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RESEARCH ARTICLE ARAŞTIRMA MAKALESİ

THE FISH FAUNA OF THE SEYHAN DAM LAKE (ADANA)

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Abstract: This study was carried out between March 2004 and February 2005, to determine the fish species inhabited in Seyhan Dam Lake. Totally 804 specimens were caught by different methods. It was determined that specimens caught were belonging to 23 species and 9 families (Salmonidae, Cyprinidae, Cobitidae, Siluridae, Clariidae, Cyprinodontidae, Poecilidae, Percidae, and Blennidae) were identified. The results revealed that *Oncorhynchus mykiss* (Walbaum, 1792), *Carassius carassius* (Linnaeus, 1758), *Carassius gibelio* (Bloch, 1783), *Acanthobrama* sp., *Alburnus* sp., *Squalius kottelati* Turan, Yilmaz & Kaya, 2009, *Luciobarbus pectoralis* (Heckel, 1843), *Capoeta angorae* (Hanko, 1925), *Capoeta erhani* Turan, Kottelat & Ekmekçi, 2008, *Cobitis evreni* Erk'akan, Özeren & Nalbant, 2008, *Aphanius fasciatus* (Valenciennes, 1821) and *Aphanius mento* (Heckel, 1843) are new records for Seyhan Dam Lake.

Keywords: Seyhan Dam Lake, Fish species, Taxonomy, Ichthyofauna

Özet: **Seyhan Baraj Gölü (Adana) Balık Faunası**

Çalışma, Seyhan Baraj Gölü'nde yaşayan balık türlerini belirlemek için Mart 2004 ile Şubat 2005 tarihleri arasında gerçekleştirilmiştir. Farklı avcılık yöntemlerinin uygulandığı çalışmada toplam 804 adet balık yakalanmıştır. Yakalanan örneklerin 23 tür ve 9 familyaya (Salmonidae, Cyprinidae, Cobitidae, Siluridae, Clariidae, Cyprinodontidae, Poecilidae, Percidae, Blennidae) mensup oldukları tespit edilmiştir. Bu çalışmada tespit edilen türlerden, *Oncorhynchus mykiss* (Walbaum, 1792), *Carassius carassius* (Linnaeus, 1758), *Carassius gibelio* (Bloch, 1783), *Acanthobrama* sp., *Alburnus* sp., *Squalius kottelati* Turan, Yilmaz & Kaya, 2009, *Luciobarbus pectoralis* (Heckel, 1843), *Capoeta angorae* (Hanko, 1925), *Capoeta erhani* Turan, Kottelat & Ekmekçi, 2008, *Cobitis evreni* Erk'akan, Özeren & Nalbant, 2008, *Aphanius fasciatus* (Valenciennes, 1821) ve *Aphanius mento* (Heckel, 1843) Seyhan Baraj Gölü için yeni kayıttır.

Anahtar Kelimeler: Seyhan Baraj Gölü, Balık türleri, Taksonomi, İhtiyofauna

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Introduction

Total area surface of Turkey's Lakes is 9200 km^2. Turkey has approximetly 200 natural lakes, 679 pool and 114 dam lakes. In a study made in Turkey, 22 wetlands were present according to Ramsar agreement of fish criteria. Sixteen of these wetlands are natural lakes and two of them are river basins (Kucuk and Ikiz, 2004).

There are many studies, carried out by Turkish and foreign researchers, on the fresh water fish fauna of Turkey. The first study on freshwater fish fauna of Turkey was carried out by Abbolt in 1835 (Geldiay and Balik, 1996). Following studies were predominantly on taxonomy and ecology of fish in the different regions of Turkey Kosswig (1939), Battalgil (1941), Sozer (1941), Kosswig and Battalgil (1943), Numann (1958), Ladiges (1960), Balik (1988), Kalkan and Erdemli (1994), Geldiay and Balik (1996), Ozulug (1999), Altun (1999), Erk'akan et al. (1999), Kuru (2004), Ugurlu and Polat (2007) and Kara et al. (2010).

Seyhan Dam Lake is one of the most important freshwater reservoirs for fisheries production in the southern Anatolia region. To date, several fisheries studies; Sarihan and Toral (1973), Sarihan (1974), Sarihan and Kumova (1984), Ozyurt and Avsar (2002), Alagoz (2005), Alagoz et al. (2006), Erguden Alagoz et al. (2008a), Erguden Alagoz and Erguden (2008b), Erguden Alagoz and Goksu (2009, 2010) were reported in Seyhan Dam Lake which was built on Seyhan River.

Commercial fisheries in the Seyhan Dam Lake started in the early 70's just after transplantation of pike-perch, *Sander lucioperca* (Linnaeus, 1758) (1971 and 1973), (DSI, 1984). Later, Common carp, *Cyprinus carpio* Linnaeus, 1758 transplantation was also carried out between 1976 and 1980 by DSI (1985). However, pikeperch population destroyed small fish carp population and unbalanced cyprinid fish stock unusal changing in the lake. Similarly, Ozyurt and Avsar (2002) indicated that pikeperch especially feed on small carp fish and young roach, *Rutilus rutilus* (Linnaeus, 1758). Thus, they can change species balance in the Seyhan Dam Lake.

