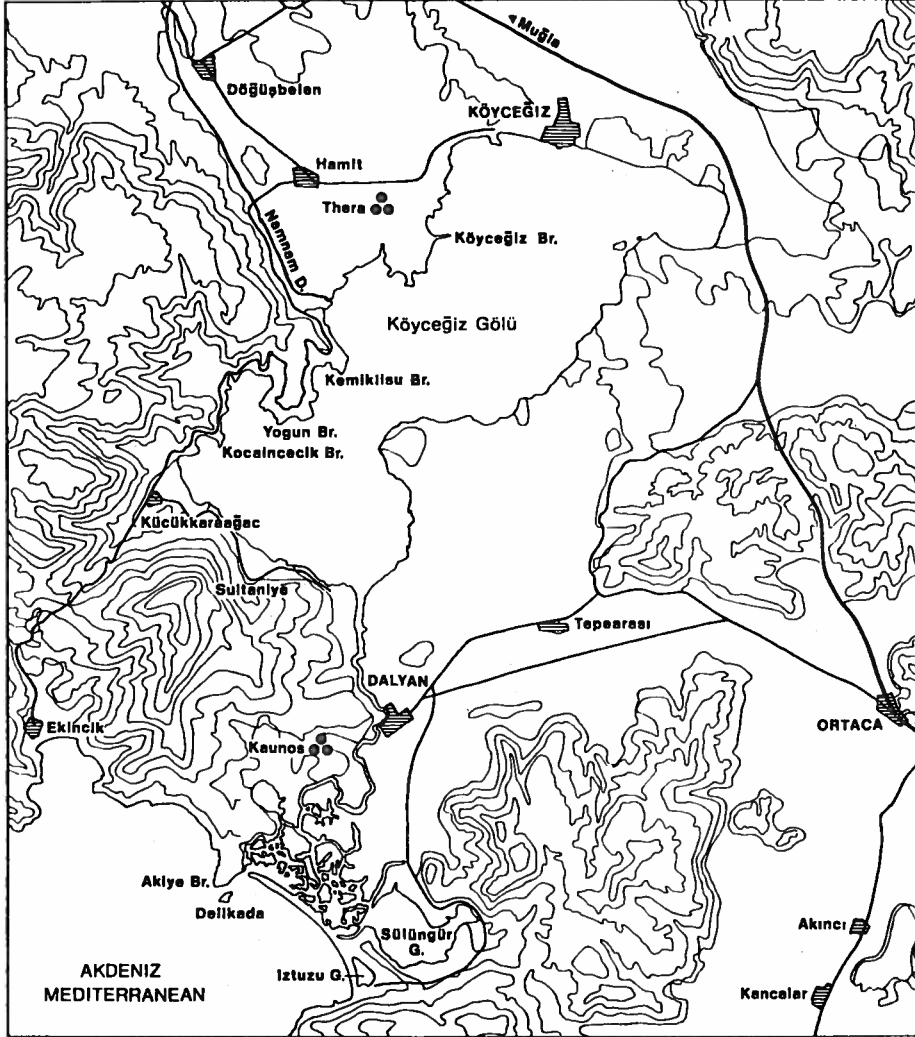




BIRDS OF TURKEY
TÜRKİYE KUŞLARI



8

Köyceğiz - Dalyan

Birds of Turkey is a series which provides conservationists, birdwatchers and ornithologists with documents on bird areas of Turkey. This is accomplished by combining the records of many birdwatchers. Each issue covers one area. If enough new records are available, improved lists will be prepared even on areas of already published lists. The editorial board (address below) would be grateful to receive any bird records from Turkey.

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The Birds of the Köyceğiz - Dalyan area

Köyceğiz - Dalyan bölgesinin kuşları

by Aygün Kılıç and Max Kasperek

1. Area and geographic position

The area covered by this study includes Köyceğiz Gölü, the Dalyan River and estuary (incl. Sülüngür Gölü), İztuzu Gölü, the Dalyan - İztuzu beach and the immediate surroundings. The area is a transition zone between the Mediterranean and Aegean regions. EROL (1982, 1983) put Köyceğiz Gölü and the area east of the Dalyan River into the Mediterranean region (region no. 3.1.1.1.; environs of Dalaman) and the area to the west of the Dalyan River into the Aegean region (region no. 2.1.3.4.; Reşadiye peninsula). The Reşadiye or Datça peninsula, which is a sunken mountain ridge projecting into the sea, is an important barrier between both regions.

Köyceğiz town is situated on the highway from Muğla to Fethiye. The area belongs to Muğla province.

The co-ordinates of the center of the area are 36°53'N/28°38'E.

2. Altitude

The estuary and the lake are almost at sea level. Köyceğiz Gölü is 8 m above sea level according to one reference and the surrounding plains are just a few metres above the sea. A mountain to the west of the Dalyan River rises to 937 m above sea level.

3. Surface and depth

Köyceğiz Gölü has a surface of approx. 5,200 ha and the Dalyan estuary is about 1,150 ha. Lake Köyceğiz is amongst the 20 largest lakes in Turkey. No information is available on its depth.

4. General description of the area

The Köyceğiz - Dalyan complex is one of the largest Turkish coastal wetlands. FELLOWS, who passed through the area in both 1838 and 1840, said "no part of Asia Minor that I have seen is so picturesque as the whole of this district" (FELLOWS 1839: 247). Without doubt, the rich variety of habitats is responsible for the beauty of the area which is still amazing today: A freshwater lake with some islands, a brackish water estuary with a labyrinth of reedy

channels, several kilometres of sand dunes, gallery forest on the shores of the lake, pine forests on the headlands, Mediterranean maquis and many other habitats are concentrated in an incredibly small area.

The Köyceğiz lake was once a bay of the sea. The Dalaman River, which is now some 15 km to the east of the lake, once had a different course and its sediments cut off the bay from the sea. Thus the genesis of the lake is very similar to the nearby Bafa Gölü which was formed about 400 A.D. (KASPAREK 1988). In contrast, however, Köyceğiz Gölü seems to be considerably older. The ancient Kaunos was described by the classical writer and geographer STRABON as a town with shipyards and a harbour. That means that 2,000 years ago the coastline was only some 2-3 km behind the present one (STRABON lived from 63 B.C. to 23 A.D.) and lake Köyceğiz already existed at that time. Further evidence of the age of Köyceğiz Gölü comes from inscriptions in Kaunos which indicate that the Dalyan River existed in those days and was used for fishing (BEAN 1985).

The flood plains and the river valleys between Marmaris and Fethiye are characterised by the forests of the Amber tree *Liquidamber orientalis*. This is a species endemic to SW-Anatolia and apart from here, only a few scattered stands are found in the provinces of Muğla and Antalya. In SW-Anatolia, the Amber tree replaces the Plane tree (*Platanus orientalis*) which is found in related associations in other parts of the Turkish lowlands (e.g. in the Aegean region). The Amber tree is a glacial relict and needs the strongest protection. The stands on the shores of lake Köyceğiz are among the largest within its limited range. Specific epiphytic moss associations are found on the stems of the Amber trees. One has been described as "Scorpiurium sendtneri - Zygodon vulgaris Ass." and another as "Rhynchostegiella tenella var. litorea - Scorpiurum circinatum Ass." (WALTHER 1975).

Köyceğiz Gölü, the largest waterbody in the wetland complex, is a freshwater lake. Several streams enter the lake. Namnam River on the west side of the lake is one of the biggest. Reed beds are found around the mouths of these streams and also at other places along the shore. Amber gallery forests occur on the shores and are usually crossed by small streamlets. In winter and springtime the forests are frequently inundated.

Dalyan River is the outflow of Köyceğiz lake and splits up into a labyrinth of channels below Dalyan town. The course of the river follows a headland with rocky slopes on the west and lowlands on the east bank and with many meanders. The town of Dalyan, with some 3,000 inhabitants and a rural rather than an urban character, is on the east side of the river.

The Dalyan estuary (dalyan delta) consists of many channels which are fringed with Common Reed *Phragmites australis*. The reeds stand 4-6 m high but are confined to the channel shores so large reed beds are absent. Low vegetation covers the surrounding wet meadows. Sülüngür Gölü, Alagöl and Sülüklü Gölü are three of the larger areas of open water. The delta is generally brackish, but the salinity varies greatly both with exact location and even time.

Sülüngür Gölü, for example, has a very low salinity. In short the area is exactly what is meant by "estuary" (in contrast to lagoons etc.): It is an embayed coastal water body diluted by freshwater flow. The Dalyan estuary enters the sea at the western edge of some sand dunes which are about 50 m wide and separate the estuary from the sea. The entry (Dalyan ağzı) is rather shallow (c. 0.5 m deep) but has a considerable current.

Dalyan beach is crescent-shaped. İztuzu Gölü, which is separated from the Dalyan estuary by a mountain ridge, is a small lake at the back of the eastern third of the beach. The lake does not have a natural connection to the sea but one was made during the construction of a hotel (which was later cancelled) in 1987. The connection has now silted up. No permanent streams enter the lake and its depth does not exceed 1 m. Sea water from waves sometimes enters the lake during winter storms. The salinity of the lake varies with the influx of sea water and surface water as well as rainfall and evaporation. In general the water is salty.

The vegetation of the area is typically Mediterranean. On dry sites vegetation varies from degraded phrygana (maquis) through phrygana to pine forests with all intermediate types present. The forests are usually of *Pinus brutia*.

