# Stock and Fishery Dynamics of Coregonus lavaretus of Lake Sevan, Armenia

## Abstract

Bardukh Gabrielyan

Reduction in water level of Lake Sevan brought about by hydroconstruction and abstraction of water for irrigation has essentially changed its ecological regime. Changes of the lake's ecosystem have resulted in considerable disturbance of habitat conditions of fish related mostly to effect on natural reproduction and food provision conditions. Recent years due to secondary eutrophication of the lake and intensified illegal fishing populations of all commercial type fish have been depressed. Related to this, for determination of the state of Coregonus lavaretus population - the main fishery species of the lake dynamics of its population parameters has been studied. For that calculation program Lowestott VPA Suite, Version 3.1 by Darby C.D. and Flatman S. (1994) is applied. It was determined that for the given population the most suitable calculation method is Extended Survivors Analysis (XSA) with shrinkage 0.2.

During the calculation process trends of the dynamics of C. lavaretus stocks from 1979-1998 are revealed and an attempt is made to give short-term forecast of catch of this species in Lake Sevan. For choosing the most appropriate method under catch-at-age analysis "Retrospective Analyses" are done for two types of fishing gears - purse seine net and gillnet. Analysis of the obtained data has shown that in 1990s a tendency in the population toward rejuvenation is observed in parallel with depletion of its stocks. It should be noted that if in preceding period the main regulating factor having impact on stocks was change of water quality brought about by changes of the reservoir's regime, then for recent years fishing pressure due to practically

unregulated fishing in the lake has turned to main factor.

Thus, drastic reduction of stocks of C. lavaretus under the impact of the fishery will result in misbalance with its food base, accumulation of excessive organic matter in the lake and therefore, aggravation of eutrophication processes there.