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### RESEARCH ARTICLE

#### DISTRIBUTION OF CHUKAR PARTRIDGE *ALECTORIS CHUKAR* IN DISTRICT CHAMOLI, GARHWAL HIMALAYA, INDIA.

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#### Abstract

A study was conducted on the Chukar partridge *Alectoris chukar* in district Chamoli, Uttarakhand from July 2016 to April 2017 and information on distribution, density and habitat characteristics were collected. Chukar partridge were sighted between 1100 to 1870m altitudes with overall  $6.36 \pm 2.07$  individual/sighting in 33.10 km area. Average density of partridge was recorded  $9.96 \pm 1.89$  individuals per square kilometer area. Chukar showed a clear preference to open scrub habitats (dominant vegetation were *Euphorbia*, *Rhus parviflora*, *Rubus ellipticus*, *Rosea* sp. *Berberis* sp. etc.), interspersed with rocks near human habitations.

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#### Introduction:-

Partridges are a group of game birds (Order-Galliformes, Family-Phasianidae) and known to mankind since long ago for their food and sports values. The hills of Garhwal Himalaya harbour 6 species of partridge namely- Black partridge *Francolinus francolinus*, Grey partridge *F. pondicerianus*, Swamp partridge *F. gularis*, Hill partridge *Arborophilla torquella*, Chukar partridge *Alectoris Chukar* and Snow partridge *Lerwa lerwa* are found in different ecological zones (Hume and Marshall 1879 and Ali and Ripley 1983). Among these, Chukar partridge *Alectoris chukar* is a widespread and found in south Europe, the Middle East and Asia and introduced in many countries (Galbreath and Moreland, 1953; Christensen, 1954; Molini, 1976; Cramp and Simmons, 1980; Crami Winkler *et al.* 1987; Madge and McGown, 2002). In Garhwal Himalaya, Chukar partridge commonly known as "Chakor" in vernacular language is a common sport bird and considered also as a pest species. No attempts have been made so far for its management because lacking the baseline data on ecology and behaviour of this species. In this paper we report new information on distribution, status and ecology.

#### Material And Methods:-

From July 2016 to April 2017, a survey was carried out in Chamoli, Dasoli and Pokhri blocks of district Chamoli, Uttarakhand. After collection of the secondary information on occurrence of Chukar partridge from local people viz. ladies (who regularly visit in the forest for fuel and fodder collection), hunters and forest personnel, potential sites were visited for 2 to 8 days. The trail walk and point count methods (Javed and Kaul, 2002) were used to collect data on sightings of Chukar and habitat characteristics (altitude, slope aspect, distance from habitations and crop fields, dominant vegetation etc.)

Densities are given as the maximum number of individuals of different group per site divided by area of the site was also calculated.

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**Results:-**

Detail of sightings of Chukar partridge and habitat characteristics are presented in Table 1. The survey yielded 15 new localities for Chukar partridge in Garhwal Himalaya, Uttarakhand. A total of 330 Chukar (cumulative of all sites) were sighted in 74 visits at Sagar, Naroun dhar, Mandal, Khalla, Gangol Gaun, Gair, Tangsa, Dev Khal, Hafla, Pokhri, Langsi, Bacher, Develdhar, Majheti and Maithana.

The overall sighting of Chukar was  $6.36 \pm 2.07$  individuals per sighting. Maximum number of bird (11 Chukar in single sightings) was observed at Gair whereas minimum number (3 birds per sighting) was recorded at Develdhar. In total 33.10km surveyed area, average density was recorded  $9.96 \pm 1.89/\text{km}^2$ . Chukars in pair were frequently sighted during February to April at Majheti and Maithana.

The birds were sighted between 1100 to 1870m altitude ranges but more than 75% individuals were recorded in the altitude range of 1200 to 1760m. Chukars appear to prefer south-east facing steep slopes covered with dense to open scrubs (*Euphorbia*, *Rhus*, *Rubus*, *Berberis*), open forest (*Pinus* sp.), rocks and crop fields (Table 2). Of the total 330 Chukars sighted during study, forest habits were the least used ( $11.34 \pm 1.0\%$ ), while scrub area were the most used ( $33.30 \pm 3.67\%$ ). In rock and crop field total  $28.65 \pm 3.46\%$  and  $16.87 \pm 2.84\%$  Chukars were sighted respectively.



