The Ornithological Diversity of the Province of Kilis

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Abstract: In this study, it is aimed to determine the bird diversity of Kilis province that is located in the southeast Anatolia, Turkey. For this purpose, field survey was conducted between February 2017 and June 2018. As a result, 129 species, belonging to 43 families (16 orders) that live in settlements, agricultural fields, wetlands, forests, and steppes were recorded. They were categorized as 76 residents, 43 summer migrants, 8 winter visitors, and 2 transit migrants. According to the Red Data Book of Turkey, these species were listed as 2 “Vulnerable”, 3 “Near threatened”, and 124 “Least concern”.

Keywords: Avifauna, Clanga clanga, Streptopelia turtur, redlist.

1. Introduction

Located at the intersection of three continents, Turkey is a bridge and in crossroads in terms of biodiversity (Karakaş, 1999; Ambarlı et al., 2016; Küçükosmanoğlu et al., 2019). Moreover, three (the Caucasus, the Mediterranean, and Irano-Anatolian) of the world’s 34 hot spots that are rich in biodiversity, which must be protected immediately, are located in Turkey (Küçükosmanoğlu et al., 2019). Turkey displays the continent features in terms of bird species diversity. Two of the four bird migration routes in the Palearctic region cross over Anatolia. Among the most important reasons behind Turkey’s avifaunistic richness are its location on major migration routes, geographical location, abundance of wetlands, and habitat diversity (Erciyas Yavuz, 2014; Erciyas Yavuz et al., 2015; Karadağ & Erdoğan, 2019).

Ornithofaunistic research in Turkey with several exceptions, are devoted to exhibit local ornithofauna. Introducing a complete ornithofauna is possible by handling such local studies together (Kiziroğlu, 2015). Although there is no comprehensive study on the determination of the bird species in Kilis province, there is an extensive study on the determination of bird species in the province of Gaziantep which is the single neighbor of Kilis (Toprak et al., 2008). Also, bird observations made in this province on Kuşbank and Trakuş websites also have great contributions in determining the bird diversity of the province (Anonim, 2020a).

Kilis province, with its intact forest area located on the northwestern provincial border, with the agricultural lands located in the east and with 6 rivers and dams and ponds on these rivers, has important resting, feeding, and breeding areas for both migratory species and resident species. There is no important bird area (IBA) for the bird species in Kilis province. However, there is the Elbeyli Key Biodiversity Area (KBA) (Eken et al., 2006). This area is the important resting and feeding area for the bird species in the east region of Kilis.

The aim of this study is to determine the bird diversity of Kilis. Our study will contribute to the studies done to list the bird species that are Turkey’s biological richness.

2. Material and Methods

Kilis is situated in the C6 square in the southern part of Turkey and is bordered by Syria to the south and Gaziantep to the north, east, and west, with coordinates 36°37'-37°2' N, 36°42'-37°3' E and its total area is 1,642 km². Kilis province is zoo-geographically located in the western Palearctic. Also, the area falls in the Mediterranean and Irano-Turanian floristic regions and possesses a semiarid Mediterranean climate (Solak et al., 2014). Average annual temperature of experimental area was 17.1°C according to the long-term meteorological data (1959-2019) (Anonim, 2020b). The forest and shrub vegetation of study area is composed of Pinus brutia, Pinus pinea, Arbutus andrachne, Pistacia lenticins, Erica arborea, Styxus officinalis, Cistus creticus, and some members of Juniperus, Cupressus, Quercus, Fraxinus, Populus, Acacia, Olea and Acer (Solak et al., 2014).
The study was conducted between the dates of February 2017-June 2018, in a total of 13 field surveys on 41 days. 659 field spots between 371 and 972 meters were visited in Polateli, Elbeyli, and Musabeyli regions. Within the scope of the project, field survey was carried out on all 21 parcel on 1/25,000 scale map of Kilis province. The field survey was carried out for 3 days in winter, 9 days in spring, 3 days in summer, and 4 days in autumn in 2017 and 6 days in winter, 13 days in spring, and 3 days in summer in 2018. Field studies were conducted in wetlands, forests, steppe, settlements, and agricultural areas. The sites were selected by evaluation of the satellite videos of the birds were used in the field survey. Observations such as sounds, wing sounds, feathers, singing of the birds were used in the field survey. Both direct and indirect methods were used over the line transect when determining the species. Both direct and indirect observations were used in the field survey. Investigations were conducted using transect method. Also, spot observation method (waiting for 45-60 minute durations on spots that have full sight of the area) was used to survey water birds and shore birds. Observations were conducted over 5 hours after the dawn and 3 hours before the nightfall since birds are very active and meteorological events like heat and moisture prevent determining the bird species from long distances. Species name, number of individuals, breeding status, habitat type, threats, date, hour and geographical coordinates were recorded. The geographical coordinates of the observed species were identified using the geographical positioning system (GPS) device Garmin Etrex 10. Coordinates were recorded as latitude and longitude in decimal degrees and referenced to the World Geodetic system established in 1984 (WGS84). These locations and their coordinates have been recorded in Noah's Ark Biodiversity Database (Anonim, 2020c).

