



## Diversity of migratory birds at Casti pond Bhopalgarh (Jodhpur)

3846

**Dr Swati Ojha**

Associate professor, Zoology, Sri Khushal Das University Hanumangarh [Raj.]

**Ram Kishor**

Research Scholar, Dept. of Zoology, Sri Khushal Das University Hanumangarh [Raj.]

### Abstract:

Bird migration is a regular and seasonal movement of migratory birds from one part of the world to another part of the world and return toward their native place. This phenomenon is a type of seasonal movement of migratory birds because it is regulated by the biological rhythm or internal biological clock. Bird migrates because of many purposes like sheltering, feeding, breeding, nesting etc. Many other factors which induce the biological clock seasonally like freezing, photoperiodism, fat deposition, seasonal variation, Inherited instinct behaviour etc. So, there are many migratory birds migrate between breeding and wintering grounds. Wintering grounds like Indian thar desert jodhpur area in Rajasthan, in jodhpur area, there are many waterbodies which have rich diversity of migratory birds like Casti pond. Thus, the winter season of every year, many species and thousands of Migratory birds come and stay at Casti pond in Bhopalgarh (Jodhpur). Migratory birds like Black wing stilt, Common coot, Bar headed goose, Indian cormorant, great cormorant, common moorhen, Demoiselle crane, little grebe, Eurasian Spoonbill, Indian spot billed duck, Gadwall, Knob billed duck or comb duck, Northern Pintail, Northern shoveler, Marsh sandpiper, Ruff bird, Great blue heron, Painted stork, Common pochard, mallard duck, Red naped ibis, Black headed ibis, etc. These migratory bird species arrived and observed in the mid-September of 2021 and start to return after February or stating of the March month 2022.

**Key words:** Bird migration, Diversity of migratory birds, Casti pond.

**DOI Number:** 10.14704/nq.2022.20.9.NQ44442

**Neuro Quantology 2022; 20(9):3846-3852**

### Introduction:

Bird migration is a unique and greatest thing of the nature, in which thousands of migratory birds and their species make the hazardous or risky journey from one part of the world to another part of the world with the changes of seasons. Bird migration occur when their native place conditions are not suitable or favourable for living because of total vegetative area there is completely frozen with snow. In this conditions resources for survival are decreasing that's why they migrate from decreasing resources toward the area of increasing resources for food, survival, shelter, water, stopover and nesting. In the monsoon season of every year, waterbodies of Rajasthan like lakes, ponds, ditches, canals etc. become filled with rainy water and in these water bodies many types food or prey sources for migratory birds like invertebrates and

vertebrates for ex. Aquatic insects, worms, larvae, molluscans, fish, frogs, planktons and vegetations in pond water etc. After the passing of rainy season, migratory birds start coming here during the winter season.

The Casti pond at Bhopalgarh (Jodhpur), many migratory bird species comes in the months September to February of the year 2021-2022 like; Black winged stilt (*Himantopus himantopus*), Bar headed goose (*Anser indicus*), Demoiselle crane (*Grus virgo*), Little grebe (*Tachybaptus ruficollis*), Indian cormorant (*Phalacrocorax fuscicollis*), great cormorant (*Phalacrocorax carbo*), Common coot (*Fulica atra*), Common moorhen (*Gallinula chloropus*), Eurasian Spoonbill (*Platalea leucorodia*), Knob billed duck or comb duck (*Sarkidiornis melanotos*), Indian spot billed duck (*Anas poecilorhyncha*), Gadwall bird (*Mareca strepera*),



Northern Pintail (*Anas acuta*), Northern shoveler (*Spatula clypeata*), Marsh sandpiper (*Tringa stagnatilis*), painted Stork (*Mycteria leucocephala*), Great blue heron (*Ardeaherodias*), Common pochard (*Aythya ferina*), Ruff (*Philomachus pugnax*), mallard duck (*Anas platyrhynchos*), Red-naped ibis (*Pseudibis papillosa*) Black headed ibis (*Threskiornis melanocephalus*) etc. at this pond.

#### Method and Materials:

The study was done at the Casti pond in Bhopalgarh (Jodhpur). This Casti pond located in at the Latitude 26.567457°N and Longitude 73.233739° E. Many of the migratory bird species arrived at this pond in the winter season of 2021-22 and they stay here in whole winter. I have recorded 21 migratory bird species at this pond during above period and for this study. I have used direct observation method from mid-September 2021 to February 2022. data were recorded in the field book at the Jajiwai pond Bhopalgarh (Jodhpur). I have also collected some information about migratory birds via questionnaire survey from Casti villagers who are living near the Casti pond in Bhopalgarh area. At this pond the migratory bird species were identified with the help of "The birds of Indian subcontinents" (Salim Ali) and "The book of Indian birds" (Salim Ali) and google lens. Each species observed also manually with the help of Nikon binocular (10\*50), Canon camera 700 D with lens 50-400 mm and noted down in field note book.

