Yunus Araştırma Bülteni 2013 (2): 51-65

www.yunus.gov.tr
ISSN 1303 - 4456

Derleme
Review

An Overview of the Status of Recreational Fisheries in Turkey: Samples of Galata Bridge, the Dardanelles, and Lake Abant

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Geliş Tarihi: 18.01.2013
Kabul Tarihi: 16.02.2013

Abstract

In this study, general level of amateur or sports fishing and its structural status and legal and technical properties were defined by examining the recreational fishing activities (with purposes of tourism or sporting) in Turkey's three separate aquatic environments. It was realized that central and local authority governing the natural resource was unsatisfactory and such primary issues as amateur fishing / organization, protection of the source, and an awareness to create a community have not been recognized yet by the fishermen using the natural source. Despite their similar legal status, amateur fishing practices in the seas (coast/bay, strait, estuary, quay, jetty/spur) and internal waters (rivers, lakes/ponds) of our country are quite different. This difference varies depending on target fish species as well as local/regional changes, which causes a major confusion in the sector. Recreational fishing management strategy needs to be addressed comprehensively and its administrative and legal infrastructure must be rebuilt in the near future both for the continuity of the aquatic living resources and for amateur fishing practice to have institutional/sectoral structure.

Keywords: Angling, Galata Bridge, the Dardanelles, Lake Abant, Fisheries Community, the Rules of Amateur Fishing.

Özet

Türkiye'deki Amatör Balıkçılığın Durumuna Genel Bir Bakış: Galata Köprüsü, Çanakkale Boğazı ve Abant Gölü Örnekleri

Bu çalışmada Türkiye'nin üç ayrı sucul ortamındaki amatör (turizm/sportif amaçlı) balıkçılık faaliyetleri incelenerek amatör balıkçılığın genel yapısal durumu; yasal ve teknik özellikleri tanımlanmıştır. İnceleme yapılan bölgelerde doğal kaynağı yöneten merkezi ve yerel yönetimlerin yetersizliğinin yanında, kaynağı kullanan balıkçılar açısından da amatör balıkçılığın; organizasyon, kaynağı koruma ve sosyal bir topluluk oluşturma bilinci gibi birincil konuların henüz kurumsallaşmadığı görülmüştür. Yasal statüleri benzer olmasına karşın ülkemizdeki deniz (kıyı, boğaz, haliç, lagün) ve iç sulardaki (akarsu, göl) amatör balıkçılık yapısal özellikler ve uygulama açısından birbirinden oldukça büyük farklılıklar göstermektedir. Bu farklılıklar hedef balık türüne göre de değişmektedir. Bu durum sektörde büyük bir kavram kargaşasına neden olmaktadır. Gerek sucul canlı kaynakların devamlılığı, gerekse de amatör balıkçılık olgusunun kurumsal ve sektörel bir yapıya kavuşabilmesi için yakın gelecekte amatör balıkçılık yönetim stratejisinin kapsamlı olarak ele alınması ve idari ve hukuki altyapısının yeniden oluşturulması gerekmektedir.

Anahtar Kelimeler: Olta Balıkçılığı, Galata Köprüsü, Çanakkale Boğazı, Abant Gölü, Balıkçı Toplulukları, Amatör Balıkçılığın Kuralları

1. Introduction

Living patterns brought by industrialization and urbanization since the beginning of 20th century have introduced people's leisure, entertainment and travel needs as well. In this process, recreational angling emerged and developed with the purpose of meeting the growing need to stay alone with nature.

On the other hand, amateur fishing in the world today, beyond its primary purpose mentioned above, could be transformed into an economic gain. With the income from the sources operated directly by the public or the private sector, the continuity of the resource is provided and, also, a quality lifestyle is offered for people to share recreational and cultural values.

Amateur fishing in Turkey is yet to win a corporate structure in terms of both concept and practice. When compared with Japan, the USA and EU countries where amateur angle fishing has made great progress and become a huge commercial sector, there is a quite messy, complex, weak and inadequate administration, and complicated setting in Turkey. Today the amateur fisheries management, legislations and regulations are carried out by the Ministry of Food, Agriculture and Livestock (DPC: General Directorate of Protection and Control) and Provincial (Provincial and District Directorates of Agriculture). Regulating amateur fishing and published every four years (published every other year before 2008), *"the Communiqué Number 2/2 Regulating Amateur (sports) Fisheries"* is prepared by the same ministry as well.

In accordance with 'No.*1380 Fisheries Act"* and "*Fisheries Regulation Article 6*" issued by the Ministry of Food, Agriculture and Livestock, valid between September 1 and August 31, it is intended to protect the natural habitats in the sea and inland waters, to use these fisheries resources in an amateur way, and to maintain amateur fisheries in a framework for responsible and sustainable fishing. However, it is difficult to apply in practice. Although the rules are determined in legal legislations, the sea (coast/bay, strait, estuary, quay, and jetty/spur) and internal waters (rivers, lakes/ponds) amateur fishing practices vary considerable from one another and exhibit a disorganized structure in our country.

The most simple and brief description of amateur fishing is as follows: it is a non-profit, recreational fishing activity for individual consumption and an activity done with a variety of fishing tools by people of different income levels. Since there is not a compulsory licensing system in Turkey yet, anyone who wants can easily have the status of amateur fisherman. Fishery products of amateur fishing cannot be marketed in Turkey as in Europe as required by law. Although the legal framework of the amateur fishing is defined in *'Fisheries Law No.1380 Aquaculture and Fisheries Communiqué'*, the majority of the amateur fishermen are unaware of these rules, which leads to ignorant fishing. Amateur fishing is very popular in Turkey, especially in marine coastal regions and inland waters. However, '*Amateur Fishing Certificate'* is not necessary for fishing, nor is there a regular registration system. Even the most basic statistical information about the sector is very incomplete and inadequate. How many people are directly engaged in amateur fishing in our country is not known very clearly. Information on amateur fishermen and the effects of these activities on the ecosystem cannot be measured numerically yet (Anonymous, 2007). On the other hand, the supervision of amateur fishing activity cannot be done properly due to the lack of realistic legal regulations.

In this study, amateur fishing practices in three different environments of Turkey that are different from each other were studied and current practices were defined. On the basis of these examples, ecosystem-fishing relationships of recreational fishing in our country and socio-cultural and socio-economic structure of the industry were examined and some objective recommendations were made.

2. Anglers at Galata Bridge

2.1. The Irrepressible Rise of Amateur Angling

Although its history is not known very clearly, the anglers at Galata Bridge have reappeared since late 1990s, when the act of cleaning the Golden Horn ended. The Project of cleaning the Golden Horn, a very special ecosystem, of serious pollution is one of the first example/pioneer projects to recover an almost completely lost near-shore/sensitive ecosystem on behalf of our country[1]. Angling at Galata Bridge became an indispensible part of the Golden Horn and Istanbul, especially, in the first half of the 2000s. That the Golden Horn was rehabilitated and placed at the service of the citizens of the city is, no doubt, a praiseworthy effort. A hidden/invisible sector appeared on the Galata Bridge not only for the fishermen but also for fishing equipment and angle dealers, live bait traders, people renting the place occupied, and so-called amateur but, in reality, professional traders selling fresh fish (Figure 1).

