miss A. Bricknell.

Swim suit competiton at Oreti beach, 1940

The bridge over the Oreti River was constructed in 1928/1929. The opening of the Oreti River Bridge, together with the construction of the Stead Street Bridge over the Waihopai River, opened up Sandy Point Domain as a playground for Invercargill.

Initially, most attention was focussed on Oreti Beach and there was virtually no recreational activity on the Domain itself.

In the 1920s and 1930s yachtsmen used to sail across the estuary to Daffodil Bay for picnics but now there is virtually no boating activity on the estuary.

Sandy Point Domain caters for a number of recreational activities which could not happily or conveniently be accommodated in an urban area and, in this respect, it is particularly well placed. For example, motor sports require a considerable amount of space for their successful operation and they can be particularly noisy.

There has been ample space for the development of these sports and the noise generated by them is quickly dissipated in the wide open spaces. Similarly, the Oreti River has provided a convenient venue for a number of aquatic-based activities.

The recreational organisations based on Sandy Point are mainly located in an area immediately south of Dunns Road so that it forms an easily defined Recreation management Zone.

Sandy Point is a popular area for organised team sports because of its excellent drainage

The opening of the Oreti River Bridge focussed attention on Oreti Beach and it was natural that the first recreational organisation to become established was the Oreti Surf Life Saving Club in 1929.

The Southland Motor Cycle Club began using Oreti Beach for motorcycle racing in the early 1930's and so became the second club to use Sandy Point Domain.

The next club to use Sandy Point Domain was the Southland Power Boat Club which commenced activities in 1947 on an area of riverbank south of the Dunns Road Bridge. At that time there was little more than a track heading south from Dunns Road and most of the area was covered with lupins.

Other organisations soon began to take advantage of the land available at Sandy Point and there are now over 30 clubs and organisations using the reserve.

See Appendix 6 for a detailed list of clubs available in the Domain.

2.2.9 *Residences – Cribs*

Carl Rask purchased a block of land at Whalers Bay where he lived for many years. His sons followed and lived near Whalers Bay but until what date is unknown.

The Rasks' land was eventually purchased and returned to public ownership. It appears that from that time there may have been one or two cribs in the area.

Having regard to the relative remoteness of the area it is quite possible that several of them would have been squatters who paid no rent. C M Smith mentions some of the problems associated with "weekend crib owners" in his report.

2.2.9.1 *Early Cribs*

Apart from some weekend cribs mainly in the Cooper's Creek area, Sandy Point appears to have been largely a "wasteland" until the 1940s. Their presence in the area was obviously quite destructive. In 1924, Smith mentions the destruction that they had wreaked on the native forest through timber cutting for firewood and other purposes.

In 1929 the Oreti River Bridge also brought a demand for seaside accommodation and accordingly the Invercargill Borough Council had a number of sections surveyed off in 1931 at Oreti Beach. Fifty-six sections were provided, including provision for two reserves.

An old crib that has since been removed from the Domain

The naming of the subdivision created considerable interest but eventually the Council settled on the name of Oreti Sands. This is the only part of Sandy Point Domain which has been legally surveyed as sections for this purpose.

2.2.10 *Place Names*

Sandy Point Domain is not rich in place names and only a few original names can be authenticated. Other place names, although having an air of being quite old, appear to have been bestowed in more recent times.

With the growing popularity of Sandy Point Domain over the past 20 years or so, it became necessary to bestow further place names in order to facilitate the public's use of the area.

2.2.10.1 *Early Place Names*

Oue - variously spelt as Owi, Oui or Oue - this appears to be the earliest recorded name for the area. Early maps show Owi (Oue) Village and Owi (Oue) Point. The name is derived from the Maori kaika which formerly existed on the eastern shore of the Domain.

Foundations to the old jetty at McCoy's Beach

Honekai (a principal chief of Murihiku) was resident at this settlement in the 1820s. Honekai and many of his people moved to Ruapuke where he died - introduced diseases (e.g. measles) caused many deaths and devastated the populations of Maori in the south

Oue is said to have been named after Maui decided to leave a man in the area to look after his interests while he continued his journey of discovery and to wait there for his return.

Cooper's Creek - this small creek which drains the central portion of the Domain is named after Owen McShane, the ex-ship's cooper, who probably settled there in 1838 after the whaling station was closed down. This name was recorded at least as early as 1870.

Rasks' Point - situated on the northern side of what is now known as Whalers' Bay. It was named after Carl Rask who settled there in the 1870s. The whole bay was originally known as the Rasks' Point Farm. The name appears to have come into use towards the end of the last century.

Sandy Point - following the abandonment of the Maori kaika of Oue in the 1870s, Sandy Point came into use as an embracing term for the whole area. At the same time, the name of "Oue" fell into disuse. It should be noted that Point Oue appears on one of W J W Hamilton's sketch maps named as Sandy Point as early as 1850.

Daffodil Bay - Daffodil Bay was one of the most popular parts of Sandy Point and yet few people are aware that it was originally called West's Flat. It received its name from Mr and Mrs W J N West who used to live there. Originally they ran an accommodation house in partnership with J G Hughes at the Mokomoko Inlet.

Travellers journeying from Bluff to Riverton or inland Southland used to cross the estuary by boat from the Mokomoko Inlet, travel across Sandy Point and then along the beach to Riverton. Thus, the accommodation house was, of one or another of the settlers on Sandy Point, popular (or sometimes necessary) as an overnight stopping place.

The Wests eventually retired to Sandy Point and it was Mrs Christina West who planted the daffodils amongst the flax bushes which gave this delightful area its current name - Daffodil Bay.

Kilmock Bush - known to Kenneth McLennan as Top Bush in the 1890s. The name "Kilmock Bush" appears on a cadastral plan as early as the 1920s. It has not been possible to ascertain the origin of the name.

Castle Stand Hill - this name was given to a prominent sand hill by Captain John L Stokes in 1850. It was noted as being in the vicinity of Henry McCoy's station but W J W Hamilton's sketch map is so vague that its exact location can only be surmised. As a name, it probably never gained currency.

Christie's Track - a name used by Thomas Waugh in the 1890s. It was named after a carter, Mr Christie, who took several successive loads of marram seed etc inland from the beach, thus forming a rough track. Thomas Waugh then sowed marram seed in the wheel tracks which proved to be a very successful method of establishing the marram. The exact position of the original Christie's Track is not known but the road now so named is in the general vicinity of where Christie's Track would have been.

Oreti Beach - just when the western coastline of Sandy Point came to be known as Oreti Beach is not known with certainty. On an early map drawn by Chief Tuhawaiki in 1943, the beach is named Mateaweawe, although that name has not been observed on any later maps.

In Thomas Waugh's various accounts (1890-1895) of the area, he refers to it simply as the "Ocean Beach". It would appear that the name Oreti Beach did not arise until perhaps the early part of this century or maybe even a little later.

2.2.10.2 *Later Place Names*

The following place names appear in "Sandy Point Domain" (Petrie, 1970):

- West's Point.
- Printz's Point.
- Huruhuru's Beach.
- Noki Kaika.
- Whalers' Bay.
- McCoy's Beach.

Not one of these appears on any earlier map or in any publication and so it can only be assumed that these names have been given in more recent times and therefore have no historical foundation. However, they do help to commemorate some early residents and activities.

With the growing popularity of Sandy Point Domain as a recreational area and its increasing development, it was found that a lack of place names was a hindrance. Accordingly, in 1982 a number of localities and features were given what were considered appropriate names.

McShane's Track - named after Owen McShane the cooper who resided somewhere in the vicinity.

Hatch's Hill - tradition has it that J Hatch used to climb this prominent sandhill in the early days in order to see whether any ships were crossing the bar to enter the estuary. Apart from hearsay, there is no evidence that J Hatch ever resided at Sandy Point.

McLennan's Flat - the name commemorates Kenneth McLennan who erected his dwelling on the bank of the Oreti River in the vicinity in 1889.

Silver Lagoon - this largest remaining area of water in the Domain has also been known as the White Lagoon, although its current name appears to have been more generally used. It would appear that the name originated with some of the early lessees of the area.

Various forestry tracks and roads have also been given names as a means of identification. Those names commemorate some of the people who have been associated with the area in past years.

3.0 MANAGEMENT OBJECTIVES

In setting management objectives for Sandy Point Domain, the Oreti River, New River Estuary and Oreti Beach must also be taken into consideration. The nature of these areas and their quality affect the recreational use of the Domain and its whole ecosystem. One is dependent upon the other and the intensity of public usage will have an effect on both the land ecosystem and that of the surrounding waters.

3.1 To manage Sandy Point in perpetuity for the physical wellbeing and appreciation and enjoyment of the public to an extent that it does not compromise its conservation, soil conservation, preservation and historic values.

3.2 To encourage and facilitate the wise use of land for active and passive recreational pursuits to an extent compatible with sound conservation and preservation objectives.

3.3 To conserve and enhance the natural landscape, indigenous flora and fauna, essential ecological processes and encourage improvements in the quality of the surrounding waters, in accordance with sound conservation practices, for the benefit of the public, and of the flora and fauna.

3.4 To protect and enhance the scenic qualities of the Domain and its environs.

3.5 To enhance and encourage public access into and through all public areas of the Domain.

3.6 To use those areas designated for afforestation in accordance with sound forestry practices so that they will provide an ongoing financial benefit for Sandy Point Domain and Invercargill's parks and reserves.

3.7 To phase out non-conforming residential and holiday houses over a period of time by a process of gradual attrition or acquisition of the properties.

3.8 As the opportunity arises, to resume the private forestry leasehold areas in the southern portion of the Domain.

3.9 To allow (conditional) certain trades or business developments that are compatible with servicing the needs of the Domain.

3.10 To zone land according to its primary use or purpose.

3.11 To promote the control and eradication of animal and plant pests from the Domain as far as practicable.

4.0 POLICIES

Note: Where the policies in this Management Plan refer to the term "Council" this means the Parks Manager and/or the Parks Division as the nominated representative of the Invercargill City Council, unless otherwise stated.

4.1 GENERAL USE

Reserves are a major source of open space in the City and are provided for the benefit, enjoyment and use of the public. "Use" policies guide the response of Council to applications to use the reserves. The scope of "uses" that may be proposed is wide and includes: sport, passive recreation, art and cultural events, commercial promotions and festival activities.

Council reserves the right to decline a proposal for use of a reserve, or take action as it sees fit against a user, or stop a use, if the use is likely to cause any adverse effects to the reserve, reserve users or reserve neighbours.

Council occasionally receives applications for the use of reserves for temporary or long-term commercial activities. Commercial activities are an acceptable part of the range of activities within the reserves of the City provided they are consistent with the primary purpose of the reserves as classified under the Reserves Act 1977. The activities should not adversely impact on the reserve, reserve values, reserve users or reserve neighbours.

Long-term non-commercial use of a reserve occurs predominantly through lease arrangements and generally relates to non-commercial activities carried out from sports fields, clubhouses, halls and other indoor facilities and community group buildings. This generally means long-term enclosure of reserve space for the use by a particular group that then obtains a greater benefit than that received by the general public.

Objective:

- *To allow and encourage public use that is compatible with the purpose of the reserve.*

Policies:

4.1.1 The utilisation of the park shall be in compliance with its classification as a Recreation Reserve and the policies set out in this Management Plan.

4.1.2 Access to the park will be free of charge to the general public except as provided for in Policy 4.1.4 or where exclusive use has been granted.

4.1.3 All events in parks and reserves must be booked in advance with the Parks Division and users must comply with the "Terms and Conditions" for use of the Park. These terms and conditions are reviewed and updated from time to time.

4.1.4 Council may charge a fee for use of the park where the user gains a special benefit that is not available to other reserve users, or where there are costs associated with the activity or event. The rate of fee set will be charged:

(a) To ensure a reserve or part of a reserve has been booked for an event or activity.
(b) To provide temporary or long term exclusive use of a reserve or part of a reserve.
(c) To cover a booking service and administrative costs.
(d) To cover additional costs resulting from the activity or event i.e. staff coverage, opening gates, power, water, rubbish collection etc.
(e) Where the activity or event is of a commercial nature.

4.1.5 Park and reserve facility fees and charges are adopted by Council annually and are identified in Council's Annual Plan.

4.1.6 Where necessary, Council will consider temporary closure of a reserve, or part of a reserve, in conjunction with statutory requirements for the protection and wellbeing of the reserve and for the protection and control of the public using it.

4.1.7 Council may grant a permit for commercial activities to temporarily occupy part of the reserve for a period of up to six consecutive days (Section 54(1)(d) and Section 56(1)(b) Reserves Act 1977*)*, if it is necessary to enable the public to obtain the benefit and enjoyment of the reserve or for the convenience of those using the reserve.

4.1.8 Council may grant a long-term lease or licence for a recreation or commercial activity to occupy part of the reserve where the activity complies with the Reserves Act 1977.

4.1.9 Any user of the reserve shall be responsible for ensuring that any adverse effects on the reserve and reserve values, reserve users or reserve neighbours can be avoided, remedied or mitigated, except as otherwise authorised by Council and includes compliance with Council bylaws.

4.2 ACCESS INTO AND THROUGH RESERVES

The level and standard of access provided into the reserve needs to be appropriate to the reserve values and the anticipated level of public utilisation of the reserve.

At various times Council may close the park or parts of the park for issues of safety, maintenance, development and wildlife protection. Some events may also require temporary closure of part of a reserve. Some occupation agreements may allow restricted access by the general public into areas of the reserve by the use of fences and/or forms of barriers.

Motorised and non-motorised vehicles on reserves can be a source of danger to other reserve users and may have the potential to cause damage to reserves. Tracks and footpaths are often integral to the ease of use and enjoyment of a reserve by users, providing recreational opportunities and links between areas.

Council is committed to working towards the removal of barriers to the participation of the elderly or people with limited mobility in leisure and recreational activities on reserves.

Improved access to parks and reserves can increase the use of a park by enhancing comfort and convenience for a range of users and provide significant safety benefits.

It will not always be feasible or desirable to make all facilities fully accessible. Different degrees of accessibility will be achievable at different sites. Many existing facilities are not accessible and it may not be practical to modify them. The cost of constructing accessible facilities may be prohibitive and outweigh the usefulness or suitability of such a facility.

Wherever possible, the design or upgrade of a facility shall incorporate features that allow easy access for the elderly or people with limited mobility. For features to be recognised as fully accessible they need to comply with national standards.

Objectives:

- *To ensure the public has freedom of entry, access and use of the reserve subject to any necessary conditions, restrictions, or limitations of use from time to time.*
- *To ensure pedestrian safety by restricting motorised and non-motorised vehicle access on the reserve.*
- *To allow tracks and footpaths over the reserve.*
- *To improve access to the reserve where practical and feasible to ensure everyone is able to enjoy it.*
- *To allow limited motorised vehicle access on designated car parks and roadways.*

Policies:

4.2.1 The reserve will be open for public access except where restrictions and limitations are necessary for the reserve's protection and management, exclusive activities or public safety.

4.2.2 All motorised vehicles (except emergency and authorised maintenance vehicles) must keep to designated roads, car parks and picnic areas within the reserve.

4.2.3 Existing car parking shall be maintained to a level which is compatible with the nature of the reserve in a style that does not detract from its aesthetic qualities or recreational use of the Park.

4.2.4 Vehicle access for special events may be granted for specific purposes and then terminated at the completion of the event.

4.2.5 Where car parking areas are provided for clubs and organisations, all costs relating to the formation and maintenance shall be borne by the club or organisation concerned.

4.2.6 Reserves, associated facilities and landscaping will be designed or upgraded, where practical and feasible, to meet the current national standard and design criteria for access for people with disabilities.

4.2.7 To provide and maintain only those public vehicle access routes sufficient to accommodate public demand that are compatible with the management objectives for the Domain.

4.2.8 To access site operations and requirements and provide car parking and places where vehicles are permitted in accordance with the management objectives for the Domain.

4.2.9 To establish and maintain such speed restrictions, as may be necessary, on all internal roads for the public safety and to preserve the tranquillity of the area.

4.2.10 As resources permit internal roads may be upgraded and improved in order to permit them to stand up to the increasing traffic they have to bear, provided that this work will not compromise the environment.

4.3 BOUNDARIES AND FENCES

Council reserves adjoin a variety of land uses in settings from urban to rural with a range of fencing styles. While Council will meet its Fencing Act 1978 obligations, it is important that ratepayers are not burdened with paying for boundary fencing that exceeds the standard of fence beyond that which is considered a minimum requirement.

Council sets a maximum contribution towards half the materials based on a cost per lineal metre for an appropriate standard fence style which is reviewed annually. If a boundary fence is considered necessary, a contribution from Council may be made subject to an application being received in writing. Once it is determined that a new fence is required or the current fence should be replaced, the applicant is advised.

All applications for a fence will be assessed on its design in terms of visual permeability and its contribution to the attractiveness of the reserve.

Fences and barriers may be required within reserves to prevent vehicular access to the grounds and, where it is desirable, to enclose service areas or the premises of exclusive sporting users.

Objectives:

- *To meet boundary/fencing obligations under the Fencing Act 1978 where required.*
- *To limit the number of fences or barriers on reserves to those which will protect reserve values, reduce the adverse effects on reserve neighbours, or which ensure the reserve can be used safely.*
- *To protect reserve values and encourage freedom of public movement into and through reserves.*
- *To stop encroachments on reserve land.*

Policies:

4.3.1 Council will assess requests for contribution towards construction of reserve boundary fences only when it is deemed necessary and where it is to be established on the correct legal boundary.

4.3.2 Council will meet its boundary fencing obligations under the Fencing Act 1978 where there is a justifiable need. Council shall contribute on a per metre basis up to a maximum amount based on the current rate at the time of application as approved by Council resolution annually. Council shall in each case assess the type of fence appropriate to the character, use and environs of the reserve.

4.3.3 Where a reserve occupier requests the enclosure of its facilities, the cost of erecting and maintaining appropriate fences to the satisfaction of Council shall be borne by the reserve occupier and requires written approval from the Parks Manager for colour and design prior to construction.

4.3.4 Enclosure of an activity or feature within the reserve with a fence or barrier will only be permitted if there is a justifiable need, e.g. protecting other reserve users from the effects of the activity and protecting reserve values.

4.3.5 Stock proof boundary fences shall be kept to a high standard so that farm stock cannot gain access to the Park.

4.3.6 Boundary fences shall be kept clear of any invasive weeds.

4.3.7 Where appropriate, suitable post and wire fences along boundaries shall be maintained. Should future development necessitate, fences will be upgraded according to the requirements of the area. Existing and future fences and barriers will be maintained according to Council policy.

4.3.8 Where encroachments onto reserve land have been identified, these need to be addressed through formal agreements or stopped immediately.

4.4 OCCUPATION AGREEMENTS

The term "occupation agreement" refers to any lease, license, easement or other agreement granted between Council and a person, organisation or company that is occupying part of a reserve.

Council's power to grant an occupation agreement over reserves varies depending on the status of the reserve concerned and the rights transferred from the Crown.

Objectives:

- *To permit the occupation of the reserve for approved individuals, groups, users or facilities by the granting of occupation agreements.*
- *To balance the retention of open space with appropriate use and occupation of the reserve.*
- *To ensure public accountability of reserve management.*

- *To ensure adequate remedy or mitigation of any adverse effects on reserve values caused by leases, licences, easements or other occupation agreements.*

- *To ensure that all costs associated with the development and implementation of occupation agreements are the responsibility of the applicant.*

Policies:

4.4.1 All organisations with buildings or facilities on the reserve shall be required to hold an occupation agreement as provided for by the Reserves Act 1977.

4.4.2 Where an organisation has the exclusive use of a reserve or part of a reserve, for the playing of outdoor sports, games or other recreational activity, it shall be required to hold a lease of the area involved as provided for by the Reserves Act 1977.

4.4.3 Application for any new occupation agreement in the reserve will be in writing providing detailed information about the type of occupation. Applications for occupation agreements shall meet the Objectives and Policies of 4.34.1 - Requests for Development on Reserves with particular emphasis on Policy 4.34.1.9, which identifies the requirements of any development plan.

4.4.4 The approved occupier of any area of the reserve shall not sublet, assign, transfer, mortgage or part with possession of any part of the land or building without the prior written consent of Council.

4.4.5 Easements shall be subject to Sections 48 and 48A of the Reserves Act 1977.

4.4.6 All costs associated with occupation agreements shall be the responsibility of the applicant.

4.4.7 Occupation agreements shall include provision for the removal of facilities or buildings no longer required by an occupier, lessor or owner before the end of any occupation agreement.

4.4.8 Council shall draw up leases and licences subject to the provisions contained in the First Schedule and the sections of the Reserves Act 1977 relevant to the reserve classification and purpose of the lease or licence.

4.5 BUILDINGS AND STRUCTURES

Reserves are created principally for the provision of open space and natural areas. Some buildings and structures such as changing rooms, toilets and clubrooms are considered necessary for the enjoyment and full utilisation of the Reserves and are allowed for in the Reserves Act 1977.

