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### New Fisheries-related data from the Mediterranean Sea (April 2014)

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## Supplementary Data

### Collective article B

#### New Fisheries-related data from the Mediterranean Sea (April, 2014)

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#### 3. Natural diet of common carp (*Cyprinus carpio* L., 1758) in Anatolia (Turkey): a review

By L. Vilizzi, F.G. Ekmekçi and A.S. Tarkan

##### Online Supplement 1

##### Statistical analysis

Differences between waterbody types (i.e. man-made reservoirs and natural lakes) in the diet composition of common carp were analysed using permutational multivariate analysis of variance (PERMANOVA). The Bray-Curtis dissimilarity index was applied on presence-absence data in order to produce a distance matrix and differences between waterbody types were tested based on a single-factor experimental design (9999 permutations of the raw data;  $\alpha = 0.05$ ). Non-metric multi-dimensional scaling (NMDS) was used as an ordination method, and a dendrogram plot also was generated through cluster analysis (group average). Statistical analyses were carried out in PERMANOVA+ for PRIMER v6 (Anderson *et al.*, 2008).

##### References

Anderson, A.J., Gorley, R.N., Clarke, K.R., 2008. *PERMANOVA+ for PRIMER: Guide to Software and Statistical Methods*. PRIMER-E Ltd, Plymouth, UK, 216 pp.

##### Online Supplement 2

##### References for data in Table S1

Atasagun, S., 1991. *Mogan (Ankara) Gölü'ndeki sazan (Cyprinus carpio L., 1758) ve kadife (Tinca tinca L., 1758) balıklarının besin tipleri ve beslenmelerinde mevsimsel değişimler [The food items and seasonal variation in feeding of carp (Cyprinus carpio L., 1758) and tench (Tinca tinca L., 1758) in Mogan Lake]*. MSc Thesis. Ankara University, Ankara, Turkey, 31 pp. [In Turkish with a summary in English.]

Atasagun, S., Karabatak, M., 1995. *Mogan (Ankara) Gölü'ndeki sazan (Cyprinus carpio L., 1758) ve kadife (Tinca tinca L., 1758) balıklarının besin tipleri ve beslenmelerinde mevsimsel değişimler [The food items and seasonal variation in feeding of carp (Cyprinus carpio L., 1758) and tench (Tinca tinca L., 1758) in Mogan Lake]*. *Süleyman Demirel Üniversitesi Eğirdir Su Ürünleri Fakültesi Dergisi*, 4, 151–167. [In Turkish with a summary in English.]

Çetinkaya, O., 1992. *Akşehir Gölü sazan populasyonu (Cyprinus carpio L., 1758) üzerinde araştırmalar II. populasyonun yapısı, üreme ve beslenme [Studies on the carp*

population (*Cyprinus carpio* L., 1758) in Akşehir Lake II. Population structure, reproduction and feeding]. *Turkish Journal of Zoology*, 16 (1), 30–42.

Gül, A., Yılmaz, M., Kuşçu, A., Benzer, S., 2010. Feeding properties of common carp (*Cyprinus carpio* L., 1758) living in Hirfanlı Dam Lake. *Kastamonu Eğitim Dergisi/Kastamonu Education Journal*, 18 (2), 545–556.

Gürbüz, A., 2004. *Hirfanlı Baraj Gölü'nde yaşayan sazan (Cyprinus carpio L., 1758) ve kadife (Tinca tinca L., 1758)'nin beslenme biyolojisi [The feeding biology of common carp (Cyprinus carpio L., 1758) and tench (Tinca tinca L., 1758) living in Hirfanlı Dam Lake]*. PhD Thesis. Gazi University, Ankara, Turkey, 287 pp. [In Turkish with a summary in English.]

Karaca, İ., 1995. *Hirfanlı Baraj Gölü (Kırşehir)'nde yaşayan sazan (Cyprinus carpio L., 1758)'in büyüme ve beslenme özellikleri [Growth and feeding of common carp (Cyprinus carpio L., 1758) living in Hirfanlı Dam Lake]*. MSc Thesis. Gazi University, Ankara, Turkey. [In Turkish with a summary in English.]

