

ACTIONS AIMED AT KINDS OF LIVING AQUATIC CREATURES WHICH HAVE ECONOMIC VALUES AT THE ÇANAKKALE DARDANELLES ECOSYSTEM

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Abstract: *There is a huge population of species abundance in the ecosystem of the Dardanelles, which plays an important role in the aquatic production of Turkey. This affluence of species points to the fact that geographical area is generally open systems for which cybernetic systems are inadequate. Moreover, this ecosystem is a kind of transition between different ecosystems. Coastal habitat in the natural life presents richness in view of the variety and number of the species locally. In the light of these facts, this study investigated the species which are under great pressure in the coastal and aquatic environment that form the ecosystem of the Dardanelles.*

Keywords: *Marine, Coastline Ecosystem, Geography, Degradation, Fishing*

Özet: *Ülkemiz sucul üretiminde önemli paya sahip Çanakkale Boğaz ekosisteminde yer alan zengin tür popülasyonları mevcuttur. Bu zenginlikte ekosistemin genel olarak bir açık sistem oluşu ve sibernetik sistemlerin azlığı da etkindir. Ayrıca ekosistem diğer ekosistemler arası geçiş niteliğindedir. Doğal hayattaki kıyı habitatı yerel anlamda da türlerin çeşitlilik ve sayısı açısından zenginlik arz eder. Bu çalışmada Çanakkale Boğaz ekosistemi oluşturulan kıyı ve akvatik ortamda büyük baskı altında kalan türler ve avcılık incelenmiştir.*

Anahtar Kelimeler: *Deniz, Kıyı, Ekosistem, Coğrafya, Bozulma, Balıkçılık*

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Uluslararası Hakemli Sosyal Bilimler E-Dergisi
ISSN:1694 – 528X Sayı: 13 Ekim – 2007

İktisat ve Girişimcilik Üniversitesi – Türk Dünyası Kırgız – Türk Sosyal Bilimler Enstitüsü Celalabat – KIRGIZİSTAN

1. Introduction

The Dardanelles is the 61-km-long (38-mile) strait between the Aegean Sea and the Marmara Sea. It is the westernmost section of the waterway that divides Europe from Asia and connects the Mediterranean and Black seas. The width is 1-6 km / 0.75-4 mile and the average depth is 100 m / 328 ft. The name Dardanelles comes from Dardanus, mythical ancestor of nearby Troy. It was also called the Hellespont in ancient times. According to ancient writers, in mythology, the name derives from Helle who fell from the back of the golden-fleeced ram while passing through the strait on the way to Colchis in the Black Sea. Despite unpredictable weather and swift surface currents, the Dardanelles has been a strategic water route and an object of conquest throughout history.

