Study the growth characteristics of (*Carassius gibelio* Bloch, 1782) in the Boostan Dam Lake and Alakoli Reservoir in Golestan Province

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Abstract

In this study, age and growth parameters of Prussian carp *Carassius gibelio* were examined using 222 specimens from the Boostan dam lake and 238 specimens from the Alakoli reservoir. Sampling was carried out monthly from February to September 2015. The ratio was 1:0.13 and 1:0.09 in the study population of Boostan Dam Lake and Alakoli reservoir, respectively. Age determination by scales showed six age groups (1^+-6^+) for females and three age groups (1^+-3^+) for males in the Bostan Dam Lake and five age groups (1^+-5^+) for females and four age groups 1^+, 2^+, 4^+ and 5^+ for males in the Alakoli reservoir. The total size distribution varied from 3.3 to 20.6 cm in length and 0.83 to 141.12 g in weight and from 4.3 to 19/6 cm in length and 1.67 to 114.65 g in weight in the Boostan dam lake and Alakoli reservoir respectively. The growth pattern was isometric in males and negative allometric for both females and population in the Boostan Dam Lake and isometric in males and positive allometric for both females and population in the Alakoli reservoir. The parameters of von Bertalanffy growth fit the mean observed total lengths-at-age for each sex separately and were estimated as ($L\infty$= 574.17 cm, k = 0.07 year -1, t0= -0.10 year for females, $L\infty$= 338.43 cm, k = 0.15 year-1, t0= -1.04 year for males, and as $L\infty$= 299.06 cm, k = 0.18 year -1, t0= -0.34 year for combined sexes in the Boostan dam, $L\infty$= 4344 cm, k = 0.01 year -1, t0= -0.12 year for females, $L\infty$= 3177 cm, k = 0.01 year-1, t0= -0.18 year for males, and as $L\infty$= 2526.15 cm, k = 0.04 year -1, t0= -0.40 year for combined sexes in the Alakoli reservoir. The instantaneous growth rate was 1^+-2^+ ages for population in both regions. Condition factor showed that in the Boostan Dam Lake, the highest value was observed in June and August for females and the lowest in March for males and in the Alakoli reservoir, the highest condition factor was in May for females and the lowest in May for males. This results showed that these values differ in our study with other studies in this field that can be attributed to environmental differences.

Keywords: *Carassius gibelio*, length-weight relationship, parameters of von Bertalanffy, Boostan Dam Lake, Alakoli reservoir.