In this study, based on direct individual observations and conversations with the anglers on Galata Bridge, two separate visits were scheduled, the first in April 2008 and the second in September. Each time it was interviewed 25 anglers face to face and noted some structure and rules of recreational fisheries in Galata Bridge. When people angling at Galata with amateur/sporting purposes are considered, the situation is, at first glance, as follows: there is a very low rate of fishermen with "Amateur Fishing Certificate" according to the *Communiqué*"[2] regulating amateur fisheries by the Ministry of Agriculture and Rural Affairs (Anonymous, 2009). We surveyed total 50 fishermen. They have only 7.5% amateur fishing certificate. The ratio is numerically so low is a noticeable result as it indicates the quality of amateur fishery management. In fact, average 472 anglers indicated that they had caught fish there countless times over the years without being inquired by any official or civilian institution and they had not had any legal inquiries or sanctions or met with any responsible people. These observations and determinations are quite interesting as they demonstrate amateur fishing practices in Turkey.

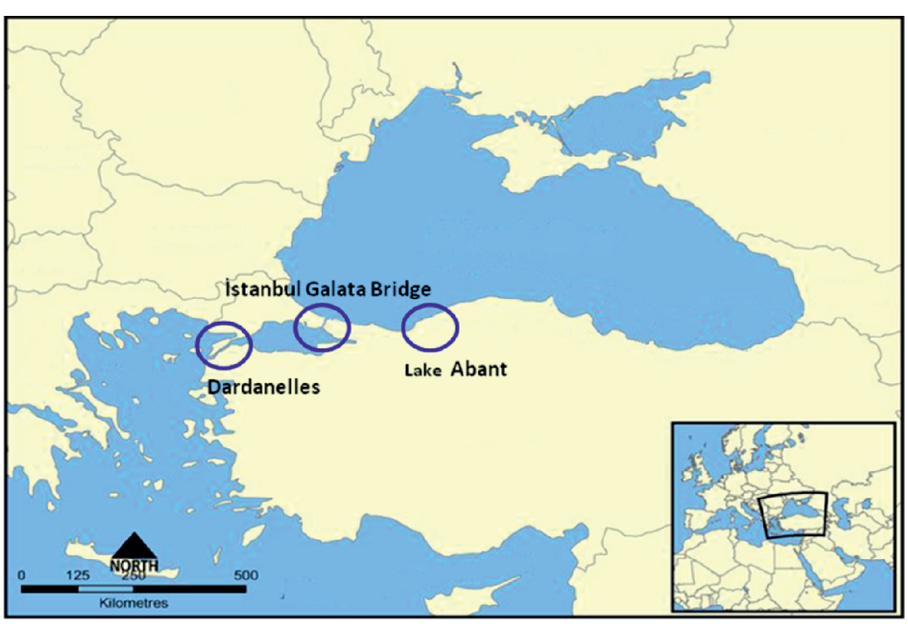

Figure 1. Giving as an example in prototype recreational fisheries locality in Turkey.

[1]We remember in gratitude Prof. Dr. Erdoğan Okuş, instructor at Istanbul University, Institute of Marine Sciences and Technology, Department of Physical Oceanography and Marine Biology, who contributed to this study with his research team and died at a young age.
[2]source: http://www.kkgm.gov.tr/teblig/2008-49.html

2.2. A system Creating Its Own Values

According as some amateur fishing members of society viewpoint; today there is an undisciplined system working by its own rules outside the rules of traditional fishing on Galata Bridge and other bridges of the Golden Horn, or along the two banks of the Bosporus (*communication personally; Tarık Ersal, Murat Karahan, Nasuhi Albulak, and Oral Atak who are committed to amateur sport fishing in Turkey*). Away from amateur fishing purposes, anglers have gained an identity at a small trade scale though not at a commercial scale. The unlimited and unregulated fishing continues throughout the day. Especially during spring and early fall, the Golden Horn is like a haven for flocks of young and juvenile horse mackerels against the strong currents of the Bosporus. There is no doubt that the Golden Horn has hosted many species as well as horse mackerel flocks since the second half of the 1990s. It has been home to Atlantic bonito moving from the Marmara to the Black Sea or in the opposite direction from early September to late November, to small blue fish schoolings in the fall when '*Chestnut Black storms'* appear and the water gets cool, and to blue fish rushing and also to green picarel all year around (Artüz, 1957; Turgan, 1959; Deveciyan, 2006). When the temperature increases towards the end of spring, it is open to other species coming to the Golden Horn are mullet, sardines, brown meager, garfish, striped sea bream, sand smelt, sea bass, and turbot (Artüz, 1957).

In this study, according to the directly counting methodology; 514 anglers in spring and 406 anglers in fall even increasing in number at weekends, keep fishing on the bridge. When the amount of fish caught was examined closely, it was realized that any protection and control officers do not take any action against the limits/quota exceeded although it is limited in terms of minimum size and maximum pieces/weight with Fisheries Regulations and *Amateur Communiqué*[3] based on the '*Fisheries Law'*. According to findings daily fish amount of an experienced angler catching only horse mackerel on the bridge can reach up to maximum 10 kg (sample number are 50). Depending on the influx of immigration and the movement of prey species, the fishing of horse mackerel is intense early in the morning and near the end of the day. Even if we accept the amount of horse mackerel caught on any given day throughout the year as some 5 kg, the total amount of horse mackerel fishing is expressed in tones, which is directly marketed on the bridge without any commercial auditing. However, according to *No.2/2 Communiqué of 2008 and 2012 fishing period regulating amateur fisheries* the definition of *Amateur fisherman* is as follows: *the person fishing only for sports and recreation without any tangible or financial purposes*. According to this definition, when an amateur fisherman sells the fish caught, the legal status of that person changes into *Aquaculture producer*[4] and the provisions of the Communiqué regulating Commercial Fisheries are to be applied. In doing so, these people will need to have a permit license in accordance with the law of Aquaculture. In addition, they will be subject to inspection and control in the additional legal legislation framework in terms of hygiene, food health, tax procedure, etc. Therefore, he needs to have a document and some qualifications necessary for the conditions of professional fishermen and to sell the fish at the location approved by the laws and regulations. One reason for this is to prevent unfair competition with commercial fishermen living on fisheries and another reason is to protect the ultimate consumer. One other important reason is to avoid overfishing, more than allowed, which is contrary to the spirit of amateur/sports fishermen and, thus, to contribute stock identification and control. However, implementation and supervision of existing restrictions on commercial fishing in our country is inadequate[5] . The weight limit of the fish allowed to be caught in one day in our seas by amateur

[3]No. 2/2 Communiqué of Amateur (sport) fisheries. Official Gazette: 21.08.2008-26974. Communiqué No: 2008/49. Amendment: 05.11.2008 OG Issue: 27045. Amendment: 10.07.2010 OG Issue: 27637.

