



ISSN: 2347-5129  
 IJFAS 2015; 2(4): 249-250  
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 www.fisheriesjournal.com  
 Received: 05-02-2015  
 Accepted: 14-03-2015

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# International Journal of Fisheries and Aquatic Studies

## Length -Weight relationships of *Oxynoemacheilus theophilii* (Teleostei: Nemacheilidae) from Turkey

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### Abstract

This study presents the first available references on length–weight relationships (LWRs) for *Oxynoemacheilus theophilii* in five freshwater systems [Dalaman Stream (Burdur), Düger Spring (Burdur), Bozcay Creek (Burdur), Yiğitler Creek (Izmir), Cüneyt Creek (Balıkesir)] in Turkey.

**Keywords:** *Oxynoemacheilus theophilii*, length–weight relationships, Turkey.

### 1. Introduction

The genus *Oxynoemacheilus* consists of 42 species of freshwater fish and has a wide geographic distribution throughout Europe and Asia. About 75 percent of *Oxynoemacheilus* fishes are live in Turkey (Freyhof *et al.* 2011, Erk'akan, 2012) [1, 4]. As with many freshwater fish species of the Turkey, there is very little information on the length weight relationships of *Oxynoemacheilus* species. LWRs are only known for *Oxynoemacheilus eregliensis* (Erk'akan *et al.* 2013) [2], *Oxynoemacheilus samanticus*, *Oxynoemacheilus mesudae*, *Oxynoemacheilus evreni*, *Oxynoemacheilus simavicus*, *Oxynoemacheilus angorae* (Erk'akan *et al.* 2014) [3]. *Oxynoemacheilus theophilii* lives in freshwater systems of Greece (stream Evergetoulas, Lesbos Island) and Turkey (Froese and Pauly 2014) [6]. *O. theophilii* is known from a single locality in Greece (Stoumboudi *et al.*, 2006) [7]. It is severely threatened by habitat degradation that is caused mainly by water abstraction and pollution. No studies are available in the literature on the biological aspects, especially length weight relationships, of *Oxynoemacheilus theophilii* (Froese and Pauly, 2014) [6]. The present study attempted to establish the length weight relationships of *Oxynoemacheilus theophilii* from five freshwater systems in Turkey.

