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Birds of Camili (Artvin, Turkey)

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Abstract

This study was conducted in Camili (Artvin, of North-East Turkey). Breeding and autumn migrating field surveys between March 2003 and October 2003 were performed in order to determine breeding statutes and transit bird species of Camili. The study area was divided into four different sub–regions. In these sub-regions, timed-species counts (TSCs) were made to determine species abundance. The Margalef index and the cluster analysis were also used to determine species richness and similarity between sub-regions. In total, 49 bird species were recorded. The most abundant breeding bird species in the study area were determined as redstart (*Phoenicurus phoenicurus*), blackbird (*Turdus merula*), blackcap (*Sylvia atricapilla*), coal tit (*Parus ater*), great tit (*Parus major*), jay (*Garrulus glandarius*), and chaffinch (*Fringilla coelebs*). Moreover, it was found out that the area was probably used by a total 38 actual and/or possible bird species for breeding purposes.

Key Words: Bird, Timed-species counts, Species richness, Camili

Introduction

Because of important migration routes, different kinds of habitats, and wide variety of climatic regimes, Turkey has one of the richest bird faunas in the Western Palearctic. Although Turkey may have important areas, which are still unknown, for birds, the bird fauna of Turkey is relatively well known when compared to other groups (1). As the most recently, a total of 453 bird species were listed for Turkey (2). However, new species records have been made and bird species numbers are increasing (3).

North-East Turkey is an important region for bird species, especially forest birds and raptors. Studies on bird migration in this area, especially raptor migration, were carried out in 1990, and 1994 (4, 5); however, studies in terms of avifauna are scarce for the region.

Camili is located near the border of Georgia and has not been previously studied so far in terms of its bird species. Therefore, the aim of this paper is to show the birds present in Camili focusing on its ornithological importance.

Study Area

The study area includes three different valleys (41^0.28' N, 41^0.89' E), Uğur-Maral, Efeler, and Baltacılar, and situated in Camili region (Figure 1). It is characterized by natural mixed forest area, subalpine and alpine meadows, and slopes with *Rhododendron*.

The study area has a semi-arid cold Mediterranean climate (6). Detailed climate data are available for Artvin, which is approximately 60 km to the south-west of Camili (Figure 2). However, the harshest winter is usually observed in Camili spanning from November to May.

Conservation of the Study Area

The area which lies between the Black and Caspian seas has been evaluated as one of the endemic bird areas (EBA) in the world (7). This mountainous EBA includes the study area. Therefore, the study area is important for Caucasian black grouse (*Tetrao mlokosiewiczi*) and Caucasian Chiffchaff (*Phylloscopus lorenzii*).

The primary problems that affect the natural ecosystem are overgrazing and hunting. During the summer period, grazing activities were seen in suitable habitats of Caucasian black grouse. Due to hunting, breeding red-backed shrike (*Lanius collurio*) populations and migrating raptor species, particularly Accipiter species, are under threat.

Materials and Methods

Observation surveys were performed between March and October in 2003. The study area was divided into four different sub-areas: 1-Uğur-Maral Valley, 2-Efeler Valley, 3-Baltacılar Valley, and 4-Camili (Figure 1). To assess the study area in terms of species abundance, timed-species counts (TSCs) were also made (8).

Cluster analysis was performed using SYNTAX 2000 to determine similarity between sub-regions according to most abundant bird species.

To assess the species diversity for different sub-regions, Margalef index was used. This index is commonly used in community studies in birds (9). According to the index,

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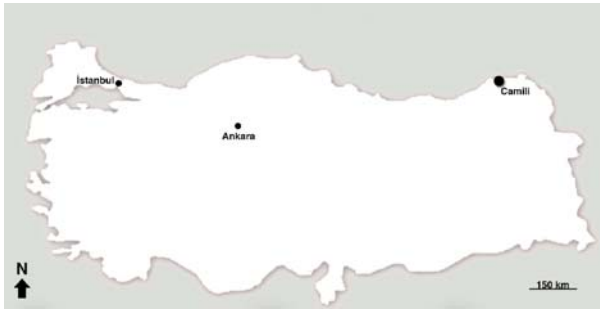
$$D = (S-1)/\log_e N \quad (1)$$

In this formula, S indicates species numbers, and N indicates individual numbers in the bird community (10).



