



Study on the age and growth of Caspian trout (*Salmo Caspius*) in the south of the Caspian Sea via back calculation technique

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Abstract:

The aim of present work was to study on the growth and age structure in Caspian trout *Salmo Caspius* during 2013-2015. Totally, 43 and 101 individuals have been captured in Cheshmehkileh River Tonekabon, Iran for back calculation and biometrical parameters study, respectively including measurement of the length, weight and age. The minimum (min) and maximum (max) ages determined 4 and 7 years while the 5 year was the most frequency group and the 6 and 7 years groups showed remarkable pattern. The mean length and weight of cathead individuals were 69.2 ± 6.2 cm and 3323 ± 677 g, respectively. Base on back calculation method in 2014, the mean length of 1, 2 and 3 years fish were 18.98 ± 3.5 , 30.5 ± 7.24 and 41.7 ± 9.1 cm, respectively which all were below maturity age thus usually do not come close to the coastal waters for spawning. Moreover, males possessed larger size which might represent better growth however greater prevalence and frequency occurred in females. Growth parameters such as growth coefficient (K) and L_{∞} was measured 0.18, 104 cm, respectively and growth performance index (ϕ') calculated 3.289 while it was an allometric negative growth. L_{∞} and K on the Caspian trout showed an acceptable range and proper growth. Hatchery rearing, if has very high proportion, can results to a reduction in the fitness of hatchery fish in the wild thus more empirical studies are needed to reveal the controversy of whether hatchery stocking is useful or harmful.

Keywords: Caspian trout (*Salmo caspius*), Caspian Sea, Growth, Age, Back calculation