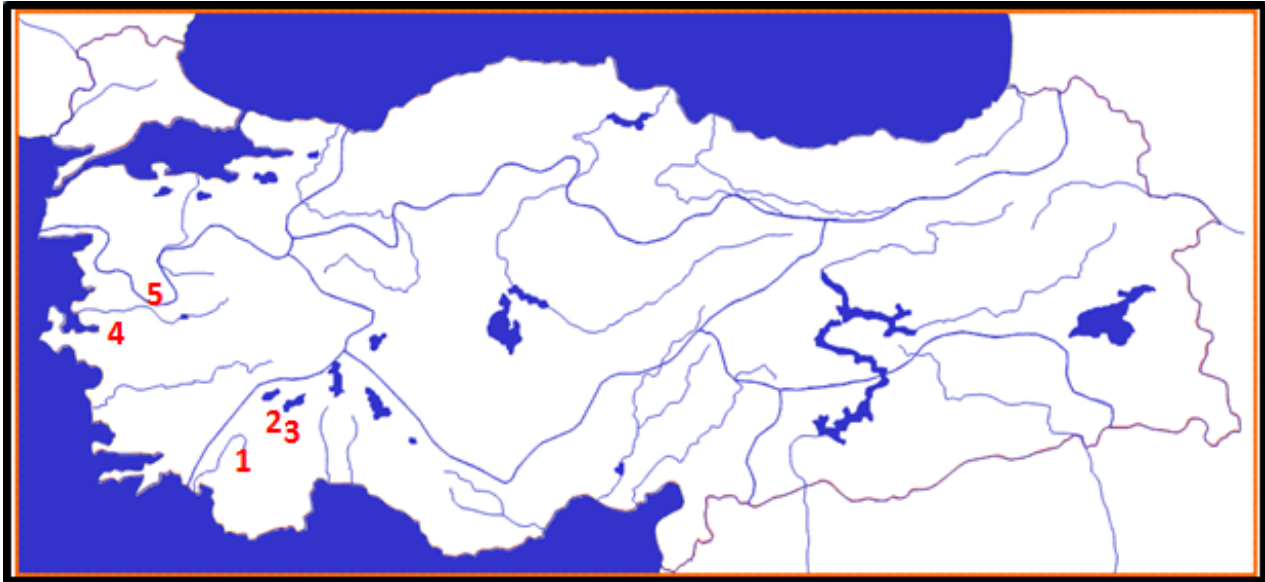
### 2. Materials and Methods

The study was carried out in five different locations [Dalaman Stream (Göhlisar, Burdur), Düger Spring (Burdur), Bozcay Creek (Burdur), Cüneyt Creek (Balıkesir, Sındırgı), Yiğitler Creek (Kemalpaşa, Izmir)] in Turkey. Field studies were conducted from 2013-2014. Ichthyofauna were sampled using fish traps and electro-shock device. Fish species was identified according to Stoumboudi *et al.*, 2006 [7]. Specimens were measured to the nearest 0,1 cm total length (L) and weighted to the nearest 0,01 g total weight (W). Parameters a and b were estimated by linear regression on the transformed equation;  $\log(w) = \log(a) + b \log(L)$ .

### 3. Results

Locality, Sample size, size range (cm, TL; gr, TW), length–weight parameters a and b, range (b) and the correlation coefficient ( $r^2$ ) are given in Table 1. Localities are shown in Map of Turkey (Figure 1).

Locality	n	TL (cm)	W(g)	a	b	range (b)	$r^2$
		min-max	min-max				
Dalaman Stream	10	6.4-7.9	2.51-4.88	0.011	2.989	2.940-3.021	0.93
Duger Spring	13	3.9-5.8	0.56-2.09	0.007	3.188	3.086-3.298	0.94
Bozcay Creek	10	3.1-5.6	0.25-1.18	0.01	2.898	2.766-3.039	0.94
Yiğitler Creek	9	5.5-8.9	1.1-5.4	0.004	3.293	3.239-3.365	0.98
Cüneyt Creek	17	6.6-10.5	2.3-11	0.007	3.070	3.011-3.151	0.96



**Fig 1:** Map of localities

1-Dalaman Stream (Göhlisar, Burdur), 2-Düger Spring (Burdur), 3-Bozcay Creek (Burdur), 4-Yiğitler Creek (Kemalpaşa, Izmir), 5-Cüneyt Creek (Balıkesir, Sındırgı)

#### 4. Discussion

The values of parameter  $b$  remained within the expected range of 2.5-3.5 (Froese, 2006) [5]. Significant differences in length-weight relationships between localities found for *Oxynoemacheilus theophilii*. The observed difference could be due to the sampling procedure (sample size, sex ratio and length range) or ecological and environmental factors. Studies about length weight relationships of same species in different localities also showed very variable  $b$  value (Froese and Pauly, 2014) [6].

#### 5. References

1. Erk'akan F. Two New *Oxynoemacheilus* (Teleostei: Nemacheilidae) Species from Western Turkey. Research Journal of Biological Sciences 2012; 7:97-101.
2. Erk'akan F, Innal D, Özdemir F. Length-weight relationships for ten endemic fish species of Anatolia. Journal of Applied Ichthyology 2013; 29:683-684
3. Erk'akan F, Innal D, Özdemir F. Length-weight relationships for some endemic stone and spine loach species in Anatolia. Journal of Applied Ichthyology 2014; 30:244-245.
4. Freyhof J, Erk'akan F, Özeren C, Perdices A. An overview of the western Palearctic loach genus *Oxynoemacheilus* (Teleostei: Nemacheilidae). Ichthyological Exploration of Freshwaters 2011; 229(4):301-312.
5. Froese R. Cube law, condition factor and weight-length relationships: history, meta-analysis and recommendations. Journal of Applied Ichthyology 2006; 22:241-253.
6. Froese R, Pauly D. (Eds) FishBase. World Wide Web electronic publication <http://www.fishbase.org>, version, 2014, (10/10/2014).
7. Stoumboudi MT, Kottelat M, Barbieri R. The fishes of the inland waters of Lesbos Island, Greece. Ichthyological Exploration of Freshwaters 2006; 17(2):129-146 .