

## A Study on the Ornithofauna of Sakaryabaşı/Eminekin Pond and Its Vicinity\*

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**Abstract:** The study was carried out to determine the ornithofauna of Eminekin Pond and its vicinity in Sakaryabaşı, within the district of Çifteler in Eskişehir province. The study area is situated on one of the migration routes of birds. During the study period, from July 1995 to July 1996, a total of 102 bird species from 37 families were observed in the area and 37 of these species were resident, ten of them were winter visitors, forty six were summer visitors and only nine were found to be passage migrants.

**Key Words:** Ornithofauna, Sakaryabaşı, Eskişehir, Turkey.

### Sakaryabaşı/Eminekin Göleti ve Çevresinin Ornitofaunası Üzerine Araştırmalar

**Özet:** Bu çalışmada Eskişehir'in Çifteler ilçesine bağlı Sakaryabaşı/Eminekin Göleti ve çevresindeki kuş faunası araştırılmıştır. Çalışma alanı kuş göç yollarından birisi üzerinde bulunmaktadır. Temmuz 1995 ile Temmuz 1996 tarihleri arasında gerçekleştirilen arazi çalışmaları sonucunda, alanda 37 familya'ya ait 102 kuş türü tespit edildi. Gözlenen türlerin 37'sinin Yerli, 10'unun Kış Ziyaretçisi, 46'sinin Yaz Ziyaretçisi olarak ve 9 türün de göç sırasında bölgeyi Transit olarak kullandığı görüldü.

**Anahtar Sözcükler:** Avifauna, Sakaryabaşı, Eskişehir, Turkey.

### Introduction

Turkey is located on major migration paths in the Palearctic region. Its geography and climatic variations form a suitable environment for numerous species. Five hundred of the 9000 bird species worldwide are found in Europe and nearly the same number (453 species) are found only in Turkey (1-11). The ever-increasing human impact on existing natural resources has caused the extinction of many bird species and others have become endangered. Therefore an inventory and the conservation of biological diversity has become the main interest of researchers. Such interest has led to the allocation of more areas as National Parks, Natural Conservation Reserves, and Important Bird Areas based on their unique

fauna and flora (12-14). In addition to protecting their bird species, many countries are also conducting research on their ecology, reproduction, migration and behavior (15-17). Recently, similar studies have started to fill the gap in the knowledge Turkey as well (18-20).

Sakaryabaşı/Eminekin pond is an artificial wetland originally constructed for irrigation by the State Waterworks (DSİ) and which turned into an important feeding, resting and nesting site for birds over time. During the migration period, the first resting area for birds entering through Thrace (Trakya) and the Bosphorous is Manyas Bird Paradise after which Balıkdamı (Sivrihisar) together with Eminekin pond is the second resting point in Anatolia (21).

\* This study was part of an MSc thesis.

The purpose of this study was to determine the bird species at Sakaryabaşı/Eminekin Pond and its vicinity and thereby determine their regional status, nesting activities, SPECs (Species of European Conservation Concern status), Red Data Book status, and the importance of the area during migration as well as possible threats they face.

**Study Area**

The Sakaryabaşı/Eminekin wetland is located in the Çifteler district of Eskişehir. The research area is at lat 39° 22' 30" N, long 39° 22' 90" E. It is surrounded by Emirdağ (Afyon) to the east, Mahmudiye district (Eskişehir) to the west, Han district to the south, and Kaymaz district to the north. Sakaryabaşı together with Kırgız Lake and Hamamkaya Spring form the watershed area of Sakarya River, which is suitable for recreation and fish production (Figure).

Eskişehir province has a typical steppe climate: dry and hot summers, and cold winters with low

precipitation. According to the Eskişehir Meteorology Station the lowest and highest temperatures measured were 12.2 °C and 39 °C, in November 1995 and July 1996, respectively. The highest precipitation and average humidity were 66.0 mm in October 1995 and 80% in January 1996. Between October and April frosts were also observed. The period covering June through early October was dry.