3. Results and Discussion

As a result of this study, 129 species belonging to 43 families were determined. The list regarding the seasonal status of the birds determined during our field study and the classification of the birds determined in terms of order and family level, breeding status and Redlist status are as follows (Table 1).

| Scientific Name | English Name               | BERN | CITES | IUCN | Status | Breeding Status |
|-----------------|----------------------------|------|-------|------|--------|-----------------|
| Alectoris chukar | Chukar Partridge           | III  | OL    | LC   | R      | B               |
| Fringillaria montifringilla | Black Francolin | III  | OL    | LC   | R      | B               |
| Coturnix coturnix | Common Quail               | III  | OL    | LC   | R      | B               |
| Spatula querquedula | Garganey               | III  | OL    | LC   | S      | B               |
| Spatula clypeata | Northern Shoveler          | III  | OL    | LC   | R      | B               |
| Anas platyrhynchos | Mallard                   | III  | OL    | LC   | R      | B               |
| Apus apus        | Common Swift               | III  | OL    | LC   | S      | B               |
| Apus pallidus    | Pallid Swift               | II   | OL    | LC   | S      | B               |
| Apus affinis     | Little Swift               | III  | OL    | LC   | S      | B               |
| Coculus canorus  | Common Cuckoo             | III  | OL    | LC   | S      | B               |
| Culicidae leia   | Rock Dove                  | III  | OL    | LC   | R      | B               |
| Culicidae palumbus | Common Wood Pigeon        | OL   | OL    | LC   | R      | B               |
| Streptopelia turtur | European Turtle Dove     | III  | OL    | VU   | S      | B               |
| Streptopelia decauco | Eurasian Collared Dove   | III  | OL    | LC   | R      | B               |
| Spiloglaena seagaleensis | Laughing Dove          | III  | OL    | LC   | R      | B               |
| Gallinula chloropus | Common Moorhen           | III  | OL    | LC   | R      | B               |
| Falca atra       | Eurasian Coot             | III  | OL    | LC   | R      | B               |
| Tachybaptus ruficollis | Little Grebe          | II   | OL    | LC   | R      | B               |
| Podiceps cristatus | Great Crested Grebe       | III  | OL    | LC   | R      | B               |
| Himantopus himantopus | Black-winged Stilt     | II   | OL    | LC   | R      | B               |
| Vaneus vannesius  | Northern Lapwing           | III  | OL    | NT   | R      | B               |
| Charadrius dubius | Little Ringed Plover      | II   | OL    | LC   | S      | B               |
| Actitis hypoleucus | Common Sandpiper          | II   | OL    | LC   | S      | B               |
| Chloicocephalus genei | Slender-billed Gull     | II   | OL    | LC   | R      | B               |
| Chloicocephalus ridibundus | Black-headed Gull     | III  | OL    | LC   | R      | B               |
| Ichthyopterus ichthyaetus | Pallas's Gull          | III  | OL    | LC   | W      | NB              |
| Larus michahellis | Yellow-legged Gull        | III  | OL    | LC   | R      | B               |
| Scientific Name | English Name | BERN | CITES | IUCN | Status | Breeding Status |
|-----------------|-------------|------|-------|------|--------|-----------------|
| Larus armenicus | Armenian Gull | III  | OL    | NT   | R      | U               |
| Ciconia nigra   | Black Stork  | II   | II    | LC   | S      | U               |
| Ciconia ciconia | White Stork  | II   | OL    | LC   | S      | B               |
| Phalacrocorax carbo | Great Cormorant | III | OL    | LC   | R      | B               |
| Izobrychus minutus | Little Bittern | II  | OL    | LC   | S      | B               |
| Nycticorax nycticorax | Black-crowned Night Heron | II | OL    | LC   | S      | B               |
| Ardeola ralloides | Squacco Heron | II  | OL    | LC   | S      | B               |
| Bulbulus ibis | Western Cattle Egret | II | OL    | LC   | R      | B               |
| Ardea cinerea | Grey Heron | III  | OL    | LC   | R      | B               |
| Ardea purpurea | Purple Heron | II   | OL    | LC   | S      | B               |
| Ardea alba | Great Egret | II   | OL    | LC   | R      | B               |
| Egretta garzetta | Little Egret | II   | OL    | LC   | R      | B               |
| Pandion haliaetus | Western Osprey | III | II    | LC   | R      | U               |
