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COMMONWEALTH OF AUSTRALIA

DEPARTMENT OF NATIONAL DEVELOPMENT

BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS



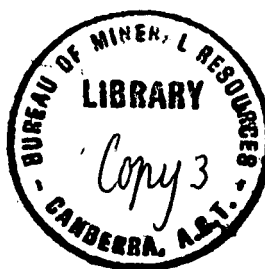
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REPORT ON THE SOUNDING OF PRION LAKE,
MACQUARIE ISLAND, MARCH 1953

by

P.M. McGregor

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Prion Lake on the plateau of Macquarie Island, is believed to be a result of the action of an ice-sheet moving over the surface of the land. It should, by the shape of its basin, indicate the direction of movement of the ice-sheet in this region. Elsewhere on the island there are several indications that the general movement was from the south-south-west but it has been suggested that near Prion Lake the movement was nearly at right angles to this. More recently this has been doubted and it was felt necessary to determine the shape of the lake's basin by soundings. One set of soundings were obtained by M. Taylor and P.M. McGregor of the 1952-53 A.N.A.R.E. Party.

On the 2nd of March, 1953, a circular rubber dinghy was carried from the Sandy Bay hut to the lake. Unfortunately the weather had deteriorated since leaving the main station the previous day, and was most unsuitable for allowing the observations to be performed as desired. A cold northerly wind of 35 knots and cloud base below lake level meant that a minimum of time could be spent on the lake; and as it was impossible to propel the craft in any direction other than that of the wind, soundings in this direction only were made.

The axis of Prion Lake is approximately 1,200 yards long in the direction 038° - 218° True. It was in this direction, down the centre of the lake, that eleven soundings were made, closely spaced near the north and south banks, more widely separated in the middle of the lake. For the reasons given above, the distances at which the soundings were made could not be exactly controlled and except for those near the shores were estimated as fractions of the lake's length. Near the banks the first and last three positions were more accurately 50 yards apart. A weighted cord, knotted at 10 feet intervals gave depths to plus or minus two feet.

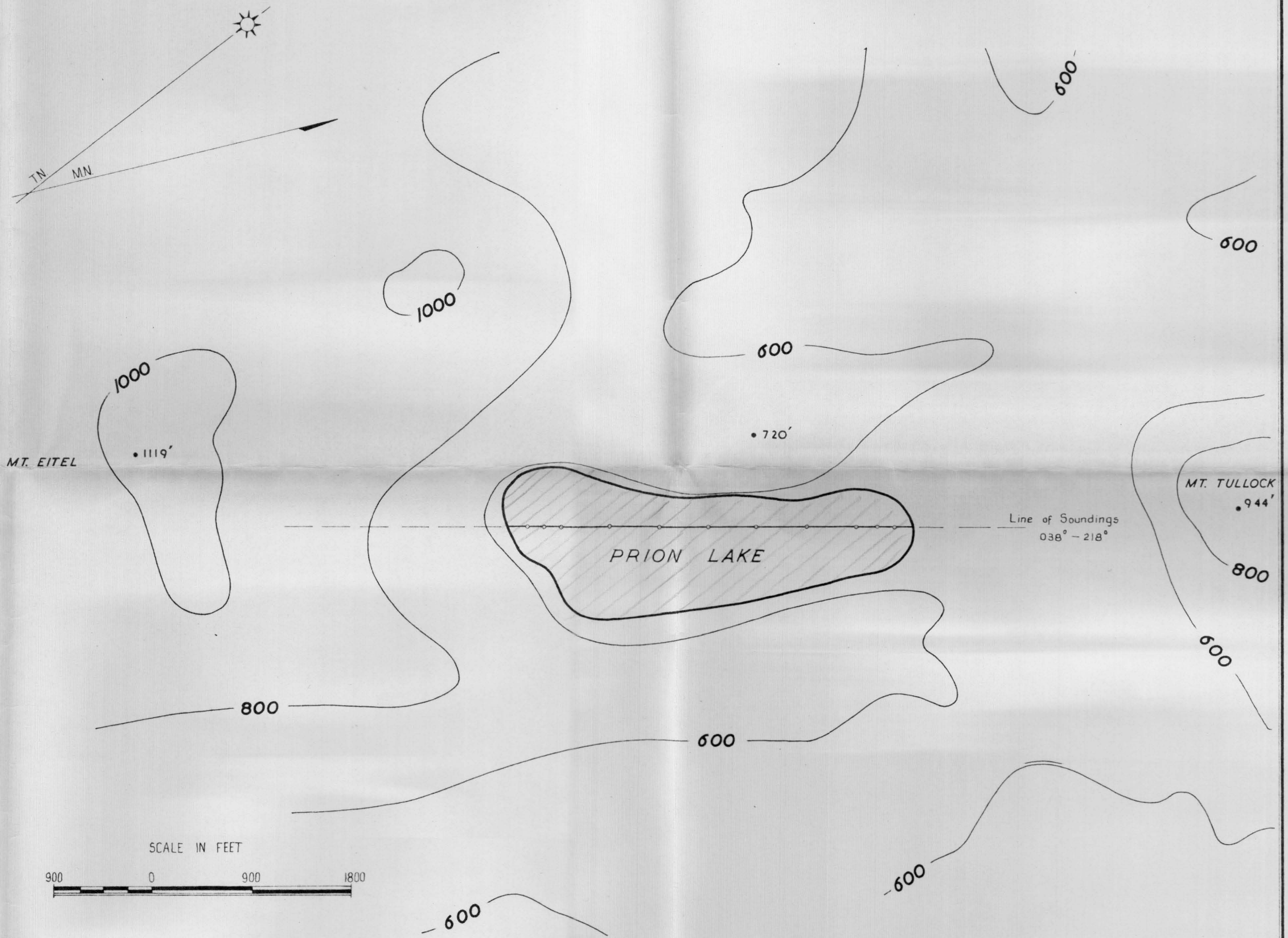
The results are shown in the table at the end, distances being from the northern bank. The plate shows a plan of the lake indicating the sounding line and sounding points, and the profile obtained along this line. Both the plan and the extensions of the profile beyond the banks of the lake were obtained from Blake's map of the island.

