EASTERLY AND WESTERLY RAINFALLS IN HAWKE'S BAY

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Paper presented at the Hydrology Symposium
Annual Conference of the New Zealand
Meteorological Service, 2 November, 1961.

An investigation was made to assess the relative effectiveness of easterly and westerly winds in giving rain over the Hawkes Bay area.

Days in 1958, when fairly general rain fell in Hawke's Bay, were classified according to the direction of the low level winds prevailing at the time of the rain. As wind direction often changed during the rain, it was necessary to use broad criteria, and results are given for two main classes, namely "westerly" comprising flow from northwest to southwest, and "easterly" from south to northeast inclusive. Together these classes included about two thirds of the year's rainfall at most of the stations studied.

Rainfall amounts for these days were tabulated for a number of stations which lie near three lines lying roughly east-west across Northern, Central and Southern Hawke's Bay. The respective rainfall station lines are:

(1) Te Wairere, Esk, Tangoio.

(2) Otupae, Owhaoko, Kuripapango, Waiwhare, Rissington, Westshore.

(3) Mill Farm, Rangimarie, Ashley Clinton, High View, Mt. Vernon, Rotokai, Brooklands, Aramoana.

(Note: Otupae is 5 miles west of the Hawke's Bay Catchment District divide and Otupae, Rangimarie, Rotokai, Brooklands and Aramoana lie well away from their respective lines).

The results are shown on the accompanying diagram. For each station the amount of rain clearly associated with westerly winds is represented by the black column above the line, and the amount with easterlies below the line. For comparison the total rainfall in 1958 is shown for each station, represented by a white column drawn half above and half below the line.

The following are the main features indicated in the diagram:

(1) At all Hawke's Bay stations easterly rain exceeded westerly rain especially in the north and east.
(2) Both the easterly and westerly rains increased towards the west.
(3) Easterly rains were roughly proportional to the total rainfall except on the western portion of the central line, where their relative importance

decreased towards the district boundary.

(4) Westerly rainfall increased fairly rapidly towards the divide (Ruahine) in the High View - Ashley Clinton - Rangimarie - Mill Farm vicinity, but elsewhere did not show very marked gradients.

(5) The ratio of westerly to easterly rain decreased towards the east, appreciably in some places.

Owing to the small sample of data used, and the subjective nature of the selection and classification of the rain days, these results can be taken merely as indicating the main features of the distribution of rain with easterlies and westerlies; the numerical values have little significance.

RAINFALLS AT SELECTED HAWKES BAY STATIONS