**Fish Species of Streams in Denizli Provinces and Their Distribution**

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**Fish Species of Streams in Denizli Provinces and Their Distribution**

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**Please use Times New Roman font style and 1.5 line spacing in all text**

Vedat YEGEN1\*, Süleyman BALIK2, Erdal BİLÇEN1, Hasan Musa SARI2, Rahmi UYSAL1, Abdulkadir YAĞCI1

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**Abstract:** In this study, the freshwater fish of streams in Denizli province and their distribution was researched. Research was carried out in total 24 station between July-August 2003. Electroshocker was used in sampling activities. The samples, which was caught through sampling activities, had been brought to the Eğirdir Fisheries Research Institue and species identification was determined according to metric and meristic characteristics in the laboratories of our institute and Aegean University, Fisheries Faculty, Department of Basic Sciences. As a result of this activities, 17 taxa belonging to 9 families were determined. *Gasterosteus aculeatus* are recorded for the first time from this province.

**Keywords:**

- Max 5 keywords

**Abstract:**

- 12 font size

- Justified

- Max: 200 words

- Single paragraph

**Keywords:** Denizli, stream, fish fauna, distribution

**Turkish Title:**

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**Denizli İli Akarsularında Yayılım Gösteren Balık Türleri ve Bölgedeki Dağılımları**

**Öz:** Bu çalışmada Denizli ili akarsularında yayılış gösteren balık türleri ve bölgedeki dağılımları incelenmiştir. Araştırma 2003 yılı Temmuz-Ağustos ayları arasında toplam 24 istasyonda gerçekleştirilmiştir. Örneklemelerde elektroşoker kullanılmıştır. Örneklemeler sonucunda elde edilen numuneler Eğirdir Su Ürünleri Araştırma Enstitüsü Müdürlüğü’ne getirilmiş, tür teşhisleri enstitümüz ve Ege Üniversitesi Su Ürünleri Fakültesi Temel Bilimler Bölümü İçsular biyolojisi laboratuarlarında metrik ve meristik özelliklerine göre yapılmıştır. Yapılan çalışmalar sonucunda 9 familyaya ait 17 takson belirlenmiştir. Cyprinidae familyasının tür çeşitliliği açısından bölgenin en baskın populasyonu olduğu belirlenmiştir. *Gasterosteus aculeatus* türü bölgeden ilk defa bildirilmektedir.

**Turkish abstract is not required for foreign authors.**

**Turkish Abstract:**

- 12 font size

- Justified

- Max: 200 words

**Anahtar kelimeler:** Denizli, akarsu, balık faunası, dağılım

**Turkish Keywords:**

- Max 5 keywords

**INTRODUCTION**

**Main Headings:**

- Upper case

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- Bold

- Left aligned

**Text Content:**

- 12 font size

- Justified

- The first line indented 1.25 cm

- There is no line space between paragraphs

**Subtitle:**

- Only the first letter is capitalized.

- 12 font size

- Bold

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**Subtitle** (If needed)

The first study on the Turkish freshwater fish species was done by Abbott in 1835 (Balık 1988). The studies done by foreign researchers continued to 1940s, thereafter expanded with domestic researchers contributions.

Akcay River is born from Bozdag and Sandraz Mountains located Beyagac, Denizli. Total stream length is 157 km, but only 70 km in Denizli provincial border. There is Kemer Dam on this river which founded to irrigation, prevent from floods, and electricity generation (Saraçoğlu 1990; Yılmaz et al. 2003; Anonymous 2004).

1 line space

**MATERIALS and METHODS**

.

**RESULTS**

.

**DISCUSSION**

.

**ACKNOWLEDGEMENTS**

The supporting agencies (with support ID) and presentation information in any symposium/convention should be given in Acknowledgements heading. For example:

This study was supported by General Directorate of Agricultural Research and Policies with TAGEM/HAYSÜD/2001/09/02/01 project number and was presented in 2nd Symposium on Fish Introduction and Reservoir Management, 20-22 May 2015, Isparta - Turkey by oral presentation.

**References:**

- References should be written in **alphabetical** order and according “Council of Science Editors Documentation” (**CSE Name-Year**) citation style.

- **DOI** number should be given for articles.

- 12 font size, 1.5 line spacing, justified, 1.25 cm hanging

- There is no line space between references

- References (articles, books, chapters, etc.) titles should be written with lower case without the first letter of the first word (without special cases).

- If reference has not English title, determined by author(s), it should be written in original language (should not be translate to English), and the used language should be noted between brackets at the end.  
For example: [in Turkish] [in French]

**Note:** All references should be referred in text. Please view the reference examples (for articles, books, chapters, reports, thesis, etc.) which detailed described in page 7.

