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Original Article

Population Status of Cheer Pheasant (*Catreus wallichii*) in Azad Jammu and Kashmir, Pakistan

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Abstract
Azad Jammu and Kashmir is one of the important areas that harbor the population of Cheer pheasant in Pakistan. Study was conducted from July 2010 to June 2011 to determine the potential of these sites as a possible focal point to start Cheer pheasant conservation activities in AJK. A total of 579 individuals was estimated from study sites. Highest population (n=434) was recorded at Qazi Nag Game Reserve, followed by Phalla Game Reserve (n=117) while minimum population (n=28) was noted at PirChinasi range area. An increasing trend in population was observed due to improvement in watch and ward, law enforcement and other conservation measures. Habitat deteriorating, agricultural activities, livestock grazing and seasonal grass cutting, fire and hunting were identified as major threats to the survival of this species in AJK. This study recommended the immediate formulation and implementation of Cheer pheasant conservation action plan along with declaration of its potential habitats as protected area to ensure the further survival of this important species.
Keywords: Cheer pheasant, AJK, Phalla game reserve, PirChinasi, Muzaffarabad

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INTRODUCTION

Cheer Pheasant *Catreus wallichii* is a monotypic pheasant represented by single species in the genus *Catreus* (Del Hoyo *et al.,* 1994). It is distributed throughout the southern foothills of the western Himalayas, occurring in northern Pakistan, India and central Nepal (Birdlife International, 2014). In Pakistan, the past distribution of the Cheer was extended from Hazara eastward River Indus through Rawalpindi, District of Punjab and some parts of Azad Jammu and Kashmir Pakistan (Mirza, 1980; Qureshi *et al.*, 1999; Awan *et al*., 2004). It was once abundant throughout Siran and Kaghan Valleys in Hazara District, the Margala Hills, and reportedly was also present in Swat and Kohistan Districts (Severinghaus *et al.,* 1979; Severinghaus, 1979; Zaman, 2008).

In the early twentieth century, this species was recorded on the fringes of Azad, Jammu and Kashmir at Qazinag (Baker, 1930) in Kishtwar and the hills of the Jhelum valley (Osmaston, 1927, Awan *et al.,* 2004; Iftikhar, 2006; Khan *et al*., 2006) Machiara National Park (Islam and Crawford, 1986) and Neelum valley (Roberts,1991) including Salkhala Game Reserve (Mirza, 1978).

Cheer showing little seasonal altitudinal movement (Johnsgard, 1999) and while comparing to other pheasant species this species is relatively sedentary (Roberts, 1991; Ali and Ripley, 1983). It remains closely associated with hilly villages, preferring the open forest type comprising grass coverage and rocky crags underneath (Hume and Marshall, 1879; Anwar, 1989; Singh *et al*., 2011). Due to ongoing habitat loss, small population size and hunting in some areas, the Cheer pheasant is evaluated as vulnerable (Bird Life International, 2014). Various factors in habitat loss, including grazing, periodic fire, deforestation are threats to the survival of this species.

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Although previous studies and literature (Awan *et al.,* 2004; Iftikhar, 2006; Khan *et al.,* 2006) authenticated the presence of the Cheer pheasant in AJK, however, the present study was aimed to identify and explore the current population trends of these threatened birds in other potential sites of their distribution along with already known sites.

MATERIALS AND METHODS

Study area

The study area comprised of three potential sites, where the presence of Cheer pheasant hadbeen confirmed in earlier studies. These sites were 1. PirChinasi and surrounding areas of District Muzaffarabad, 2. Qazi Nag Game Reserve and surrounding areas in Jehlum Valley, District Hattian and 3. Phalla Game Reserve and surrounding areas in District Haveli (Figure 1). PirChinasi and surrounding areas (34.387691 N, 73.551610 E) lies in Dopatta and Lachrat forest Ranges at 30 km from Muzaffarabad, the capital of Azad Jammu and Kashmir. The altitude varies from 1500 m to 3000 m (above sea level/asl.) along a total area of 2193 ha with characteristic vegetation of moist temperate forest type.

