



North to Alaska: Evidence for conveyor belt transport of Dungeness crab larvae along the west coast of the United States and Canada

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ABSTRACT: We propose and evaluate the hypothesis that Dungeness crab (*Cancer magister*) larvae from the northwestern coast of the United States and Canada can be transported northward to southeastern Alaska. Larvae collected in southeastern Alaska during May and June 1997-2004 had abundances and stages that varied seasonally, interannually, and spatially. An unexpected presence of late-stage larvae in spring raises a question regarding their origin, and the most plausible explanation is that they hatched off the northern Washington and British Columbia coasts and were transported to southeastern Alaska. Buoy drift tracks support the hypothesis that larvae released off the northern Washington and British Columbia coasts during the peak hatching season can be physically transported to southeastern Alaska, arriving as late-stage larvae in May and June, when local larvae are only beginning to hatch. A northward spring progression of monthly mean 7° C SST isotherms and phytoplankton blooms provide further evidence that environmental conditions are conducive for larval growth and metabolism during the transport period. The proposed larval transport suggests possible unidirectional gene flow between southern and northern populations of Dungeness crabs in southeastern Alaska.

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