

KAITORETE SPIT



A unique sand dune area in need of protection

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Executive Councillor

Kaitorete Spit is south-west of Banks Peninsula in Canterbury. It is the largest remaining dune area in New Zealand where the vegetation is still dominated by pingao (*Desmoschoenus spiralis*) and where native plants are still a conspicuous component of vegetation.

The Kaitorete Spit extends 28 km south from Banks Peninsula in Canterbury and is the largest remaining dune area in New Zealand dominated by pingao.

Photo S. Courtney

During 1972–1973, I spent hundreds of hours on Kaitorete Spit studying plant species, climate and soils as part of my masters degree. This involved experiencing the Spit in all its moods, from blistering summer heat to winter temperatures well below freezing, dehydrating nor-westers and gale force southerly winds laden with salt. The time spent in that wild and desolate landscape provided me not only with an intellectual exercise but also a chance to appreciate a vast expanse of sea, sand and fascinating vegetation in complete solitude — a “wilderness” experience within only 50 km of a major city.

Formation of the Spit

Kaitorete Spit is a barrier beach formed by deposition of Rakaia river gravels along the coast commencing some 6000 years ago, with sand deposition commencing probably about 1000 years ago. Such gravel beaches with associated dune systems are extremely rare world-wide. Forming the seaward boundary of Lake Ellesmere, the spit measures 28 km long, being 3.2 km wide at its eastern end and tapering to 100 m wide at its western extremity (see diagram). The dune system is largely shaped by the onshore south west winds. In the western 8 km the shore line is

being cut back, foredunes measure up to 7.6 m in height and their seaward faces are continually wave-trimmed. For the next 13 km eastward the coastline is building out, and dune height decreases gradually to about 1.5 m. In the most easterly sector dunes are reduced to a mere scattering of sand over the gravel.

Dune profiles are gently contoured, characteristic of sand under pingao. Relicts of much older dunes are scattered over a sandy plain landward of the coastal dune complex. Large deflation hollows up to 200 m across form a prominent feature between the parallel ridges of foredunes and rear dunes.

A severe climate and poor soils

Climate and soils interact to make the spit an extraordinarily adverse environment for plants. Rainfall measurements on the spit indicate a mean annual figure of 515 mm (20 inches) and less than 400 mm in some years. Added to this, the water-holding capacity of the ground is unusually low, since as well as the high proportion of stones in the profile the sand itself is extremely coarse.

Very high evaporation rates prevail for much of the year because of the dry nor-west winds characteristic of Canterbury,