This locality was divided in four sub-localities or study sites *i.e.,* Ban WaliGali, Cheeran, Seki Heri Wala par and Nagan. There are five villages in the vicinity of the study site *viz.,* Rajvayean, Niazpur, Butliyan, Bandi and Meldehi. The population is mostly farmers, growing seasonal crops mainly maize on terraces. Most families keep domesticated animals: goats, cows, sheep and buffaloes (Table I). Qazi Nag Game Reserve (34.270648N, 73.776041E) is present 75 km in the East of Muzaffarabad in upper Jehlum valley in Kathaie block of Chinari range of Jehlum valley forest division, with an area of 4832 ha.

The elevation varies between 2400 m to 4000 m and the area is under the moon soon influence and consist of moist temperate conifer, sub-alpine scrub, birch forest and high alpine pastures. Qazi Nag was divided in Nali Gundi Grain, Sokha, Sangarr Bari, Khater Nar, Naga Tak, Sangria Par, Rasheyan/Lamniyan, Grang Par, Shair Ba and Shangri Par. The main villages in the vicinity of the study locality viz. Kona, Dara Batagi, Nardagian, Tarara, Jabara, Khtharnar, BandiChakan, Gali, Loon ban and Jabar (Table II). Phalla Game Reserve (33.955167 N, 74.201223 E) lies about 23 km away from renowned town of Forward Kahuta.

Table I: Distribution, habitat and population of Cheer Pheasant in PirChinasi Game Reserve.

Localities	Cheeran	Ban WaliGali	Seki Hari Wala Par	Nagan
Forest type	Himalayan moist temperate forests	Mixed deciduous coniferous forests	Moist temperate mountain forest	Mixed deciduous coniferous forests
Trees	*Cedrusdeodara, Pinuswallichiana, Abiespindrow, Quercusincana, Carnotas*sp.	*Aesculusindica, Pinuswallichiana, Taxuswallichiana*	*Aesculusindica, Pinuswallichiana, Abiespindrow, Cedrusdeodara*	*Aesculusindica, Pinuswallichiana, Taxuswallichiana, Cedrusdeodara*
Shrubs	*Indigoferagerardian, Berberis lyceum, Viburnum grandiflorum, Daphnioleoides*	*Viburnum grandiflorum, Indigoferagerardian a, Berberis lyceum,*	*Viburnum grandiflorum Berberis lyceum Indigoferagerardiana Rosa laevigata*	*Viburnum grandiflorum Berberis lyceum Indigoferagerardiana Rosa laevigata*
Herbs	*Dryopterisstewartii, Verbascumthapsus Menthaarvensis Menthe longifolia, Heteropogoncontortus*	*Adiantumcapillus, Viola biflora, Bergeniaciliata,*	*Dryopterisstewartii Verbascumthapsus Menthaarvensis Solanum nigrum*	*Menthaarvensis Heteropogoncontort us, Solanum nigrum, Thymus surpyllum*
Altitude	1680-1830 (Southern)	1680-1890 (Southern)	1680-1980 (Southern)	1520-1680 (Southern)
Migration in winter	500 meter move belowfromCheeran	250 meter move below from Ban WaliGali	300 meter move below from Seki Hari Wala Par	300 meter move below from Nagan
Observed	06	04	08	10

This game reserve comprises on compartment No. 36-37 with an area of 332 ha. This study area was divided in 11 study sites i.e. Man Ser, DaangGali, Ali Abad, Jangari, Burjan, Kala Mola, Kut Nar, PajaGali, Sunder Mar Basa, Boli Wala Nalla and Hathi Par. This Game Reserve mainly characterized by representative plant species of Himalayan mixed moist temperate forest with extensive under growth of *Indigofera gerardiana, Berberis lyceum, Viburnum grandiflorum* at lower elevation and *Salix denticulate* at higher elevations. Tropical, rocky and scrub forest and barren habitat also prevail on lowest altitudinal areas (Table III).

