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A review on diversity of birds

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Abstract
Birds are one of the most prominent species on the earth. They are the bio-indicators which can be used to access the health of any ecosystem. If there is any harmful change in the environment birds are the first to get affected and to show any signs of stress in the environment change. Because of this reason they are used to monitor the quality of any habitat or niche and hence they are the key elements of any ecosystem. They play an important role in any ecosystem as they are potential bio-indicators, pollinators, seed-dispersers and scavengers and are also beneficial to human in agriculture by checking the population of harmful pests which adversely affect productivity. The Number of migratory birds visiting ant area also indicates the health of that particular environment.The total number of bird's species known to science as inhabiting the earth today has been estimated about 10,000. If subspecies of geographical races are taken into account the figure would rise to nearly 30,000. In India 538 species of birds have been reported belonging to 16 orders, 77 Families and 16 subfamilies.

Keywords: birds, environment, diversity and migratory birds

Introduction
Birds are one of the most adaptive and widely spread organisms on the planet and the adaptation of birds totally depends upon their body mass and feeding habits and because of which they have followed human colonization. Due to a higher degree of adaptability of these few successful species, their density is much higher in the cities as compared to the more natural adjacent habitats [1].
Grimmett [2] reported more than 9,000 birds species present in the world. India has about 1,300 birds species and contribute over 13% of the world's birds population. Deepa and Ramachandra [3] observed that 20% freshwater wetland support the known range of biodiversity in India. Anon [4] recently studied that the wetlands are found to be the richest zone by of present avifauna and freshwater biodiversity are the most threatened of all types of diversity. The efforts should make to conserve these aquatic systems. The birds populations are important for the ecosystem and they play various important roles such as predators of insect pest, pollinators and scavenger. Aquatic system is adjacent to terrestrial habitats. Aquatic invertebrates are may provide stopping sites to land bird migrants. The Lakes, water reservoir and ponds are providing stopping sites to land bird migrants [5]. Ali [6] reported about 8600 known genera of birds in the world. Out of them 1200 genera grouped in 70 families and 20 orders are found in India. Now-a-days over exploitation of natural resources, over expanding human settlements, pollution and habitat loss are contributing to a rapid degradation of environmental quality and thereby affecting the floral and faunal diversity.
Today more than 9600 species of birds occur all over the world. Of these 2100 species and subspecies occur in the Indian subcontinent, India alone has 1200 species. With the new classification coming into force, the number of species may well be 1300, containing about 13% of the worlds birds [7]. Sharma and Shukla [8] reported avian diversity is in danger due to increase in population, the interaction between human and ecosystem is expanding. Due to alarming interference, because of few more reasons for example development of the residential area and urbanized colonies.
The main reasons for the destruction of biodiversity seems to be rapid expansion of industries, agriculture, urbanization and large scale development projects, which leads to destruction of habits, pollution and over utilization of biological resources. Avifauna is an important constitute as well as important link in the food chain of any ecosystem. Birds have been considered as useful biological indictors because they are ecologically versatile and inhabit all kinds of habitat [9].

Related Work
Anthropogenic stress on diversity and abundance of avifauna studied in India by many authors. Prakash [10] worked on avifauna as indicator of habitat quality in Buxa Tiger Reserve. Verma [11] investigated preliminary study of the biodiversity of Mahul Creek and reported decrease in avifaunal diversity due to anthropogenic activity. Mohan and Gaur [12] observed avian diversity around Jajiwal pond and reported changes brought about in wetland by anthropogenic activity had affected the biodiversity.
Datta [13] worked on human interference and avifaunal diversity of two wetlands of Jalpaiguri had reported decline in several waterbird population due to human interference. Sharma and Saini [14] investigated on impact of anthropogenic activity on habitat utilization by birds in Ghorana Wetland of Jammu and Kashmir.
Zafri and Rahmani [15] studied about the endangered species of birds. Delany & Scott [16] investigate about 878 water bird species belongs to 33 families. A total of 469 species of birds has been listed in Madhya Pradesh by Grimmett and Inskipp [2]. It includes three critically endangered birds (Oriental white backed and long billed vulture, siberih crane), three endangered species (Great Indian bustard,

lesser florican, and greater adjuant) and 15 vulnerable species, 15 near threatened species.