Objectives:

- *To provide, maintain and preserve well designed and appropriately located buildings and structures on the reserve to improve utilisation, preserve historical features and add to the enjoyment of the reserve by its users.*

- *To ensure that all reserve facilities are maintained to an appropriate standard that enhances amenity values of the reserve.*

Policies:

4.5.1 The number of buildings and structures on reserves will be limited to a level which facilitates the safe and appropriate use of the Park.

4.5.2 The open space and natural amenity values of the reserve will be protected and managed by only allowing those buildings and structures which complement the Park.

4.5.3 Applications for new buildings or changes to existing buildings on the reserve require Council approval and shall meet the Objectives and Policies of 4.34.1 - Requests for Development on Reserves with particular emphasis on Policy 4.34.1.9, which identifies the requirements of any development plan.

4.5.4 Buildings and structures on the reserve shall be designed to a high standard and where practical, be designed to limit the opportunity for vandalism.

4.5.5 Buildings and structures on the reserve will be designed or upgraded, where practical and feasible, to meet the current national standard and design criteria for access for people with limited mobility.

4.5.6 Applications for extensions to existing buildings shall only be granted where the extension is seen as enhancing the enjoyment and full utilisation of the reserve.

4.5.7 The design of any building or structure on the reserve shall be subject to Council approval and shall be in keeping with the surroundings to enhance and complement the landscape.

4.5.8 Exterior colour schemes of buildings and structures on the reserve shall be approved by Council. The painting and creation of murals (not advertising) on buildings and structures may be considered on submission of a copy of the design and proposed colour scheme to Council.

4.5.9 Where appropriate, buildings on the reserve shall be shared with other recreation users of the reserve and when not required for events or gatherings, made available for other non commercial community use. Preference will be given to activities of a recreation nature.

4.5.10 The establishment, design and maintenance of public toilets in the reserve shall take into account current New Zealand Standards.

4.5.11 The number and location of public toilets on the reserve shall be kept under constant review.

4.5.12 Any tenanted buildings are to be maintained to a presentable standard of high quality for visitors to see.

4.5.13 No application for extensions will be granted to those buildings on the park that are classified as non-conforming buildings.

4.5.14 Clubs and associations shall be responsible for maintenance of their buildings and facilities on the park to an appropriate standard as determined by Council.

4.5.15 Clubs and associations shall be responsible for the full cost of removal of any building and associated facilities when no longer required.

4.5.16 To permit only those facilities associated with and necessary for a particular activity.

4.5.17 To provide and maintain only those facilities required for the proper management, interpretation and use of the Domain, and to ensure that their character and function are consistent with the management objectives of the particular Zone(s). A preference will be given to relocatable buildings for new buildings. Buildings no longer required for this purpose are to be removed.

4.5.18 To provide appropriate facilities in those areas where a definite need has been established and providing they are in accord with the management objectives of the area.

4.5.19 To maintain ranger accommodation to a level and in situations which provide for adequate management and supervision of the Domain.

4.6 NON CONFORMING USE

Generally buildings are only permitted on recreation reserves where they are associated with, and necessary for, the use of the reserve for outdoor recreation. If buildings have no direct relationship with the purpose of the reserve or with outdoor recreation, then they are non conforming. It is important to consider the overall intent of the classification (protecting the open space and recreational values) when considering any further building construction or extensions.

Objective:

- *To identify those buildings which are deemed not essential to the operation of the park or to enhance public recreation and enjoyment.*

Policies:

4.6.1 The following buildings do not comply with the provisions of the Reserves Act 1977 and/or the policies of this plan and are listed as non conforming:

- Cribs at Oreti Beach;
- Cribs at Cooper's Creek.

4.6.2 While maintenance is permitted, no extensions to existing cribs will be allowed. No renovations or extensions shall be permitted which would increase the degree of non-conforming use classification of the Management Plan.

4.6.3 No further residential buildings or cribs will be permitted in the Domain.

4.7 OUTDOOR FURNITURE

Providing outdoor furniture on reserves that are appropriately designed and blend in with the surrounding landscape can add to the user's enjoyment of a reserve. Outdoor furniture such as seating, picnic tables, rubbish bins and cycle racks need to be maintained so that they remain an attractive asset to the reserve and do not become a safety hazard.

Objective:

- *To provide outdoor furniture that enhances the experience of the reserve user.*

Policies:

4.7.1 Outdoor furniture on parks and reserves shall be designed to a high standard.

4.7.2 Outdoor furniture shall be provided in the reserve where an identified need has been established and where resources permit. The number, design and placement of outdoor furniture shall be in keeping with the purpose and levels of use of the park and appropriate to the setting.

4.8 SIGNS

Signs inform the public of their responsibilities as users of the park and advise users of the management and maintenance responsibilities of the reserve and its facilities.

Signs are also used as a way of educating and informing the public on features of the park and should make it easier for park users to find their way around the park and locate areas of interest.

The implementation of the policies on signs on reserves is subject to the appropriate provisions of Council Bylaws, District Plan rules and the requirements of the Reserves Act 1977.

Objectives:

- *To provide signs that assist in user orientation and park legibility.*
- *To use signs as a way to enhance educational opportunities in the reserve.*
- *To minimise the adverse visual effects of signs while maximising useful information to reserve users.*
- *To ensure consistent sign information, styles and types on the reserve.*

Policies:

4.8.1 Council shall use current New Zealand Standards as a guide when providing and maintaining signs on parks and reserves.

4.8.2 Signs on the reserve shall be for the purpose of proper management, administration and control of the reserve. Education and interpretation facilities shall be provided in key areas of the reserve.

4.8.3 Permanent advertising signs are not permitted on the reserve. Permanent signs for trade advertising may be permitted with the approval of Council only when the sign is to be located within an enclosed sports area and only where the sign will not be visible from outside the sports area.

4.8.4 Temporary advertising intended to alert or inform the public about a forthcoming event or attractions on the reserve may be permitted at the discretion of Council. The position of all temporary advertising shall be approved by Council, all costs shall be the responsibility of the applicant and temporary signs shall remain in place for a maximum of 14 days.

4.8.5 Reserve occupiers must apply to Council to place signage on their buildings. The size, style and scale of signage will be taken into consideration and in particular, the effect or visual impact the sign will have on reserve users and the reserve neighbours. All signs on the buildings shall be limited to the name of the club or organisation and shall be within the dimensions of 3m long by 1.2m deep and to a maximum area of 1.5m². Any requests for signage outside these dimensions must be approved by way of Council resolution.

4.8.6 Reserve occupiers will be responsible for meeting the costs of producing, erecting, maintaining, removing and replacing signs relating to their activity to be located on or adjacent to their buildings.

4.8.7 The number of signs shall be kept to the minimum number required to meet the needs of users.

4.8.8 Council will provide standard identification signage at the entrance to each activity.

4.8.9 Advertising signs may be attached to internal fencing of enclosed recreation areas, providing that any such sign shall not be visible from outside of the particular area. Before signs are put up they shall first be approved by the Parks Manager.

4.9 LIGHTING

Council recognises that some reserve user groups wish to operate at night. Sufficient lighting in high use areas is important so that people can see and be seen.

While lighting can be considered an essential component of night use in a reserve area, it is appropriate that the cost should fall to those who attract users of the facility at night. It is also important that the effects of lighting on reserve neighbours are taken into consideration.

Objectives:

- *To allow sports field, car park and access way lighting where appropriate.*

- *To enhance the real and perceived safety of the park through the provision of lighting along key pedestrian paths.*

Policies:

4.9.1 Council will only consider the provision of lighting on the reserve where there is a clear public benefit or for amenity, security and safety reasons.

4.9.2 Council shall consider current best practise and lighting engineering standards, energy efficiency and appropriate design for the location when establishing new lighting fixtures on the reserve.

4.9.3 The light spill generated from any activity on the reserve shall not exceed 5 lux at any residential boundary between the hours of sunset and sunrise.

4.9.4 Where an identifiable beneficiary from Council's lighting of car parks and access ways exists, the full operation, maintenance and replacement costs will be passed onto this beneficiary.

4.9.5 The reserve occupier is responsible for the provision and maintenance of lighting associated with their activity, with the approval of Council.

4.9.6 Lighting is to be compatible with the use of the area and in a style that will not detract from its aesthetic qualities.

4.9.7 To limit lighting in areas of high environmental value to ensure the natural character of the Domain is retained.

4.10 NETWORK UTILITY INFRASTRUCTURE

Utility infrastructure can impact on reserve values, neighbours and users by restricting the current use of a reserve and the potential development of the reserve for future enjoyment.

It is not desirable to have network utility infrastructure on reserves and reserves should not be regarded as infrastructure corridors.

Overhead services detract from the appearance of any park and generally place limitations on the placement of trees, overall landscaping and the development of the area.

Objectives:

- *To allow network utility operators conditional access to the reserve for the purpose of inspection, maintenance, ongoing operation and upgrading of existing utility infrastructure.*

- *To ensure adverse effects of network utility infrastructure on the reserve values, users and neighbours are able to be avoided, remedied, compensated or mitigated.*

- *To permit network utility infrastructure only where it is deemed essential for the reserve.*

Policies:

4.10.1 No new network utility infrastructure will be permitted on the reserve unless a definite benefit to the reserve can be established. Any new network utility infrastructure deemed essential for a reserve shall be laid underground.

4.10.2 Council will permit network utility operators conditional access to reserve land to inspect, maintain, operate or upgrade existing works, subject to the provisions of the relevant empowering Acts, the Reserves Act 1977 and conditions of Council.

4.10.3 The utility provider is responsible for all costs associated with temporary closures of the reserve and the costs of reinstatement in the event of damage to the reserve from the network utility infrastructure.

4.10.4 Network utility operators must supply a useable and up-to-date "as built" infrastructure plan in a form and detail agreed with Council officers, including information regarding their location on the reserve as a condition of any occupation agreement.

4.10.5 To limit the provision of reticulated services such as power and telephone to the Recreation Zone, or other existing points of supply.

4.11 EDUCATION

The reserve has considerable potential as an educational resource for the general public, special interest groups and schools.

"Self educational" facilities including: brochures, signage and interpretation material at specialised feature gardens and historically/culturally significant sites all offer opportunities as educational resources. Other opportunities include guided tours and demonstrations.

Objective:

- *To enhance the educational opportunities on the reserve.*

Policies:

4.11.1 Council will continue to distribute and update relevant material to a wide range of users.

4.11.2 Council will continue to keep material relevant when providing educational value to Park users.

4.11.3 Council will explore different means of telling the "stories" using proven methods as well as the use of new technology available.

4.11.4 To provide suitable and well-designed interpretive facilities and information.

4.12 HISTORY

Because of its early Maori occupation and later settlement by early Europeans, Sandy Point Domain is quite rich in historical sites and associations.

Fortunately, the known archaeological and historical areas occur in the Environment Zone, particularly between Daffodil Bay and Whalers Bay. However, one or two occur in the forestry areas and they should be given particular attention to ensure that they are not disturbed by any future operations or development.

Consultation with the local Iwi on early Maori sites and the protection of such needs to be ongoing.

Policies:

4.12.1 To protect, in accordance with the requirements of the Historic Places Act 1993 or any subsequent legislation, all known historical and archaeological sites in the Domain.

4.12.2 Where practical, and considered worthwhile, particular historical sites should be interpreted with suitable plaques or similar means of commemoration.

4.13 TREES AND VEGETATION

Trees and vegetation contribute to the amenity, historical, environmental, cultural and landscape values of a reserve.

It is important to actively manage and maintain vegetation on reserves where possible. However, from time to time vegetation can become a nuisance or danger to reserve users and reserve neighbours and can affect the use or enjoyment of the reserve or adjoining properties. Council will consider remedial action where appropriate to resolve these problems.

People regularly approach the Parks Division requesting permission to collect firewood, cones and pine needles from fallen or cut trees on reserves. Firewood permits are generally only given to non-profit community groups or individuals for personal use only.

Objectives:

- *To protect and restore the native forest remnant within the reserve.*
- *To display a variety of trees and shrubs in the reserve.*
- *To develop and maintain the vegetation on the reserve as a significant function contributing to the reserve's attractiveness and popularity.*
- *To maximise the benefits of vegetation on reserves while avoiding, minimising or mitigating the adverse effects on reserve neighbours.*
- *To control the removal of exotic wood from felled or fallen trees for safety, landscape or management purposes.*

- *To control the unauthorised removal of vegetation from reserves.*
- *To ensure the integrity of shelter is maintained into the future.*

Policies:

4.13.1 Planting and maintenance of vegetation in reserves shall be planned strategically and designed to enhance and protect the park's scenic and horticultural qualities and natural character.

4.13.2 Planting for re-vegetation is to be locally sourced so it is in keeping with the natural and surrounding vegetation most appropriate to the park's vegetation zone and character of the area.

4.13.3 Maintenance or removal of vegetation will only be undertaken by Council, or Council approved contractors.

4.13.4 Before making any decision on complaints received about trees on reserves, Council will firstly consider and assess the effect of the alleged nuisance by:

(a) Considering the potential danger to life and property.
(b) Considering the interests of the public and reserve users.
(c) Considering the value and protection of the tree.

It may also be necessary to discuss further any concerns the affected person/group may have.

4.13.5 Firewood permits may be granted to groups and individuals for a fee for the removal of wood from felled or fallen trees, or from pruning operations including:

(a) Members of the public where the wood is for personal use only.
(b) Non-profit community groups where the proceeds of the sale are being used for projects approved by Council.

4.13.6 All individuals or groups given permission to collect or remove firewood from a reserve shall follow the current Invercargill City Council Parks Division Chainsaw Safety Standard.

4.13.7 No live or standing trees or vegetation are to be removed or damaged during firewood removal operations.

4.13.8 To care for and maintain a healthy and regenerating indigenous vegetation cover in those areas which have a significant biological and/or scenic value, and which warrant continuing protection.

4.13.9 To implement enhancement plantings in areas of indigenous vegetation wherever warranted and/or practicable.

4.13.10 To manage the Environment Zone in accordance with good conservation principles so that the values of the various areas contained within it are not compromised by human use or other deleterious factors.

4.13.11 To plant and maintain, as far as may be practicable, adequate amenity strips, of suitable species, along the principal road frontages of forestry plantation areas.

As a general guideline, such amenity strips shall have an average depth of 30 metres wherever practicable.

4.13.12 To maintain and plant species of vegetation suitable to a particular zone and in locations which will enhance the scenic and amenity qualities of the Domain.

4.14 RESERVE WATER AND SOIL CONSERVATION

Because of its sand and shingle nature, the whole of Sandy Point Domain is highly susceptible to erosion or other disturbances, particularly around shorelines and the coastal dune system.

Inconsiderate public activity in native forest areas and particularly around the fringes of picnic areas can also result in severe and very damaging soil disturbance.

In areas where soil stability is low or threatened, remedial measures shall be implemented where necessary and to such a degree as may be practicable and/or sustainable.

Buffer vegetation such as marram grass and sand dunes, *Selliera radicans* on tidal flats and rushes, hedges and flax along riverbanks play a vital part in the prevention of erosion to those areas. Along riverbanks and around ponds and lagoons, such vegetation is important for the well-being of fish, other aquatic fauna and birdlife.

Being surrounded on three sides by water, it is important to ensure that the quality of those waters is maintained or improved to the highest possible standards, so that their recreation and wildlife values are not compromised.

Policies:

4.14.1 To maintain and enhance soil stability within the Domain.

4.14.2 To protect and enhance buffer vegetation around shorelines.

4.14.3 As the management of the surrounding waters cannot be easily separated from the management of Sandy Point Domain, it is preferable that they be administered under the one control.

4.14.4 To encourage and promote the quality of the surrounding waters to the highest possible standard.

4.14.5 To manage the inland waters of the Domain for their wildlife and environmental values.

4.14.6 To maintain all necessary cooperation and liaison with the Southland Regional Council and any other relevant organisation with matters relating to marine and foreshore areas.

4.14.7 To ensure that the existing bylaws remain relevant to the possibility of changing circumstances.

4.15 AMENITY FORESTRY

4.15.1 *General*

4.15.1.1 *Forestry Zone Management*

To manage the amenity forestry plantations in accordance with good amenity forestry practices and as detailed in the Council's Forestry Management Plan for amenity forestry, with consideration towards the recreational values.

Although the amenity forestry plantations have a definite amenity and recreational value, they are also a production forest. It is, therefore, important they receive the appropriate management.

4.15.1.2 *Recreational Use*

To permit recreational use of the plantations to a level which is compatible with good amenity forestry management and has due regard for the prevention of forest fires and other damages to the crop.

Throughout their life amenity forestry plantations provide opportunities for recreational activities such as walking, mountain biking, orienteering, horse riding and firewood gathering. However, such activities have to be in balance and complementary to amenity forestry and, according to management requirements for safety reasons or seasonal fire restriction; users must expect that there may be restrictions on access to plantations.

4.15.1.3 *Buffer Strips (Margins)*

To plant and maintain, as far as may be practicable, adequate amenity margins of suitable species along the principal road frontages of forestry plantation areas. Such amenity/aesthetic margins should have an appropriate depth to maximise screening and effect.

Particularly at the clear felling stage, forestry can be perceived to be a messy and untidy operation. While the public should not be denied the opportunity to observe all stages of amenity forestry operations, it is also necessary to consider the scenic values of the Domain. If the roadside areas of plantations are planted with natural native species as a permanent amenity margin, the scenery of the roadsides is preserved regardless of what happens behind.

Suitably chosen local native species will also help to provide additional habitats and food sources for birds, thus improving the environment of the Domain.

When plantation areas are clear-felled, shelter from wind is often lost. Permanently planted amenity margins along the road frontages of plantations help to ameliorate the effects of wind until the plantations are re-established.

4.15.1.4 *Private Forestry Leases*

To seek to progressively resume the forestry leasehold areas.

The leases are for a 50 year period and are non-renewable. The majority of these leases began in the middle of the 1960s. The leases were granted under terms which were most unfavourable to the Council and, assuming that they run their

full term, they will only give the Council a total return of $28,589, or an average of $571.78 per annum for 210.83 ha. Three of the original seven leases now remain.

No provision was made for the lessees to contribute towards road maintenance. As the roads in that area are really nothing more than sand tracks, they will readily break up under heavy traffic at considerable cost to the Council. In the future, the forestry activity of Council will be responsible for a road maintenance contribution.

4.15.1.5 *Revenue from Sale of Logs*

All revenue after expenses and repayment of loans from logging activities be retained in a special fund for reserves purposes. Under the Reserves Act 1977, Council is obliged to invest any funds derived from reserve land into management of reserves.

4.15.2 *Preparation of Amenity Forestry*

4.15.2.1 *New Plantation Areas*

If land has heavy cover of gorse and/or broom, then scrub should be root-raked into windows in the spring or summer and followed up with a pre-plant spray of a suitable herbicide to kill seedling re-growth prior to planting. Alternatively, blanket aerial application can be used.

If land is in pasture and has heavy gorse cover, the paddock should be ripped with a winged ripping to provide cultivation and this initial shelter within the furrows.

Controlled burning as a land preparation tool is impracticable at Sandy Point, mainly due to the disjointed nature of the forest and the proximity of native bush reserves.

Previous planting in the farm lease area has shown that excellent results are achieved when planting in heavy grass after the paddock has been ripped with winged tine. In these sandy soils it is not necessary to have the level of cultivation of that of a winged tine.

4.15.2.2 *Replanting*

In areas that have been logged, logging debris will be drawn up into windrows, which will generally be located at right angles to the prevailing wind, and skid sites will be ripped prior to planting. Windrows are to be limited in height and to be so placed to be well back from established roads and tracks.

Prior to any land preparation taking place in logged over areas, it is advantageous to open up the areas to the public for firewood gathering, as long as this does not conflict with fire protection or any other operation that may be taking place in the vicinity.

Skid sites are often very compacted soils from heavy machinery. Ripping ensures that the soils are well cultivated and aerated to enable the seedlings to grow successfully.

4.15.3 *Planting*

4.15.3.1 *Planting Species*

Suitable species to be planted at Sandy Point are as follows:

- *Pinus radiata*
  - for protection on western fringes in buffer/shelter zone.
  - for protection of forestry.
  - for production on new land.
  - for production on second rotation sites.

- *Cupressus macrocarpa*
  - for production in well sheltered new land or well sheltered second rotation sites.

Pinus radiata appears to be the most salt resistant tree at Sandy Point in those areas exposed to salt laden winds. It is the most versatile production species as it has the shortest rotation and is able to grow well on a wide range of sites. Pinus radiata is also the preferred local commercial species.

Macrocarpa can produce high value saw logs if well managed on a well sheltered site. The commercial use of macrocarpa is a niche market in Southland with limited outlet for large quantities of saw logs.

4.15.3.2 *Stocking Rate*

Soil types (sand), salt laden winds and exposure dictate that the appropriate stocking rate for monitoring is 1600-1800 in all areas.

4.15.3.3 *Replanting Areas*

Any areas that are at present under existing forest cover will be replanted as soon as practical to fit in with planning of future forest development and comply with ETS requirements.

Any significant gaps caused by Armillaria will be cleared and replanted in macrocarpa in order to obtain maximum productivity from the site.

Those areas that are in the vicinity of existing native bush areas or immediately adjacent to regenerating native bush will not be replanted. This will be assessed at the time by the Parks Manager, taking into account the management policies of the Domain.