[4]No.2/1 Communiqué of Commercial fisheries. Official Gazette: 21.08.2008-26974. Communiqué No: 2008/48. Amendment: 05.11.2008 OG Issue: 27045. Amendment: 03.03.2009 OG Issue: 27158. Amendment: 26.09.2009 OG Issue: 27358. Amendment: 10.07.2010 OG Issue: 27637.

[5]Source: http://www.kkgm.gov.tr/teblig/2008-48.html. see especially Article 18: anchovy, sardine and horse mackerel fishery.

Fishermen is defined for some fish species as amount (maximum of 5 kg) and as pieces for some larger fish species (Anonymous, 2009). Pieces limits were determined for the species with a reduction in their stocks and for those over 5 kg such as spearfish and little tunny (Anonymous, 2009).

According to the results; another fact is that about 25 to30% of the anglers fishing on the Galata Bridge are doing this work almost entirely as professional/ commercial (small business) job. In this way, they are both having good time and providing a noticeable support to their family budgets. Clearly, an important part of amateur anglers on Galata Bridge are creating a more or less effect on horse mackerel, a big majority of which has not reached reproductive maturity (Genç et al., 1999) as do large-scale commercial fishermen (owners of trawlers, seine boats, etc.) who do not obey the rules and create considerable pressure on these populations. Of course, stock estimate studies are done according to certain scientific criteria. Among the reasons for the decrease in stocks of migratory fish, the impact rates of amateur fishermen and small tradesmen or large-scale commercial fishermen should be set close to reality.

Therefore, as mentioned before, a significant part of Galata Bridge anglers do not fit the concept of "*amateur fishermen*". It should be regarded as "a kind of fishing sector that cannot be defined: small tradesmen!" On one side, there are the struggles of poor people's daily life, on the other side is located the spectacle, breathtaking panorama of the Golden Horn and Istanbul.

3. Coastal fisheries In The Dardanelle Strait

3.1. Migratory Fishes Of The Strait

Dardanelle Strait, just as Istanbul Strait, is a strategic natural transition point where pelagic fish populations have feeding and reproduction migration from the Black Sea to the Aegean and the Mediterranean Sea, and in the opposite direction. In this bi-directional pass along the Dardanelles during certain periods of the year, migratory fish schools are very important fishing potential for small coastal fishermen and big coastal fishing boats. Known as '*Migratory Fish*', Atlantic mackerel, chub mackerel, blue fish, and horse mackerel are intensively fished during the period from early September to late February and all in summer, known as "*winter fishery* (Ünsal, 2010). Therefore, the Dardanelle Strait has a special importance in the coastal fishery of our country. As discussed below, some social/sociological cases are decisive in the formation of this special case. Small coastal fisherman/amateur angler concept has not reached the commercial state as much as here in any of the small coastal settlements of Turkey. For that reason, localized in the center of the city along the Dardanelles, amateur fishing activities are striking examples/models to define amateur and professional fisherman concept and the confusion resulting from this phenomenon (Figure 1).

There are about 2500 coastal fishermen located in such major coastal settlements on both sides of the Dardanelles Strait characterized with coastal fishing as Çayagzı (Sarıçay)/city centre, Eceabat Pier, Gallipoli Fishing shelter, Kumkale, Lapseki, and Çardak. It has been identified that some 40% of the retired or still working have "*Amateur Fishing Certificate*" and the others have Professional fishing license (yellow license for commercial hunters and green license for commercial boats) (Zengin et al., 2010). In the personal interviews both with amateur fishermen and *Hasan Hüseyin Günes*, the president of Çanakkale/central "*Seafood and Small Fishermen Protection Association*", in field observation studies conducted in July 2008 and April 2009 in the localities on both sides of the Dardanelles.It was surveyed total 30 amateur fishermen that

the vast majority f the fishermen there, though they have '*Amateur Fishing Certificate'*, have directly engaged in Professional coastal fishing and have been attracted to commercial aims. Normally, this group of fishing vessels should have a '*Type D*' commercial plate used by Professional/ Competent fishermen, but '*Special Boat Certificate*' is given to the boats not involved in any commercial activities including fishing is used.

These special boat certificates are prepared by Harbour Administration rather than Provincial Directorates of Agriculture. This has brought about an operation to dispose the license ban starting in 2002[6] for commercial fishing vessels by the Ministry of Agriculture in order to prevent the increase in fishing power. This event may also be considered as an indirect practical solution of the amateur fisherman interested in fishing and aiming at direct commercial fishing. However, the fishing power of professional fishermen is constantly challenged by the amateur fishermen. In this sense, the fishing power formed by *the boats with "Type D" license* is under the greatest effect. Professional transitions are provided by purchasing old boats with no physical function or exchanging the boats with licenses, which, partially, results from inadequate and unclear description of professional fisheries in our country in professional and commercial ways. Thus, acting like professional fishermen who are not subject to any actual enforcement/control, amateur fishermen are great potential for transition to near/coastal fishery. Although not entitled for it, amateur fishermen are able to market the fish hunted with a commercial identity as do professional coastal fishermen.

3.2. City of the Retired: Çanakkale

Social status and socio-economic situation of the fishermen doing direct commercial fishery with amateur fishing license in Çanakkale Central Sarıçay and along Kordon differ greatly from those amateur anglers on Galata Bridge. Of these fishermen in Çanakkale, 22% are retired, 15% are working in a public sector, 28% are professional fishermen, 28% are students, and 7% are unemployed. (Ünal et al., 2010). A great majority of the retired are such public workers as officers, policemen, teachers, engineers, bankers, etc. and a common social/ community network has been formed among them. Although the primary job of 35 % is fishing, it is performed as an additional work due to economic difficulties. Whether in the group of the retired or the still working, fishing started as a hobby has turned into an additional economic gain for the family budget in the later process. Hence, '*the city of the retired'* is a popular term for Çanakkale, which is not applicable for those amateurs fishing in the Golden Horn, Istanbul Strait, or on the Galata Bridge, since they do not have any social relationships except for daily, temporary commercial relationship. The anglers here form a cosmopolitan community. While most of the anglers on Galata Bridge using only angles are unemployed and economically of the lowest group, 21% of the anglers in Çanakkale strait have fishing boats. (Ünal et al., 2010).

