This Week's Citation Classic®


This study soon went out of print, but most of it was incorporated into a comprehensive review of the field 10 years later. During the interval much new material had become available. For example, statisticians had refined the various formulae for estimating survival rate, etc. The "models stock" method of A.N. Dzerzhavin had been developed by F.E. Fry. Calculations for estimating population size from decline in fishing success had been elaborated by F.L. Delury and F.H. Leslie. Baranov had made a calculation of the rate of fishing for maximum sustainable yield in 1912, and in 1945 I outlined a more general usage procedure. In 1957 a third method was proposed by R.M. Fry, which used the asymptotic curve method. I also proposed a method for E. Barry. In 1954 I had extended the method of estimating annual recruitment for salmon, which included the "additions removal" method for other populations. A monograph was proposed by Beverton and J.J. Holt. It related to two levels of fishing, the most notable being California sardine. An examination of the change in fishing rate and population size, J.A. Gallant's version of the additions and removals method, and an examination of the changes in a stock as rate of fishing for redfish shows the "catch per unit of effort" method. The fourth and last member of this series of reviews is the 1975 Bulletin here cited as a Classic. It contains most of the 1958 material, but the formulae were put into the international notation. Among the new sections are the "catch curve" method of estimating recruits, the work of the "catch curve" method of estimating survival rate and related statistics. Both parts of the work were strongly influenced by F.L. Baranov's original but little-known monograph of 1918, which I had laboriously translated from Russian. Some of the illustrations used in 1948 were analyses of data published by others, notably the series of reports on Pacific halibut by W.F. Thompson and colleagues.

1. Ricker W E. Relation of "catch per unit effort" to abundance and rate of exploitation, J. Fish. Res. Board Can. 5:45-70, 1946. (Cited 20 times since 1945.)