Where there is any reasonable likelihood of regeneration adjacent to existing natural vegetation, roads or tracks, the area planted in exotic species will be reduced so that native bush can regenerate without hindrance.

4.15.4 *Maintenance*

4.15.4.1 *Releasing - Spraying*

In the spring following planting, the trees will be released from weed competition by spot spraying. This should be done using metered spraying equipment. A selective herbicide which will control all weeds, without adversely affecting the

trees will be applied according to the manufacturer's recommendations. Aerial blanket spraying will be applied if required.

Supervision of this operation is necessary to ensure all spots are at least 1.5m². This prevents the possibility of any grass growth collapsing on the seedlings, thereby smothering them. This is an important operation due to the aggressive grass growth that may be experienced, especially in the farm lease area.

4.15.4.2 *Blanking - Survival Check*

In February after planting, a survival check is to be carried out on the seedlings planted in the last planting season. The area is to also be inspected in the second year.

An evenly spread survival rate of 75-80% (1200-1440 stems per ha) is acceptable. Isolated significant areas of less than 75% will be replanted in the following year.

4.15.4.3 *Tending/Pruning*

Protection Trees

Trees designated as protection trees will be planted as prescribed in the planting section, after which no tending will take place, ie., protection trees will be managed under a "plant and leave" regime.

If successful even establishment is achieved, a light early thin to waste in Year 6 to encourage stability will be carried out.

The main purpose of the protected trees is to provide shelter for the more productive areas. Most shelter benefit is achieved if the protection or buffer zone is left at its original stocking and left unpruned. As this will tend to be on the western fringes of the forest, tree form will be poor.

Tending Regime for Framing Regime

This suggested tending regime for areas to be managed under a framing regime is as follows:

Approximate Age (years)	Mean Top Height (MTH) (metres)	Operation	Stems per ha
8-10 Years	10	Thin to waste to	800
16 Years	18	Production thin to	400
30-35 Years	28	Clearfell	

The main aim for areas designated to be managed under a framing regime is to produce good quality straight unpruned saw logs, therefore stocking is kept as high as possible for as long as possible without jeopardising too much diameter growth.

Tending Regime for Pruning and Production Thinning

The suggested regime for areas to be pruned and production thinned is as follows:

Approximate Age (years)	Mean Top Height (MTH) (meters)	Operation	Stems per ha
6	6.0	0-2.2 lift to prune	400
8	2.2-4.5	2.2-4.2 lift to prune	400
8	8.0	Thin to waste to	800
10	4.5-6	4.2-6.0 lift to prune	380
16	18.0	Production thin to	380
30-35	34	Clearfell	

As the stand will be thinned for production, the pruned stocking is less than that of a thin to waste regime so that the cost of pruning will not be wasted on trees that are to be extracted between the ages of 16 and 20 years. Only on the better sites of Sandy Point will pruning and production thinning be carried out together.

Where production thinning is not carried out, the thinning to waste at Age 8 will be to a lower stocking of 450 stems per hectare.

Macrocarpa

The suggested tending regime for macrocarpa is as follows:

Approximate Age (years)	Mean Top Height (MTH) (metres)	Operation	Stems per ha
3-5		Form prune	600
8-9	6	0-2m lift prune	375
10-11	9	2-4m lift prune	350
9-10	9	Thin to waste to	350
15	13	4-6m lift prune	325
	40	Clearfell	

4.15.4.4 *Designation of Tending Areas*

Protection Areas

Generally these will be a 50-100 meter strip on the exposed southern and western fringes of the forested areas or anywhere else where tree form is poor and where no value can be added by thinning or pruning.

Areas to be Managed Under a Framing Regime

Generally these areas will be just within the buffer strip area or where trees are exposed and their form does not warrant pruning. The decision on whether to prune or not will be made after pre-assessment of the stand just prior to when they are scheduled for their first prune.

Areas to be Managed Under a Pruning Regime

Generally these will be areas that are well sheltered on the leeward side of the forested areas and where tree form is good enough for pruning to add value to the final crop. The decision on whether to prune will be made after pre-assessment of the stand just prior to when they are scheduled for their first prune.

Once the decision has been made to prune, pruning will take place to at least 4.5 meters, which will give a merchantable log length of pruned log. The decision of whether to prune to 6 meters will depend on the quality of the trees and whether this operation will add value to the final crop. This decision will be made after the trees have been pruned to 4.5 meters.

4.15.4.5 *Fertilising - Deficiency Testing*

Foliage analysis will be carried out to check for possible deficiencies in nutrients or trace elements. In the event of an acute deficiency being found, aerial application of a suitable fertiliser should be considered, should forest health or colour dictate. No deficiencies are anticipated, but boron is known to be marginal through much of the South Island.

4.15.4.6 *Harvesting*

Production Thinning

Prior to any production thinning taking place, consultation and approval will be made with the Invercargill City Council Parks Division.

Production thinning should be carried out on stands with a Mean Top Height (MTH) of no greater than 18 meters.

Damage to crop trees is to be minimised by using experienced contractors and to use cull trees for leverage to pull extracted stems around.

A prescription for precise densities will be given to contractors on crop trees and will be marked prior to the operation taking place.

Where production thinning is being carried out, all recreational users of the stand are to be excluded.

The risk of wind throw is high at Sandy Point - being on the Foveaux Strait Coast and having shallow sandy soils. The risk of wind throw is considerably heightened when the MTH is greater than 18 meters.

Damage to crop trees can be caused by contractors using crop trees to pull extracted stems around. Damage results in bark being stripped off at the base of the tree, increasing risk of disease or insect attack.

Clearfelling

Consultation and approval will take place with the Invercargill City Council Parks Division prior to any clearfelling taking place.

Areas to be clearfelled to reflect age (32 years being extreme harvest age) and also being of economically viable areas to increase compartment area and time.

During any clearfelling operation recreational users will be excluded from the vicinity at all times.

Total areas to be regulated by age rather than large areas dictated by high prices. This will lessen the overall impact on recreational use.

Over most of Sandy Point, ground based harvesting systems such as skidders will be used, unless the particular area being logged is excessively wet when cable logging systems may be used.

The New Zealand Forest Code of Practice shall be the minimum standard used during harvesting in order to maintain the highest standards of environmental protection.

As parts of Sandy Point are regularly used by the public for recreational purposes, the size of the logged areas should be considered so disruption to the recreational users and scenic values is kept to a minimum.

4.15.5 *Protection*

4.15.5.1 *Fire Control - Water Supply*

Water supply for fighting fires can be pumped from the Oreti River Estuary or from existing ponds in the Sandy Point region. In periods of high to extreme fire risk, the public who use Sandy Point must be made aware of the fire danger in the area. As a result, activities such as firewood gathering are permitted only at the discretion of the Parks Division.

In spite of a generally equally distributed annual rainfall, Southland does at times have long dry periods which, when combined with drying winds, contribute to create a high fire risk. Combined with the high recreational use of the area, it is important that fire regulations are strictly adhered to and policed.

4.15.5.2 *Pests and Diseases*

Armillaria spp has in the past caused mortality at Sandy Point. This will always be present at some level in this forest but if stress on the trees is minimised, then the disease is unlikely to cause major areas of mortality.

Diseases such as Dothistroma can sometimes cause problems in radiata pine. There is no evidence to suggest that diseases such as this are excessive in this region, however the forest will be inspected on a regular basis and, where appropriate, action will be taken.

4.15.5.3 *Pest Animals*

Hares and rabbits have in the past caused problems at Sandy Point and there is considerable number of opossums in the area. It is essential that regular animal control is carried out to prevent damage to young seedlings and adult trees.

4.16 MINING AND EXPLORATION

While knowledge of mineral resources in the Domain is minimal, the indications are that there are probably no minerals of economic value.

Although the likelihood of mining activities cannot be assessed at present, it must be stated that major mining activities are incompatible with the values of the Domain and contrary to the present day concepts of conservation.

Each mining application will be examined to determine its possible effect on the scenic, environmental and recreational values of the Domain and on the users of the area. Past experience has shown that if applicants are made aware of the values of the Domain, they are likely to be willing to delete Sandy Point Domain from the application area or, at the least, limit their activities to the absolute minimum.

Policies:

4.16.1 To object to any application for mining privileges within the Domain, unless it can clearly be demonstrated that any ensuing activity will cause minimal damage or disturbance to the Domain.

4.16.2 To ensure that any applicants for exploration, prospecting or mining privileges are made aware of the values and management objectives of the Domain and the extent of their responsibilities consequent to any approvals which may be given.

4.17 PEST PLANTS AND ANIMALS

Pest plants and animals are a threat to the health of the environment. Some pest species contribute significant detrimental effects on native plants, animals and ecological processes, or impose an adverse visual impact on the landscape.

Effective control of weeds and animals is undertaken to comply with the Regional Pest Management Strategy for Southland.

Objective:

- *To minimise the impact of pest plants and animals on reserve values, reserve users and reserve neighbours.*

Policies:

4.17.1 Pest plants and animals on parks and reserves shall be controlled in accordance with the "Regional Pest Management Strategy - May 2007" or any subsequent reviews of this Strategy.

4.17.2 Council will endeavour to remove invasive weed and pest animal species from the reserve by approved control methods. Animals and birds deliberately abandoned in the reserve may be considered a pest and destroyed.

4.17.3 Council will liaise, support, assist and cooperate with the Southland Regional Council and other interest groups to provide for the detection and control of pest plants and animals in parks and reserves.

4.17.4 To control or eliminate, as far as may be practicable, the presence of undesirable exotic tree and shrub species in indigenous vegetation areas.

4.17.5 Noxious plants will be controlled or eradicated by approved methods except for the following:

- Broom being used as a nurse crop for conservation purposes or where it will be suppressed by forestry plantings.

- Gorse which may also be used as a nurse crop, or which is so encompassed by other vegetation that it cannot escape and will eventually be suppressed by indigenous plants.

4.18 FAUNA AND WILDLIFE HABITATS

With some 80 odd species of birds recorded in the Domain and its environs, its importance as a habitat needs no further elaboration.

Although important for all species, the Domain is more particularly so for wetland species, especially the Australasian bittern and the grey teal.

Where possible, particular habitat areas will be enhanced by the improvement of the vegetation or by the provision of nesting facilities.

The importance of the New River Estuary as a breeding ground and nursery for flounder and sole cannot be stressed enough. However, that resource is very dependent upon the quality of the water. While there has been an improvement in water quality over the past years, it is important that improvements continue.

Policies:

4.18.1 To protect and enhance the Domain and its environs for the purpose of a birdlife habitat by permitting public recreational use and other activities to an extent which is compatible with habitat conservation and protection.

4.18.2 To protect and enhance those areas of the Domain and its environs which are important as wildlife habitats for the lower orders of the indigenous fauna, of both land and marine habitats.

4.18.3 To conserve and protect as far as may be practicable the freshwater and marine habitats in and around the Domain.

4.18.4 To classify the ponds and immediate surrounds along Pit Road as wetland areas and wildlife habitats.

4.18.5 To cooperate with the appropriate agencies to maintain and improve the water quality of the Estuary so as to maintain a sustainable flounder and sole fishing resource.

4.18.6 To conserve the fresh water shoreline vegetation and where necessary, to provide shade, bank stability and to protect the breeding habitat of whitebait so as to ensure the continuing health and population of the fresh water species.

4.18.7 That all owners of domestic cats in the Domain be encouraged to have their cats fitted with collars and bells, as well as having their pets desexed.

4.19 DOGS ON RESERVES

Council adopted the Dog Control Policy for Parks and Reserves in May 2005. This policy refers only to dogs on the parks, reserves and open spaces managed and controlled by the Parks Division.

The control of dogs on the reserve has been an issue from time to time and while there is signage and controls placed on the park, it is difficult to enforce these rules but better education of dog owners has helped.

Dog faeces can carry disease which can affect humans and other dogs. When a dog fouls in public, the person controlling the dog is responsible for the immediate removal of the faeces.

Objectives:

- *To provide environments within the city's parks and reserves where dogs and people can happily co-exist.*
- *To allow dogs and their owners reasonable access to the city's parks and reserves, at the same time protecting the safety and comfort for all users.*
- *To make available areas of open space in the city's parks and reserves, which provide reasonable exercise and recreational opportunities for dogs and their owners.*
- *To minimise danger and/or nuisance caused by dogs to the public or to wildlife and natural habitats on the city's parks and reserves.*
- *To provide appropriate signage and public notification to dog owners (or those people exercising their dogs) informing them of their responsibilities while using the city's parks and reserves.*

Policies:

4.19.1 Access
Appropriate levels of access to parks and reserves for dogs and their owners shall be made available.

4.19.2 Safety and Conflict
Dog access to parks and reserves shall be restricted or, in some cases, prohibited where the likelihood of conflict exists between dogs, the public or the environment.

4.19.3 Exercise Areas
Dog exercise areas shall be made available to provide sufficient opportunities for the needs of dogs in the city's parks and reserves.

4.19.4 Signage and Education
A review of the dog control signage on parks and reserves in the city shall be carried out with a goal of standardising and simplifying this. Opportunities for informing the public on dog control policies on parks and reserves, such as newsletters, media releases and advertising shall also be considered. Appropriate signage will be erected at various locations to assist dog owners in complying with this policy.

4.19.5 Dog Fouling

Every person, whose dog defecates on any city park or reserve, is required to remove the deposited faeces from the reserve area immediately or dispose of the material in a suitable receptacle.

4.19.6 Responsibilities

It is the responsibility of the person exercising the dog on the city's parks and reserves to ensure the dog is fully registered and that it complies with any other Council dog control bylaw.

4.19.7 Enforcement

Parks Division officers shall convey the agreed policies to dog owners when observing any offence. Enforcement will be via Council's dog control officers and, if necessary, by provision of the Reserves Act 1977, parks rangers and the introduction of bylaws.

Definitions

Dogs-on-a-Leash Areas

Areas where dogs are required to be leashed at all times are:

- All parks and reserves in the Invercargill City Council area, with the exception of areas classified as -
  - Dog-prohibited areas.
  - Designated dog-exercise areas.

Dogs-on-a-leash areas include all walking tracks on parks "short walks" and all cemeteries and crematoria areas. A list of walking tracks is located in the Parks office.

Dog-Prohibited Areas

Areas where dogs are prohibited are:

- Anywhere within ten metres of any children's play equipment, including skateboard ramps and paddling pools.
- The designated playing areas of all marked sports fields.
- The areas around the Sandy Point ponds and lagoons specifically designated as wildlife habitats *[refer to Sandy Point Management Plan].*
- The area around and in the Donovan Park pond where there is risk of disturbing wildlife *[refer to Donovan Park Management Plan].*
- Areas that from time to time the Council will notify by way of signage and advertising that there is a temporary dog prohibition in place because of wildlife, stock or other issue.

Designated Dog-Exercise Areas

These are areas designated for dog exercise where dogs are permitted to be at large while under continuous surveillance and effective control. Maps showing these areas are located in the Parks office.

- Sandy Point Domain, excluding playgrounds, marked sports fields and the ponds and lagoons designated as wildlife habitats. Dogs must be on a lead while on all formed walking tracks.

- Donovan Park, excluding marked sports fields and the Donovan Park pond where there is a risk of disturbing wildlife.

- Elizabeth Park, excluding playgrounds. Dogs must be on a lead while on all formed walking tracks.

- Turnbull Thomson Park, excluding playgrounds and marked sports fields. Dogs must be on a lead while on all formed walking tracks.

Notes

- *The person exercising the dog must be able to control it as if it was on a leash. If the person exercising the dog cannot stop or retrieve the dog immediately with a whistle or call, then the person cannot exercise their dog with its leash off.*

- *The person exercising the dog must carry a leash at all times.*

- *The person exercising the dog must be capable of restraining the dog.*

- *The person exercising the dog is responsible for removing any deposited faeces from the dog exercising area.*

4.20 DOMESTIC ANIMAL CONTROL

Uncontrolled domestic animals can cause damage to plants and soil structure of reserves and may endanger other reserve users.

Objective:

- *To protect the vegetation and soil structure of the reserve and to provide a safe and attractive reserve for all users.*

Policy:

4.20.1 Uncontrolled animals are not permitted on parks and reserve unless otherwise provided for with an appropriate lease or licence under Section 73 of the Reserves Act 1977 or with written permission from Council.

4.21 DISPOSAL OF RUBBISH

Council is committed to reducing the amount of rubbish that is deposited on Council land. The dumping of rubbish on reserves or the inappropriate use of existing rubbish disposal facilities can detract from the reserve values and the proper functioning of reserves.

Council's general policy is not to provide rubbish bins on public parks except in high use/high profile areas.

Council is also concerned about the impact garden escapees can have on areas of environmental importance. Garden escapees, or weeds, often come from garden waste being dumped onto neighbouring reserve land. While this reserve is not an environmental reserve, there is still a cost in cleaning up and removing dumped garden waste.

Objectives:

- *To preserve reserve values through appropriate disposal and collection of rubbish and garden waste.*
- *To encourage reserve users to act responsibly by requiring them to take home their rubbish.*

Policies:

4.21.1 No person shall deposit any domestic refuse, trade waste, garden refuse, rubble or other debris on the reserve.

4.21.2 Reserve user groups are responsible for ensuring the area of their responsibility is kept clear of rubbish.

4.21.3 Event organisers are responsible for collection and disposal of rubbish when the reserve is booked for events.

4.21.4 Reserve users shall dispose of sewerage in such a way that it will not be a health hazard or affect the quality of soil and nearby waters.

4.21.5 Where necessary, existing effluent disposal systems should be upgraded so as to comply with the standards of this Management Plan.

4.22 FIRES ON RESERVES

Fires on reserves have the potential to cause significant damage to habitat, buildings and structures on reserves and to adjacent property.

Sandy Point Domain is part of the Southern Rural Fire District and as such comes under the Forest and Rural Fires Act 1977 and its Regulations. Council is obliged to take all statutory measures to ensure that fires do not occur in the Domain.

Objective:

- *To protect natural habitat, buildings and structures on the reserve from damage and destruction of uncontrolled fires.*

Policy:

4.22.1 The lighting of fires on the reserve outside of a contained gas barbeque is not permitted without the prior written authorisation from Council.

4.22.2 To prohibit open-air fires in the Domain except as may be permitted under the Forest and Rural Fires Act 1977 and its Regulations.

4.22.3 To ensure the protection of vegetation, people, buildings, amenities and other property from damage or destruction by fire, through the implementation of fire control measures based on the Forest and Rural Fires Regulations and the Council's Fire Plan for the area.

4.23 FIREWORKS DISPLAYS

Groups occasionally wish to use reserves for fireworks displays. These displays are controlled by legislation other than the Reserves Act 1977 but require permission from Council when the activity is to occur on a reserve.

Objective:

- *To allow fireworks displays on the reserve if adverse effects on reserve values, reserve users and reserve neighbours can be avoided, remedied or mitigated.*

Policies:

4.23.1 Fireworks displays by organised groups may be allowed on the reserve with prior written authorisation from Council.

4.23.2 Applicants wishing to use the reserve for fireworks displays must provide evidence they have met the requirements of relevant legislation, regulations, codes and permits and provide an acceptable Risk Management Plan before final permission will be granted.

4.23.3 Proof of adequate public liability insurance is required for permission to be granted for fireworks displays on the reserve.

4.24 LIQUOR CONSUMPTION AND SALE

Reserve users can request consent for special or one off events where liquor is sold or supplied incidental to the principal purpose of the occasion or event being held.

Objective:

- *To allow the consumption and sale of liquor on the reserve where the effects on the reserve, reserve values, reserve users and reserve neighbours can be avoided, remedied or mitigated and the relevant statutory and Bylaw requirements are met.*

Policy:

4.24.1 Council will not oppose the granting of liquor licences for premises located on parks and reserves or special licenses in defined areas for one off types of events where:

(a) The granting of permission is consistent with the purpose of the reserve.
(b) The effects on the reserve, reserve values, reserve users and reserve neighbours can be avoided, remedied or mitigated.
(c) Applicants can provide evidence they have met the requirements of relevant legislation, regulations, codes and permits.

4.25 FIREARMS

Policy:

4.25.1 To restrict the carrying and use of all types of firearms within the Domain and its environs, apart from those areas specifically set aside for organised firearm activities. Permits will be issued, where appropriate, for specific activities such as the control of pests.

4.26 RECREATION

Policies:

4.26.1 To provide walking tracks only to the extent that is compatible with the management objectives for the Domain and which will not act to the detriment of natural areas.

4.26.2 Walking tracks will be designed and upgraded, where practical and feasible, to meet the current national standard.

4.26.3 Council shall use current New Zealand Standards as a guide to developing and maintaining walking tracks on the Domain. All walking tracks shall be developed and maintained to the 'short walk' standard where resources permit.

4.26.4 To maintain bridges and steps within the Domain.

4.26.5 To allow public recreational use of the three Zones of the Domain to an extent that will not compromise the natural values of the areas, nor the management objectives.

4.26.6 To prohibit those recreational activities which are not in harmony with the management objectives for the various Zones of use within the Domain and also to prohibit any activity which would lessen the opportunities for others to enjoy the qualities that make Sandy Point Domain so attractive.