By being the most productive inland water reservoir in terms of usefullness of fish resources, Seyhan Dam Lake provides economical benefits to the Cukurova region and people who lives there. The dispersion of inoculated carp and pikeperch had a considerable effect on the dispersion of other fish species due to the provoking fact. Therefore, this study has been carried out to estimate relationship between current and previous studies in terms of fish population distribution. It was also aimed to determine the current composition of fish species in the dam lake.

Materials and Methods

Seyhan Dam Lake is in the boundaries of Adana (Figure 1) and an important inland water resorvoir in southeast Mediterranean. It was built on Seyhan River for irrigation, prevention of flood and electiricity in 1956. The lake is approximetly 4 km wide, 23 km long, and maximum 45 m deep in spring season and the area is maximum 9200 hectares. Altitude from sea is nearly 6 meters (Kirgiz, 1984).

Fish samples were caught periodically every month from March 2004 to February 2005. A total of 804 individuals were collected using gill nets, scoop nets, trammel nets with various mesh sizes. While putting the samples in plastic containers, catching date, weather situation were noted and then the containers were labeled. Photographs of fish samples were taken in the study area and the laboratory 4-5% formaldehyde solution were used for the first fixation and then 70% alcohol was added for preservation. Morphometric measurements were carried out with a 0.1 mm digital caliper. Some meristic characteristics, such as rays in dorsal, ventral, anal and pectoral fins, caudal fins, gill rakers, lateral line, transversal scales and number of barbels, were determined. The samples were deposited at the Fisheries Faculty of the Çukurova University, Turkey. Identification of fish samples were used from Geldiay and Balik (1996), Erk'akan et al. (1999), Banarescu and Boutskaya (2003), Kuru (2004), Erk'akan et al. (2007, 2008), and Turan et al. (2006, 2008, 2009).

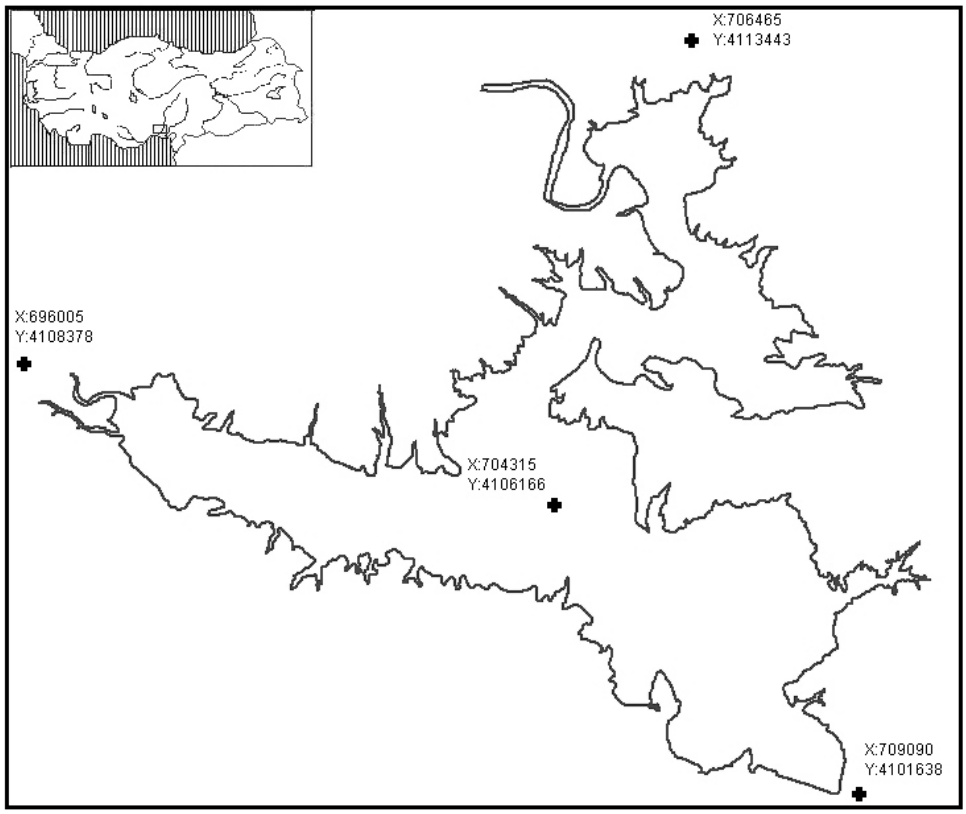

Figure 1. Seyhan Dam Lake is the study area.

Results and Discussion

A total of 23 species belonging to 22 genera and 9 families (Salmonidae, Cyprinidae, Cobitidae, Siluridae, Clariidae, Cyprinodontidae, Poecilidae, Percidae, Blennidae) were caught from Seyhan Dam Lake, which were listed in Table 1. The classifications of specimens were done according to Kuru (2004).

