Christchurch District Plan
Site of Ecological Significance

Site Significance Statement

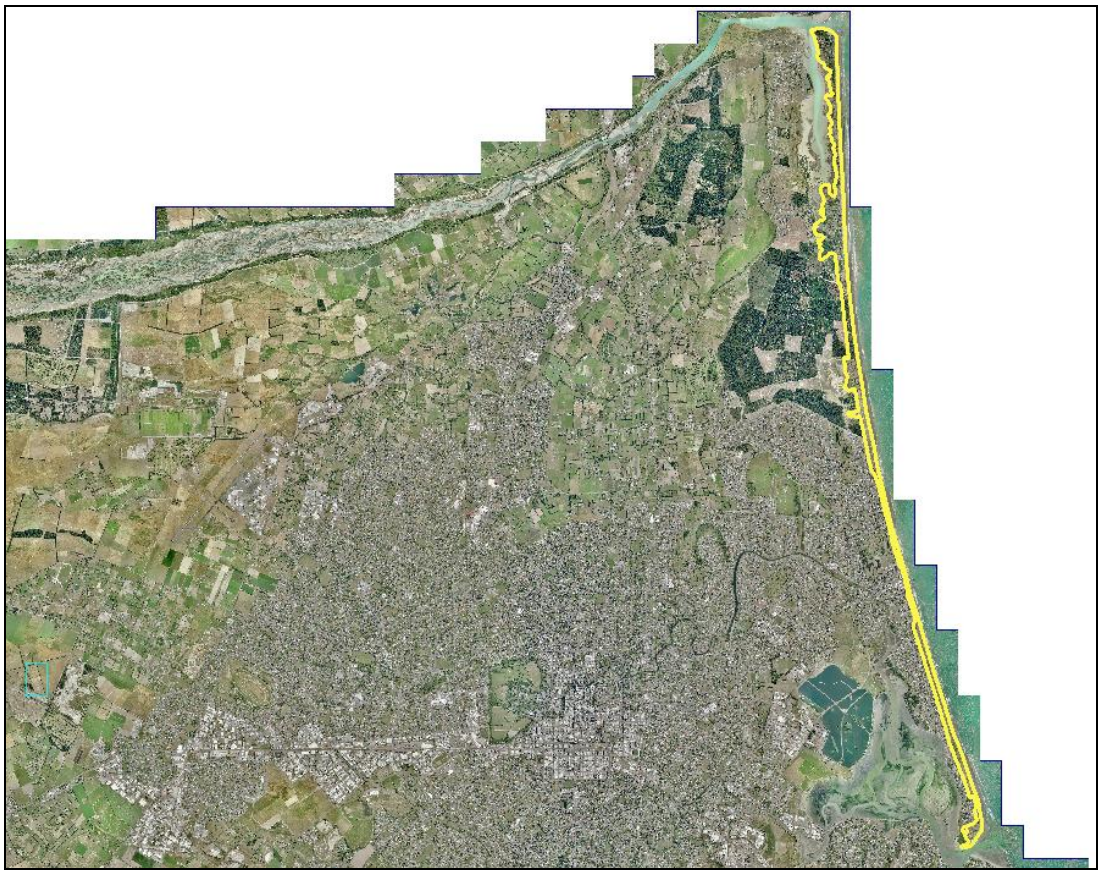
Site name: Christchurch Coastal Strip

Site number: SES/LP/6

Summary of Significance:

The Christchurch Coastal Strip SES supports both remnant and planted indigenous plant communities that are representative of the Low Plains Ecological District, and supports several species of flora and fauna that are either nationally threatened, at risk or uncommon.

Site Map (Refer Appendix 1)



Additional Site Information

Central point NZTM: N5190679, E1576722

Area of SES (ha): 387.21ha

Site Description

The site is composed of the beach, coastal dune and back-swamp systems containing a mosaic of remnant native plant and animal populations, significant areas of fore and rear-dune re-vegetation using locally sourced indigenous plant species, and roosting and nesting sites for threatened native bird species.