Kırankaya, Ş.G., 2007. *Gelingüllü Baraj Gölü'ndeki (Yozgat) aynalı sazan, pullu sazan (Cyprinus carpio, L., 1758) ve gümüşi havuz balığı [Carassius gibelio (Bloch, 1782)]'nin büyüme, üreme ve beslenme biyolojisinin karşılaştırmalı olarak incelenmesi [A comparative study on growth, reproduction and feeding biology of mirror carp, wild carp (Cyprinus carpio, L., 1758) and prussian carp [Carassius gibelio (Bloch, 1782)] in Gelingüllü Dam Lake (Yozgat-Turkey)]*. PhD Thesis. Hacettepe University, Ankara, Turkey, 199 pp. [In Turkish with a summary in English.]

Numann, W., 1958. *Anadolu'nun muhtelif göllerinde limnolojik ve balıkçılık ilmi bakımından araştırmalar ve bu göllerde yaşayan sazanlar hakkında özel bir etüd [Limnological and fisheries science related investigations on various lakes of Anatolia and a special study on carp living in these lakes]*. İstanbul Üniversitesi Fen Fakültesi, Hidrobiyoloji Araştırma Enstitüsü Yayınlarından, Monografi 7, 114 pp. [In Turkish.]

Pala, G., Tellioglu, A. & Şen, D., 2003. *Keban Baraj Gölü'nde yaşayan Cyprinus carpio (Linnaeus, 1758)'nun sindirim sistemi içeriği [The content of digestive system of Cyprinus carpio (Linnaeus, 1758) inhabiting in Keban Dam Lake]*. *Fırat Üniversitesi Fen ve Mühendislik Bilimleri Dergisi*, 15 (2), 135–142. [In Turkish with a summary in English.]

Şen, F., 2001. *Nazik Gölü (Ahlat-Bitlis) sazan (Cyprinus carpio L., 1758) populasyonu üzerinde bir araştırma (A study on the carp (Cyprinus carpio L., 1758) population of the lake Nazik (Ahlat-Bitlis-Türkiye))*. PhD Thesis. Atatürk University, Erzurum, Turkey, 131 pp. [In Turkish with a summary in English.]

Tanyolaç, J. & Karabatak, M., 1974. *Mogan Gölü'nün biyolojik ve hidrolojik özelliklerinin tespiti [Biological and hydrological characteristics of Lake Mogan]*. Türkiye Bilimsel ve Teknik

Araştırma Kurumu, Vhag proje No. 91, 136 pp. [In Turkish]  
 Turker, H., 2006–2007. The feeding habits and assimilation efficiencies of three cyprinid species in Lake Gökçöy (Bolu-Turkey). *Süleyman Demirel Üniversitesi Eğirdir Su Ürünleri Fakültesi Dergisi*, 2–3 (1–2), 37–45. [In Turkish with a summary in English.]  
 Yılmaz, M., Gümüş, A., Yılmaz, S. & Polat, N. 2003. Samsun-

Bafra Balık Gölleri (Tatlı Göl ve Gıcı Gölü)'nde yaşayan sazan (*Cyprinus carpio* L., 1758)'ın yaşlara göre besin tercihi [Aged-based food preferences of common carp (*Cyprinus carpio* L., 1758) inhabiting Fish Lakes in the Bafra District of Samsun province (Lakes Tatlı and Gıcı)]. *Turkish Journal of Animal and Veterinary Sciences*, 27 (4), 971–978. [In Turkish with a summary in English.]

**Table S1.** Food items making up common carp natural diet in waterbodies of Anatolia. Taxonomy after <http://www.itis.gov> (accessed 08/01/2014).