Family: Salmonidae

***Oncorhynchus mykiss* (Walbaum, 1792)**

Material examined: 10 September 2004, 1 specimens; 15 January 2005, 3 specimens.

Diagnostic characteristics: TL: 24.0-35.7 cm, D: III-IV 10-12, A: III-IV 8-12, P: I 12-13, V: II 8-9, C: 19. Lateral line scales: 135-150 (Figure 2).

Family: Cyprinidae

***Cyprinus carpio* Linneaus, 1758**

Material examined: 17 March 2004, 12 specimens; 18 April 2004, 2 specimens; 15 May 2004, 3 specimens; 15 June 2004, 10 specimens; 17 July 2004, 3 specimens;14 August 2004, 10 specimens; 10 Semptember 2004, 15 specimens; 15 October 2004, 6 specimens; 19 November 2004, 12 specimens; 16 December 2004, 1 specimens; 15 January 2005, 12 specimens; 17 February 2005, 10 specimens; 18 March 2005, 4 specimens.

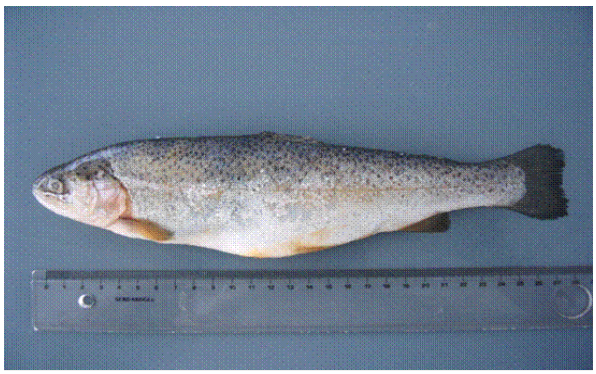

Figure 2. *Oncorhynchus mykiss* (Walbaum, 1792)

Diagnostic characteristics: TL: 20.0-45.0 cm, 27-28 gill-rakers on the first branchial arch; D: III 17-21, A: III 5, P: I 13-14, V: II 6-8. Lateral line scales: 30-37 (Figure 3a and 3b).

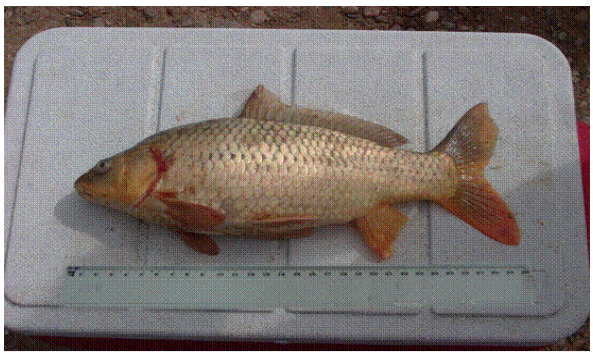

Figure 3a. *Cyprinus carpio* Linnaeus, 1758

Figure 3b. *Cyprinus carpio* Linnaeus, 1758

***Carassius carassius* (Linnaeus, 1758)**

Material examined: 16 December 2004, 2 specimens; 19 November 2004, 2 specimens.

Diagnostic characteristics TL: 17.5-35.00 cm, 23-34 gill-rakers on the first branchial arch; D: III 20-21, A: III 5-6, P: I 16-17, V: II 7-8. Lateral line scales: 29-30, Transversal scales: 5-6. (Figure 4).

Figure 4. *Carassius carassius* (Linnaeus, 1758)

Table 1. List of fish species and number from Seyhan Dam Lake.

Family	Species	Number
Salmonidae	*Oncorhynchus mykiss* (Walbaum, 1792)*	4
Cyprinidae	*Cyprinus carpio* Linnaeus, 1758	100
	Carassius carassius (Linnaeus, 1758)*	4
	Carassius gibelio (Bloch, 1783)*	10
	Acanthobrama sp.*	10
	Alburnus sp.*	2
	Squalius cephalus (Linnaeus, 1758)	4
	Squalius kottelati Turan, Yilmaz & Kaya, 2009*	4
	Garra rufa (Heckel, 1843)	4
	Chondrostroma regium (Heckel, 1843)*	8
	Luciobarbus pectoralis (Heckel, 1843)*	5
	Rutilus rutilus (Linnaeus, 1758)*	150
	Capoeta angorae (Hanko, 1925)*	10
	Capoeta erhani Turan, Kottelat & Ekmekçi, 2008*	5
	Tinca tinca (Linnaeus, 1758)*	52
Cobitidae	*Cobitis evreni* Erk'akan, Özeren & Nalbant, 2008*	3
Siluridae	*Silurus glanis* Linnaeus, 1758	10
Clariidae	*Clarias gariepinus* (Burchell, 1822)	2
Cyprinodontidae	*Aphanius fasciatus* (Valenciennes, 1821)*	53
	Aphanius mento (Heckel, 1843)*	2
Poecilidae	*Gambusia affinis* (Baird & Girard, 1853)	350
Percidae	*Sander lucioperca* (Linnaeus, 1758)	10
Blennidae	*Salaria fluviatilis* (Asso, 1801)	2

*Introduced species

***Carassius gibelio* (Bloch, 1783)**

Material examined: 15 October 2004, 5 specimens; 19 November 2004, 5 specimens.

