POPULATION DYNAMICS AND EXPLOITATION PATTERNS OF COMMON CARP (*CYPRINUS CARPIO*) IN THE DANUBE RIVER, KM 1047–1071

A. Dobre[1,2], M.D. Stroe[1*], D. Mirea[1], A.N. Macoveiu (Dobre)[1,3], F.M. Dima[1,4]

[1]Institute of Research and Development for Aquatic Ecology, Fishing and Aquaculture 54 Portului Street, 800211 Galați, Romania
[2]University of Agronomic Sciences and Veterinary Medicine of Bucharest, 59 Marasti Blvd, District 1, Bucharest, Romania
[3]Faculty of Food Science and Engineering, "Dunarea de Jos" University of Galati, Romania, 47 Domnească Street, 800008, Galați, Romania
[4]Faculty of Engineering and Agronomy of Braila, "Dunarea de Jos" University of Galati, 29 Calea Călăraşilor Street, 810017, Brăila, Romania
**e-mail: sdesimira.icdeapa@gmail.com*

Abstract

This study evaluates the biological status and population dynamics of the common carp (Cyprinus carpio) in the Danube River, between km 1047–1071. A total of 192 individuals were sampled, and their length-frequency distribution was used to estimate growth and mortality parameters. Growth parameters were estimated using the von Bertalanffy Growth Function, resulting in $L\infty=75.6$ mm, $K=0.63$ year^{-1}, $t_0=-0.70$ year and the growth performance index $\Phi'=3.56$, indicating moderate growth potential. Mortality analysis showed total mortality ($Z=2.07$ year^{-1}), with natural mortality ($M=0.81$ year^{-1}) and fishing mortality ($F=1.26$ year^{-1}), resulting in an exploitation rate ($E=0.61$), suggesting high fishing pressure on the population. These results provide a comprehensive overview of the carp population dynamics, supporting sustainable management and conservation strategies in the studied freshwater system.

Key words: *inland fish, stock assessment, growth parameters, mortality rates, population dynamics*