

28 Rangiputa

Description and geomorphology

Rangiputa is located approximately 26 km north of Kaitiaki on the eastern side of the Karikari Peninsula. The site is situated at the mouth of the Rangaunu Harbour between Kotiatia Point in the north and Wairakia Point in the south.

The site has a sandy shoreline that is approximately 2.5 km long and faces east to south east. The beach comprises fine to medium sand and has a minimal high tide berm with a width of less than 5 m. The berm width is restricted further in areas where rock revetment structures are located.

The site has a dune system in areas where no revetment exists, which is well vegetated with spinifex. The dune elevation ranges from RL 2 to 6 m. The southern 750 m of the site has an accreting dune system with a healthy foredune developing (cell 28C).

The site has a rock reef located near the southern end of the site (Scheigis Rock) and the main channel is located on the western side of the reef. A small stream enters the shoreline immediately north of the reef that has a localised effect on the shoreline position.

Local considerations

The site has a number of rock revetments that total approximately 750 m. The high tide level is above the rock revetment toe in most areas which restricts access along the shoreline.

A boat ramp is located near the centre of the site, which is recessed back into the rock revetment.

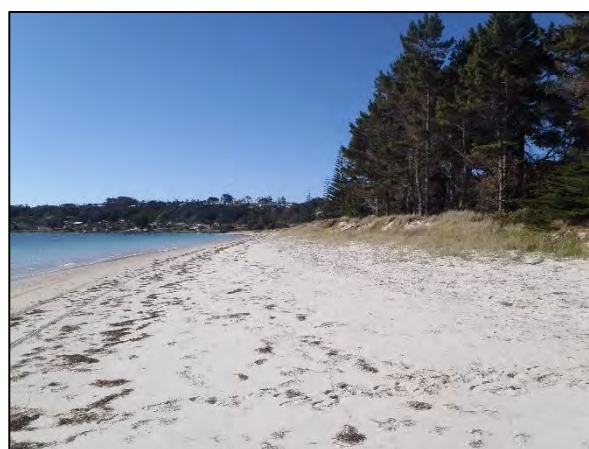
Coastal Erosion Hazard Assessment

The site is split into three cells based on differences in geomorphology, dune height and shoreline movement trends.

Adopted component values are presented within Table 28-1. Short-term erosion rates are assessed at 5 to 15 m. Long-term trends range from variable at the northern end, erosion of up to -0.25 m/year through the centre section and



Site Photograph A (northern end)



Site Photograph B (central section)



Site Photograph C (southern end)

accretion of up to 0.3 m/year at the southern end.

Histograms of individual components and resultant CEHZ distances using a Monte Carlo technique are shown in Figure 28-1 to figure 28-3.

Coastal Erosion Hazard Zone widths are presented within Table 28-2 and Figure 28-4 and are generally a function of the historic long-term trend with CEHZ1 values ranging from 13 m in the south to 24 m in the centre. The Current P_{66%} value has been adopted for Cell C as this exceeds the 2065 value. The CEHZ2 ranges from 25 m in the south where a minimum value has been adopted to 48 m in the centre.

CEHZ's have been mapped in agreement with the calculated values. Note that cell 28C has experienced accretion since about 1945 over approximately 600 m, with CEHZs offset from the accreted most recent shoreline.

Figure 28-5 shows the available historic shorelines for Rangiputa.

Table 28-1 Component values for Erosion Hazard Assessment

Site		28. Rangiputa		
Cell		28A ²	28B ²	28C
Cell centre (NZTM)	E	1626766	1627229	1627370
	N	6140246	6139685	6138755
Chainage, m (from N/W)		0-580	580-1680	1680-2450
Morphology		Estuary Bank	Estuary Bank	Estuary Bank
Short-term (m)	Min	5	5	5
	Mode	8	10	10
	Max	10	15	15
Dune/Cliff elevation (m above toe or scarp)	Min	2.3	2.5	2.9
	Mode	3.4	3.4	4.6
	Max	6.1	4.8	6.1
Stable angle (deg)	Min	30	30	30
	Mode	32	32	32
	Max	34	34	34
Long-term (m) -ve erosion +ve accretion	Min	0.1	-0.1	0.3
	Mode	0	-0.15	0.2
	Max	-0.1	-0.25	0.1
Closure slope (beaches)	Min	0.067	0.067	0.067
	Mode	0.067	0.067	0.067
	Max	0.067	0.067	0.067
SLR 2065 (m)	Min	0.19	0.19	0.19
	Mode	0.29	0.29	0.29
	Max	0.39	0.39	0.39
SLR 2115 (m)	Min	0.45	0.45	0.45
	Mode	0.77	0.77	0.77
	Max	1.1	1.1	1.1

²CEHZ0 included behind coastal protection structure.