| Clanga clanga | Greater Spotted Eagle | III | II    | VU   | W      | U               |
| Hiraaetus pennatus | Booted Eagle | III | II    | LC   | R      | U               |
| Accipiter nisus | Eurasian Sparrowhawk | III | II    | LC   | R      | B               |
| Circus aeruginosus | Western Marsh Harrier | III | II    | LC   | R      | B               |
| Circus epeus | Hen Harrier | III  | II    | LC   | R      | U               |
| Milvus migrans | Black Kite | III  | II    | LC   | R      | B               |
| Buteo rufinus | Long-legged Buzzard | III | II    | LC   | R      | B               |
| Buteo buteo | Common Buzzard | III | II    | LC   | R      | B               |
| Tyto alba | Western Barn Owl | II   | II    | LC   | S      | B               |
| Athene noctua | Little Owl | II   | II    | LC   | R      | B               |
| Asio otus | Long-eared Owl | II   | II    | LC   | S      | B               |
| Upupa epops | Eurasian Hoopoe | II   | OL    | LC   | S      | B               |
| Coracias garrulus | European Roller | II | OL    | LC   | S      | B               |
| Merops apiaster | European Bee-eater | II | OL    | LC   | S      | B               |
| Dendrocopos syriacus | Syrian Woodpecker | II  | OL    | LC   | R      | B               |
| Falco tinnunculus | Common Kestrel | II   | II    | LC   | R      | B               |
| Lanius collurio | Red-backed Shrike | II  | OL    | LC   | S      | B               |
| Lanius senator | Woodchat Shrike | II   | OL    | LC   | S      | B               |
| Garrulus glandarius | Eurasian Jay | OL   | OL    | LC   | R      | B               |
| Pica pica | Eurasian Magpie | OL   | OL    | LC   | R      | B               |
| Ciconia monedula | Western Jackdaw | OL   | OL    | LC   | R      | B               |
| Corvus frugilegus | Rook | OL   | OL    | LC   | R      | B               |
| Corvus cornix | Hooded Crow | OL   | OL    | LC   | R      | B               |
| Corvus corax | Northern Raven | III  | OL    | LC   | R      | U               |
| Poecile lugubris | Sombre Tit | II   | OL    | LC   | R      | B               |
| Cyanistes caeruleus | Eurasian Blue Tit | II | OL    | LC   | R      | B               |
| Parus major | Great Tit | II   | OL    | LC   | R      | B               |
| Alauda arvensis | Eurasian Skylark | III | OL    | LC   | R      | B               |
| Calandrella brachydactyla | Crested Lark | III | OL    | LC   | R      | B               |
| Melanocorypha bimaculata | Bimaculated Lark | II | OL    | LC   | S      | B               |
| Melanocorypha calandra | Calandra Lark | II   | OL    | LC   | R      | B               |
| Pycnonotus xanthopygos | White-spectacled Bulbul | III | OL    | LC   | R      | B               |
| Hirundo rustica | Barn Swallow | II   | OL    | LC   | S      | B               |
| Delichon urbicum | Common House Martin | II | OL    | LC   | S      | B               |
| Cercopis daurica | Red-rumped Swallow | II | OL    | LC   | S      | B               |
| Cettia cetti | Cetti’s Warbler | II   | OL    | LC   | R      | B               |
| Scientific Name              | English Name            | BERN | CITES | IUCN | Status | Breeding Status |
|-----------------------------|-------------------------|------|-------|------|--------|-----------------|
| Aegithalos caudatus         | Long-tailed Tit         | III  | OL    | LC   | R      | B               |
| Phylloscopus trochilus       | Willow Warbler          | II   | OL    | LC   | T      | U               |
| Phylloscopus collybita       | Common Chiffchaff       | II   | OL    | LC   | R      | B               |
| Acrocephalus arundinaceus   | Great Reed Warbler      | II   | OL    | LC   | S      | B               |
| Acrocephalus melanopogon    | Moustached Warbler      | II   | OL    | LC   | R      | U               |
| Acrocephalus scirpaceus     | Eurasian Reed Warbler   | II   | OL    | LC   | S      | U               |
| Iduna pallida               | Eastern Olivaceous Warbler | II | OL    | LC   | S      | B               |
| Argya altrastris            | Iraq Babbler            | III  | OL    | LC   | R      | U               |
| Sylvia curruca              | Lesser Whitethroat      | II   | OL    | LC   | S      | B               |
| Sylvia melanocephala        | Sardinian Warbler       | II   | OL    | LC   | R      | B               |
| Sylvia mystacea             | Menetries's Warbler     | II   | OL    | LC   | S      | B               |
