

## Research Article

# Diversity and Distribution of Avian Fauna of Swat, Khyber Pakhtunkhwa, Pakistan

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This survey was conducted from January 2013 to December 2013 to explore the avian fauna of Swat valley and to find out the major threats to the avian fauna of the area as it was neglected for years. Direct and indirect methods were used in the study by visiting the field and by interviewing the local peoples and hunters about the current and past status of the avian fauna of the area. During the current study direct and indirect methods were used. A total of 138 species were recorded belonging to 13 orders and 48 families. The order Passeriformes were recorded much in number that were 31 species. Most of the birds were migratory and few were resident. The fauna was very rich due to the flora of the area and also due to less hunting. Orders Anseriformes, Apodiformes, Charadriiformes, Columbiformes, Pelecaniformes, Phoenicopteriformes, and Psittaciformes were found migratory and orders Ciconiiformes, Coraciiformes, Galliformes, and Piciformes were found resident while some members of Gruiformes and Passeriformes were found migratory and some resident.

## 1. Introduction

Birds are one of the most popular life forms on the planet, and their diversity leads to a richness of life and beauty. Apart from this, birds have always fascinated mankind with their intrinsically beautiful plumage, melodious songs, and artistic behavior. There are around 9000 species of birds living in the world today, with a tremendous diversity of life style. Besides this, birds are valuable for many aspects; that is, they are a sensitive indicator of pollution and also play great role in pest control.

The bird species are friends of farmers who believe that bird consumes large numbers of harmful insects, as well as their eggs and larvae, which serves as a biological control agent of insect pests in Pakistan [1, 2].

Birds are of great economic importance to the human society. They play an important role in controlling population of different insects and pests. They play the role of scavengers and pollinating agents and also help in the dispersal of seeds of vegetation. They are helpful and help to provide rich food for mankind and are known to man since ages [3].

Wildlife management and conservation initiatives are only possible with the appropriate information on wildlife and its habitat [4]. Wildlife habitat basically comprises food, cover, and water. Each species requires a particular habitat or the space, food, shelter, and other needs of survival so much so that species are said to be the product of their habitat [5].

With regard to birds, the total number of birds species in the world today is 9040 and the total number of taxa of birds of Indo-Pakistan subcontinent is 2060 [6]. The variety of avian species in ecosystems reflects the well-being of its habitat. Birds are the indicators of environment and are being used for conservation and environmental impact assessment [7].

Of course, the Indian subcontinent, a part of the vast Oriental biogeographic regions, is very rich in biodiversity. Out of more than 9,000 birds of the world, the Indian subcontinent contains about 1,300 species, or over 13% of the world's birds [8].

Pakistan harbors a wide range of ecosystems which in turn catches the attention of a diverse avifauna to exploit their resources [9]. More than 650 species of birds have

been reported in the country and their occurrence in three zoogeographical zones (Oriental, Palaearctic, and Ethiopian regions) is unique in the world [10, 11].

Although the bird is intensively hunted and captured in its native range in Pakistan, owing to which local populations could be declining, the overall status of the species is regarded as stable [12–14]. The species is a friend of farmers who believe this bird consumes large numbers of harmful insects, as well as their eggs and larvae, and serves therefore as a biological control agent of insect pests in Pakistan [1, 2].

The bird is normally found foraging in open cultivated tracks and grasslands intermixed with scrub forests and is rarely observed above an elevation of 1200 m in Pakistan [15]. The Grey Francolin (*Francolinus pondicerianus*) is widely associated with the drier regions of the Indus plains and has penetrated the Thar Desert in Sindh, as well as the Thal and Cholistan deserts in Punjab. The species also occurs in the lower hills of the Makran and Lasbela districts in Balochistan, the Cherat and Kohat districts of Khyber Pakhtunkhwa province, the salt range and agroforestry tracks of the Pothwar Plateau in Punjab, and the Margalla hills of Islamabad [16–18].