Diagnostic characteristics: TL: 20.0-37.0 cm, 45-50 gill-rakers on the first branchial arch; D: IV 15, A: III 6, V: II 6, P: I 13. Lateral line scales 30, Transversal scales: 7/6 (Figure 5a,b).

Figure 5a. *Carassius gibelio* (Bloch, 1783)

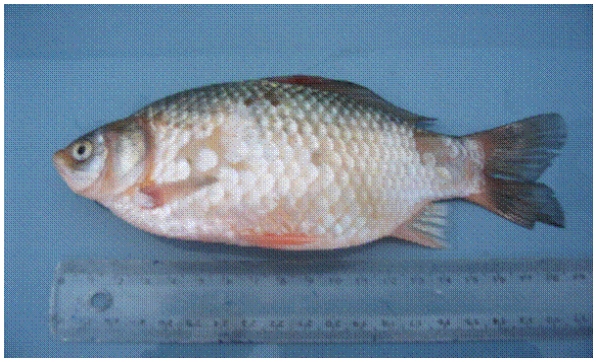

Figure 5b. *Carassius gibelio* (Bloch, 1783)

***Acanthobrama* sp.**

Material examined: 18 April 2004, 7 specimens; 17 November 2005, 3 specimens

Diagnostic characteristics: TL: 12.0-15.5 cm, D: II 7-8, A: II 13-15, P: I 13, C: 25. Lateral line scales: 70-74, Transversal scales: 12-13/6-7 (Figure 6).

***Alburnus* sp.**

Material examined: 15 October 2004; 2 specimens.

Diagnostic characteristics: TL: 13.8-22.0 cm, D: III 11, A: III 17. Lateral line scales: 64 (Figure 7).

Figure 6. *Acanthobrama* sp.

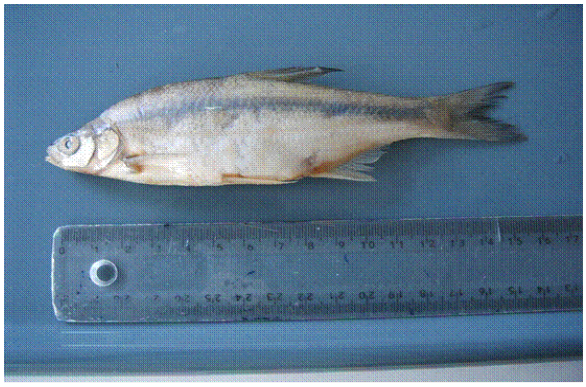

Figure 7. *Alburnus* sp.

***Squalius cephalus* (Linnaeus, 1758)**

Material examined: 18 April 2004, 2 specimens; 17 February 2005, 2 specimens.

Diagnostic characteristics: TL: 18.0-26.0 cm, 8–9 gill rakers on the first arch. D: II 9, A: II 8-9, P: I 14, V: I 8. Lateral line scales: 44-46, Transversal scales: 7/4 (Figure 8).

Figure 8. *Squalis cephalus* (Linnaeus, 1758)

***Squalius kottelati* Turan, Yilmaz & Kaya, 2009**

Material examined: 18 April 2004; 4 specimens.

Diagnostic characteristics: TL: 15.0-18.0 cm, D: III 8–9, A: II 9, P: I 16. Lateral line scales: 40–41, Transversal scales: 7–8/4 (Figure 9).

Figure 9. *Squalis kottelati* Turan, Yilmaz & Kaya, 2009

***Garra rufa* (Heckel, 1843)**

Material examined: 16 December 2004; 4 specimens.

Diagnostic characteristics: TL: 7.8-10.0 cm, D: III 8, A: III 4-5, P: I 14, V: I 7. Lateral line scales 34–35, Transversal scales:4/3 (Figure 10).

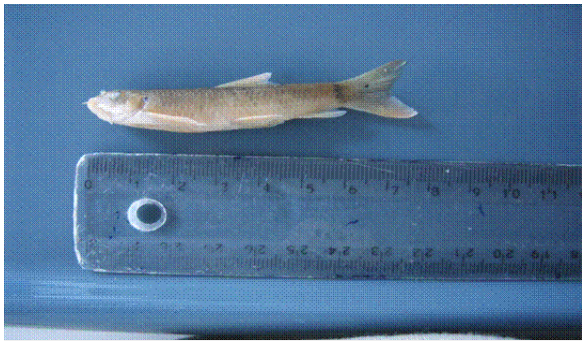

Figure 10. *Garra rufa* (Heckel, 1843)

***Chondrostoma regium* (Heckel, 1843)**

Material examined: 14 August 2004, 3 specimens; 16 December 2004, 5 specimens.

Diagnostic characteristics: TL: 14.0-23.0 cm, D: III, 8-12, A: III, 10-11, P: I 15-16, V: I-II, 6-8. Lateral line scales: 64-68 (Figure 11).