4.26.7 To restrict organised or group activities, which by their nature require constructed facilities and considerable modification of the landscape, to the Recreation Zone.

4.26.8 To manage the Recreation Zone so that it will contribute to the aesthetics and general amenity of the Domain and thus improve the environment for the carrying out of the various recreational activities.

4.26.9 To encourage all organisations in the Recreation Zone to actively improve the general appearance and amenity of the areas they occupy through paying attention to building maintenance, general tidiness of areas around buildings and elsewhere, and amenity plantings of suitable species of trees and shrubs.

4.26.10 To permit horses and mountain bikes within the Domain on designated tracks.

4.26.11 To prohibit horses on walking tracks, in designated picnic areas and other public areas where people are accustomed to congregate.

4.26.12 To prohibit mountain bikes on walking tracks, picnic areas and native bush areas.

4.26.13 To maintain picnic areas within the Domain.

4.26.14 To upgrade, as resources permit, picnic areas to an extent which is compatible with the management objectives for the Domain.

4.26.15 New tracks, when developed, will, if possible, be multi-use.

4.27 CAMPING

Camping is only permitted on reserves administered under the Reserves Act 1977 in the Invercargill District in camping grounds specific to that purpose. Potential problems resulting from campers on reserves include toilet waste disposal, rubbish and damage to parks.

There are registered camping grounds on reserves in Bluff and at Sandy Point, as well as other private facilities, that provide adequate camping grounds for visitors to the City.

Objectives:

- *To conserve the public health, well being and safety of the public while on the reserve.*
- *To ensure the public have equity of use over reserves under the Council's control.*
- *To prohibit camping in the reserve.*

Policies:

4.27.1 Camping is not permitted on the reserve except for in such authorised areas as the motor camp and the scout camp area.

4.27.2 In special circumstances, camping on the reserve for one off events may be approved by Council resolution.

4.28 PLAYGROUNDS AND PLAY EQUIPMENT

The provision of a variety of well maintained and safe play equipment is important for the development of children. Play equipment complements the areas of open space available to children for informal play.

Objectives:

- *To develop and maintain areas of the reserve for children's play.*
- *To ensure a healthy and safe environment is provided for playground users.*
- *To maintain existing playgrounds that are creative, stimulating and fun, and to encourage children to engage in social interaction and physical activity.*

Policies:

4.28.1 The playground shall be maintained and upgraded as required to provide quality play equipment, safety surfacing and high play value.

4.28.2 All new or upgraded play equipment shall comply with the relevant New Zealand Safety Standards.

4.28.3 All playgrounds and play equipment shall be given a monthly maintenance inspection and a six monthly safety inspection to ensure all pieces of equipment are maintained to a safe standard.

4.28.4 Informal play opportunities shall be encouraged through the design of open spaces within the reserve using the natural landforms and existing features, to the extent the surrounding vegetation and horticultural qualities are not damaged.

4.29 HEALTHY AND ACTIVE PARKS

Council has a role to play in providing public spaces that offer healthy and active opportunities for the public.

One of the key outcomes of the "Our Way Invercargill"[1] strategy plan is "Health and Wellbeing - We are healthy people". This aligns with the "Healthy Eating - Healthy Action (HEHA)" strategy developed by the Ministry of Health as an approach to improving nutrition, increasing physical activity and achieving healthy weight for all New Zealanders.

Some of the ways Council can contribute to the "Health and Wellbeing" outcome is through providing opportunities in our parks which include:

- Encouraging Healthy Lifestyles:
  - promoting a 'smoke free' environment.
  - promoting healthy eating.
- Encouraging Active Lifestyles:
  - providing activity friendly environments.
  - promoting active use of the Park.
  - providing equity of provision in terms of culture and ability.

[1] 'Our Way Invercargill' Long Tern Council Community Plan (LTCCP) 2006 – 2016, Invercargill City Council

Objective:

- *To encourage healthy and active lifestyles for Invercargill residents through use of the Park.*

Policies:

4.29.1 Groups booking events in the reserve will be encouraged to provide healthy food alternatives at their event.

4.29.2 Council will consider the cultural needs and physical abilities of potential users when designing environments in the reserve to ensure the Park is welcoming and functional for all.

4.30 SMOKE FREE PARKS AND RESERVES

Objectives:

- *To encourage healthy and active lifestyles for Invercargill residents through use of parks and reserves as Smoke Free areas.*
- *That this be promoted in all Invercargill City Council Parks and in particular, within 20 meters of play equipment; entrances to the Queens Park Aviary and Queens Park Animal Reserve; and all marked sports fields.*
- *That the public be encouraged through signage and publicity to maintain a clean, healthy environment in these areas.*
- *That this become a policy in each of the Reserve Management Plans upon their drafting or review.*

Policies:

4.30.1 By designating and promoting all Invercargill City Council owned children's playgrounds, the Queens Park Aviary, Queens Park Animal Reserve, and areas designated as sports fields as Smoke free areas.

4.30.2 That this be promoted in all Council Parks and in particular within 20 meters of play equipment, entrances to the Queens Park Aviary and Queens Park Animal Reserve, and allocated sports fields.

4.30.3 That the public be encouraged through signage and publicity to maintain a clean, healthy environment in these areas.

4.30.4 That this become a Policy in each of the Reserve Management Plans upon their drafting or review.

4.30.5 Groups booking events on Invercargill City Council parks will be encouraged to actively promote their event as Smoke Free.

4.31 NOISE LEVELS

Existing recreational users of the reserve, such as the Southland Sports Car Club and other motorised sports clubs, have used the reserve as a base for their activities for a number of years.

While the noise output of these activities does not conform to the standards outlined in the District Plan, their activities are allowed in the reserve as they have existing use rights and are managed as per the Noise Management Plan annexed as Appendix 9.

The imposition of a night time limit is proposed to meet the standards in the District Plan and resource consent will be required for any activities that will not meet this requirement.

Policies:

4.31.1 To allow noise levels consistent to those that have been allowed in the past for existing recreation uses except between the hours of 10.00pm and 7.00am where the noise level on the boundary shall not exceed 40dBA L10.

4.31.2 Recreational activities new to the reserve will meet the following noise level standards (measured at the neighbouring boundary):

- 55 dBA L10 between the hours and 7.00am and 10.00pm.
- 40 dBA L10 between the hours of 10.00pm and 7.00am.

4.31.3 Resource consents will be required if these standards cannot be met.

4.32 ADMINISTRATION

The reserve is vested in Council for Recreation Reserve purposes.

Objective:

- *To comply with the Reserves Act 1977 requirements for administration and management.*

Policy:

4.32.1 The Invercargill City Council, through the Parks Manager, shall carry out the day to day administration and management of the reserve, using Parks Division Assets and Operations Unit staff and contractors.

4.33 PLAN AMENDMENT AND REVIEW

The Reserves Act 1977 sets out clear requirements for the preparation, amendment and review of Reserve Management Plans.

Objective:

- *To ensure this Management Plan is kept under review to reflect the needs of current and future users and to be consistent with current best practice management procedures.*

Policies:

4.33.1 Any change or amendment, not involving a comprehensive review of the reserve's Management Plan, shall be made by adopting the procedures specified in Section 41(9) of the Reserves Act 1977.

4.33.2 The Reserve Management Plan shall be kept under continuous review as laid down in Section 41(4) of the Reserves Act 1977 and shall be operative from the date of signing for a period of ten years, at which time it will be completely reviewed.

4.34 DEVELOPMENT AND CHANGE

4.34.1 *Requests for Development on Reserves*

Reserves are created principally for the provision and preservation of open space and natural areas. Some buildings and structures such as changing rooms, toilets, clubrooms, car parks and fences are considered necessary for the enjoyment and full utilisation of reserves and are allowed for in the Reserves Act 1977.

The landscape character of a reserve contributes to and enhances the City's environment and impacts on reserve users, reserve neighbours and people passing by. While certain activities and buildings are permitted on reserves it is important to ensure that the effects of any structure or use does not impact negatively on reserve values, reserve users and reserve neighbours.

When considering an application to develop or change part of a reserve, Council will take into account the existing character of the reserve, including:

- The existing and potential use of the reserve.
- The natural and built environment.
- The surrounding landscape and the use of neighbouring land.
- The purpose and classification of the reserve under the Reserves Act 1977 and the management objectives stated in the current Reserve Management Plan.

Objectives:

- *To protect and enhance the open space, landscape and historical values of the reserve while providing adequate facilities for recreation and play.*
- *To ensure that development is appropriate to the reserve and that new developments complement and enhance the existing character of the reserve.*

- *To provide and maintain well designed and appropriately located buildings and structures in the reserve to improve utilisation and add to the enjoyment of the reserve by its users.*

- *To ensure that all reserve facilities are provided and maintained to an appropriate standard that meets public health and safety requirements and contributes to the attractiveness of the reserve.*

- *To ensure the costs associated with any development by/for a specific user group are met by that group.*

Policies:

4.34.1.1 The number of buildings and structures on the reserve will be limited to a level which facilitates the safe and appropriate use, protects the open space and natural amenity values, while being compatible with the purpose and classification of the reserve.

4.34.1.2 Public safety, public benefit and the character of the environment should be taken into account when planning the development of buildings, structures and associated landscaping.

4.34.1.3 The construction of any new buildings or extensions to existing buildings is not permitted unless anticipated in the current Management Plan and may be subject to a review or amendment to the Management Plan.

4.34.1.4 The design of the proposal shall be subject to Council approval and shall be in keeping with and complement the surroundings. Buildings and structures shall be placed with regard to reserve values, views and proximity to access points.

4.34.1.5 Exterior colour schemes of buildings and structures shall be approved by Council. The painting and creation of murals (not advertising) on buildings and structures may be considered on submission of a copy of the design and proposed colour scheme to Council.

4.34.1.6 The development shall be designed in a way that limits the opportunity for vandalism.

4.34.1.7 The development will be designed, where practical and feasible, to meet the current national standard and design criteria for access for people with disabilities.

4.34.1.8 The lease or licence to occupy agreement will define the obligations of the building owners on reserve land when the building is no longer required or the club has disbanded. These include removal or disposal of the building and facilities, or on-selling of the building to an approved recreational activity. Any outcome of this will be to the approval of Council.

4.34.1.9 Development plans are required for all development proposals for structures, facilities or buildings on the reserve (including alterations and extensions to existing buildings) and will include an assessment of effects. In particular the proposal should address how adverse effects on the values of the reserve will be avoided, remedied or mitigated. The development plan shall include:

(a) The location and design of proposed buildings, structures and landscaping including any car parking, lighting, fences and signage and the extent of the area required.
(b) Details of the size, scale, visual impact and relationship of the proposal to the surroundings.
(c) Any new building requirements as part of the development, or the changed use of existing buildings. Indicate any alterations required for existing buildings.
(d) Details of any known or potential liabilities associated with any existing building or structure being added to or modified.
(e) Any likely effects (adverse or otherwise) of the proposal on the landscape, environment and reserve users or reserve neighbours including visibility into and through the reserve and public safety.
(f) Details of any change or removal of any existing trees or vegetation.
(g) Details of any drainage and earthworks required and disruption to drainage patterns. Full restoration of disturbed landform during construction and landscaping and compliance with relevant legislation is the responsibility of the applicant.
(h) Details of any change or disruption to network utility infrastructure and details of infrastructure required as part of the development.
(i) Details of any specific landscaping requirements - species, screening or shelter.
(j) Consideration of existing users (both formal and informal) and the impact of this proposal on them. Any issues of public access, thoroughfare and egress on reserves and into any buildings and the loss of any open space including during construction phase.
(k) Details of any discussions with existing user groups.
(l) Anticipated user numbers and the times of use.
(m) Details of anticipated life of the structure and future maintenance requirements.
(n) Details as to who will be responsible for all future maintenance and insurance for the buildings and structures. Acknowledgement of the club or group's responsibility if or when the building is no longer required or if the club disbands.
(o) Details of the anticipated completion date and any plans to stage the development.
(p) Any other matters arising as determined by Council.

5.0 FUTURE DEVELOPMENT

A Reserve Management Plan is developed to reflect current reserve use and reserve values. A Management Plan should also highlight anticipated future development or change to the reserve and the likely impact a development will have on reserve users, reserve values and reserve neighbours. Any development not anticipated in, or meeting the policies of the current Reserve Management Plan, will require an amendment to the Management Plan.

Any future development at the reserve shall only be to the extent which is in accordance with the overall management objectives and policies and subject to meeting the requirements defined in 4.34.1 - Requests for Development on Reserves.

Before any development is implemented, it must be established that there is a need for such development and that what is proposed will be of benefit to the reserve and to those using it.

5.1 PROPOSED REMOVAL OF RESERVE STATUS FROM PARTS OF SANDY POINT DOMAIN

Council is considering the option of removing the reserve status and thereby freeholding the leased areas currently occupied by the Cabbage Tree Restaurant (containing 0.8983 ha being Lot 1 DP 301427 contained in Certificate of Title 6086) and the Beach Road Holiday Park (containing 5.2050 ha being Lot 2 DP 301427 contained in Certificate of Title 6087).

The proposal is included in this Management Plan however no final decision will be made until Council hears any submissions received regarding revocation of the reserve status (Section 24 of the Reserves Act 1977), disposal of the abovementioned parts of the Reserve (Section 25 of the Reserves Act 1977) and Ministerial approval has been granted.

Plan showing the two separate leased areas wishing to freehold

5.2 LAND APPLICATION OF BIOSOLIDS AT SANDY POINT

Council proposes to apply biosolids to very sandy soil in the Christies Track area of Sandy Point. This area had previously been leased by Council for grazing purposes, but the leases have now been terminated and it is planned to develop the area with native plantings for recreational use. Biosolids application will improve soil condition and provide an improved environment for the planting programme.

5.2.1 *Proposed Sandy Point Biosolids Application Site*

The proposed biosolids application site is shown on the plan below, and is approximately 42 ha in area. It is located between Christies Track and the Southland Golf Club golf course, approximately 200 m from Oreti Beach.

This proposal will be subject to a resource consent application to Environment Southland. There would be up to three biosolids applications over the area over a ten year period. Each application will take two to three weeks, involving the transport of biosolids by truck from the Clifton Wastewater Treatment Plant, and spreading using agricultural machinery. Biosolids application would be at intervals of one to three years, depending on the volumes transported and are covered with each application.


LINKS RD
CHRISTIES INK
Invercargill
Proposed Biosolids Application Area - Sandy Point

6.0 APPENDICES

6.1 APPENDIX 1 - VEGETATION LIST OF SANDY POINT DOMAIN

This list incorporates those studies made by earlier workers in the field, as well as that by L J Metcalf, made from 1979 onwards. The first person to record a list of some of the plants growing in Sandy Point Domain was C M Smith in 1924.

Smith was a forester working for the New Zealand Forest Service and, in his report on Sandy Point Domain Afforestation Scheme; he mentioned some of the principal or more noteworthy species to be found in the area.

He was followed by J E Holloway in about 1926 and an amateur botanist, F S Lokan, who botanised the area from the 1930s to the 1950s, compiling a comprehensive list of the indigenous plants growing in Sandy Point Domain.

In 1973 Diane J Lucas undertook a landscape appraisal of Sandy Point Domain, in which she listed several previously hitherto unrecorded species. More recently (in 1976), C G Robertson compiled a supplementary list which extended the number of species observed there.

During the course of numerous visits to the area over the past ten years, L J Metcalf has further extended the number of species recorded for the area.

This list differs from all previous lists in that the adventive flora and some of the lower orders for plants have also been recorded. So far the fungi, lichens and mosses have been only superficially recorded.

S	Denotes species recorded by C M Smith, 1924
H	Denotes species recorded by J E Holloway Ca. 1926
+	Denotes species recorded by F W Lokan
L	Denotes species recorded by D J Lucas
R	Denotes species recorded by C G Robertson
!	Denotes species recorded by L J Metcalf
*	Denotes species recorded by Lokan and which are of uncertain status

Fungi

!	Aseroe rubra
!	Clathrus cibarius
!	Geastrum sp
!	Paurocotylis pila
!	Weraroa rubra

Lichens

!	Ramalina linearis
!	Stereocaulon ramulosum
!	Sticta latifrons
!	Teloschistes sp

Musci

!	Cyathophorum bulbosum
!	Hypoptergium navae-seelandiae
!	Ptychomnion aciculare
!	Thuidopsis furfosa

Psilopsida
Psilotaceae

!	Tmesipteris sp	
Lycopsida		
Lycopodiaceae		
+	Lycopodium billardiera	
+	Lycopodium scariosum	
!	Lycopodium volubile	
Filicales		
Ophioglossaceae		
!	Botrychium australe var. millefolium	
+!	Ophioglossum coriaceum	
Hymenophyllaceae		
+	Hymenophyllum bivalve	
!	Hymenophyllum multifidum	
!	Hymenophyllum sanguinolentum	
Dicksoniaceae		
!	Dicksonia fibrosa	Wheki ponga
!	Dicksonia squarrosa	Wheki
Polypodiaceae		
+!	Phymatodes diversifolium	
!	Pyrrosia serpens	
Grammitidaceae		
+!	Ctenopteris heterophylla	
Dennstaediaceae		
+*	Hypolepis distans	
+!	Hypolepis millefolium	
Pteridaceae		
+!	Histiopteris incisa	Cut leaf bracket
+!	Pteridium aquilinum var. esculentum	Bracket
Aspleniaceae		
+!	Asplenium bulbiferum	Hen and Chicken fern
+!	Asplenium flabellifolium	
+!	Asplenium flaccidum	
!	Asplenium flaccidum x scleroprium	
+!	Asplenium hookerianum	
!	Asplenium lyallii	
+!	Asplenium oblongifolium	
R!	Asplenium scleroprium	
Blechnaceae		
+!	Blechnum capense	
+*	Blechnum capense var.	
+!	Blechnum discolor	Crown fern or pio pio
+!	Blechnum fluviatile	
+!	Blechnum minus	
+!	Blechnum penna-marina	Alpine hard fern
+	Blechnum vulcanicum	
Dryopteridaceae		
!	Dryopteris felix-mas	Male fern
+!	Polystichum vesititum	
+!	Polystichum richardii	
!	Rumohra aiantiformis	
Adiantaceae		
!	Pellaea rotundifolia	
Spermatophyta		
Gymnospermae		
Podocarpaceae		

S+!	Dacrydium cuprerssinum	Rimu
+!	Podocarpus dacrydiodes	Kahikatea
S!	Podocarpus ferrugineus	Miro
S+!	Podocarpus hallii	Hall's totara
S+!	Podocarpus spicatus	Totara
S+!	Podocarpus totara	Totara
Angispermae		
Monocotyledonaea		
Juncaginaceae		
L!	Zostera muelleri	
Hydrocharitaceae		
!	Lagarosiphon major	
Potamogetonaceae		
!	Potamogeton cheesemanii	
Gramineae		
S!	Ammophila arenaria	
!	Agropyron repens	
!	Anthozanthum odoratum	
!	Bromus sp	
S+!	Cortaderia richardii	Toe toe
S+!	Chionochloa rubra	Red tussock
!	Dactylis glomerata	
!	Echinopogon ovatus	
!	Festuca arundinacea	
S L	Festuca littoralis	
!	Festuca novae-zelandiae	
+!	Hierochloe redolens	
!	Holcus lanatus	
!	Hordeum murinum	
+!	Poa cita	Silver tussock
!	Puccinellia novae-zelandiae	
!	Puccinellia stricta	
!	Spartina anglica	
L	Spartina townsendii	
Liliaceae		
+!	Astelia fragrans	Bush lily
Agavaceae		
S+!	Cordyline australis	Cabbage tree
S+!	Phormium tenax	New Zealand flax
Lemnaceae		
!	Lemna minor	
Juncaceae		
+!	Juncus bufonius	
+!	Juncus pallidus	
+*	Luzula campestris	
!	Luzula picta var. picta	
Restoniaceae		
R!	Leptocarpus similis	
Iridaceae		
!	Crocosmia x crocosmiiflora	
+!	Liberta ixioides	New Zealand iris
R!	Libertia peregrinans	
Orchidaceae		
+*	Caladenia minor	
+!	Chiloglorris cornuta	

+!	Corybas macranthus	
+!	Corybas trilobus	
+!	Drymoanthus adversus	
+!	Earina autumnalis	Raupeka
+!	Earina mucronata	
+!	Gastrodina sp aff sesamoides	
+	Microtis unifolia	
!	Prasophyllum colensoi	
+	Pterostylis banksii	Greenhood orchid
+H	Pterostylis mutica	
!	Pterostylis sp	
+	Thelmitra longifolia	
Cyperaceae		
+!	Carex comans	
!	Carex demissa	
+	Carex dipsacea	
+!	Carex geminata	
+*	Carex leporina	
+	Carex pumila	
L!	Carex secta	Niggerhead
R!	Carex sinclairii	
R	Carex trifida	
S+	Desmochoenus spiralis	Pingao
!	Eleocharis acuta	
+!	Scirpus cernuus	
H	Scirpus nodosus	
+!	Scirpus pungens	Three-square rush
!	Uncinia rubra	
!	Uncinia sp	
!	Uncinia uncinata	
Dicotyledoneae		
Winteraceae		
+!	Pseudowintera colorata	Horopito
Ranunculaceae		
S+!	Clematis foetida	
S+!	Clematis paniculata	Puwananga
!	Clematis vitalba	Traveller’s joy
+!	Ranunculus acaulis	
!	Ranunculus drouetii	
!	Ranunculus flammula	
!	Ranunculus hirus	
!	Ranunculus repens	
Papaveraceae		
!	Papaver dubium	
Cruciferae		
!	Brassica nana	
!	Cakile edentula	
!	Capsella bura-pastoris	Shepherd’s purse
!	Cardamine sp	
!	Diplotaxis muralis	
!	Lepidium desvauxii	Bushy peppercress
!	Matricaria matricaioides	
!	Nasturtium microphyllum	
!	Sisymbrium officinale	
Violaceae		

+!	Melicytus lanceolatus	
R!	Viola vunninghamii	
Crassulaceae		
!	Sedium acre	
+!	Tillaea moschata	
Droseraceae		
+	Drosera pygamea	
+	Drosera spathulata	Sundew
Aizoaceae		
!	Disphyma clavellatum	
R!	Tetragonia trigyna	New Zealand Spinach
Caryophyllaceae		
!	Cerastium sp	
!	Montia perfoliata	
!	Sagina procumbens	Pearl wort
R	Scleranthus uniflorus	
!	Stellaria gracilenta	
!	Stellaria media	Chickweed
Polygonaceae		
R	Muehlenbeckia axillaris	
S+!	Muehlenbeckia australis	Pohuehue
S	Muehlenbeckia complexa	
!	Polygonum aviculare	
!	Rumex acetosella	Sorrel
!	Rumex crispus	Curled dock
!	Rumex obtusifolius	Broad-leaved dock
Chenopodiaceae		
!	Atriplex buchananii	
!	Atriplex triangulare	
L!	Salicornia australis	
Geraniaceae		
!	Geranium microphyllum	
R	Geranium sessiliflorum	
Haloragaceae		
+!	Gunnera albocarpa	
+	Gunnera arenaria	
+	Gunnera prorepens	
!	Haloragis depressa	
!	Myriophyllum elatinoides	

Note: Lucas records Gunnera hamiltonii but there is no record of it ever having been found on Sandy Point. The type locality is on the opposite side of the Oreti River, from Sandy Point, and she obviously made the record in error.

