

## 28 Rangiputa

### Description and geomorphology

Rangiputa is located approximately 26 km north of Kaitia 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 to 28-4 and Figure 28-4 and are generally a function of the historic long-term trend. CEHZ1 values are rounded to 10 to 27 m. CEHZ2 values are rounded to 25 to 51 m and CEHZ3 values are rounded to 25 to 56 m.

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 <sup>2</sup>	28B <sup>2</sup>	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 2080 (m)	RCP 2.6	0.16	0.16	0.16
	RCP 4.5	0.21	0.21	0.21
	RCP 8.5M	0.33	0.33	0.33
	RCP 8.5H+	0.51	0.51	0.51
SLR 2130 (m)	RCP 2.6	0.28	0.28	0.28
	RCP 4.5	0.42	0.42	0.42
	RCP 8.5M	0.85	0.85	0.85
	RCP 8.5H+	1.17	1.17	1.17

<sup>2</sup>CEHZ0 included behind coastal protection structure.

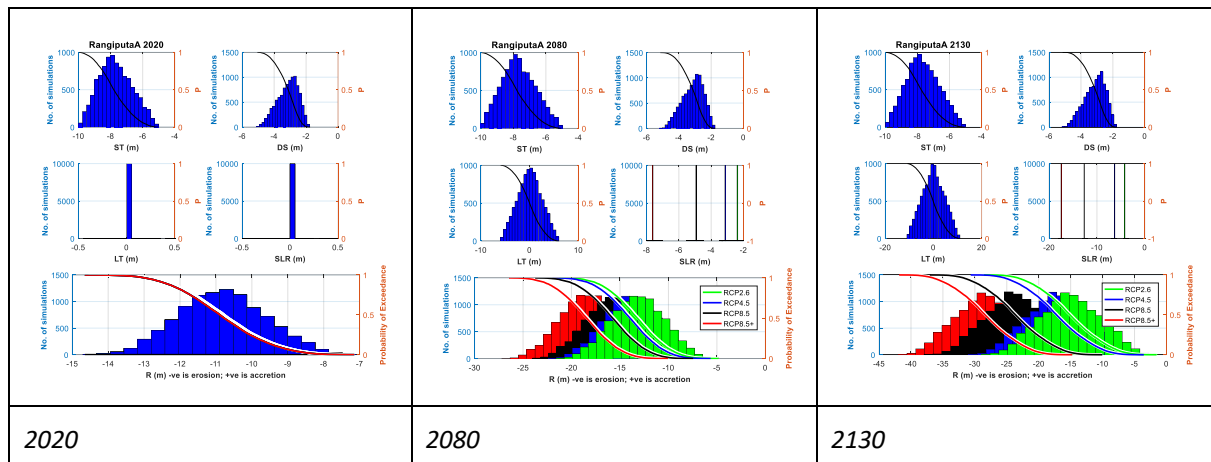


Figure 28-1 Histograms of parameter samples and the resultant shoreline distances for 2020, 2080 and 2130 timeframes for cell 28A

