

Scientific Note**Status and distribution of species of the family Anatidae in the Padma River charland of Rajshahi District, Bangladesh**

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The ducks and geese are wonderful water birds, being members of the Order Anseriformes and the Family Anatidae, commonly called as anatids includes 148 species under 43 genera. The anatids are medium to large sized birds with plumpy body; short legs; toes are jointed each other by skinny folds known as 'web'. These birds can walk strongly, and swim well with their webbed feet. They can remain floating on water for quite a long time, and some can dive under water. Their bill is flat and rounded at the tip, with or without having a small but sharp nail. The ducks and geese forage by diving, dabbling and nibbling in the deep water, on water surface, aquatic weeds and vegetations respectively. The flattened bill with serrated lamellae is well defined for filter feeding. The plumage is so oily that after diving, the birds do not get wet at all. Plumage colour is widely varied among the species; and in some species plumage colour shows sexual dimorphism. Many of them have bright yellow or orange coloured bills, legs and toes. Anatids are vocal birds producing a range of quacks, honks, squeaks and trumpeting sounds; and females often have a deeper voice than males (Todd, 2000). Ducks are also called as 'waterfowls' because they graze in water area.

A large number of the anatids are migratory. They fly to long distances at a great height. A number of species are monogamous breeders, and in most species the females incubate the eggs alone. Young ducks and geese are of all species are precocial. All species of this family undergo a moult of their

flight feathers after the breeding season, and pass through a flightless period of few weeks. Almost all of them live near the waterbodies including inland and coastal wetlands, river charlands, and coastal islands, preferring aquatic and bank vegetations around the water.

The family Anatidae includes 148 species under 43 genera worldwide. A total of 29 species of 13 genera were reported to be found in Bangladesh (Siddiqui *et al.*, 2008). Khan (2015) listed 31 species of anatids under 13 genera from Bangladesh.

Charlands (sandbars) of the Padma and other larger rivers have typically complex ecosystem, referred as 'charland ecosystem'. This ecosystem provides food, shelter and reproductive isolation to the wildlife fauna. Literature on the charland wildlife is scanty in Bangladesh, though numbers of published work are found from different countries of the world (Tracy-Smith *et al.*, 2012). Previously, Reza *et al.* (2014) published an article on the water birds of the Padma River charland of Rajshahi district, which included only five species of anatids.

The present paper deals with the species of the family Anatidae, recorded and identified from the Padma River charland of Rajshahi district of Bangladesh.

The present report is prepared based on the field studies on the charland of the Padma River during a period from March 2008 to June 2015. The field studies were based on bird watching with a team of 8-10 members.

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Study area: The study area extending from Premtali of Godagari upazilla (24°28'N 88°19.8'E/ 24.4667; 88.3306) to Sardah of Charghat upazilla (24°17'N 88°46.5'E/ 24.2833; 88.7750), Rajshahi district. The charland is more or less continuous throughout this part of the Padma River, at some places cut by small closed water areas and narrow channels. The distance between Premtali to Sardah is approximately 60 kilometers.

The main bird observation sites were three: (i) Premtali, (ii) Rajshahi City and (iii) Sardah.

(i) At Premtali the observation area of the char area was around 2-3km from East to West, and approximately 1 km inside the char.

(ii) The longest study site was Rajshahi City Corporation area, extending from the District Court to Shampur, Kantakhali, covering approximately 10.2km long East-West, and around 2-4km inside the char. Bird watching in the Padma charland was started in 2008, for nearly 2 years it was confined to 3-4 points of the Rajshahi City area, such as, Central Park, Baro Kuthi, Alupatti, Talaimari Shaheed Minar and Kazla. Later on other 5-6 points were included in the bird watching area.

(iii) The charland situated adjacent to the Rajshahi Cadet College, Sardah was visited. The site area was approximately 2km East-West and 0.5km inside the char.

Bird watching sites: Bird watching in the Padma charland was started since 2008. For nearly 2 years the bird watching was confined at 3-4 sites of the Rajshahi City area such as, Central Park, Boro Kuthi, Alupatti, Talaimari Shaheed Minar and Kazla. Since 2010, the total study area are extensively covering to record the avifauna, throughout the year except the monsoon time.

Bird watching schedule: The study area was extensively surveyed each year from

autumn (October) to summer (June). In the Rajshahi City area bird watching and data recording have been carrying regularly, at least twice a week. However, at the points from Kazla to Talaimari Shaheed Minar the bird observation was carried once in a week; and at the distant sites like Premtali, and Sardah it was twice in a year.

Bird watching at the Padma char was mostly started before sun rise, and more or less 3-4 hours were spent. Sometimes the study was carried at the late afternoon till sunset, for about 2 hours.

Habitats of the charland: Habitats of the study area were categorized as 1) Water area and 2) Charland. The charland included four types of sub-habitat, such as, grass land, sandy area, agricultural land and open wood land (plantation areas). The characteristics of the soil of the habitats were different. Accordingly flora and fauna of the sub-habitats were found to be different in composition.

