

# Stock Dynamics of *Coregonus lavaretus* in Lake Sevan, Armenia

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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. Due to secondary eutrophication of the lake and intensified illegal fishing populations of all commercial type fish have been depleted in recent years.

## Aims

The population parameters of the main fishery species of the lake, *Coregonus lavaretus*, were studied to determine the health of the stock. Trends in the dynamics of *C. lavaretus* stocks from 1979-1998 were revealed and an attempt is made to give short-term forecast of catch of this species in Lake Sevan.

## Methods

The Lowestoft VPA Suite, Version 3.1 by Darby C.D. and Flatman S. (1994) was applied. For the given population the most suitable calculation method is Extended Survivors Analysis (XSA) with shrinkage 0.2. 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.

## Results

Analysis of the obtained data has shown that in the 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.

## Conclusion

Drastic reduction of stocks of *C. lavaretus* by the impact of the fishery will result in an imbalance with its food base, leading to accumulation of excessive organic matter in the lake and therefore aggravation of the eutrophication processes there.