	Man-made reservoirs								Natural lakes													
	Gelingüllü Reservoir	Gelingüllü Reservoir	Hirfanlı Reservoir	Hirfanlı Reservoir	Hirfanlı Reservoir	Keban Reservoir	Lake Akşehir	Lake Akşehir	Bafra Balık Lakes	Lake Beyşehir	Lake Eğirdir	Lake Gökçöy	Lake İznik	Lake Kuş (Manyas)	Lake Marmara	Lake Mogan	Lake Mogan	Lake Nazik	Lake Sapanca	Lake Süleyman	Lake Ulubat (Apoliyont)	
	(1a)	(1b)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(6)	(6)	(9)	(6)	(6)	(6)	(10)	(11)	(12)	(6)	(6)	(6)	(6)
<b>Phytoplankton</b>																						
<b>Bacillariophyta</b>																						
<i>Achnanthes</i>				√	√	√																
<i>Amphipleura</i>					√																	
<i>Amphiprora</i>				√																		
<i>Amphora</i>			√	√		√			√													
<i>Caloneis</i>			√	√																		
<i>Cocconeis</i>	√	√	√	√		√			√													
<i>Craticula</i>												√										
<i>Cyclotella</i>	√	√	√	√	√	√			√												√	
<i>Cymatopleura</i>	√	√	√	√					√													
<i>Cymbella</i>	√		√		√	√			√			√									√	
<i>Denticula</i>			√																			
<i>Diatoma</i>	√	√	√	√	√	√			√													
<i>Diploneis</i>	√	√																				
<i>Epithemia</i>				√																	√	
<i>Fragilaria</i>	√	√		√	√	√			√													
<i>Gomphonema</i>			√	√	√	√			√													
<i>Gyrosigma</i>	√	√	√	√		√			√			√										
<i>Hantzschia</i>			√																			
<i>Licmophora</i>					√																	
<i>Melosira</i>	√	√	√	√	√				√												√	
<i>Navicula</i>	√	√	√	√	√	√			√			√									√	
<i>Nitzschia</i>	√	√	√	√	√	√			√			√									√	
<i>Pinnularia</i>			√	√					√													
<i>Rhoicosphenia</i>			√	√		√			√													
<i>Rhopalodia</i>				√																		
<i>Stauroneis</i>						√																
<i>Surirella</i>	√	√	√	√	√	√			√													
<i>Synedra</i>	√	√	√	√	√	√			√												√	
<i>Tabellaria</i>												√										
<i>Tetracyclus</i>									√													
Undefined								√														√
<b>Charophyta</b>																						
<i>Closterium</i>				√					√													
<i>Cosmarium</i>			√	√		√			√		√										√	
<i>Euastrum</i>									√													
<i>Mougeotia</i>				√																		
<i>Nitella</i>									√													
<i>Spirogyra</i>		√		√	√				√		√										√	

(continued)

Table S1 (continued)