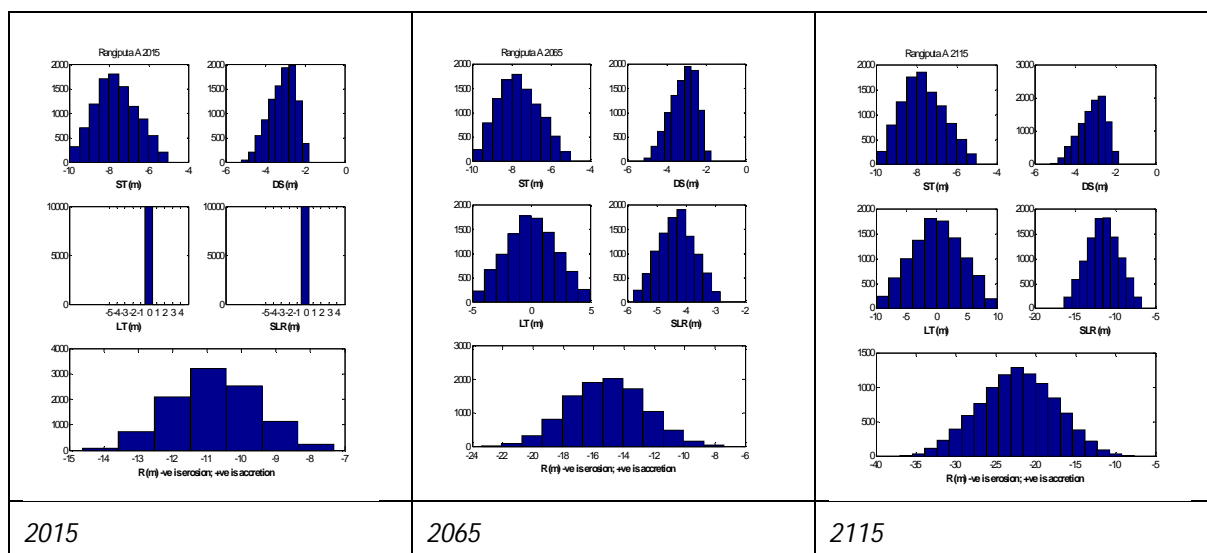


Figure 28-1 Histograms of parameter samples and the resultant shoreline distances for 2015, 2065 and 2115 timeframes for cell 28A

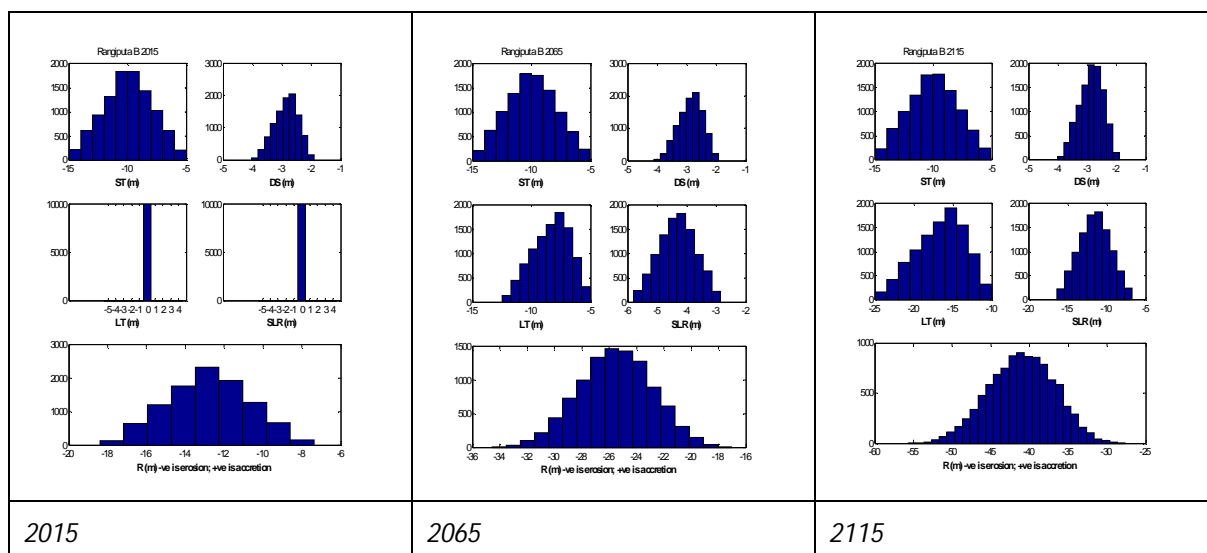


Figure 28-2 Histograms of parameter samples and the resultant shoreline distances for 2015, 2065 and 2115 timeframes for cell 28B