Methodology

A total of 42 surveys has been carried out and data were recorded with the help of twenty-two field staff members of the Department of Wildlife and Fisheries of AJK. Binoculars (Canon, 8×40 mm) were used to scan the study area. Cheer pheasant calling is random and irregular (Gaston and Singh, 1980; Awan, 2002; Awan *et al.,* 2004) and they call for a short spell around dawn.

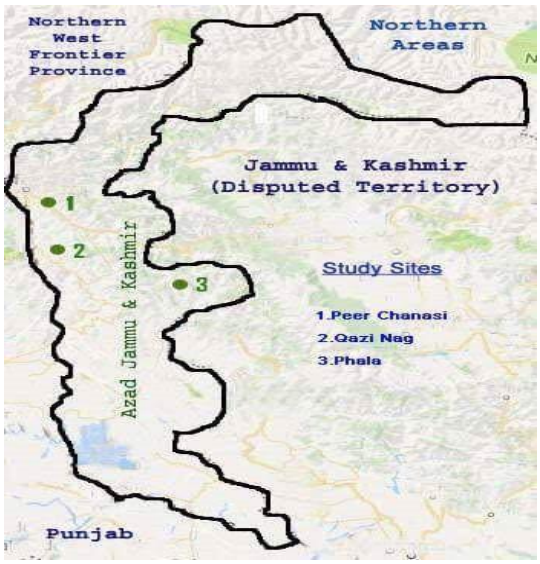

Figure 1: Map of the study area showing three main localities in Azad Jammu and Kashmir.

Surveys were carried out by using the dawn call counting technique, during the breeding season between April to May, 2010. Areas were divided into localities on the basis of already identified potential sites. By counting the number of birds heard calling from a selected point, it was possible to record the minimum number of birds present in a given area. Survey points were selected within the altitudinal range of the birds with the help of local experts including hunters and shepherds. Survey points were ridges or valleys where all around hearing was possible and periodically observed during dawn.

RESULTS AND DISCUSSION

Population Estimation

Cheer pheasant was distributed in all three localities of the study area, with the total population of 579 birds. Highest population was recorded at Qazi Nag game reserve (n=434), followed by Phalla game reserve (n=117) while minimum population was noted at Pir Chinasi range (n=28) (Fig. 2).

Qazi Nag Game Reserve has highest Cheer pheasant population in AJK and divided into 10 study sites. Highest population was noted at Shangri Bari (n=150), followed by Shair Ba (n=50) and Grang Par (n=45) whereas lowest population was recorded at Nali Gundi Garan (n=7) (Figure 5). A total of 117 birds were estimated in the Phalla Game Reserve of Rawalakot forest division in Kahutta range. Highest population was recorded at DaanGali (n=28) followed by HathiPar (n=22) and Boli Wala Nalla(n=12), while lowest population was recorded at Ali Abad (n=2) (Table II; Fig. 3).

The population was doubled than the findings of Khan *et al.* (2006) where he reported 49 birds in this site. This remarkable increase in population of was due to some conservation measures like improvement in watch and ward system, awareness raising in communities and effective law-enforcement taken in the area during last five years.

In PirChinasi the Cheer pheasant has been surveyed in four study sites, namely, Cheeran, Ban WaliGali, Seki Heri Wala Par and Nagan. The area consisted on northeastern and southeastern slopes with extensive patches of tall grasses mixed with shrubs. Highest population was recorded at Nagan (n=10) followed by Seki Heri Wala Par (n=8) while lowest population was observed at Ban WaliGali (n=4) (Fig. 4). This area is used as pasture by local people and cattle bearers and heavy grazing, lopping and periodically seasonal burning were noted that might have adverse effects on Cheer pheasant population (Table I).

Table II: Distribution, habitat and population of Cheer Pheasant in Qazi Nag Game Reserve.