#### Observations:

Observations of diversity of migratory bird species at Casti pond in Bhopalgarh area from mid-September 2021 to February 2022. I have observed 21 migratory bird species at Casti pond during this period and these are following;

### 1.Black winged stilt (*Himantopus himantopus*)



Black winged stilt belongs to the family Recurvirostridae of shore birds. It distributed in the Asia, Europe, Australia, Africa, North America and South America. An adult black winged

stilt has long pink legs, long thin bill, black-and-white plumage and a male black winged stilt has a black back, while female black winged possesses a brown shade.

### 2.Bar headed goose (*Anser indicus*)



Bar headed goose belongs to the family Anatidae means duck's category. They have extremely large range and can be found in Afghanistan,

Bangladesh, Bhutan, China, Mongolia, Nepal, Russia etc. The Bar headed goose is the one of the world's highest-flying birds. Bar headed goose have slightly larger wing area than other goose bird, which is bilevel to help them to fly at high altitude. These geese rely on flapping their wings, not on gliding.

### 3.Little grebe (*Tachybaptus ruficollis*)



Little grebe also known as dabchick, which belongs to the family Podicipedidae, it is a member of grebe family of water birds. Its genus name is from

takhus is 'fast'and bapto "to sink under". This bird species found in the Indian subcontinent, Including India, Pakistan, Sri Lanka, and Bangladesh. In breeding their plumage, the front of neck and breast are rich rufous red.

#### 4. Indian cormorant (Phalacrocorax fuscicollis)



Indian cormorant belongs to the family Phalacrocoracidae, it is also known as Indian shag. This bird species is mainly a native of the Indian subcontinent but can be found in eastern region of Thailand and Columbia. The Indian cormorant can be distinguished by its distinct blue eyes, small head, triangular forehead and a long beak, neck with a hooked tip. A medium sized adult is brown and black in colour on its upper plumage. Their choice of food consists of fish, frog and other aquatic creatures.

#### 5. Great cormorant (Phalacrocorax carbo)



Great cormorant is belonging to the family Phalacrocoracidae and it is also known as Black shag or great black cormorant across the Northern hemisphere. This species is distributed in Indian Subcontinent, Asia, Africa, Europe, Australia, North America. It is a large bird, measuring 70 to 100 cm in length and weighing 2 to 5 kg. males are heavier than female. It has a long tail, yellow throat patches, and black coloured wings with a long tail, breeding adult has extensive white on head with a red spot at the base of the bill.

#### 6. Common coot (Fulica atra)



Common coot belongs to the family Rallidae and it is also known as Eurasian coot or coot bird which is distributed in Europe, Africa, Asia, Indian subcontinents, Bangladesh, Shri Lanka etc. Its body is totally blacked except beaked head and

legs. Their bill is also white, with a swelling at upper edge and their lobed toes make powerful swimmers in open water area. This species showing very gregarious and stolen type of behaviour.

3848

#### 7. Common moorhen (Gallinula chloropus)



Common moorhen belongs to the family Rallidae is also called as marsh hen or waterhen or swamp chicken. This moorhen bird species is distributed in Asia, Africa, Europe, Indian subcontinent, Indonesia and Philippines. Moorhens are blackish with white stripes on the flanks, red yellow beak and long green legs.

#### 8. Eurasian Spoonbill (Platalea leucorodia)



Eurasian spoonbill belongs to the family Threskiornithidae and it includes in large wading or large shore bird category. This is a palearctic species, from the United Kingdom, Southern Florida, costal Texas, Portugal, Japan, North Africa also. Their large bill is rounded at the tip, and the birds use it to probe with the bottom of muddy or shore water, feeling for amphibians, fish, molluscs to eat.

#### 9. Knob billed duck or comb duck (Sarkidiornis melanotos)



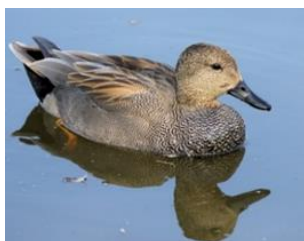
Knob billed duck or comb duck belongs to the family Anatidae and it is also called as African comb duck. This species of duck is found in South America, Paraguay, Argentina, Trinidad, Brazil etc. Fleshy knob over the bill of male smaller outside in breeding time, when yellow head also lost, female comb duck smaller without knob or comb over bill.