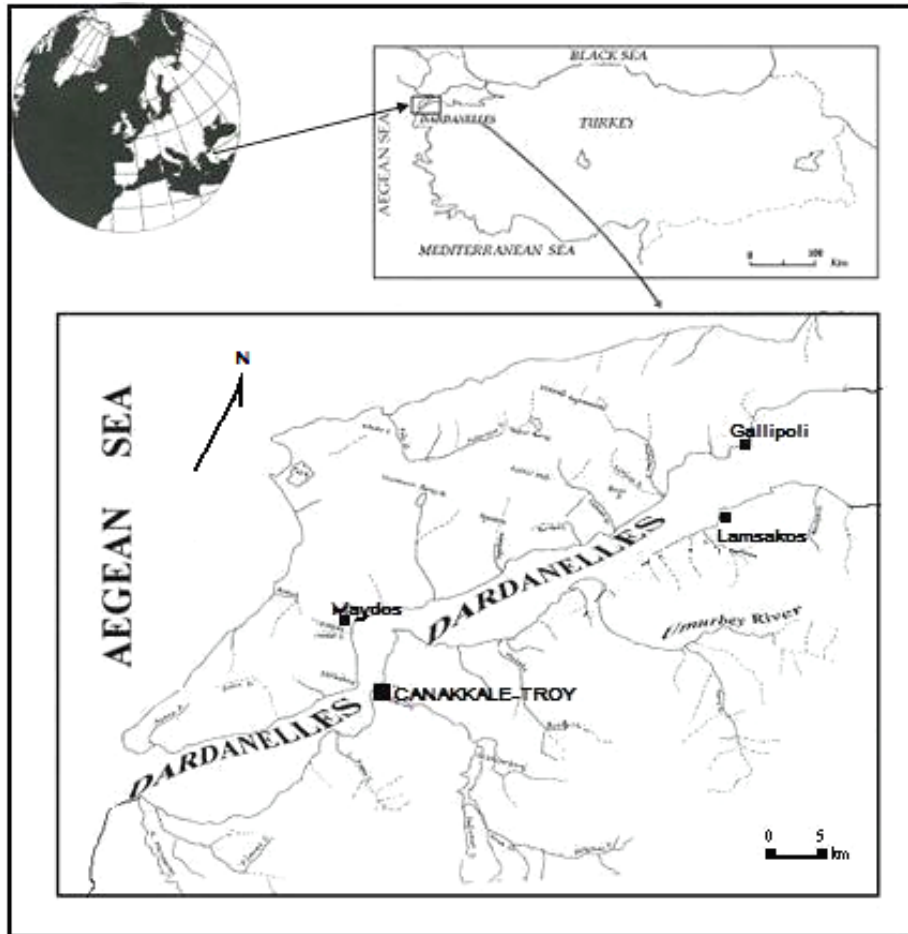


Figure I: Location of Study Area

The Çanakkale Dardanelles Ecosystem is productive in terms of some living sea creatures. In this wealth, it is functioning that the ecosystem is generally clear and cybernetics systems are not enough. Besides this, the ecosystem is between the other ecosystems. The shore habitat in natural life supplies richness locally from the point of view of numbers and variety of types. In this study, fishing, which constitutes Çanakkale Dardanelles ecosystem with big pressure in the coast and aquatic environment, is evaluated.

2. Terrestrial Environment

It is located in our region as important areas at wetlands in ecological production. Here the soil construction is also important. When Mass and soil features of the Biga peninsula are evaluated, it is seen that mountainous land constituted from andezite and granite. Silicate basic mass with no lime and soil with acid reaction, which constitutes from them, are widely seen. Soil is generally deep and clay (Kantarıcı, 1996). It is seen that basic mass and soil type of the Gelibolu Peninsula is so various. There are the Oligocene conglomerates, sandstone and marls on the north side of peninsula, on the south part white sandstone and red marls belonging to sub Miocene, on the southernmost part of the peninsula, besides sandy limestone layers, there are yellow colored sandstone, clay, and marl belonging to the period of neojen over Miocene and sub Pliocene (Irmak and others, 1980). The existence of the Dardanelles is an important factor with this richness. As approaching to the sea level, underground water-level ceiling approaches to the surface are a result of this, various wetlands constituted. The important wetlands on the Gelibolu Peninsula of Dardanelles are Kavak Delta, Anafartalar Cave, Suvla Lagoon, Munipbey, Sütluce, Cumali, Ilgardere, Kayaaltı Stream, Bigali Stream, Eceabat Stream, and Salt Lake. The wetlands on the Biga Peninsula at the Anatolian part of the Dardanelles are like this these parts show variability from the point of determined bird types. These fields are so important for nourishment and sheltering of birds. There are several numbers and various kinds of birds in these areas. The bird types seen at the determined

wetlands of the Dardanelles are these:

The bird types in these wetlands are badly affected from the agricultural activity, deformations on the soil structure because of pasturing, sucker of a plant, grass, breaking of seedbeds by animals, thrown trashes, trips made to these areas with an aim of reaction and noises. In this region, quail, duck, goose, and pheasant fishing are widely done. Especially at the end of August and at the beginning of September, quail fishing increased by using various kinds of electrical techniques. Fishing causes these types in the wild life to decrease.

Wild Life is our region on the Gelibolu Peninsula to Korudağ Mass, on the Biga Peninsula mountainous mass of Mountains Kaz is both at the position of neighbourliness. For that reason, it is very rich from the point of wild life. But this richness decreases day by day. It is talked about in 60s in the country annuals at the inventory searching, goat hair as a textile raw material, jackal leather beside spring wool, fox and bear leather are assured (Çanakkale Province Annual, 1967). Today, at the shore parts of the region, this types of interference are not discussed. But pig and snake that gives harm to villagers' fields, fox that gives harm to poultry in the village and jackal fishing which gives damage to sheep herds go on. Bear fishing for its fur at the Kaz Mountains is important. Furthermore, animal smuggling is increase to 1.5 million dollars per a year in the worldwide. Fishing is frustrated by using toxic chemicals in agriculture area. Our region is also affected from this fact (All of us 12, 1994). Frog, snake, snail, and turtles are collected from the region and abducted to abroad with a specific fee for each. But it is difficult to determine its amount, because it is unrecorded.