Localities	Naga Tak	Grang Par	Shangri Bari	Sangria Par
Forest type	Moist temperate mountain forest	Rocky, cleft region and temperate zone.	Himalayan moist temperate forests	Mixed deciduous coniferous forests
Trees	*Pinus wallichiana, Abies pindrow, Aesculus indica,*	*Pinus wallichiana, Abies pindrow, Aesculus indica*	*Aesculus indica, Pinus wallichiana, Abies pindrow,*	*Quercus dilatata, Acer cesium, Maytenus royleanus*
Shrubs	*Viburnum grandiflorum, Indigofera gerardiana, Berberis lyceum,*	*Viburnum grandiflorum, Berberis lyceum,*	*Viburnum grandiflorum, Daphnioleoides*	*Sarcococca saligna, Rosa laevigata*
Herbs	*Dryopteris stewartii Menthe longifolia, Solanum nigrum*	*Heteropogon contortus, Mentha longifolia, Dryopteris stewartii,*	*Dryopteris stewartii, Verbascum thapsus Heteropogon contortus,*	*Themedaanathera, Trifolliumrepens, Fragarianubicola*
Altitude (m)	1520-1830 (Eastern)	1980 (Northern)	1980 (Northern)	1830 (Eastern)
Migration in winter	300 meter move below from Naga Tak	350 meter move below from Grang and par	400 meter move below from Shangri	500 meter move below from loan ban
Observed	27	45	150	30

Table II: Continue……..

Localities	Cheata Loan Ban/Par	Sangarr Par	Khater Nar	Shair Ba
Forest type	Himalayan moist temperate forests	Rocky, cleft region and temperate zone.	Tropical, rocky and scrub forest and barren habitat	Dry deciduous temperate forest regions
Trees	*Maytenus royleanus, Pyruspashia, Quercus incana*	*Pinus wallichiana, Abiespindrow, Plantagolanceolata*	*Pinus wallichiana, Taxus wallichiana, Cedrusdeodara*	*Quercus dilatata, Quercus incana, Maytenusroyleanus*
Shrubs	*Indigofera gerardiana, Berberis lyceum, Sarcococca saligna,*	*Viburnum grandiflorum, Daphnioleoides,*	*Berberis lyceum, Sarcococcasaligna, Rosa laevigata*	*Rubusfruticosus, Sarcococcasaligna, Rosa laevigata*
Herbs	*Theopogonpallidus Dryopterisstewartii Adiantum capillus*	*Dryopterisstewartii Verbascumthapsus Adiantum,*	*Dryopterisstewartii Adiantum capillus Viola biflora*	*Solanum nigrum, Trifolliumrepens, Dryopterisstewartii,*
Altitude (m)	1680 (Eastern)	2140 (Eastern)	1830 (Eastern)	1830 (Eastern)
Migration in winter	300 meter move below from Sangria Bari	350 meter move below from Kater Nar	300 meter move below from Shir Ba	500 meter move below from Sokha
Observed	45	15	20	50

Table II: Continue……..

Localities	Sokha	Nali Gundi Grain	Rasheyan/Lamniyan
Forest type	Himalayan moist temperate forests	Mixed deciduous coniferous forests	Dry deciduous temperate forest regions
Trees	*Pinus wallichiana, Salix denticulate, Acer cesium, Abiespindrow,*	*Pinus wallichiana, Taxus wallichiana, Abiespindrow, Cedrusdeodara*	*Pinus wallichiana, Salix denticulate, Buxisuspapilosa, Pyruspashia*
Shrubs	*Indigoferagerardiana, Berberis lyceum, Rubusfruticosus, Rosa laevigata*	*Viburnum grandiflorum, Daphnioleoides, Elaeagnusparvifolia*	*Indigoferagerardiana, Berberis lyceum, Rubus. Viburnum grandiflorum, Daphnioleoides*
Herbs	*Dryopterisstewartii Verbascumthapsus Adiantum capillus Viola biflora*	*Dryopterisstewartii Verbascumthapsus Menthaarvensis, Heteropogoncontortus,*	*Poaanuva Theopogonpallidus Taraxcumafficinales Viola biflora, Mentha*
Altitude (m)	1980 (Eastern)	1980 (Eastern)	1980 (Eastern)
Migration in winter	250 meter move below from Nali Gundi	500 meter move below from BandiChaken	Movebelow from Rashian and Lamniyan
Observed	15	07	30