In Khyber Pakhtunkhwa the wild fauna is rich and its wildlife flourishing in forests is a precious heritage of the country but due to motorized and ground hunting these wildlife species were driven to a point of extinction. For this purpose it is necessary to provide the best protection to wildlife in Khyber Pakhtunkhwa; therefore several areas were declared as protected areas [19].

The present study was conducted with the following aims:

- (1) to explore the avian fauna of Swat valley,
- (2) to find out the major threats to the Avian fauna of the valley,
- (3) to differentiate between migratory and endemic birds.

## 2. Methods and Materials

**2.1. Study Area.** The historic Swat Valley lies between 34°–40' to 35°N latitude and 72' to 74°–6'E longitude and is part of the Federally Administered Tribal Areas (FATA) of the Khyber Pakhtunkhwa province of Pakistan. Total area is 5,337 km<sup>2</sup>, total population is 1,257,602, and capital is Saidu Sharif.

The survey was conducted from January 2013 to December 2013. The data was collected by using the direct and indirect methods in order to study the present status of avian fauna of the district Swat. Direct data collection will be made by visiting the study area once or twice a day early in the morning at 8:00 am till sunset. The bird fauna were observed using binoculars and the status of each bird was stated as follows: M is migratory; R is resident; C is common; r is rare; WM is winter migrant; and SM is summer migrant.

In indirect data collection, hunters, wildlife staff, local residents, farmers, and other knowledgeable persons were interviewed about the present and past status of the birds diversity of the study area. The main focus was made by visiting study area rather than relaying the data which was collected indirectly.

## 3. Results

The survey was conducted from January 2013 to December 2013. In this survey total 138 species were recorded which belong to 13 orders and 48 families (see Table 1). The fauna of the study area was rich due to the current cease fire in the district Swat due to the current terrorism situation in the area. Most of the birds were migratory. Orders Anseriformes, Apodiformes, Charadriiformes, Columbiformes, Pelecaniformes, Phoenicopteriformes, and Psittaciformes were found migratory and orders Ciconiiformes, Coraciiformes, Galliformes, and Piciformes were found resident while some members of Gruiformes and Passeriformes were found migratory and some resident.

Feeding and habitat availability play an important role in the diversity and distribution of the avian fauna of area. The flora of the study area was rich and due to the thick flora the study area was bearing rich avian fauna. As the flora of the study area was very thick the Quails and Grey Partridge were found in large numbers as there were many places of shelters for their breeding and other activities.

It was observed that the birds were hunted but the hunting ratio was low due to the current situation of terrorism in Swat; therefore the bird fauna was rich. In our study the *Alectoris chukar* was found widely in many numbers due to less hunting in the study area due to the cease fire in Swat.

During the survey total 15 species belonging to family Anatidae were recorded and all were summer migratory (SM); all the species were rare (r) except *Mergus merganser* which was common. The species of family Apodidae were found migratory and were rare in number. Most of the species of the order Charadriiformes were found migratory and were summer migratory (SM) and were found to be common, while *Vanellus vanellus* was winter migratory (WM) and was recorded as rare (r). All species of the families Ardeidae and Ciconiidae were found resident (R) but were rare in numbers. The species of family Columbidae were found migratory (M), and all were found as common (C) except *Chalcophaps indica*, *Treron pompadora*, and *Treron phoenicoptera* which were rare in numbers. The species of the order Coraciiformes were resident (R) and were common (C), while *Upupa epops* was found rare (r). The members of family Phasianidae were resident (R) and were found as common. The members of the families Turnicidae and Rallidae were resident (R) and were common (C), while the members of family Gruidae were migratory (M) and were also noted as common (C). Most of the species of the order Passeriformes were resident (R) and were common except *Sturnus vulgaris*, *Hirundo rustica*, and *Terpsiphone paradise* which were found to be winter migratory (WM) and were common, while *Dicrurus macrocercus* and *Carpodacus pulcherrimus* were summer migratory (SM) and were common. All members of the order Pelecaniformes were summer migratory (SM) and were found common. Species of the order Phoenicopteriformes were found summer migratory (SM) and were rare in numbers. The *Dendrocopos moluccensis* was the only member of family Picidae recorded during the study and was resident (R) and was found as rare (r). Members of family Psittacidae were found migratory (M) and were common.