***Luciobarbus pectoralis* (Heckel, 1843)**

Material examined: 17 February 2005, 5 specimens.

D: II 7-8, A III 10-11, P: I 16-19, V: I-II, C: 26. Lateral line scales: 53, Line transversal: 10/7.

Diagnostic characteristics: TL: 17.8-19.5 cm, Lateral line scales: 45-48, gill rakers: 15-17 (Figure 12).

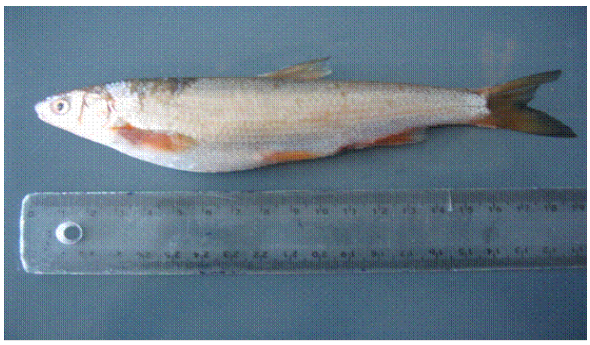

Figure 11. *Chondrostoma regium* (Heckel, 1843)

Figure 12. *Luciobarbus pectoralis* (Heckel, 1843)

***Rutilus rutilus* (Linnaeus, 1758)**

Material examined: 17 March 2004, 4 specimens; 18 April 2004, 10 specimens; 15 May 2004, 8 specimens; 15 June 2004, 12 specimens; 17 July 2004, 8 specimens; 14 August 2004, 22 specimens; 10 Semptember 2004, 10 specimens; 15 October 2004, 3 specimens; 19 November 2004, 2 specimens; 16 December 2004, 11 specimens; 15 January 2005, 30 specimens; 17 February 2005, 14 specimens;18 March 2005, 16 specimens.

Diagnostic characteristics: TL: 14.2-25.0 cm, 11–16 gill rakers on the first arch. D: III 9-10, A: II 7–8. Lateral line scales: 45-60, Transversal scales: 7–10/3–4 (Figure 13).

***Capoeta angorae* (Hanko, 1925)**

Material examined: 17 March 2004, 2 specimens; 15 January 2005, 4 specimens; 17 February 2005, 4 specimens.

Diagnostic characteristics: TL: 12.0-22.0 cm, D II 8, A III 4-5, P: I 16-18, V: I-II, C: 22-23. Lateral line scales: 67, Transversal scales: 15/11 (Figure 14).

Figure 13. *Rutilus rutilus* (Linnaeus, 1758)

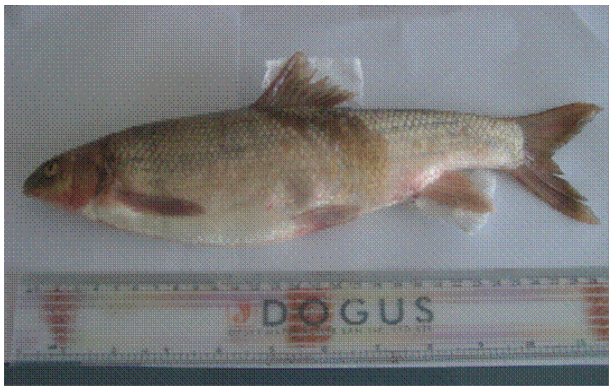

Figure 14. *Capoeta angorae* (Hankó, 1925)

***Capoeta erhani* Turan, Kottelat & Ekmekçi, 2008**

Material examined: 15 January 2005, 5 specimens.

Diagnostic characteristics: TL: 13.5-21.0 cm, D: II-III 8-9, A: III 5, P: I 14-17, V: I 7-8, C: 22-26, Lateral line scales: 67, Transversal scales: 12/9, gill rakers: 26-27, pharyngeal teeth: 4.3.2-2.3.4. (Figure 15).

***Tinca tinca* (Linnaeus, 1758)**

Material examined: 17 March 2004, 9 specimens; 18 April 2004, 12 specimens; 15 May 2004, 7 specimens; 15 June 2004, 3 specimens; 17 July 2004, 1 specimens;14 August 2004, 2 specimens; 10 Semptember 2004, 3 specimens; 15 October 2004, 1 specimens; 19 November 2004, 1 specimens; 16 December 2004, 1 specimens; 15 January 2005, 4 specimens; 17 February 2005, 5 specimens; 18 March 2005, 3 specimens.

Diagnostic characteristics: TL: 11.0-26.5 cm, D: III 8, A: III 6-7, P: I 11-15, V: II 9. Lateral line scales: 95-98 (Figure 16).