To give information for this works, communicated directly and checked official yearly (2008 and 2009) documents and registrations to the "S*eafood and Small Fishermen Protection Association*". There are 480 fishermen members in Çanakkale. 130 fishing boats of those fishermen are in shelter in Kordon, and 350 of them are in the shelter in the mouth of Sarıçay River. Using the same shelter, 400 boat owners have no link with the association, nor are they members. Not organized among themselves, these fishermen

[6]According to Article 4 in Fisheries directorate; all measures to prevent the increase in fishing power are taken by the Ministry to ensure the sustainability of fisheries and to reduce fishing pressure (Anonymous).

sail for fun/hobby during the holiday season, spending their leisure time at sea and consuming the fish caught for their individual needs. The sizes of the amateur fishermen's boats in the shelter are, respectively, as follows: 15% of 5 to 6 m, 75% of 6 to 7 m, 10% of 7 to 9 m. Only 6 of those boats are longer than 9 m. In all of these boats, such fishing gears as angle, trawl, and setline are used. Apart from these, only 10 to 12 boats use fishnets and hunt such fish species of high economic value as sardines, bluefish, bonito, garfish, Atlantic saury, etc. depending on the season.

3.3. Market Forces

According to the surveyed and direct communication fishermen; angling in Çanakkale strait is abundant and fertile mainly in two periods. The first is the period called '*winter fishery'*, which lasts from early September to late February. In this season lasting about 6 months, adult bluefish flocks returning back in the post-spawning migration from the Marmara and Black Sea and their juveniles participating in the first year to the stock, and small blue fish are fished. Winter fishery is a highly profitable economic period.

In '*summer fishery'* lasting from April 15 to late August, having reproductive migration from the Aegean to the Marmara Sea and from the Istanbul Strait to the Black Sea, and known as *migratory fishes*, some pelagic species such as Atlantic mackerel, chub mackerel, and horse mackerel are caught. These fishermen do fishing in the Marmara entrance of the Dardanelles, in the region between Gallipoli Lighthouse and Mehmetçik Lighthouse (the monument) in the South.

In the marketing of the fish caught, a well-organized system able to change the marketing conditions in favor of the fishermen cannot be mentioned. Market prices are under the control of the agents called 'buyer up' and the trawl skippers. In fishing season, the fish caught by the professional and amateur fishermen are offered to the middleman at the price specified due to abundant fish of the purse-seine boats. The initiatives of the brokers are important outside the fishing period. However, type and size of the fish caught affects the market value as well. Caught with angles, precious bottom fish such as red porgy, dentex, black sea bream, small-scalled, two-banded bream and seabream are marketed for export. Such *migratory fishes* as sea bass, Atlantic mackerel and bluefish / small bluefish are marketed to Istanbul, Izmir, Bursa and Ankara. The same species are exported as well. Some species like horse mackerel, sardines, and chub mackerel are consumed in the local market.

The fish caught by the fishermen members of the association are marketed under the supervision of the association in an organized way. Following the fishing, the fish brought to the market place at the shelter place in Kordon is delivered to the personnel assigned by the association and transferred to the cooling system. The fish type, weight and price of the fish delivered by each member are recorded by the same official. Prices are determined by the president of the association on a daily basis by considering the general fish market. 10% of discount is made of each member of the association after every fish delivery, which is saved in a pool and spent for routine expenditures of the association (water electricity, ice, plastic, a staff officer).

The interview with Hasan Hüseyin Güneş, a retired teacher and the president of the Association, for a local newspaper on June 18,

2009 is interesting since it expresses the problems of amateur and coastal fishermen members[7].

4. Lake Abant; Amateur Lake Fishery

4.1. An Endemic Trout Species: *Salmo Trutta Abanticus*

Lake Abant, at an altitude of 1320 m, in an area of 125 hectare, with a depth of 15 to 20 m, is a *landslide set-lake* formed as a result of tectonic movements and alluvial deposits. The water of Lake Abant flows into Bolu stream through the creek of the same name. The northwest of the lake is swamp. Beginning after the surrounding plains of 1,770 m high, Abant Mountain is divided with the valleys formed by rushing streams. The groundwater and these small streams, the most important of which is Beşpoyraz stream, feed the lake surrounded by forests of pine, fir and beech trees. Fruit plants such as hawthorn, rose hips, blackberry, strawberry, various mushrooms, and mountain flowers enhance the vegetation. There are wild boars, roe deer, rabbits, foxes, bears, wildfowl, and prey animals such as wild pigeon and partridge in the region. Abant

Lake with the beauty of each season is a popular holiday resort with recreation, sports, and hunting opportunities (Türker, 2010) (Figure 1).

Apart from being the host of extraordinary natural beauties of our country, the most important feature of Lake Abant is Abant trout (*Salmo trutta abanticus*), an endemic species, living in the waters of this region, especially, in Lake Abant. Of course, that was the case until 1980s. Today, it is not easy to talk about a safe future for the lake and the fish having breeding migration between the rivers flowing into the lake. Nowadays, Abant trout populations living in the lake are exposed to three main different stresses. These are, respectively; (1) degradation of the natural structure of the lake and environmental effects, (2) other non-native species degrading the food-chain dynamics of the lake against Abant trout, and (3) Illegal and uncontrolled fishing pressures (Türker, 2010).

4.2. A threatened Aquatic Ecosystem And A Trout Species

The dominant species in the lake is tench (*Tinca tinca*). It has been found out that velvet fish causes predation pressure on small and medium-sized trout in the lake (Beklioğlu, 2006). There is not clear information about when the tench was first released into the lake. Tortonese (1954) discovered *Tinca sp* and *Barbus sp* species (cyprinids) in the sampling study of the lake in 1951.

[7] **Problems of Small Scale Fishermen**

"The varieties of fish species have decreased in Çanakkale waters compared to previous years. With each passing year, the situation is getting worse. There were a lot of fish in terms of type and quantity 8 or 10 years ago. We used to fish a lot of Atlantic mackerels, chub mackerels, and horse mackerels in June and July but we haven't seen these fish in recent years. There are several reasons for this decline, of course. The most important one is the excessive chemical pollution in the seas. Another one is the seine boats and trawlers coming from the Black Sea and their not complying with the rules set by the Ministry. For instance, high light fishing is harmful for the fish. Especially the trawlers fishing near the coast are extremely dangerous for the bottom fish. Heavy ship traffic in the straits interrupts both the fish flock and the fishing activities.

The main problem is the laws. Very different kinds of documents are required from our friends' fishing boats. The rate of document diversity is very high. Some documents are renewed which is a high financial burden. There are certain restrictions on boats with qualified staff. We want them to be extended. Thus, the difference between a Professional boat and an amateur boat is understood. Fishing is done in limited areas as it is the strait area. We are deeply affected by the economic crisis and small fishermen are in economic difficulties.

Our members like angling. There is no certain daily fishing limit. An average 150 to 250 kg/day of fish is caught in Çanakkale Strait and the Gulf of Saros, most of which is sent to Istanbul fish market. Of the fish in the Dardanelles, Atlantic mackerel is becoming extinct. In addition, there is a great decrease in the amount of dentex, bream, and sea bass. Citizens of Çanakkale cannot consume fish due to above mentioned reasons though it is a coastal city. The price of the fish does not decrease as the amount of fish decreases, which are reflected on the citizens. However, we, as the association, keep the consumer prices lower than retail prices determined in Çanakkale fish market.

