

Additional height of incoming waves may be drawing water out from the beach, and by the same token drives the water further up the beach. I would judge the distance of interplay is 250' and the height equivalent to the normal range of tide or 6-7 feet. There is a powerful underflow during these times extending out into the surf area, if action of feeding scoters is a criterion as they, in many instances could not swim against the outgoing water.

White (Indian) foam formed on beach to  $1\frac{1}{2}$  feet deep and after the surging water retracted the wind would blow the foam over non-friction surfaces for several hundred feet. Some masses say 1 foot in diameter would sail beyond highest point of wave action to unaffected beach in the speed of the wind and in a hundred feet or so, <sup>gradually</sup> disappear from erosion of the foam mass over the drier sands. One mass blew for 1 hundred feet over water saturated sands to cliff area and thence up steep slope to divide 30' high and then into space upward for another 40' to drop down on the lee side of the pass.

Additional action takes place when wave advances up a river channel in beach with movement from several direction into and over the river channel, as well as driving up the channel like a channel bore.

Many times the entire surf was one mass of white foam and or wind blown water from breaking crests of waves.

First breaking outer waves at times seemed like mountains with typical breaker. Also areas where there was interplay from complex wave action within the normal advancing waves.

Pacific City, Thousand Trails Preserve, Tillamook Co., Oregon  
~~Survey, near river mouth, Oregon~~  
 Nov. 3, 1984

min. temp 50°F. Rain occasionally last night but cleared over Pacific by 8:00 A.M. <sup>high surf and strong winds</sup> From site C 16 began census of western gulls migrating S along coast. Observation a 25° are directly W. Birds sailed by from 60' to 250' above beach. and taking advantage of updraft winds off ocean. Census in intervals of 5 minutes. I do not know how much earlier the flight started or when. all moving S and only rarely wing beat.  
 8:15 A.M. to 8:20 107 western gulls, 1 brown pelican