(a)

(b)

Figure 1. Location of Camili (A). 1, 2, and 3 indicates sub-regions in Camili (B). 1-Uğur-Maral, 2-Efeler, and 3-Baltacılar.

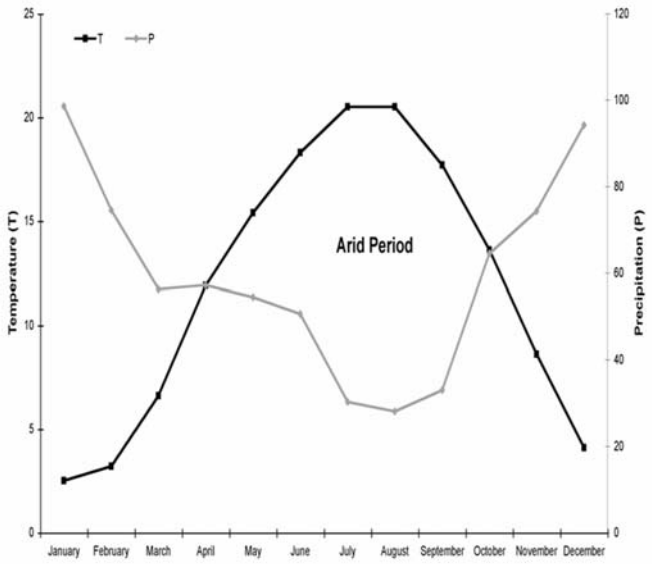


Figure 2. Ombrothermic climate diagram for Artvin.
species diversity (D) can be expressed as:

International conservation statuses for all recorded bird species were determined according to SPEC, European Threat Status (ETS), Bern Convention and Bonn Convention (11).

Results and Discussion

In the study area, 49 bird species were recorded between February and October 2003. They belong to 4 order and 18 families (Appendix I). The highest numbers of species were recorded in May (26 species). The smallest numbers of species were recorded in October (12 species). The highest numbers of individuals were recorded in June (245 individuals); the smallest numbers of species were recorded in October (135 individuals) (Figure 3).

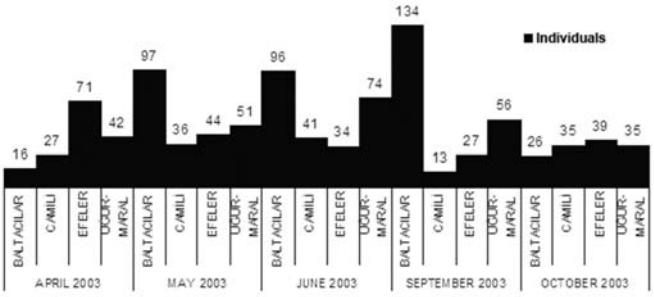


Figure 3. Individual numbers of birds recorded in the study area.

During the spring period in 2003, actual and/or possible breeding bird species were determined in the study area and represented 77.5% (n=38) of total bird species recorded (Appendix I).

According to Margalef index, all sub-regions had different index value for each month during the study period (Figure 4). However, there is no significant difference between these index values (H=7.08, df=3, p>0.05).