In our study area, birds were recorded in the steep grassy hillsides; hilly tract constitutes mosaic of steep and open ground, precipitous cliffs, and patches of grasses, open scrubby forest with stunted vegetation cover along the northwestern slopes. Their preferred habitats seem to be consisting on scattered tall trees, both coniferous and deciduous plants and open scrub and grasses. The results are also supported by Delacour (1977), Ali and Ripley (1983) and Johnsgard (1986). The typical habitat represents the mixed deciduous coniferous forests and Himalayan Moist Temperate Mountain Forests. The representative forest trees are listed in (Table I, II and III). The survey of the Qazi Nag Game Reserve revealed a promising population of Cheer pheasantwith 434 individual sightings over 40 consecutive field days, is ideally suited for further study and future conservation measures because it is supported by a relatively healthy habitat located in geographically isolated and protected area. The data collected indicate that the Cheerpheasant is sedentary in its potential habitat in AJK. We found that the birds in the surveyed area remained confined to the specific area. Over grazing, grass cutting for stall feeding, lopping of broad leaved trees, soil erosion, forest fire, hunting and depredations seem to be common threats to the species in the study area. In these surveyed areas, we frequently encountered White Crested Kalij Pheasant (*Lophura leucomelanos hamiltoni*) and Koklass (*Pucrasia macrolopha*).

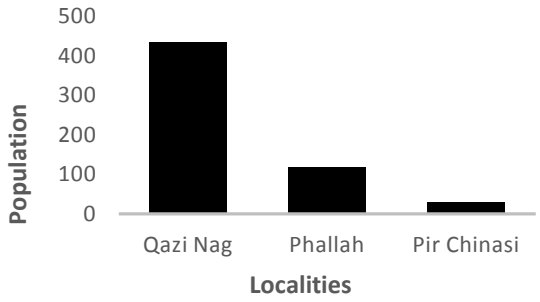

Figure 2: Population comparison of Cheer Pheasant among different sites of the study area during study period.

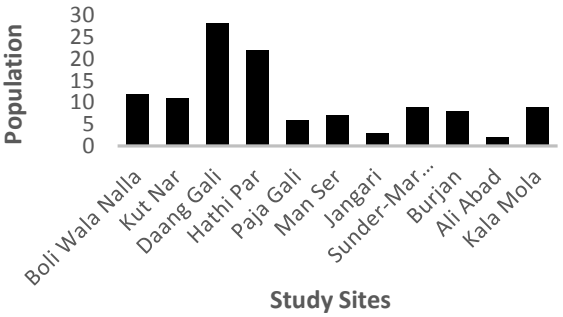

Figure 3: Population comparison of Cheer Pheasant among different study sites of Phalla Game Reserve during study period.

Table III: Distribution, habitat and population of Cheer Pheasant in Phalla Game Reserve and surrounding

