

## Seasonal variation in the population of urban birds

BHARAT M. VYAS

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### ABSTRACT

A population is a group of interbreeding organisms of the same kind occupying a particular space. For the study of seasonal variation in the population of urban birds, Visnagar city area and its vicinity was selected. It is situated between 23°42' N and 71°34' E above 127 m.s.l. To study the seasonal variation in the population of urban birds, four sites have been selected. Direct count method was employed for estimating the population of each species of the selected family. It has been found that highest population was in winter and low in summer. After winter, population declined due to the departure of migratory species. Generally population is controlled by climatic factors such as temperature, relative humidity, rainfall and photoperiodism etc. and sometimes it may not be so. Food sources are considered as an important factor for living organism. Seasonal index formula suggested by Rao (1983) was adopted. It was a monthly average percentage of birds in a study area. It was also recorded highest in winter and lowest in early summer.

Correspondence to :

**BHARAT M. VYAS**

Department of Biology, Nootan  
Science and Commerce College,  
Visnagar, MEHSANA  
(GUJARAT) INDIA

E-mail: [bharatkumarvyas46@yahoo.in](mailto:bharatkumarvyas46@yahoo.in)

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A population is a group of interbreeding organisms of the same kind occupying a particular space. Each population is a structural component of the ecosystems, through which energy and nutrient flow and it is characterized by density (Smith, 1980). Mac Arthur and Mac Arthur (1961) for the first time gave the concept of diversity and niche differentiation. Some bird species are highly adopted and can survive and flourish even in disturbed areas or in surroundings with continuous human activities. On account of their mobility, birds are excellent bio-indicators of the quality of the environment. Ali and Ripley (1983) stated that India's avifauna is one of the most interesting in the world and provides ample opportunity to study "Population ecology".

Wetland areas of urban environment and its related avian biodiversity was selected to evaluate its population count. The urban environment even conceptually cannot be designed to bring nature into the urban human settlement. The major onding influencing factor on the composition and distribution of bird species is the direct human intervention. The diversity recorded in such a human impacted area was investigated.

### Study area:

For the study of seasonal variation in the population of urban birds, Visnagar city area and its vicinity was

selected. Visnagar is a Taluka place of Mehsana district, which is about 750 years old. It is situated between 23°42' N and 71°34' E above 127 m.s.l. Being a Taluka place; it is surrounded by rural areas. Several water bodies are situated at outskirts of the area which was selected for the study. Last 10 years the town has been very much developed.

### MATERIALS AND METHODS

To study the seasonal variation in the population of urban birds, four sites have been selected. These sites were considered as variable sub-habitats. Each site differed from another on the basis of surrounding of vegetation, food sources, human activities, pollution, water availability, etc. Direct count method was employed for estimating the population of each species of the selected family. It is a method in which the bird encountered by the observers along with census route is counted. Checklist is prepared. Population of the urban birds recorded for the various seasons of 2003.

### RESULTS AND DISCUSSION

Yearly observation has been taken with a fixed schedule for the search of total individual population of all selected sites of the study area which is recorded in Table 1. It has been found that highest population was in winter and low in summer. After winter, population declined due to the departure of migratory species. They were Common coot, *Fulica atra*, Common greenshank,

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