

## Korean Research Plan for Chum Salmon in 2007

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## **Korean Research Plan for Chum Salmon in 2007**

Salmon enhancement program in Korea started in 1967 and the program has been more activated since Salmon Research Center of Korea was established at Yangyang in 1984. The major activities of the Salmon Research Center were the release of chum salmon fingerlings and the catch of adult chum salmon for the artificial fertilization. The range of return rate to the Korean waters maintained in 0.71~1.52 % during 1990s, but it has seriously reduced since 2000. To overcome the low return rate and enhance the chum salmon resources in the Korean waters, 10-year-science plan were made in 2004. Below is the brief summary of science plan.

1. To reveal the mechanisms of mass mortality of chum salmon during their early life in rivers and coastal areas in conjunction with the fluctuation of return rates, we will carry out the researches as follows;

- (1) Identification of prey and predator species for juvenile salmon in the rivers and coastal areas,
- (2) Stage-by-stage estimation of survival rate after releasing in the rivers and coastal areas,
- (3) Monitoring of environmental factors in the river and coastal areas,
- (4) Examination of growth rate during the early life history using otolith and compare the growth rate between released juvenile salmon and wild juvenile salmon, and
- (5) Investigation on the optimal releasing period for juvenile salmon.

2. Climate change could affect the distribution, migration route, and biological characteristics of salmon while they return to natal rivers for spawning. This research includes

- (1) Continuous monitoring activities on environmental conditions in the Korean waters and the western Pacific Ocean, and
- (2) Climate change effects on the biological characteristics of chum salmon returned to the Korean waters.

3. Otolith thermal marking on Korea chum salmon will be carried out as a preliminary research to provide information about growth, survival during the early ocean life stage, and hatchery origins from 2007 release (2006 brood).

4. For the stock identification, we will study on the parasitic fauna as a biological tag for the returned chum salmon to Namdae-cheon(stream). Also, genetic variations through mitochondrial DNA control region sequence analysis and microsatellite DNA analysis will be continued to reveal the relationship between Korean and other countries chum salmon.

5. The natural stocks of masu salmon (cherry salmon) were a quite abundant in the coastal areas of Korea even though the stock is hardly found in the streams of Korea. We plan to expand masu salmon releasing program, and as the first step of masu salmon research, we will examine stomach contents to know the prey items of masu salmon and the competitions for preys with other fish species in the coastal area and ocean.

6. International cooperative research in the North Pacific Ocean including the Bering Sea in terms of BASIS will be continued.