| Sitta neumayer              | Western Rock Nuthatch   | II   | OL    | LC   | R      | B               |
| Sitta tephronota            | Eastern Rock Nuthatch   | II   | OL    | LC   | R      | B               |
| Sturnus vulgaris            | Common Starling         | OL   | OL    | LC   | R      | B               |
| Turdus merula               | Common Blackbird        | III  | OL    | LC   | R      | B               |
| Turdus philomelos           | Song Thrush             | III  | OL    | LC   | W      | NB              |
| Cercotrichas galactotes     | Rufous-tailed Scrub Robin | II | OL    | LC   | S      | B               |
| Erithacus rubecula          | European Robin          | II   | OL    | LC   | R      | B               |
| Luscinia megarhynchos       | Common Nightingale      | II   | OL    | LC   | S      | B               |
| Irania guturalis            | White-throated Robin    | II   | OL    | LC   | S      | B               |
| Phoenicurus ochruros        | Black Redstart          | II   | OL    | LC   | W      | NB              |
| Phoenicurus phoenicurus     | Common Redstart         | II   | OL    | LC   | T      | U               |
| Saxicola rubicola           | European Stonechat      | II   | OL    | LC   | S      | U               |
| Saxicola torquatus          | Common Stonechat        | II   | OL    | LC   | R      | U               |
| Saxicola maurus             | Siberian Stonechat      | II   | OL    | LC   | W      | NB              |
| Oenanthe oenanthe           | Northern Wheatear       | II   | OL    | LC   | S      | B               |
| Oenanthe isabellina         | Isabelline Wheatear     | II   | OL    | LC   | S      | B               |
| Oenanthe pleschanka         | Pied Wheatear           | II   | OL    | LC   | S      | B               |
| Oenanthe finschii           | Finschi's Wheatear      | II   | OL    | LC   | R      | B               |
| Oenanthe hispanica          | Black-eared Wheatear    | II   | OL    | LC   | S      | B               |
| Passer domesticus           | House Sparrow           | OL   | OL    | LC   | R      | B               |
| Passer hispaniennis         | Spanish Sparrow         | III  | OL    | LC   | R      | B               |
| Passer monticola            | Dead Sea Sparrow        | III  | OL    | LC   | R      | B               |
| Passer montanus             | Eurasian Tree Sparrow   | III  | OL    | LC   | R      | B               |
| Petronia petronia           | Rock Sparrow            | II   | OL    | LC   | R      | B               |
| Cammoris saxthocollis       | Yellow-throated Sparrow | III  | OL    | LC   | S      | B               |
| Motacilla flava             | Western Yellow Wagtail  | II   | OL    | LC   | S      | B               |
| Motacilla cinerea           | Grey Wagtail            | II   | OL    | LC   | R      | B               |
| Motacilla alba              | White Wagtail           | II   | OL    | LC   | R      | B               |
| Anthus pratensis            | Meadow Pipit            | II   | OL    | NT   | W      | NB              |
| Fringilla coelebs           | Common Chaffinch        | III  | OL    | LC   | R      | B               |
| Chloris chloris             | European Greenfinch     | II   | OL    | LC   | R      | B               |
| Rhodospiza obsoleta         | Desert Finch            | III  | OL    | LC   | R      | B               |
| Linaria cannabina           | Common Linnet           | III  | OL    | LC   | R      | B               |
| Carduelis carduelis         | European Goldfinch      | II   | OL    | LC   | R      | B               |
| Serinus serinus             | European Serin          | II   | OL    | LC   | R      | B               |
| Spinus spinus               | Eurasian Siskin         | II   | OL    | LC   | W      | NB              |
| Emberiza calandra           | Corn Bunting            | III  | OL    | LC   | R      | B               |
| Emberiza citrinella         | Yellowhammer            | II   | OL    | LC   | W      | NB              |
| Emberiza cia                | Rock Bunting            | II   | OL    | LC   | W      | NB              |
| Scientific Name         | English Name       | BERN | CITES | IUCN | Status | Breeding Status |
|-------------------------|-------------------|------|-------|------|--------|-----------------|
| Emberiza caesia         | Cretzschmar's Bunting | II   | OL    | LC   | S      | B               |
| Emberiza melanocephala  | Black-headed Bunting | II   | OL    | LC   | S      | B               |

