

## AFSC/ABL: Chum salmon bycatch genetic stock identification 1994-1995 Bering Sea

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In some years, the Bering Sea trawl fishery incidentally harvests (bycatch) large numbers of chum salmon. Because chum salmon were declining in some western Alaska areas, the origins of the chum salmon bycatch were important. Tagging studies have shown that chum salmon originating in Asia and North America migrate through the eastern Bering Sea. Genetic stock identification (GSI), a method of estimating stock composition in mixed-stock fisheries, has helped in evaluating stock contributions to salmon fisheries on the western coast of North America. Through cooperative efforts between state and federal agencies, a comprehensive genetic baseline for Pacific Rim chum salmon stocks has been developed, which enables GSI in fisheries such as the Bering Sea trawl fishery.

In 1994, the National Marine Fisheries Service, Auke Bay Laboratory, initiated a feasibility study of GSI in determining the origins of the chum salmon bycatch in the Bering Sea trawl fishery. Sampling in 1995 was intensified and resulted in samples covering the entire fishing season, representing nearly 11% of the total chum salmon bycatch.

Estimates for our 1994 fishery samples over three period were 39-55% Asian stocks, 20-35% western Alaska stocks, and 21-29% southeastern Alaska, British Columbia, or Washington stocks. One small sample (N=47) of maturing fish showed a surprisingly large contribution of British Columbia stocks (53%). Estimates for our 1995 samples over seven time periods were 13-51% Asian stocks, 33-53% western Alaska stocks, and 9-46% southeastern Alaska, British Columbia, or Washington stocks. As in 1994, the sample of maturing fish (N=277) showed a large contribution of British Columbia stocks (49%) and Washington stocks (25%).