This study measured and evaluated the relation of coastal foredune morphology to stream beach outlets, and investigated the processes associated with the stream outlet. Intermediate-size streams were studied, and defined as those that flow across the beach most of the year but have no tidal influence. Fifty-four of these streams were found along the northern Oregon coast between the Columbia River and Yaquina Bay. Crescent Lake Outlet, Saltair Creek and Daley Lake Outlet were chosen as study streams for
further investigation.

Significant differences at the intermediate-size stream outlets were found in dune morphology and volume, beach profile and plan form, and in wave and wind processes.

Dune height and volume are less at the outlet, especially on the northern side of the stream, because stream wetting of sand was found to interrupt the dominant northward eolian processes. Stream incision into the upper beach allows storm waves to break farther onto the shore, into the area of dune formation. Flooding hazard is also increased by the stream embankment's focusing of wave energy. Increased deposition at stream outlets appears to increase the lower beach elevation in the surf zone and may cause the observed increase in offshore turbulence near the stream. No significant beach sediment size variation was found.

Increased hazard to development is expected because of reduced dune size, lowered beach face and focusing of storm waves at the stream outlet.