

## VI. Closing Remarks

Distinguished Mr. Chairman, Colleagues, Ladies and Gentlemen

Our symposium is coming to an end. This is the third meeting of scientists organized by the NPAFC. The two previous ones were in 1996 and 1998. Similarly, the present symposium was oriented to the discussion of a specific concern to scientists and practical fishermen. The papers presented provide us with a good idea of the state of knowledge of salmon, and identify priorities.

About ten years ago, nearly concurrently with the establishment of NPAFC, salmon research entered a new phase. Previously, the main effort was oriented to the freshwater period. It was expressly for the freshwater period that the main quantitative characteristics had been obtained. Marine research was significant, too. It provided us with a detailed picture of the life of salmon at sea. However, this research was mostly qualitative. It had little relevance to quantitative assessment and to process or mechanism analysis.

The situation changed radically throughout the past decade. The share of marine research has risen considerably whereby quantitative assessments are made which enable us to understand the processes occurring within salmon stocks at sea.

I shall try to list recent achievements which I have memorized well. Naturally, I shall omit something because of my special interest.

Understanding of salmon as a natural phenomenon has become more profound. The same is true of recognition of dependence of salmon on global natural processes. This opens up possibilities for macroscale forecasts in the future.

The structural feature of salmon migration on the high seas was discovered and described. It was found that the migrations in the ocean have a structure that is similar to the structure of spawning runs in rivers, and that this characteristic is established hundreds of miles away from the coast.

Trawling techniques for salmon were developed for projections of returns and possible catch. For several years, this system was applied successfully in Russia to Okhotsk Sea pink salmon stocks.

Previously, salmon research was restricted mostly by the fishing season. At present, studies are conducted the year round, making it possible to get knowledge of

wintering of salmon, and the factors that affect these species during winter.

We have come to understand better the year-round features of growth, sufficiency of food, and food relations. We have begun very promising investigations of lipids. The above factors will allow us to understand better the characteristics of mortality and survival of salmon and, still more important, factors of mortality and survival during wintering. Those data can make it possible to improve significantly the quality of fishing forecasts.

We have raised tagging of salmon, especially with archival tags, to a new level.

The establishment of the international database for genetic identification of stocks can be viewed as a great success.

Several hypotheses of special interest have been put forward recently which show a vector of future research.

The above-mentioned success could be achieved only through international cooperation of scientists. On the other hand, this united effort is augmented significantly by the activities of NPAFC.

In closing, on behalf of all the participants, I would like to thank the Government of the United States for the opportunity to hold this symposium. My thanks go to the State of Alaska and to our colleagues from Juneau for their kind hospitality and for excellent conditions to work and relax in.

I am grateful to the Secretariat of the NPAFC for the excellent organization of the event. I thank the NPAFC for the support which made it possible for several scientists to take part in the symposium. I also thank members of the steering committee for their preparatory work.

I would like to thank Alaskan weather which tied us up closer to this house and allowed us to feel better the warmth of its walls and the warmth of communication.

Thank you all. Happy journey home.

This symposium is adjourned.

Oleg Gritsenko

Chairman

Committee on Scientific Research and Statistics

1997-1999