Data recording: Digital cameras like, still camera (Nikon D3000 DSLR, 300 mm Nikon lens); video camera (Sony DCR SR68) were used to photograph the birds. A pair of binoculars was used for bird watching. The calls of the birds were recorded with a sound recorder. Besides that the characters observed, and the movements of the birds were noted in field notebook.

Identification of birds: The birds those were photographed were identified in the Department of Zoology, University of Rajshahi by consulting the published literature, viz., Baker (1922-1930), Ali (1961, 2002), Ali and Ripley (1968-1972), Khan (2008, 2015), Grewal *et al.* (1993), Halder (2010), Siddiqui *et al.* (2008), Das & Ghosh (2015) and the Internet (Birdlife International). Characteristics of the birds were studied from those mentioned in the Encyclopedia of Flora and Fauna of Bangladesh Siddiqui *et al.* (2008).

Table 1. Anatid species observed in the Padma River charland and their status and occurrence in Bangladesh

SI No.	Scientific Name	English Name	Bangla Name	Status in Bangladesh ¹	Observation time at study sites
1	<i>Anser indicus</i> (Latham, 1770)	Bar-headed Goose	Dagi Rajhash	Uncommon Winter Visitor	Nov-March
2	<i>Tadorna ferruginea</i> (Pallas, 1764)	Ruddy Shelduck/ Brahminy Shelduck	Khoira Chokhachoki	Common Winter Visitor	Nov-April
3	<i>T. tadorna</i> (Linnaeus, 1758)	Common Shelduck	Pati Chokhachoki/ Shah Chokha	Common Winter Visitor	Jan-Feb
4	<i>Nettapus coromandelinus</i> (Gmelin, 1789)	Cotton Pygmy Goose/Common Teal	Dhola Balihash	Uncommon Resident	Jan-March
5	<i>Anas falcata</i> (Georgi, 1775)	Falcated Duck	Phuluri Hans	Rare Winter Visitor (Globally Near Threatened)	January
6	<i>A. Penelope</i> (Linnaeus, 1758)	Eurasian Wigeon	Eurasio Sithihash/Lalshir	Common Winter Visitor	Oct-March
7	<i>A. poecilorhyncha</i> (Forster, 1781)	Indian Spot-billed Duck	Deshi Meteyhash/	Uncommon Winter Visitor	March-Nov
8	<i>A. strepera</i> (Linnaeus, 1758)	Gadwall	Piyong Hans/Peeing Hash	Common Winter Visitor	Oct-April
9	<i>Netta rufina</i> (Pallas, 1773)	Red-crested Pochard	Bamunia Hans/Tiki Hash	Uncommon Winter Visitor	Dec-Jan (very rare)
10	<i>Athya fuligula</i> (Linnaeus, 1758)	Tufted Duck/Tufted Pochard	Laljhuri Bhutihash	Common Winter Visitor	Oct-July (often seen throughout winter)
11	<i>A. nyroca</i> (Guldenstadt, 1770)	Ferruginous Duck	Morcherong Bhutihash	Common Winter Visitor	Nov-April

¹Siddiqui *et al.* (2008)

Names of the recorded species were confirmed from ITIS (2005). Status of the birds in Bangladesh was confirmed from BirdLife International (2016).

During the study period total 11 species of anatids were recorded from the Padma River charland of Rajshahi. Among the observed birds only one was a goose and the rest are ducks. These 13 species belong to six genera viz., *Anser*, *Tadorna*, *Nettapus*, *Anas*, *Aythya* and *Netta*. The number of the species under each of the genus is, 1 species of *Anser* (11%), 2 species of *Tadorna* (18.18%), 1 species of *Nettapus* (11%), 4 species of *Anas* (36.36%), 2 species of *Aythya* (18.18%) and 1 species of *Netta* (11%). Names of the species and their status in Bangladesh are presented in Table 1. All the species are winter visitors of Bangladesh except *Nettapus coromandelinus*,

which is an uncommon resident of Bangladesh. *Nettapus* is a monospecific genus in the world. In southern parts of Bangladesh, *N. coromandelinus* has been domesticated, and reared along with the domestic ducks. Harvey (1990) reported total 26 species of anatids from Bangladesh. In Siddiqui *et al.* (2008) total 29 species ducks under 13 genera are listed.

The observed birds were identified by their plumage colour and the characters as mentioned in Siddiqui *et al.* (2008). Among the observed birds it was found that the Shelducks (*Tadorna* spp.) and the Wigeon (*Anas penelope*) are distinctively colourful than the other species. Literature show that some of these species differs in colour between the sexes, and even the males of some species differ in colour between their

breeding and non-breeding seasons of the year. All of the recorded species were observed as flocks of small or large sizes; some are fond of living with family party or in mixed party (Siddiqui *et al.* 2008). On the Padma char the shellducks especially the Ruddy Shellduck were seen in large flocks consisting of 50 to 100 birds. During each visit only four Bar-headed geese were found. The Falcated Duck, the Indian Spot-billed Duck and the Red-crested Pochard were seen rarely, and the Cotton Pygmy Goose

was seen only 2-3 times during the study period (Table 2).