The study area is covered with various plant species depending on the elevation and soil structure. On agricultural land, economically important crop species are cultivated, e.g. *Triticum*, *Hordeum*, *Beta*, and *Helianthus* species. Tree populations in the area mainly composed of *Populus*, *Platanus*, *Salix*, and *Pinus* species (22). Twelve different fish species (*Aspius aspius taeniatus*, *Chondrostoma nasus*, *Gobio gobio*, *Barbus plebejus*, *B. p. escherichi*, *Alburnus orontis*, *Alburniodes bipunctatus*, *Vimba vimba tenella*, *Cyprinus carpio*, *Capoeta capoeta sieboldi*, *Silurus glanis* and *Aphanius chantrei*), ten species of gastropods (*Theodoxus pallasi*, *T. transversalis*, *T.*

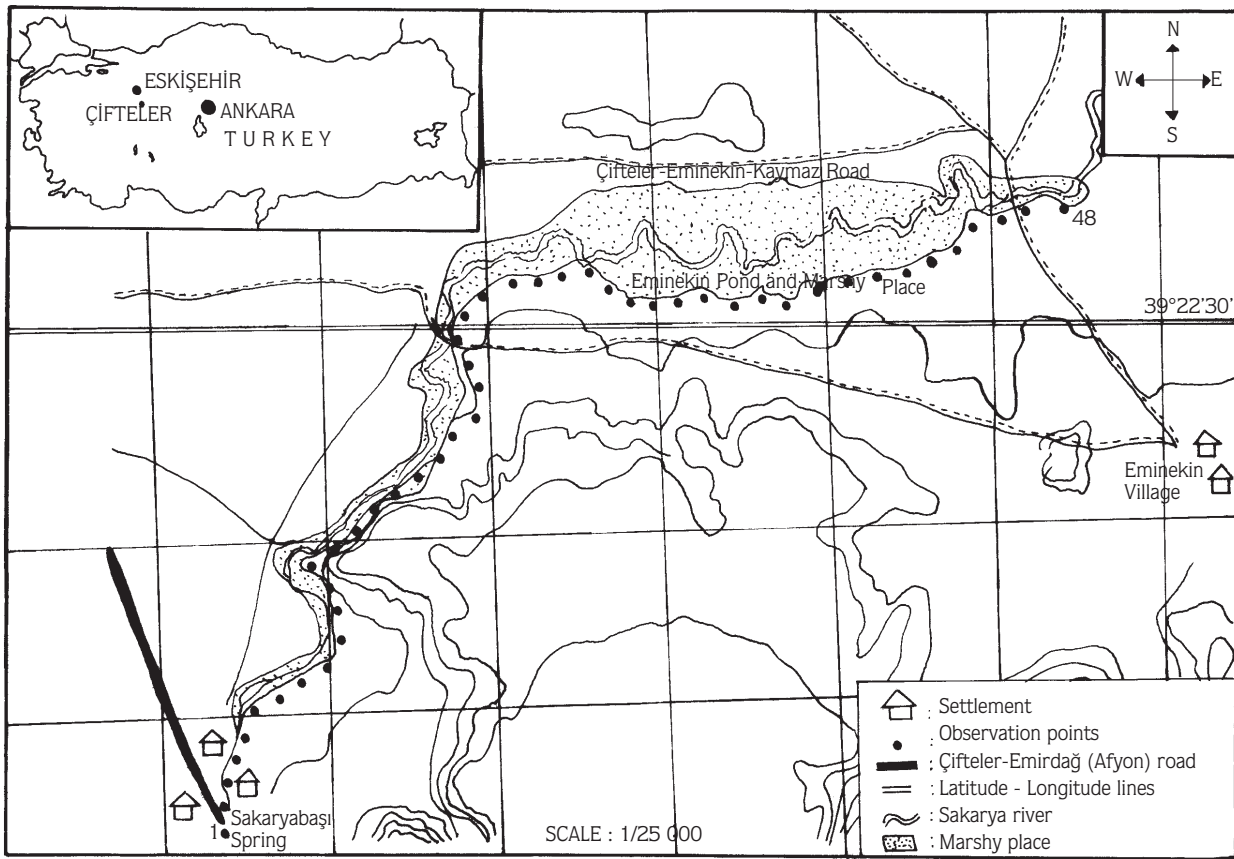


Figure. Geographical map of study area.