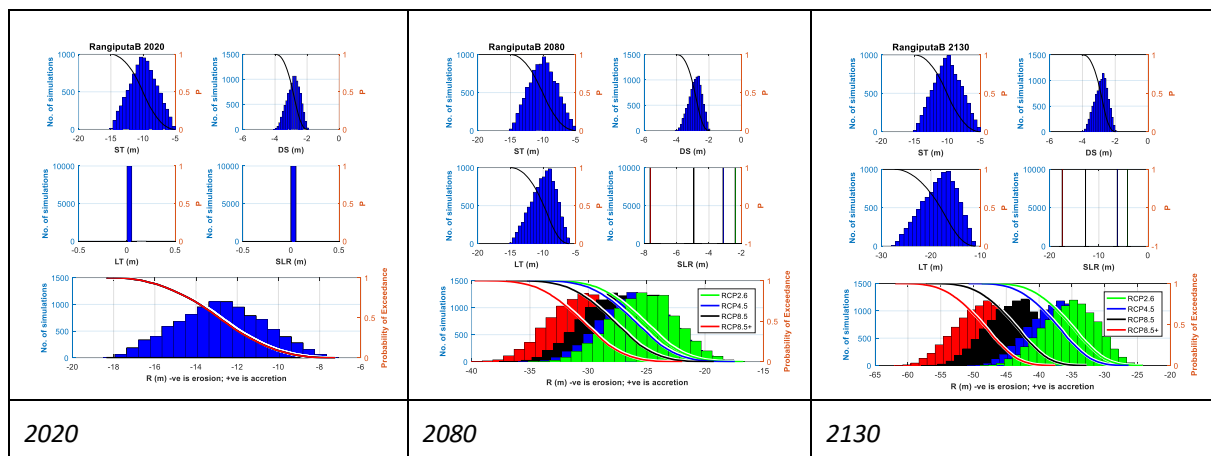


Figure 28-2 Histograms of parameter samples and the resultant shoreline distances for 2020, 2080 and 2130 timeframes for cell 28B

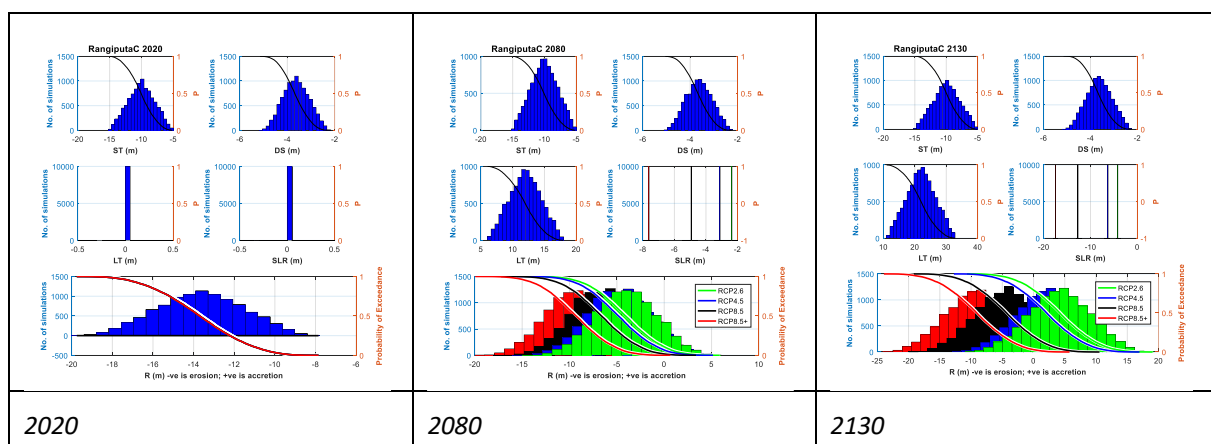


Figure 28-3 Histograms of parameter samples and the resultant shoreline distances for 2020, 2080 and 2130 timeframes for cell 28C

Table 28-2 Coastal Erosion Hazard Zone Widths For 2020

Site		28. Rangiputa		
Probability of CEHZ (m) Exceedance		A	B	C
	Min	-7	-7	-8
	99%	-8	-8	-9
	95%	-9	-9	-10
	90%	-9	-10	-11
	80%	-10	-11	-12
	70%	-10	-12	-13
	66%	-10	-12	-13
	60%	-11	-12	-13
	50%	-11	-13	-14
	40%	-11	-13	-14
	33%	-11	-14	-15
	30%	-11	-14	-15
	20%	-12	-15	-16
	10%	-12	-16	-16
	5%	-13	-16	-17
	1%	-14	-17	-18
	Max	-14	-19	-19

