

3-2. Food Production and Salmon Growth (Keynote-2)

Influence of Ocean Environment on a Reduction of Japanese Chum Salmon (*Oncorhynchus keta*) Body Size

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In the 1990s, a reduction of Japanese chum salmon (*Oncorhynchus keta*) body size was observed. In order to investigate the body size reduction of Japanese chum salmon in the North Pacific, we developed a fish bioenergetic model for chum salmon. The model was driven by SST and zooplankton density obtained from NEMURO. Although the model did not include density dependent effect (carrying capacity), this model reproduced the body size reduction of chum salmon. The model showed that the size reduction was caused by the prey density in the eastern North Pacific during winter and spring seasons. This result suggests that the carrying capacity for chum salmon in the Bering Sea is enough.