TABLE 1: Table showing the details of species recorded during the study.

Order	Family	Scientific name	Local name	Status
Anseriformes	Anatidae	<i>Aythya baeri</i>	Shingare	M (SM) (r)
Anseriformes	Anatidae	<i>Anas formosa</i>	Shingare	M (SM) (r)
Anseriformes	Anatidae	<i>Tadorna ferruginea</i>	Shingare	M (SM) (r)
Anseriformes	Anatidae	<i>Anas falcate</i>	Shingare	M (SM) (r)
Anseriformes	Anatidae	<i>Anas strepera</i>	Shingare	M (SM) (r)
Anseriformes	Anatidae	<i>Anas crecca</i>	Shingare	M (SM) (r)
Anseriformes	Anatidae	<i>Anas platyrhynchos</i>	Shingare	M (SM) (r)
Anseriformes	Anatidae	<i>Anas poecilorhyncha</i>	Shingare	M (SM) (r)
Anseriformes	Anatidae	<i>Anas acuta</i>	Shingare	M (SM) (r)
Anseriformes	Anatidae	<i>Anas clypeata</i>	Shingare	M (SM) (r)
Anseriformes	Anatidae	<i>Aythya ferina</i>	Shingare	M (SM) (r)
Anseriformes	Anatidae	<i>Aythya nyroca</i>	Shingare	M (SM) (r)
Anseriformes	Anatidae	<i>Clangula hyemalis</i>	Shingare	M (SM) (r)
Anseriformes	Anatidae	<i>Bucephala clangula</i>	Shingare	M (SM) (r)
Anseriformes	Anatidae	<i>Mergus merganser</i>	Shingare	M (SM) (C)
Apodiformes	Apodidae	<i>Tachymarptis melba</i>	Lagarai	M (r)
Apodiformes	Apodidae	<i>Cypsiurus balasiensis</i>	Lagarai	M (r)
Apodiformes	Apodidae	<i>Apus apus</i>	Lagarai	M (r)
Apodiformes	Apodidae	<i>Apus pacificus</i>	Lagarai	M (r)
Apodiformes	Apodidae	<i>Apus nipalensis</i>	Lagarai	M (r)
Apodiformes	Apodidae	<i>Apus pallidus</i>	Lagarai	M (r)
Charadriiformes	Scolopacidae	<i>Limosa lapponica</i>	Tum Tel	M (SM) (C)
Charadriiformes	Scolopacidae	<i>Calidris ferruginea</i>	Tum Tel	M (SM) (C)
Charadriiformes	Scolopacidae	<i>Lymnocyptes minimus</i>	Chaghat	M (SM) (C)
Charadriiformes	Scolopacidae	<i>Calidris acuminata</i>	Tum Tel	M (SM) (C)