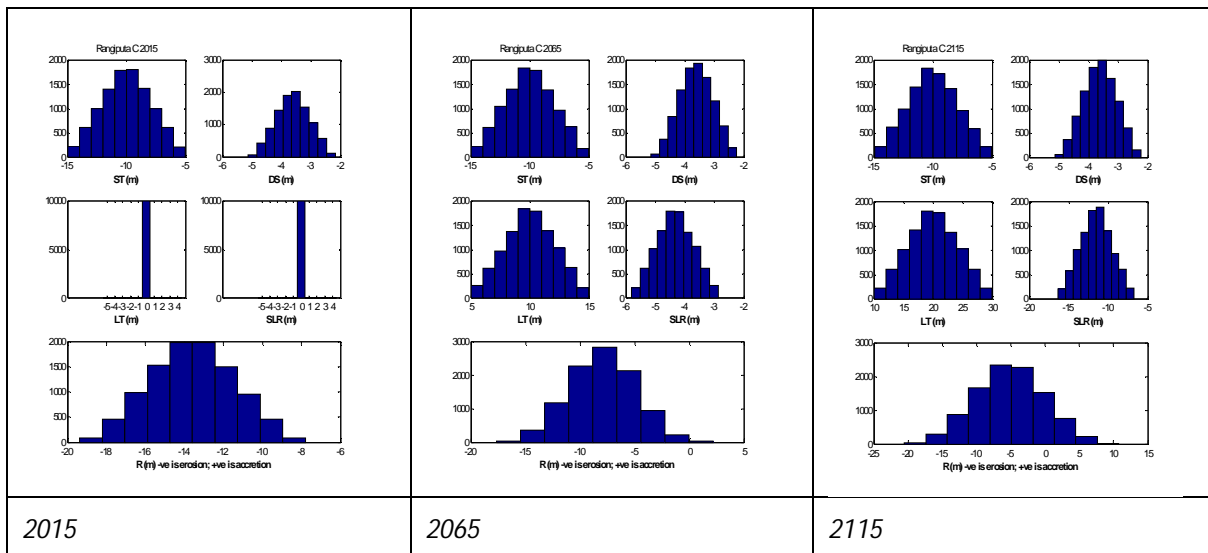


Figure 28-3 Histograms of parameter samples and the resultant shoreline distances for 2015, 2065 and 2115 timeframes for cell 28C

Table 28-2 Coastal Erosion Hazard Zone Widths

Site		28. Rangiputa								
Cell		28A			28B			28C		
Time		2015	2065	2115	2015	2065	2115	2015	2065	2115
Probability of CEHZ (m) Exceedance	Min	-7	-7	-8	-7	-17	-28	-8	2	11
	99%	-8	-10	-12	-8	-20	-32	-9	-1	6
	95%	-9	-11	-15	-9	-21	-34	-10	-3	3
	90%	-9	-12	-16	-10	-22	-36	-11	-4	1
	80%	-10	-13	-18	-11	-23	-37	-12	-5	-1
	70%	-10	-14	-20	-12	-24	-39	-12	-6	-2
	66%	-10	-14	-20	-12	-24	-39	-13	-7	-3
	60%	-10	-15	-21	-12	-25	-40	-13	-7	-4
	50%	-11	-15	-22	-13	-26	-41	-14	-8	-5
	40%	-11	-16	-23	-13	-26	-42	-14	-9	-6
	33%	-11	-16	-24	-14	-27	-43	-15	-9	-7
	30%	-11	-17	-25	-14	-27	-43	-15	-10	-8
	20%	-12	-17	-26	-15	-28	-45	-16	-11	-9
	10%	-12	-18	-29	-16	-29	-47	-16	-12	-12
	5%	-13	-19	-30	-16	-30	-48	-17	-13	-14
	1%	-13	-21	-33	-17	-32	-51	-18	-15	-16
	Max	-15	-23	-37	-18	-35	-56	-19	-18	-21
CEHZ1		-14			-24			-13		
CEHZ2		-30			-48			-25		

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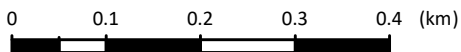
- 2013 - 2014 shoreline
- Erosion Protection Structures
- ↔ Cell Extent

Coastal Erosion Hazard Zone

- CEHZ0 (protected by structure)
- CEHZ1 (2065 CEHZ)
- CEHZ2 (2115 CEHZ)

Notes: Dashed CEHZ indicates greater uncertainty around stream mouths and backshore topography. Northland 0.1m Rural Aerial Photos (2014-2015).

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Coastal Erosion Hazard Assessment

Rangiputa

Site: 28

FIGURE No. Figure 28-4

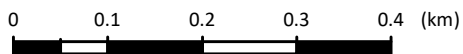
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Notes: Dashed CEHZ indicates greater uncertainty around stream mouths and backshore topography. Northland 0.1m Rural Aerial Photos (2014-2015).

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Historic shorelines

Rangiputa

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FIGURE No. Figure 28-5

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