

Environmental Education and conservation of birds in Delhi: A comparative Study

Sana Rehman, Bhuvesh Shokeen, Aakib, Preeti Chauhan

Assistant Professor, Department of Environmental Studies, Rajdhani College, University of Delhi

Abstract

Analyses of the field of environmental education research have highlighted its rapidly expanding size and increasingly diverse nature (e.g. Hart & Nolan, 1999). Delhi being urban center has been a model of ecological studies and it is also rich in birdlife (Ganguly 1975). Various monitoring programs has been operating throughout the world to spread awareness and to foster skills among citizens to rationally analyze the status of birds. This study highlights the role and importance of environmental awareness among common citizen. To test the effectivity environmental education, the author has conducted the research by diving the people into two categories: College Students (who has been studying Environmental Science Paper in First year of their Under Graduate Degree) and Common Citizens (who may/ may not have formal environmental education). It also emphasizes on widening the scope of curriculum through various education programs specifically related to birds.

Keywords: environmental education, birds, Delhi, conservation

1. Introduction

Bird watching in itself is a matter of joy and exhilaration. (Salim Ali 1989) ^[1]. Apart from joy that it bestows, with careful and intelligent birdwatching (with or without any special scientific training) infinitely large datasets can be procured relating to the lives and behavior of birds which inturn will help in procuring valuable information about the health of the ecosystem as they very good environmental indicators (Bibby *et al.* 1992) ^[2]. The aim of education is to inculcate desirable traits in the human societies in order to shape the the citizen to behave according to desirable manner. These desirable traits are defined as skills useful in reading or mathematics, successful consumerism, productive employment, responsible citizenship etc. (Harold *et al* 1990) ^[6]. The following goals were laid down according to TBILISI intergovernmental conference on environmental education in 1977:

1. to foster clear awareness of, and concern about, economic, social, political, and ecological interdependence in urban and rural areas;
2. to provide every person with opportunities to acquire the knowledge, values, attitudes, commitment, and skills needed to protect and improve the environment;
3. to create new patterns of behavior of individuals, groups, and society as a whole towards the environment.

Although the benefits of environmental education has been known for a long time, there has been not enough evidence that environmental education can be helpful in improving student learning. The concern has been exposed in several state and national reports that most of the research in regard is anecdotal in nature. This led to a concern that whether the education that we are providing in our school and college curricula is enough to inculcate values, attitudes, commitments and skills that are required to improve our living habitat. The categories of environmental education *objectives* were also laid down in the TBILISI intergovernmental conference 1977:

- **“Awareness-**to help social groups and individuals acquire

- an awareness and sensitivity to the total environment and its allied problems.” This will encourage people to know and realize the budding problems associated with their respective ecologies.
- **“Knowledge-**to help social groups and individuals gain a variety of experience in, and acquire a basic understanding of, the environment and its associated problems.” To know about current issues and grass root level analysis of environmental problems associated with the habitat for greater understanding.
- **“Attitudes-**to help social groups and individuals acquire a set of values and feelings of concern for the environment and the motivation for actively participating in environmental improvement and protection.” The soul pupose of environmental education is to design attitude towards protection, monitoring and auditing the problems related to the environment.
- **“Skills-**to help social groups and individuals acquire the skills for identifying and solving environmental problems.” It require vigorous training and values to explore the nature of environmental problem and design mitigation measure to solve it.
- **“Participation-**to provide social groups and individuals with an opportunity to be actively involved at all levels in working toward resolution of environmental problems.” Conservation can only happen if the people living in a society work together and form social groups to solemnly handle issues related to environment.