	Man-made reservoirs								Natural lakes													
	Gelingüllü Reservoir (1a)	Gelingüllü Reservoir (1b)	Hirfanlı Reservoir (2)	Hirfanlı Reservoir (3)	Hirfanlı Reservoir (4)	Keban Reservoir (5)	Lake Akşehir (6)	Lake Akşehir (7)	Bafra Baltık Lakes (8)	Lake Beyşehir (6)	Lake Eğirdir (6)	Lake Gököy (9)	Lake İznik (6)	Lake Kuş (Manyas) (6)	Lake Marmara (6)	Lake Mogan (10)	Lake Mogan (11)	Lake Nazik (12)	Lake Sapanca (6)	Lake Süleyman (6)	Lake Ulubat (Apolyont) (6)	
<i>Staurastrum</i>				√					√													√
<i>Zygnema</i>	√	√		√	√							√										
<b>Chlorophyta</b>																						
<i>Actidesmium</i>						√																
<i>Ankistrodesmus</i>				√	√	√			√			√										
<i>Cladophora</i>						√																
<i>Coelastrum</i>	√	√	√																			
<i>Keratococcus</i>						√																
<i>Kirchneriella</i>				√																		√
<i>Monoraphidium</i>									√													
<i>Oedogonium</i>									√													
<i>Oocystis</i>			√	√	√																	√
<i>Pandorina</i>									√													
<i>Pediastrum</i>	√	√	√	√	√				√			√										
<i>Scenedesmus</i>		√	√	√	√				√			√										√
<i>Stigeoclonium</i>				√																		
<i>Tetraedron</i>				√		√																
<i>Ulothrix</i>	√	√																				
Undefined								√														
<b>Cyanophycota</b>																						
<i>Anabaena</i>				√	√	√			√			√										
<i>Aphanizomenon</i>					√																	
<i>Chroococcus</i>				√	√	√																
<i>Gloeotrichia</i>			√			√																
<i>Lyngbya</i>			√	√	√	√																
<i>Merismopedia</i>				√	√	√			√			√										
<i>Microcystis</i>				√	√				√			√										√
<i>Nostoc</i>				√	√	√																
<i>Oscillatoria</i>	√	√	√	√	√	√			√			√										√
<i>Schizothrix</i>						√																√
<i>Spirulina</i>				√		√																√
<i>Symploca</i>						√																√
<b>Euglenophycota</b>																						
<i>Euglena</i>	√	√	√	√	√				√			√										√
<i>Phacus</i>			√	√																		
<b>Pyrrhophycota</b>																						
<i>Ceratium</i>				√																		
<i>Peridinium</i>				√	√				√													
<b>Rhodophyta</b>																						
<i>Lemanea</i>		√																				
<b>Xanthophyta</b>																						
<i>Vaucheria</i>									√													
<b>Zooplankton</b>																						
<b>Cladocera</b>																						
<i>Alona</i>	√	√	√	√	√							√										√
<i>Bosmina</i>	√	√	√				√			√	√	√	√	√	√						√	√
<i>Ceriodaphnia</i>			√		√	√																√
<i>Chydorus</i>	√	√			√																	√
<i>Daphnia</i>	√	√	√	√	√	√			√			√	√	√	√						√	√
<i>Diaphanosoma</i>			√	√																		√
<i>Leydigia</i>				√																		

(continued)

Table S1 (continued)

	Man-made reservoirs								Natural lakes												
	Gelingüllü Reservoir	Gelingüllü Reservoir	Hirfanlı Reservoir	Hirfanlı Reservoir	Hirfanlı Reservoir	Keban Reservoir	Lake Akşehir	Lake Akşehir	Bafra Balık Lakes	Lake Beyşehir	Lake Eğirdir	Lake Gököy	Lake Iznik	Lake Kuş (Manyas)	Lake Marmara	Lake Mogan	Lake Mogan	Lake Nazik	Lake Sapanca	Lake Süleyman	Lake Ulubat (Apolyont)
	(1a)	(1b)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(6)	(6)	(9)	(6)	(6)	(6)	(10)	(11)	(12)	(6)	(6)	(6)
<i>Macrothrix</i>	√	√																			
<i>Pleuroxus</i>				√																	
Undefined																	√				
<b>Copepoda</b>																					
<i>Canthocamptus</i>	√	√																			
<i>Cyclops</i>	√	√	√	√	√	√				√	√			√	√		√		√	√	√
<i>Diatomus</i>			√	√	√						√						√				
Undefined										√			√	√		√			√	√	√
<b>Malacostraca</b>																					
<i>Astacus</i>												√									
<i>Gammarus</i>									√			√									
<i>Mysis</i>												√									
<b>Ostracoda</b>																					
<i>Cypridopsis</i>												√									
<i>Cypris</i>			√	√	√							√					√				
Undefined	√	√								√				√	√					√	√
<b>Rotifera</b>																					
<i>Ascomorpha</i>																					√
<i>Asplanchna</i>																					√
<i>Bdelloidea</i>	√																				
<i>Brachionus</i>																					√
<i>Cephalodella</i>																					√
<i>Filinia</i>					√	√															√
<i>Hexarthra</i>					√	√															√
<i>Keratella</i>	√	√	√	√	√	√			√												√
<i>Lecane</i>	√	√	√		√	√															√
<i>Polyarthra</i>					√	√															√
<i>Synchaeta</i>					√	√															√
<i>Triarthra</i>				√																	√
Undefined																√		√			√
<b>Benthic invertebrates</b>																					
<b>Diptera</b>																					
<i>Chironomus</i>			√	√	√							√						√	√		
<i>Eucorethra</i>				√	√													√			
Undefined	√	√	√				√		√	√		√	√	√	√	√			√	√	√
<b>Gastropoda</b>																					
<i>Gyraulus</i>												√									
<i>Physa</i>												√									
Undefined				√	√				√	√										√	√
<b>Nematoda</b>		√							√												
<b>Oligochaeta</b>				√	√													√	√		
<b>Coleoptera</b>																					
<i>Chaetophora</i>									√												
<b>Detritus</b>					√							√					√				
<b>Plant material</b>	√			√			√					√				√	√		√	√	
<b>Fish</b>																					
<b>Eggs</b>	√	√		√										√	√				√	√	√
<b>Parts</b>	√	√						√	√												

