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CENSUS STUDY OF DUCKS, SWANS AND GEESE FROM HIGH-ALTITUDE WETLANDS OF PAKISTAN

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ABSTRACT

The family Anatidae consists of aquatic birds such as ducks, geese and swans of varied sizes that belong to the order Anseriformes (Carboneras, 1992). The Anatidae comprise of approximately 148 species (Johnsgard, 2010). This family is commonly found across the globe except for in Antarctica. Data on ecology and population of these water birds was taken from protected areas of Pir Lasura National Park (June-July 2009), Banjosa Game Reserve (May-June 2009), Dhirkot National Park (February 2008), Pir Chanasi National park (April-May 2010) and Tolipir National Park (April-May 2008). Only four species from the family Anatidae were found in the study region. Banjosa Game Reserve had the most diversity with 41 % of Mute swan, 10% of Lesser White-fronted Goose and 32% of the Northern Shoveler. Efforts are needed by the concerned parties to conserve the population of the Lesser White-fronted Goose which was only observed in Banjosa Game Reserve and had a low population density, along with a vulnerable status globally.

Keywords: duck, swan, geese, mallard, migratory bird

INTRODUCTION

The family Anatidae consists of aquatic birds such as ducks, geese and swans of varied sizes that belong to the order Anseriformes (Carboneras, 1992). The Anatidae comprise of approximately 148 species (Johnsgard, 2010). This family is commonly found across the globe except for in Antarctica. Grzimek (2002) describe some features of this family that set it apart from others. These include a bill shaped flatter than others with stratum corneum and feet with limited webbing. According to the IUCN (2016) repository, approximately 4 % of the species belonging to this family have become extinct with 3.5 % critically endangered and another 4.7 % endangered. A study conducted at Taunsa Barrage reported 110 bird species in 2008 from which 39 belonged to the family Anatidae and (Ali et al., 2011).

Banjosa Game Reserve covers an area of 557.68 hectares approximately, under the administrative district of Poonch. Within the boundary of the Game Reserve is the artificial freshwater Banjosa lake. It is located approximately 1,800 m above sea level. This part receives its major rainfall during the monsoon from May to August.

Dhirkot is a Tehsil Headquarter of District Bagh, the State of Azad Jammu and Kashmir (AJK). The town is located at an altitude of around 1820 m above sea level. Dhirkot, being placed in relatively eastern longitudes, receives relatively higher summer monsoon precipitation, supporting a thicker forested plantation.

The TNP area mainly comprises of south facing slopes of the Tolipir part of the Pir Panjal Mountain Range, starting from

the northern top folds falling at 2,617 m asl., to the lowest southern parts falling at 1,367 m asl. Small perennial springs appear at different places and serve as the main source of water for human consumption. This study was conducted to find the status of species belonging to the family Anatidae in selected protected areas of Pakistan.

MATERIALS AND METHODS

Data on ecology and population of these water birds was taken from protected areas of Pir Lasura National Park (June-July 2009), Banjosa Game Reserve (May-June 2009), Dhirkot National Park (February 2008), Pir Chanasi National park (April-May 2010) and Tolipir National Park (April-May 2008). Several methods were employed to survey the population of water birds belonging to the Anatidae family. This included looking for clues such as the bird droppings, footprints and feathers. The number of birds observed was calculated using the direct count method. Data from previously conducted studies was reviewed for confirmation.

RESULTS AND DISCUSSION

Only four species from the family Anatidae were found in the study region. Banjosa Game Reserve had the most diversity with 41 % of Mute swan, 10% of Lesser White-fronted Goose and 32% of the Northern Shoveler. Not only the diversity but also the population density of these species was greater in BGR compared to other sites except for *Anas platyrhynchos*, which was not observed in BGR. Tolipir National Park had only one species available, the Northern Shoveler. No species from this family were observed in PCNP and PLNP. *Cygnus olor* belong to the order Anseriformes. They are migratory birds with an increasing population trend (BirdLife International, 2016). A probable cause of their low population in most study sites may be that they preferably inhabit lowland freshwaters (Del Hoyo et al., 1992).

An adult *Anser erythropus* has a half-moon white patch on its slanted forehead. The head of a Lesser White-fronted Goose is smaller compared to the Greater White-fronted Goose with a short pink bill, and a golden eye-ring (Shreeram and Arpit Deomurar, 2014). According to the IUCN Redlist (2018) its population is decreasing to the extent that it is now classified under vulnerable. It is a migratory bird and an herbivore.

Anas Clypeata has a very wide geographical range. They usually breed from April to June. Ali et al. (2011) reported 3 at Taunsa Barrage and 760 at Jiwani Coastal Wetlands from their study in 2008.

In their study, Ali et al. (2011) reported that 6 *Anas platyrhynchos* at Taunsa Barrage and 34 at Jiwani Coastal Wetlands were observed. Birds are perceived as a good way to gauge the health of the ecosystem. No species belonging to this family were observed from Pir Chanasi National Park and Pir Lasura National Park. Since these birds are full migratory, reasons for their absence might be changes to the habitat, available food or climatic conditions.

Small perennial springs appear at different places and continuous flow of water results in small bodies of running water. The average annual precipitation for the area remains around 166.5 cm. The major part of this rainfall is received in the form of summer monsoon during May–August (68.0 cm). Minimum precipitation is received during autumn (September–November; 22.0 cm). Average precipitation of 39.5 cm has been recorded for December-January and 37.0 for February–April period. Hailstorms are frequent during August – September, while snowfall is received at intervals between November and March. Dew and frost are characteristically frequent

during different parts of the year, depending upon temperature (Khan, 2002).