Charadriiformes	Scolopacidae	<i>Limicola falcinellus</i>	Tum Tel	M (SM) (C)
Charadriiformes	Scolopacidae	<i>Actitis hypoleucos</i>	Tum Tel	M (SM) (C)
Charadriiformes	Scolopacidae	<i>Calidris alpina</i>	Tum Tel	M (SM) (C)
Charadriiformes	Scolopacidae	<i>Calidris alba</i>	Tum Tel	M (SM) (C)
Charadriiformes	Scolopacidae	<i>Calidris temminckii</i>	Tum Tel	M (SM) (C)
Charadriiformes	Dromadidae	<i>Dromas ardeola</i>	Tum Tel	M (SM) (C)
Charadriiformes	Recurvirostridae	<i>Himantopus himantopus</i>	Tum Tel	M (SM) (C)
Charadriiformes	Glareolidae	<i>Cursorius cursor</i>	Tum Tel	M (SM) (C)
Charadriiformes	Glareolidae	<i>Cursorius coromandelicus</i>	Tum Tel	M (SM) (C)
Charadriiformes	Charadriidae	<i>Vanellus vanellus</i>	Babozai	M (WM) (r)
Charadriiformes	Charadriidae	<i>Charadrius hiaticula</i>	Tum Tel	M (SM) (C)
Charadriiformes	Charadriidae	<i>Vanellus leucurus</i>	Tum Tel	M (SM) (C)
Charadriiformes	Charadriidae	<i>Charadrius mongolus</i>	Tum Tel	M (SM) (C)
Charadriiformes	Stercorariidae	<i>Stercorarius pomarinus</i>	Tum Tel	M (SM) (C)
Charadriiformes	Laridae	<i>Larus canus</i>	—	M (SM) (C)
Charadriiformes	Laridae	<i>Larus heuglini</i>	Tum Tel	M (SM) (C)
Charadriiformes	Laridae	<i>Larus ridibundus</i>	Tum Tel	M (SM) (C)
Charadriiformes	Rostratulidae	<i>Rostratula benghalensis</i>	Tum Tel	M (SM) (C)
Charadriiformes	Haematopodidae	<i>Haematopus ostralegus</i>	Tum Tel	M (SM) (C)
Ciconiiformes	Ardeidae	<i>Ardea modesta</i>	Bagh	R (r)
Ciconiiformes	Ardeidae	<i>Ixobrychus flavicollis</i>	Bagh	R (r)
Ciconiiformes	Ardeidae	<i>Nycticorax nycticorax</i>	Bagh	R (r)
Ciconiiformes	Ardeidae	<i>Ardea cinerea</i>	Bagh	R (r)
Ciconiiformes	Ardeidae	<i>Ardea goliath</i>	Bagh	R (r)