Onagraceae		
!	Epilobium erectus	
!	Epilobium nummularifolium	
!	Epilobium pallidiflorum	
S+!	Fuchsia colensoi	
S+!	Fuchsia excorticata	Kotukutuku
!	Fuchsia perscandens	
Callitrichaceae		
+!	Callitriche stagnalis	
Thymelaeaceae		
+	Pimelea arenaria	
S R	Pimelea lyallii	
Coriariaceae		

S!	Coriaria sarmentosa	Tutu
Tropaeolacea		
!	Tropaeolum speciosus	Flame creeper
Pittosporaceae		
!	Pittosporum tenuifolium ssp colensoi	Kohuhu
Myrtaceae		
S+!	Leptospermum scoparium	Manuka
+	Myrtus obcordata	
S+!	Myrtus pedunculata	Rohutu
Hypericaceae		
!	Hypericum androsaemum	St John's wort
Elaeocarpaceae		
S+!	Elaeocarpus hookerianus	Pokaka
S+!	Aristotelia serrata	Wineberry
Malvaceae		
!	Plagianthus divaricatus	Shore ribbon wood
	Plagianthus regius	Ribbon wood
Cunoniaceae		
S!	Winmannia racemosa	Kamahi
Escalloniaceae		
S+!	Carpodetus serratus	Putaputaweta
Rosaceae		
H	Acaena microphylla	
+	Acaena sanguisorbae	Biddy biddy
!	Acaena viridior	Biddy biddy
+!	Potentilla anserionoides	
+*	Rubus australis	Bush lawyer
!	Rubus cissoids	Bush lawyer
S!	Rubus fruticosus	Blackberry
S+!	Rubus schmidelioides	
Leguminosae		
S	Carmichaelia sp	
S!	Cytisus scoparius	Broom
!	Lotus pedunculatus	
!	Lupinus arboreus	Tree lupin
S	Sophora microphylla	Kowhai
!	Trifolium medium	
!	Trifolium repens	White clover
S!	Ulex europaeus	Gorse
!	Vicia cracca	Vetch
Moraceae		
!	Paratrophis microphylla	Turepo
Urticacea		
!	Australina pusilla	
!	Urtica incisa	Singing nettle
Icacinaceae		
!	Pennantia corymbosa	Kaikomako
Loranthaceae		
+!	Loranthus micranthus	Mistletoe
R	Tupeia antarctica	
Rhamnaceae		
+!	Discaria toumatou	Wild Irishman
Rutaceae		
!	Melicope simplex	
Araliaceae		

+!	Pseudopanax colensoi	
S+!	Pseudopanax crassifolius	Lancewood
!	Pseudopanax edgerleyi	
!	Pseudopanax simplex	
+!	Schefflera digitata	Pate
Cornaceae		
!	Corokia cotoneaster	
S+!	Griselinia littoralis	
Salicaceae		
!	Salix alba var vitellina	Golden Willow
!	Salix caprea	Goat Willow
Umbelliferae		
+	Anistome aromatica	
+!	Apium australe	New Zealand celery
!	Centella uniflora	
!	Conium maculatum	Hemlock
H	Hydocotyle heteromeria	
!	Hydocotyle moschata	
!	Hydocotyle novae-zelandiae	
	Hydocotyle novae variety	
L!	Lilaeopsis novae-zelandiae	
!	Scandix pecteren-veneris	
!	Schizeilema trifoliolatum	
Resedaceae		
!	Reseda luteola	
Epacridaceae		
S+!	Cyathodes fraseri	
+!	Cyathodes juniperina var oxycedrus	
+	Dracophyllum longifolium	
Myrsinaceae		
S+!	Myrsine australis	Mapou
Apocynaceae		
S+!	Parsonia heterophylla	Kaihua
Caprifoliaceae		
L!	Sambucus nigra	Elder
Rubiaceae		
+	Coprosma acerosa	
!	Coprosma areolata	
+	Coprosma foetidissima	
S+!	Coprosma lucida	Karangu
S+!	Coprosma parviflora	
!	Coprosma propinqua	
!	Coprosma rhamnoides	
+	Coprosma rotundifolia	
+	Coprosma rubra	
!	Galium aparine	Cleavers
!	Galium sp possibly G tenuicaule	
R!	Nertera balfouriana	
!	Nertera dichondrifolia	
!	Nertera setilosa	
+	Nertera sp	
Compositae		
!	Achillea millefolium	Yarrow
!	Bellis perennis	Lawn daisy
S+	Cassinia fulvida	Golden tauhinu

!	Cassinia vauvilliersii	Cottonwood
+!	Celmisia gracilenta	
!	Chrysanthemum leucanthemum	Oxeye daisy
!	Cirsium arvense	Californian thistle
!	Cirsium vulgare	Scotch thistle
R!	Cotula coronopifolia	
H	Cotula perpusilla	
+	Cotula squalida	
!	Cotula traillii ssp pulchella	
!	Cotula sp	
!	Crepis capillaris	Hawksbeard
!	Gnaphalium collinum	
+!	Gnaphalium luteo-album	
+*	Gnaphalium uliginosum	
+!	Helichrysum bellidioides	
!	Helichrysum filicaule	
!	Hypochaeris radicata	Catsear
!	Lactuca sp	
!	Lagenifera strangulata	
!	Matricaria inodora	Scentless chamomile
+	Raoulia glabra	
+!	Raeulia hookeri	
H	Raoulia hookeri var apice-nigra	
+	Raoulia tenuicaulis	
!	Senecio biserratus	
!	Senecio elegans	
!	Senecio glomeratus	
!	Senecio jacobaea	Ragwort
+!	Senecio minimus	
!	Sonchus asper	Rauriki
!	Sonchus olearaceus	Sow thistle
Gentianaceae		
!	Erythraea centaurium	
S+	Gentiana saxosa	Shore gentian
Primulaceae		
+!	Samolus repens	
Plantaginaceae		
!	Plantago coronopus	
!	Plantago mahor	Broadleaved plaintain
!	Plantago species	
	Plantago triandra	
Campanulaceae		
+!	Wahlenbergia gracilis	
Goodeniaceae		
L!	Selliera radicans	
!	Reseda luteola	
Lobeliaceae		
+!	Pratia angulata	
Boraginaceae		
!	Myosotis laxa	Water forget-me-not
Solanaceae		
!	Solanum dulcamara	Bittersweet
!	Solanum laciniatum	Poro poro
!	Solanum tuberosum	Potato
Convoluvlaceae		

!	Calystegia sepium	Convolvulus
R	Calystegia laciniatum	Shore convolvulus
+	Dichondra repens	Mercury Bay weed
Scrophulariaceae		
!	Digitalis purpurea	Foxglove
+	Euphrasia repens	
!	Gratiola sexdentata	
R	Hebe elliptica	Kokomuka
S+!	Hebe salicifolia	Kotomiko
+	Mazus pumilio	
+!	Mazus radicans	
R!	Mimulus repens	
!	Parentucellia viscosa	Tar weed
!	Verbascum virgatum	Moth mullein
Lentibulariaceae		
H	Utricularia monanthos	
!	Prunella vulgaris	Self heal

Trees and shrubs still surviving on the site on Rask's Point farm are:

Pinus radiata	Monterey pine
Cupressus macrocarpa	Monterey cypress
Eucalyptus globulus	Blue gum
Taxus baccata	Yew
Crataegus monogyna	Hawthorn
Fuchsia magnellanica var macrostemma	
Pyrus communis	Pear
Buddleia globosa	

6.2 APPENDIX 2 - INVERTEBRATES

6.2.1 *Mollusca*

Not a great deal is known about the shellfish found in the waters around Sandy Point, apart from the fact that the number of species is relatively limited.

Certain species do however abound and the commonest by far is the mud snail (*Amphibola crenata*) which is found on most of the mud flat areas of the New River Estuary.

It is extremely important in the ecology of the New River Estuary as, along with the cockle (*Chione stutchburyi*), it is the principal food for some of the wading birds which inhabit the estuary. The pied oyster-catcher is known to consume enormous quantities each day.

The large wedge shell (*Macromona liliana*) also occurs in reasonable quantities. It lives buried in the sand at depths of up to 15cm.

Other species of mollusc may occur in the estuary but none have been commonly observed around the Sandy Point shore.

The pipe (*Paphies australis*) was once widespread in the estuary but its numbers have been drastically reduced by sedimentation and pollution.

6.2.2 *Crustacea*

Two species of mud crab have been observed, the commonest being *Helice crassa*. It occurs mainly near the shoreline in the mid-littoral to upper-littoral zone, particularly where there is sheltering vegetation such as the rush *Scripus pungens*. Mud crabs probably form part of the diet of the white-faced herons which may be seen feeding on the mudflats at various times.

6.2.3 *Annelida*

One little known component of the estuarine fauna is the polychaete worms. There are at least two species in the estuary but there has been no detailed investigation to find out just how many species do occur. The polychaete worms occur in the sand which underlies the top layer of mud slurry.

Nicon aestuariensis appears to be the most common species. It is about the size of an earth worm and is recognised by its pale pink colour, with a red blood line running the length of its body.

The other species is *Glycera Americana* which is a pale colour and is more pointed at the head.

Polychaete worms form an important part of the diet of birds such as the pied oyster-catcher, pied stilt and bar-tailed godwit.

6.2.4 *Insects*

While no comprehensive survey of the insect fauna of Sandy Point has been done, it is obvious from the little bit of work that has been carried out that the area is probably quite rich in species.

During the summer months various species of butterfly may have been observed. The red admiral (*Bassaris gonerilla*) and the yellow admiral (*Bassaris itea*) are the two most conspicuous and they may be seen from early spring until late autumn.

The former, in particular, is probably limited in number by the small quantities of its food plant, stinging nettle, which occur in the Domain.

The copper butterfly (*Lycaena sp*) occurs mainly in grasslands and around areas where the *Muehlenbeckia* vine grows. It is not as common as might be expected, although no doubt it is greatly influenced by the seasons.

In certain open country locations the southern blue (*Zizinia otis ozxleyi*) can be seen flying close to the ground on sunny days. Its presence probably depends upon the existence of suitable food plants such as the clovers and lotus.

The tussock butterfly (*Argyrophenga antipodum*) is not uncommon in open country grassland situations where it may be seen drifting lazily and somewhat erratically over the grasses. This species and the copper butterfly are two ancient butterflies which support the theory of New Zealand's long separation from other land masses. Sufficient open country should be left in order to ensure their continuing presence in Sandy Point Domain.

A migrant species which, not infrequently, is observed at Sandy Point is the Australian painted lady (*Cynthia kershawi*). Numbers of this butterfly regularly cross the Tasman Sea and, in some years, they come across in hundreds. So far there is no positive evidence of their having bred in this country.

The conspicuous, diurnal, magpie moth (*Nyctemera annulata*) is a common sight over the summer months and its larvae, the woolly-bear caterpillars, may be seen feeding on native species of *Senecio* which are common in a variety of situations.

Of the other insects, even less is known. Numerous areas of water and swamp provide ideal homes for aquatic insects with both the scarlet damsel fly (*Xanthocnemis zealandica*) and the blue damsel fly (*Austrolestes colensonis*) being common around the lagoons and ponds.

Two of the larger dragon flies (*Procordulia*) may also be seen at times.

The Silver Lagoon and the swampy area surrounding it is probably the most important single aquatic habitat.

Stick insects are known to occur in the bush, the huhu beetle (*Prionoplus reticularis*) is common, particularly in the pine plantations, and at least one species of native mealy bug (*Coelostomidia sp*) has been observed.

One insect which makes its presence particularly noticeable over the summer months is the cicada. On any reasonably warm summer's day, the noise of the

cicada's song fills the air in any of the bush areas. Many visitors mistakenly refer to cicadas as crickets.

At least one species of cave weta is common in forested areas.

A wide variety of insect habitats exist in Sandy Point Domain. They range from forest and shrub land to aquatic, swamp land, grassland and littoral. Fortunately, good representations of these habitats occur in the Environment Zone and, consequently, are quite well protected. However, individual habitat areas occur in other Zones and, where they are deemed to be significant, every effort should be made to retain them.

6.2.5 *Habitat Areas*

The diversity of Sandy Point Domain and its environs provides a wide range of habitats, ranging from estuarine mudflats to sand dunes, wetlands and forest. The results of the survey carried out by Peter Hamill during the summer of 1987/88 are summarised below:

6.2.5.1 *Mudflats of the New River Estuary*

The mudflats of the New River Estuary host a variety of invertebrate fauna. The most commonly seen species is that of the mud snail (*Amphibola crenata*). However, when a shovel of mud is turned over, it is seen that two species of polychaete worms (*Nicon austurariensis* and *Glycera Americana*) are also very numerous. The whelk (*Cominella glandiformis*) is also found. It feeds mainly on the common cockle (*Chione stutchburyi*) and is also known to feed on the wedge shell (*Macromona liliana*) which is also present in the mudflats.

Many small tunnels are scattered over the mudflats in a random pattern. They are the home of the mud crab (Helic*e crassa*). Further down the mud flats, another species of crab (*Macrophthalmus hirtipes*) is also found living in tunnels.

As the incoming tide moves up the mudflats, a species of marine Isopod (*Isocladus armalus*) may be seen moving around rapidly in search of food. Marine Amphipods, which are similar to the sand hoppers, can also be found moving with the encroaching tide.

6.2.5.2 *Sandy Areas of the New River Estuary and Oreti Beach*

The size and extent of Oreti Beach makes it a very important habitat for a variety of sand dwelling creatures. There is a very large tidal range over the beach, which results in a wide variety of animals occupying the area. When the tide is fully out, small holes which have slightly raised edges can be seen.

These holes are home to the ghost shrimp (*Callianassa filholi*) which is an orange and white crayfish-like animal.

Higher up the beach, the siphon holes of the toheroa (*Paphies ventricosa*) and the pipi (*Paphies australis*) may be seen.

At the upper limit of the tidal zone, in small burrows under logs of drift wood, the common sandhopper (*Talorchestia quoyani*) is found jumping in its very distinctive manner. The common swimming crab (*Ovalipes* catharus) occurs in the surf, just off the beach.

The sandy areas of the New River Estuary are located mainly near the junction of the Estuary and the open sea near Point One.

Living at the lower limit of the tidal zone, cockles (*Chione stutchburyi*) and mussels (*Mytilus plantatus*) are found. Cockles live in the substrate while the mussels are attached individually to small stones, which are used as anchors.

The green anemone (*Isactinia olivacea*) also attaches itself to small stones below the low tide level.

Deep in the sand of the mid tidal level, the formidable looking mantis shrimp (*Heterosquilla tricarinata*) lives in relatively large holes which extend to just above the normal surface of the beach, thus creating a small mound around the hole. The mantis shrimp lurks just below the mouth of the tube, waiting in ambush to seize any small animal which may move past. They are mainly nocturnal, very shy and therefore are rarely seen.

The lungworm (*Abarenicola affinis*) and the ribbon worm (*Glycera americanis*) are polychaetes which are found living in the sandy beaches of the New River Estuary.

The common cat's eye snail (*Turbo smaragdus*) and the snails (*Diloma subrostrata subrostrata* and *Melarhapa cinctra*) are also found feeding on seaweed in this area.

The modest barnacle (*Elmimius modestus*) is also present in the estuary.

6.2.5.3 *Sand Dunes*

The commonest species found in the sand dunes is the common sand hopper (*Talarchestia quoyoni*) which is found living under and feeding on seaweed, driftwood and the roots of marram grass.

Early in summer, March flies (*Dilophns nigrostigma*) are very numerous around the flowering lupins.

The bumble bee (*Bombus terrestris*) and the attractive orange, purple and yellow beetle (*Zorian minutum*) can also be seen feeding on the lupin flowers.

Ants (*Prolasius advena* and *Monomorium antarcticus*) are found living under the lupins along with the common slater (*Porcellio scaber*), the large black beetle (*Cilibe sp*) and the ground beetle (*Mecodema sp*).

Three species of centipede and two species of millipedes were found living in the sand dunes.

Eight species of spider (*Lycosa sp, Lycosa hilaris, Diea sp, Allotrochosa shavinslandi, Sidymella sp, Araneus subcompta* and *Araaneujs sp*) were found in the sand dunes.

Living amongst the flax bushes is the jumping spider (*Trite planiceps*).

Many more species are also likely to be present, including possibly the katipo spider.

The gorse-seed weevil (*Apion ulicis*), elephant weevil (*Rhynchodes ursus*) and weevil (*Etnalis spinicollis*) occur in the undergrowth.

During the summer months the almost deafening song of the cicada (*Melamipsalta cincta*) is also heard around the dunes.

Butterflies and moths found in the sand dunes include the tussock butterfly (*Argyrophenga antipodum*), cabbage white butterfly (*Pieris rapae*), common copper butterfly (*Lycaena salustis*), magpie moth (*Nyctemera annulata*), common grass moth (*Crambus flexuosellus*) and the porina moth (*Porina umbraculata*).

Two species of beetle live under the driftwood on the beach. They are the rove beetle (*Creophlus sp*) and the sand beetle (*Thelyphassa limbata*).

Other species present are:

- Shore earwig *Anisdabis littorea*
- Gad fly
- Gad fly hunter *Rhopalum carbonarium*
- European wasp *Vespula germanica*
- Ichneumon fly *Lissopimpla excelsa*
- Ranger dragonfly *Procordulia smithi*
- Hoverfly *Syrphus novaezealandiae*
- Sand fly *Austroimulium australense*
- Tachinid parasite *Hexamera alcis*

6.2.5.4 *Daffodil Bay Area*

This area has one of the most diverse habitats to be found in Sandy Point Domain. The habitats in this area include coastal scrub, ponds, swamp, open land, lupin covered sand dunes, pine forest and native forest.

The most interesting find in this area was that of a new species of spider. The spider, a member of the Agenidae family, was found living in a totara tree.

Other interesting finds include the Cicada (*Amphipsalta zealandica*) which is the largest and noisiest of the New Zealand Cicadas. It usually lives in areas of dense bush at higher altitudes than Sandy Point, where it occurs at sea level in relatively open *pinus* and totara bush.

In the *Pinus* plantations, the steel blue horn-tailed Borer (*Sirex noctilio*), a pest in pine plantations, is not uncommon. The larvae bore holes inside the trunk but fortunately mainly attack unthrifty trees. A parasite of the horn-tailed borer's larvae, the ichneumon fly (*Rhyssa persuasoria*) also occurs in the area.

Spiders found in the area include the following species: *Lycosa sp, Mynoglenes subola, Mynoglenes sp, Aranea atrihostuta, Tekella absidata, Neoramia sp, Epinsinus sp, Eriophora pustolosia, Clubiona huttoni, Photcomma sp, Laperousia blattifera, Dyarcyops orepukiensis, Pakaha insignita* and previously unidentified species from the families Salticidae, Tetragnathidae and Malkaraidae.