There are warm and hot thermal springs along the Dalyan River and on the shores of lake Köyceğiz (Sultaniye). The springs are mineral water and some have a sulphurous smell. Their temperatures usually range between 37°C and 40°C.

5. Ancient sites

Kaunos which lies on the opposite side of the Dalyan River from the town of Dalyan was an ancient town and is now a tourist attraction. Its origin is Carian and its owners have changed many times in history. Mausolos, who was the king of Caria within the Persian empire during the 4th century A.D., fortified the town, which was the southernmost point of his empire. The northernmost point was Herakleia on the shores of Bafa Gölü (which was a bay of the sea at that time) and Mausolos fortified that town in a similar way.

The most striking feature of the archeological site nowadays is the kings' gravels above Dalyan. They stem from the 4th century A.D. The acropolis is well above ground level. The ruins of a castle are of Byzantine origin (middle age). A long wall embraces the old town which had a harbour at the place where today Sülüklü Gölü is situated. The ruins of a theatre, a market place (agora), a bath, a temple and some other buildings can still be seen. Ankara University has carried out annual excavations since 1967.

6. Ornithological importance of the area

The outstanding feature of bird life in the Dalyan - Köyceğiz wetland complex is the breeding of the White-breasted Kingfisher, *Halcyon smyrnensis*,

and the Pied Kingfisher, *Ceryle rudis*. Both are endangered kingfisher species in Turkey. The White-breasted Kingfisher is among the rarest birds in Turkey and its population is estimated to some 100-150 pairs of which approx. 75% are concentrated in five localities (VAN DEN BERK & KASPAREK 1988). The Köyceğiz - Dalyan area is among those five areas. The Pied Kingfisher is somewhat more common, but also has a limited range in Turkey where the population probably does not exceed some 250 pairs.

The most recent record of the Black Francolin, *Francolinus francolinus*, was in 1960. It has not been seen in the study area or its surroundings since then and we can be certain that this species has disappeared from the area.

Other breeding species or presumed breeders include Shag, *Phalacrocorax aristotelis*, Little Bittern, *Ixobrychus minutus*, Night Heron, *Nycticorax nycticorax*, Purple Heron, *Ardea purpurea*, Short-toed Eagle, *Circaetus gallicus*, Marsh Harrier, *Circus aeruginosus*, Booted Eagle, *Hieraetus pennatus*, Lesser Kestrel, *Falco naumanni*, Spur-winged Plover, *Hoplopterus spinosus*, and Gull-billed Tern, *Gelochelidon nilotica*. In addition Pygmy Cormorant, *Phalacrocorax pygmaeus*, and Squacco Heron, *Ardeola ralloides*, are possible breeders. All these species are threatened in Turkey or on a European or even global level. The White Stork, *Ciconia ciconia*, breeds in almost every human settlement and a colony of 10-19 pairs exists in pines near Kemalije between Dalyan and Ortaca.

Köyceğiz Gölü and the Dalyan estuary are of some importance for wintering grebes, ducks, waders, and other waterfowl. Although there are only sporadic observations during winter, the numbers seem to be modest. Nevertheless, up to 850 Great Crested Grebes, 990 Little Grebes, 160 Pygmy Cormorants and 17,000 Coots were counted in winter.

Until now, 180 bird species have been recorded in the area. Only 12 of these have been proved to breed because there have been few observations during the breeding season.

7. Fauna (without birds)

The beach of Dalyan has become famous because Loggerhead Turtles [German: Unechte Karettschildkröte] *Caretta caretta* nest there. The beach is among the 13 most important nesting grounds of sea turtles in Turkey and plays a special role as it forms an outpost in the distribution of this species (BARAN & KASPAREK 1989). Much less known is the fact that a further turtle species, the Nile Soft-shelled Turtle [German: Afrikanische Weichschildkröte] *Trionyx triunguis* inhabits the freshwater parts of the wetland complex. This species which reaches a length of up to 1.5 m is as threatened as the Loggerhead Turtle in the Mediterranean and its occurrence in Turkey is confined to a few places (KASPAREK & KINZELBACH 1989). Altogether, a total of three species of amphibian and 19 (20?) species of reptile have been recorded in the area (KASPAREK 1989d).

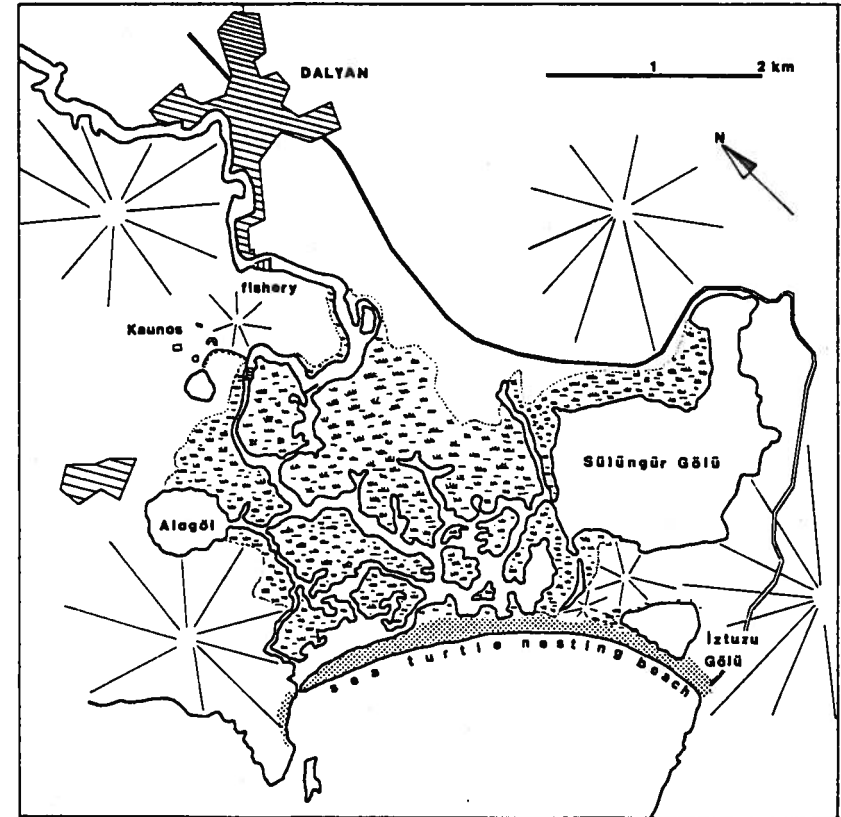


Fig. Map of the Dalyan estuary and the Dalyan - İztuzu beach.

In a preliminary report, the authors have listed 7 species of fish which occur in the study area (KILIÇ & KASPAREK 1987), but the total number of species is apparently higher.

So far, 9 species of mammal have been recorded (unpubl. data by the authors). The most prominent species is the Otter [German: Fischotter] *Lutra lutra* which lives in the Dalyan estuary. Unfortunately, it is hunted by local people. Even more spectacular is the occurrence of the Monk Seal [German: Mönchsrobbe] *Monachus monachus* in the sea in front of the Dalyan - İztuzu beach (Delikli Ada etc.). However, that occurrence is irregular and recent sightings need confirmation.

Among invertebrates, the authors have collected 5 species of terrestrial, 6 species of freshwater and 3 species of marine snail, one species of a freshwater

mussel and 6 species of marine mussel. KINZELBACH has collected even more malacological material and is going to evaluate and publish this together with the authors' data.

8. Human activities

Fishery

The Dalyan estuary and the Dalyan River have been important fishing grounds for local fishermen for at least 3000 years. A local co-operative has at present over 60 full-time workers plus a varying number of seasonal workers. The Dalyan River can be closed by three different weirs: one near the ancient Kaunos, one to the east of that and one below Dalyan town. The latter had been some 1-2 km up the river within the town until about 20 years ago.

Over 700 tons of fish are harvested every year. Mullet (*Mugil spp.*) are the main crop, with important amounts also of Gilt-head Bream ("Çipura"), Eel (*Anguilla anguilla*) and Carp (*Cyprinus carpio*). A decrease in the annual yield of mullet which migrate from the sea into brackish and freshwater for reproduction is said to be a consequence of the increased tourism. Migrating mullet are disturbed by the tourist boat traffic.

Agriculture

Agriculture is the most important income of the people of Köyceğiz, Dalyan and the villages. Cotton is the main crop, but citrus trees (oranges and lemons) also play an important role. Fertilizers and pesticides are applied in high amounts and probably reach the water bodies after they have been washed out by rain fall.

Sewage

None of the human settlements has a sewage farm and all sewage is discharged directly or indirectly to the wetland complex. Sewage farms are urgently recommended.

Boat traffic

In the course of the increase of tourism (see below) the boat traffic has increased considerably. Over 100 boats are found in Dalyan (with additional boats at Köyceğiz) for transporting tourists from the town to the ancient sites and to the beach. Several counts in June 1987 (A.K.) showed that on average one boat passes the Dalyan River every 5 minutes. Depending on the time of day, up to 16 boats were counted per hour. Later in the season and in 1988, these numbers increased. The boats include those carrying tourists and those of working fishermen. The boats passing through the estuary cause great disturbance to fish, reptiles and birds: The fishermen's claim that the decrease of the mullet crop during recent years is a consequence of the boat traffic

seems plausible. The Nile Soft-shelled Turtle, which lives in the channels, is under almost continuous pressure from the boats, because they have to come to the surface to breathe. For birds, the heavy traffic means a steady disturbance and hence a withdrawal from the area. The boat traffic thus seems to be responsible for the low numbers of (breeding) waterfowl.