<sup>1a</sup> Kırankaya (2007) (Mirror carp); <sup>1b</sup> Kırankaya (2007) (Scale carp); <sup>2</sup> Karaca (1995); <sup>3</sup> Gürbüz (2004); <sup>4</sup> Gül *et al.* (2010); <sup>5</sup> Pala *et al.* (2003); <sup>6</sup> Numann (1958); <sup>7</sup> Çetinkaya (1992); <sup>8</sup> Yılmaz *et al.* (2003); <sup>9</sup> Turker (2006–2007); <sup>10</sup> Tanyolaç and Karabatak (1974); <sup>11</sup> Atasagun (1991) (same as Atasagun & Karabatak, 1995); <sup>12</sup> Şen (2001).

## 5. Reproductive biology of common carp (*Cyprinus carpio* L., 1758) in Anatolia (Turkey): a review

By L. Vilizzi, A.S. Tarkan and F.G. Ekmekçi

### Online Supplement 3

#### Statistical analyses

Differences in mean age at maturity, spawning period duration, absolute fecundity, relative fecundity and egg diameter with waterbody types (man-made reservoirs and natural lakes; Sakarya River was not included since it was the only watercourse in the dataset) were analysed using permutational univariate analysis of variance (PERMANOVA). Following data normalisation, the Euclidean distance was used to produce a distance matrix and differences between waterbody types were tested based on a single-factor experimental design (9999 permutations of the raw data;  $\alpha = 0.05$ ). Statistical analyses were carried out in PERMANOVA+ for PRIMER v6 (Anderson *et al.*, 2008). Briefly, the advantage of PERMANOVA over traditional parametric analysis of variance is that the stringent assumptions of normality and homoscedasticity in the data, which are very often unrealistic when dealing with ecological datasets, are considerably relaxed (Anderson, 2001).

Trends in monthly GSI data were analysed using Dynamic Factor Analysis (DFA) after centering of the data and using a diagonal matrix. DFA is a multivariate technique estimating underlying common trends in multiple time series (Zuur *et al.*, 2003). DFA was applied using Brodgar 2.5.7 (<http://www.brodgar.com>).

#### References

- Anderson, M.J., 2001. Permutation tests for univariate or multivariate analysis of variance and regression. *Canadian Journal of Fisheries and Aquatic Sciences*, 58 (3), 626–639.
- Anderson, A.J., Gorley, R.N., Clarke, K.R., 2008. *PERMANOVA+ for PRIMER: Guide to Software and Statistical Methods*. PRIMER-E Ltd, Plymouth, UK, 216 pp.
- Zuur, A.F., Tuck, I.D., Bailey, N., 2003. Dynamic factor analysis to estimate common trends in fisheries time series. *Canadian Journal of Fisheries and Aquatic Sciences*, 60 (5), 542–552.