Extent of Site of Ecological Significance

The SES spans a distance of approximately 19 km from the Mouth of the Waimakariri River to the tip of the South Shore spit. The SES varies in width across this length as dictated primarily by the width of dune system, and also by the location of discretely significant areas within the SES (e.g. natural and/or constructed back-dune wetlands and ponds, remnant and significant planted indigenous coastal plant communities). Maps showing the extent of the Christchurch Coastal Strip SES are included as Appendix 1.

Assessment Summary

The Christchurch Coastal Strip SES has been evaluated against the criteria for determining significant indigenous vegetation and significant habitat of indigenous fauna listed in Appendix 3 of the Canterbury Regional Policy Statement (Environment Canterbury, 2013) (see below) referring also to the Wildland Consultants (2013) Guidelines and advice from the relevant Specialist Ecologist Groups. Under these criteria the site is ecologically significant because it meets the representativeness (criteria 1 and 2), rarity/distinctiveness (criteria 3, 4 and 5), and ecological context criterion (criteria 8).

Assessment against Significance Criteria

Representativeness

1. ***Indigenous vegetation or habitat of indigenous fauna that is representative, typical or characteristic of the natural diversity of the relevant ecological district. This can include degraded examples where they are some of the best remaining examples of their type, or represent all that remains of indigenous biodiversity in some areas.***

The site is significant under this criterion.

The site contains some of the last remaining degraded examples of habitat of indigenous fauna that are representative and typical of the natural diversity of this part of the Canterbury coastline within the Low Plains Ecological District.

North of Heyders Road, remnant akeake *(Dodonaea viscosa)*, tauhinu *(Cassinia leptophylla), NZ flax/harakeke (Phormium tenax)* are conspicuous along the dunes, with manuka *(Leptospermum scoparium)* and marsh ribbonwood *(Plagianthus divaricata)* along the western edge of the dunes. Near the end of the Brooklands Lagoon spit ngaio *(Myoporum lateum)* seedlings are now regenerating in the vicinity of the last remaining ngaio tree that recently died.

Native coastal forest and shrub-land restoration plantings dating from the early 1990s to present are scattered along the coastal dune (including back dunes) from the mouth of the Waimakariri River in the north to just south of the Spencer Park Surf Lifesaving Club.

From the end of Aston Drive south to the end of the South Shore spit, locally sourced native coastal forest restoration plantings that are representative of the natural diversity of the Canterbury coast within the Low Plains Ecological District are now starting to dominate the back-dune systems throughout much of this length. These plantings are typified by semi-mature dense plantings with full canopy closure (e.g. opposite Thompson Park, Mountbatten Street, Beatty Street, the south end of the spit and numerous other smaller pockets), connected by more sparse plantings and natural regeneration within a matrix of introduced marram grass. Vascular plant species identified during a rapid survey of this site by the Project Ecologist in July 2014 are listed in Appendix 2.

On the foredunes, at least 11 areas of local native sand binders that are representative of the natural diversity of the Canterbury coast within the Low Plains Ecological District have been established and have formed dense swards. These are listed in Appendix 3 and were ground-truthed by the Project Ecologist and the CCC Senior Coastal Ranger in June 2014, and subsequently measured by Coastal Ranger team in July 2014 to provide respective area coverage of each site.

2. Indigenous vegetation or habitat of indigenous fauna that is a relatively large example of its type within the relevant ecological district.

The site is significant under this criterion.

Pingao *(Ficinia spiralis)* dominated restoration plantings along the fore-dune between Heyders Road and the Spencer Park Surf Lifesaving Club are likely to represent the largest area of native dominated fore-dune vegetation in the Low Plains Ecological District[1].

Spinifex *(Spinifex sericeus)* plantings along the fore-dune south of New Brighton are likely to represent the largest area of spinifex fore-dune vegetation in the Low Plains Ecological District[1].

[1] Discussion with Jason Roberts, Senior Ranger – Field Delivery, Coastal & Plains Ranger Team, Christchurch City Council, 11th July, 2014.

Rarity/Distinctiveness

3. Indigenous vegetation or habitat of indigenous fauna that has been reduced to less than 20% of its former extent in the Region, or relevant land environment, ecological district, or freshwater environment.

The site is significant under this criterion.