TABLE 1: Continued.

Order	Family	Scientific name	Local name	Status
Ciconiiformes	Ardeidae	<i>Ardea purpurea</i>	Bagh	R (r)
Ciconiiformes	Ardeidae	<i>Egretta intermedia</i>	Bagh	R (r)
Ciconiiformes	Ardeidae	<i>Egretta gularis</i>	Bagh	R (r)
Ciconiiformes	Ardeidae	<i>Egretta garzetta</i>	Bagh	R (r)
Ciconiiformes	Ardeidae	<i>Ardeola grayii</i>	Bagh	R (r)
Ciconiiformes	Ardeidae	<i>Bubulcus ibis</i>	Bagh	R (r)
Ciconiiformes	Ardeidae	<i>Butorides striata</i>	Bagh	R (r)
Ciconiiformes	Ardeidae	<i>Ixobrychus minutus</i>	Bagh	R (r)
Ciconiiformes	Ardeidae	<i>Ixobrychus cinnamomeus</i>	Bagh	R (r)
Ciconiiformes	Ciconiidae	<i>Ciconia nigra</i>	Zanrai	R (C)
Ciconiiformes	Ciconiidae	<i>Ephippiorhynchus asiaticus</i>	Zanrai	R (C)
Ciconiiformes	Ciconiidae	<i>Ciconia ciconia</i>	Zanrai	R (C)
Columbiformes	Columbidae	<i>Chalcophaps indica</i>	Toti ranga kautara	M (SM) (r)
Columbiformes	Columbidae	<i>Streptopelia decaocto</i>	Kautara	M (SM) (C)
Columbiformes	Columbidae	<i>Columba livia</i>	Shna Kautara	M (SM) (C)
Columbiformes	Columbidae	<i>Columba rupestris</i>	Shna Kautara	M (SM) (C)
Columbiformes	Columbidae	<i>Columba leuconota</i>	Kautara	M (SM) (C)
Columbiformes	Columbidae	<i>Columba eversmanni</i>	Banj karoro kautara	M (SM) (C)
Columbiformes	Columbidae	<i>Columba palumbus</i>	Shna Kautara	M (SM) (C)
Columbiformes	Columbidae	<i>Columba hodgsonii</i>	Tapasai kautara	M (SM) (C)
Columbiformes	Columbidae	<i>Streptopelia turtur</i>	Kanra kautara	M (SM) (C)
Columbiformes	Columbidae	<i>Streptopelia chinensis</i>	Kautara	M (SM) (C)
Columbiformes	Columbidae	<i>Streptopelia senegalensis</i>	Spalama kautara	M (SM) (C)
Columbiformes	Columbidae	<i>Treron pompadora</i>	Toti ranga kautara	M (SM) (r)
Columbiformes	Columbidae	<i>Treron phoenicoptera</i>	Toti ranga kautara	M (SM) (r)
Columbiformes	Columbidae	<i>Streptopelia orientalis</i>	Karkorai kautara	M (SM) (C)
Coraciiformes	Alcedinidae	<i>Halcyon pileata</i>	Shentagh	R (C)
Coraciiformes	Alcedinidae	<i>Alcedo atthis</i>	Shentagh	R (C)
Coraciiformes	Alcedinidae	<i>Megaceryle lugubris</i>	Mula chargakh	R (C)
Coraciiformes	Coraciidae	<i>Coracias garrulus</i>	Shentagh	R (C)
Coraciiformes	Upupidae	<i>Upupa epops</i>	Mula chargakh	M (r)
Galliformes	Phasianidae	<i>Alectoris chukar</i>	Zarka	R (C)
Galliformes	Phasianidae	<i>Francolinus francolinus</i>	Taro	R (C)
Galliformes	Phasianidae	<i>Francolinus pondicerianus</i>	Tanzarai	R (C)
Galliformes	Phasianidae	<i>Coturnix coturnix</i>	Batair	R (C)
Galliformes	Phasianidae	<i>Coturnix coromandelica</i>	Batair	R (C)
Galliformes	Phasianidae	<i>Perdicula asiatica</i>	Batair	R (C)
Galliformes	Phasianidae	<i>Lophophorus impejanus</i>	Late	R (C)
Galliformes	Phasianidae	<i>Catreus wallichii</i>	Sham	R (C)
Galliformes	Phasianidae	<i>Lophura leucomelanos</i>	Taro	R (C)
Gruiformes	Turnicidae	<i>Turnix suscitator</i>	Nwaraz	R (C)
Gruiformes	Turnicidae	<i>Turnix sylvatica</i>	Nwaraz	R (C)
Gruiformes	Gruidae	<i>Grus antigone</i>	Deng	M (C)
Gruiformes	Gruidae	<i>Grus nigricollis</i>	Deng	M (C)
Gruiformes	Gruidae	<i>Anthropoides virgo</i>	Deng	M (C)
Gruiformes	Rallidae	<i>Gallixrex cinerea</i>	Khwar chargai	R (C)
Gruiformes	Rallidae	<i>Gallinula chloropus</i>	Khwar chargai	R (C)
Passeriformes	Sturnidae	<i>Sturnus vulgaris</i>	Sakhakha	M (WM) (C)
Passeriformes	Sturnidae	<i>Acridotheres ginginianus</i>	Kharoo	R (C)
Passeriformes	Sturnidae	<i>Acridotheres tristis</i>	Kharoo	R (C)

TABLE 1: Continued.