Methodology

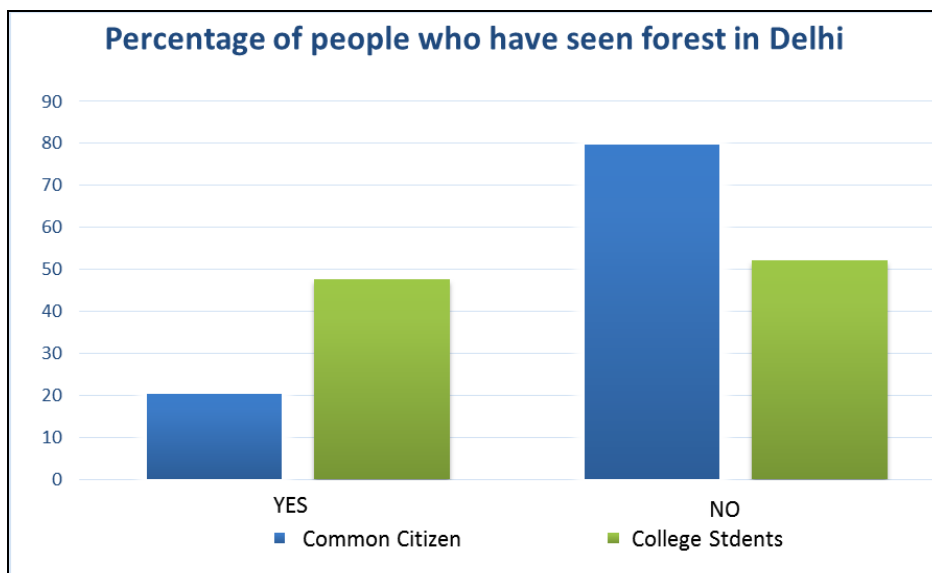
A random survey was conducted on 280 people within the premises of Delhi in the month of March 2017. They were asked to fill up questionnaire regarding places and programes associated with birds. These people were then divided into two basic categories- College Students who has been obtaining formal education on environmental issues since past 3 years as a part of compulsory course for Environmental Science in their undergraduate degree and Common citizens who may or

may not have formal environmental education. Volunteers conducted the survey randomly with the help survey sheets and picture of the birds were shown individually to all the citizen for identification like Hill Myna, Painted Stork, Lesser Flameback, Lesser Hornbill, Sarus Crane and Night Heron. The question unanswered by the people was treated as “null question” and was not included in the study. The answers was recorded and analyzed for further studies.

Results

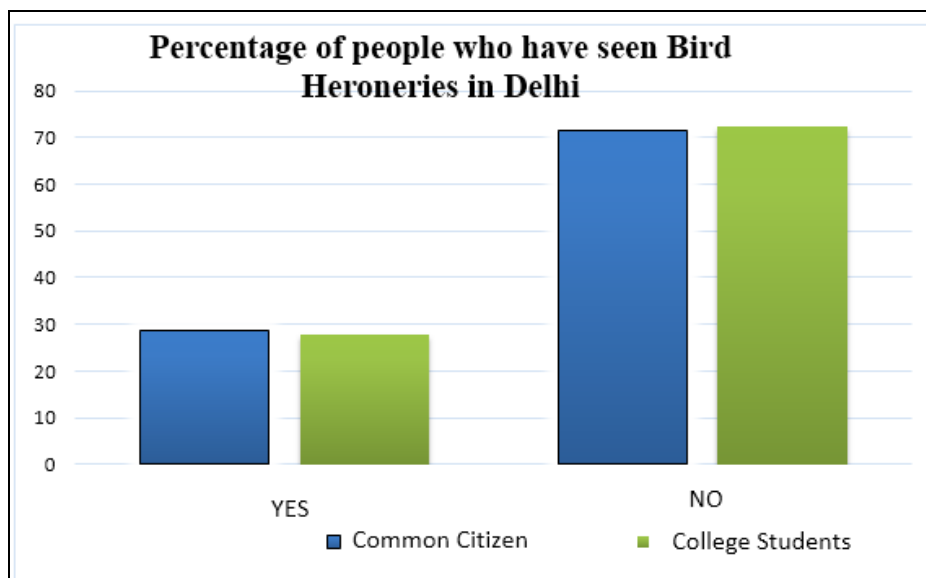
Delhi is rich in its avian biodiversity and can pride itself of being the world’s second bird rich capital after Nairobi, Kenya. Within its 1484 km² of area, Delhi has a remarkable natural forest cover, spreading over 299.58 km² which is 20.20% of its total geographical area (Source: Forest survey of