B: Breeding; NB: Non-Breeding; U: Unknown

According to Kızıroğlu (2015); Resident (R), Summer migrant (S), Winter visitor (W), Transsit migrant (T), Vagrant (V)

According to IUCN (2021), Red List categories; LC: Least concern, NT: Near threatened, VU: Vulnerable, EN: Endangered, CR: Critically endangered

According to BirdLife (2015), BERN categories; II: Annex II, III: Annex III, OL: Out of List

According to BirdLife (2015), CITES categories; II: Annex II, III: Annex III, OL: Out of List

In the light of the data obtained as a result of field studies “Yellow-legged Gull (Larus michahellis)”, Menetries’s Warbler (Sylvia mystacea), “The Iraq Babbler (Argya altirostris)”, “European Stonechat (Saxicola rubicola)”, “Siberian Stonechat (Saxicola maurus)”, “Yellowhammer (Emberiza citrinella)”, “Cretzschmar’s Bunting (Emberiza caesia)”, “Yellow-throated Sparrow (Gymnoris xanthocollis)” are listed as new records for the Kilis province.

Finally, as a result of this study, some species that spread in a limited area (Dead Sea Sparrow “Passer moabiticus”, The Iraq Babbler “Argya altirostris”, Menetries’s Warbler “Sylvia mystacea” and Yellow-throated Sparrow “Gymnoris xanthocollis”) were identified.

4. Conclusion

This study is important as it is the first, regular and long-term research study on the ornithofauna of the area. Among the identified species, it was observed that important species that are in danger of extinction use the area for feeding, breeding, and resting during migration.

According to IUCN Redlist Categories, 2 Vulnerable (Greater Spotted Eagle “Clanga clanga” and European Turtle-dove “Streptopelia turtur”) and 3 Near Threatened (Northern Lapwing “Vanellus vanellus”, Armenian Gull “Larus armenicus” and Meadow Pipit “Anthus pratensis”) were identified (BirdLife International, 2017a, 2017b, 2018, 2019a, 2019b). “European Turtle-dove (Streptopelia turtur)” is a summer migrant and “Northern Lapwing (Vanellus vanellus)” is a resident. In our bird list of the results, European Turtle-dove and Northern Lapwing are given as breeding birds. In Çamuru mound, two pairs of “European Turtle-dove” were observed that reproduce with nests in June 2018. In Save dam, a pair of “Northern Lapwing” was observed that reproduces with nest in May 2017. As a result, Çamuru mound and Save dam are important areas for these species and must be protected.