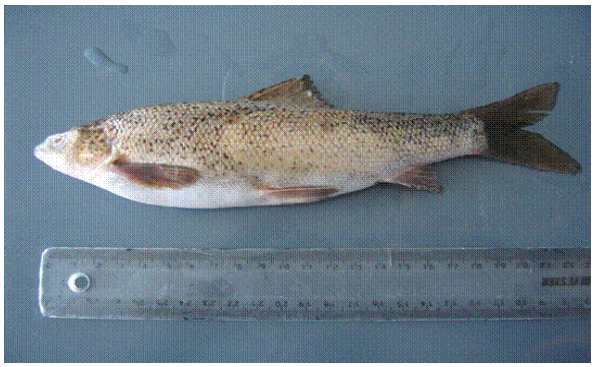

Figure 15. *Capoeta erhani* Turan, Kottelat & Ekmekçi, 2008

Figure 16. *Tinca tinca* (Linnaeus, 1758)

***Cobitis evreni* Erk'akan, Özeren & Nalbant, 2008**

Material examined: 10 September 2004, 3 specimens.

Diagnostic characteristics: TL: 8.0-14.0 cm, D: II 7, A: II 6, P: I 7-8, V: I 4-5, C: 16, 15-16 Large brown spots along the lateral line (Figure 17).

Family: Siluridae

***Silurus glanis* Linnaeus, 1758**

Material examined: 17 July 2004, 10 specimens.

Diagnostic characteristics: TL: 20.5-450.0 cm, D: I 2, A: I 93, P: I 13, V: I 10, C 15. (Figure 18).

Figure 17. *Cobitis evreni* Erk'akan, Özeren & Nalbant, 2008

Figure 18. *Silurus glanis* Linnaeus, 1758

Family: Clariidae

***Clarias gariepinus* (Burchell, 1822)**

Material examined: 15 June 2004, 2 specimens.

Diagnostic characteristics: TL: 22.0-300.0 cm, D: 82, A: 45, P: II, V: I 6, C: 15 (Figure 19).

Figure 19. *Clarias gariepinus* (Burchell, 1822)

Family: Cyprinidontidae

***Aphanius fasciatus* (Valenciennes, 1821)**

Material examined: 17 July 2004, 53 specimens.

Diagnostic characteristics: TL: 3.0-5.0 cm, D: II 8-11, A: II 7-11, P: I 13–14, V: I 5–6. Lateral line scales: 20-21 (Figure 20).

Figure 20. *Aphanius fasciatus* (Valenciennes, 1821)

***Aphanius mento* (Heckel, 1843)**

Material examined: 17 July 2004, 2 specimens.

Diagnostic characteristics: TL: 2.5-5.0 cm, D: II 13, A: I 8- 9, P: I 12-13 (Figure 21)

Figure 21. *Aphanius mento* (Heckel, 1843)

Family: Poecilidae

***Gambusia affinis* (Baird & Girard, 1853)**

Material examined: 17 July 2004, 350 specimens.

Diagnostic characteristics: D: I 5, A: I 5, P: 11–12, V: 4. Male 3–4 cm, TL, Female 4–5 cm, TL, Lateral line scales: 30-33 (Figure 22).

Family: Percidae

***Sander lucioperca* (Linnaeus, 1758)**

Material examined: 17 March 2004, 1 specimens; 15 October 2004, 5 specimens; 17 February 2005, 2 specimens; 18 March 2005, 2 specimens.

Diagnostic characteristics: TL: 14.5-52.0 cm, D1: XIII-XV, D2: II-III 19-24, A: III 11-13, V: I 4–5, P: 15-17, Lateral line scales: 80–93, Transversal scales: 13-16/16-24 (Figure 23).

Figure 22. *Gambusia affinis* (Baird & Girard, 1853)

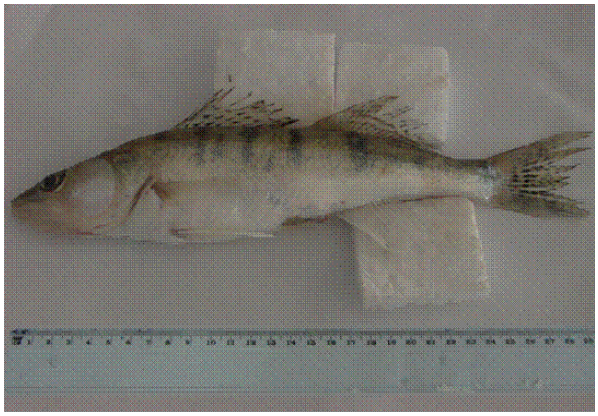

Figure 23. *Sander lucioperca* (Linnaeus, 1758)

Family: Blennidae

***Salaria fluviatilis* (Asso, 1801)**

Material examined: 18 March 2005, 2 specimens.

Diagnostic characteristics: TL: 7.8-9.0 cm, D XII-XIII, A 18-20, P 12-13, V: 4 (Figure 24).