### Online Supplement 4

#### References for data shown in Table 4

- Akyurt, İ., 1987a. Almus Baraj Gölü sazan (*Cyprinus carpio* L., 1758) populasyonunun gelişme durumu, boy-ağırlık ilişkisi, kondüsyon faktörü ve üreme yaşı üzerinde araştırmalar [Studies on growth ratios, length-weight relationship, condition factor and reproduction age of common carp in the Almus Dam Lake]. *Çukurova Üniversitesi Ziraat Fakültesi Dergisi*, 3 (1), 305–321. [In Turkish with a summary in English.]
- Akyurt, İ., 1987b. Kazan Gölü aynalı sazan (*Cyprinus carpio* L.,) [sic] 1758) populasyonunun incelenmesi [Studies on

- the population of mirror carp of the Kazan Lake]. *Çukurova Üniversitesi Ziraat Fakültesi Dergisi*, 3 (1), 323–340. [In Turkish with a summary in English.]
- Alp, A., Balık, S., Akyürek, M., 1999. Akşehir Gölü sazan (*C. carpio* L., 1758) populasyonunda büyüme ve üreme özellikleri [The growth and reproduction characteristics of carp (*C. carpio* L., 1758)] population in Akşehir Lake. pp. 407–417. In: *X Ulusal Su Ürünleri Sempozyumu, Adana, 22–24 September*. Çukurova Üniversitesi, Adana. [In Turkish with a summary in English]
- Balık, İ., Çubuk, H., 2001. Karakaören I Baraj Gölü'ndeki sudak (*Stizostedion lucioperca* (L., 1758)) ve sazan (*Cyprinus carpio* L., 1758) populasyonlarının bazı üreme özellikleri [The some [sic] reproduction characteristics of pikeperch (*Stizostedion lucioperca* (L., 1758)) and carp (*Cyprinus carpio* L., 1758) population in Karakaören I Dam Lake]. *Suleyman Demirel Üniversitesi Fen Bilimleri Enstitüsü Dergisi*, 5 (2), 15–24. [In Turkish with a summary in English.]
- Bircan, R., 1993. Bafra Balık Gölleri yaşayan sazan (*Cyprinus carpio* L., 1758)'in üreme biyolojisi ile ilgili bir araştırma [A study on the reproduction biology of the carp (*Cyprinus carpio* L., 1758) in the Balık Lakes of Bafra]. *Turkish Journal of Veterinary and Animal Sciences*, 17 (4), 291–297. [In Turkish with a summary in English.]
- Bircan, R., Erdem, M., 1997. Altınkaya Baraj Gölü'ndeki sazan balığı (*Cyprinus carpio* Linnaeus, 1758)'nın üreme özelliklerinin incelenmesi. [Investigations on the reproduction characters of the common carp, *Cyprinus carpio* Linnaeus, in the Altınkaya Dam Lake]. *Turkish Journal of Veterinary and Animal Sciences*, 21 (3), 255–261. [In Turkish with a summary in English]
- Çetinkaya, O., 1992. Akşehir Gölü sazan populasyonu (*Cyprinus carpio* L., 1758) üzerinde araştırmalar II. Populasyonun yapısı, üreme ve beslenme [Studies on the carp population (*Cyprinus carpio* L., 1758) in Akşehir Lake II. Population structure, reproduction and feeding]. *Turkish Journal of Zoology*, 16 (1), 30–42. [In Turkish with a summary in English.]
- Çolakoğlu, S., Akyurt, İ., 2013. Bayramiç Baraj Gölü'nde (Çanakkale) yaşayan aynalı sazan (*Cyprinus carpio* L., 1758) balıklarının üreme özellikleri [Reproductive properties of common carp (*Cyprinus carpio* L., 1758) living in Bayramiç Dam Lake]. *Fırat Üniversitesi Fen Bilimleri Dergisi/Fırat University Journal of Science*, 25 (2), 161–166. [In Turkish with a summary in English.]
- Demirkalp, F.Y., 1992. Bafra Balık Gölleri (Balıkgölü-Uzungöl)'nde yaşayan *Cyprinus carpio* Linnaeus, 1758, *Mugil cephalus* Linnaeus, 1758 ve *Stizostedion lucioperca* (Linnaeus, 1758)'nin üreme biyolojileri [The reproduction biology of *Cyprinus carpio* Linnaeus, 1758, *Mugil cephalus* Linnaeus, 1758, *Stizostedion lucioperca* (Linnaeus, 1758) in Bafra Balık Lakes (Balıkgölü-Uzungöl)]. *Turkish Journal of Zoology*, 16 (4), 311–322. [In Turkish with a summary in English.]
- Doğan, Y., 2001. *Çamlıdere Baraj Gölü (Ankara)'nde yaşayan sazan (Cyprinus carpio L., 1758)'in bazı biyolojik özelliklerinin incelenmesi* [The investigation of some biological features of common carp (*Cyprinus carpio* L., 1758) living in Çamlıdere Dam Lake]. MSc Thesis. Gazi University, Ankara, Turkey, 72 pp. [In Turkish with a summary in English.]