3. Aquatic Environment

In our working field as an aquatic environment mostly streams where drought is seen in summer and Karamenderes, Sarıçay, Lapseki, and River Umurbey are also active. There is a Salt Lake as a lake with salt in its construction. Besides this, the

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Uluslararası Hakemli Sosyal Bilimler E-Dergisi

ISSN:1694 – 528X

Sayı: 13

Ekim – 2007

İktisat ve Girişimcilik Üniversitesi – Türk Dünyası Kırgız – Türk Sosyal Bilimler Enstitüsü Celalabat – KIRGIZİSTAN

Dardanelles is very rich by means of various types because it is a water-line from the point of water quality with a mixture of the Marmara and Aegean Sea. Main operations done to this environment as an economic purpose are like these:

Sponge fishing is chief activity. The Dardanelles supplies appropriateness to sponge. There are sponge stores at the exit of the Dardanelles. In a research, 2591.55 kilograms sponge store is determined in this area in 1993 (Ministry of Forest, Agriculture and Village, 1983). In a period of one decade, in 1985 1 ton, 1989 7 tons and 6 tons in 1990 were taken out. But in the other years no sponge has been taken out (Government Province of Çanakkale Province Central of Coordination and Plan Data 2000).

Shellfish and Molluscs; removing and producing of crustaceous and invertebrate sea animals is done. A sort of sea animal named blue mussel is widely seen at the Dardanelles and around it. Crustaceous and invertebrate are taken out at the Akbaş cove at the production institution belongs to a private company. At some parts of the Dardanelles, blue mussel types are widespread. There are also sand mussels at the north entrance of the Dardanelles. Sea snails were taken out of the deep sea 4216.7 tons in 1995, (Management of Agriculture Annual Report, Government Province of Çanakkale, 1996). Totally, Shellfish and Molluscs were taken out 4725.0 tons of in 2001 (Management of Agriculture Annual Report, Government Province of Çanakkale, 2001).

Table 1: Production of Shellfish and Molluscs on Çanakkale Ecosystem (tone) Anon 2002

TYPE OF CROPS	1997	1998	1999	2000	2001
Octopus	45.0	62.0	96.0	78.2	94.3
Calamary	42.0	47.0	77.0	79.8	51.4
Shrimp	580.0	640.0	660.0	830.0	1822.6
Oyster	325.0	412.0	810.0	3.0	4.3
Mussel	3285.0	3925.0	4350.0	2925.0	2724.0
Mussel-gravel	520	415.0	208.0	31.2	28.4

(Management of Agriculture, Province of Çanakkale, Annual Report, 2003)

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Fishing is so widespread at the Dardanelles. The reason for this is that it is located in an aquatic environment which has rich mixture of seawater bed. Water quality constitutes with water mixture of the Marmara Sea and The Black Sea. It is an important factor that migrating fish are being at the passing way.

Important fishing institutions are established at the Dardanelles. In fact, established food industry fishing has a certain importance in this area. The important fishing institutions in the area are given in Table 2.

Table 2: Fishing Foundation on Dardanelles Coastline

LOCATION	TYPE	SEA AREA (m ²)	BREAKWATER LENGTH (m)	EXTRM. DEP. (m)	BOAT CAPACITY	OPENING DATE
Çanakkale	Harbour	6 000	600	2.00-3.50	35	1971
Kepez	Harbour	41 400	428	8.40-25.00	2 RO-RO ramps	2006
Kumkale	Shelter	3 000	110	1.00-	30	1990
Lapseki	Shelter	6 000	194	0.8 -9.00	New	1971
Şevketiye	Shelter	5 000	130	1.00-4.00	20	1979
Çardak	Quay	5 000	135	0.4 -2.90	25	1970
Gelibolu	Harbour	2 200	95	2.00-4.50	50	1972
Eceabat	Quay	6 000	35	0.8-2.20	39	1980
Kilitbahir	Quay	800	95	1.00-6.00	28	1966
Seddülbahir	Shelter	1 100	162	1.00-3.50	120	1975

(Management of Agriculture, Province of Çanakkale, Annual Report, 2004)

The main harbour is Kepez, Çanakkale and Gelibolu harbour. These harbours's piers take a place as below images.

