

Study on main reproductive characteristics of wild common carp, *Cyprinus carpio*, in Anzali Lagoon

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Received date: 2019.07.31

Reception date: 2019.04.05

Abstract

The study of body length and weight, maturity age, sex ratio, egg diameter, fecundity and spawning season of common carp has been done and the main aim was help to its population rebuilding. 1023 specimens were caught in Anzali wetland monthly from October 2015 until March 2017. There was used sexual maturity stages 3-7 for determining adults and, Gonado-somatic index and sexual maturity stages for determining spawning season. The results showed body weight $54.3-2264$ (687.6 ± 337.3) g in adult males ($n=333$) and $226.1-5483$ (856.7 ± 543.2) g in adult females ($n=367$) with significant difference between them ($U=49999$, $P<0.01$). Total length was measured $161-571$ (369.3 ± 63.1) mm in adult males and $260-761$ (391.3 ± 72.2) mm in adult females with significant difference between them ($U=52040$, $P<0.01$). Length maturity in 50% females was calculated 352 mm (TL). Adult males and females had 3-10 and 3-12 years old respectively, thus maturity in both sexes took place in 3 years old. Adult males number was 1.58 times than adult females in running ripe to newly fully spent individuals in spawning season (spring and summer) and it differed from standard value ($X^2=10.8$, $P<0.01$). There were 3 different batches of eggs (large, medium and small) in adult female ovaries, at least. The averages of absolute and relative batch fecundity (only large eggs) were estimated 170977.6 ± 176651.3 eggs and 132400 ± 62400 eggs per one kilogram of female body weight, respectively. Common carps spawned from late March until October in Anzali wetland in a water temperature of $13-27$ °C. This study showed common carp individuals select only multiple batch spawning model per a spawning period, which according with more spawning months and fecundity than other southern Caspian Sea basin.

Keywords: *Cyprinus carpio*, Common carp, Spawning season, Maturity, Anzali wetland.