A solitary Chukar partridge *Alectoris chukar*



A group of Chukar partridge in their feeding habitat

**Table:-** Records of Distribution of Chukar partridge *Alectoris chukar* at different habitats in district Chamoli, Garhwal Himalaya

S i t e s	Survey period	Altitu de (m)	Total visits	Chukars sighted	Individu als/ sighting	Area surveyed (km <sup>2</sup> )	Density (bird/ km <sup>2</sup> )
1. Sagar	8- 15/07/20 16	1500- 1550	8	46	8	3.5	2.28
2. Naroun Dhanr	21- 24/07/20 16	1620- 1700	4	32	9	1.0	9.0
3. Mandal	6- 11/08/20 16	1760- 1820	6	16	4	1.7	2.35
4. Khalla	13- 17/8/201 6	1700- 1760	5	27	10	3.0	3.33
5. Gangol Gaun	25- 29/8/201 6	1430- 1500	5	31	6	2.5	2.40
6. Gair	7-14 /9/2016	1200- 1250	8	17	4	2.0	2.0
7. Tangsa	16- 23/9/201 6	1350- 1400	8	22	7	1.2	5.83
8. Dev Khl	27- 30/9/201 6	1770- 1860	4	19	5	1.6	3.12
9. Hafla	11- 13/10/20 16	1600- 1640	3	21	6	1.5	4.0
10. Pokhri	25- 27/10/20 16	1760- 1870	3	18	8	1.1	7.27
11. Langsi	24- 26/10/20 16	1660- 1700	3	12	5	2.3	2.17
12. Bacher	15- 19/11/20 16	1240- 1300	5	26	7.6	1.7	4.47
13. Devaldhar	21- 22/12/20 16	1550- 1670	2	9	4.3	2.5	1.72
14. Majheti	22- 27/02/20 17	1700- 1800	6	23	8.4	1.5	5.60
15. Maithana	15- 18/04/20 17	1100- 1150	4	11	3.21	2.5	1.28
<b>Total/ Average</b>			<b>74</b>	<b>330</b>	<b>6.36 ± 2.07</b>	<b>33.10</b>	<b>9.96± 1.89</b>

**Table 2:-** Percent of Chukar partridge *Alectoris chukar* sighted in different habitats in district Chamoli, Garhwal Himalaya (values in parenthesis indicate number of Chukar partridge).

Habitats	Percent sightings of Chukar (Mean±S.E.)
Forest ( <i>Pinus</i> sp.)	11.34±1.0 (47)
Scrub ( <i>Euphorbia</i> , <i>Rhus</i> , <i>Rubus</i> , <i>Berberis</i> etc.)	33.30±3.6 (120)
Crop fields (used to grow mainly Rabi and Kharif crops)	16.87±4.82 (67)
Rocky area	28.65 ±3.46 (134)

**Discussion:-**

A wide spread distribution of Chukar partridge in the Western Himalaya was reported by Hume and Marshall (1879), Ali and Ripley (1983) and Kukreti (2007). Findings of present study reveal that this species is well distributed between 1100 to 1870m altitudes in suitable habitats in Chamoli district in Garhwal Himalaya. Chukar partridge appear to prefer scrubby, rocky areas and crop fields over forested areas. The perennial shrubs like *Euphorbia*, *Rhus*, *Rubus*, *Berberis* appeared as an important elements of habitats. Sightings of Chukar in small group (3 to 11) birds seems a threat to conservation of this game species in study area because local old hunters have reported sighting of coveys consisting more than 160 birds in the past. Despite the ban on hunting and poaching under Wildlife Protection Act 1972, hunting is still common practices around the study areas. Egg picking for food during breeding period in March-April is another cause of decline of Chukar population. Garhwal Himalaya is hilly region and 45% area (of total geographical area) is covered under forests. Actual dense forests exist in 34.65% area and rest 3,132 Km<sup>2</sup> is covered with sparsely distributed trees, scrubs and barren rocks/stones (Chauhan *et al.* 2001). This large wasteland area in the form of scrub habitat can be used for conservation and management of the biodiversity including sports birds to generate income for upliftment of the status of the local people.

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