Order	Family	Scientific name	Local name	Status
Passeriformes	Zosteropidae	<i>Zosterops palpebrosus</i>	Zyar chatai	R (C)
Passeriformes	Dicaeidae	<i>Dicaeum erythrorhynchos</i>	Chatai	R (C)
Passeriformes	Passeridae	<i>Passer domesticus</i>	Chanchanra	R (C)
Passeriformes	Corvidae	<i>Corvus splendens</i>	Kargha	R (C)
Passeriformes	Corvidae	<i>Corvus corone</i>	Kagha	R (C)
Passeriformes	Leiotherichidae	<i>Turdoides caudata</i>	Soorra	R (C)
Passeriformes	Hirundinidae	<i>Hirundo rustica</i>	Totakarkai	M (WM) (C)
Passeriformes	Dicruridae	<i>Dicrurus macrocercus</i>	Toranakha	M (SM) (C)
Passeriformes	Monarchidae	<i>Terpsiphone paradise</i>	Partoghakhai	M (WM) (C)
Passeriformes	Certhiidae	<i>Certhia himalayana</i>	Tak takai	R (r)
Passeriformes	Ploceidae	<i>Ploceus philippinus</i>	Tan tanai	R (C)
Passeriformes	Laniidae	<i>Lanius vittatus</i>	Teghak	R (r)
Passeriformes	Fringillidae	<i>Carpodacus pulcherrimus</i>	Sur sare	M (SM) (C)
Passeriformes	Pycnonotidae	<i>Pycnonotus atriceps</i>	Balbala	R (C)
Passeriformes	Pycnonotidae	<i>Pycnonotus leucogenys</i>	Balbala	R (C)
Passeriformes	Pycnonotidae	<i>Pycnonotus leucotis</i>	Balbala	R (C)
Passeriformes	Pycnonotidae	<i>Pycnonotus cafer</i>	Balbala	R (C)
Passeriformes	Emberizidae	<i>Emberiza melanocephala</i>	Tan tanai	R (C)
Passeriformes	Emberizidae	<i>Emberiza fucata</i>	Chanchanra	R (C)
Passeriformes	Emberizidae	<i>Melophus lathami</i>	Tan tanai	R (C)
Passeriformes	Motacillidae	<i>Motacilla alba</i>	Sper lakai	R (C)
Passeriformes	Motacillidae	<i>Motacilla madaraspatisensis</i>	Sper lakai	R (C)
Passeriformes	Motacillidae	<i>Motacilla citreola</i>	Sper lakai	R (C)
Passeriformes	Motacillidae	<i>Motacilla lugens</i>	Sper lakai	R (C)
Passeriformes	Campephagidae	<i>Pericrocotus erythropygius</i>	Tan tanai	R (C)
Passeriformes	Regulidae	<i>Regulus regulus</i>	Tan tanai	R (C)
Passeriformes	Aegithinidae	<i>Aegithina tiphia</i>	Tan tanai	R (C)
Passeriformes	Cinclidae	<i>Cinclus pallasii</i>	Dabagai	R (C)
Pelecaniformes	Phaethontidae	<i>Phaethon aethereus</i>	Batha	M (SM) (C)
Pelecaniformes	Pelecanidae	<i>Pelecanus onocrotalus</i>	Batha	M (SM) (C)
Pelecaniformes	Pelecanidae	<i>Pelecanus philippensis</i>	Batha	M (SM) (C)
Pelecaniformes	Pelecanidae	<i>Pelecanus crispus</i>	Batha	M (SM) (C)
Pelecaniformes	Anhingidae	<i>Anhinga melanogaster</i>	Batha	M (SM) (C)
Phoenicopteriformes	Phoenicopteridae	<i>Phoenicopus roseus</i>	Deng	M (SM) (r)
Phoenicopteriformes	Phoenicopteridae	<i>Phoenicopus minor</i>	Deng	M (SM) (r)
Piciformes	Picidae	<i>Dendrocopos moluccensis</i>	Tak takai	R (r)
Psittaciformes	Psittacidae	<i>Psittacula krameri</i>	Toti	M (C)
Psittaciformes	Psittacidae	<i>Psittacula himalayana</i>	Toti	M (C)
Psittaciformes	Psittacidae	<i>Psittacula cyanocephala</i>	Toti	M (C)

#### 4. Discussion

The food availability, feeding, and habitats may be the main factors of variation in the birds population slightly than any other risk [20]. In our study it was found that feeding and habitat availability play important roles in the diversity and distribution of the avian fauna of area. The flora of the study area was rich and due to the thick flora the study area was bearing rich avian fauna.

The birds are intensively hunted and captured in their native range in Pakistan, owing to which local populations

could be declining, but the overall status of the species is regarded as stable [12–14]. In our study it was observed that the birds were hunted but the hunting ratio was low due to current situation of terrorism in Swat; therefore the bird fauna was rich.

To avoid the severe winter season a large number of birds migrate from central Asian countries and Europe towards wetlands of Pakistan. There are seven fly zones all over the world in which one zone (Indus fly zone) is present in Pakistan. The birds reach Pakistan flying over Karakorum, Sulaiman Ranges, and Hindu Kush along the Indus River.

