

3-1. Migration and Distribution of Salmon (Oral-7)

Stock-Specific Ocean Distribution and Migration of Chum Salmon in the Bering Sea and North Pacific Ocean

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Chum salmon (*Oncorhynchus keta*) is a major pelagic fish species in the Bering Sea ecosystems. The stock-specific ocean distribution of chum salmon was estimated by genetic stock identification (GSI) and otolith marks. Fish were caught by 1-h trawl at 63 stations in the Bering Sea and North Pacific Ocean during the summer (June/July) and early fall (August/September) of 2003. Tissue samples were collected from chum salmon (n=3,982), and run for 20 allozyme loci to estimate the stock composition of mixtures. In addition, otoliths were collected from chum salmon (n=3,982), and examined for mark pattern to determine the hatchery origin. The GSI-estimates combined with catch data (CPUE) indicated that the ocean distribution patterns of immature chum salmon were different among regional stocks. The Japanese stock was mainly distributed in the central Bering Sea. The distribution of the Russian stock was similar to that of Japanese chum salmon, but it also spread into the North Pacific Ocean. The northwestern Alaska stock including fall runs in the Yukon River were distributed mainly in the southern edge (40°N) of the Gulf of Alaska. The Alaska Peninsula/Kodiak stock was widely distributed in the Bering Sea and North Pacific Ocean. The Southeast (SE) Alaska/North BC stock appeared in the northern Gulf of Alaska and southern Bering Sea. The distribution of the South BC/Washington stock was similar with that of SE Alaska/North BC stock, but expanded to the northern Bering Sea. The present samples included otolith-marked chum salmon released from Alaska (n=67), Canada (n=3), Japan (n=22), and Russia (n=6). The recovery sites of marked fish were almost consistent with the marine distribution of those regional stocks estimated by GSI. We estimated the stock-specific migration patterns of chum salmon in the Bering Sea and North Pacific Ocean from best available information including ocean conditions and winter habitats.