Species of moths and butterflies which occur include the tussock butterfly (*Argyrophenga antipodum*), the cabbage white butterfly (*Pieris rapae*), the common butterfly (*Lycaena salustius*), the red admiral (*Bassaris gonerilla*), the yellow admiral (*Bassaris itea*), the southern blue (*Zizinia otis oxleyi*), the magpie

moth (*Nyctemera annulata*), the Porina moth (*Porina sp, Melanchra sp*), the common grass moth (*Crambus flexuosellus*), the flax notcher (*Persectania steropastis*), the case moth (*Oeceticus omnivorus*) and the forest looper (*Tatsoma timora*).

Around the ponds and swampland, the red damsel-fly (*Xanthocnemis zealandica*) and the blue damsel-fly (*Austrolestes colensonis*) are common.

The yellow spotted dragonfly (*Procordulia grayi*) may be seen skimming over the surface of the water and the ranger dragonfly (*Procordulia smithii*) may be seen soaring high above the swamps on the sheltered sides of the trees.

Six species of weevil (*Pleosporius bullatus, Sharpius imitarius, Cacephatus inrertus*, the gorse seed weevil (*Apion ulicis*) and the elephant weevil (*Rhynchodes ursus*)) are also found in this area.

Other species are:

- Grass grub beetle *Costelytra zealandica*
- Black cricket *Nenobius sp*
- Grasshopper *Paprides nitdus*
- Shield bug *Peocilometic gravis*
- Borer beetle *Andoium punctatum*
- Icheumon flies *Lissopimpla excelsa and Netrelia producti*
- Stink bug *Oncaontias vittatus*
- March fly *Dilophns nigrostigma*
- Diving beetle *Rhantus pulverosus*
- Water boatman *Sigara arguta*
- Back swimmer *Anisops wakefieldi*
- Hoverflies *Melanostana fasciatus, Syrphus novaezealandiae and Tubitera tenar*
- Cranefly *Zelandotipula novarae*
- Cicada *Cicadetta scutellaris*
- Honey bee *Apis mellifera*
- Bumble bee *Bombus terrestris*
- Sand hopper *Talorchestia sp*
- Slater *Porcellio scaber*
- Drone fly *Eristalis tenax*
- Fly *Protoystricia alcis*
- White fly *Aleurodes papillifera*
- Striped flesh fly *Parasarcophagus milleri*
- House fly *Musa domestica*
- Native blue bottle *Calliphora quadrimaculata*
- Mosquito *Ochilerotatrus subalbirostris*
- Spittle bug *Philaenus trimaculatus*
- Manuka beetle *Pyronota festiva*
- Ground beetle *Mecodema sp*
- Huhu beetle *Prionoplus reticularis*
- Bush centipede *Hanseniella sp*
- Earwig *Forficula auricularia*
- A species of rove beetle

6.2.5.5 *Silver Lagoon*

The Silver Lagoon area is a very important and diverse habitat. Living on the stems of water weeds growing in the lagoon, four species of molluscs have been recorded. They include a fresh water bivalve, the pea mussel (*Pisidum sp*), gastropods (*Gyraulus sp, Potamopyrgus sp*) and *Physastia sp*.

Two species of damsel-fly can be seen darting about the surface of the lagoon and its neighbouring areas, the common redcoat damsel-fly (*Xanthocnemis zealandica*) being the most common. The other is the blue damsel-fly (*Austrolestes colensonis*), the largest damsel-fly in New Zealand.

The larger yellow spotted dragonfly (*Procordulia grayi*) commonly darts over the surface of the lagoon, while the ranger dragonfly (*Procordulia smithi*) may be seen soaring in the breeze during the summer.

On the flax, the distinctive notches along the leaf margins indicate the presence of the flax notcher moth (*Persectania steropastis*).

On the leaves of the cabbage tree, a species of jumping spider (*Trite planiceps*) occurs.

Another species of spider (*Lycosa sp*) can be found floating on the surface of water.

In the water the large red water mite (*Eylais waikawae*) can be observed swimming between the stems of plants.

The diving beetle (*Rhantus pulverosus*), waterboatman (*Sigara arguta*) and the backswimmer (*Anisops wakefieldi*) are very common.

An uncommon form of Daphnia (*Daphnia carinata*), a variety of *cephalata*, which has not yet been fully described, is found living at the bases of the stems of water plants. This species has a large extension of the carapace above its head which is a response to the large numbers of boatmen and backswimmers found in the lagoon.

The tussock butterfly (*Argyrophenga antipodum*) and the grass moth (*Crambus fleuxuosellus*) are common in the surrounding areas.

6.2.5.6 *Kilmock Bush*

Kilmock Bush is essentially a stand of totara trees with an underlying carpet of bush lily and kowaowao which provides a rich habitat for many species of invertebrates.

The bush environment houses numerous flies. The bush fly (*Scaptia adren*) is one of the most often seen. The tachinid fly (*Protohystricia alcis*), drone fly (*Eristalis tenax*), striped flesh-fly (*Parasarcophagus milleri*), house fly (*Musa domestica*) and the native blue bottle (*Calliphora quadrimaculata*) are also present.

A species of ant (*Huberia striata*) lives in the undergrowth.

Spiders found in Kilmock Bush are *Diea ambara, Goyenia sp, Neoramia sp, Mamoea rota* and two undescribed species from the families Lycosidae and Theridiidae.

Several species of beetle were also recorded. They include the ground beetle (*Mecodema sp*), large black beetle (*Cilibe deyoensis, Philoneis sp*), brown beetle (*Costelytra zealandica*), the weevil (*Cacephatus incertus*), gorse seed weevil (*Apion ulicis*), borer beetle (*Anobium punctatum*) and the eleven-spotted ladybird (*Coccinella punctata*).

The small native black field cricket (*Nenobius sp*) is very numerous around the margin of the bush during the summer months.

A species of grass hopper is also found in this area.

The spittle bug (*Philaenus trimaculatus*) and the shield bug (*Poecilometic gravis*) are found on the grass surrounding the bush.

Other species present in Kilmock Bush:

- Common earwig *Forficula auricularia*
- Bush centipede *Hanseniella sp*
- Isopod *Styloniscus sp*
- Red damsel-fly *Xanthocnemis zealandica*
- Ranger dragonfly *Procordulia smithii*
- Grass moth *Crambus flexuosellus*
- Porina moth *Porina umbraculata*
- Pale selidosema moth *Selidosema panagrata*
- Forest looper *Tatosoma timora*
- Stink bug *Oncacontias vittatus*
- March fly *Dilophns nigrostimga*
- Hover fly *Melonostoma fasciatum* and *Syrphus novaeaealandiae*
- Crane fly *Zealandotipula novarae*
- Cicada *Cicadetta sp*

6.2.6 *List of the Invertebrates of Sandy Point Domain*

Mollusca		
Mudsnail	*Amphibola crenata*	Estuary
Mudsnail	*Diloma subrostra subrostra*	Estuary
Common whelk	*Cominella glandiformis*	Estuary
Marine snail	*Melarhapa cincta*	Estuary
Freshwater snail	*Gyraulus sp*	Lagoon
Freshwater snail	*Potamopyrgus sp*	Lagoon
Freshwater snail	*Physa sp*	Lagoon
Freshwater snail	*Pisidium sp*	Lagoon
Pipi	*Pahies australis*	Estuary
Cockle	*Chione stutchburyi*	Estuary
Mussel	*Mytilus plantatus*	Estuary
Wedge shell	*Marcomona liliana*	Oreti Beach/ Estuary
Toheroa	*Paphies ventricosa*	Oreti Beach
Crustaceans		
Mud crab	*Helice crassa*	Mudflats

Stalk-eyed crab	*Macrophthalmus Hirtipes*	Mudflats
Sandhopper	*Talorchestia quoyani*	Sand hills
Daphnia	*Daphnia carinata variety caphalata*	Lagoon
Isopod	*Styloniscus sp*	Bush
Ghost shrimp	*Gallianasca filholi*	Oreti Beach
Mantis shrimp	*Heterosquilla tricarinate*	Estuary/Sandy
Slater or wood louse	*Porcillia scaber*	Bush
Red water mite	*Eylais waikawae*	Lagoon
Modest barnacle	*Eliminius modestus*	Estuary
Insects		
Order: Odonata		
Red damsel-fly	*Xanthocnemis zealandica*	Lagoon/Swamp
Blue damsel-fly	*Austrolestes colensonis*	Lagoon/Swamp
Yellow spotted dragonfly	*Procordulia grayi*	Lagoon
Ranger dragonfly	*Procordulia smithi*	Lagoon
Family: formicidae		
Ant	*Prolasius advena*	Sand dunes
Ant	*Monomorium antarcticus*	Sand dunes
Ant	*Huberia striata*	Bush
Order: lepidoptera		
Tussock butterfly	*Argyophenga antipodum*	Open areas
Common copper butterfly	*Lycaena salustius*	Throughout area
Southern blue butterfly	*Zizinia otis oxley*	Throughout area
Cabbage white butterfly	*Pieris rapae*	Throughout area
Red admiral butterfly	*Bassaris gonerilla*	Throughout area
Yellow admiral butterfly	*Bassaris itea*	Throughout area
Magpie moth	*Nyctemera annulata*	Throughout area
Porina moth	*Porina umbraculata*	Throughout area
Common grass moth	*Crambus flexuosellus*	Throughout area
Pale selidosema	*Selidosema panagrata*	Bush
Common forest-looper	*Tatosoma timora*	Bush
Case moth	*Oeceticus omnivorous*	Bush
Flax notcher	*Persectania steropostis*	Lagoon

Brian Patrick, formerly of Invercargill, supplied the following list of rate moths which he has observed at Sandy Point:

- *Maoricrambus ancobolus*
- *Asaphodes sp nova*
- *Asaphodes araria*
- *Asaphodes stephanotis*
- *Eurythecta uana*
- *Circia metastica*
- *Protithana potmiras*
- *Meophyas paralosa*
- *Orocrambus lewisi*
- *Orthenches polita*
- *Declana herniane*
- *Metacrias strategica*
- *Tatosoma topia*

Order: Diptera and Hymenoptera		
Bumble Bee	*Bombus terrestris*	Throughout area
Ichneumon fly	*Lissopimpla excelsa*	Throughout area
Ichneumon fly	*Netelia producti*	Throughout area

Ichneumon fly	*Rhyssa persuasoria*	Plantations
Steel blue horntail borer	*Sirex noctilio*	Plantations
Honey Bee	*Apis mellifera*	Throughout area
European wasp	*Vespula germanica*	Throughout area
Gad fly		Throughout area
Gad fly hunter	*Rhopalum carbonarium*	Sand dunes
Hover fly	*Syrphus novaezealandiae*	Edge of bush
Hover fly	*Melanostoma fasciatus*	Edge of bush
Hover fly	*Tubifera tenax*	Edge of bush
Drone fly	*Eristalis tenax*	Bush
Tachnid	*Protohystricia akis*	Bush
Bush fly	*Scaptia adrel*	Bush
Striped flesh fly	*Parasarcophagus milleri*	Bush
Common house fly	*Musa domestrica*	Everywhere
Native blue bottle	*Calliphora quadrimaculata*	Bush
White fly	*Aleurodes papillifera*	Bush
Crane fly	*Zelandotipula novarae*	Bush
March fly	*Dilophus nigrostigma*	Everywhere
Mosquito	*Ochilevatotus subalbirostris*	Everywhere
Sand fly	*Austrosimulium australense*	Everywhere
Order: Hemiptera		
Waterboatman	*Sigara arguta*	Lagoon
Backswimmer	*Anisops wakefieldi*	Lagoon
Cicada	*Amphipsalta zealandica*	Bush
Cicada	*Melampsalta cincta*	Sand dunes
Cicada	*Cicadetta scutellaris*	Everywhere
Vegetable bug (shield bug)	*Poecilometic gravis*	Edge of bush
Shied bug	*Oncacontias vittatus*	Grass/bush
Spittle bug	*Philaenus trimaculatus*	Grass/edge of bush
Order: Coleoptera		
Diving beetle	*Rhantus pulverosus*	Lagoon
Weevil	*Pleosporius bullatus*	Bush
Weevil	*Sharpus imitarius*	Bush
Weevil	*Cacephatus incertus*	Bush
Weevil	*Etnalis spinicollis*	Sand dunes
Elephant weevil	*Rhynchodes ursus*	Bush
Gorse seed weevil	*Apion ulicis*	Gorse
Grass grub beetle	*Costelytra zealandica*	Grassland
Borer beetle	*Anabium punctatum*	Bush
Manuka beetle	*Pryonota festiva*	Bush
Ground beetle	*Mecodema sp*	Bush
Earwig	*Forficula aricuclaria*	Bush
Shore earwig	*Anisolabis littorea*	Sand dunes
Beetle	*Zorion minutum*	Flowering plants
Large black beetle	*Cilibe otagoensis*	Bush
Sand beetle	*Thelyphassa limbata*	Sand dunes
Rove beetle	*Creophilus sp*	Bush
Eleven spotted ladybird	*Coccinella 11-punctata*	Throughout area
Black beetle	*Philoneis sp*	Bush
Huhu beetle	*Prionoplus reticularis*	Plantations
	Orthenches polita	
	Declana herniane	
	Metacrias strategica	

	Tatosoma topia	
Miscellaneous Orders		
Bush centipede	*Hanseniella sp*	Bush
Ribbon worm	*Nicon aesturariensis*	Estuary
Ribbon worm	*Glycera Americana*	Estuary
Ribbon worm	*Abavenicola affins*	Estuary/Sand
Green anemone	*Isactinia olivacec*	Estuary
Marine isopod	*Isocladus armalus*	Estuary
Order: Araneae		
	Lycosa sp	Scrub
	Lycosa sp	Lagoon
	Lycos hilaris	Sand dunes
	Mynoglenes	Coastal scrub
Jumping spider	*Trite planiceps*	Flax
Orb web	*Araneus atrihastula*	Bush
	Tekella absidata	Bush-Totara
	Undefined species	Bush
	Undefined species	Bush dwelling
Harvestman	*Pantopsalis sp*	
	Neoramia sp (immature)	Bush
	Diaea sp	Sand dunes
	Episinus sp	Coastal scrub
	Allotrochosa schaunislandi	Sand dunes
Orb web	*Eriophora pustulosia*	
	Clubiona huttoni	Bush
	Sidymella sp	Sand dunes
New species	*Agelenidae*	Bush - Totara
	Mynoglenes subdola	Bush
	Pholcomma sp	Bush
	Laperousia blattifera	Bush
Common bush litter	*Teridiidae sp*	
	Clubiona convoluta	Otatara
Undefined species, New Zealand and Chile		Bush
	Dyarcyops orepukiensis	bush
Harvestman	*Pakeha insignita*	
	Phalangium opilio	
Order: Arachnida		
	Lycosa sp undefined	Kilmock bush
	Araneus subcompta	Sand dunes
	Diea ambara	Kilmock bush
	Lycosa sp	Cabbage tree
	Trite planiceps	Flax bush
	Cobweb spiders	Kilmock bush
	Goyenia sp	Kilmock bush
	Aranaeus sp	Sand dunes
	Neoramia sp	Cabbage tree

6.3 APPENDIX 3 - LIST OF BIRD SPECIES RECORDED IN SANDY POINT DOMAIN AND ADJACENT WATERS

Family *Spheniscidae* – Penguins

Yellow-eyed penguin	*Medadyptes antipodes*	An occasional visitor usually when in moult; breeds in Southland coasts.
Southern blue penguin	*Eudyptula minor minor*	An occasional visitor; usually in moult; breeds along the coast.

Family *Procellariidae* – Petrels, Shearwaters and Fulmars

Antarctic Petrel	*Thalassoica antarctica*	Rare visitor

Family *Phalacrocoracidae* – Shags

Black Shag	*Phalacrocorax carbo*	In moderate numbers throughout the year, feeding and resting; nearest breeding ground is Awarua Swamp.
Pied Shag	*P varius varius*	Small numbers, feeding and resting.
Little Shag	*P melanoleucos brevirostris*	Abundant throughout the year; breeds in Awarua Swamp.
Stewart Island Shag	*Leucocarbo carunculatus chalcocnotus*	Good numbers of both bronze and pied phases feed in the estuary throughout the year; nearest known breeding place is at entrance to Bluff Harbour.
Spotted Shag	*Stictocarbo punctatus*	Up to 50 birds at most times of the year.

Family *Ardeidae* – Herons, Egrets and Bitterns

White-faced Heron	*Ardea novaehollandiae*	Resident and breeding on tall trees; up to 220 birds throughout the year; regular mudflat feeders as well as in the ponds and lagoons.
White Heron	*Garzetta alba*	An occasional visitor.
Little Egret	*E garzetta*	An occasional visitor.
Cattle Egret	*Bulbulcus ibis*	A regular visitor to adjacent paddocks.
Australasian bittern	*Botaurus poiciloptilus*	Seen occasionally in swampy areas, lagoons and ponds; breeding; now very rare in Southland due to decreased wetland habitat.

Family *Threskiornithidae* – Ibises and Spoonbills

Glossy ibis	*Plegadis falcinullus*	Small flocks straggling from Australia sometimes use the estuary and environs, remaining for some weeks.
Royal spoonbill	*Platalea region*	An occasional visitor.

Family *Anatidea* – Swans, Geese and Ducks

Black swan	*Cygnus atratus*	Resident and now breeding; moult on estuary; apparently not as common as formerly. Waituna Lagoon, Awarua Bay and Invercargill Estuary are the three principal feeding areas for this species in Southland.
Canada goose	*Branta Canadensis*	Seen occasionally in small numbers.
Paradise shelduck	*Tadorna variegata*	Small numbers appearing again regularly after absence of many years, as waterfowl management encourages re-establishment of this species in Southland; breeding.
Mallard	*Anas platyrhincos*	Resident and breeding; the predominant waterfowl species in the area; common in large numbers through all parts of the estuary.
Grey duck	*A superciliosa*	Resident in small numbers.
Grey teal	*A gibberifrons*	This nomadic species is regularly seen among other waterfowl.
Brown teal	*A chlorotis*	Recorded; extremely rare.
New Zealand scaup	*Aythya novaeseelandiae*	Silver lagoon – rare but apparently increasing.
New Zealand shoveler	*A rhynchotis*	Resident and breeding, moderate numbers.

Family *Accipitridae* – Harriers

Australasian harrier	*Circus approximans*	Resident, breeding and roosting in swamplands.

Family *Phasianidae* – Pheasants and Quails

California Quail	*Lophortyx californicus*	Recorded as resident and breeding but it is quite likely that feral cats have caused the disappearance of this species.
Ring-necked pheasant	*Phasiaanus colchicus*	Not now known to exist and was probably never established on Sandy Point.

Family *Rallidae* – Rails

Marsh crake	*Porzana pusilla*	Resident and breeding in marginal vegetation; wetland habitat essential for survival of this diminishing species is decreasing as land drainage occurs.
Pukeko	*Porphyrio melanotus*	Resident and breeding in moderate numbers, apparently increasing.

Family *Haematopodidae* – Oystercatchers

South Island pied oystercatcher	*Haematopus finschci*	Resident; breeds on adjacent farmland; generally abundant. Seasonal movement of species results in autumn and winter flocks of up to 5,000 birds, feeding in the estuary and environs, which thus play an important part in the population dynamics of this species.
Variable oystercatcher	*Porphyrio melanotus*	Resident and breeding in small numbers, in the black phase of this polymorphic species.

Family *Columbidae* – Pigeons

New Zealand pigeon	*Hemiphaga novaeseelandiae*	Present throughout the year and breeding in the bush; particularly noticeable during the latter part of the winter and early spring.
Shining cuckoo	*Chalcites lucidus*	Generally arrives in late September/early October and may be heard in both bush and pine plantations; breeding.
Long-tailed cuckoo	*Eudynamis taitensis*	Recorded by D Lucas, but it would appear to be a rather unlikely recording.

Family *Strigidae* – Owls

Morepork	*Ninox novaeseelandiae*	Resident and breeding in bush areas; generally an unobtrusive bird but may be heard and occasionally seen in the evenings.
Little owl	*Athene noctua*	Resident and breeding in a variety of habitats.

Family *Charadriidae* – Plovers

Spur-winged plover	*Lobibyx novaehollandiae*	Resident and breeding on adjacent wetland and shingle; uses estuary as feeding ground regularly throughout the year.
Pacific golden plover	*Pluvialis fulva*	Trans-equatorial migrant from its breeding grounds in Siberia and Alaska; summer resident, up to 100 birds using estuary and adjacent wet paddocks.
New Zealand dotterel	*Charadrius obscurus*	Regular visitor outside breeding season, in small numbers; breeds on Stewart Island.

Banded dotterel	*C bincinctus*	Resident and breeding in moderate numbers through the breeding season; in late summer there is a significant increase in numbers as the estuary serves as a staging area for the species prior to its annual migration to northern New Zealand and Australia.
Wrybill	*Anarhychus frontalis*	An occasional visitor from its breeding grounds on Canterbury riverbeds.

Family *Scolopacidae* – Curlews, Snipes etc.

All species listed in this section are trans-equatorial migrants, breeding in central and eastern Siberia and/or Arctic or sub-Arctic North America. A few birds of some species (notably bar-tailed godwit and turnstone) winter in the estuary, but most of the birds arrive in the last week of September and depart in late March for their breeding grounds. The Pacific Golden Plover, already mentioned, also falls within this category.