Further problems related to the boat traffic come from the speed boats of tourists who enter the estuary from the sea (coming e.g. from Marmaris). The high waves cause damage to the rhizomes of the reeds. Frequently, oil is lost from the boats causing an oil film on the surface of the water.

Therefore it is recommended

- that the number of boats in general be limited
- that the daily number of boat tours be limited
- that a one way system for boats be initiated
- that access of speed boats be prohibited
- that legislation on the discharge of oil be enforced.

These measures can be initiated without harm to tourism.

Tourism

The Köyceğiz - Dalyan region is one of the main tourist investment areas of the Turkish Ministry of Culture and Tourism and tourist facilities with a capacity of some 10,000 beds were planned (BARAN & KASPAREK 1989). The plans have included, among others, a hotel and holiday village around İztuzu Gölü, a marina within the Dalyan estuary including new channels through the delta, tennis courts in the wetland and a disco on the rocky spur which separates İztuzu Gölü from Sülüngür Gölü. At present, it seems that all these plans have been cancelled as a consequence of national and international protests. The area has been protected as a "Mediterranean specially protected area" (see below). However, as this protection status does not prohibit the tourist development by law, the problems might come up again one day. At the moment, the tourist development is confined to the towns of Dalyan and Köyceğiz and to Sultaniye (the thermal springs on the western shore of the lake which is outside the protected area).

Hunting

There are many local hunters in the marshes especially during winter. As large concentrations of ducks and geese are absent, hunting parties do not occur here like they do on many other Turkish wetlands. The hunting of Otter, *Lutra lutra*, was reported in June 1987 and a fur of this species was offered for sale in 1988.

9. Nature conservation

The area around the ancient Kaunos is protected as "SIT alanı" which is an archeological site under protection. This is relevant also for nature

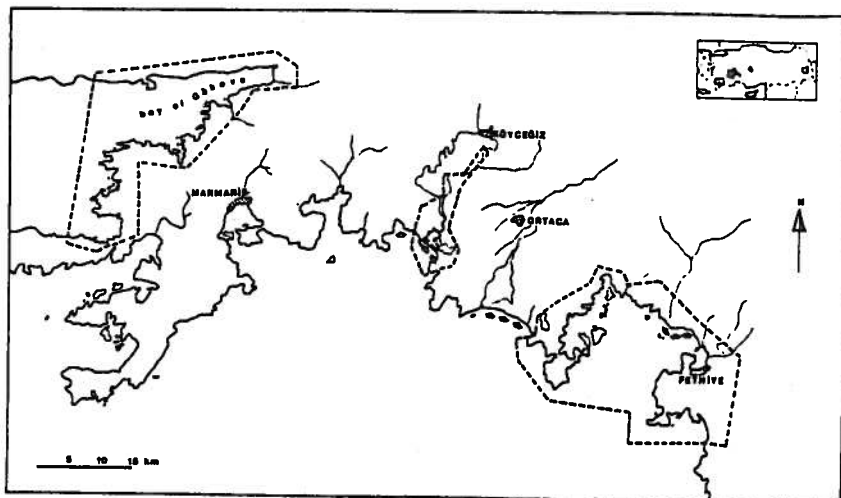


Fig. Map of the three "specially protected areas" in Turkey. These areas have been protected under the Barcelona Convention in 1988. The Turkish Government has not yet issued the regulations and protection measures for these areas. Note that only less than the half of Lake Köyceğiz has been protected. The arrows show the nesting beaches of sea turtles (map from: BARAN & KASPAREK 1989).

conservation, as it prohibits any development of the area.

After a long public discussion on the tourist development of the region and its environmental impact and after the cancelling of a large tourist project at İztuzu as a consequence of these discussions, the area has become a "Mediterranean specially protected area". It comprises the whole beach and the Dalyan estuary and about half of Köyceğiz Gölü. It does not comprise some sensitive wetlands in the northwestern corner of Köyceğiz Gölü.

The "Mediterranean specially protected areas" are a legal tool in the framework of the Barcelona Convention for the protection of the Mediterranean. The kind of protection is not described accurately in Turkish law. Hence, the exact conservation measurements are dependent on an "Environmental Commission" which decides on all aspects of land use in those areas. In principal, the commission would even have the right to allow tourist development (cf. BARAN & KASPAREK 1989).

10. Bird-watching activity

Bird-watching activity has been surprisingly low. The area was visited by bird-watchers on 108 different days and some 1040 bird records are available from the study area. However, some of these visits were extremely short, so there are e.g. 8 "transit journeys" what means observations only along the Marmaris - Fethiye road. The authors stayed a total of 31 days in the study area (which is almost 30% of all the observation activity). Their main interest was herpetology and conservation, so that ornithological observations often remained marginal. Remarkable are also the observations of R. KINZELBACH who attributed another 30% of the observation activity. The table lists all observers whose data were available. There are practically no previously published sources.

1946	01.10	C. KOSSWIG (cf. MERTENS 1952).
1960		G. E. WATSON (in: KUMERLOEVE 1961).
1962	17.06	KUMERLOEVE (1962a, 1964), transit journey.
1968	11-12.09	A. R. KITSON & R. F. PORTER (in: Bird Report 1968-69).
1970	02.12	L. J. DIJKSEN & F. KONING (unpubl.), transit journey.
1971	21.09	unknown observer (Bird Report 1970-73).
1972	10-11.05	F. DELLMUTH & W. KLEIN (in: Bird Report 1970-73).
1973	01.05	J. A. LOTERIJMAN TE WINSCHOTEN together with VAN DEURSEN, BAKKER and MULDER (unpubl.).
1974	12.05	KUMERLOEVE (1976), transit journey.
	07-9.09	C. BANGHAM, P. F. O. WILLIAMS et al. (in: Bird Report 1974-75).
1975	10.08	R. KINZELBACH (unpubl.).
1977	05-6.03	R. KINZELBACH (unpubl.), transit journey.
1980	04.04	L. J. DIJKSEN & M. PRINS (unpubl.).
1981	22.05	N. KOCH et al. (unpubl.), transit journey.
	10.06	U. GLIMMERVEEN & H. HOLS (unpubl., see also Bird Report 1976-81).
1983	end V	T. MACKE, A. MAISCH, TH. KLEEFISCH et al. (unpubl.).
1984	12.04	K. HANDKE & P. KALMUND (unpubl.), transit journey.
1985	17-18.04	H. WILDE (unpubl.).
	22.08	M. KASPAREK & A. KILIÇ (unpubl.), transit journey.
1986	16.03	M. GIERTZ & N. GOLAY (unpubl.).
	26-28.03	Gesellschaft Rheinischer Ornithologen (unpubl.).
	27.03	C. BRINCKMEIER (unpubl.), transit journey.
	27.03.-1.04	M. KASPAREK & A. KILIÇ (unpubl.).
	22.12	A. KILIÇ (unpubl.).
	11-14.12	J. K. LARSEN (unpubl.).
	31.12	M. KASPAREK et al. (unpubl.).
1987	28.-31.03	L. J. DIJKSEN (unpubl.).
	1-3.04	L. J. DIJKSEN, M. KASPAREK & A. KILIÇ (unpubl.).

- 22-23.4, 13-24.6, 30.7-1.8 R. KINZELBACH (unpubl.).
 09.06-16.06 A. KILIÇ (unpubl.).
 28.06-01.07 M. KASPAREK, partly together with K. CORBETT (unpubl.).
 10.07 F. & M. SIESTE (unpubl.).
 9-11.08 J. TEMPEL LANG (unpubl.).
 21.10 CH. v. ESCHWEGE, M. KASPAREK, N. KOCH & A. KILIÇ (unpubl.).
 27.10, 2-3.11 R. Vos (unpubl.).
 28.12 M. KASPAREK (unpubl.).
 1988 30-31.01 L. J. DIJKSEN & A.-M. BLOMERT (unpubl.).
 25-27.04 CH. HAAS (unpubl.).
 01-03.06 R. KINZELBACH (unpubl.).
 22-23.06 M. KASPAREK, A. KILIÇ et al. (unpubl.).
 1.7, 11.8, 18.10 M. KASPAREK et al. (unpubl.).
 1989 16-22.4 R. KINZELBACH (unpubl.).

11. Hints for bird-watchers

The towns of Köyceğiz and Dalyan are generally visited. From Dalyan, boat tours are offered through the estuary to the ancient sites at Kaunos and from there to the beach. Many bird-watchers take this opportunity. More interesting from the ornithological point of view than the Dalyan estuary are the wetlands on the shores of Köyceğiz Gölü. Small wetlands at the outflow of the lake or to the west and southwest of Köyceğiz town have a rich bird life, but are hardly ever visited by bird-watchers. Further study is needed there. The whole western shore of lake Köyceğiz has not been included in the "Mediterranean specially protected area" and it needs urgent investigation to see whether there are important habitats which need similar protection. Special emphasize should be put on observations during the breeding season, as the number of breeding species is not known with sufficient accuracy. Also winter observations are almost completely missing, a fact which is true for almost all Turkish wetlands.