Patra and Chakrabarti [17] observed avian diversity in both saline and fresh water bodies. They are rich in several kinds of birds and aquatic vegetation at Digha (West Bengal, India). Pradhan [18] reported total 61 species of birds belong to 27 families at Ansupa Lake, Odisha. Zakaria and Rajpar [19] studied on diversity and density of terrestrial birds and water birds in man-made marsh habitat at Putrajaya (Malaysia). Choudhury and Nama [20] observed effect of biomass extraction from wetlands indicated the importance of Indian wetlands.

Importance of wetlands birds investigated by many authors in India, Like Wagnaneo and Wagnaneo [21] investigated wetlands in relation to conservation strategy. Kumar [22] on wetland birds and their conservation and Gogoi [23] worked on biodiversity of inland aquatic ecosystem in India and reported changes in the seasonal hydrological conditions.

Kumar and Gupta [24] investigated 54 species of birds belong to 36 genera, 15 families and 5 orders. Tere and Parasharya [25] identified 66 species of birds of Gujarat belong to 17 families and 11 orders. Jadhav [26] studied 54 bird species belong to 16 orders at Mudflat areas of NRI complex Navi Mumbai. Sharma [27] observed 47 species of birds belong to 7 orders of Ajmer. Ali and Thivyanathan [28] reported 14 species of birds belong to 9 families and 7 orders at Tamilnadu.

Boyd [29] studied 153 species of bird of China. Aynalem and Bekele [30] recorded 129 bird species in Tana Lake, Etjiopia. Hui [31] reported 64 species of birds of Guangzhou. Khan [32] documented 59 species of birds from 23 families in Malaysia. Mojiol [33] enlisted 83 species of birds belong to 31 families and 60 genera at Malaysia.

Padhye [34] reported 91 species of birds at Tamhini, northern Western Ghats. Yardi [35] studied 64 residential and 24 non-residential birds species in Aurangabad. Mohan and Gaur [12] observed 62 birds species belong to 26 families at Jajiwal pond. Nagarjuna [36] enlisted 31 birds species belong to 13 different families at Pulicat brackish water lake. Pawar [37] investigated 95 birds species in three water reservoirs namely Kanher, Mahadare and Kas of Satara district.

Sethi [38] documented breeding behavior in the Pied Bush Chat (*Saxicola caprata*). Asokan [39] investigated 73 birds species belong to 13 orders and 41 families of Mayiladuthurai Taluk, Tamil Nadu. Saikia and Saikia [40] observed distribution, status, and ecology of white-winged Wood Duck and Hornbills at Nameri national park, Assam.

Arora [41] investigated 1186 birds species of urban and rural residential areas of Ludhiana. Pattnaik [42] enlisted 63 birds species belong to 12 orders in Utkal university area, Bhubaneswar, Odisha. Rawal [43] identified 22 species of birds belong to 15 families from the four study sites namely Outlet channel, Rajrajeshwar temple, Feeder channel and Kunda village of Kunda reservoir.

Hoyer [44] documented 33 bird species in Florida. Trainor [45] reported 78 species of birds in Indonesia. Khan [46] reported 198 species of birds in Bangladesh. Surana [47] recorded 109 species of birds belong to 34 families at Chimdi lake, Sunsari, Nepal. Pawar [48] investigated 248 species of birds. Hussain [49] recorded 41 species of Kokilamedu Lake of department of atomic energy (Dae) campus at Kalpakkam.

Chhetry [50] reported 98 species of species of birds belong to 60 genera and 18 families at the Koshi barrage area, Nepal. Acharya [51] observed 100 birds species belong to 22 families in Rhododendron wildlife sanctuary. Palita [52] studied 61 birds species belong to 26 families and 10 orders at Kosi-Katarmal, Uttarakhand. Guptha [53] enlisted 78 species of birds belonging to 33 families. Kumar [54] investigated on biodiversity of bird's indices and comparative chronobiology of Uppalapadu and Nelapattu bird protected areas, Andhra Pradesh.

Conclusion

Now-a-days, avifaunal diversity has been decreasing due to the destruction of natural habitats and human disturbances. Water resources (river and wetland) support all living things including human beings. Due to unplanned management, agriculture and disposal of untreated public sewage water and other human and animal wastes in to the water bodies are continuously deteriorating their water quality and biotic resources.

To study any ecosystem the birds serve as important component as they have the ability to fly away and avoid any obnoxious condition. Hence, they are considered as important health indicators of the ecological conditions and productivity of an ecosystem.

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