

The total length of tidal record obtained in 1901 from the self-registering gauges at these three localities, was as follows:

Neil Harbour, east side of Cape Breton..... From Aug. 9, to Oct. 31.
St. Paul Island; permanent station, Cabot Strait,..... Continuous record.
Port aux Basques, S. W. angle of Newfoundland,..... From July 9, to Oct. 31.

The differences in the time of the tide in relation to St. Paul Island were fully worked out for these localities. The result, after excluding a few exceptional irregularities, is given below; and it is at once evident that the variation in the difference of time is too great to enable either locality to be taken to replace St. Paul Island. It is remarkable to find so wide a variation in time on such short distances. The comparison with Pictou is also included for the same period, July 15 to October 31; and it is noteworthy that the range in the difference is little greater than for Port aux Basques. The difference with Pictou has also the advantage of being more nearly equal for high and low water, and consequently more amenable to reduction to law, by which the variation in the difference can be allowed for. The variation and the range are in absolute time throughout.

COMPARISONS WITH ST. PAUL ISLAND.—Difference in the Time of the Tide.

Localities.	Number of Differences obtained.	Variation in the Difference of Time.	Range in the Difference.
Neil Harbour, H. W.....	130	0 m. to 39 m. earlier.....	39
" " L. W.....	116	7 " 40 "	33
Port aux Basques, H. W.....	158	6 m. earlier to 38 m. later.....	44
" " L. W.....	150	15 " 49 "	64
Pictou, H. W.....	190	1 h. 04 m. to 2 h. 00 m. later.....	56
" L. W.....	184	0 h. 44 m. to 1 h. 45 m. "	61

Throughout the region which extends from Cabot Strait to Northumberland Strait, the leading variation in the difference of the time of the tide follows the moon's declination; and it is greatest in amount when the declination is at its maximum. This is well illustrated by the following comparisons. The first of these shows the unusual result that the two tides of the day at Port aux Basques are alternately earlier and later than at St. Paul Island when the moon's declination is high. In the second table, a direct comparison is made at a time of high declination for each of the three localities in Cabot Strait with Pictou itself; which is the local port of reference for Northumberland Strait.