Long-billed curlew	*Numenius madagascariensis*	Regular summer resident in small numbers; a few birds over winter.
Asiatic whimbrel	*Numenius phaeopus variegates*	A rare New Zealand visitor, recorded in small numbers occasionally.
American whimbrel	*N P hudsonicus*	A rare summer visitor, recorded occasionally.
Asoatoc black-tailed godwit	*Limosa melanuroides*	Rare visitor, recorded occasionally.
American black-tailed godwit	*L haemastica*	Rare visitor, recorded occasionally; this species is rare by world standards.
Eastern bar-tailed godwit	*L lapponica*	Regular summer visitor in numbers of up to 3,500; up to 300 birds over winter.
Greenshank	*Tringa nebularia*	Rare summer visitor.
Siberian tattler	*Tringa beevipes*	Rare summer visitor.
Turnstone	*Arenaria interpres*	Up to 1,000 birds are regular summer visitors, some over winter.
Knot	*Calidris canutus*	Up to 90 birds are regular summer visitors.
Sharp-tailed sandpiper	*C acuminata*	Regular summer visitor.
Pectoral sandpiper	*C melanotos*	Occasional summer visitor in small numbers.
Curlew sandpiper	*C ferruginea*	Regular summer visitor in small numbers.
Red-necked stint	*C ruficollis*	Regular summer visitor, up to 50 in numbers.
Sanderling	*C alba*	Rare summer visitor – one or two seen most years.

Family *Irecurvirostridae* – Stilts		
Pied stilt	*Himantopus leucocephalus*	Resident and breeding in small numbers in estuary environs; numbers increase in late summer as post-breeding seasonal movement takes place.
Family *Laridae* – Gulls		
Southern black-backed gull	*Larus dominicanus*	Resident and breeding on nearby peat swamps; large numbers scavenge at city refuse tip throughout a year.
Red-billed gull	*L scopulinus*	Resident in moderate numbers throughout the year; scavenger at city tip.
Black-billed gull	*L bulleri*	Resident in large numbers throughout the year, with post-breeding increasing in late-summer; scavenger at city tip.
Family *Sternidae* – Terns		
Black-fronted tern	*Childonias albostriatus*	Present throughout the year in two's and three's, with post-breeding increase to 20-30 birds in autumn; nearest breeding area is Oreti River above Oporo.
Gull-billed tern	*Gelochelidon nilotica*	Rare New Zealand visitor from South East Asia; recorded only six times in New Zealand, two of these in New River Estuary and environs.
Caspian tern	*Hydroprogne caspia*	A breeding colony of 70-80 pairs (one of the five New Zealand colonies) has been present on the estuary, probably for many years. Since 1964 the colony has been studied, recorded and chicks branded. Nesting site was always a shellbank in the Woodend arm of the estuary until 1973, by which time this shellbank was overgrown with noxious weeds, and the surrounding mudflats (previously used as loafing areas by the Caspian terns and many other species) overgrown with Spartina grass. A new low shellbank appeared south of the old nesting site about this time, and in 1974 the Caspian terns nested successfully on this new shellbank on their second attempt, the first nests having been washed out by tides. In 1975 three separate attempts were made, but all were unsuccessful due to tides flooding the shellbank, which appeared to be lower than in 1974.

		1975 was the first year since recording started in 1964 that no chicks were raised. After breeding, Caspian terns disperse from the estuary to rivers throughout New Zealand, with only two or three remaining on the estuary and environs until August, when the numbers build up again preparatory to breeding.
Arctic tern	*Sterna macrura*	Rare visitor to New Zealand; of the eight records, one is from New River Estuary.
Easter little tern and White fronted tern	*Sterna striata*	Former resident and breeding on the estuary in a colony of up to 300 pairs. Last bred in January 1969 when there were 504 birds; no attempt at breeding since that date. The greatest recorded number since 1969 is 18 on 11 January 1975.
Family *Alcedinidae* – Kingfishers		
New Zealand Kingfisher	*Halcyon sancta*	Resident and probably breeding in small numbers along certain parts of estuary verge; feeds largely on crabs.
Family *Alaudidae* – Larks		
Skylark	*Alauda arvensis*	Resident and breeding.
Family *Hirundinidae* – Swallows		
Welcome swallow	*Hirundo neoxena*	Seasonal visitor in increasing numbers in autumn and winter; nearest known breeding occurs in Canterbury and Westland; attempted to breed in estuary environs (under bridge on Bluff Road) in 1974; hawks for insects over ponds and lagoons.
Family *Muscicapidae* – Flycatchers		
Fantail	*Rhipidura filiginosa*	Resident and breeding occurs in most parts of the Domain wherever there are trees or tall shrubs; both pied and black phases occur.
South Island Tomtit	*Petroica macrocephala*	Not common, but resident and breeding; with the consolidation of native bush areas, it is hoped that this species will increase.

Family *Sylviidae* – Warblers

South Island fernbird	*Bowdleria punctata*	Resident and breeding in small numbers in scrub at estuary verge. A species truly associated with and dependent upon wetland. There are scattered pockets of fernbirds in various parts of Southland, Awarua Swamp and the nearby estuary areas form the last real stronghold of this species in the district. Land development and burning have greatly reduced the fernbird population; probably extinct in the Domain itself.
Brown creeper	*Finschia novaeseelandiae*	Resident and breeding but not uncommon.
Grey warbler	*Gerygone igata*	Resident and breeding in bush and plantation areas.

Family *Turdidae* – Thrushes

Song thrush	*Turdus philomelos*	Resident and breeding in bush and scrub.
Blackbird	*T merula*	Resident and breeding in bush and scrub.

Family *Prunellidae* – Accentors

Hedge sparrow	*Prunella modularis*	Resident and breeding in shrubland areas.

Family *Motacillidae* – Wagtails and Pipits

New Zealand Pipit	*Anthus novaeseelandiae*	Resident and breeding in open country.

Family *Meliphagidae* – Honeyeaters

Bellbird	*Anthornis melanura*	Common in bush areas; resident and breeding.
Tui	*Prosthemadera novaeseelandiae*	Common in bush areas; resident and breeding.

Family *Zosteropidae* – Silvereyes

Silvereye	*Zosterops lateralis*	Resident and breeding; not uncommon over most parts of the Domain, although sightings tend to be seasonal.

Family *Fringillidae* – Finches

Chaffinch	*Fringilla coelebs*	Resident and breeding in shrubland.
Greenfinch	*Chloris chloris*	Resident and breeding in shrubland and open country.
Goldfinch	*Cardueelis carduelis*	Resident and breeding in shrubland and open country.
Redpoll	*C flammea*	Resident and breeding in shrubland and open country.

Yellow hammer	*Emberiza citronella*	Resident and breeding in shrubland and open country.

Family *Ploceidae* – Sparrows

House sparrow	*Passer domesticus*	Resident and breeding

Family *Sturnidae* – Starlings

Starling	*Sturnus vulgaris*	Resident and breeding, mainly in open country.

Family *Cracticidae* – Australian Bell Magpies

White-back magpie	*Gymnorhina hypoleuca*	The first observation of this bird on Sandy Point was made in 1983; increasing.

6.4 APPENDIX 4 - VERTEBRATES

The following is a list of those fish which have so far been recorded:

Sand flounder	*Rhombosolea plebia*
Yellow-bellied flounder	*Rhombosolea leporina*
Green-backed flounder	*Rhombosolea taperina*
Black flounder	*Rhombosolea novaezelandiae*
Sole	*Peltorhamphus novaezelandiae*
Long-finned eel	*Anguila dieffenbachia*
Short finned eel	*Anguila australis schmidtii*
Lamprey	*Geotria australis*
Yellow-eyed mullet	*Aldrichetta fosteri*
Smelt	*Retropinna retropinna*
Whitebait	*Galaxis maculates* and probably several other *G fasciatus* make up the bulk of the whitebait species.
Brown trout	*Salmo trutta*
Stargazer	*Leptoscopus macopygus huttoni*
Globefish	*Sphiroedes richei*
Red cod or hoka	*Physiculus bachus*

6.5 APPENDIX 5 - MAMMALS

6.5.1 *Rabbit (Oryctalarus cuniculus)*

The first introduction of rabbits into Southland is sometimes erroneously attributed to Sandy Point Domain in 1863. There were, however, earlier introductions in other parts of the province. Be that as it may, the rabbits very quickly made themselves at home in the warm sandy terrain of Sandy Point. Their efforts, combined with that of burning and over-stocking with farm animals, soon reduced much of the area to a waste of moving sand.

The effects of depredations of rabbits continued in gradually lessening degrees right up until about 1940. Since then most of the scars have been revegetated and there is little obvious evidence of past damage.

Today, rabbits are not a significant problem in the Domain.

6.5.2 *Hare (Lepus europaeus)*

Hares are present in Sandy Point Domain, but in quite small numbers. The effect they have appears to be insignificant, although at times they cause damage to newly-planted pine trees.

6.5.3 *Stoat (Putorius erminea)*

This mustelid is present, but nothing is known of its numbers or what effects it has on the wildlife of the area. That could only be ascertained after some study and detailed observation. It is very likely they have some effect on the birds of the Domain, but how much is not known.

6.5.4 *Ferret (Putorius foetidus)*

Sightings of ferrets have been recorded by possum trappers but the evidence would indicate that they are not common. As with the stoat, they probably have some effect on ground dwelling birds. It is probable that both stoats and ferrets also maintain some control on rabbits and hares.

6.5.5 *Hedgehog (Erinaceus europaeus)*

Hedgehogs are present in the Domain, but as with the former mammals, absolutely nothing is known of their abundance or likely effects on the plant and animal life of the area.

6.5.6 *Feral cat (Feliz catus)*

These are the worst predators in the Domain. Their significance in numbers is evidenced by the fact that forty were trapped and destroyed in one year. No doubt ground-feeding birds of all kinds form a significant part of their prey, although on the credit side they probably exert some control over rabbits, hares and rats.

The main problem with feral cats is the fact that their numbers are continually reinforced because of people dumping pet cats at holiday times. However, there appear to be fewer than previously.

6.5.7 *Brush-tailed possum (Trichosurus vulpecula)*

Along with feral cats, the possum is the most serious pest in Sandy Point Domain.

They are mainly restricted to the forested areas and trapping records indicate that they are present in reasonably high numbers.

Their numbers have a distinct effect on the relative abundance of palatable species such as Pseudopanax colensoi and, once a species declines, the browsing effects of a few possums will keep it down.

Over the past years, systematic trapping of the main native forest areas has helped with the regeneration of tree and shrub seedlings.

6.5.8 *Ship rat (Rattus rattus)*

Occurs in bush areas, but its incidence and effect on the other fauna is not known. It is possibly more common than is generally realised as one opossum trapper reported trapping 51 in the winter of 1986.

6.5.9 *Dolphin**

Large schools of dolphin (up to hundreds) have been recorded as sometimes entering the estuary. It is presumed that they are either the Dusky dolphin or Hector's dolphin, but no positive identification has been made. The latter would appear to be more likely.

6.5.10 *Fur seal* (Arctocephalus forsteri)*

Individual New Zealand Fur Seals occasionally enter the estuary and have been recorded as swimming up either the Waihopai or Oreti Rivers.

**Bradley in Southland Catchment Board's comments on the Management Plan 31 August 1989.*

6.6 APPENDIX 6 - SPORTS AND RECREATION CLUBS

6.6.1 *Motor Sports*

6.6.1.1 *Southland Motor Cycle Club*

In the early 1930's, the Southland Motor Cycle Club commenced having annual races on Oreti Beach, the wide flat sands of which are ideal for speed trials.

In 1948, the Club took up an area of land, south of Dunns Road and along what is now known as Pit Road, for the purposes of forming a scramble track.

During 1966, a 500 metre speedway track was formed.

In 1977 Council resolved that the disused gravel pits north of Dunns Road near Oreti Beach be approved for trail riding.

A new building was erected in 1980 to adjoin the existing building at the time.

The track was restored in 1998.

6.6.1.2 *Southland Sports Car Club*

The Southland Sports Car Club has been involved in the Sandy Point area since 1949, when land for a circuit was granted to them by the Invercargill City Council.

Progress at first was slow, and it was not until 8 November 1953 when the first working bee by Club members was held to prepare for a motor racing circuit. At that time, Domain Road did not exist and there was a very rough track to gain access to the venue from Dunns Highway past the flax mill at the time.

Originally it was proposed to build a circuit one mile in length. The success of the Southland Centennial Road Race at Ryal Bush in 1956 persuaded the Club to amend and accelerate plans to build a circuit 1.6 miles in length, so that it would qualify for international competition. Money was raised by way of gifts and debentures to build the sealed circuit and this was opened for its first race on 17 November 1957.

The first "international" race was held on 6 February, 1958. The early meetings were not as profitable as had been hoped and by 1959, the Club owed $32,000 with $18,000 being required within four years. The initial seal was far from satisfactory and most cars spent more time off circuit than on it because of the smooth river gravel stones that had been used.

A Board of Control was formed and further capital was raised. A tragic accident at the 1966 event killed two spectators and a driver. This led to a change in track design that eliminated the accident venue and extended the circuit to its present length and configuration.

In 1980 international races were abandoned and they did not resume in a slightly different form until 1990. Since that time they have been held on at least an annual basis and have diversified their interest.

Today the circuit is used not only for motor racing (car, motorcycle and drags) but also driver training (private, professional student) and other forms of motor sport. Other events such as cycling and triathlons are also held at Teretonga Park. Its use has increased greatly over the years and it is in some form of use most weekends.

Since 1991 a continuous improvement has been made to the circuit, facilities and grounds and, currently, the circuit is internationally licensed to International Grade 3 and National Grade 1, which covers all current Motorsport New Zealand recognised vehicle categories.

At the present time the circuit is highly regarded in both Australia and New Zealand for its layout and safety features, which have resulted in the second highest lap speed record of any permanent motor racing circuit in both countries.

Areas of Teretonga Park have been subleased by the Club for grazing in previous years.

The NZ Grand Prix was first held in Teretonga in January 2001.

The control tower was replaced in 2010.

6.6.1.3 *Southland Stock Car Drivers Association Inc.*

Stock car racing commenced in 1963. At that time the Association used the track operated by the Southland Motor Cycle Club.

From a safety point of view, that proved to be unsatisfactory and in 1976, the Southland Stock Car Drivers Association was granted the use of 7.25 ha immediately to the south of Teretonga. There, the Association has constructed its own racing track and clubrooms.

The area is known as Riverside Speedway.

6.6.1.4 *Invercargill Kart Club Incorporated*

Go-kart racing at Sandy Point commenced about or just prior to 1960 when the Club took up 5.47 ha of land along Pit Road. In 1962, the 500 meter racing track was sealed and the Club became well established. Over the years, the track and facilities have since been upgraded and the track lengthened.

Events such as the Southern Series and the South Island Champs have been held there.

6.6.2 *Aquatic Sports and Activities*

6.6.2.1 *Oreti Surf Life Saving Club Incorporated*

This was the first recreational organisation to become established on the Domain. It was formed in 1929 and, except for a two-year recess during World War II, this Club has actively patrolled Oreti Beach ever since.

Records show from 1984-1992, members of the Oreti Surf Life Saving Club were named as Honorary Beach Wardens.

6.6.2.2 *Southland Power Boat Club Incorporated*

This Club has its headquarters on the banks of the Oreti River, approximately 1km south of the Dunns Road Bridge. Along with the Rowing Clubs and the Water Ski Club, this Club has a set section of river allocated for its use.

6.6.2.3 *Invercargill Yacht Club*

The Invercargill Yacht Club has an interesting history as it used the waters of the New River Estuary for over one hundred years.

Originally named the Star Sailing Club, it had its headquarters by the old Stead Street Wharf. After a violent storm wrecked its clubrooms and slipway in 1956, the Club moved to Sandy Point Domain.

The site was chosen on the banks of the Oreti River, just north of the Dunns Road Bridge, where it purchased an old scout den.

Continuing siltation eventually made the river too shallow and so the Club vacated Sandy Point some time about 1976, transferring its activities to Awarua Bay.

The building is now occupied by the Jellicoe Sea Scouts.

6.6.2.4 *Invercargill Rowing Club*

This Club also originally started on the Waihopai River and has a long history.

It was established in 1897 and, like the Yacht Club, transferred to Sandy Point following the wrecking of its clubrooms by a disastrous storm in 1957.

Its clubrooms are a little further south from the Power Boat Club.

The Southland Rowing Association had its headquarters alongside that of the Invercargill Rowing Club.

6.6.2.5 *Waihopai Rowing Club*

Originally the Invercargill Railway Rowing Club, this Club was formed in 1887. At first, membership was confined to railways employees, but it soon had to open its membership to all comers.

The Club eventually transferred to Sandy Point in 1967, where a clubhouse was built, and is situated immediately south of the Invercargill Rowing Club.

In 1985 changing rooms were built to accommodate an increasing number of women members. As Club membership increased, the need for more space for storage and Club facilities arose, resulting with an extension to the existing building in 1995 for that purpose.

6.6.2.6 *Southland Water Ski and Runabout Club*

The Southland Ski and Runabout Club was formed in 1960 and is located near the mouth of the Oreti River.

The clubrooms are actually situated somewhere in the vicinity of where McLennan's cottage stood.

6.6.3 *Land Based Activities*

6.6.3.1 *Southland Clay Target Club*

This Club was formed in 1952 and moved to Sandy Point in 1965. It occupies an area of 14.76 ha at the southern end of Pacific Avenue.

6.6.3.2 *Rugby Southland Incorporated*

Frequent closures of City fields caused the Southland Rugby Football Union to look at the possibility of establishing some all-weather fields at Sandy Point.

In 1966, the Southland Rugby Football Union obtained a lease of 16.6 ha of land immediately south of Dunns Road and just beyond the Motor Camp. The land is known as Oreti Park.

They have developed a number of rugby fields and the erection of a semi-covered stand, capable of seating 600 visitors. Lighting was installed at Les George Oval. Lights and poles were relocated from Mataura Rugby Club.

Since becoming established, these fields have been a tremendous boom to rugby players.

6.6.3.3 *Southland Equestrian Centre*

Initially known as the Southland Pony Club and the Southland Area New Zealand Horse Society, this organisation was formed in 1969.

They have 11.41 ha along the eastern side of the southern portion of Pacific Avenue where gymkhanas, training schools and other equestrian activities are carried out.

Over the years buildings have been placed on the site and soil and ground conditions have been upgraded.

6.6.3.4 *Invercargill Pistol Club*

The Invercargill Pistol Club was established in 1962 and, after using the Invercargill Smallbore Rifle Range in Turnbull Thomson Park for some years, the Club in 1970 then leased an area of land near the old gravel pits in the northern portion of the Domain.

It has 50 meter and 25 meter ranges and the area is also used by both the Police and Army for small arms practice.

6.6.3.5 *Southland Golf Club Incorporated*

Established in 1969, when a lease on 108.3 ha of waste land, dune and ex gravel pit, between the fore-dune of Oreti Beach and Pit Road, was obtained. From 1969-1972, nine playable holes were developed, as well as facilities, amenities and the club house. Since then, further development has been ongoing, with the establishment of an 18 hole course and its features.

The club now leases 66 ha.

6.6.3.6 *Southland Rodeo Association*

In 1978 a move was made to Sandy Point, where a complete new complex was developed and the Club has since become well established. The New Zealand Nationals were held there in 1984.

6.6.3.7 Georgetown Scouts

In 1968, Georgetown Scouts was first granted a lease at Fosbender Park. At Mauritangi Campsite there have been many group camps and functions.

Native plantings have been implemented by the Parks Division and the Scout Group over the years.

6.6.3.8 *Southland Rugby League*

The Southland District Rugby League Association currently use Sandy Point Domain sports grounds on a seasonal basis.

6.6.3.9 *Southland Football Association*

The Association started leasing the grounds from 1970. In 1999 the old hockey grounds were developed into four new fields of 90 x 55. These fields have been used for various tournaments and competitions over the years.

6.6.3.10 *Jellicoe Sea Scouts*

This Scout Group occupies the area previously used by the Invercargill Yacht Club. In 1979 the Invercargill Yacht Club sold its clubhouse to the Jellicoe Sea Scouts, subject to the demolition of the old rear portion of the building being carried out.

6.6.3.11 *Southland Mountain Bike Club*

Mountain bike trails have been constructed over the past years and are maintained by the Southland Mountain Bike Club. These are mostly used by general public although the Club does hold some regular events throughout the winter months.

6.6.3.12 *Southland Orienteering*

Many areas of Sand Point Domain have been used for school, club and public orienteering events over the years.

6.6.3.13 *Horse Trekkers*

Various Clubs including Birchwood Hunt Club, Mount Linton Endurance Riding Club and Southland Trail and Pleasure Horsemen use specific areas of Sandy Point Domain for horse trekking. The commercial business of Rakiura Rides has leased land along Sandy Point Road from 2006.

6.6.3.14 *Southern Paintball Club*

In 1995 approval was given for Southern Paintball to lease a portion of Fosbender Park and were relocated to the north side of Links Road in 2010 and are now leasing and area 5.4415ha.

