A TEXTURAL AND MINERALOGICAL STUDY OF THE BEACH SANDS, ALONG THE SOUTHWEST COAST OF THE NORTH ISLAND.

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by

NEIL ALEXANDER LITHGOW

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ABSTRACT

A sediment survey of the beaches from Patea to Manawatu River on the southwest coast of the North Island has been undertaken. The survey objectives are to establish the beach sediment provenance, the net longshore drift and the extent of the contributing rivers to the longshore drift system. Sediments derived from the Taranaki Volcanics predominate, particularly in the northern part of the study area. However, sediment contributions from other sources (Pliocene to Pleistocene and Recent sediments, Taupo Volcanic Zone volcanics) become increasingly important in the southern part of the study area.

A gradual decrease in heavy mineral abundance indicates a net southeastward longshore drift. This is further supported by the distribution pattern of the grain size parameters and local heavy mineral distribution patterns about the river mouths within the study area.

The high abundance of heavy minerals and coarser sediment 1-3 km south of Whangaehu, Rangitikei and Turakina River mouths, suggests that the discharging river sediment is being deposited onto the beach at some distance south of the river mouths rather than immediately adjacent to them. Grain size parameters indicate that the Whangaehu and Rangitikei Rivers are contributing coarse sediment to the longshore drift system, while the Turakina River is supplying lesser amounts of, but finer and better sorted, sediment to the adjacent beaches at the river mouth.

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CHAPTER 1

INTRODUCTON.

1.1 BACKGROUND.

The Rangitikei-Wanganui Catchment Board administers the coastal region extending 85 km from the Waitotara River in the north to Himitangi Beach in the south. The Catchment Board is currently undertaking a Coastal Hazard Zone survey, which is a five year project funded by NWASCA. A survey of the beach sediments commencing in May, 1984, along the coast from Patea River in the north to Manawatu River in the south (Fig.1) was subsequently undertaken in order to determine both longshore drift directions and provenance of beach sediments.

1.2 OBJECTIVES.

This thesis has four major objectives to be determined from textural and mineralogical data,

(1) To determine the provenance of the beach sediments along the coast from Patea to Manawatu River.

(2) To verify the net longshore drift direction in the study area.

(3) To determine which rivers in the Rangitikei-Wanganui Catchment Board area (Wanganui, Whangaehu, Turakina and Rangitikei Rivers) are contributing sediment to the longshore drift system.

(4) To assess other coastal processes that have some bearing on the mineralogy and texture of the beach sands in the study area.

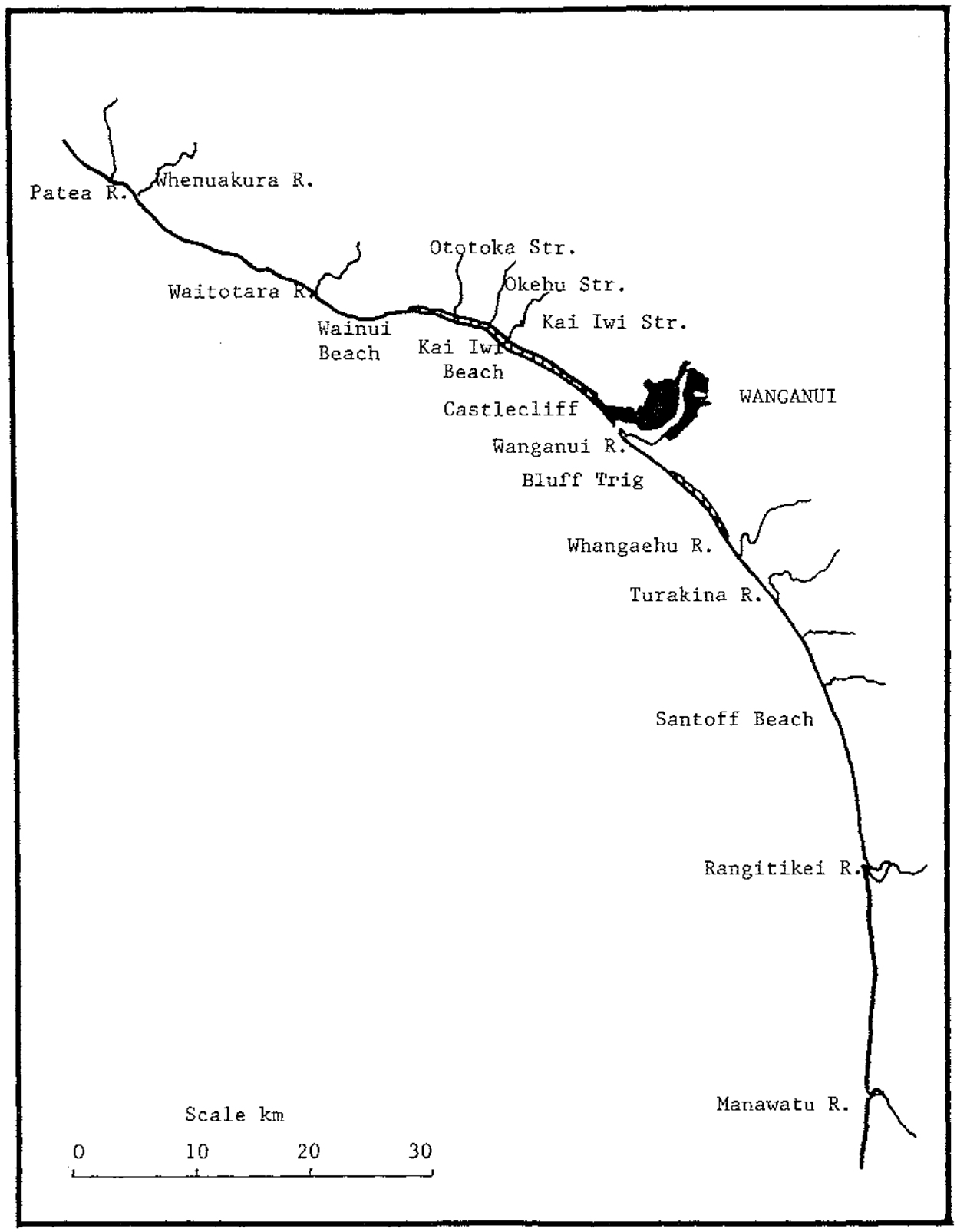

FIG. 1.

LOCATION DIAGRAM OF THE STUDY AREA