*fluviatilis*, *Valvata cristata*, *Fagolia esperi*, *Melanopsis praemorsa*, *M. p. ferussaci*, *Pseudomincola pallida*, *Hydrobia akramowskir* and *H. logiscata*) and six species of Hydracarina – water mites (*Arrenurus sinuator*, *A. furcillatus*, *A. albator*, *Unionicula minor*, *Numania deltaides* and *Hygrobates fluviatilis*) have been reported in faunal studies (23-25).

## Materials and Methods

The survey was conducted from July 1995 to July 1996 at Sakaryabaşı/Eminekin Pond and its vicinity. "Point Counts on a Transect Line" is the main bird watching method used in the study (26,27). A 2.4 km line was divided into 48 spots, each 50 m apart. Spot counts were performed twice a day between 8:00 and 11:30, and 15:00 and 18:30. The area was visited a total of 28 times for observations on foot at the following times: July-November (ten, twice a month), December-February (three, once a month), March (3), and April-June (12, four times monthly). All visits lasted 2-3 days (Table 1).

Nest activities, which were confirmed by adults carrying nest materials or by eggs or hatchlings, were also investigated. The specifications of various types of bird's nests were also studied from a boat at different periods of time.

Heron brand (10 x 50) binoculars and a Canon EOS 1000 camera were used for observations and taking photographs. The species list, scientific names and status were taken from Heinzel et al. (6,7), and Kiziroğlu (8); SPECs (Species of European Conservation Concern) and Red Data Book status were from Tucker and Heath (28) and Kiziroğlu (29).

## Results

In this study 102 species (of 37 families) were found; they were members of nonpasseres (41) and passeres (61). Of the 102 species observed, 37, 46, ten, and nine of them were residents, summer visitors, winter visitors, and passage migrants, respectively. Forty-one species were confirmed breeders, including 28 residents and 13 summer visitors. The complete survey data is presented in Table 2.

From this table, it can be seen that the study area has quite a rich bird fauna, especially during the spring migration (between March and May 1996). In this period, both the number of species and population density are higher than during the rest of the year. It was observed that *Ciconia ciconia*, *C. nigra*, *Grus grus*, *Fringilla coelebs*, *Ficedula semitorquata*, *Phylloscopus trochilus*, *Hippolais icterina*, *Anthus trivialis*, *A. pratensis* and *Plegadis falcinellus* use the study site both for feeding and resting.

Date	Researcher	Date	Researcher
07-09.07.1995	Aziz ASLAN	24-25.03.1996	Aziz ASLAN
28-30.07.1995	//	28-30.03.1996	//
09-11.08.1995	//	07-09.04.1996	//
24-26.08.1995	//	14-16.04.1996	//
07-08.09.1995	//	19-18.04.1996	//
22-23.09.1995	//	24-25.04.1996	//
09-11.10.1995	//	08-10.05.1996	//
29-30.10.1995	//	16-18.05.1996	//
09-10.11.1995	//	24-26.05.1996	//
24-25.11.1995	//	30.05.1996	//
26-27.12.1995	//	08-09.06.1996	//
29-30.01.1996	//	14-15.06.1996	//
09-10.02.1996	//	22-23.06.1996	//
14-15.03.1996	//	29-30.06.1996	//

Table 1. Observation dates.



