魚鱗情報によるシロザケの母川回帰解析

A Study on the Stock Origin Identification of Chum Salmon Based on Scale Pattern Analysis.

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Abstract

A study of fish scale, along with otolithes, backbones and other hard parts, yields ecological information such as the source river, the rate of growth , as well as the fish age. Consequently, the analysis of scale pattern has been widely used to determine the fish age and their stock origins.

In the present paper, an analytical method of determining the stock discrimination of chum salmon caught from different origins using scale patterns is developed.

The analysis has been made by utilizing an auto-correlation coefficient and power spectrum as a function of the circuli number. The authors employed a discriminant function incorporated with power spectralized values of amplitude of circuli pattern data as explanatory variables.

Fish from four different rivers were grouped with an averageaccuracy of 88 %. The scale samples used in the analysis were collected from four rivers (R.Tokachi in Hokkido, R. Anadyr in Russia, R. Yukon in Alaska and R. Fraser in Canada.)

(keywords: chum salmon, scale pattern, circuli pattern, stock origin, spectrum analysis, discriminant function.)