The most important measure to be taken is to maintain the fishing ban for the seine boats and trawlers from April 1 to August 30. Because this is spawning period, bans need to be longer. Also, purse seine fishing and trawl fishing should be banned at all kinds of entry and exit to the Dardanelles." (Olay, 2009).

The same species were, also, reported by Akşiray (1956). He stated that mullet (*Leuciscus sp.*) species live in the lake as well as *Barbus sp*, though few in numbers.

In recent years, Lake Abant trout populations are rapidly disappearing as with different populations in other regions. In order to develop sports fishing, *Salmo trutta magrostigma* and *Oncorhynchus mykiss* were released unconsciously into Lake Abant by the Ministry of Environment and National Parks Directorate is estimated that these trout species released into the lake ecosystem have negative impact on Abant trout population (Çiftçi et al., 2009). The most significant aquatic animals in the lake other than these fish populations are otter (*Lutra lutra*) and Mallard duck (*Anas platyrhynchos*). Although only two otters were recorded in the lake in 1992, their number increased in time and reached to 25 in 1998, thus, being the most important predators in the lake. (Alp and Kaptanoğlu, 2000).

Abant trout is not only threatened by the trout and cyprinids released into the lake. Some environmental/external disturbances have negative impact on the natural structure of the lake as well. Moreover, some natural characteristics such as the water potential of the lake, fauna, and flora have changed in time. The unplanned settlements around the lake have continued to increase to this date. The lake is open to winter tourism and amateur fishing. Water level has decreased in time and soil materials and debris from streams due to heavy rainfall have filled the lake, resulting in excessive vegetation. The most important problem in the lake is the deterioration of the ecological structure. Increasing deterioration of water quality in the lake and the fillings formed at the bottom of the lake as a result of erosion/accumulation has led to the deterioration of animal-plant balance. High-water plants (macrophytes) have progressively increased and become dominant in the lake, prompting the development of aquatic plants (water lily, water reeds, etc) in the lake this situation has led to the narrowing of the lake wetland in time (Türker, 2010). Three basic problems (*erosion/accumulation, pollution, vegetation*) arising in connection in other wetlands of Turkey have emerged in this mountain lake, too (Zengin et al., 2008).

4.3. Violated Amateur Fishing Rules

According to the observations in this; Lake Abant is a unique example in terms of the amateur fishing practices there showing the functioning in similar rivers and lakes of our country. The greatest pressure on the fish fauna of Abant Lake is due to the illegal fishing and overexploitation (overfishing), an indication of the failure in shared responsibility and authority between different departments of the state. Under the administration of central and provincial administrative units of such different ministries as the Environment, Agriculture, Forestry and Tourism over the years, the natural resources of the lake are increasingly depleted due to inconclusive authority and responsibility definitions and the absence of joint-coordination (administrative weaknesses).

Because when it was compared last the catch per unit effort between now and past it was very declined last 20 years. We checked this situation when the survey time with amateur anglers especially at the weekend. This kind of destruction has two results, one of which is economic loss which seems more frivolous compared to the degradation of the ecosystem leading to the second loss. At this point, local people, the villagers, or non-governmental organiza-tions/associations established for the purpose of amateur fishing need to take the responsibility. That administrative activities such as protection and management are fulfilled by these agencies sounds more realistic in terms of solution.

In the observational studies carried out around the lake in September 2008, important information was obtained about how amateur angling is violated in the lake. The events witnessed there reveal the functioning of the bureaucracy about amateur fishing in our country. A public officer working at Abant Lake National Park as '*Forest Guard*' for many years was dismissed and sent to another city because he allowed illegal fishing (fishing more than permitted) to a senior bureaucrat working in the same city.

On the other hand, amateur fishermen coming from neighbor and large metropolitan cities, in particular, Bolu, Ankara, and Istanbul, at weekends do fishing above legally permitted number of fish (3 pieces) and the size limit (determined catch limit for all species is 20 cm) due to the weaknesses of the control system and violation of existing rule (*communicate with a retired woodsman and forest guard*). However, according to the rules of sports fishing, a licensed amateur angler is permitted to use two angles at most. Each angle is required to have two pins at most. "*Forest waters long term fishing permit"* or "*Daily Fishing Receipt"* by the local units of the Ministry of Environment and Forest shall be required for fishing in forest waters (Anonymous, 2009).

In practice, none of these rules are applied in the lake. Due to its proximity to Bolu province, fishermen from Bolu are fishing throughout the year, including the fishing ban period. The attitude of the only officer in the lake does not go beyond charging extra for the additional angle. The officer gives receipt for more than 2 angles, sometimes 9 to 10, which is formally ignored. '*Bone worm',* fed by the fishermen at home, is used as bait and numerous angles are put into the lake. Fishing with bone worm poses the risk of spreading the parasite and its variants to the ecology of the lake (*communication personally; Tarık Ersal, Murat Karahan, Nasuhi Albulak, and Oral Atak who are committed to amateur sport fishing in Turkey*).

As part of in this survey; it have communicated and observed two period of during spring and autumn to sportive anglers in the lake at weekends, there were 15 to 20 people in average fishing in the lake. It is obvious that an estimated 4160 pieces of fish will be caught in a year even if the lower limit of the number of the anglers is accepted as 15. This is an estimated amount to be caught as a result of one-day fishing activity. The amount of an angler's individual fishing is about three or four times more than the allowed amount. This is an extremely high figure for a lake of small surface area like Abant. These figures give an estimated idea as record-keeping system/registration card for amateur fishermen has not been developed yet. In this way, fishing in the lake continues throughout the year, creating significant pressure on the spawners.

5. Discussion

In this study, amateur or recreational fishing activities in three different aquatic environments in Turkey were examined and the structural status of the amateur fishing in general terms, the legal and technical properties were defined. On one side of this endeavor is a very colorful, individual, amateur hobby to enjoy life but on the other side is clearly exhibited the miserable state of amateur fisheries in Turkey. Even the amateur fishing localities dealt with give numerous ideas in the perception of amateur/angle fishing in Turkey from the administrative point. According to the findings, though similar in their legal status, amateur fishing practices in the sea (coastal/bay, strait) and internal waters (rivers, lakes, lagoon and delta) are quite different from each other (Zengin et al., 2002; Zengin et al., 2008; Zengin et al., 2012a; Zengin et al., 2012b). These differences vary depending on the type of the target fish as well as local/regional changes.

While the source is not adopted by the villagers/settlers in river trout fishing, amateurs fishing in lake and marine environments of fishing permit have gained a commercial identity, causing a major confusion in the sector. On one side, (1) Aquatic fish resources are not used productively, on the other hand, (2) fish stocks, especially the native trout populations in lakes and rivers, are on the point of depletion (Zengin et al., 2002).