The site is significant under this criterion. Lloyd *et al.* (2013) identify that *"any indigenous vegetation on the Canterbury Plains"* meet this Rarity/Distinctiveness criterion. Coastal vegetation has been reduced to less than 20% of its former extent in the Low Plains Ecological District. The Threatened Environment Classification reports that less that 10% of indigenous cover remains in the Low Plains Ecological District (See Walker *et al.* 2007; Lloyd *et al.* 2013).

4. Indigenous vegetation or habitat of indigenous fauna that supports an indigenous species that is threatened, at risk, or uncommon, nationally or within the relevant ecological district.

The site is significant under this criterion.

The site contains the threatened red katipo spider *(Latrodectus katipo)* (Patrick 2002).

The site supports a foredune specialist moth (Agrotis ceropachoides) which is described by Patrick (2013) as being uncommon in the Low Plains Ecological District

Large areas of pingao *(Ficinia spiralis)* planting have been established on the fore-dunes between the end of Heyders Road and the Spencer Park Surf Lifesaving Club, and elsewhere throughout the SES (Refer Appendix 3). Pingao is listed as At Risk/Declining under the Department of Conservation Threat Classification System (de Lange *et al.* 2012).

A number of other threatened species have been recorded from the coastal strip between the mouth of the Waimakariri River and the South Shore spit as identified by McCombs (2003), including:

Common Name	**Botanical Name**	**Threat Status**
Sand fescue	*Poa billardierei*	At Risk/Declining
Sea sedge	*Carex litorosa*	At Risk/Declining
Milkweed	*Euphorbia glauca*	At Risk/Declining

Occurrences of these species were subsequently confirmed during field visits with the CCC's Senior Field Delivery Coastal Ranger (See also Appendix 3).

The site contains populations of common skink (*Oligosoma polychroma)* and McCanns skink *(O. maccanni)* throughout the length of SES[2]. Although Hitchmough *et al.* (2013) list both species as Not Threatened under the NZ Threat Classification System, the common skink is a cryptic species complex, and this classification refers to one described clade only (*O. polychroma* Clade 1). Of the four un-described clades, Clade 4 and Clade 5 occur in the Low Plains Ecological District (see Liggins *et al.* 2008), and are both described by Hitchmough *et al.* (2013) as being At Risk, where their total area of occupancy is estimated to be in excess of 10,000 ha, but with a predicted decline of 10-70% across their range. Common skinks were sighted by the Project Ecologist in several locations along the coastal strip in July 2014.

Threatened/Nationally Vulnerable (D1/1) (Robertson *et al.* 2012) Banded Dotterel *(Charadrius bicinctus bicinctus)* regularly nest above the high-tide line towards the northern end of Brooklands Lagoon spit.

At Risk/Declining (B1/1) (Robertson *et al.* 2012) White-fronted Tern *(Sterna striata striata)* regularly roost along the New Brighton foreshore approximately 150 m north of the pier (regularly 80 birds), and approximately 50 m north of the end of Bowhill Road (regularly 40 birds) (Roberts *pers comms*)[2].

A Threatened/Nationally Vulnerable species (Robertson *et al.* 2012) White-flippered Penguins *(Eudyptula minor albosignata)* are known to nest in the sand dunes at four active sites (Roberts *pers comms*)[2]. Accordingly, the penguin louse *(Austragoniodes waterstoni)* also occurs on and is endemic to these penguins (Refer Pawson and Emberson 2000) and therefore shares at least the same, if not heightened threat status of the White-flippered Penguins.

5. The site contains indigenous vegetation or an indigenous species at its distribution limit within Canterbury Region or nationally.

The site is significant under this criterion.

The dune system along the Christchurch coastline is the southern limit for spinifex *(Spinifex sericeus)*, where the last known natural plant was recorded in 1944 (Bergin 2011). However this species has been reintroduced to a number of locations within the SES. Note that populations of Spinifex established at Taylors Mistake and at Okains Bay on Banks Peninsula are considered to be outside the historic natural range for this species.

[2] Discussion with Jason Roberts, Senior Ranger – Field Delivery, Coastal & Plains Ranger Team, Christchurch City Council, 11th July, 2014.