India). Landmark forests in Delhi are Kamla Nehru Ridge forest, Central Ridge Reserve forest, Arravali Biodiversity Park, Sanjay van, Jahapanah City forest and Asola Wildlife Sanctuary. Apart from these forested areas, various Community parks, District parks, green belt around roads and other green open spaces make Delhi even more beautiful. These forest patches harbours great variety of avian diversity in the region. Through our research it was astonishing to know that among the people surveyed 80% of the common citizen haven’t seen any forest patches in Delhi that harbours great variety of avian life. Very few recognized the importance of vegetation cover and associate it with diversity of birds. Many college students who have been obtaining formal education in environment could not identify many forest patches in the region.



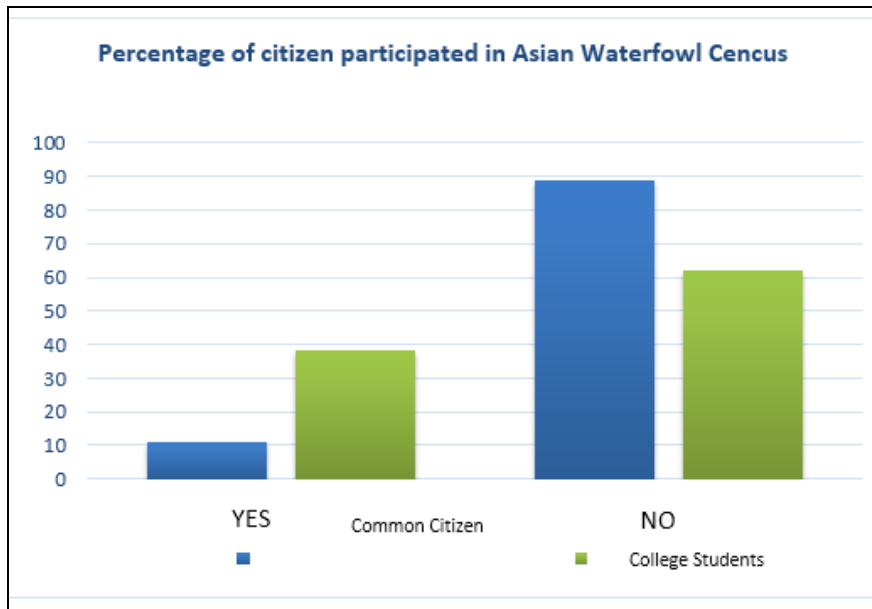
Heroneries are a great medium for checking and monitoring birds in a small area with far less sampling effort (Urfi 2004)^[9]. Presence and absence of heroneries also helps in identifying the overall health of the ecosystem. They have been used as a model for identifying various factors that

influence ecological balance (Tiwary 2016)^[7]. Surprisingly, most of the college students as well as common citizen cdnt identify several heroneries that are present in Delhi Zoo, Okhla Bird Sanctuary and several ponds in the vicinity.