Falcons, cranes, swans, ducks, flamingos, waders, and geese are important migratory birds in host country [21]. Similarly in our study the migratory birds recorded were ducks, geese, and swans, which were mostly summer visitors.

Birds are normally found foraging in open cultivated tracks and grasslands intermixed with scrub forests and are rarely observed above an elevation of 1200 m in Pakistan [22]. The elevation of the study area ranges from 4500 to over 6000 meters.

Rose ringed parakeet, house crow, house sparrow, mynas, and bulbuls were common among the resident birds, while kingfisher, koel, rollers, and tree pie were rare in number and have small spread families [23]. House sparrow, house crow, myna, and bulbul were recorded as residential and abundant as also reported previously [24, 25]. In our study the resident birds were chukars, pheasants, house crow, house sparrow, mynas, and bulbuls which are quite similar to the previous studies.

Common sandpiper is common winter visitor to Azad Kashmir. Plumbeous redstart and river chats are also common and locally migrant [25]. Similarly in our study sandpipers were found as winter visitors.

*Alectoris chukar* has worldwide distribution, which is found in India, Afghanistan, Middle East, and western Himalayas, east to central Nepal [6]. In Pakistan, *Alectoris chukar* is very adaptable to all kinds of the arid, rocky, and hilly country ascending to the higher mountain valleys of the inner Himalayas ranges [15] and bare, arid hillside of the Punjab and western Himalayas [26]. It is distributed throughout Pakistan in certain places, that is, Punjab, Sind, Baluchistan, Chitral, Salt range, Swat, Kohistan, and Gilgit [15, 26]. This bird is also found throughout the AJK [27]. In our study the *Alectoris chukar* was found widely in many numbers due to less hunting in the study area due to the cease fire in the Swat.

The Grey Francolin (*Francolinus pondicerianus*) is widely associated with the drier regions of the Indus plains and has penetrated the Thar Desert in Sindh, as well as the Thal and Cholistan deserts in Punjab. The species also appears in the lower hills of the Makran and Lasbela districts in Balochistan, the Cherat and Kohat districts of Khyber Pakhtunkhwa province, the salt range and agroforestry tracks of the Pothwar Plateau in the Punjab, and the Margalla hills of Islamabad [17, 18]. In our study the Grey Francolin was found in many numbers.

The Quail carries out all its vital functions (feeding and nest-building) in the herbaceous strata of natural coastal grasslands (abundant grasses), high altitude prairies (e.g., uncultivated land in the Aveyron and Capcir, France) or, as for the Grey Partridge *Perdix perdix*, the grassy areas of open agrosystems (with the notable exception of ryegrass). The Quail prefers cover which, although dense enough to provide protection, allows fluid movements, hence the choice of alfalfa, winter barley, and winter wheat when still green and showing abundant basal leaves or early shoots [28]. As the flora of the study area was very thick, the Quails and Grey Partridge were found in large numbers as there were many places of shelters for their breeding and other activities.

Red Turtle Dove is summer visitor and spotted dove is common [15]. The work of [25] reported its status as common. This species is found in Himalaya and Kashmir but locally migrant [24]. In our study the Rock Pigeon, Hill Pigeon, Snow Pigeon, Pale-backed Pigeon, Common Wood-Pigeon, Speckled Wood-Pigeon, Eurasian Turtle Dove, and other members of the same family were recorded as migratory and were found to be summer visitors.

## 5. Conclusion

Hunting and habitat destruction are major threats to wildlife. Fauna of an area depends on the flora present in the area because it provides food and shelter to the fauna and destruction of the habitats also results in the elimination or migration of species. The avian fauna of the study area was rich because the flora was thick. Hunting in the study area was very much loss due to the cease fire in Swat due to the current situation of terrorism in Swat. It was concluded from the current study that hunting and habitat destruction are the major threats to the wildlife.

## Conflict of Interests

The authors declare that there is no conflict of interests regarding the publication of this paper.

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