Localities	Boli Wala Nalla	Kut Nar	DaanGali	Hathi Par
Forest type	Himalayan Moist temperate mountain forest	Himalayan moist temperate forests	Mixed deciduous coniferous forests	Tropical, rocky and scrub forest and barren habitat
Trees	*Pinus wallichiana, Salix denticulate, Abiespindrow, Plantagolanceolata, Pyruspashia*	*Quercus dilatata, Quercus incana, Acer cesium, Maytenusroyleanus*	*Pinus wallichiana, Salix denticulate, Abiespindrow, Plantagolanceolata*	*Maytenusroyleanus and Pyruspashia Quercus dilatata, Quercus incana*
Shrubs	*Indigoferagerardiana, Berberis lyceum, Viburnum grandiflorum*	*Sarcococcasaligna, Rosa laevigata*	*Viburnum grandiflorum, Daphnioleoides*	*Indigoferagerardiana, Berberis lyceum, Sarcococcasaligna*
Herbs	*Taraxcumafficinales, Poa annua, Dryopterisstewartii, Verbascumthapsus, Adiantum spp. Viola biflora Menthaarvensis*	*Solanum nigrum, Themedaanathera, Trifolliumrepens, Fragarianubicola*	*Dryopterisstewartii Viola biflora Menthaarvensis Menthe longifolia Heteropogoncontortus, Solanum nigrum*	*Theopogon pallidus Dryopterisstewartii Verbascumthapsus Adiantum capillus Viola biflora Menthaarvensis*
Altitude (m)	1520-1830 (Western)	1830-1980 (Western)	1980 (Eastern)	1520-1680 (Eastern)
Migration in winter	500 meter move below from Boli Wala Nalla	300 meter move below from Kut Nar	350 meter move below from DaangGali	400 meter move below from Hathi par
Observed	12	11	28	22

Table III: Continue…….

Localities	PajaGali	Man Ser	Jangari	Sunder-Mar Basa
Forest type	Dry deciduous temperate forest regions	Rocky, cleft region and temperate zone.	Himalayan moist temperate forests	Mixed deciduous coniferous forests
Trees	*Maytenusroyleanus, Pyruspashia, Quercus dilatata, Quercus incana*	*Pinus wallichiana, Buxuspapillosa, Acer cesium, Abiespindrow, Plantagolanceolata*	*Abiespindrow, Plantagolanceolata, Maytenusroyleanus, Pyruspashia, Quercus dilatata*	*Pinus wallichiana, Salix denticulate, Acer cesium, Abiespindrow, Plantagolanceolata*
Shrubs	*Indigoferagerardiana, Rubusfruticosus, Rosa laevigata*	*Viburnum grandiflorum, Daphnioleoides, Elaeagnusparvifolia*	*Indigoferagerardiana, Berberis lyceum, Rubusfruticosus*	*Indigoferagerardiana, Berberis lyceum, Sarcococcasaligna*
Herbs	*Theopogon pallidus Taraxcumafficinales Dryopterisstewartii Adiantum capillus Viola biflora*	*Dryopterisstewartii Verbascumthapsus Menthaarvensis Menthe longifolia Heteropogoncontortus, Solanum nigrum,*	*Theopogon pallidus, Taraxcumafficinales Dryopterisstewartii Verbascumthapsus Adiantum capillus Viola biflora*	*Dryopterisstewartii Verbascumthapsus Adiantum capillus Viola biflora Menthaarvensis*
Altitude (m)	1680-1830 (Northern)	1980 (Western)	1830-1980 (Northern)	1520-1830 (Western)
Migration in winter	500 meter move below from Paja	300 meter move below from Seri Dhoke	500 meter move below from Jangri Kala	500 meter move below from Sunder mar
Observed	06	07	03	09

Table III: Continue…….

Localities	Burjan	Ali Abad	Kala Mola
Forest type	Himalayan Moist temperate mountain forest	Dry deciduous temperate forest regions	Tropical, rocky and scrub forest and barren habitat
Trees	*Abiespindrow, Plantagolanceolata, Pyruspashia, Quercus dilatata*	*Maytenusroyleanus and Pyruspashia, Quercus dilatata, Quercus incana*	*Pinus wallichiana, Salix denticulate, Abiespindrow, Plantagolanceolata*
Shrubs	*Viburnum grandiflorum, Daphnioleoides, Elaeagnusparvifolia*	*Indigoferagerardiana, Berberis lyceum, Rubusfruticosus Sarcococcasaligna, Rosa laevigata*	*Viburnum grandiflorum, Daphnioleoides, Elaeagnusparvifolia*
Herbs	*Dryopterisstewartii Verbascumthapsus Adiantum capillus Viola biflora Menthaarvensis*	*Theopogon pallidus Dryopterisstewartii Adiantum capillus Viola biflora Menthaarvensis*	*Dryopterisstewartii Verbascumthapsus Adiantum capillus Viola biflora Menthaarvensis*
Altitude (m)	1830-1980 (Eastern)	1830-1980 (Western)	1830-1980 (Eastern)
Migration in winter	300 meter move below from Burjan	500 meter move below from Aliabad	250 meter move below from Kala Mula
Observed	08	02	09