- Düzgüneş, E., 1985. *Mogan Gölü'ndeki sazan (Cyprinus carpio L., 1758) stoklarının tahmini ve populasyon dinamiği üzerine bir araştırma [Stock prediction and research on the population dynamics of carp (Cyprinus carpio L., 1758) in Lake Mogan]*. PhD Thesis. Ankara University, Ankara, Turkey, 91 pp. [In Turkish with a summary in English.]
- Erdem, Ü., 1982a. *Eğirdir, Beyşehir ve Çavuşçu Gölleri sazan (Cyprinus carpio L. 1758) populasyonları üzerine gelişme, üreme ve bazı vücut özellikleri bakımından karşılaştırmalı bir araştırma [A comparative study on growth, reproduction and body features of common carp (Cyprinus carpio L. 1758) from Eğirdir, Beyşehir and Çavuşçu lakes]*. PhD Thesis. Selçuk University, Konya, Turkey, 120 pp. [In Turkish with a summary in English.]
- Erdem, Ü., 1982b. *Eber Gölü sazan (Cyprinus carpio L., 1758) populasyonunda büyüme oranı ve bazı üreme özellikleri [Growth rate and some reproductive characteristic [sic] of the carp (Cyprinus carpio L., 1758) population of Eber Lake]*. *Selçuk Üniversitesi Fen Fakültesi Dergisi, Seri B Biyoloji*, 2 (1), 91–105. [In Turkish with a summary in English.]
- Erdem, Ü., 1988. *Tödürge Gölündeki sazan (Cyprinus carpio L., 1758) populasyonunun bazı biyolojik özelliklerinin incelenmesi [Investigations on the [sic] some biological characters of the populacation [sic] of the carp (Cyprinus carpio L., 1758) in Tödürge Lake]*. *Türk Zooloji Dergisi*, 12 (1), 32–47. [In Turkish with a summary in English.]
- Güç, G., 2006. *Keban Baraj Gölü (Elazığ)'nde yaşayan aynalı sazan (Cyprinus carpio Linnaeus, 1758)'in üreme biyolojisi [The reproduction biology of mirror carp (Cyprinus carpio Linnaeus, 1758) living in Keban Dam Lake (Elazığ)]*. MSc Thesis. Fırat University, Elazığ, Turkey, 49 pp. [In Turkish with a summary in English.]
- Karabatak, M., 1973. *Mogan Gölü sazan, Cyprinus carpio L.'nin (Osteichthyes: Cyprinidae) üreme biyolojisi [Reproduction biology of the common carp Cyprinus carpio L.'nin (Osteichthyes: Cyprinidae) in Lake Mogan]*. MSc Thesis. Ankara Univeristy, Ankara, Turkey, 42 pp. [In Turkish with a summary in English.]
- Karataş, M., 2000. *Kazova (Tokat) Kaz Gölü sazan (Cyprinus carpio L., 1758) populasyonu'nun üreme özelliklerinin incelenmesi [Investigations on the reproduction properties of the common carp (Cyprinus carpio L., 1758) population in Kazova Kaz Lake, Tokat, Turkey]*. *Turkish Journal of Veterinary and Animal Sciences*, 24 (3), 261–265. [In Turkish with a summary in English.]
- Karataş, M. & Sezer, M., 2005. *Reproduction characteristics of population of carp (Cyprinus carpio) inhabiting in Almus Dam Lake, Turkey*. *Journal of Biological Sciences*, 5 (2), 119–123.
- Kılıç, S., 2003. *Yeniçağa Gölündeki sazan (Cyprinus carpio L., 1758) populasyonu ve avcılığı [Population and fishing of carp (Cyprinus carpio L., 1758) in Yeniçağa Lake]*. MSc Thesis. Karadeniz University, Trabzon, Turkey, 80 pp. [In Turkish with a summary in English.]