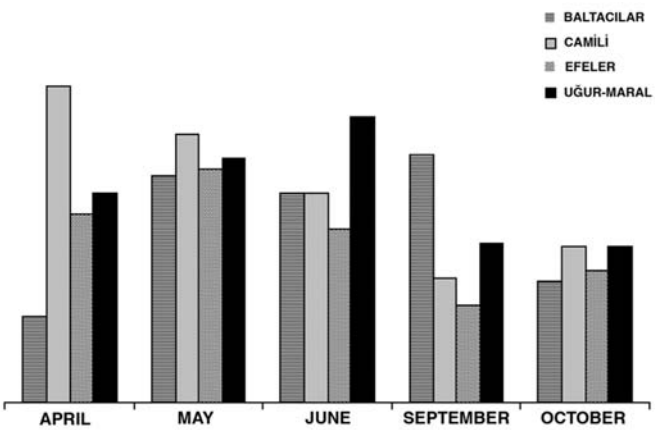


Figure 4. According to the Margalef index, the comparision of the species richness between sub-regions in the study area.

The results of TSCs are given in Table 1 for most abun-

dant bird species. According to this count, the most abundant bird species in the study area are redstart (*Phoenicurus phoenicurus*), blackbird (*Turdus merula*), blackcap (*Sylvia atricapilla*), coal tit (*Parus ater*), great tit (*Parus major*), jay (*Garrulus glandarius*), and chaffinch (*Fringilla coelebs*). Chaffinch can also be assessed as the most dominant bird species for all study area. According to these bird species' TSC values, a cluster analysis indicated that Baltacılar region is different from other regions (Figure 5). Although there is no difference in terms of species richness between sub-regions, Baltacılar can be named as the key area for most abundant bird species.

Table 1. According to timed-species count, the most abundant bird species recorded in study area and their count scores.

	Baltacılar	Camili	Efeler	Uğur-Maral
Phoenicurus phoenicurus	5	5	2	2
Turdus merula	6	3	5	4
Sylvia atricapilla	4	3	3	3
Parus ater	4	3	3	2
Parus major	6	6	4	5
Garrulus glandarius	6	2	3	3
Fringilla coelebs	6	6	6	6

So far, ninety-seven areas in Turkey have been stated as important bird areas (IBA) (12). One of them is East Black Sea Mountain Ranges, which includes Trabzon, Rize, and Artvin. This IBA includes our study area and endemic bird area for Caucasus. It has a military protected status due to its proximity Georgia border. However, there are serious threats (e.g. trapping) which are imminent for red-backed shrike and raptor species. Although raptor specialized trapping is traditional for this area, this must be prevented immediately. All of raptor species are under threat according to international conservation status (e.g. Bern Convention, Bonn Convention).

Camili and its environs are really important for raptor migration. Borçka pass has been indicated as important gate for most of raptors and some other gliding birds (4, 5). In the study area, black kite (*Milvus migrans*), sparrowhawk (*Accipiter nisus*), honey buzzard (*Pernis apivorus*), long-legged buzzard (*Buteo rufinus*), golden eagle (*Aquila chrysaetos*), and saker falcon (*Falco cherrug*) were recorded during the autumn migration. Sparrowhawk, golden eagle, saker falcon were observed in migration flocks of black kites, honey buzzards, and long-legged buzzards, all of which are observed as highly migratory species in Western Palearctic (13). According to other international conservation status (e.g. Bern and ETS) (Appendix 1), the most of the raptor species (e.g. black kite, long-legged buzzard, golden eagle, and saker falcon) are indicated under threat. Therefore, the study area is very important for migrating raptors. So far, pesticides, changes in land use and habitat loss, hunting and trapping activities in distribution ranges of these species have been stressed as important threat factors (14, 15). In Turkey, especially Northeast part, trapping activities and habitat loss in relation to changing land use can be stressed as major threats for these migrant raptor species. Moreover, loss of habitat as a result of human development, shooting and indirect poisoning are stressed the major threats in Turkey and Greece for lammergeier, which is evaluated as a possible breeders in the study area (15, 16). Therefore, suitable habitats in the study area and environs must be seriously protected, and trapping activities must also be prevented.