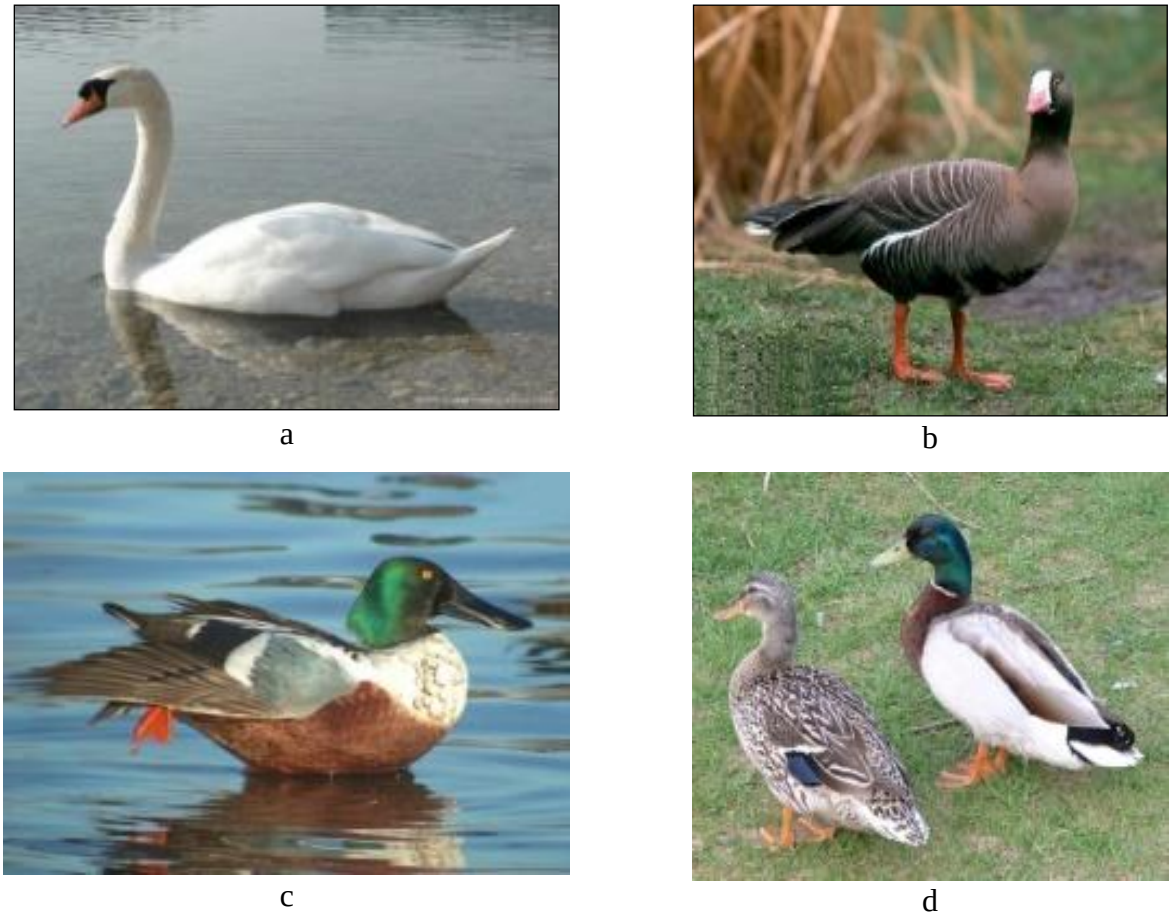

Figure 1. (a) *Cygnus olor* Mute Swan (b) *Anser erythropus* Lesser White-fronted Goose (c) *Anas clypeata* Northern Shoveler (d) *Anas platyrhynchos* Mallard.

Table 1: List of avian species recorded from BNR and DNR and its adjacent areas

Names	Feed	Remarks	Status	
			Local sightings (%)	Global status*
Cygnus olor Mute Swan	----	Inhabits rivers, lakes, marshes, wet fields, farmlands, sheltered bays. Silent and shy	BGR (41)	LC
Anser erythropus Lesser White-fronted Goose	---	Inhabits marshes, lakes, grasslands, estuaries.	BGR (10)	VU
Anas clypeata Northern Shoveler	Flatting seeds, plant debris, mollusks, insect larvae	Island water bodies, winter visitor	BGR (32) DNR (12) TNP (19)	LC
Anas platyrhynchos Mallard	In winter seeds, submerged vegetation like shoots and leaves of water weeds (*Hydrilla verticillata* and *Vallisneria spiralis*). In summer insects (Chrinomidae, Odonata larvae, small mollusks, water beetles)	Vegetated lakes, jheels and marshes. Dabbles, up-ends and grazes, breeder, localized or patchily distributed, winter visitor	DNR (10)	LC

(LC); least concern, (VU); vulnerable

CONCLUSION

Only four species from the family Anatidae were found in the study region. Banjosa Game Reserve had the most diversity with 41 % of Mute swan, 10% of Lesser White-fronted Goose and 32% of the Northern Shoveler. Efforts are needed by the concerned parties to conserve the population of the Lesser White-fronted Goose which was only observed in Banjosa Game Reserve and had a low population density, along with a vulnerable status globally.

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