



What do nearshore water circulation patterns tell us about shellfish tracts?

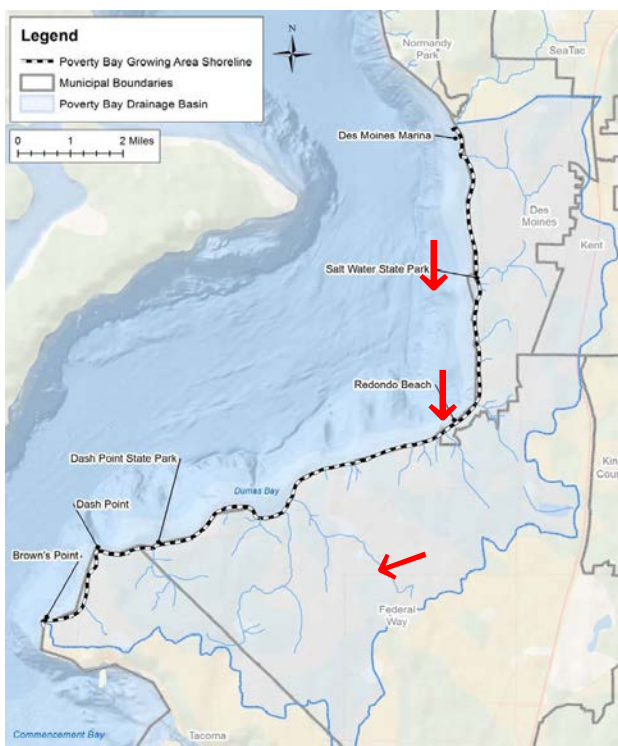


Outfall effluent into the Poverty Bay shoreline can impact aquaculture tract status.

To gain a better understanding of nearshore water circulation patterns in Poverty Bay, DNR will deploy neutrally buoyant drogues in the nearshore and track their movement in kayaks with hand held GPS devices. Drogues are “drifters” carried at the water surface by tidal currents. Recording their route of travel is an accepted method of understanding the pathway outfall effluent can travel.

Three different locations have been selected as drogue release stations; creek mouth, updrift and down drift. The drogues will consist of brightly colored fruit, such as oranges and grapefruit, labeled by the name of the release station. In order to track nearshore water movement, drogues will be deployed in batches by kayak and then released simultaneously from each of the three locations. Drogues will be tracked over a determined area for a certain amount of time. The actual distance traveled over time and the longshore rate of travel will be calculated from field data collected. This will occur in dry and wet weather conditions at similar points of the tide cycle.

Poverty Bay has several shellfish tracts being considered for upgrading of tract status. The presence of bacteria is one parameter being considered for this upgrade. Once a circulation pattern is determined in Poverty Bay, bacteria sampling will be completed to determine the travel pathway for the bacteria and the potential impacts to aquatic resources.



Poverty Bay drainage basin, municipalities and upland creeks. Map prepared by King County. Red arrows show where the preliminary dry season drogues were released by WDNR Aquatic staff and the direction of travel that was recorded. The three release stations are Salt Water State Park (creek mouth), Des Moines (up drift) and Redondo Beach (down drift).