The one line of soundings is of no value by itself and further profiles transverse to it are required in order to determine the shape of the lake's basin and hence the probable direction of flow of the ice-sheet.

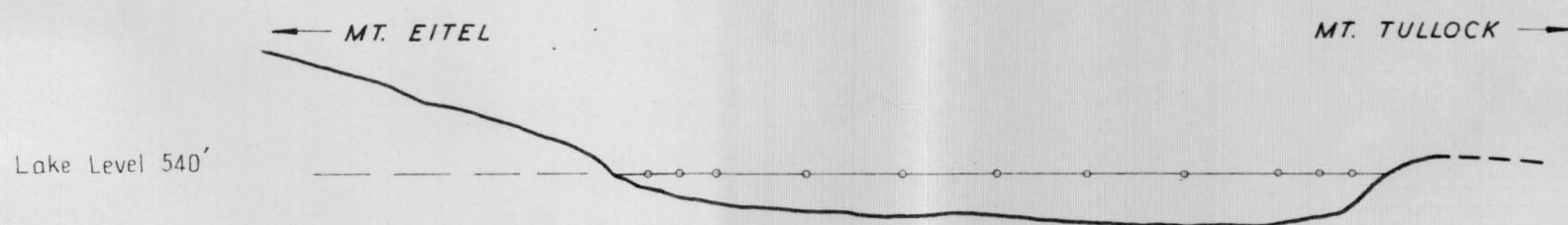
TABLE OF DEPTHS SOUNDED AT DISTANCES
FROM NORTH BANK OF PRION LAKE.

Distance - (Yards)	50	100	150	300	450	600	
Depth - (Feet)	52	94	106	108	102	84	
Distance - (Yards)	750	900	1050	1100	1150		
Depth - (Feet)	82	70	55	44	18		

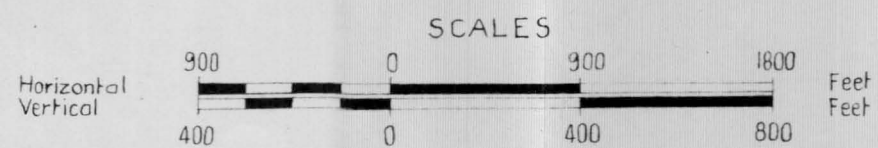
P.M. McGregor.
26th October, 1953.



PLAN SHOWING LINE OF SOUNDINGS AND SOUNDING POINTS



PROFILE ALONG SOUNDING LINE



PLAN AND DEPTH PROFILE OF
PRION LAKE, MACQUARIE ISLAND