6. ***Indigenous vegetation or an association of indigenous species that is distinctive, of restricted occurrence, occurs within an originally rare ecosystem, or has developed as a result of an unusual environmental factor or combinations of factors.***

   Site not assessed under this criterion

Diversity and Pattern

7. ***Indigenous vegetation or habitat of indigenous fauna that contains a high diversity of indigenous ecosystem or habitat types, indigenous taxa, or has changes in species composition reflecting the existence of diverse natural features or ecological gradients.***

   Site not assessed under this criterion

Ecological Context

8. ***Vegetation or habitat of indigenous fauna that provides or contributes to an important ecological linkage or network, or provides an important buffering function.***

   The site is significant under this criterion. The SES represents a continuous linear ecological corridor with a high degree of functional connectivity between Brooklands Lagoon and the Avon Heathcote Estuary. Established coastal native forest restoration areas throughout the SES are also likely to provide functional connectivity for native bush bird species moving from the Port Hills north along the coast to (e.g.) Bottle Lake Forest, Styx River reserves etc. Evidence for this functional connectivity includes an increased incidence of Bellbirds and NZ Wood Pigeon along the coastal strip.

9. ***A wetland which plays an important hydrological, biological or ecological role in the natural functioning of a river or coastal system.***

   Does not meet this criterion

10. ***Indigenous vegetation or habitat of indigenous fauna that provides important habitat (including refuges from predation, or key habitat for feeding, breeding, or resting) for indigenous species, either seasonally or permanently.***

    The site is significant under this criterion.

    Brooklands Spit has an important role as a high tide roosting site for birds which forage along the adjacent coastline and within Brooklands Lagoon. At the Waimakariri Rivermouth and on the ocean beach, the foreshore is utilized as an important roosting area by many species, including Pied Cormorant, Spotted Shag, South Island Pied Oystercatcher, Variable Oystercatcher, Banded Dotterel, Bar-tailed Godwit, Black-backed Gull, Red-billed Gull, Black-billed Gull, Caspian Tern, White-fronted Tern and Black-fronted Tern (Crossland 2008).

Site Management

Existing Protection Status

- Coastal Conservation Area
- Department of Conservation

Threats and risks	Management recommendations	Support package options N/A
• Pest plant incursion	• Monitor pest plant infestations and implement control as required. • Assess new pest plant incursions and implement control as required	
• Impact of recreation activities including horses, pedestrians and 4WD vehicles on dunes	• Fencing • Interpretation highlighting risks to biodiversity values	
• Fire	• Prohibition of open fires • Regular patrols during summer months • Interpretation highlighting risks of fire to biodiversity values • Discourage the use of fire-promoting plant species on the dune system to reduce the likelihood of fires establishing and causing greater damage.	Fire extinguishers provided to surf club
• Coastal erosion (including tsunami)	• Encourage the planting of native foredune sand binders spinifex and pingao that reduce storm surge damage effects on the dune system • Ongoing revegetation to create wider & more robust dune system	

• Inappropriate land use in a dune-land environment	• Ensure that any changes to dune functioning do not compromise ecology of the system • Require proposals to commission biodiversity inventory • Ensure no net loss in biodiversity values	
• Animal pest incursion	• Monitoring of possible animal pest incursions in penguin and wader breeding and wader/tern/gull/cormorant/shag roosting areas and trapping as necessary • Trap for incursions by feral cats, ferrets, stoats and other wild mammalian predators	
• Disturbance to wildlife from dogs	• Prohibit dogs within nesting and roosting areas • Interpretation highlighting the impacts dogs can have on wildlife values	

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Assessment completed by: Dr Antony Shadbolt
Date: 14th January 2015

Statement completed by: Dr Antony Shadbolt
Date: 14th January 2015

Statement updated by: XXX
Date: XXX

PLEASE NOTE THIS STATEMENT IS BASED ON INFORMATION AVAILABLE AT THE TIME OF WRITING. DUE TO THE DYNAMIC NATURE OF ECOSYSTEMS, FUTURE REASSESSMENT OF THE SITE MAY BE NECESSARY TO REFLECT ANY CHANGES IN KNOWLEDGE OF ITS ECOLOGICAL SIGNIFICANCE.