Also, some species (Yellow-legged Gull “Larus michahellis”, Menetries’s Warbler “Sylvia mystacea”, The Iraq Babbler “Argya altirostris”, European Stonechat “Saxicola rubicola”, Siberian Stonechat “Saxicola maurus”, Yellowhammer “Emberiza citrinella”, Cretzschmar’s Bunting “Emberiza caesia”, Yellow-throated Sparrow “Gymnoris xanthocollis”) are listed as new records for the Kilis province as it is determined that these species were not observed in the literature review.

Finally, in this province the existence of these species (Dead Sea Sparrow “Passer moabiticus”, The Iraq Babbler “Argya altirostris”, Menetries’s Warbler “Sylvia mystacea” and Yellow-throated Sparrow “Gymnoris xanthocollis”), which have spread in a limited area in Turkey, is revealed in our results. Although spread in a limited area, these species, except the Iraq Babbler, are breeding in Kilis.

92 species and 1 subspecies belonging to 38 families were identified in the study to determine the bird diversity between 2003 and 2004 in Gaziantep province, which is approximately 45 km northeast of the Kilis province (Toprak et al., 2008). 69 species detected in the study conducted by Toprak et al. (2008) were also detected in our study. However, 24 species detected in the study conducted by Toprak et al. (2008) were not detected in our study. In the study conducted by Toprak et al. (2008), 61 species detected in our study were not detected. These 61 species include both the new records species for the Kilis province and the species which have spread in a limited area in Turkey. 361 species belonging to 68 families were identified in Hatay province, which is approximately 103 km southwest of the Kilis province (Atahan et al., 2008; Ünal, 2016; Lepage, 2021). Hatay has such a large variety of birds, due to its location on an important bird migration route. However, The Iraq Babbler “Argya altirostris”, Yellow-throated Sparrow “Gymnoris xanthocollis” and Dead Sea Sparrow “Passer moabiticus” species detected as new records for Kilis province could not be detected in the province of Hatay. This results indicates that these ornithological studies should be repeated regularly in order to follow the distribution status of the species.

Threats such as excessive use of pesticides due to agricultural activities, destruction of nests, excessive use of water, habitat destruction, poaching, and burning of reeds were determined for all bird species during the field studies conducted within the scope of the Biodiversity inventory of Kilis province. The amounts of punishment and counts of inspection should be increased in order to prevent the catching of the species and poaching. In order to prevent excessive use of pesticides and destruction of nests, inspections should be increased and awareness raising meetings should be held for local people. The activities that cause habitat destruction should not be allowed to be carried out in or near the areas where the birds are densely populated; however, if it must be done, it should be done by considering the annual life cycles of the birds such as breeding and hatching. Excessive and unconscious water use should be prevented through local public awareness meetings, administrative fines, and legal regulations. Lastly, hunting the “European Turtle-dove (Streptopelia turtur)”, which is protected on a world scale, should be banned by the Central Hunting Commission Decisions as soon as possible.

Although, in the literature review, it was determined that this province’s bird species list consists of 271 species belonging to 57 families (Kızıroğlu, 2015; Anonim, 2020c), results of this study determined 129 species belonging to
43 families. It is stated in the literature study that the main reason why some bird species cannot be observed in the field studies is the water shortage due to the excessive use in 2017 and 2018. Due to the decrease of water in rivers, dams and ponds, bird species that need their feeding and breeding depending on the water or water edge prefer suitable regions outside the province. For example; the ducks and shore birds determined during the every Mid-Winter Water Bird (KOSK) counts in the Küplüce, Seve and Balılık ponds was not determined during the 2018 KOSK counts due to the excessive water decrease. To summarize, when the literature data is compared with the field surveys, the ornithofauna of the Kilis consists of 280 bird species belonging to 61 families. If these results are considered as a whole, 280 bird species, which were determined in Kilis province, correspond to more than half of the Turkey’s bird list.

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