Figure 24. *Salaria fluviatilis* (Asso, 1801)

In the present study, a total of 23 species were determined from the Seyhan Dam Lake. However, only 20 fish species were reported by Sarihan and Toral (1973) for Seyhan Dam Lake in the 1973. Of those only 8 fish species (*C. carpio, L. cephalus, G. rufa obtusata, S. lucioperca, B. Fluviatilis, S. glanis, C. gariepinus (lazera), Aphanius* sp.) were the same to our study. In another study, DSI (1985) reported 14 species, namely european eel (*A. anguilla*), bleak (*A. alburnus*), danube bleak (*C. chalcoides*), carp (*C. carpio*), common bream (*A. brama*), mediterranean barbel (*B. meridionalis*), barbel (*B. barbus*), common nase (*C. nasus*), european chub (*L. cephalus*), Siraz (*C. pestai*), angora loach (*N. angorae*), spined loach (*C. teania*), wels catfish (*S. glanis*), pike-perch (*S. lucioperca*) in the same lake.

When early studies related to fish populations in Seyhan Dam Lake is considered, ıt seems to have an important variation in fish fauna species. Some of the significant reasons for this variation are thought to be ecological changes. Another reason for this, many fish species were introduced by local fishermans to Seyhan Dam Lake without permission.

Onchorhynchus mykiss is widely breed not only in pool and cage freshwaters but also in marine water cages. In addition to being commercially cultured, rainbow trout (*O. mykiss*) also an invasive species, which is listed by IUCN (International Union for Conservation of Nature, IUCN) among the fastest invading 100 species across the world (Kitano, 2004). Although this species was first introduced to Seyhan Dam Lake so as to be breed in loating pools during winter months, it is considered to have escaped from cage during transport (Erguden Alagoz et al., 2010a).

S. lucioperca was first time inoculated into the Seyhan Dam Lake in 1970-1973 by DSI (1984). There after, DSI (1985) study was inoculated about 60.000 young common carps into the dam lake in 1976 to 1980.

Common carp is stocked into natural waters, reservoirs, and temporarily inundated areas, in order to utilize the natural food production of these waters for enhanced capture fisheries and this is also done by DSI in Turkey.

C. carassius was reported in lakes and river system in Turkey (Balik, 1984, Geldiay and Balik, 2007). *C. carassius* was first time determined in the Seyhan Dam Lake by the present study. Diagnostic characteristics of *C. carassius* individuals were similar to individuals in Orontes River (Yalcin et al., 2001).

C. gibelio is an invasive species. *C. gibelio* were found in Terme-Samsun Simenit Lake (Helli (Ugurlu) and Polat, 2003) and İstanbul Büyük Çekmece Dam Lake (Ozulug, 1999). This species is distinguished from *C. carassius* in Europe by a golden-brown, silvery body colour the last simple anal and dorsal rays are strongly serrated. *C. gibelio* was first recorded by the present study in the Seyhan Dam Lake.

Up to date, two species of *Acanthobrama* (*Acanthobrama mirabilis* and *Acanthobrama marmid*) were reported in Turkish freshwaters by Geldiay and Balik (1996). In the present study, seven specimens of *Acanthobrama* were determined in Seyhan Dam Lake. *Acanthobrama* sp. was also reported in Ceyhan River (Kara et al., 2010). According to Kara et al. (2010) this species was different from *A. mirabilis* and *A. marmid*. The diagnostic characteristics of *Acanthobrama* sp. generally defined in our study were similar to *A. marmid*, however, number of dorsal spin was different from *A. marmid*.

Alburnus is distributed in a large part of Syria, Iran, Caucasia, Europe and Anatolia (Armantrout, 1969, Banarescu, 1977, Bogutskaya, 1990, Geldiay and Balik 1996). In our study, two specimens of *Alburnus* were determined in Seyhan Dam Lake and this species was different from *Alburnus* species. Diagnostic characteristis of *Alburnus* sp. determined in the present study are not consistent with the previous studies (Balik and Alp, 1994, Geldiay and Balik, 1996, Kara et al. 2010). This species is probable a new species for Seyhan River system.

European Chub (*S. cephalus*) belong to the family Cyprinidae, which contains numerous species of fish present in Turkey (Geldiay and Balik 1996). Diagnostic charasteristics of *S. cephalus* were similar features reported by Geldiay and Balik (1996).

S. kottelati was described from the Orontes, Ceyhan and Seyhan River systems as a new species by Turan et al. (2009). *S. kottelati* was found in Menzelet, Sır Dam Lakes, and in Ceyhan River (Kara et al., 2010). In the present study, *S. kottelati* was found the first time for Seyhan Dam Lake. Diagnostic charasteristics of *S. kottelati* were similar to the features reported by Turan et al. (2009).

G. rufa was previous reported in Seyhan River system (Ladiges, 1960, Balik, 1988), Tigris-Euphrates system (Bianco and Banarescu, 1982), According to Geldiay and Balik (1996), *G. rufa* inhabited in Antakya, South East Anatolia district, Seyhan and Ceyhan River system. In our study, *G. rufa* was determined in the Seyhan Dam Lake. Diagnostic charasteristics of *G. rufa* were similar to that of stated by Kara et al. (2010).