12. Acknowledgements

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13. Abbreviations

BW	=	Bangham, Williams et al.
DB	=	Dijkzen & Blomert
DeK	=	Dellmuth & Klein
DK	=	Dijkzen & Koning
Dij	=	Dijkzen
DKK	=	Dijkzen, Kasperek & Kılıç
GG	=	Giertz & Golay
GRO	=	Gesellschaft Rheinischer Ornithologen
HKa	=	Handke & Kalmund
Has	=	Haas
Ka	=	Kasperek
Kil	=	Kılıç
Kin	=	Kinzelbach
KK	=	Kılıç & Kasperek
KKKi	=	Kasperek, Koch & Kılıç
KP	=	Kitson & Porter
Ku	=	Kumerlovee
Lar	=	Larsen
Lo	=	Loterijman te Winschoten et al.
Vos	=	Vos
Wil	=	Wilde
•	=	breeding has been confirmed

Species list

Little Grebe *Tachybaptus ruficollis* **Küçük Batağan**
Breeding along the shores of lake Köyceğiz, on the lower course of Namnam River, the Dalyan River and the Dalyan estuary. The numbers in winter are usually modest, e.g. about 40 individuals in the Dalyan estuary on 31.12.1986 (Ka), but Lar counted 990 on 11-14.12.1986.

Great Crested Grebe *Podiceps cristatus* **Büyük Batağan**
Breeding resident in low numbers. Usually small numbers from late summer (1 offshore on 11.8.1988, Ka) to early spring, but maximum is 850 on 11-14.12.1986 (Lar). Otherwise highest number only 17 on 30-31.1.1988 (DB).

Black-necked Grebe *Podiceps nigricollis* **Karaboyunlu Batağan**
Winter visitor. Maximum is 32 birds on 17.4.1985 (Wil) and 25 on 11-14.12.1986 (Lar). Still three individuals on 11.5.1972 (DeK).

Cormorant *Phalacrocorax phalacrocorax* **Büyük Karabatak**
Regular visitor to the area in winter and spring in low numbers.

Shag *Phalacrocorax aristotelis* **Tepeli Karabatak**
Perhaps breeding anywhere on the rocky coast to the southeast of the Dalyan - İztuzu beach.

Pygmy Cormorant *Phalacrocorax pygmaeus* **Küçük Karabatak**
Resident, but no evidence for breeding so far. Highest numbers during spring migration, e.g. 160 birds on 11-14.12.1986 (Lar) and 120 birds on 27.3.1986 (GRO).

Dalmatian Pelican *Pelecanus crispus* **Tepeli Kutan**
One winter record: A single individual on 11-14.12.1986 (Lar).

Little Bittern *Ixobrychus minutus* **Küçük Balaban**
Perhaps breeding in low numbers. Earliest on 25.4.1988 (Has), latest on 2.11.1987 (Vos).

Night Heron *Nycticorax nycticorax* **Gece Balıkçılı**
Breeding season records indicate breeding. Earliest in spring on 5-6.3.1977 (Kin), latest on 2.11.1987 (Vos). Highest number is a flock of 72 birds on 21.4.1989 (Kin) which was passing over the area from south to northwest at a height of some 120 m. Seven birds left the flock and landed on the shores of Lake Köyceğiz.

Squacco Heron *Ardeola ralloides* **Alaca Balıkçıl**
Regularly seen in low numbers on spring migration. A late record on 1.5.1973 (Lo) might indicate breeding. In spring, earliest on 27.3.1986 (GRO, KK), in autumn, latest on 11-12.9.1968 (KP).

Little Egret *Egretta garzetta* **Küçük Ak Balıkçıl**
Recorded in almost all months of the year with higher numbers during the migration seasons. Maximum is 100 on 25.4.1988 (Has), the highest number in winter is 19 on 30-31.1.1988 (DB).

Great White Egret *Egretta alba* **Büyük Ak Balıkçıl**
Only a few records of one individual each in March, August and December.

Grey Heron *Ardea cinerea* **Gri Balıkçıl**
Regularly seen throughout the year. Mostly single individuals, maximum is at least 10 in the Dalyan estuary on 30.3.1986 (KK).

Purple Heron *Ardea purpurea* **Erguvan Balıkçıl**
Several records are available, including during the breeding season which suggests that a few pairs breed in the area.

• **White Stork** *Ciconia ciconia* **Leylek**
Breeding species and migrant. The earliest record in spring is on 16.3.1986 (GG). Some population data are:
Dalyan: One pair in 1985 and 1987 (DKK, Ka, Kin).
Hamit: At least one nest in 1987 (Kin).
Kemaliye: A colony exists in pines near the village. In 1987, at least 19 nests were reported by Kin, but only 13 (not all occupied) by DKK. In 1988, at least 17 nests were counted by Kin, 11 by Tem and 10 by Has. Colony also occupied in 1989 (Kin).
Köyceğiz: 1-2 nests were reported by local people in 1974 (KUMERLOEVE 1976). One nest in 1987 (Kin).
Okçular: 1987 a nest on a chimney SW of the village (Kin).
Ortaca: one empty nest after the breeding season in 1985 (KK); at least one (probably two) nests in 1987 (Kin).
Toparlar: one empty nest after the breeding season in 1985 (KK).
Tepearası: one old nest seen in winter 1986/87 (Ka).

Glossy Ibis *Plegadis falcinellus* **Çeltikçi**
Regular migrant in March and April in variable numbers. Maximum is 250 individuals on 25.4.1988 (Has).

Spoonbill *Platalea leucorodia* **Kasıklı**
One individual at Dalyan on 27.4.1988 (Has) is the only record.

Wigeon *Anas penelope* **Fiyo**
Lar counted 100 on 11-14.12.1986.

Teal *Anas crecca* **Çamurcun**
Winter visitor. Highest number are 250 in the Dalyan estuary on 31.3.1987 (Dij) and 150 on 11-14.12.1986 (Lar).

Mallard *Anas platyrhynchos* **Yeşilbaş**
Relatively rare species with maximum counts of 300 on 11-14.12.1986 (Lar) and 98 on 30-31.1.1988 (DB).

Pintail *Anas acuta* **Kılördek**
About 15 individuals on İztuzu Gölü on 2.4.1987 (DKK) is the only record.

Garganey *Anas querquedula* **Çıkırıkçın**
Rare visitor. A late flock on 1.5.1973 (Lo).

Shoveler *Anas clypeata* **Kepçel**
Irregular visitor with a maximum of 57 on 30-31.1.1988 (DB).

Red-crested Pochard *Netta rufina* **Macar Ördeği**
Lar counted 115 birds on 11-14.12.1986 which are so far the only record.

Pochard *Aythya ferina* **Boz Dalağan**
Winter visitor. The highest number is 480 on 30-31.1.1988 (DB).

Ferruginous Duck *Aythya nyroca* **Pasbaş Dalağan**
About 10 individuals in the Dalyan estuary on 29.3.1987 (Dij) are the only record.

Tufted Duck *Aythya fuligula* **Dalağan**
Recorded only once: two individuals were seen on 30-31.1.1988 (DB).

Honey Buzzard *Pernis apivorus* **Art Şahini**
Two records during the autumn migration: one individual on 11.9.1968 and nine individuals on the following day (KP).

Short-toed Eagle *Circaetus gallicus* **Yılan Kartalı**
Seen regularly in the surrounding hills during the breeding season. The earliest record in spring is on 27.3.1986 (GRO), the latest in autumn on 11-12.9.1968 (KP), but there is also an extremely late (but certain) observation on 28.12.1987 (Ka). One individual on 30.3.1987 had the less common colouration pattern with white head (Ka).

Marsh Harrier *Circus aeruginosus* **Saz Delicesi**
Probably breeding resident in low numbers. Maximum numbers are reached in winter, when some 17 birds were counted at once in the Dalyan estuary on 31.12.1986 (Ka). Records during the breeding season are few, e.g. one male on 10.7.1987 (Sie).

Hen Harrier *Circus cyaneus* **Gökçe Delice**
Regular winter visitor from November (earliest on 2.11.1987, Vos) to March (latest one on 29.3.1986, KK).

Sparrowhawk *Accipiter nisus* **Atmaca**
Winter visitor. A record of at least one individual on 12.4.1984 in pine forests west of Köyceğiz (HKa) suggests local breeding.

Levant Sparrowhawk *Accipiter brevipes* **Doğu Atmacası**
One individual at Köyceğiz on 22.5.1981 (KOCH) is the only record.

Buzzard *Buteo buteo* **Şahin**
Mostly single individuals are present almost throughout the year. Records are missing from July to September.

Long-legged Buzzard *Buteo rufinus* **Kızıl Şahin**
Present in the area from October to April. One record on 12.8.1987 (two birds, Tem) might indicate breeding somewhere in the surroundings.

Golden Eagle *Aquila chrysaetos* **Kaya Kartalı**
Lo observed one bird near Köyceğiz on 1.5.1973.

Booted Eagle *Hieraaetus pennatus* **Küçük Kartal**
One light phase bird at İztuzu Gölü on 22.6.1987 (Kin) and one immature bird on 12.9.1968 (KP). The June record might indicate local breeding.

Bonelli's Eagle *Hieraaetus fasciatus* **Tavşancıl**
Vos observed one at Dalyan on 27.10.1987.

Osprey *Pandion haliaetus* **Balık Kartalı**
The only record is of one individual on 2 and 3.11.1987 (Vos). Apart from some winter observations in the south, these are the latest autumn records for Turkey (KASPAREK 1989b).

