

Short communication

Length–weight relationships for seven freshwater fishes caught in Kemer reservoir, Turkey

By G. Özcan

Department of Hydrobiology, Faculty of Fisheries, Mustafa Kemal University, Antakya, Hatay, Turkey

Summary

Length–weight relationships (LWR) were estimated for *Acanthobrama mirabilis*, *Barbus pectoralis*, *Chondrostoma meandrense*, *Capoeta bergamae*, *Silurus glanis*, *Petroleuciscus smyrnaeus* and *Cyprinus carpio* from the Kemer reservoir in western Anatolia, Turkey. This study is the first reference on length–weight parameters for five of these species.

Introduction

Estimates of length–weight relationships (LWR) are necessary for stock assessment and management (Pauly, 1983; Petrakis and Stergiou, 1995; Gonçalves et al., 1997; Koutrakis and Tsikliras, 2003).

Materials and methods

The study was carried out in the Kemer reservoir (37°32'58"N and 28°32'48"E) on the Akçay Stream, which is a branch of the Great Menderes River in western Anatolia. Sampling was performed by using gill nets (18–35 mm mesh sizes) and cast nets (12–22 mm mesh sizes) from March to June 2006. Specimen were preserved in a 4% formaldehyde solution, then identified (Elvira, 1987; Geldiay and Balık, 1999) and measured to the nearest cm total length (TL) and weighed to the nearest 0.01 g total weight (W). Scientific names for each species were checked with the FishBase (Froese and Pauly, 2007).

LWR for the total body weight was calculated using the equation: $W = a \cdot TL^b$, where W is the total weight (g), TL is the

total length (cm), and a and b are the equation parameters. Parameters a and b were estimated by the least squares regression method.

Results and discussion

Estimated parameters of the LWR of seven freshwater fish species are given in Table 1. The five species for which no LWR were found in FishBase (Froese and Pauly, 2007) are highlighted in bold. Cases of allometric growth are indicated with bold confidence limits of exponent b .

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Table 1
 Length (L) (cm)–weight (W) (g) relationships for seven fish species from Kemer reservoir, based on $W = aL^b$

Species	n	L _{min} –L _{max}	a	b	CI	r ²
<i>Acanthobrama mirabilis</i> Ladiges, 1960 ¹	379	11.0–16.7	0.0081	3.018	2.913–3.123	0.904
<i>Barbus pectoralis</i> Heckel, 1843	122	10.4–36.2	0.0065	3.141	3.050–3.232	0.968
<i>Chondrostoma meandrense</i> Elvira, 1987 ¹	86	12.7–17.8	0.0050	3.217	3.075–3.359	0.915
<i>Capoeta bergamae</i> Karaman, 1969 ¹	73	14.0–22.8	0.0252	2.638	2.488–2.788	0.919
<i>Cyprinus carpio</i> Linnaeus, 1758	33	12.4–34.6	0.0174	3.101	2.886–3.216	0.983
<i>Petroleuciscus smyrnaeus</i> (Boulenger, 1896)	18	4.3–9.1	0.0191	2.802	2.680–2.924	0.989
<i>Silurus glanis</i> Linnaeus, 1758	7	23.4–58.3	0.0199	2.568	2.487–2.649	0.970

Species in bold italic not included in FishBase (Froese and Pauly, 2007) W–L relationships.

¹Endemic species of Turkish inland waters.

n, sample size; min, minimum; max, maximum; CI, confidence intervals; a , intercept of the relationship; b , slope of the relationship $W = aL^b$; r^2 , coefficient of determination.

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- Author's address:** Gülnaz Özcan, Department of Hydrobiology, Faculty of Fisheries, Mustafa Kemal University, TR-31040, Antakya, Hatay, Turkey.
E-mail: gnarin@mku.edu.tr; gulnazozcan@yahoo.com