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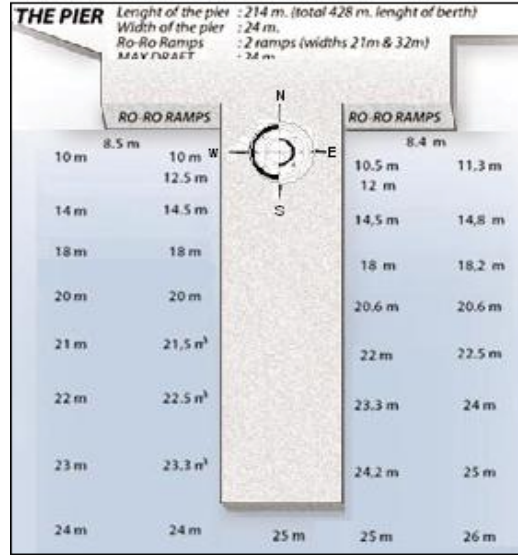


Figure II: Kepez Pier Status

Kepez Harbour is biggest construction on Çanakkale Dardanelles Strait.



Figure III: Kepez Harbour from Ikonos Satalite-2006

The port has ISPS Code, and its service variety covers all requirements at the region, Dardanelles Straits even collection of slop, sludge, bilge water and solid waste with licensed barges which serve to the vessels around Dardanelles Straits. In the same time it has a 2 ro-ro ramps and big pier for trans-shipment and serving for the native and foreign tourists. It has huge capacity for exporting import fish capacity.

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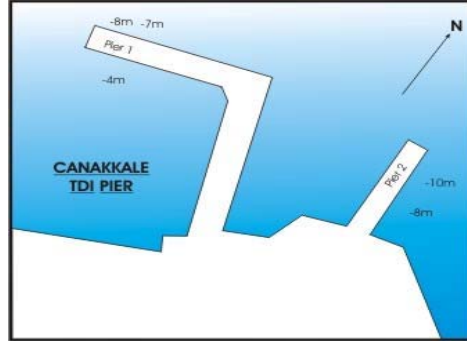


Figure IV. Çanakkale Pier Status

It serves the Asia between Europe regions as well as transit traffic to the main road passenger with ferryboat. It also plays an important role as a transit port main fishing shelter in Dardanelles.



Figure V: Çanakkale Harbour from Ikonos landsat-2006

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Gelibolu harbor is also important fishing, ferry boat and cargo ships progress.



Figure VI: Gelibolu Pier Status



Figure VII: Gelibolu Harbour from Ikonos landsat-2006

The increase of the number of troughs and family busy with fishing and with modernization of the fishing devices, more fishes are caught. The number of families busy with fishing and trough numbers related with this are given in Table 3.

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Table 3: Professional Smack and Fisherman Family

HARBOR NAME	MOTOR SHIP (GH/P)	DRAGNET	TRAWLER	FAMILY NUMBER
Çanakkale (Capital)	562	5	12	3 620
Gelibolu	146	2	-	500
Lapseki	69			300
Eceabat	125			800
Karabiga	96	2	1	300

(Management of Agriculture, Province of Çanakkale, Annual Report, 2005)

Fish types at the Dardanelles, which have economic values, are too many because it is a passing way of them.