Although the responsibility of the aquatic living resources in marine/coastal, lake and river environments of Turkey is shared by different ministries, an effective protection cannot be provided. Managed whether by the traditional rules (Japan Model) (Zengin, 2001), or by a system of modern legal/administrative rules of the developed western countries, the undisciplined pattern is to be eliminated at once. Leaving behind the first ten years of the 21 century, it is mandatory to implement the basic rules for the management of aquatic resources in our country. In terms of the rational use of sources, they need to be managed by civil institutions like associations as in the countries where modern fisheries is applied, and the fish resources there are to be developed by these associations. These civil organizations will both organize the activities of amateur licensing, control, technical and vocational training and meet the need for belonging to a social community.

Amateur fisheries in costal regions are done to spend time and for individual consumption by the middle-aged retired people (Dalkıran and Baki, 2009). On the other hand, when the visas of the registered amateur fishermen's documents are considered, the rate, though, is very low. The reasons for this are not being aware of getting visa for the documents, forgetting, or underestimation. The importance given to the license by the amateur fishermen is reduced in the following periods or even completely left. While the records of the people in commercial fisheries is kept for a period of 5+3 years and thought to be fishing, amateur fishermen were given a period of 2 years, which is quite significant. This period was extended to 4 years with the Communiqué No.2/2 published in 2008 (Dalkıran and Baki, 2009). A license is essential for the sustainability of fish populations. '*Amateur fishing authority*' should be given with an examination following training prepared by the regulatory authority. The person's license should be taken back in case of the violation of the rules and illegal fishing penalty should be deterrent (Referens, 2009).

Turkey contains the waters of four different geographic basins (Black Sea, Mediterranean, Arabian Gulf, and the Caspian Sea). This difference is reflected on the forms of natural trout as well. The waters of our country are extremely rich in terms of natural trout populations. This potential is of great economic value for angling as well as biological wealth. However, the most important factors limiting inland amateur trout fishing can be listed as unlimited and illegal fishing, environmental pressures (energy plants, gravel mines, domestic waste, etc.), unfiltered discharge practices, inadequate public supervision, problems at the fishing place, and the inadequacy or even the total absence of socio-economic initiatives focused on natural trout fishing. (Ersal et al., 2008).

The most critical type of fish for amateur fishing in inland waters, rivers, and lakes is trout. Fishing ban is applied for all types of trout between October 1 and March 31. The fishing of three pieces of fish, at most, larger than 20 cm is allowed during fishing period. (Anonymous, 2009). The insensitivity of managers and experts at local organizations is known to be responsible for illegal fishing of the trout stocks in both amateur and

commercial ways. In the interviews with the staff working on fisheries protection and ontrol, it is emphasized that existing fisheries laws should be reconsidered and criminal sanctions should be organized according to prevailing conditions if illegal fishing is to be prevented. Therefore, the functionality of control services is lost.

In case of inadequate natural stock, the management of trout stocks requires great experience and long-term national programs. In order to benefit from fish resources with commercial and recreational (tourism) aims, the rules of legal fishing are defined depending on the property of each resource and every fisherman is provided with commercial and amateur fishing licenses[8] (Mills and Piggns 1988). Today, the above-mentioned subjects are not applicable to our country.

The activities of anglers in fishing period are controlled by local fishing co-operatives. River angle fishing is permitted starting from 200 m at river mouth to 200 m to the girth created for the stock breeding at the end of the river. These girths are small dams/ponds, the last part of the river where spawned salmon broodstock migrate for breeding. Natural salmon farming is very low in the rivers of Japan. Salmon production is carried out under natural conditions at production units established on rivers supported by fishing co-operatives. In this way, tens of thousands of fish return to the river. Chum salmon (*Oncorhynchus keta*) is the most important salmon type in all rivers of Japan. Sports fishing in rivers ends by 2 p.m. after which fishing is done with the nets put on the rivers by commercial fishermen. Amateur, sport, and professional fishing in each river of Japan has very specific rules. The number of amateur, sport, and commercial fishermen fishing in every river is known. All types of angles including single-hook angle are permitted. The fish caught cannot be released alive into the water. Weight, size, and scale samples of all the fish caught are recorded by the river officials. The anglers catch two male fish at most in a day. The fish caught cannot be sold. Only five fish are allowed to be sold in a day (Bergman, 2009). Although all these regulations are established with administrative or legal rules, individual discipline and self-control mechanisms are effective in practice. That the fishermen are respectful to the rights of each other and constantly maintain this limit has been institutionalized as a moral value in this country despite the current competitive market rules, (Zengin, 2001).

The situation is quite different in Turkey. The Gendarmerie, the National Parks, and the Ministry of Forestry officials are in charge of control and surveillance authority in rural areas. However, the authorized units are generally not informed about the restrictive laws and rules of fishing in the regions and some local organizations even try to implement their own bans violating the constitution, which creates a serious problem for an amateur fisherman coming miles to the fishing area suitable to the current Communiqué (Ersal et al., 2008).

[8]In "*coastal fisheries management*" including the management of aquatic living resources in Japan, the idea that the source belongs to the fisherman using it is emphasized. Sub-fields system depending on the administrative restructuring is established to ensure the continuity of fishing, to use stocks at certain level, and to protect it. With this system, each administrative district takes necessary measures to regulate the fishing in their boundaries. In regional fisheries model, any of the fishermen is unable to catch fish outside the region he is legally bound to, every licensed fisherman do fishing in his own region, the fish caught is marketed by the fisherman himself after fishing at the place founded by the cooperatives, and all the records of the fish are directly transferred to the relevant department of the cooperative. Today in all fishing areas of Japan, an extremely multiple/specific management model has been developed which is convenient to the ecological features of the area, type of fishery, and biological characteristics of the fish. In this model, even the smallest detail is considered including the leaving of each member of the cooperative from the port at the same time, starting fishery together, and leaving the fishing area in equal period of time (Zengin, 2001). In addition, every amateur fisherman is a member of an association. It is impossible to participate in any fishing activities without the permission of the association. Conforming to the rules of the association, a sport angler pays to the association for every fishing activity. Thus, the trout populations, especially, in rivers are promoted every year with the contributions from outside.

Aquaculture has shown a more rapid progress than expected and become wides- pread, which has a very large yield on the country's economy. But sport fishing is also an important economic potential. It is necessary that the conditions to use both of them with a suitable operating system be created. Not only cities but rural areas will benefit from such an economic potential, too. This approach / practice can provide tourist attraction / advantages. In this context, a private fishing place right must be legally obvious and the protection of this right for the investing special/legal structure must be defined by law. Such investments for amateur sport fishing should be encouraged with tax exemptions and credit facilities by considering its potential contribution to local economies and sports fishing principles should be established and applied in our country as well. Fly fishing is an activity that can be done throughout the year with the philosophy of '*catch and release*' especially on all trout species. Such a tourism activity in coastal areas will increase tourism in dead season. The only drawback of this practice is turbidity in creeks during winter months (Ersal et al., 2008). The most critical fish type for amateur fishing in inland waters, rivers and lakes in Turkey is trout[9].