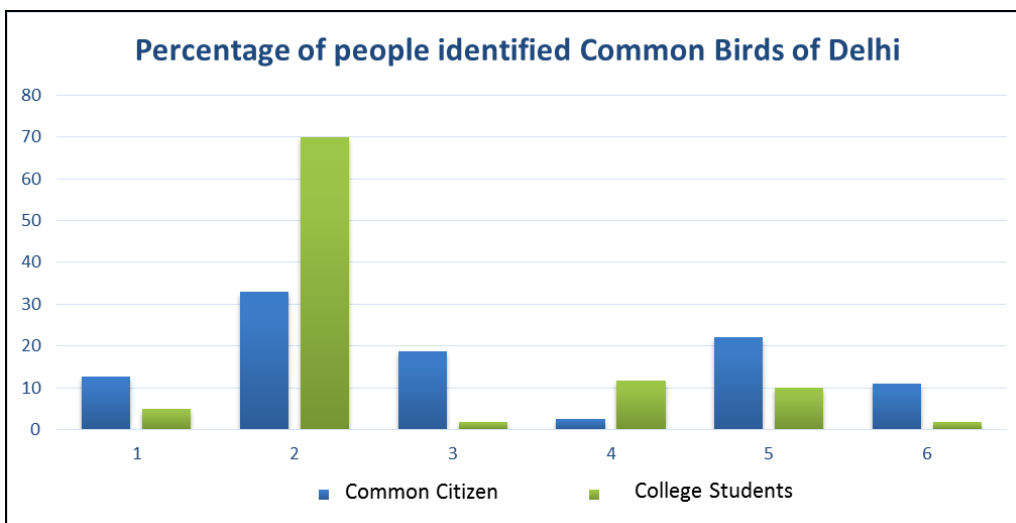
For an area to qualify as an Important Bird Areas IBA, there is internationally agreed set of criteria as being globally important for the conservation of bird populations. The development of the program and sites are identified by BirdLife International. Currently there are over 12,000 IBAs worldwide. Among these Delhi also has an IBA which is recognized internationally as Okhla Bird Sanctuary in the south of the state along the river Yamuna. Another IBA as recognized by (Urfi 2006) [10] is Delhi Zoo that harbors many

breeding population of Painted Stork, Little Egret, Lesser Cormorant and Greater Cormorant. Our survey reports that around 17% of the citizens believe that we don't have any IBAs in the state that shows sheer lack of information and awareness. Although 22% of the college students as well as 46% of common citizen agreed that we have at least 1 IBA in the state. Recognition of such areas are very necessary for prioritizing conservation practices in the region.



Asian waterfowl census AWC is another such activity which is organized by Wetlands International where thousands of volunteers' across Asia and Australasia count avian diversity in the wetlands of their country (Urfi 2004) [9]. This event happens every January. This program was started in 1987 and since then it has recorded thousands bird species around the Asian and Australian subcontinent. Around 62% of the college

students and 90% of the local population haven't had any information about the largest activity of the waterfowl census in the country which is an alarming situation because knowledge and attitude among the people can only be changed through knowledge. People were also asked to identify few common bird species in Delhi and most people only could identify 2 out of six.



Discussion & Conclusion

The study demonstrates the lack of knowledge and awareness among the state population. Even among the college students who have been obtaining formal environment education does not know very basic monitoring programs operational in Delhi

like Asian waterfowl census. However, it is noticeable that students who have obtained formal education were able to recognize many important bird sites as well they could identify with many problems related to conservation of birds. Practical approach should be institutionalized in the education

programmes rather than theoretical one. This is an alarming situation because conservation practices cannot be directed if the people are not aware about social, ecological, economic and political problems of this rich avian diversity in the state. And for increasing the efforts in conservation, the students must know the real time environmental problems in a given ecosystem.

At the level of planning and policy making, the following recommendations should be taken into account:

- Initiation of a long-term conservation monitoring program for heronry birds nesting in Delhi. This program should be institutionalized at the government and non-government organization and sustained by its, own staff and run with the help of volunteers. The Delhi zoo and Okhla bird sanctuary program will go a long way in enhancing our understanding of population declines in birds, and can serve as a model for initiating similar programs in other urban heronries.
- Develop community-level nature education programs at various school and colleges, including a nature interpretation center.
- There is a strong interdependence of birds (particularly heronry birds) and their habitat particularly wetlands and forest area, there is a need to integrate the two sites in land use planning and in the formulation of conservation strategies.
- There is also an urgent need to control the various ecosystem stressors, especially pollution, siltation and the increasing encroachments on the banks and floodplain of the river Yamuna and various forest areas.

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