Appendix 1 Site Maps:

Christchurch Coastal Strip Area 1: Brooklands Lagoon Spit

Christchurch Coastal Strip Area 2: Spencer Park Beach

Christchurch Coastal Strip Area 3: Bottle Lake Plantation (North**)**

Christchurch Coastal Strip Area 4: Bottle Lake Plantation (Central)

Christchurch Coastal Strip Area 5: Bottle Lake Plantation (South)

Christchurch Coastal Strip Area 6: Waimairi Beach

Christchurch Coastal Strip Area 7: North New Brighton

Christchurch Coastal Strip Area 8: New Brighton

Christchurch Coastal Strip Area 9: South New Brighton

Christchurch Coastal Strip Area 10: South Shore

Christchurch Coastal Strip Area 11: South shore Spit

APPENDIX 2: Indigenous Vascular Forest and Shrub Species

List of native vascular forest and shrub-land species occurring on the coastal strip between Aston Drive and the South Shore spit recorded by the Project Ecologist in September 2014

Austroderia richardii	toetoe
Carmichaelia robusta	broom
Cassinia leptophylla	tahinu
Coprosma acerosa	sand coprosma
Coprosma repens	taupata
Coprosma robusta	karamu
Cordyline australis	cabage tree
Corynocarpus laevigatus	karaka
Dodonaea viscosa	akeake
Griselinia littoralis	broadleaf
Hebe salicifolia	korimiko
Hebe stritssima	hebe
Hoheria angustifolia	houhere
Leptospermum scoparium	manuka
Muehlenbeckia astonii	shrubby pohuehue
Muehlenbackia complexa	pohuehue
Myoporum laetum	ngaio
Myrsine australis	matipo
Olearia paniculata	golden akeake
Phormium tenax	NZ flax
Pittosporum eugenioides	lemonwood
Pittosporum tenuifolium	kohuhu
Plagianthus divaricatus	marsh ribbonwood
Plagianthus regius	lowland ribbonwood
Poa cita	silver tussock
Podocarpus totara	totara
Pseudopanax arboreus	fivefinger

APPENDIX 3: Fore-dune Restoration Sites

Fore-dune restoration sites along the Christchurch coastline between Heyders Road (Spencerville) to the South Shore spit (sites listed from north to south) recorded by the Project Ecologist in September 2014.

1) Heyders Road to Spencer Park Surf Club

Spinifex	*(Spinifex sericeus)*
Pingao	*(Ficinia spiralis)*
Milk weed	*(Euphorbia glauca)*
Sea Sedge	*(Carex litorosa)*
Pohuehue	*(Muehlenbeckia complexa)*
Sand coprosma	*(Coprosma acerosa)*

2) End of 20th Avenue (Bottle Lake Plantation)

Spinifex	*(Spinifex sericeus)*

3) End of Flemming Street:

Sea Sedge	*(Carex litorosa)*

4) Between Cygnet Sreett & Leaver Terrace

Spinifex	*(Spinifex sericeus)*
Pingao	*(Ficinia spiralis)*
Milk weed	*(Euphorbia glauca)*

5) Bowhill Road to New Brighton Car Park

Pingao	*(Ficinia spiralis)*
Spinifex	*(Spinifex sericeus)*

6) Car Park South of Pier

Spinifex	*(Spinifex sericeus)*
Pingao	*(Ficinia spiralis)*
Milk weed	*(Euphorbia glauca)*
Sand coprosma	*(Coprosma acerosa)*

7) Between Bridge Street & Sturdee Street

Spinifex	*(Spinifex sericeus)*

8) End of Beatty Street

Spinifex	*(Spinifex sericeus)*

9) End of Caspian Street

Spinifex	*(Spinifex sericeus)*

10) Opposite end of Rockinghorse Road

Spinifex	*(Spinifex sericeus)*

11) End of South Shore Spit

Pingao	*(Ficinia spiralis)*

APPENDIX 4: *Euxoa ceropachoides*

Email correspondence

Hi Antony
Hope you are enjoying your adventure in Borneo. I envy you!

Please add the noctuid moth to Spencerville Dunes; *Euxoa ceropachoides* – used to be on DoC's threatened list as Data deficient, but I studied and moved off list. It is distributed from Marlborough to Kaitorete Spit, on dunes and has a flightless female that limits dispersal ability. It is an indigenous species of some significance that has managed to survive modification of our dunelands. Adults fly from July to September – a rather unusual flight period.

Cheers
Brian

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