6.6.3.15 *Southland Archery and Bowhunters Club Inc*

The Invercargill Archery Club was previously located at Turnbull Thomson Park. In 1991 the name of the Club was changed to Southland Archery and Bowhunters Club Inc.

In 1997 the lease for Turnbull Thomson Park was cancelled and a lease for a site at Sandy Point Domain was issued.

6.6.3.16 *Southland Landrover Club*

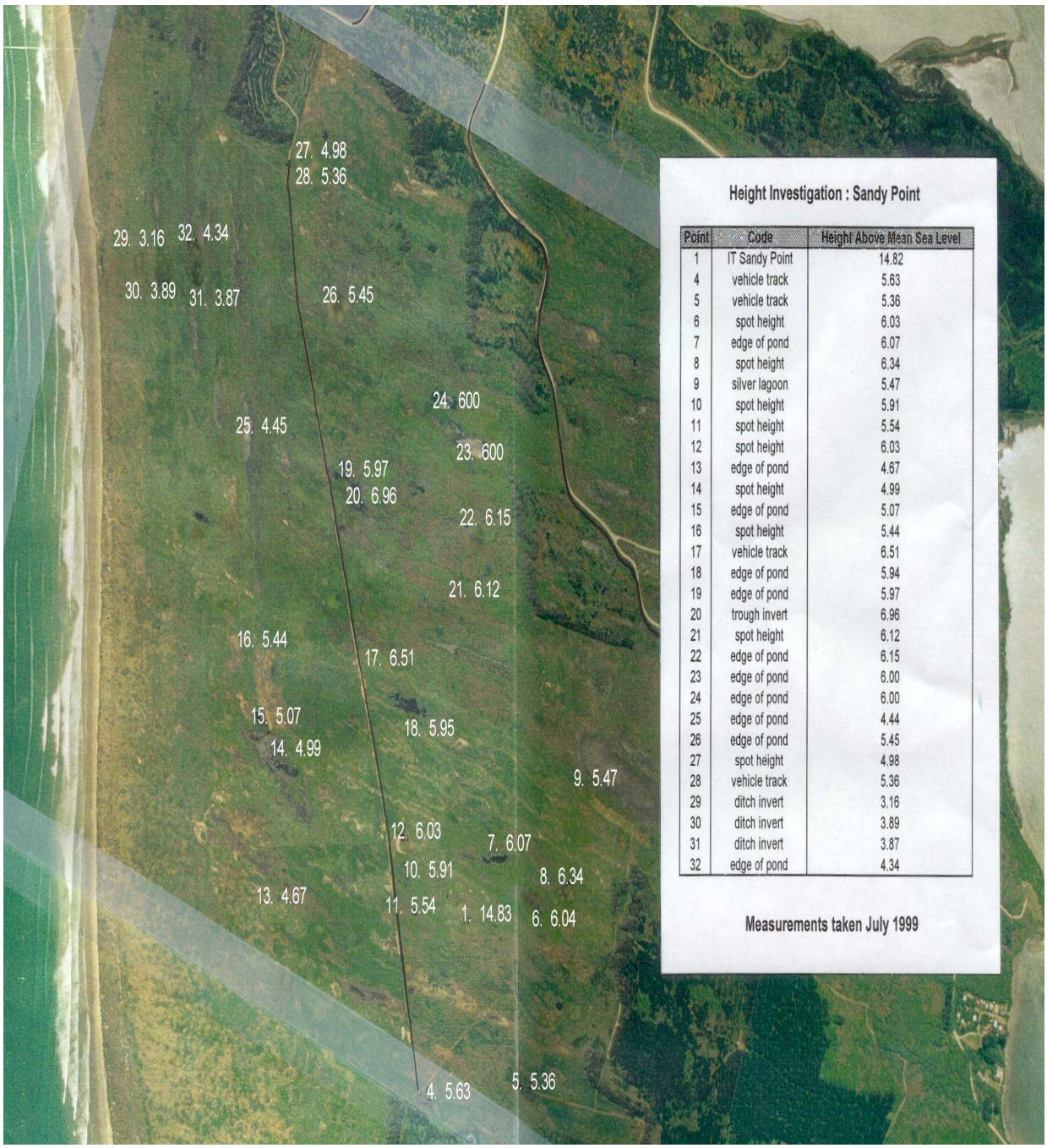
This Club started leasing an area at Sandy Point Domain from 1998.

In 2003 the leased area was transferred from an area west of Teretonga to the area east of the Mauritangi Scout Camp, Fosbender Park.

6.6.3.17 *Southland Sled Dog Association*

The Southland Sled Dog Association has been a regular user of Fosbender Park, Sandy Point over the years. Many training runs and events have been held on the sled dog tracks which have been developed there.

6.7 APPENDIX 7 - SPOT HEIGHTS

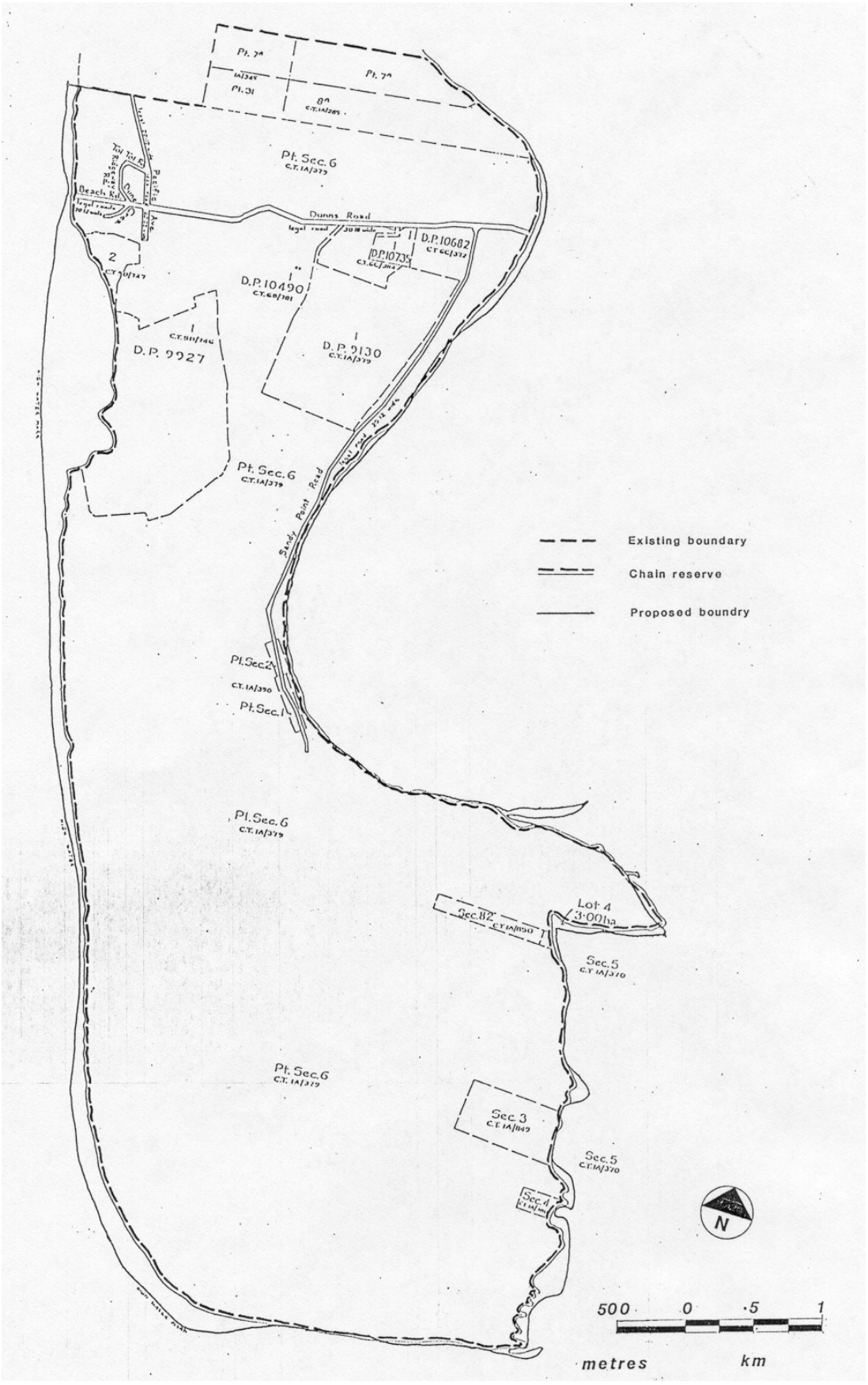


Height Investigation : Sandy Point

Point	Code	Height Above Mean Sea Level
1	IT Sandy Point	14.82
4	vehicle track	5.63
5	vehicle track	5.36
6	spot height	6.03
7	edge of pond	6.07
8	spot height	6.34
9	silver lagoon	5.47
10	spot height	5.91
11	spot height	5.54
12	spot height	6.03
13	edge of pond	4.67
14	spot height	4.99
15	edge of pond	5.07
16	spot height	5.44
17	vehicle track	6.51
18	edge of pond	5.94
19	edge of pond	5.97
20	trough invert	6.96
21	spot height	6.12
22	edge of pond	6.15
23	edge of pond	6.00
24	edge of pond	6.00
25	edge of pond	4.44
26	edge of pond	5.45
27	spot height	4.98
28	vehicle track	5.36
29	ditch invert	3.16
30	ditch invert	3.89
31	ditch invert	3.87
32	edge of pond	4.34

Measurements taken July 1999

6.8 APPENDIX 8 - CADASTRAL MAP



6.9 APPENDIX 9 - NOISE MANAGEMENT PLAN - TERETONGA PARK

Noise Management Plan
Teretonga Park

1.0 Introduction

This document sets out a plan to manage noise emissions from Teretonga Park, a motor vehicle race track that is widely used for motorsport and other related activities throughout the year. This plan has been prepared in consultation with an acoustic consultant. The plan contains a set of objectives, a description of the maximum permitted noise levels, the means by which these limits will be complied with, monitoring procedures, complaint procedures, public notification of events and review provisions. The underlying theme is the general duty to avoid unreasonable noise, as provided by section 16 of the Resource Management Act 1991.

2.0 Objectives

This Management Plan has the Following objectives;

*To manage the facilities in a manner consistent with the resource consent granted on **(date) and any other relevant legislation or conditions imposed by consent authorities.** All events on the site are subject to the provision of the Noise Management Plan.*

To establish priorities for the reductions in off-site emissions of noise through improved design and use of noise-mitigating structures and facilities and by the enforcement of in-house MotorSport New Zealand rules regarding maximum permissible vehicle noise levels.

To maintain an effective and relevant Noise Management Plan by periodical review and consultation so that the contents of the Plan remain appropriate for all parties.

3.0 The Site and Actives

The Teretonga Park Motor Race Circuit is situated on land on the Sandy Point Recreational Reserve and fronts onto Sandy Point Road. The site is used for motor sports, driver training, product testing and as a sporting and special events facility.

Noise from the site has been assessed on a number of occasions over a period of 18 months. The principal existing noise sources and those likely in the foreseeable future are identified as,

Motor Racing
Driver Training
Vehicle Testing
Public Address System

Apart from the public address system, all other noise sources are related to vehicles using the Teretonga Park circuit.

4.0 Noise Limit's

The noise conditions imposed when the consent was granted on **(date)** (as modified on appeal) are:

Noise from activities at Teretonga Park shall, at all times, be managed so that the following noise limits are not exceeded:

Category	L10	Lmax	No of days
Category A	75 dB(A)	90 dB(A)	20 days
Category B	65 dB(A)	80 dB(A)	80 days
Category C	55 dB(A)	75 dB(A)	Unlimited

(i) The number of days allocated to each category is not to be exceeded at the notional monitoring sites.

(ii) The sound levels for each category set out above are not to be exceeded (during the hours set out below) at or within the boundary of any existing site zoned residential, or at or within the notional boundary (20 metres from dwelling) of any rural dwelling. In the case land zoned industrial or commercial the foregoing provision shall apply except that the use shall be conducted so that the maximum sound levels for each category of day are not exceeded within the notional boundary (20metres from existing buildings excluding the Teretonga Park Clubrooms) of existing buildings.

(a) **Category A Days**
There shall be no more that 20 Category A days in any twelve month period of which no more than 10 days shall be a Sunday or Public Holiday

Between the hours of 9.00am and 9.00pm, the following sound levels shall no be exceeded:

75 dB(A) L10
90 dB(A) Lmax

At all other times sound levels shall not exceed 45dB(A) L10 and 65 dB(A) Lmax

(b) **Category B Days**
There shall be no more that 80 Category B Days in any twelve-month period of which no more than 20 days shall be Sunday or Public Holiday.

Between the hours of 9:00am and 7:00pm (provided that on two days per year an endurance event may continue until 10:00pm), the following sound levels shall not be exceeded:

65dB(A) L10
80dB(A) Lmax

At all other time's sound levels shall not exceed 45 dB(A) L10 and 65 dB(A) L_{max}

(c) **Category C Days**
There are no restrictions on the number of Category C Days. The following sound levels shall not be exceeded;

(i) 9:00am to 10:00pm Monday to Saturday; 55 dB(A) L10 and 75 dB(A) Lmax

(ii) At all other times; 45 dB(A) L10 and 65 dB(A) Lmax

The public address system shall comply with noise levels for Category B

(d) **Exception**
On not more than six days in any twelve month period the sound levels may exceed (between the hours of 10:00am and 4:00pm) the maxima specified for a Category A Day, provided that those sound levels are not exceeded for a period of not more than one hour on any one day.

5.0 **Noise Management**

Noise is an acoustic phenomenon and when generated at source with sufficient energy has the ability to propagate widely into the surrounding area. The principle of noise control is **noise control at source**, which implies the need to adopt practical solutions identified above, the prime requirements is for all track users to use an effective exhaust silencer to limit noise emissions. Further treatment of air inlets and engine attachments may be required in some cases to reduce noise. It is the policy of the track management to require all users to fit and maintain noise suppression equipment so that maximum noise emission limits imposed by MotorSport New Zealand are adhered to.

In order to conform with the general duty to avoid unreasonable noise, track management and race officials shall enforce trackside noise limits for all motorsport activities that are consistent with the New Zealand Manual of Motorsport issued by MotorSport NZ. For races, a Lmax of 95dB(A) is specified for a point 30 metres and at right angle from the edge of the track where the vehicle is at maximum power. For all other events, an effective exhaust muffler is required to reduce noise emissions to an environmentally acceptable level. This provision will not, however, apply to the exception referred to under item 4(d) above, which is for promotional purposes and will be infrequent and of short duration.

A further means of limiting noise in the surrounding area is the effective use of barriers and screens to deflect acoustic energy. The use of advertising signs as acoustic barriers has considerable potential to assist in limiting noise emissions from the site.

Southland Sports Car Club and Teretonga Park management will ensure noise performance standards for the existing situation are met through a combination of enforced vehicle noise limits and judicious placement of advertising signs/hoardings and other structures deemed necessary. As part of the review of the noise management plan (item 8.0 below), the best practical option for further reducing noise limits will be examined in the future and further reductions of noise emissions will be sought based on any new on-vehicle technological developments and opportunities for further noise suppression structures around the track perimeter. In particular, options for further reducing vehicles exhaust noise emissions and further investment in noise-reducing barriers will be examined, and decisions made based upon the best practical option for the control of noise.

The design and placement of barriers to deflect sound away from sensitive locations will be finalised in the engineering design and layout of the proposed track expansion. By way of an example, a 3.5 metre high barrier with a superficial mass of 18 kg/m2, placed at 10 metres from the source (ie. The track centre line) will provide for a reduction (potential barrier correction) at 60 meters from source of 15.2 dB for a point source, and about 12 dB for a line source. It is natural that the acoustic barrier effect reduce with distance and for the above example re-calculated for a receptions point at 160 metres, a potential barrier reduction of 14dB is estimated. During the development of the engineering plan for track construction, barrier placement criteria will be developed based on distances to nearest residential and industrial/commercial boundries, and on the resource constraints which will determine size and materials used in barrier construction.

Further noise management is to be achieved through the judicious placement and control of the public address loudspeakers. Sound levels from this source are not to exceed Category C noise limits and careful placement and control of the speakers will limit noise from this source at the relevant off-site boundaries.

The day-to-day responsibility for noise management shall rest with the **Clerk of Course** during race meetings and the **Track Manager** at all other times. In setting priorities for track-side improvements, the Track Management shall have to regard to the need to examine the acoustical effects of advertising signs and other structures, and shall make the best practical use of existing and proposed new signage to reduce noise emissions from the site.

At six monthly intervals the track management shall publicly notify in a local newspaper its programme of events for the following 12 months. The programme shall set out the type of events, their duration, and the dates which will be nominated as Category A, Category B, and Category C days. The programme shall also specify the dates (if any) on which events will be held to which the exemption from noise limits will be held. A list of scheduled events for the next 12 months is attached to this plan.

6.0 Noise Monitoring

Periodic monitoring of noise from activities at Teretonga Park is required to demonstrate compliance with the relevant noise limits. In order that there is consistency in the monitoring the following **Noise Monitoring Programme** shall be adhered to;

Noise Monitoring Programme

Monitoring of L_{MAX} and L_{10} noise levels shall take place twice annually for each of the category A, B, or C type events. Condition 2(b) of the resource consent requires results of noise monitoring to be provided to the Council every three months as well as upon being requested by the Environmental Manager of Invercargill City Council. At the conclusion of three monthly periods during which there has been no monitoring, it shall be sufficient compliance with condition 2(b) of the resource consent for the consent holder to notify Council accordingly (but this shall not relieve the consent holder of the obligation to carry out monitoring twice annually for each category of event, as specified above).

Days on which monitoring takes place shall be selected at random unless monitoring of certain events is specified by the Environmental Manager of Invercargill City Council (or his/her nominee). Monitoring shall be in accordance with NZS6801:1991 "Measurement of Sound" and shall take place in accordance with the conditions of consent at, or within, the boundary of any existing site zoned residential or at or within the 20 metre notional boundary of any rural dwelling or industrial building on sites zoned for industrial use, excluding the Southland Sports Car Club clubrooms. Subject to the express provisions of the resource consent, noise levels are to be assessed in accordance with NZS6802:1991 "Assessment of Environmental Sound", excepting the application of paragraphs 4.2.1 and 4.2.2 "Limits of Acceptability" of that Standard.

Without prejudice towards the identification of more suitable sites, the currently proposed noise monitoring sites are:

(1) At the eastern end of the Dunns Road bridge over the Oreti River.
(2) Southland Power Boat Club boat ramp.
(3) Entrance to rugby fields on the western side of Teretonga Park.

On any scheduled monitoring day, the monitoring shall be conducted for a period of not less than 15 minutes, and shall include monitoring of a representative range of individual events held on that day.

It is intended that monitoring be conducted in consultation with an acoustic consultant. In the initial stages elementary training by a suitably qualified person will be given in the monitoring of sound levels in the local environment, the provisions of the relevant New Zealand Standards, and in the recording of results. In any event, monitoring must be undertaken in accordance with relevant Standards.

7.0 Complaint Procedures

Within the framework of the provisions of the Resource Management Act 1991, a suitable procedure exists for the general public to seek action if they are of the opinion that noise from the site exceeds a reasonable level. Without limiting the rights of any individual, a "reasonable level" is taken here are meaning the noise levels, taken at the appropriate time and location, not exceeding the maximum noise levels specified above.

Without limiting the rights of any person or any Consent Authority, any person who is of the opinion that noise levels emitted from the site exceed a reasonable level, may register a complaint with the Environmental Manager (or his/her nominee) of the Invercargill City Council. The City Invercargill Council shall record the time of the complaint, the address of the complainant, and a description of the type of noise. On receiving such a complaint the City Council may notify as soon as practical the Clerk of Course or Track Manager as to the complaint time and description. The Clerk of the Course and/or the Track Manager shall investigate the complaint and ascertain the cause. Within 72 hours of receiving such a complaint the Clerk of the Course or the Track Manager shall respond in writing explaining to the Environmental Manager, as far as can be ascertained, the likely cause of the noise and action taken, if any, to prevent a recurrence.

8.0 Review of Noise Management Plan

Of key importance in the successful operation of this Management Plan is the need for its provisions to remain practical and reasonable. For this reason the Consent Holder and the Council are to reassess the Noise Management Plan every two years.

Every two years the Consent Holder and the Council shall reassess the Noise Management Plan and consider the results obtained from representative monitoring with a view to ensuring that the best practical options are being pursued to avoid, mitigate, or remedy and adverse effect arising from noise emissions at Teretonga Park. The opportunity to reassess the effectiveness of the noise monitoring programme also exists.

Condition 4 of the Resource Consent includes noise performance standards which will apply from (and including) the ***(date)*** unless the consent holder is successful in an application to change any of those levels pursuant to section 127, Resource Management Act 1991. Such application is to be lodged no later than ***(date)*** provided however that the club will not be entitles to seek a change that would permit noise levels above those applying up to ***(date)***, as set out in condition 2 of the Consent. In the event of an application being lodged as provided for above, the noise performance standards applying up to ***(date)*** shall continue to apply until the application is finally determined.

Signed…… Date……..

for **Consent Holder**