A provisional checklist of the avifauna of Turaif province, the Kingdom of Saudi Arabia

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Abstract

The richness and diversity of avian species inhabiting Turaif province of Saudi Arabia were surveyed for a period of one-year (2014–2015) using walked belt transects in different habitats of the studied area. Bird species were observed and recorded by sightings or vocal calls. A total of thirty-three bird species belonging to fifteen families were observed across all the surveys in the Turaif area. During a breeding season, species abundance was higher as compared to non-breeding season. Out of 33, eighteen species were passage migrants and fifteen species were noted as breeding residents. Family Muscicapidae which showed the highest proportion (24.24%) was represented by 8 bird species followed by family Alaudidae and family Falconidae represented by 4 species each. According to this survey relatively a fair quantity of bird species still exists in the Turaif region. This area is of significant interest in terms of conservation of birds due to higher densities of endemic, breeding or resident avian species.

1. Introduction

Assessment of the richness and distribution of species is fundamental to the fields of population biology and ecology (Bibby et al., 2000; Sutherland, 2006). Information on abundance, richness or threats of any species are vital not only for detecting key conservation areas (Fishpool, and Evans, 2001; Manu et al., 2010) but also to assess the conservation position of the species, for instance, the species which has been categorized or ranked as threatened Species according to IUCN Red List. A dynamic, definitive list would serve as a standard to the user community on the species richness of a particular region.

The Arabian Peninsula with varied climatic conditions, unique and diverse habitats, desert and coastal areas attracts and supports different avian species throughout the different seasons of the year. In spite of the wide and varied topography of the northern province of Saudi Arabia, reports on the abundance of its native terrestrial fauna in general and avifauna in particular has not been explored well (Al-Sadoon et al., 2016). Apparently, there is a scarcity of detailed account of common birds inhabiting different habitats of Saudi Arabia. In the last few decades, check-lists (Stagg, 1985, 1987), notes and articles (Gasperetti and Gasperetti, 1981; Palfrey, 1988), and account in different books (Jennings, 2010) regarding the bird fauna of Saudi Arabia were published (Symens, 1988a, 1988b). Lees-Smith (1986) reported on the checklist of south-western Arabian avifauna.

In the present survey, we present a provisional checklist of the birds of the Turaif region and this is the first attempt to explore the abundance and distribution of avifauna around the Turaif province of the Kingdom of Saudi Arabia.

2. Material and methods

This survey was conducted in Turaif province (31°40'39"N 38°39'11"E) situated in the northern west of Saudi Arabia, during different seasons of the year (2014–2015). This region is known for its unique geomorphology and topography occupied by different types of landscape, like Sandy habitat, Mountain habitat, Highland habitat, Wetland habitat, and Sabkha habitats occupied by a wide range of biodiversity. The ambient temperatures range from below the freezing point to 45 °C, whereas, mean annual precipitation recorded in December is 14.3 mm to 5.4 mm in March, however, in June–July precipitation recorded is 0 mm (Al-Sadoon et al., 2017).
Six belt transects (1 km by 200 m) were selected, two in each of the three types of habitats. The transects were not established in other habitat types such as Mountain and Highland habitats. The entire area was surveyed during the different months of the year, beginning in November 2014, and ending in October 2015. Four field visits were made to record the avifauna of different locations of the study area. Surveys of these habitats were carried out in the early hours between sunrise and mid-morning (6am–10am) within the survey period. One observer following a straight line walked each transect lacking much vegetation, but deviating from the center line in the vegetation transects, to discover any birds prowling inside or behind bushes. The birds observed on the transects were counted, identified and recorded. The birds were also observed either by binocular (Jeory 6 × 30) or by naked eyes depending upon the distance. The birds were identified and classified using the field guide about the birds of the middle east by Stagg (1984)

Animal procedures were in accordance with the standards set forth in the guidelines for the care and use of experimental animals by the King Saud University, Riyadh; Kingdom of Saudi Arabia.

3. Results

The checklist of diverse species of birds observed by the authors along the transects are shown in the Table 1. The surveyed region was visited for a period of 7–9 days, 5 times a year most of the field survey effort was assigned to the breeding seasons which usually commence in spring and summer (March-July). In total, thirty-three avian species belonging to fifteen families were observed/recorded across all the five surveys in the Turaif region. Eighteen species were passage migrants and 15 species were noted as breeding residents recorded across all seasons of the survey (Table1). There was not an even distribution of the number of bird species across fifteen identified families. Among 15 families, the Muscicapidae was represented by 8 species, accounting for 24.24% of the total of 33 avian species recorded in the 12 months’ survey period (Fig. 1). Two families, Alaudidae and Falconidae were represented by 4 species each (12.12%), accounting for 24.24% of the total species (Fig. 1). Five families namely Turdidae, Motacillidae, Sylviidae, Columbidae and Scolopacidae were characterized by

Table 1
List of bird species recorded in the study area during the study period (2014–2015).