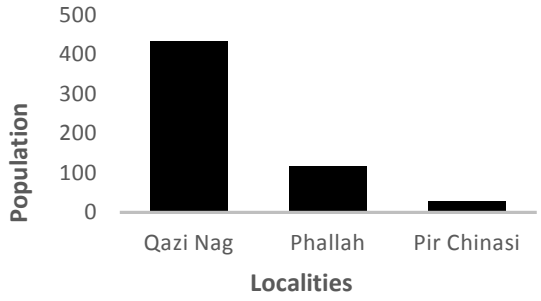

Figure 2: Population comparison of Cheer Pheasant among different sites of the study area during study period.

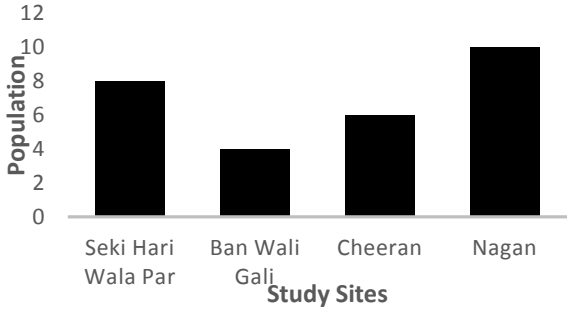

Figure 4: Population comparison of Cheer Pheasant among different study sites of PirChinasi during study period.

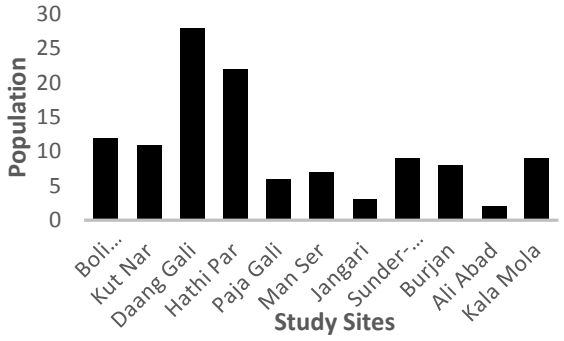

Figure 3: Population comparison of Cheer Pheasant among different study sites of Phalla Game Reserve during study period.

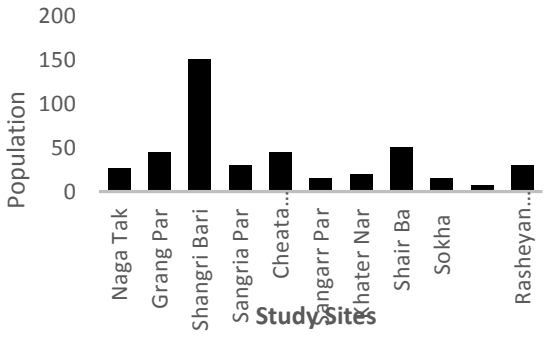

Figure 5: Population comparison of Cheer Pheasant among different study sites of the Qazi Nag Game Reserve during study period

Conclusions

A total 579 Cheer pheasant was recorded in study area with the highest population (n=434) found at Qazi Nag Game Reserve due to most suitable habitat of the animal. Population of the bird is growing with respect to time when compared to earlier records, due to conservation measures taken by the Department of Wildlife and Fisheries, AJK. Habitat deteriorating, agricultural activities, hunting were identified as major threats to the survival of this species in AJK.Conservation strategies should be continuing along with awareness campaign to protect this beautiful bird. Incentives should be provided to the local people to avoid pressure on natural resources.

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