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Avian Biodiversity a Viable Indicator for Biological Biodiversity and Changes in Environmental Conditions

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ABSTRACT: Bird migration is natural phenomenon by which birds travel seasonally between two separate geographic regions to be used as wintering and breeding grounds. Bird migration is an imperative ritual for the sustainability and reproductive success of bird species. It is important that birds migrate, in order for them to achieve breeding and food availability. The present study has been undertaken in the GVISH campus as it has a rich flora the avian biodiversity is one of a viable indicator for biological biodiversity and changes in environmental conditions.

Key words: Avian biodiversity, Environmental condition, food and GVISH campus.

INTRODUCTION

The study of ornithology has been prevalent for years now. Birds are constantly being observed, recorded, and watched, to further the bird knowledge. Bird migration is a natural phenomenon by which birds travel seasonally between two separate geographic regions to be used as wintering and breeding grounds. Bird migration is an imperative ritual for the sustainability and reproductive success of bird species. It is important that birds migrate, in order for them to achieve breeding and food availability. Migration is also important because changes in habitat in different regions occur at any given moment so that movement allows a succession of temporary resources (Dingle *et.al.*, 2007).

Birds migration is the important phenomenon between breeding, nesting to feeding and resting grounds. To avoid great winter of the west, water birds from the different parts migrate to the Indian Subcontinent and especially to the water bodies of central India varieties of colorful water birds are seen in different water reservoirs and some such studies were carried by Gajendrasingh Pachlore & Mamata Chandrakar (2011).

Birds play an important role in aquatic ecosystem by controlling the number of insects, small vertebrates, aquatic weeds, reptiles and being a prey to large predator species. 1200 bird species found in India, around 22% are totally dependent on wetlands. In addition, they are regarded as a viable indicator for biological biodiversity and changes in environmental conditions, Furness and Greenwood, (1993); Gregory *et al*., (2003), hence the present study has been undertaken to observe the role of flora in food availability and the avian biodiversity in the Government Vidarbha Institution of Science and Humanities (GVISH) Amravati (MS) India.

MATERIAL AND METHODS

Amravati is located at 20° 93" N and 77° 75" E, at an elevation of 343 M in Maharashtra. The climate of Amravati is tropical dry climate with hot dry summer from March to June. The Monsoon season is from July to October and warm winters from November to March the hot temperature over recorded was 27.0°C on March 2016. Diversity and density of winter migratory birds were recorded by weekly visit and the study is based on the observation of 3 month from January to April 2016. During the study birds were observed weekly while walking around the GVISH Campus. The birds were observed during morning and evening with the help of binocular (Olympus 11 × 50) and cameras were used for birds watching and photography and identified up to the species levels wing physical features with the aid of guides and reference Book (Ali S; Reply 1988) (Grimmet *et.al.* 1999).

The species of the birds encountered during each visit were enlisted and their status, month of sight, feeding habits of the birds were observed feeding habits of the residential birds were observed and categorized by finding out food items available in study area and accordingly birds were classified as carnivorous, omnivorous, Herbivorous and Insectivorous etc. Few species of the birds were photographed. Status of the species is based on the checklist of Birds of Maharashtra.

RESULT AND DISCUSSION

In the present study 21 species of birds were recorded from Wadali wetland Lake, 12 species are campus GVISH. Out of 21 species reported, 7 species were local or resident, 4 were resident migrant and 9 species were migratory. The eating habits revealed that the highest no. of birds recorded was, 9 Omnivorous, Carnivorous 7, Insectivorous 3 and 2 Herbivorous. The status (seasonal occurrence), feeding habits, month of bird sighting and place of occurrence were illustrate in checklist R-Resident. RM -Resident Migrant. M-Migratory, (+) throughout the year, (sighted once), (+) presence. In GVISH Campus 12 bird's species has been identified and the checklist is depleted in (Table 1).

Out of the 12 birds species observed, Omnivorous 5 (41.66 %) species were carnivorous 4 (33.3 %) and 3 (25%) were insectivorous. The significance of this study was to see if birds migrated to areas of best habitat and food abundance. Migration is largely misunderstood because of the many variations among species, population, age group, and sexes being a great factor in the general topic. With respect to each category, many differences arise causing a large significance on specific details.

Table 1: Consolidated checklist of birds in GVISH campus along with status, Month of sighted, feeding habitat etc.

Sr. No.	Common Name	Scientific Name	Status	Month sight	Feeding habit
1.	Spot billed duck	*Anas poecilorhynacha*	RM	June-March	Omnivorous
2.	Common Sandpiper	*Actitis hypoleucos*	RM	June-March	Carnivorous
3.	Wire-tailed Swallow	*Hirundo smithii*	RM	Oct-March	Insectivorous
4.	Yellow Watail	*Motocilla flava*	RM	Nov-March	Insectivorous
5.	Asian Paradise Flycatcher	Terpsiphore paradise	RM	March	Insectivorous
6.	Cattle Egret	*Bubulcus ihis*	R	+	Carnivorous
7.	Black Kite	*Milvw migrans*	R	+	Carnivorous
8.	Shikra	*Acipiter bodiw*	R	+	Carnivorous
9.	Indian Peafowl	Pava (ristatu)	R	+	Omnivorous
10.	Purple Moorhen	*Porphyrina porphyrin*	R	+	Omnivorous
11.	White bristed Waterchen	*Amaurornis phoenicuris*	R	+	Omnivorous
12.	Bronze-winged Jacana	Metopidies Indian	R	March-Oct	Omnivorous

However, migration is always related to seasonal change, unless species are non migratory in which seasons are not influences on residency. Birds have adapted to habitat changes overtime to now have morphology and physiology that enables them to fly comfortably across long distances. (Bock, 2008) Bird migration is a very intricate and confounding matter that can only be understood through thorough research. Although bird migration is a difficult subject to understand, the research provided over three centuries is proven to be helpful, and conclusive. Ornithology is only contributing to this phenomenon by also conducting experiments and observations of many bird species, to better comprehend birds' morphology and behavior. With all of the research being conducted, adaptations and the evolution of birds can be explained. The abundance of research about birds will help give better-developed knowledge of birds and the migration phenomenon. Birds play an important role in ecosystem as a secondary and tertiary consumers for perfect balancing with the environment K. J. Sirjue (2012).

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