Table 2. continued

SPECIES LIST NONPASSERES OBSERVATION PERIODS	M O N T H S												I R.S.	II O.M.N.S.	III N.A.	IV SPEC.I,S,Cr.	V R.D.B.			
	I	II	III	I	V	I	V	I	III	I	X	X						I	XII	
<i>Upupa epops</i>	1															S.V	8	(+)	S	A.2
<i>Dendrocopos syriacus</i>																R	6	(-)	4, (S)	A.3
<b>PASSERES</b>																				
<i>Galerida cristata</i>																R	44	(+)	3,D,M,d	(-)
<i>Lullula arborea</i>																R	13	(-)	2,V,L,d	(-)
<i>Alauda arvensis</i>																R	11	(+)	3,V,L,d	(-)
<i>Eremophila alpestris</i>																R	2	(-)	(S)	A.3
<i>Hirundo rustica</i>																S.V	55	(+)	3,D,M,d	(-)
<i>Riparia riparia</i>																S.V	75	(-)	3,D,M,d	(-)
<i>Delichon urbica</i>																S.V	60	(-)	S	A.4
<i>Anthus trivialis</i>																P.M	5	(-)	S	(-)
<i>A. pratensis</i>																P.M	3	(-)	4, S	(-)
<i>Motacilla flava</i>																S.V	32	(+)	S	(-)
<i>M. flava Feldg</i>																S.V	142	(+)	...	(-)
<i>M.cinerea</i>																S.V	2	(-)	(S)	A.4
<i>M.alba</i>																R	30	(+)	S	A.4
<i>Erithacus rubecula</i>																W.V	19	(-)	4, S	(-)
<i>Luscinia megarhynchos</i>																S.V	9	(-)	4, (S)	A.3
<i>Phoenicurus phoenicurus</i>																S.V	7	(-)	2,V,L,d	(-)
<i>P. ochinurus</i>																W.V	9	(-)	S	(-)
<i>Saxicola rubetra</i>																S.V	11	(-)	4, S	(-)
<i>S. torquata</i>																W.V	13	(-)	3,(D),M,d	(-)
<i>Oenanthe oenanthe</i>																S.V	12	(+)	S	A.3
<i>Turdus merula</i>																R	11	(+)	4, S	(-)
<i>T. viscivorus</i>																R	6	(-)	4, S	(-)
<i>Cettia cetti</i>																S.V	60	(+)	S	A.4
<i>Acrocephalus arundinaceus</i>																S.V	75	(+)	(S)	(-)
<i>Hippobolais icterina</i>																S.V	13	(-)	4, S	A.3
<i>Sylvia communis</i>																S.V	12	(-)	4, S	(-)
<i>S. atricapilla</i>																S.V	17	(-)	4, S	(-)
<i>Phylloscopus collybita</i>																S.V	9	(-)	(S)	(-)
<i>P. trochilus</i>																P.M	6	(-)	S	(-)
<i>Regulus ignicapillus</i>																W.V	4	(-)	4, S	(-)
<i>Muscicapa striata</i>																S.V	8	(-)	3,D,M,d	(-)
<i>Ficedula parva</i>																P.M	5	(-)	(S)	(-)
<i>F. hypoleuca</i>																P.M	16	(-)	4, S	(-)
<i>F. semitorquata</i>																S.V	4	(-)	2,(E),L,d,<10000 p	(-)
<i>Panurus biarmicus</i>																R	65	(+)	(S)	A.2
<i>Parus ater</i>																R	8	(-)	S	(-)

Table 2. continued

SPECIES LIST PASSERES	M O N T H S												I R.S.	II O.M.N.S.	III N.A.	IV SPECT.S, Cr.	V R.D.B.			
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII								
<i>P. caeruleus</i>	1	1	2	3	1	2	3	4	1	2	3	4	1	2	1	R	6	(-)	4, S	(-)
<i>P. major</i>																R	12	(+)	S	(-)
<i>Remiz pendulinus</i>																R	14	(-)	4, (S)	(-)
<i>Oriolus oriolus</i>																R	55	(+)	(S)	A.2
<i>Lanius collurio</i>																S.V	2	(-)	S	(-)
<i>L. minor</i>																S.V	10	(+)	3, (D), M,d	(-)
<i>Pica pica</i>																S.V	4	(-)	2, (D), M,d	(-)
<i>Corvus monedula</i>																R	32	(+)	S	(-)
<i>C. frugilegus</i>																R	70	(+)	4, (S)	(-)
<i>C. corone cornix</i>																R	900	(+)	S	(-)
<i>Sturnus vulgaris</i>																R	53	(+)	...	(-)
<i>Passer domesticus</i>																R	1800	(+)	S	(-)
<i>P. montanus</i>																R	200	(+)	S	(-)
<i>P. hispaniolensis</i>																R	42	(+)	S	(-)
<i>Petronia petronia</i>																R	270	(+)	(S)	(-)
<i>Fringilla coelebs</i>																R	19	(-)	S	(-)
<i>C. carduelis</i>																S.V	28	(-)	4, S	(-)
<i>C. cannabina</i>																S.V	24	(-)	4, S	A.4
<i>Pyrrhula pyrrhula</i>																R	35	(+)	(S)	A.4
<i>Emberiza cia</i>																W.V	50	(-)	4, S	A.4
<i>E. schoeniculus</i>																W.V	27	(-)	S	A.3
<i>E. melanocephala</i>																S.V	18	(-)	3, V, L,d	(-)
<i>Miliaria calandra</i>																R	140	(+)	S	A.4
																S.V	14	(+)	2, (V), L,d	A.2
																S.V	18	(+)	4, (S)	(-)