Lesser Kestrel *Falco naumanni* **Küçük Kerkenez**
A small colony (10 birds on 27.3.1986, GRO) on the rocky ridge of the Kaunos citadel is probably this species rather than the Kestrel *Falco tinnunculus*. Several observations independently from that site, latest one on 11-12.9.1968

(KP).

• **Kestrel** *Falco tinnunculus* **Kerkenez**
One pair breeding near the road along Sülüngür Gölü (courtship display was noted there on 29.3.1987, Dij, and breeding was confirmed on 12.8.1987, Tem). Present in the area also in winter.

Hobby *Falco subbuteo* **Delice Doğan**
Present on 17.6.62 (Ku) and one individual on 11-12.9.1968 (KP). No other records, especially no recent observations are available.

Chukar *Alectoris chukar* **Keklik**
Only a few observations.

Quail *Coturnix coturnix* **Bıldırçın**
One on 2.11.1987 (Vos) is the only record.

Black Francolin *Francolinus francolinus* **Turaç**
WATSON recorded one male "between Köyceğiz and Muğla" on 11.4.1960. Unfortunately, no exact locality and no statement on habitat is available (cf. KUMERLOEVE 1963). Since then, there is no further record either in the area itself or its surroundings and it is supposed that the Black Francolin has become extinct in this part of Turkey.

Water Rail *Rallus aquaticus* **Su Kılavuzu**
Winter visitor in low numbers. Although breeding records are missing, breeding cannot be ruled out. The latest record is on 25.4.1988 (Has).

Little Crake *Porzana parva* **Benekli Yelve**
BW observed one individual on 8.9.1974.

Moorhen *Gallinula chloropus* **Su Tavuğu**
Only a few winter records, latest 3-4 on the shores of the Dalyan River on 21.4.1989 (Kin).

Coot *Fulica atra* **Sakarmeke**
Breeding resident. In winter, only relatively small numbers with maximum counts of 740 on 30-31.1.1988 (DB) and 300 on 2.11.1987 (Vos), but exceptionally 17,000 individuals on 11-14.12.1986 (Lar).

Great Bustard *Otis tarda* **Toy**
HUŞ (1974) stated the occurrence of the Great Bustard in the Köyceğiz - Dalaman area according to documents at the General Directorate of Forestry. However, the occurrence seems to have been only occasional (cf. KASPAREK

1989c) as the area does not provide suitable habitats for the species.

Black-winged Stilt *Himantopus himantopus* **Uzunbacak**
Some records in March in low numbers and two birds below Dalyan on 18.6.1987 (Kin).

Avocet *Recurvirostra avosetta* **Kılıçgaga**
Five individuals on 3.11.1987 (Vos) are the only record.

Collared Pratincole *Glareola pratincola* **Batak Kırılancı**
Lo recorded this species at Kaunos on 1.5.1973.

Little Ringed Plover *Charadrius dubius* **Küçük Halkalı Cilibit**
Apparently breeding around İztuzu Gölü, in the bed of the Namnam River south of Hamit (at least 3 pairs there on 20.6.1987, Kin) and also on the nearby Ekincik beach. The earliest record in spring is on 27.3.1986 (about 10 individuals, KK).

Ringed Plover *Charadrius hiaticula* **Büyük Halkalı Cilibit**
Migrant in both seasons. Some late records (two birds each on 2 and 3.11.1987, Vos) suggest occasional over-wintering.

Kentish Plover *Charadrius alexandrinus* **Küçük Cilibit**
Migrant and possibly a rare breeding species.

Grey Plover *Pluvialis squatarola* **Gümüş Yağmurcun**
Six birds in the Dalyan estuary on 27.4.1988 (Has) are the only record.

Spur-winged Plover *Hoplopterus spinosus* **Mahmuzlu Kızıkuşu**
KOSSWIG observed Spur-winged Plovers at lake Köyceğiz in the 1950s and estimated 30-40 pairs. Ku found several pairs at the outflow of Köyceğiz Gölü on 17.6.1962. The present population size is not known. In spring, earliest 8 birds on 31.3.1987 (Dij).

Lapwing *Vanellus vanellus* **Kızıkuşu**
Winter visitor.

Sanderling *Calidris alba* **Ak Kumkuşu**
Recorded twice, that is once in spring (8 birds on 27.4.1988, Ka) and once in autumn (2 birds on 21.10.1987, KKKi).

Temminck's Stint *Calidris temminckii* **Sarıbacaklı Kumkuşu**
Has observed ten individuals on 27.4.1988.

Dunlin *Calidris alpina* **Kumkuşu**
Records of a few birds each in May, November and December.

Ruff *Philomachus pugnax* **Dögüşkenkuş**
Migrant in spring (max. 35 birds on 27 and 28.3.1986, KK and GRO). A few individuals can be seen almost throughout the year.

Jack Snipe *Lymnocyptes minimus* **Küçük Su Çulluğu**
Vos observed one individual on 2.11.1987.

Snipe *Gallinago gallinago* **Su Çulluğu**
Recorded in March and November.

Black-tailed Godwit *Limosa limosa* **Batak Çulluğu**
One individual on 1.5.1973 (Lo) is the only record.

Curlew *Numenius arquata* **Kervan Çulluğu**
Dij observed one bird between Dalyan and Kaunos on 29.3.1987.

Redshank *Tringa totanus* **Kızılbacak**
Present throughout the year. A few pairs probably breed. The highest number is 25 on 28.12.1987 (Ka).

Marsh Sandpiper *Tringa stagnatilis* **Batak Düdükçünü**
Two individuals were observed in some inundated fields near Köyceğiz on 27 and 28.3.1986 (GRO, KK).

Green Sandpiper *Tringa ochropus* **Yeşil Düdükçün**
Present throughout the year. The highest number is at least 40 on 31.3.1987 (Dij).

Wood Sandpiper *Tringa glareola* **Orman Düdükçünü**
Migrant in spring, earliest seen on 28.3.1986 (GRO), latest on 1.5.1973 (Lo). Highest number over 50 near Dalyan on 17.4.1989 (Kin).

Common Sandpiper *Actitis hypoleuca* **Dere Düdükçünü**
An observation during the breeding season (two on 1.7.1988, Ka) might indicate breeding somewhere in the area.

Little Gull *Larus minutus* **Küçük Martı**
Migrant in spring with numbers up to 80 (on 27.3.1986, GRO). One summer record: Kin observed one individual west of Köyceğiz town on 31.7.1987. Also recorded in winter: About 10 immatures on 31.12.1986 (Ka) and one on 11-14.12.1986 (Lar).



Fig. The Dalyan estuary.

Black-headed Gull *Larus ridibundus* **Karabaş Martı**
Resident in relatively low numbers.

Yellow-legged Gull *Larus cacchinnans* **Sarıbacaklı Gümüş Martı**
A few can be seen regularly throughout the year.

• **Gull-billed Tern** *Gelochelidon nilotica* **Gülen Sumru**
Recorded twice in March: GRO saw 8-10 individuals on 27.3.1986 and Dij one bird on 31.3.1987. In April, Kin observed about 100 on the river below Dalyan on 17.4.1989 and a few there on 21.4.1989. On 20.6.1987, Kin observed two pairs with almost fledged young at the mouth of a small stream to the west of Köyceğiz town.

Sandwich Tern *Sterna sandvicensis* **Karagagalı Sumru**
Has observed two birds on 27.4.1988, Ka two in winter on 31.12.1986, and Lar one on 11-14.12.1986.

Common Tern *Sterna hirundo* **Sumru**
Breeding in low numbers. The maximum is about 100 birds at Dalyan on

27.4.1988 (Has).

Little Tern *Sterna albifrons* **Küçük Sumru**
Two birds on 31.3.1986 (KK) are the only record.

Black Tern *Chlidonias niger* **Kara Sumru**
Six birds west of Köyceğiz town on 31.7.1987 (Kin) are the only record.

White-winged Black Tern *Chlidonias leucopterus* **Akkanathı Sumru**
Migrant in spring (April, May) with numbers up to 34 on 11.5.1972 (DeK).

Wood Pigeon *Columba palumbus* **Tahtalı**
Lo observed one at Kaunos on 1.5.1973.

Collared Dove *Streptopelia decaocto* **Kumru**
Breeding resident apparently in all human settlements. Records are available from Köyceğiz, Dalyan, Kemaliye, Okçular, Çitlik, Döğüşbelen and Tepearası and Hamit.

Turtle Dove *Streptopelia turtur* **Üveyik**
Breeding species. In spring, earliest on 23.4.1987 (Kin), in autumn latest on 11-12.9.1968 (KP).

Great Spotted Cuckoo *Clamator glandarius* **Tepeli Guguk**
Sie observed two birds at Dalyan on 10.7.1987 and Kin one west of Köyceğiz on 31.7.1987.

Cuckoo *Cuculus canorus* **Guguk Kuşu**
Two calling males near Dalyan on 21.4.1989 (Kin) are the only record.

Little Owl *Athene noctua* **Kukumav**
One in Köyceğiz on 28.3.1986 (KK) and one just east of the town on 2.12.1970 (DK) are the only records.

Tawny Owl *Strix aluco* **Alaca Baykuş**
Several records of calling males are available from Köyceğiz, from Dalyan-Kaunos and from İztuzu Gölü.

Long-eared Owl *Asio otus* **Orman Baykuşu**
Kin observed one at Köyceğiz Gölü on 5-6.3.1977 and Wil one at Hamit on 18.4.1985. Ku had heard one on 17.6.1962.