Recreational fishing and related tourism has a multi-functional role in aquaculture. Angling facilities is providing great economic value to civil communities. Unlike marine fishing, fish releasing/stocking by the state at inland waters, natural or built reservoirs provides a continuous economic source. Another important point to be mentioned is the state of existing fish farms on the rivers of natural trout. Although clearly defined by the law, many trout farms in Turkey are established too close to the source to adversely affect the existence of natural trout and water quality. Direct, unfiltered, and uncontrolled waste disposal to the river is quite common.

6. Recommendations

1- Amateur fisheries should be considered as a sector and the agencies involved should do necessary regulations. Thus, who does amateur fishing and what type of fish is caught and its amount can be recorded. That the effects of amateur and sport fishing on the ecosystem are determined with scientific studies will be a reference for the legal responsibilities and sanctions to be brought.

2- It is necessary both for the continuity of the aquatic living resources and for amateur fishing with instutional/sectoral structure that amateur fisheries management strategy be addressed comprehensively and its administrative and legal infrastructure be rebuilt in the near future. Effective rules and prohibitions must be brought necessarily for amateur fishing to be continued in our waters in the future.

3- The pressure on stocks is mainly both on the ecosystem and on the economy due to lack of license and organization in amateur fisheries, unconsciousness, and lack of self-control system. The commercial size of amateur fishing in inland waters is greater than marine fishing. The economic loss there should be structurally/legally re-arranged to provide income for rural areas.

[9]In a study carried out in major rivers in the eastern Black Sea, it has been found out that the fishing pressure on Black Sea trout (*Salmo trutta labrax)* is mainly; (1) Due to illegal fishing, especially, when spawners of marine type are caught with coastal nets while entering the river and with traps called 'fence' while leaving the river. Likewise, smolt individuals of marine and river forms are heavily fished with cast nets, angles, dynamite, and electricity throughout the year. (2) Apart from overfishing pressure, various activities performed on river bed by public and private organizations are influential on the decline of marine trout stocks. Especially since the early 1990s, rivers are under intensive pollution and distortion due to different actions such as sand and gravel taking along the rivers starting from river mouths, river bed improvement work, road construction work, disposal of solid and liquid waste, hydro-electric power plant projects ,and the filling of coasts (Zengin et al., 2002). The destruction of natural habitats affects the feeding and breeding migration of the fish in the river. Due to these destructions, fewer fish enter the rivers for spawning.

4- There is a significant pressure on stocks in inland waters. While imposing bans to maintain stocks, places for amateur fishing to be continued should be determined. The places to be determined in inland waters, especially, ponds and dam lakes for irrigation are well suited for this activity. That these resources are operated by private/legal people with the support of the state is more realistic. In this ay, it is necessary to form recreational fishing areas and to supplement these areas with fish farming[10].

5-There are considerable number and range of inter-and intra-sectoral users. It is also recognized the management conflicts and synergies that exist between recreational and commercial fisheries and aquaculture and other aquatic resource users (Kaerney, 2002). These arise, for example, from stocking ad introduction to meet angler demand versus protection of biodiversity or development of hydropower production versus fisheries interests. As a consequences, there is need to balance promotion of aquaculture and inland fisheries with biodiversity protection (Cowx and Van Anrooy, 2008).

6-The state cannot get rid of the existing problems by only imposing and applying bans. Therefore, the state needs to consider the people engaged in this activity while imposing bans. For that reason, places for amateur fishing activities should be formed. Legal arrangements should be made to legalize the fish caught (to insure, to consider as a source of employment to the unemployed) by amateur fishermen (e.g. spearfishing in the Gulf of Saros, anglers on Galata Bridge).

7-The recording of amateur fisheries and its control will contribute to the economy. There is a complete irregularity in current applications. Therefore, the systems in developed countries such as America, Germany, Japan, Scandinavian countries, etc. can be modeled. Amateur fisheries in these countries are regulated with the economic approach. Real amateur/ sport fishermen invest money in this business. The source should be managed by users as well as administrative and legal regulations of the State.

References

Akşiray, F. 1959. Abant Gölünde Suni Islah Yolu ile İlk Alabalık Üretilmesi Hakkında. İstanbul Üniversitesi Fen Fakültesi Hidrobiyoloji Enstitüsü Dergisi, Seri A-5: 115-124.

Alp, Ş. and Kaptanoğlu, M. 2000. Van İli Çatak İlçesinde Bulunan Su Samurlarının Habitat ve Karşılaştığı Problemler. TTKD, Tabiat ve İnsan Dergisi. Yıl: 34, Sayı 1, s: 8-10.

Anonymous, 2007. AB Ortak Balıkçılık Politikası ve Türkiye Semineri. 22–23 Ekim 2007, Bandırma Ticaret Odası. AB Balıkçılık Bülteni Sayı 8. Ekim 2007.

Anonymous, 2009. Tarım ve Köyişleri Bakanlığı Koruma ve Kontrol Genel Müdürlüğü. 2/2 numaralı Amatör (Sportif) Amaçlı Su Ürünleri Avcılığını Düzenleyen Tebliğ. (İlk yayımlanma: 1.08.2008 tarih ve 26974 sayılı Resmi Gazete, Değişiklik: 05.11.2008 tarih ve 27045 sayılı Resmi Gazete).

Artüz, M. İ. 1957. Bazı Pelajik Balıklarımızda Görülen Av Periyotları. Et ve Balık Kurumu, Balıkçılık Araştırma Merkezi Raporları. Seri; Deniz Araştırmaları B. No: 1, İstanbul, 40 s.

Beklioğlu, M. 2006. Abant Gölü Balık Toplulukları ve Genel Yapı Üzerine Değerlendirme. Bolu Doğa Koruma Milli Parklar Av ve Yaban Hayatı Koruma Şubesi Raporu.

Bergman, A. 2009. An Angler's Guide to Salmon Fishing in Japan. Jul 17th, 2009.

[10]It cannot be said that fish releasing activities in Turkey have been done correctly until now (Zengin, 2006). The sources need to be supported by creating technical and scientific infrastructure of fish releasing programs. Thus, a system will be created to meet the demands of people fishing and a source of employment will be created.

Cowx, I, G. and Van Anrooy, R. 2008. Social economic and ecological objectives of inland commercial and recreational fisheries and aquaculture. EIFAC Occasional Paper No: 44. Food and Agriculture Organization of the United Nations, Rome, 2010, Page 1-5.