Table 4: Production of Aquatic Crops on Çanakkale in 1996-2001 (tone)

YEAR	SEA FISH	SHELLFISH MOLLUS.	INNER FISH	SEA FARM.	INNER FARM.	TOTAL
1996	5,186.0	4,850.0	2.8	0.0	160.0	10,198.0
1997	9,389.0	4,800.0	189.7	0.0	168.0	14,546.7
1998	9,804.0	5,502.9	47.6	60.0	174.0	15,588.0
1999	10,672.0	3,947.0	33.5	190.0	209.0	17,258.0
2000	12,773.5	3,947.2	33.5	190.0	209.0	17,153.2
2001	17,093.1	4,755.0	33.0	200.0	165.0	22,246.1
Total	64,917.6	30,059.1	368.5	540.0	1,106.0	96,991.2

(Management of Agriculture, Province of Çanakkale, Annual Report, 2002)

The types at the population are like these:

There is a decrease at the number and type of the fish fishing. It was 5051 tons in 1985 but this quantity decreased to 4 402, 2 tons sea product in 1995 (Management of Agriculture Annual Report, Government Province of Çanakkale, 1996) and than 25 116.8 tons catching in 2001 (Management of Agriculture Annual Report, Government Province of Çanakkale, 2001).

Productions gained at the result of production of this type and activities in this area are evaluated at the institutions given below.

Table 5: Fishing Industry on Dardanelles Coastline

COMPANY NAME	PLACE	ACTIVITY
Dardanel	Kepez	Canned Food, Raising of mussel in Kilye Bay
Akbalik	Çardak	Sand Mussel, Black Mussel, Anchovy, sardine
Amoti-Bosforo (Marsan)	Akbaş koyu-Eceabat	Sand Mussel
Erden	Gelibolu	Sardine
Yakşi	Gelibolu	Sardine
Yelkenci	CLOSED (Because of Crisis)	

Fishing with light at night, reproduction and leaving caviar, giving damage to the sunken which are nourishment areas of fishes, harmed fishes at Maria net, fishing done at an unsuitable time, trawling, physiological pollution, extreme traffic at the Dardanelles, lack of law and control also gives damage to life of fish (Ilgar, 2000).

4. Conclusion and Suggestions

Water products, is a troop of plants and animals living in the sea and inner waters. Furthermore, it is a multi disciplinary subject which includes usage of these organisms as source, placement and the open sea. Water products which are one of the animal protein sources that can be provided easily and cheaply, is not at the right place both in the agricultural sector and national economy at the moment (Atalay, İ. 1997,375-390). When the problems of the sector of water products in Çanakkale are analysed, it has been determined that only 1,65 % of the sea products, which are produced by hunting, has been registered between 1996 - 2001 and so the values of Çanakkale fish market hall are very far from reflecting the amount of production that was set down by the directorship in Çanakkale. One reason for this difference at the values is that the water products hunted in Çanakkale are marketed to other market halls and İstanbul apart from central fish market hall. However, the amount of water products marketed in Çanakkale fish halls and the data of Agriculture

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Province Directorship don't vary in the basis of amount, but contains inconsistencies about the numbers of species and production orderings. For example, sardine, anchovy and bluefish are the most marketed fish species at the fish market in Çanakkale, on the other hand, according to the data taken from Agriculture Province Directorship, sardine, tuna fish and bluefish are mostly produced fish in Çanakkale. In the statistics of Agricultural Province Directorship, there are only 17 registered fish types but according to market hall recordings, there are 55 different fish types. There is a water product cooperative in Eceabat. There is an association in order to protect small fishermen. A cooperative has been established before but couldn't work properly so it was closed.

Material is expensive in Çanakkale because of several reasons. The first reason is that the material comes from abroad by foreign currency. Secondly, there are 3 or 4 types of shops that sell these materials and these shops can not compete. Furthermore, it is not effective when cheap material is used. The bans set for fishermen are improper, the bans set for big ships don't have a deterrent affect and this is because of the fact that there aren't so many bans for trawls and hauls. It is very harmful not to add more bans although trawl, haul and tricks damage the ecological balance. Moreover, it has to be prevented to dive at night, to use dynamite and light that are prohibited materials.

It must not be given any concession to terrestrial and aquatic environment precautions to protecting life of living creatures and applying legal law sanctions. Otherwise, it will be possible to see the living creature types, which could not protect themselves, only in zoo and photograph albums. As a result of this, it affects the other rings of ecological chain. Lastly, human being constitutes one ring of this nourishment chain.

We should not narrow the other living creature's life span not to prepare our end with this negative interaction. For instance, at a publication of UNESCO, it is said that 37000 animals and plants are under menace by means of interaction because

of illegal animal traffic (All of us 12, 1994). Several living creatures have become extinct in lately. Being made conscious of individuals by means of education at the way to reach required aims will provide success.

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