Scop's Owl *Otus scops* **İshak Kuşu**
Singing males are regularly heard in and around Dalyan. Other records include

Köyceğiz and Ortaca.

Nightjar *Caprimulgus europaeus* **Çobanaldata**
At Köyceğiz, DeK heard one on 10-11.5.1972 and KP one in pine woods and glades near the town on 11.9.1968.

Swift *Apus apus* **Karasağan**
Migrant and breeding species. The earliest record in spring is on 16.3.1986 (GG).

• **Alpine Swift** *Apus melba* **Akkanlı Sağan**
Sie noted the species breeding in some cliffs close to the Dalyan - İztuzu beach on 10.7.1987. A group of about 100 migrating birds on 18.3.1986 (GG).

Kingfisher *Alcedo atthis* **Yalıçapkını**
Present throughout the year apart from May to July.

White-breasted Kingfisher *Halcyon smyrnensis* **İzmir Yalıçapkını**
This is one of the few breeding sites of the White-breasted Kingfisher in Turkey which has been known since the 1960s (VAN BERK & KASPAREK 1988). Probably a few pairs are breeding, although the exact sites and the exact number are not yet known. The White-breasted Kingfisher also stay in the area during winter.

• **Pied Kingfisher** *Ceryle rudis* **Alaca Yalıçapkını**
A few pairs breed in the area. MACKE, MAISCH & KLEEFISCH observed a family party of two adults and two already fledged juveniles at the end of May 1983. The young were following the parents.

• **Bee-eater** *Merops apiaster* **Arıkuşu**
Breeding species. In spring, the earliest record is on 25.4.1988 (Has), the latest in autumn on 12.9.1968 (KP). Nesting holes were noted by Kin at the Dalyan River below Dalyan on 18.6 and 31.7.1987.

Roller *Coracias garrulus* **Gökkuzgun**
Breeding species. In spring, the earliest record is on 18.4.1985 (Wil).

Hoopoe *Upupa epops* **İbibik**
No indication of breeding. Migrant in March/April (earliest on 18.3.1986, GG) and September.

Wryneck *Jynx torquilla* **Boyunçeviren**
One individual at İztuzu Gölü on 2.4.1987 (DKK) fits well in the spatial and seasonal distribution of the spring migration of this species in Turkey

(KASPAREK 1989a).

Green Woodpecker *Picus viridis* Yeşil Ağačkakan
Breeding resident in the deciduous forests around Köyceğiz.

Middle Spotted Woodpecker *Dendrocopus medius* Ortanca Ağačkakan
Only seen once within the borders of the study area (one near Köyceğiz on 28.3.1986, GRO), but several records indicate breeding in nearby *Pinus brutia*-forests.

Syrian Woodpecker *Dendrocopus syriacus* Alaca Ağačkakan
Kin observed several near Tepearası on 18.6.1987.

Lesser Spotted Woodpecker *Dendrocopus minor* Küçük Ağačkakan
Rare breeding species around lake Köyceğiz.

Short-toed Lark *Calandrella brachydactyla* Bozkir Toygarı
Two records from the northern shore of Köyceğiz Gölü: At least one on 28.3.1986 (HUBATSCH) and some on 20.6.1987 (Kin).

Crested Lark *Galerida cristata* Tepeli Toygar
Breeding resident in human settlements.

Wood Lark *Lullula arborea* Orman Toygarı
Breeding species in the nearby headlands e.g. between Köyceğiz and Muğla. Present in the area itself also in winter, e.g. some individuals on 31.1.1988 (DB).

Sand Martin *Riparia riparia* Kum Kırlangıcı
Migrant in spring and autumn.

Crag Martin *Ptynoprogne rupestris* Kaya Kırlangıcı
Winter visitor. Earliest about 30 at the rocky slopes to the north of Sülüngür Gölü which is also a possible breeding site on 21.10.1987.

• **Swallow** *Hirundo rustica* Kır Kırlangıcı
Breeding species. An individual was seen building a nest in Dalyan on 28.3.1986, an occupied nest was found on the following day and three nests more on 30.3.1986 (KK). Some nests also noted in Dalyan in June 1987 (Kin). In spring, earliest on 17.3.1986 (GG).

• **Red-rumped Swallow** *Hirundo daurica* Kızıl Kırlangıç
Breeding species. Kin found 2-3 nests in Dalyan in June 1987 and Tem one nest under the corrugated iron of a restaurant in Dalyan on 10.8.1987. In

autumn, latest on 12.9.1968 (KP).

• **House Martin** *Delichon urbica* Ev Kırlangıcı
Kin noted a few nests at Dalyan on 14.6.1987. Apart from that only a few observations from the migration seasons, latest on 27.10.1987 (Vos).

Tawny Pipit *Anthus campestris* Kır İncirkuşu
Two individuals on 1.7.1988 (Ka) are the only record, but one which indicates breeding.

Meadow Pipit *Anthus pratensis* Çayır İncirkuşu
Regular, common winter visitor. A group of about 60 on 27.3.1986 (GRO) is the largest flock.

Water Pipit *Anthus spinoletta* Su İncirkuşu
A few (< 10) on 31.1.1988 (DB) is the only record.

Yellow Wagtail *Motacilla flava* Sarı Kuyruksallayan
Uncommon breeding species (subspecies *feldgegg*). On migration, also one *flava*-like individual on 28.3.1986 (GRO) and one *beema*-like individual on 29.3.1986 (KK).

Grey Wagtail *Motacilla cinerea* Dağ Kuyruksallayani
Winter visitor, earliest three birds on 21.10.1987 (KKKi).

White Wagtail *Motacilla alba* Ak Kuyruksallayan
Breeding resident.

Wren *Troglodytes troglodytes* Çitkuşu
Winter visitor. The observation of some individuals just west of Köyceğiz on 2.12.1970 (DK) is the only record so far.

Dunnock *Prunella modularis* Dağ Bülbülü
Winter visitor.

Rufous Bushchat *Cercotrichas galactotes* Çalı Bülbülü
There are only observations by Ku on 17.6.1962, by KP on 12.9.1968, and by Kin on 20.6.1987. Breeding is probable.

Robin *Erithacus rubecula* Nar Bülbülü
Common winter visitor, earliest on 27.10.1987 (Vos), latest in spring on 29.3.1987 (Dij).

Nightingale *Luscinia megarhynchos* Bülbül
Breeding in the Amber forests around Köyceğiz Gölü. One individual on 27.3.1986 (GRO) is the earliest spring record.

Black Redstart *Phoenicurus ochruros* Dağ Kızılkuyruğu
Winter visitor. One individual still present on 29.3.1987 (Dij).

Whinchat *Saxicola rubetra* Çayır Taşkuşu
Migrant in March and April, earliest one male on 27.3.1986 (GRO).

Stonechat *Saxicola torquata* Taşkuşu
Winter visitor, latest two on 25.4.1988 (Has).

Wheatear *Oenanthe oenanthe* Kuyrukkakan
Migrant and possibly breeding species. In spring, earliest on 17.3.1986 (GG). The latest observation in autumn is of several birds near Köyceğiz on 11-12.9.1968 (KP).

Finsch's Wheatear *Oenanthe finschii* Aksırtlı Kuyrukkakan
Two males at Dalyan on 28.12.1987 (Ka) indicates over-wintering.

Black-eared Wheatear *Oenanthe hispanica* Karakulaklı Kuyrukkakan
Present from March (earliest two birds on 29.3.1987, Dij) to September (latest three birds of which one was singing on 11-12.9.1968, KP).

Blue Rock Thrush *Monticola solitarius* Gökçe Kaya Ardıcı
Breeding resident. Several observations are available from December.

Blackbird *Turdus merula* Karatavuk
Breeding resident.

Song Thrush *Turdus philomelos* Öter Ardıç
Winter visitor (e.g. one individual on 31.1.1988, DB) and migrant in March.

Cetti's Warbler *Cettia cetti* Kamsı Bülbülü
Breeding resident. Not uncommon around lake Köyceğiz and in the Dalyan estuary.

Fan-tailed Warbler *Cisticola juncidis* Yelpezekuyruk
Breeding species, e.g. KK noted 10 singing males near Dalyan on 29.3.1986. Still one singing on 31.7.1987 (Kin).

Sedge Warbler *Acrocephalus schoenobaenus* Dere Bülbülü
Two observations from the migration seasons: one in spring on 27.3.1986

(GRO) and two in autumn on 7.9.1974 (BW).

Reed Warbler *Acrocephalus scirpaceus* Saz Bülbülü
Rare breeding species, of which only a few pairs seem to breed in the Dalyan estuary. The earliest observation in spring is on 25.4.1988 (Has).

Great Reed Warbler *Acrocephalus arundinaceus* Büyük Saz Bülbülü
Breeding species which is considerably more common than the Reed Warbler. Over 32 birds were counted by Wil on 17.4.1985.

Icterine Warbler *Hippolais icterina* Sarı Mukallit
DeK recorded a single bird on 11.5.1972.

Subalpine Warbler *Sylvia cantillans* Bıyıklı Ötleğen
Two records from the end of March (28.3.1986, GRO, and 31.3.1987, Dij) each of one male.

Sardinian Warbler *Sylvia melanocephala* Maskeli Ötleğen
Breeding resident. Described as "common" in winter (31.12.1986, 28.12.1987, Ka).