Because of the similarity between the sub-regions, all of study area can be taken as important for breeding passerine species. Because of long-term habitat loss in Europe, redstart (*Phoenicurus phoenicurus*), stonechat (*Saxicola torquata*), olivaceous warbler (*Hippolais pallida*), orphean warbler (*Sylvia hortensis*), rock bunting (*Emberiza cia*), black-headed bunting (*Emberiza melanocephala*) have been evaluated under unfavorable conservation status according to ETS (15). According to our observations, there is no serious threat for passerines in the study area, except Caucasian chiffchaff. Habitat of Caucasian chiffchaff is under threat. This species distributes in high regions in the study area. Hence, habitat loss in relation to changing land use should be taken into consideration in the study area.

Some passerines usually select breeding areas which are located close to human activities. According to TSCs results of most abundant species between sub-regions, Baltacılar is different and richer than other areas for passerine species (Table 1, Figure 5). This result can be depended on food abundance in this sub-region.

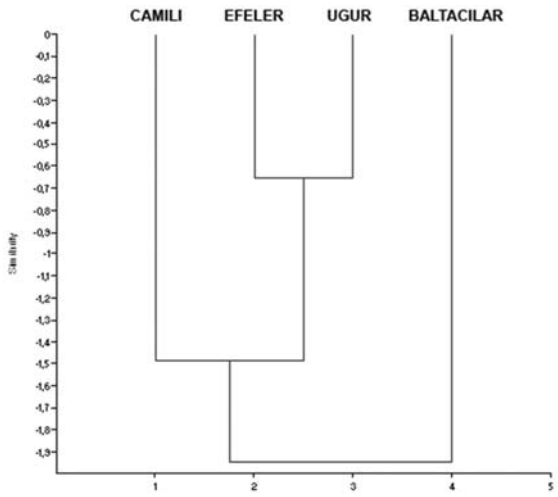


Figure 5. Similarity pattern between sub-regions in the study area. The cophenetic correlation is 0.9975.

Another important bird species, the Caucasian black grouse, was highly affected by habitat loss and human disturbance. Although we determined places which may suitable for this species in the study area, we just found

some feces, but did not see any individuals. The main cause of the decline in this species may be deterioration in the suitability of the alpine meadows. Moreover, same threats were also indicated in some literatures (7) although this species is classified as “data deficient” by the World Conservation Union, and few studies were made in Turkey for this species (17, 18). This habitat is crucial not only for adults but also for juveniles. Therefore, grazing and land use must be seriously controlled in the study area. The most recently, moreover, an article in Journal of Ornithology gave a new insight about individual numbers of the Caucasian black grouse, and it supported our discussion about importance of the region for this species (19).

Our study showed bird species richness and some threats on them in Camili and its environs. At last, we can say that Camili and its environs are really important for raptors, black grouse and some passerine birds because of its location and habitat richness. Therefore, Camili must be strictly protected.

However, this study is not complete, as Camili covers a small portion of North-East Turkey. We believe that more observations and their evaluations are needed in North-East Turkey.

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Appendix 1. Recorded bird species in the study area and their conservation and breeding status.