I - R.S.: Regional Status; P.M: passage migrant; W.V: winter visitor, R: resident, S.V: summer visitor

II-O.M.N.S.: Observed maximum numbers of species

III- N.A.: Nesting activities; (+): Nest exists, (-): Nest does not exist

IV - SPECS: Species of European Conservation Concern Status; 1: Species of Global Conservation Concern. 2: Species whose global populations are concentrated in Europe. 3: Species whose global populations are not concentrated in Europe. 4: Species whose global populations are concentrated in Europe; Favorable conservation status in Europe. Cr: Criteria : European population size/trend; L.d: Large decline, M,d: Moderate decline; <10000p: population size is below 10000 pairs. T.S.: Threat Status; E: Endangered, V: Vulnerable, R: Rare, D: Declining, L: Localized, S: Secure and (-): Their status can change in the course of time.

V - R.D.B.: Red Data Book; A.1.2: Threatened with extinction; A.2: Severely endangered; A.3: Endangered; A.4: Potentially endangered(30)

## Discussion

Several researchers have conducted ornithological trips in Eskişehir province and its vicinity. They reported the following species: *Phylloscopus sibilatrix*, *Locustella luscinioides*, *Acrocephalus schoenobaenus*, *Otis tarda*, *Porzana porzana*, *Anthropoides virgo*, *Pterocles orientalis*, *Marmaronetta (Anas) angustirostris*, *Anser albifrons*, *Circus pygargus*, *Tetrax tetrax*, *Falco naumanni*, *F. vespertinus* and *Sylvia curruca* (9,30). However, in our study none of them were observed at Sakaryabaşı/Eminekin pond and its vicinity.

There were no *Sitta neumayer* nesting in the area, a species normally found in many regions in Turkey. It was present throughout the study except during the breeding period. *Sitta neumayer* probably preferred another site or went to a higher altitude for nesting.

When the status of the species identified in our study were compared to those given by Heinzel et al. (6,7) and Kiziroğlu (8), 15 out of 46 species that were initially assigned to different categories were found to be summer migrants in the area. Such species included *Podiceps cristatus*, *Falco tinnunculus*, *Porzana pusilla*, *Vanellus vanellus*, *Actitis (Tringa) hypoleucos*, *Athena noctua*, *Motacilla cinerea*, *Chlidonias leucopterus*, *Cettia cetti*, *Hippolais icterina*, *Phyloscopus collybita*, *Fringilla coelebs*, *Carduelis chloris*, *Emberiza cia* and *Miliaria calandra*. Three species assigned to winter visitor status were reported to be migrants and residents: *Saxicola torquata*, *Regulus ignicapillus* and *Erithacus rubecula*.

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Three species (*Circus aeruginosus*, *Scolopax rusticola* and *Emberiza schoeniculus*) found to be residents were described as winter visitors and migrants. The remaining two, *Ciconia nigra* and *Plegadis falcinellus*, were noted as residents and migrants by the same researchers. All these variations imply a possible regional migration to more suitable sites depending on season.

The Ministry of Forestry prohibited hunting at Sakaryabaşı/Eminekin pond and its vicinity, starting from the 1996-1997 hunting season with a circular issued by the Central Hunting Commission (31). In spite of this decision, uncontrolled hunting has continued. During this study, *Anas platyrhynchos* (2), *Anas querquedula* (4), *Plegadis falcinellus* (1), *Circus aeruginosus* (1), *Fulica atra* (7), and *Podiceps ruficollis* (2) were hunted at different times. Many people were hunting in and near the study area. Another important danger for bird species is the release of water from the pond to Sakarya River in winter by DSİ (December, January and February). During this period the river runs only through its natural bed. If this pressure is removed by holding the water during winter, more water birds will be attracted to the site in the future.

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