C. regium is distributed in Asi, Tigris, Euphrates, Göksu, Seyhan and (Erguden Alagoz et al., 2010b). Ceyhan River systems (Geldiay and Balik, 1996). Our diagnostic features concurs with features for *C. regium* and were similar to those of Ekingen and Sarieyyüboğlu (1981), Erdemli and Kalkan (1996), Geldiay and Balik (1996), and Kara et al. (2010).

DSI (1971) and Sarihan and Toral (1973) were reported that three *Barbus* species (*B. barbus*, *B. Meridionalis*, *B. mystaceus*) for Seyhan Dam Lake. However, in these studies *B. rajonarum* has not been reported in the Seyhan Dam Lake. Recently, this species was described as *L. pectoralis* by Turan et al. (2008). Diagnostic features of *B. rajanorum* were similar to those of Geldiay and Balik (1996) and Kara et al. (2010).

R. rutilus is commonly distributed Manyas, Sapanca, Apolyont, İznik, Büyükçekmece Lake, Meriç River and Seyhan Reservoir in freshwater of Turkey (Geldiay and Balik, 1996, Erguden Alagoz et al., 2008a). According to Ozyurt and Avsar (2005), *R. rutilus* was caught annual average as 8% from the Seyhan Dam Lake. Our samples were in compliance with the meristic char-

acteristics given by Geldiay and Balik (1996) and Bogutskaya (1997) for *R. rutilus*.

In recent years, *C. capoeta angorae* has been described as *C. angorae* by Turan et al. (2006). Diagnostic features of *C. angorae* in Seyhan Dam Lake were similar to those stated by Geldiay and Balik (1996) and Kara et al. (2010).

C. erhani was first time reported from Ceyhan River and described as a new species by Turan et al. (2008). Biological characteristics and conservation status are not known. This species also was the first time found in this study for Seyhan Dam Lake.

To date, 10 Cobitidae species and 1 subgenus were described in Turkish freshwaters (Erk'akan et al., 1999, Kara et al., 2010). However, *C. evreni* in Ceyhan River was recognised by Erk'akan et al. (2008). In our study, this species was first time reported for Seyhan Dam Lake. Diagnostic charasteristics of *C. evreni* were similar to features reported by Kara et al. (2010) and Erk'akan et al. (2008).

T. tinca is widespread in Europe, and is also found in the anterior orient and western Siberia (Demirsoy, 1988). In Turkey, it is reported in rivers flowing into the Black Sea from Thrace and northern Anatolia (Kuru, 1996). The tench is introduced to some lake and dam lake from 1970. It is increasingly evident that *T. tinca* widespread in Turkey inlandwater (Karabatak, 1994). This species is introduced without permission and is rapidly widespread because of feeding competition to carp in Seyhan Dam Lake (Erguden et al., 2007, Erguden and Goksu, 2010).

S. glanis has a wide distribution that includes the Sakarya, Manyas, Apolyont, İznik, Gölhisar, Samsun, Kura, Aras, Seyhan and Ceyhan Rivers (Kuru, 1975, Geldiay and Balik, 1996, Alp et al., 2004). In our study, ten *S. glanis* was obtained from Seyhan Dam Lake.

C. gariepinus was reported in lakes and rivers in Mediterranean coast (Spataru et al., 1987, Yalcin et al., 2001, Kucuk and Ikiz, 2004). Diagnostic characteristics of *C. gariepinus* individuals were similar to those individuals in Orontes river Yalcin et al. (2001) and Ceyhan River basin (Kara et al., 2010).

A. mento and *A. faciatus* were determined in Seyhan Dam Lake. They were mostly found in lakes. Diagnostic charasteristics of *A. mento* were similar to the features reported by Kara et al. (2010). Although, Sarihan and Toral (1973) reported that systematically only the genus base of *Aphanius*. In our study, *A. mento* and *A. faciatus* was the first time identified for Seyhan Dam Lake.

G. affinis is an exotic species. It was firstly introduced by French for mosquito control in Turkey in 1912 and was introduced into Amik and Gavur Lakes (Geldiay and Balik, 1996, Erguden Alagoz and Erguden, 2008b). In our study, very intensive populations of *G. affinis* were observed in the dam lake.

S. fluviatilis inhabits in streams and lakes which flowing into the Mediterranean Sea (Changeux and Pont, 1995, Cote et al., 1999, Neat et al., 2003). It was reported that in Turkey, they are to state in rivers and Iznik Lake which near coast Mediterranean and Aegean coasts (Geldiay and Balik, 1996). This species has been reported for Seyhan Dam Lake by Sarihan and Toral (1973).

Conclusion

Consequently, very few reports have been given on the fish fauna of the Seyhan Dam Lake. In our study a total of 12 new fish species and 1 genus of 4 families, one species (*O. mykiss*) belonging to Salmonidae, 8 species and 1 genus *C. carassius*, *C. gibelio*, *Acanthobrama* sp., *Alburnus* sp., *S. kottelati*, *L. pectoralis*, *C. angorae*, *C. erhani*, belonging to Cyprinidae, one species (*C. evreni*) belonging to Cobitidae, two species (*A. fasciatus* and *A. mento* belonging to Cyprinodontidae were first time described from the Seyhan Dam Lake.

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