Çiftçi, Y., Eroğlu, O., Firidin, Ş., Erteken, A. and Okumuş, İ. 2009. Ülkemizde Kahverengi Alabalıkların Genetik Dağılımı. Doğal Alabalık Çalıştayı, 22-23 Ekim 2009, Trabzon Su Ürünleri Araştırma Enstitüsü. Çalıştay Bildiri Kitabı (Editörler: N. AKSUNGUR, E. ÇAKMAK), s: 19-30.

Dalkıran, G. and Baki, B. 2009. Yalova İlinde Sportif (Amatör) Balıkçılık Yapan Kişilerin Yaş Grupları, Meslek Grupları ve Belgelerini Yenileme (Vize) Oranları Üzerine Bir Araştırma XV. Ulusal Su Ürünleri Sempozyumu 01-04 Temmuz 2009 Rize.

Deveciyan, K. 2006. Türkiye'de Balık ve Balıkçılık. İnceleme. (Çeviren: E. ÜYEPAZARCI), Aras Yayıncılık. 574 s.

Ersal, T., Kalaç, B. and Sanalan, T. 2008. The potential Turkey inherits in fishing native trout. Symposium on interactions Between Social, Economic and Ecological Objectives of Inland Commercial, Recreational Fisheries and Aquaculture,. Antalya, Turkey, 21-24 May 2008, FAO.

Genç, Y., Zengin, M., Başar, S., Tabak, İ., Ceylan, B. and Çiftçi, Y. 1999. Ekonomik Deniz Ürünleri Araştırma Projesi. Proje No: TAGEM/IY/96/17/3/001. Trabzon Su Ürünleri Merkez Araştırma Enstitüsü.

Kaerney, R.E. 2002. Co-management the resolution of conflict between commercial and recreational fisheries in Victoria, Australia. Ocean and Coastal Management 45, 201-214.

Mills, D. and Piggins, E. 1988, Atlantic Salmon: Planning for the Future, The Proceedings of the Third Int. Atlantic Salmon Symp., Biarritz, France 21-23 October 1986, 578 s.

Olay, 2009. Günlük Mahalli Haber Gazetesi, Çanakkale, Küçük Balıkçılar Dertli. 18 Haziran 2009.

Ünal, V., Acaralı, D. and Gordoa, A. 2010. Characteristics of recreational marine fishing in the Çanakkale Strait (Turkey). Mediterranean Marine Science Research Article Indexed in WoS (Web of Science, ISI Thomson) The journal is available on line at ***http://www.medit-mar-sc.net*** 315-330 s.

Ünsal, A. 2010. Boğaz'ın Beş Efendisi: Lüfer, Palamut, Levrek, Tekir, ve İstavrite Dair. Yapı Kredi Yayınları, No: 3230, 1. Baskı, İstanbul, Aralık, 2010, 191 s.

Referens, 2009. Günlük Ulusal Gazete. 'Her Balıkçı Galata'da Rastgele Olta Sallamayacak'. 30 Mayıs 2009.

Tortonese, E. 1954. The trout of Asiatic Turkey. İstanbul Üniversitesi Fen Fakültesi Hidrobiyoloji Enstitüsü Dergisi, Seri B-2: 1-26.

Turgan, G. 1959. Lüfer Balıklarının (*Pomatomus saltatrix*, L.) Biyolojisi Hakkında, Hidrobiyoloji Mecmuası, İstanbul Ün. Fen Fak., Hidrobiyoloji Enstitüsü, Seri A, Cilt V, Sayı: 1-4, İstanbul, 144-180 s.

Türker, H. 2010. Abant Gölünde Abant Alası Popülasyonu Restorasyonu İçin Olası Engeller. 2. Ulusal Alabalık Sempozyumu, Poster Sunum, Karamanoğlu Mehmetbey Üniversitesi, Karaman, 2010.

Zengin, M. 2001, Japonya'daki Balıkçılık Yönetim Modeli ve Bu Modeli Oluşturan Değerler, Yunus Dergisi, Su Ürünleri Merkez Araştırma Enstitüsü Yayını, Trabzon, Yay. No.: 1, 11-12 s.

Zengin, M., Aksungur, M. and Tabak, İ. 2002. Karadeniz Alabalığı (*Salmo trutta labrax*) Populasyonunun Gelişimini Etkileyen Faktörler. Türkiye'nin Kıyı ve Deniz Alanları IV. Ulusal Konferansı, Türkiye Kıyıları 02 Konferansı Bildiriler Kitabı. 5–8 Kasım İzmir. E. Özhan ve N. Alpaslan (Editörler), p: 747–758.

Zengin, M. 2006. Balıklandırmanın Genel Kriterleri ve Dünyada ve Ülkemizdeki Stoklama Deneyimleri. 1. Balıklandırma ve Rezervuar Yönetimi Sempozyumu. 7-9 Şubat 2006, Antalya. TKB Akdeniz Su Ürünleri Araştırma, Üretim ve Eğitim Enstitüsü Müdürlüğü. Bildiriler (*Ed: Y. Emre, İ. Diler*), s: 69-82.

Zengin, M., Gül, M. and Ayan, A. K. 2008. Kızılırmak Deltası-Bafra Balık Göllerindeki Çevresel Faktörlerin Göl Ekosistemi ve Balıkçılığı Üzerine Olan Etkileri. Türkiye'nin Kıyı ve Deniz Alanları VII. Ulusal Konferansı, Türkiye Kıyıları 08 Konferansı Bildiriler Kitabı. 27-30 Mayıs 2008, Ankara. Balas, L. (Editör), Cilt: I, p: 185-194.

Zengin, M., Güngör, H., Güngör, G. and Dağtekin, M. 2010. 2000'li Yılların Başında Marmara Denizi Balıkçı Filosunun Yapısal Özellikleri. TÜDAV Marmara Denizi 2010 Sempozyumu Bildiriler Kitabı. Editör B. ÖZTÜRK, 25-26 Eylül 2010, İstanbul, 345-354.

Zengin, M., Yerli, S. V., Dağtekin, M. and Akpınar, Ö. İ. 2012a. Son Yirmi Yılda Çıldır Gölü Balıkçılığında Meydana Gelen Değişimler. V. Ulusal Limnoloji Sempozyumu, Süleyman Demirel Üniversitesi, Eğridir Su Ürünleri Fakültesi, 27-29 Ağustos, 2012, Isparta. SDÜ Eğridir Su Ürünleri Fakültesi Dergisi, Sempozyum Özel Sayısı, (Yayın için kabul edildi/basımda).

Zengin, M., Memiş, D. and Gessner, J. 2012b. Mersin Populasyonlarının Geleceği Açısından Sakarya Nehri Habitatını Etkileyen Çevresel Faktörler ve Akarsu Sucul Yaşamının Sürdürülebilirliği Üzerine Öneriler. FABA, 2012: Balıkçılık ve Akuatik Bilimler Sempozyumu, 21-24 Kasım 2012, Eskişehir, Osmangazi Üniversitesi, Özet Bildiriler Kitabı, 222 s.