Changes of the Far East salmon’s winter dwelling conditions in connection to the climate variability

Yulia Moseikina, Natalia Clovach, Marat Bogdanov, Andrey Krovnin and Olga Ivanova

Russian Federal Research Institute of Fisheries & Oceanography (VNIRO)
Areas, chosen for calculating of duration the period, when the sea surface temperature less then 5°C
Duration of the period, when the sea surface temperature less than 5°C

**The Kuril region**  
(46 - 47°N, 153 - 168°E)

**The Aleutian region**  
(49 - 50°N, 170°E - 175°W)

Legend:
- Purple line: Duration of the period, when the sea surface temperature less than 5°C
- Blue line: Beginning of the period, when the sea surface temperature became less than 5°C
- Red line: Beginning of the period, when the sea surface temperature became higher than 5°C
Duration of the period, when the sea surface temperature less then 5°C

the Aleutian region

the Kuril region
The salmon harvest of the West (1) and East (2) Kamchatka

- **1**
  - Year: 1950-2000
  - Catches: Tons
  - Graph: Pink salmon

- **2**
  - Year: 1950-2000
  - Catches: Tons
  - Graph: Sockeye salmon

Legend:
- **Pink salmon**
- **Sockeye salmon**
Conclusions:

- There is a clear inverse dependence between time of cold period beginning, and its duration both in the Aleutian and the Kuril regions.

- The duration of a cold period in both sectors increases in the latest ten years, moreover in the Aleutian area more quickly. We can notice an increase of negative impact of hydrological conditions on salmon in the period of their wintry.

- Moving of wintry area may led to increasing the length and duration of salmon migrations toward these area and to reducing of time of graziery. Abundance of salmons may reduce in such case.

- We have not opportunities to prevent the unfavorable effects of climatic fluctuation on salmon stock, but if we can assess of forecast the tendencies of changes in these factors, then we can estimate the possible changes in the state of salmon stocks under consideration.