- Kırankaya, Ş.G., 2007. *Gelingüllü Baraj Gölü'ndeki (Yozgat) aynalı sazan, pullu sazan (Cyprinus carpio, L., 1758) ve güümüşi havuz balığı [Carassius gibelio (Bloch, 1782)]'nın büyüme, üreme ve beslenme biyolojisinin karşılaştırmalı olarak incelenmesi [A comparative study on growth, reproduction and feeding biology of mirror carp, wild carp (Cyprinus carpio, L., 1758) and prussian carp [Carassius gibelio (Bloch, 1782)] in Gelingüllü Dam Lake (Yozgat-Turkey)]*. PhD Thesis. Hacettepe University, Ankara, turkey, 199 pp. [In Turkish with a summary in English.]
- Mert, R., Bulut, S., Solak, K., 2008. *Some biological characteristics of Cyprinus carpio (L., 1758) inhabiting Apa Dam Lake (Konya-Turkey)*. *Afyon Kocatepe Üniversitesi Fen Bilimleri Dergisi*, 2 (1), 47–60.
- Ölmez, M., 1992. *Yukarı Sakarya Havzası Sakaryabaşı Bölgesi balıklarının populasyon dinamiği üzerinde bir araştırma [A study on the population dynamics of fishes in the Sakaryabaşı Region of the Upper Sakarya Basin]*. PhD Thesis. Ankara University, Ankara, Turkey, 239 pp. [In Turkish with a summary in English.]
- Özcan, G., Balık, S., 2007. *Kemer Baraj Gölü'ndeki sazanın (Cyprinus carpio L., 1758) gonadosomatik indeks değeri ve et verimi [Meat yield and gonadosomatic index of carp (Cyprinus carpio L., 1758) in Kemer Dam Lake]*. *Türk Sucul Yaşam Dergisi*, 5–8, 176–180. [In Turkish with a summary in English.]
- Şen, F., 2001. *Nazik Gölü (Ahlat-Bitlis) sazan (Cyprinus carpio L., 1758) populasyonu üzerinde bir araştırma (A study on the carp (Cyprinus carpio L., 1758) population of the lake Nazik (Ahlat-Bitlis-Türkiye))*. PhD Thesis. Atatürk University, Erzurum, Turkey, 131 pp. [In Turkish with a summary in English.]
- Yerli, S.V., 1989. *Köyceğiz Lagün Sistemi ekonomik balık populasyonları üzerine incelemeler [Investigations on economic fish species of Köyceğiz Lagoon System]*. PhD Thesis. Hacettepe University, Ankara, 267 pp [In Turkish with a summary in English.]
- Yerli, S., Zengin, M., 1998. *Çıldır Gölü (Ardahan, Kars)'ndeki Cyprinus carpio (Linnaeus, 1758)'nun üremesi üzerine bir araştırma [An investigation on the reproduction of the common carp (Cyprinus carpio (Linnaeus, 1758)) from Çıldır Lake-Turkey]*. *Turkish Journal of Veterinary and Animal Sciences*, 22 (4), 309–313. [In Turkish with a summary in English.]
- Yılmaz, M., 1994. *Kapulukaya Baraj Gölü (Kırıkkale)'nde yaşayan sazan ve in balığının biyo-ekolojik özellikleri [Bio-ecological characteristics of the carp and fish of Kapulukaya Dam Lake (Kırıkkale)]*. PhD Thesis. Gazi University, Ankara, Turkey, 321 pp. [In Turkish with a summary in English.]
- Yılmaz, M., Gül, A., 2002. *Hirfanlı Baraj Gölü (Kırşehir)'nde yaşayan Cyprinus carpio L., 1758'nun üreme özellikleri [Reproductive properties of Cyprinus carpio L., 1758 living in Hirfanlı Dam Lake]*. *Gazi Üniversitesi Gazi Eğitim Fakültesi Dergisi*, 22 (1), 25–39. [In Turkish with a summary in English.]