Lesser Whitethroat *Sylvia curruca* Küçük Akgerdanlı Ötleğen
Breeding species. Present from March (earliest on 29.3.1987, Dij) to September (latest on 11-12.9.1968, KP).

Whitethroat *Sylvia communis* Akgerdanlı Ötleğen
Possible breeding bird. In spring, the earliest was observed on 28.3.1986 (GRO).

Garden Warbler *Sylvia borin* Bahçe Ötleğeni
BW recorded a single bird on 7.9.1974.

Blackcap *Sylvia atricapilla* Karabaşlı Ötleğen
Migrants were seen in March and November.

Rüppell's Warbler *Sylvia rueppelli* Karagerdanlı Ötleğen
Breeding species. The earliest record in spring is on 16.3.1986 (GG).

Wood Warbler *Phylloscopus sibilatrix* Orman Söğüt Bülbülü
KP heard one singing in pine woods near Köyceğiz on 11.9.1968.

Chiffchaff *Phylloscopus collybita* Söğüt Bülbülü
Perhaps rare breeding species. Not uncommon during the migration periods and also regularly seen in winter.

Willow Warbler *Phylloscopus trochilus* Göçmen Sögüt Bülbülü
Migrant in March and September. One *Phylloscopus*-warbler on 31.12.1986
had light legs and was identified as a Willow Warbler (Ka).

Spotted Flycatcher *Muscicapa striata* Benekli Sinekkapan
16 birds on autumn migration on 11-12.9.1968 (KP) are the only record.

Flycatcher sp. *Ficedula* sp. Sinekkapan sp.
KP noted one Pied Flycatcher (*Ficedula hypoleuca*) or Collared Flycatcher (*Ficedula albicollis*)
on 11-12.9.1968.

Bearded Tit *Panurus biarmicus* Bıyıklı Baştankara
GRO observed one at Kaunos on 27.3.1986.

Long-tailed Tit *Aegithalus caudatus* Uzunkuyruk Baştankara
Records are only available from March and September.

Coal Tit *Parus ater* Çam Baştankarası
Regularly present in the pine forests, e.g. near İztuzu Gölü.

Blue Tit *Parus caeruleus* Gök Baştankara
Breeding resident.

• Great Tit *Parus major* Büyük Baştankara
A fairly widespread breeding resident. A pair with freshly fledged young in the
gardens of Dalyan on 14.6.1987 (Kin).

• Rock Nuthatch *Sitta neumayer* Kaya Sivacikusu
Breeding resident in rocky areas. A nest was found in the ancient amphitheatre
of Kaunos on 31.3.1986 (KK).

Penduline Tit *Remiz pendulinus* Çulha Kuşu
Breeding resident for example at the outflow of Köyceğiz Gölü (Ka).

Golden Oriole *Oriolus oriolus* Sarıasma
KP recorded one near Köyceğiz on 11-12.9.1968.

Red-backed Shrike *Lanius collurio* Kızılsırtlı Örümcekkuşu
Migrant in spring and autumn. The highest number is about 50 on
11-12.9.1968 (KP).

Lesser Grey Shrike *Lanius minor* Karaalınlı Örümcekkuşu
Only two observations: one each on 11.8.1987 (Tem) and on 11-12.9.1968
(KP).

Woodchat Shrike *Lanius senator* Kızılbaşlı Örümcekkuşu
Recorded in 1960 by WATSON. Since then, only one observation of two birds
near Kaunos on 27.3.1986 (GRO) and a displaying pair to the west of Köyceğiz
on 16.4.1989 (Kin).

Jay *Garrulus glandarius* Alakarga
Breeding resident.

Magpie *Pica pica* Saksagan
Rare breeding resident.

Jackdaw *Corvus monedula* Küçük Karga
Rare breeding resident.

Hooded Crow *Corvus corone cornix* Leş Kargası
Regular breeding resident.

Starling *Sturnus vulgaris* Sığırcık
Two individuals on 28.3.1986 (GRO) are the only record.

• House Sparrow *Passer domesticus* Serçe
Common breeding resident. Some nests in Dalyan on 14.6.1987 (Kin). Even
several individuals present near the restaurant on the Dalyan - İztuzu beach,
far away from human settlements, on 30.6.1987 (Ka).

Spanish Sparrow *Passer hispaniolensis* Sögüt Serçesi
Migrant in March and April.

Chaffinch *Fringilla coelebs* İspinoz
Common breeding resident with large flocks in winter (e.g. about 200 birds on
31.12.1986, Ka).

Serin *Serinus serinus* Kanarya
Breeding resident. The largest flock is of some 50 on 31.12.1986 (Ka).

Greenfinch *Carduelis chloris* Florya
Uncommon breeding resident.

Goldfinch *Carduelis carduelis* Saka
Not uncommon breeding resident with flocks of up to over 100 (2.11.1987,
Vos) in winter.

Siskin *Carduelis spinus* İskete
One bird at Köyceğiz on 28.3.1986 (KK) is the only record.

Linnet *Carduelis cannabina* **Ketenkuşu**
Apparently only a winter visitor until March (latest "many" birds on 17.3.1986, GG).

Cirl Bunting *Emberiza cirlus* **Bahçe Kirazkuşu**
Apparently a rare breeding resident.

Rock Bunting *Emberiza cia* **Kaya Kirazkuşu**
Only one winter record: Ka saw two individuals at Kaunos on 31.12.1986.

Ortolan Bunting *Emberiza hortulana* **Kirazkuşu**
Migrant in spring and autumn. The earliest record is on 29.3.1986 (KK), the latest on 12.9.1968 (KP).

Cretzschmar's Bunting *Emberiza caesia* **Kızıl Kirazkuşu**
Several observations in March, earliest on 17.3.1986 (GG). Also mentioned for Köyceğiz, without details, by KUMERLOEVE (1962b).

Reed Bunting *Emberiza schoeniclus* **Batak Kirazkuşu**
Winter visitor, the largest number comprises about 15 birds on 31.12.1986 (Ka). Records on 1.5.1973 (Lo) and on 31.7.1987 (Kin) indicate breeding.

Black-headed Bunting *Emberiza melanocephala* **Karabaşlı Kirazkuşu**
Wil observed at least two birds on the western shore of Köyceğiz Gölü on 18.4.1985 and Kin several singing males in pastures west of Köyceğiz on 16.4.1989.

Corn Bunting *Miliaria calandra* **Tarla Kirazkuşu**
Common breeding resident. Highest number is over 100 on 2.11.1987 (Vos).

Özet (Turkish summary)

Araştırma bölgesi içinde Köyceğiz Gölü, Dalyan Nehri, Dalyan Deltası (delta içinde Sülüngür Gölü), İztuzu Gölü, Dalyan-İztuzu kumsalı ve yakın çevresi yer almaktadır. Akdeniz ve Ege bölgesi arasındaki geçiş alanda bulunan bölgenin EROL'a göre; Köyceğiz Gölü ve Dalyan Nehri'nin doğusu Akdeniz bölgesine, nehrin batısı ise Ege bölgesine girmektedir. Bölgenin batısında yer alan, çökmüş bir dağ silsilesi şeklinde denize uzanan Datça (Reşadiye) Yarımadası Akdeniz ve Ege bölgeleri arasında önemli bir bariyerdir. Köyceğiz ilçesi Muğla - Fethiye karayolunun hemen üzerinde yer almakta olup Muğla iline bağlıdır.

Köyceğiz Gölü ve Dalyan Deltası aşağı yukarı deniz seviyesindedir. Çevredeki yükseltiler, Dalyan Nehri'nin batısında 937 m. ye ulaşır. Köyceğiz Gölü 5200 ha., Dalyan Deltası ise 1150 ha. kadardır. Köyceğiz Gölü Türkiye'nin 20 büyük gölü arasında yer almaktadır. Derinliği konusunda ise tam bir bilgi yoktur. Köyceğiz - Dalyan bölgesi Türkiye'nin en büyük kıyı sulak alanları içinde yer alıp, çok zengin habitatları içermektedir; tatlısu gölü ve içinde bir kaç ada, yarı tuzlu sularıyla sazlarla kaplı labirent kanallarıyla delta sistemi, birkaç kilometre uzunlukta kumsal, göl kıyılarında subasar günlük ormanları, iğne yapraklı ormanlar, çevredeki tepelerde makilikler ve daha bir çok habitat bu küçük bölgede yoğunlaşmıştır. Köyceğiz Gölü jeolojik olarak bir koyken, eskiden yatağı farklı olan Dalaman Nehri'nin sedimantasyonuyla denizle direkt bağlantısı kesilmiştir.

Göl çevresinde güney-batı Anadolu'da endemik bir tür olan ve sadece Muğla ve Antalya çevresinde görülen günlük ağaçları (*Liquidamber orientalis*) geniş subasar ormanlar oluştururlar. Buzdevri reliktlerinden olan günlük ağacının korunması gerekmektedir. Köyceğiz Gölü çevresindeki ormanlar, bu türün doğal yayılış içindeki en geniş ormanlardır. Günlük ağaçlarının oluşturduğu ormanlar küçük dereciklerle bölünmüştür ve özellikle kış ve ilkbaharda su altındadırlar.

Bir tatlı su gölü olan Köyceğiz Gölü'ne çevreden çok sayıda çay ve dere açılmaktadır. Gölün batısında Namnam Çayı bunların en önemlisidir. Gölün kıyılarında ve özellikle dere ve çay ağzlarında sazlık alanlar vardır.