SPECIES	COMMON NAMES	BERN[1]	BONN[2]	SPEC[3]	ETS[4]	BS[5]
*Pernis apivorus**	European Honey Buzzard	II	II	4	S	-
*Milvus migrans**	Black Kite	II	II	3	V	-
*Gypaetus barbatus**	Lammergeier	II	II	3	E	?
*Accipiter nisus**	Eurasian Sparrowhawk	II	II	-	S	-
*Buteo buteo**	Common Buzzard	II	II	-	S	-
*Buteo rufinus**	Long-legged Buzzard	II	II	3	(E)	-
*Aquila chrysaetos**	Golden Eagle	II	II	3	R	-
*Falco tinninculus**	Common Kestrel	II	II	3	D	b
*Falco cherrug**	Saker Falcon	II	II	3	E	-
Cuculus canorus	Common Cuckoo	III	-	-	S	B
Dryocopus martius	Black Woodpecker	II	-	-	S	B
Dendrocopus major	Great Spotted Woodpecker	II	-	-	S	B
Hirundo rupestris	Eurasian Crag Martin	II	-	-	S	B
Anthus spinoletta	Water Pipit	II	-	-	S	B
Anthus trivialis	Tree Pipit	II	-	-	S	B
Motacilla cinerea	Grey Wagtail	II	-	-	(S)	B
Motacilla alba	White Wagtail	II	-	-	S	B
Cinclus cinclus	White-throated Dipper	II	-	-	S	B
Bombycilla garrulus	Bohemian Waxwing	II	-	-	(S)	-
Troglodytes troglodytes	Winter Wren	II	-	-	S	B
Prunella modularis	Dunnock	II	-	-	S	-
Erithacus rubecula	European Robin	II	II	4	S	B
Phoenicurus phoenicurus	Common Redstart	II	II	2	V	B
Saxicola rubetra	Whinchat	II	II	4	S	B
Saxicola torquata	Common Stonechat	II	II	3	(D)	B
Turdus torquatus	Ring Ouzel	II	II	4	S	B
Turdus merula	Common Blackbird	III	II	4	S	B
Hippolais pallida	Olivaceous Warbler	II	II	3	(V)	B
Sylvia borin	Garden Warbler	II	II	4	S	B
Sylvia atricapilla	Blackcap	II	II	4	S	B
Sylvia hortensis	Orphean Wabler	II	II	3	V	B
Phylloscopus collybita	Chiffchaff	II	II	-	(S)	B
Phylloscopus lorenzii	Caucasian Chiffchaff	II	-	-	?	B
Aegithalos caudatus	Long-tailed Tit	II	-	-	S	B
Parus ater	Coal Tit	II	-	-	S	B
Parus caeruleus	Blue Tit	II	-	-	S	B
Parus major	Great Tit	II	-	-	S	B
Sitta europaea	Eurasian Nuthatch	II	-	-	S	B
Garrulus glandarius	Eurasian Jay	-	-	-	(S)	B
Corvus corone cornix	Hooded Crow	-	-	-	S	B
Corvus corax	Common Raven	III	-	-	(S)	B
Passer domesticus	House Sparrow	-	-	-	S	B
Fringilla coelebs	Common Chaffinch	III	-	4	S	B
Fringilla montifringilla	Brambling	III	-	-	S	-
Carduelis chloris	European Greenfinch	II	-	4	S	B
Carduelis carduelis	European Goldfinch	II	-	-	(S)	B
Pyrrhula pyrrhula	Eurasian Bullfinch	III	-	-	S	B
Emberiza cia	Rock Bunting	II	-	3	V	B
Emberiza melanocephala	Black-headed Bunting	II	-	2	(V)	B

*All raptor species, except lammergeiger and kestrel, were recorded in migration period.

[1]**BERN CONVENTION:** Appendix II indicates that "strictly protected fauna species", Appendix III indicated "protected fauna species".

[2]**BONN CONVENTION:** Appendix I indicates that "species in danger of extinction throughout all or major parts of their range", Appendix II indicates that "species which would benefit from international cooperation in their conservation and management".

[3]**SPEC Category:** (1) Species of global conservation concern, i.e. classified as Globally Threatened, Conservation Dependent or Data Deficient. (2) Concentrated in Europe and with an unfavorable conservation status. (3) Not concentrated in Europe but with an unfavorable conservation status. (4) Concentrated in Europe and with a favorable conservation status.

[4]**EUROPEAN THREAT STATUS (ETS):** E-Endangered, V-Vulnerable, R-Rare, D-Declining, L-Localized, Ins-Insufficiently Known, S-Secure, ( )-Status provisional.

[5]**BREEDING STATUS (BS):** B-Breeding, b-possible breeding.