

AFSC/ABL: Chum salmon length and weight monitoring at Fish Creek (Hyder, AK), Chilkat River (Haines, AK), Olsen Creek (Cordova, AK), and Quilcene River (Quilcene, WA)

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Changes in size and age at maturity of chum salmon (*Oncorhynchus keta*) were monitored for two locations in North America. Chum salmon spawners returning to Fish Creek, southeastern Alaska, were sampled yearly from 1972 through 1996. Spawners returning to the Quilcene National Fish Hatchery in Hood Canal, Washington, were sampled yearly from 1973 through 1996. Size at maturity of both populations declined significantly from about 1980 to the mid-1990s. Age at maturity increased during this time. These changes were associated with a major ocean climate regime shift in the North Pacific Ocean that occurred in 1976-77. Population abundance of chum salmon increased greatly after the regime shift, especially in Asia. Similar changes in size and age at maturity occurred in Asian chum salmon; because the range of North American and Asian chum salmon overlaps on the high seas, these changes are discussed in relation to possible density-dependent population factors. Since the mid-1990s, size at maturity and population abundance have increased, possibly indicating another climate change in the North Pacific Ocean.