Dalyan Nehri ise Köyceğiz Gölü'nden dışarı açılır. Dalyan yerleşim alanından sonra kıvrılarak kanallardan oluşan bir labirent sistemiyle Dalyan Deltası'nı oluşturur. Kanallarının kıyılarında 4 ile 6 m. yükseklikte bir sazlık bandı vardır. Daha arkalarda ise daha alçak bataklık bitki örtüsü hakimdir. Bu yüzden bölgede kapalı sazlıklar yoktur. Delta içinde ise geniş açıklıklar bulunur. Örn.: Sülüngür Gölü, Alagöl, Sülüklü Gölü, gibi. Delta suları yarı tuzludur. Tuz oranı mevsimlere, deltanın pozisyonuna ve saatlere bağlıdır (ilkbahar ve kışın Köyceğiz Gölü'nden gelen fazla tatlısu, denizin gel-git hareketleri örnek verilebilir). Delta denizden yaklaşık 50 m. genişlikte bir kumsalla ayrılmıştır. Kumsal batıda sadece bir bölgede deltanın denizle bağlantısını oluşturacak şekilde açılmaktadır (= Dalyanağızı). Bu bölge son derece dar olup, derinliği yaklaşık 0,5 m.dir. Fakat akıntı burada çok hızlıdır. Kumsalın doğusunda yer alan İztuzu Gölü, deltadan bir tepeyle ayrılmıştır. Suları çok tuzlu olup, derinliği ve tuzluluk derecesi denize bağlıdır.

Akdeniz bitki örtüsü bütün bölgede hakimdir. Çevre tepelere doğru sırasıyla bozulmuş maki, maki ve çam ormanları tüm geçiş formlarıyla yer alır (en yaygın tür Kızılçam'dır *Pinus brutia*). Yerleşim alanları çevresinde turunçgiller, zeytin ve pamuk yaygındır. Köyceğiz Gölü ve Dalyan Nehri çevresinde sıcak su kaynakları bulunur. Sülfürce zengin bu kaynaklarda su sıcaklığı 37-40°C arasındadır. Ayrıca bölge içinde antik Kaunos harabeleri ve Dalyan civarında kayalıklarda 4. yüzyıldan kralmezarları yer almaktadır.

Bölgenin ornitolojik önemi

Bölgede şimdye dek 180 kuş türü gözlenmiştir. Bölge için iki önemli tür, Türkiye'de giderek yok olan İzmir Yalıçapkını (*Halcyon smyrnensis*) ve Alaca Yalıçapkını (*Ceryle rudis*) dir. İzmir Yalıçapkını Türkiye'nin en nadir kuş türlerinden biri olup popülasyonu yaklaşık 100-150 çift kadardır. Bu sayının %75'i 5 bölgede yoğunlaşmıştır. Köyceğiz-Dalyan bölgesi bunlardan birisidir. Alaca Yalıçapkını ise biraz daha fazla olup, Türkiye'deki yayılış alanı sınırlıdır. Aşağı yukarı 250 çiftlik bir popülasyon bulunmaktadır. Turaç (*Francolinus francolinus*) ise bölgede son olarak 1960'da gözlenmiştir. Turacın bölgenin tamamında yok olduğu kesindir.

Bölgede kuluçkaya yatan yada yatma olasılığı olan türlerin tamamı ya Türkiye'de yada tüm dünyada giderek azalmaktadır. Örn: Tepeli Karabatak (*Phalacrocorax aristotelis*), Küçük Balaban (*Ixobrychus minutus*), Gece Balıkçılı (*Nycticorax nycticorax*), Erguvan Balıkçıl (*Ardea purpurea*), Yılan Kartalı (*Circaetus gallicus*), Saz Delicesi (*Circus aeruginosus*), Küçük Kartal (*Hieraaetus pennatus*), Küçük Kerkenez (*Falco naumanni*), Mahmuzlu Kızkuşu (*Hoplopterus spinosus*) ve Gülen Sumru (*Gelochelidon nilotica*). Ayrıca Alaca Balıkçıl (*Ardeola ralloides*) ve Küçük Karabatağın (*Phalacrocorax pygmaeus*) bölgede kuluçkaya yatma olasılığı büyüktür. Leylek ise bölgedeki yerleşim alanlarının hemen hepsinde kuluçkaya yatmaktadır. Kemalide yakınlarında 10-19 çift bir koloni vardır.

Bazı sokuşları kısı bölgede geçirmektedir. Bunlardan; Büyük Batağan (*Podiceps cristatus*), max. 810, Küçük Batağan (*Tachybaptus ruficollis*), max. 990, Küçük Karabatak (*Phalacrocorax pygmaeus*) max. 160 ve Sakarmeke (*Fulica atra*) max. 17000 örnek verilebilir.

Dalyan bölgesi son yıllarda *Caretta caretta*'nın yumurtlama bölgesi oluşunun ortaya çıkışıyla oldukça ün kazanmıştır. İztuzu kumsalı Türkiye'nin 13 önemli deniz kaplumbağası yumurtlama bölgesi içinde yer almaktadır. Ayrıca bölgede tatlısu türü Nil Kaplumbağası (*Trionyx triunguis*) yaşamaktadır. Bu türünde Türkiye'de nesli hemen hemen tükenmek üzeredir. Bölgede diğer gruplardan 3 amfibi ve 19 (20?) sürüngen türü saptanmıştır. Memelilerden, özellikle Susamuru (*Lutra lutra*) örnek verilebilir. Ayrıca Akdeniz Foku (*Monachus monachus*) bölgede nadir olarak gözlenmektedir.

İnsan etkileri

Balıkçılık: Bölge eskiden beri önemli bir balıkçılık merkezidir. Yıllık üretim yaklaşık 700 tondur. Bu sayı yıllardan beri giderek azalmaktadır. Nedenleri arasında yetersiz işletmecilik ve üretim metodları ile sayıları hızla artan turistik tekne seferleri ilk akla gelenlerdir.

Atık sular: Yerleşim bölgelerinin atık suları direk olarak sulak alanlara verilmektedir. Arıtma tesisleri acil olarak gerekmektedir.

Tekne trafiği: Son yıllarda sayıları çok büyük bir hızla artan tekne seferleri ciddi bir problemdir. Motorların sürekli gürültüsü Nil Kaplumbağası ve kuşları rahatsız etmektedir. Teknelerin yol açtığı sürekli dalga, bölgenin doğal

sakin su akıntısını bozarak saz ve kamış köklerinin gelişmesine engel olmaktadır. Bu konudaki zararların ilk örnekleri gözlenmeye başlanmıştır. Ayrıca motorlardan akıtılan yağlar suyu kirletmektedir. Su yüzeyinde yer yer büyük yağ filmleri her zaman gözlenebilmektedir (Bkz. sayfa 6-7).

Turizm: Bölge Turizm Bakanlığı'nın ana yatırım bölgelerinden olup toplam 10.000 yatak kapasiteli otel ve tatil köyleri planlanmıştır. Bölgenin 1988 tarihinde koruma altına alınmasıyla bu planların son şekli daha açığa kavuşmamıştır.

Av: Çevrede çok sayıda yerel avcı koruma altındaki türleri de avlamaktadır. Örn.: Susamurunun avlandığı gözlenmiştir.

Koruma Bölgesi Statüsü

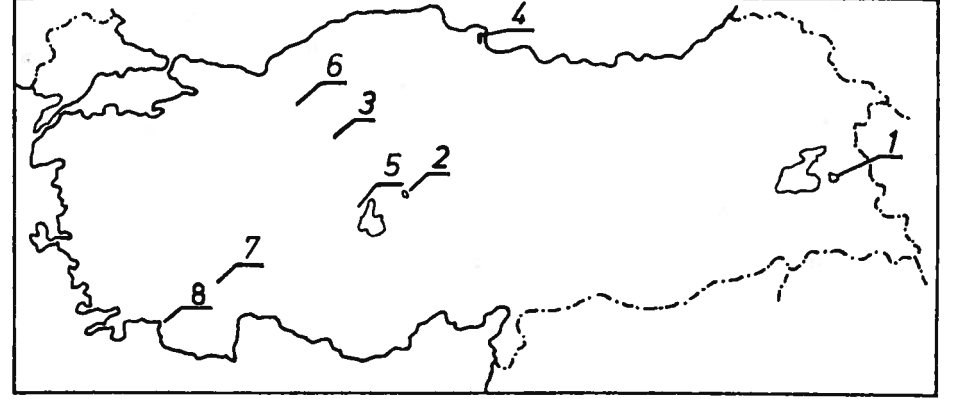
Uzun süren tartışmalardan sonra bölge 1988'de "Özel koruma Alanı" ilan edilmiştir. Bölgenin koruma statüsü, Barcelona Anlaşması çerçevesinde Akdenizi koruma anlayışıyla verilmiştir. Fakat kararın türkçe metninde bölgenin korunması için alınacak önlemler net bir şekilde açıklanmamıştır. Yeni kurulan çevre komisyonu koruma önlemleri konusunda karar vermektedir (Bak: sayfa: 7). Ayrıca koruma bölgesine Dalyan Deltası'nın tümünün alınmasına karşın Köyceğiz Gölü'nün yarısından azı girmektedir. Bir sistem olan bölgenin tümünün koruma altına alınmasına ve ayrıntılı bir koruma planına gerek vardır.

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