Table 28-3 Coastal Erosion Hazard Zone Widths Projected for 2080

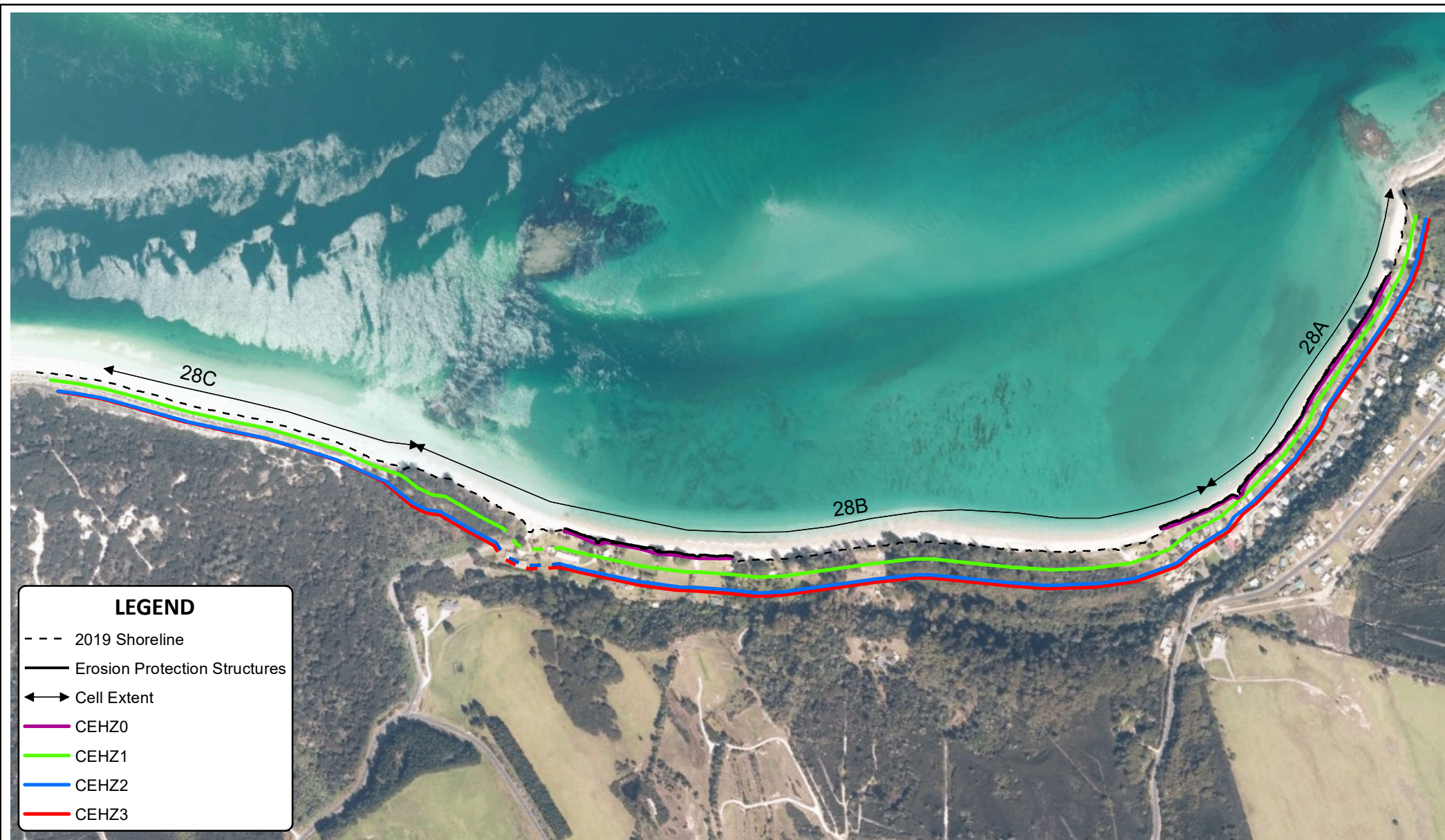
Site		28. Rangiputa											
Cell		28A				28B				28C			
RCP scenario		2.6	4.6	8.5	8.5+	2.6	4.6	8.5	8.5+	2.6	4.6	8.5	8.5+
Probability of CEHZ (m) Exceedance	Min	-5	-6	-7	-10	-17	-17	-19	-22	6	5	3	1
	99%	-7	-8	-10	-12	-19	-20	-22	-24	3	2	1	-2
	95%	-9	-9	-11	-14	-21	-21	-23	-26	1	0	-1	-4
	90%	-10	-10	-12	-15	-22	-22	-24	-27	0	-1	-2	-5
	80%	-11	-12	-13	-16	-23	-24	-25	-28	-1	-2	-4	-6
	70%	-12	-12	-14	-17	-24	-25	-26	-29	-2	-3	-5	-8
	66%	-12	-13	-15	-17	-24	-25	-27	-29	-3	-3	-5	-8
	60%	-12	-13	-15	-18	-24	-25	-27	-30	-3	-4	-6	-8
	50%	-13	-14	-16	-18	-25	-26	-28	-30	-4	-5	-7	-9
	40%	-14	-15	-16	-19	-26	-27	-28	-31	-5	-6	-7	-10
	33%	-14	-15	-17	-20	-27	-27	-29	-32	-6	-6	-8	-11
	30%	-15	-15	-17	-20	-27	-28	-29	-32	-6	-7	-8	-11
	20%	-16	-16	-18	-21	-28	-28	-30	-33	-7	-8	-9	-12
	10%	-17	-17	-19	-22	-29	-30	-31	-34	-8	-9	-11	-13
	5%	-18	-18	-20	-23	-30	-31	-32	-35	-9	-10	-12	-15
	1%	-19	-20	-22	-24	-32	-32	-34	-37	-11	-12	-14	-17
	Max	-21	-22	-24	-26	-35	-35	-37	-40	-15	-16	-17	-20
CEHZ1		-15				-27				-10			