**REFERENCES**

[Anonymous]. 2004. Denizli provincial environmental status report. Denizli: Environment and Forestry Directorate Publications 361 p.

Balık I, Kuşat M, Bolat Y. 1997. The effects of Tench (*Tinca tinca* L., 1758) introduction to Beyşehir and Eğirdir Lakes. Paper presented at: IX. National Fisheries Symposium; Isparta, Turkey.

Geldiay R, Balık S. 1996. Türkiye tatlısu balıkları. İzmir: Ege University 532 p. [in Turkish]

Example of use the reference in original language.

Sari HM, Bilecenoglu M. 2002. Threatened fishes of the world: *Acanthobrama mirabilis* Ladiges, 1960 (Cyprinidae). Environ Biol Fish. 65(3):318.   
doi: 10.1023/A:1020570900120

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**USE FORMULA and VARIABLE**

The formulas should be italicized and given in a separate line, not in sentence. The variables used in formulas also should be italicized in all text. Example: *R2*, *a*, *b*, *k*, *x*, *y*, *W*, *GSI*, *M*, *Z*, *to*, *Lt*, Wt, *L∞*, *W∞* , *TL*, *FL* etc.

**Formula sample in manuscript:**

**Variable sample in manuscript:** *Fs* is number of time units of fishing per segment, *t* is sampling time period, *Cs* is total count per segment, *Ps* is sampling probability per segment (Pfeiffer, 1966).

**USE SPECIES NAME**

Species names should be italicized. After the first using, the genus name should be abbreviated to just its initial.

**Example text:** Common carp *Cyprinus carpio* is a widespread freshwater fish species. The age of *C. carpio* populations ranged from I to IX in the studied locations.

**USE DECIMAL NUMBERS**

Decimal numbers should be separated by point, not by comma. **True:** 32.15 **False:** 32,15

**TABLES**

The title, having 12 font size and 1.5 line spacing, should be located above the table, and they should be centered to page. There should not be any space between the table and title. The all texts in table have 1.5 line spacing. The font size of table content should be 12 font size, if needed it can be reduced minimum 9 font size. Tables should be referred in the text (Table 1, Table 2, etc.), and placed the nearest place where they are referred. If needed the explanations can be added under the table with 10 font size. Please view the table examples given below.

Table 1. Distribution of fish species in streams

**Table Explanations:**

- 10 font size

- 1.5 line spacing

- Not **bold**

- Centered

**Column Headers:**

- 12 font size

- 1.5 line spacing

- Not **bold**

**Table Title:**

- 12 font size

- 1.5 line spacing

- Not **bold**

- Centered

- Lower case without the first letter of the first word (First capital).

**Table Content:**

- 12 font size

- 1.5 line spacing  
(If needed, it can be reduced minimum 9 font size.

- Not **bold**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Species | Akçay | | Büyük Menderes | | Dalaman River | | Total | |
| N | % | N | % | N | % | N | % |
| *A. anguilla* |  |  | 1 | 0.38 |  |  | 1 | 0.2 |
| *A. mirabilis* | 2 | 2.5 | 3 | 1.15 |  |  | 5 | 1.01 |
| *A. bipunctatus* |  |  | 1 | 0.38 |  |  | 1 | 0.2 |
| *L. cephalus* | 23 | 28.8 | 114 | 40.4 | 65 | 49.6 | 202 | 40.9 |
| *C. h. meandrensis* |  |  | 31 | 11.9 |  |  | 31 | 6.28 |
| *B. c. pectoralis* | 9 | 11.3 | 56 | 21.5 |  |  | 65 | 13.2 |
| *B. p. escherichi* | 23 | 28.8 | 14 | 5.36 | 39 | 29.8 | 76 | 15.4 |
| *C. c. bergamae* | 2 | 2.5 | 7 | 2.68 | 2 | 1.53 | 11 | 2.23 |
| *N. angorae* | 21 | 26.3 | 55 | 21.08 | 13 | 9.92 | 89 | 18.0 |
| *G. aculeatus* |  |  |  |  | 12 | 9.16 | 12 | 2.43 |
| Total | 80 | 100 | 282 | 100 | 131 | 100 | 493 | 100 |

Table 2. Length-weight relationship of *Seminemacheilus ispartensis*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Gender | n | *a* | *b ± SH* | *R2* | *tH* |
| ♀ | 145 | 0.0066 | 3.133361±0,031190 | 0.988 | 4.9337a |
| ♂ | 106 | 0.0055 | 3.233314±0,041133 | 0.975 | 4.8690b |
| ♀+♂ | 201 | 0.0063 | 3.133320±0,021121 | 0.988 | 6.7798c |

n: samples number, *a*: (*t*-test, *tH>tT* 0.05, 145=1.98), *b*: (*t*-test, *tH>tT* 0.05, 106=1.98), *c*: (*t*-test, *tH>tT* 0.05, 201=1.97)

**FIGURES**

The title, having 12 font size and 1.5 line spacing, should be located under the figure. Figure and title, having no space between them, should be centered to page. Figures should be referred with Arabic numerals in the text (Figure 1, Figure 2, etc.), and placed the nearest place where they are referred.