### 10.Indian spot billed duck (*Anas poecilorhyncha*)



Spot billed duck belongs to the family Anatidae and this species of duck is also known as Indian spot bill duck. It is a large dabbling duck and its name derived from red spot at the base of the bill, tip of the bill yellow in colour, it is found in the freshwater wetlands in the Indian Subcontinent, Nepal, wetlands of Pakistan etc.

### 11.Gadwall bird (*Mareca strepera*)



Gadwall belongs to the family Anatidae and this duck species is also known as “Gray duck” by hunters. It is a common and widespread medium sized dabbling duck, male gadwall is Gray-brown with black patch at the tail and female gadwall patterned with brown and buffed, also have a thin orange edge to their dark bill. Gadwall breeds in the Europe, across the Palearctic, North America etc.

### 12.Northern Pintail (*Anas acuta*)



Northern pintails belong to the family Anatidae and it is an elegant, long necked duck with a slender profile body and long tailed duck. The tail is long and pointed, in breeding season it becomes much longer and prominent in male than on female and nonbreeding males. The northern pintail is distributed in Indian subcontinent, Northern Asia, Africa, America, Africa etc.

### 13.Northern shoveler (*Spatula clypeata*)



Northern shoveler belongs to the family Anatidae called as common shoveler also belonging dabbling duck family. Its most unique feature is its large shovel shaped

bill, which help in filter feeding habitat in water. During the breeding season, male shovelers have shiny green head, rusty red undersides, a white body with black wings. The northern shoveler species is distributed in Europe, Northern America, Asia and Indian subcontinent.

### 14.Marsh sandpiper (*Tringa stagnatilis*)



Marsh sandpiper belongs to the family Scolopacidae and is an example of small wader bird, which having carnivore type of food habitat. Marsh sandpiper belonging from eastern Europe to central Asea, Eastern Europe, Sub-Saharan Africa Sandpiper body is slender pale with a fine, needle-like bill, slender greenish long legs.

### 15.painted Stork (*Mycteria leucocephala*)



Painted stork belongs to the family Ciconiidae and it is a large wader in the stork family, which is also known as the Dokh or Janghil. These beautiful coloured birds have a heavy yellow beak with a down curved tip and long pinkish legs. It is called painted stork due to their distinctive pink tertial feathers of the adult give them their name. It is found in the wetlands of Southeast Asia, Tropical Asia, Indian subcontinent, South of Himalayas etc.

### 16.Great blue heron (*Ardea herodias*)



Great blue heron belongs to the family Ardeidae and it is a large wading bird in the heron family. It has long legs, long S shaped neck, this neck can extend and retract during flight, a thick dagger like bill with pointed tip. Great blue heron is found in almost any wetland habitat of North America, Alaska, Southern Canada, Mexico, Florida.

**17.Common pochard (Aythya ferina)**



Common pochard belongs to the family Anatidae and it includes in a medium-sized diving ducks' category. Male Pochards have a bright reddish-brown head, black breast, black tail and pale grey body. Pochards breed in much of temperate and northern Europe and across the Palearctic regions.

**18.Ruff (Philomachus pugnax)**



Ruff bird belongs to the family Scolopacidae and this bird species is a medium sized wading bird. It breeds in marshes and wet meadow across northern and western Eurasia. The ruff has a long neck, small head, a shot slightly droopy pointed bill and medium long orange or reddish legs. It has carnivore type of food habitat.

**19.mallard duck (Anas platyrhynchos)**



Mallard duck belong to the family Anatidae and it is also called as wild duck. Male Mallard ducks having iridescent-greenish dark head with yellowish bill, gray body is like a sandwiched between black tail and brown breast. The mallard

ducks having a wide range of habitats, from Arctic tundra to subtropical regions wetland, it found both fresh and salt-water wetlands.

**20.Red-naped ibis (Pseudibis papillosa)**

Red naped ibis belongs to the family



Threskiornithidae and it is also called as Indian black ibis or black ibis. It has reddish warts are found on the crown and the nape, hence the

name. It is a common breeding resident in Haryana, Punjab and Gangetic plains. It is also including in a large wading bird category and its food habit is carnivore type.

**21.Black headed ibis (Threskiornis melanocephalus)**



Black headed ibis belongs to the family Threskiornithidae and it is also called as oriental white ibis or black necked ibis or Indian white ibis. It is a

type of large wading bird species which is generally walking at or along the shore part of the waterbodies. It breeds in the Southeast Asia, Bangladesh, Cambodia, China, Hong Kong, India, Nepal, Pakistan, Shri Lanka, Myanmar, West and east Japan etc.