Table 28-4 Coastal Erosion Hazard Zone Widths Projected for 2130

Site		28. Rangiputa											
Cell		28A				28B				28C			
RCP scenario		2.6	4.6	8.5	8.5+	2.6	4.6	8.5	8.5+	2.6	4.6	8.5	8.5+
Probability of CEHZ (m) Exceedance	Min	-2	-4	-10	-15	-24	-26	-33	-38	19	17	11	6
	99%	-5	-7	-14	-18	-27	-29	-36	-40	15	13	7	2
	95%	-7	-9	-16	-21	-29	-31	-38	-42	12	10	4	-1
	90%	-9	-11	-17	-22	-30	-32	-39	-44	11	9	2	-3
	80%	-11	-13	-19	-24	-32	-34	-40	-45	9	6	0	-5
	70%	-12	-15	-21	-26	-33	-35	-42	-46	7	5	-2	-6
	66%	-13	-15	-22	-26	-34	-36	-42	-47	6	4	-2	-7
	60%	-14	-16	-22	-27	-34	-36	-43	-47	5	3	-3	-8
	50%	-15	-17	-24	-28	-35	-37	-44	-48	4	2	-4	-9
	40%	-16	-18	-25	-30	-36	-38	-45	-50	3	1	-6	-10
	33%	-17	-19	-26	-30	-37	-39	-46	-50	2	0	-7	-11
	30%	-18	-20	-26	-31	-38	-40	-46	-51	2	-1	-7	-12
	20%	-19	-21	-28	-32	-39	-41	-47	-52	0	-2	-9	-13
	10%	-21	-23	-30	-35	-41	-43	-49	-54	-2	-4	-11	-16
	5%	-23	-25	-31	-36	-42	-44	-51	-56	-4	-6	-12	-17
	1%	-25	-27	-34	-38	-45	-47	-53	-58	-7	-9	-15	-20
	Max	-29	-31	-37	-42	-49	-51	-57	-62	-11	-13	-19	-24
	CEHZ2	-31				-51				-25			
	CEHZ3	-36				-56				-25			



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### LEGEND

- - - 2019 Shoreline
- Erosion Protection Structures
- ↔ Cell Extent
- CEHZ0
- CEHZ1
- CEHZ2
- CEHZ3

Notes: Dashed CEHZ indicates greater uncertainty around stream mouths and backshore topography.  
Northland 0.4m Rural Aerial Photos (2014-2016).

A4 SCALE 1:8,000

0 0.1 0.2 0.3 0.4 (km)



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PROJECT No.		
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## NORTHLAND REGIONAL COUNCIL

Coastal Erosion Hazard Assessment

Rangiputa

Site: 28

FIGURE No.

Figure 28-4

Rev.

1





LEGEND

↔ Cell Extent

- - - 2019 Shoreline

**Historic Shorelines**

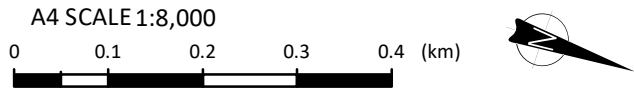
2013/11/14

2003/09/09

1977/11/18

1944/08/14

Notes: Dashed CEHZ indicates greater uncertainty around stream mouths and backshore topography.  
Northland 0.4m Rural Aerial Photos (2014-2016).



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Historic Shorelines

Rangiputa

Site: 28

FIGURE No.

Figure 28-5

Rev.

1

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