During the morning visits, the birds were found to forage either in water or at the edge of char area in shallow water. Whereas in the evening, they were found roosting in mixed flocks near the water line. However, the rare species were seen only during the morning visits. The Bar-headed Goose, the Falcated Duck and the Indian Spot-billed Duck are herbivorous and the other species are omnivorous in nature (Siddiqui *et al.* 2008).

Table 2 . Abundance and occurrence time of anatid species in different divisions of Bangladesh and present record in the Padma River charlands

SI No.	Species	Abundance of species in divisions of Bangladesh*	Occurrence in Bangladesh* ¹	Reported from Rajshahi division	Present Record (2008-2015)
1	<i>Anser indicus</i>	Uncommon, Rare B,C,D,K,S	Nov-March	Not Reported	First Report
2	<i>Tadorna ferruginea</i>	Common B,C,D,R,S	Nov-April	Common	Common
3	<i>T. tadorna</i>	Uncommon B,C,D,R,S	Jan-March, May-Sept ¹ ,	Rare in Padma	Common
4	<i>Nettapus coromandelinus</i>	Uncommon C,D,R,K,S	Jan-March, often May-Sept ¹ , once in Dec-Jan ¹	Harvey (1990)	Rare
5	<i>Anas falcata</i>	Rare D,C, S, B,	January ¹	Not Reported	First Report
6	<i>A. penelope</i>	Uncommon/ Common D,R,C,B,S	Oct-March	Uncommon	Uncommon
7	<i>A. poecilorhyncha</i>	Rare All divisions	March-Nov	3 in Padma (EH 2006)	Uncommon
8	<i>A. strepera</i>	Uncommon/ Common All divisions	Oct-April	Uncommon	Uncommon
9	<i>Netta rufina</i>	Rare D,R,S	Dec-Jan (very rare)	Padma near Rajshahi Town (EH 2007)	Rare at Haripur Char, Padma
10	<i>Athya fuligula</i>	Uncommon/ Common All divisions	Oct-July (often seen throughout winter)	Uncommon	Uncommon
11	<i>A. nyroca</i>	Uncommon/Rare B,C,D,S	Nov-April	Not reported	First Report

*Siddiqui *et al.* (2008), ¹from present record, EH: Enam Ul Haque

Flight of some of the reported species was photographed with video camera. Flocks of the Bar-headed geese were seen to fly in a straight line. In literature it is found that this goose species fly either in a straight line or in a 'V' pattern. The Falcated Duck was found to fly with strong wing beats, and a swishing

sound was heard when they flew over the head. The Cotton Pygmy Goose was observed to fly swiftly with a whistling sound of wing beats (Siddiqui *et al.* 2008).

An amateur birdwatcher James Pender reported the Shellducks, Eurasian Wigeon,

Indian Spot-billed Duck, Gadwall, Red-crested Poshard, Tufted Duck and Ferruginous Duck from the Padma char of Rajshahi (unpublished report). Except the report of Reza *et al.* (2014) there found no published reports on the anatids of the Padma River charland of Rajshahi.

All the anatid species listed in this paper are present in the National bird list of Bangladesh, with their distribution in different divisions (Siddiqui *et al.*, 2008). However, three species, *viz.*, *A. indica*, *A. falcata* and *A. nyroca* have not been reported to seen from Rajshahi Division. In this report these three species have included as the first report from this division (Table 2).

However, some relevant literature were also consulted for this paper, which are, Ahsan & Mannan (2002), Rahman and Khan (1982), Hume (1888), Young (1900), Chaterjee *et al.* (1995), etc. All these reports confirmed that most of the anatid species reported in this paper, are common winter birds of the rivers of West Bengal, Assam and Bangladesh.

The riverine habitat (water channels and sandbars) of the world supports a wide variety of bird species, many of them nests on sandbars, and other forages along or in the water channel (Claassen, 2004). The river charlands (sandbars) start to develop during the post-monsoon season and become drowned when the river water volume starts to rise, during the monsoon season. Some of the charlands of the river Padma are high enough and became permanent, and have developed as human habitation.

In fact detailed studies on river and charland birds of Bangladesh are scanty. Some reports are found on the waterbirds including the anatids as patchy work in some areas of different divisions of the country. Once there were number of water bodies including rivers in and around the Dhaka city, which are being reducing drastically with the advancement of urbanization. Husain *et al.* (1974) prepared a

list of birds of the then Dhaka, in which nine species of ducks and geese were reported. Six of the reported species are also present in the Padma river chars.

In many countries assessment, protection, site management and conservation of the waterbirds have become the part of wildlife conservation and protected by the Act (Kushlan, 2012). Unfortunately, in Bangladesh there are laws for the protection of waterbodies and its biota, but those are not strictly followed and there is no monitoring at all.

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