**Table. 1. List of Migratory birds studied at Casti pond in Bhopalgarh area**

Common name & guild	IUCN status	Residential status	Feeding habit	Feeding
Black winged stilt (Himantopus himantopus)	LC	LM	Wader	Omnivore
Common coot (Fulica atra)	LC	LM	Swimmer	Omnivore
Northern shoveler (Spatula clypeata)	LC	M	Swimmer	Omnivore



Northern pintail ( <i>Anas acuta</i> )	LC	M	Swimmer	Herbivore
Little grebe ( <i>Tachybaptus ruficollis</i> )	LC	R	Diver	Carnivore
Common moorhen ( <i>Gallinula chloropus</i> )	LC	LM	Swimmer	Omnivore
Eurasian spoonbill ( <i>Platalea leucorodia</i> )	LC	M	Large wader	Omnivore
Bar headed goose ( <i>Anser indicus</i> )	LC	M	Swimmer	Herbivore
Common pochard ( <i>Aythya ferina</i> )	V	M	Swimmer	Omnivore
Indian cormorant ( <i>Phalacrocorax fuscicollis</i> )	LC	LM	Diver	Carnivore
Large cormorant ( <i>Phalacrocorax carbo</i> )	LC	LM	Diver	Carnivore
Gadwall ( <i>Mareca strepera</i> )	LC	M	Swimmer	Omnivore
Indian spot bill duck ( <i>Anas poecilorhycha</i> )	LC	LM	Swimmer	Herbivore
Ruff ( <i>Calidris pugnax</i> )	LC	M	Small Wader	Omnivore
Marsh sandpiper ( <i>Tringa stagnatilis</i> )	LC	M	Small wader	Carnivore
Knob bill duck ( <i>Sarkidiornis melanotos</i> )	LC	M	Swimmer	Omnivore
Red napped ibis ( <i>Pseudibis papillosa</i> )	LC	LM	Large wader	Carnivore
Common sandpiper ( <i>Actitis hypoleucos</i> )	LC	M	Small Wader	Carnivore
Painted stork ( <i>Mycteria leucocephala</i> )	NT	LM	Large wader	Carnivore
Great blue heron ( <i>Ardea herodias</i> )	LC	M	Large wader	Carnivore
Black headed ibis ( <i>Threskiornis melanocephalus</i> )	NT	LM	Large wader	Carnivore

V: Vulnerable species, NT: Near threatened species, LC: Least concern species, M: Migrant species, LM: Local migrant species, R: Resident species.

### **Result and Discussion:**

Bird migration is an instinct type of behaviour of the migratory birds, resultant thousands of migratory birds also come toward Rajasthan. At the Casti pond in Bhopalgarh area (Jodhpur), a total 21 migratory bird species were found in 2021-22. It was observed that much more numbers of migratory bird species are arrived in this year at Casti pond. Although average rainfall observed lesser in the rainy season of 2021. It was observed that migratory birds are facing threaten at this pond every year due to decreasing water level very fast because of extremely harvesting of pond water by water tank suppliers. Migratory birds play several essential and indispensable roles to maintained the ecosystem. Accelerated habitat destruction and lost during the last decade, including decreased area under water bodies, ponds, wetlands, forest, natural grasslands etc. Overexploitation of water resources, unsustainable use of natural resources, Pollutions, population explosion along with increased weather variability and climate changes has results in loss of biodiversity in surrounding ecosystem. These factors have also badly impacted in entire life and survival of migratory birds. So, there should be strictly stop or prohibited these types of activities, through which ecosystem imbalanced. water tank supplier activities should be limited at block level administrative government bodies and should be conserve these types of waterbodies by the environmental ruler department of government and NGOs. At sub-district level or village level

should be organize environmental awareness camp like activities related to pond water area or wetland conservation and environment protection.

### **References:**

- S. Ojha and R. Kishor (2021). Returning behaviour of migratory birds from the Jajiwal pond Bhopalgarh (Jodhpur)
- Salim Ali (2003). The Book of Indian Birds. Bombay Natural History Society.
- Salim Ali and Dillon R S., (1987). Compact handbook of Indian and Pakistani birds. Bombay Natural History Society.
- Salim Ali (1954). The birds of Gujarat. Journal of Bombay Natural History Society. Vol. 52; pp-374-458.
- Chauhan Y. (1994). Some observations on migratory birds at Gajner wildlife sanctuary, Bikaner, M.Phil. dissertation submitted to Dungar College, Bikaner.
- Sharma, M. (1992): A Survey of Migratory Birds reported from Gajner Sanctuary, Kolayat and Kodamdesar reservoir, Bikaner(fieldtrip)
- A Salim (1954) The Birds of Gujrat. Bombay Natural His. Soc. Vol.52.
- D Mohan and A Gaur (2007) Avian Diversity Around Jajiwal pond-A Natural Wetland.
- Adam, R.M. (1873) Additional notes on the birds of the Sambhar Lake and its vicinity. Stray feathers361-404

3852

