

shore, and the fish are chiefly found between Bonaventure Island and Paspébiac, and on towards Cascapedia Bay. It has already been observed that mackerel and surface feeders generally, swim with open mouths against the wind and tide. The cause which brings the mackerel from the south shore to the north shore, arises from the fact that in the natural pursuit of their surface food against the wind they are brought up by the land, and finding food in the tidal eddies there, they pursue their course inshore against the tidal currents, until a change in the wind induces them to cross again to the opposite shore, where similar conditions prevail.

On the Gulf coast of Cape Breton the set of the currents is oftentimes inshore, and is described by Admiral Bayfield as given in the footnote (1). The influence exercised on temperature strata will be noticed subsequently.

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1. "At Cape Linzee 1½ miles northward from Port Hood, the west coast of Breton Island trends away to the north-east by east, continuing in that direction to Cape St. Lawrence a distance of 73 miles without either harbour or safe anchorage for ships. The general character is high and bold, the dangers being few and close inshore, but it is nevertheless a dangerous coast to be near in Autumn or early Winter, when the prevailing north-west winds send in a heavy sea and the set of the current is often in the same direction. The swell frequently precedes the wind by many hours, and, as there is no good holding ground, becomes dangerous to vessels caught close inshore. Even with a smooth sea and in fine Summer weather, vessels are set in towards this coast, an effect which seems to be due sometimes to the general current from the north-west coming from between the Magdalens and Prince Edward Island, and at other times to the direction of the ebb-stream from the Strait of Northumberland inclining towards these shores.

"These streams being inconstant and irregular, both in strength and direction, are therefore the more dangerous and require the more to be guarded against. In the Summer months, however, the rate of the current or tides will not be found to exceed one knot even close inshore; excepting round Cape St. Lawrence and Cape North, where it sometimes runs at the rate of 2 or 3 knots, causing a heavy, breaking sea. Its direction for three-fourths of the time is from the westward. This appears to be due to the combined action of the current and ebb-tide predominating over the flood stream from the north east, so as to render it nearly imperceptible, excepting at or near the Spring tides.

"There is no doubt that winds present, or at a distance, also influence these streams, as they have been observed to do in all parts of the Gulf."