| Family            | Common name           | Species name (Authority) | Status in Turaif | Endemic in Arabia |
|-------------------|-----------------------|--------------------------|-----------------|-------------------|
| Muscicapidae      | Black Redstart        | Phoenicurus ochrurus (Gmelin, 1774) | PM* Yes         | Yes               |
|                   | Robin                 | Erithacus rubecula (Linnaeus, 1758) | PM* Yes         |                   |
|                   | Bluethroat            | Luscinia svecia (Linnaeus, 1758) | PM* Yes         |                   |
|                   | Isabelline Wheatear   | Oenanthe isabellina (Temminck, 1829) | PM* Yes         |                   |
|                   | Desert Wheatear       | Oenanthe deserti (Temminck, 1825) | PM* Yes         |                   |
|                   | Red-rumped Wheatear   | Oenanthe moesta (Lichtenstein, 1823) | BR Yes          |                   |
|                   | Finsch’s Wheatear     | Oenanthe finschi (Heuglin, 1869) | BR Yes          |                   |
|                   | Stonechat             | Saxicola torquatus (Linnaeus, 1766) | PM* Yes         |                   |
| Fringillidae      | Chaffinch             | Fringilla coelebs Linnaeus, 1758 | PM No           |                   |
| Apodidae          | Common swift          | Apus apus (Linnaeus, 1758) | PM* Yes         |                   |
| Turdidae          | Song Thrush           | Turdus philomelos (Brehm, 1831) | PM Yes          |                   |
|                   | Blackbird             | Turdus merula (Linnaeus, 1758) | PM Yes          |                   |
| Motacillidae      | White Wagtail         | Motacilla alba (Linnaeus, 1758) | BR Yes          |                   |
|                   | Meadow pipit          | Anthus pratensis (Linnaeus, 1758) | PM Yes          |                   |
| Sylviidae         | Garden Warbler        | Sylvia borin (Boddaert, 1783) | BR Yes          |                   |
|                   | Green Warbler         | Phylloscopus nitidus (Blyth, 1843) | PM No           |                   |
| Columbidae        | Rock dove             | Columba livia (Gmelin, 1789) | BR Yes          |                   |
|                   | Laughing Dove         | Spilopelia senegalensis (Linnaeus, 1766) | BR Yes        |                   |
| Alaudidae         | Crested Lark          | Galerida cristata (Linnaeus, 1758) | BR Yes          |                   |
|                   | Hoopoe Lark           | Alamaen alaudipes (Desfontaines, 1789) | BR Yes        |                   |
|                   | Desert Lark           | Ammomanes deserti (Lichtenstein, 1823) | BR Yes        |                   |
|                   | Temminck’s horned Lark| Eremophila bilooba (Temminck, 1823) | BR Yes          |                   |
| Upupidae          | Hoopoe                | Upupa epops (Linnaeus, 1758) | BR Yes          |                   |
| Passeridae        | House Sparrow         | Passer domesticus (Linnaeus, 1758) | BR Yes          |                   |
| Corvida           | Brown necked raven    | Corvus ruficollis (Lesson, 1831) | BR Yes          |                   |
| Pycnonotidae      | Yellow-vented Bulbul  | Pycnonotus sinapogos (Ehrenberg, 1833) | BR Yes        |                   |
| Falconidae        | Kestrel               | Falco tinnunculus (Linnaeus, 1758) | BR Yes          |                   |
|                   | Saker falcon          | Falco cherrug (Gray, 1834) | PM Yes          |                   |
|                   | Gyr falcon            | Falco rusticolus (Linnaeus, 1758) | PM No           |                   |
|                   | Peregrine Falcon      | Falco peregrinus (Tunstall, 1771) | PM Yes          |                   |
| Strigidae         | Eagle Owl             | Bubo bubo (Linnaeus, 1758) | BR No           |                   |
| Scolopacidae      | Sandpiper             | Actitis hypoleucos (Linnaeus, 1758) | PM Yes          |                   |
|                   | Green Sandpiper        | Tringa ochropus (Linnaeus, 1758) | PM Yes          |                   |

*PM = Passage Migrant; BR = Breeding Resident.
2 species each (6.06%), accounted for 30.3% of the total species surveyed in the study area (Fig. 1). Rest of the families namely Fringillidae, Apodidae, Upupidae, Passeridae, Corvida, Pycnonotidiae and Strigidae were represented by a single species each (3.03%), accounted for 21.21% of the total species of birds recorded (Fig. 1). Differences between the abundance of birds in different seasons and between habitats was significant. The richness of avian species in spring were higher according to our survey when migrant breeders and late passage migrants occupied the region, in combination with resident breeders. Fewest species of birds were recorded in winter season. The number of birds observed in wetland habitats were significantly higher than other habitat types. The species richness was greatest in wetlands, but no significant difference among the other habitats.

4. Discussion

Study of Birds is having an ecological and conservation importance (Urfi, 2005), and evaluation of the influence of urbanization and change in climatic conditions on distribution of birds and to understand how birds are responding to the ongoing changes in climate (Van Buskirk et al., 2010; Gardner et al., 2011). It is of ecological importance to study the distribution of bird species and subspecies across different areas of the Arabian Peninsula. The up-to-date knowledge about the status of different avian species inhabiting or visiting the different habitats of Saudi Arabia is highly needed.

Although, faunal surveys have been conducted in many regions of Saudi Arabia, yet there is a dearth of literature on the provisional checklist of the avian species richness, distribution and range in various parts of Saudi Arabia including Turaif region.

Some species of birds were commonly visible or vocally very active in the surveyed region and thus easily noticeable, whereas some species were rarely seen or heard. Higher visibility of many bird species inhabiting the surveyed area of Turaif throughout the months of spring and summer revealed the passage of migrant species. The counts through different transect in the months of spring and summer displayed that the passage migrant species were higher than other seasonal field visits. The abundance of bird species did not show much variation throughout the survey period. However, the richness of individuals was higher in the months of spring than winter.

The species of birds recorded in this survey is confirmed by the reports of several authors who studied avifauna of different regions of Saudi Arabia. To mention few, Newton and Newton (1996) studied the seasonal diversity of birds in Asir mountains, Newton and Newton (1997) studied the central Saudi Arabia desert and Heezik and Seddon (1999) reported bird diversity of steppe desert, northern Saudi Arabia. Surveys carried out by these authors confirmed our reports of attendance of these bird species.

The current survey is the first report regarding the provisional checklist of avifauna of the Turaif region, however, more field visits and thorough surveys are mandatory for clear distribution of various bird species.

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