Figure 1.The dominant fish species Prussian carp *Carassius gibelio*

**Figure Title:**

- 12 font size

- 1.5 line spacing

- Not **bold**

- Centered

- Lower case without the first letter of the first word (without special cases).

**CITATIONS EXAMPLES**

The citations should be put in chronological order from oldest to most recent.

**SINGLE AUTHOR**

- Distribution of the fish species is related with the environmental properties (Kara 2000; Chun 2002, 2005a, 2005b; Barr 2015).

- Kara (2000) emphasized that distribution of the fish species is related with the environmental properties.

**TWO AUTHOR**

- Distribution of the fish species is related with the environmental properties (Kara and Kayhan 2000; Chun and Lee 2002, 2005a, 2005b; Barr and Shore 2015).

- Kara and Kayhan (2000) emphasized that distribution of the fish species is related with the environmental properties.

**THREE OR MORE AUTHOR**

- Distribution of the fish species is related with the environmental properties (Kara et al. 2000; Chun et al. 2002, 2005a, 2005b; Barr et al. 2015).

- Kara et al. (2000) emphasized that distribution of the fish species is related with the environmental properties.

**REFERENCES EXAMPLES**

**ARTICLE**

- The current DOI number records can be found in this URL: <http://www.crossref.org/guestquery/> . “**Search on article title**” section can be chose for quick search by using only the first author’s surname and article title.

- Journal titles should be abbreviated without using any punctuation mark between each word. For this purpose, the samples in this URL: <http://images.webofknowledge.com/WOK46/help/WOS/A_abrvjt.html> can be considered.

Surname1 N1, Surname2 N2, Surname3 N3. Year. Article title. Abbreviated Journal Title. Volume(Issue):Start Page-End Page. doi: doi number

Delacote P. 2009. Commons as insurance: safety nets or poverty traps? Environ Dev Econ. 14(3):305-322.

İlhan A, Sarı HM. 2013. Fish fauna and fisheries activities in Lake Marmara. Ege J Fish Aqua Sci. 30(4):187-191. doi: 10.12714/egejfas.2013.30.04.08. [in Turkish]

Wesolek BE, Genrich EK, Gunn JM, Somers KM. 2010a. Use of littoral benthic invertebrates to assess factors affecting biological recovery of acid- and metal-damaged lakes. J N Am Benthol Soc. 29(2):572-585. doi: 10.1899/09-123.1

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**BOOK**

Surname1 N1, Surname2 N2, Surname3 N3. Year. Book title. Place of publication: Publisher Page p.

Beverton RJH, Holt SJ. 1957. On the dynamics of exploited fish populations. London: Chapman & Hall 538 p.

Avşar D. 2005. Balıkçılık biyolojisi ve populasyon dinamiği. Adana: Nobel Kitapevi 332 p. [in Turkish]

**BOOK CHAPTER**

Surname1 N1, Surname2 N2, Surname3 N3. Year. Chapter title. In: Editor Surname N, editor(s). Book title. Place of publication: Publisher. p. Chapter Start Page-Chapter End Page.

Otegui MS. 2007. Endosperm: development and molecular biology. In: Olson OA, editor. Endosperm cell walls: formation, composition, and functions. Heidelberg (Germany): Springer-Verlag. p. 159-178.

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**Conference Presentation Or Lecture**

Surname1 N1, Surname2 N2, Surname3 N3. Year. Presentation title. Paper presented at: Conference/Symposium/Convention Name; City, Country.

Ceylan M, Çetinkaya O, Küçükkara R, Akçimen U. 2014. The reproduction efficiency of the medicinal leech *Hirudo verbana* Carena, 1820. Paper presented at: International Symposium on Fisheries and Aquatic Sciences (FABA)​; Trabzon, Turkey.

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**PROJECT/TECHNICAL REPORTS**

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Bulut C. 2011. Isparta, Burdur ve Denizli illerinde su ürünleri yetiştiriciliği yapan işletmelerin dere suyuna ve çevreye olan etkilerinin araştırılması. Isparta: Fisheries Research Station. Project No.:TAGEM/HAYSUD/2006/09/03/01. [in Turkish]

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**INTERNET RESOURCE**

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Institution Abbreviation Year. Institution Name. Page Title; [cited Date]. Available from URL

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