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Major Fauna of Rasik Beel
(West Bengal)

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ZOOLOGICAL SURVEY OF INDIA

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MAJOR FAUNA OF RASIK BEEL WETLAND COMPLEX (WB)

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INTRODUCTION

The Natural beauty of the Ganga-Brahmaputra basin in North East India is simply incomparable. The foothills of the eastern Himalayas are rich in wetlands. The biodiversity and scenic beauty of these areas attract tourists in large numbers. It is an attractive tourist site. Among these the Teesta-Jaldhaka-Raidak basin is a part of North Bengal.

Rasik Beel, one of the most important wetland of these areas is included in the Wetland Development Project of the Government of India (M.O.E.F., Govt. of India, vide No. J-22012/33/2004-CS(W) dated 1.9.2005). It is situated in the district Coochbehar of the state West Bengal. The Rava, Orao, Kheria and Rajbangshi communities are intimately associated with the Rasik Beel wetland both socially and economically. Their evolution down the edges is a part of folklore. Hordes of tourists are drawn to watch the migratory birds. The local people claim that apart from the migratory birds of diverse colours, some endangered species like Porcupine, Anteater could be seen only a few years back.

The district of Coochbehar, forming the boundary between West Bengal and Assam in the north-eastern part of India, occupies a pivotal position both historically and geographically. The abode of the Maharajas of Coochbehar, it is the gateway not only to north-east India but also to south-east Asia. Ecologically, too, the forests in the vicinity of Cooch Behar are growing in stature. Rasik Beel, a natural lake with an approximate total area of about 178 ha, is repose of birds, both residential and migratory. The nature of the Beel is a cut-off meander/ ox-bow lake. This lake is actually a complex of a number of wetlands. Some of the small beels or their portion are seasonal in nature and have been transformed into cultivated lands seasonally. The shape of few beels is that of a finger with a relative depth of about 2 metres from the adjacent land area.

The distance of Bhutan Himalayas from Rasik Beel is only about 40 Km. The cut-off meander form of the beel is due to an abrupt change of river course in the semi-mountainous sub-Himalayan region. The general slope of the region is towards the south. The northern part of Rasik Beel is bounded by a 40 M contour line. The Altitude of this complex is thus around 40 M. The main river of the locality is Raidak at a distance of 7 Km of the West from Rasik Beel. Rasik Beel lies between the Burah-Raidak and the Ghoramara rivers.

Scientifically based management action is very useful to maintain the ecological balance of any wetland region. Current inadequacy of scientific data represents a great hindrance to the

sustainability capacity of the Rasik Beel wetland complex which retards the ecological growth/ development of the complex. The Department of Social Forestry, Cooch Behar Division, has undertaken initiative to explore the Rasik Beel wetland complex in a complete scientific manner to compensate the previous loopholes and to plan a sustainable development of this area in long term basis in proper way.

GENERAL DESCRIPTION OF RASIK BEEL

Rasik Beel is a vast natural lake with one of the most promising biodiversity reserves of this region. The wetland complex constitutes water bodies of varying sizes namely, Rasik beel, Nildoba beel, Raichangmari beel, Boachamari beel and some others. The wetland complex is surrounded by Chengmari, Bara Salmari, Atiamochar and Takomari protected forest. The adjacent forest of the beels is very young and is about 10-12 years old. The beel-complex lies between Burah Raidak River and Ghoramara River. The surrounding forest of the wetland complex comes under classification of Tropical Swamp Forest. There are about eight villages surrounding the area, villagers belong mostly to schedule castes and tribes, namely Rava, Orao, Munda, Kheria, Rajbanshi etc. Almost 20% of the total forest area is interspersed with natural beel (wetlands) forming a part of the Raidak-II riverine system with a well defined watershed area and drainage system.

NOMENCLATURE

The origin of the name Rasik Beel has diverse interpretation. Some people say that the name derived from its owner named Rasik. However, legend goes that the beel was filled with fish on the first day and completely devoid of it the very next day. It is because of this wonderful trick of nature that people call it Rasik Beel. Etymologically, in Bengali, “Rasik” means a trick or sense of humor. As reported by the local villagers, the natural forest area around this wetland was destroyed long due to a devastating flood, which tolls all the big game also.

HISTORY AND JURISDICTION OF RASIK BEEL

Before independence Rasik Beel was a block (Thak No. 1183) under Gadarhat Reserve (presently named as Atiamachor and Nagurhat Beat) under the provision of the Coochbehar Forest Act (Act No. II of 1908) and also under the direct control of the Private Secretary of His Highness, the Maharaja Bhup Bahadur. The Reserve was rightly maintained for game. At first sungrass, dry firewood and some timber trees were sold from the Reserve. Later on, sale of forest produce was stopped due to a misapprehension that activities inside forest

would frighten the game away, and only the right to fish in some streams and beels in the Reserve was leased out from time to time.

According to the report of Y. S. Ahmad, IFS, DFO, Buxa Division, Bengal in 1939, the Rasik Beel was a block under Gadarhat Reserve and situated between Chakwabhangni Nadi on the west, cultivated land on the east and south and a demarcated line on the north. It was more or less triangular in shape at that time. The soil was sandy, may be due to the change of course of Raidak River at overflow during rainy season. The block area contains several beels which are connected with the Chakwabhangni Nadi, locally known as Bochamari. Those beels provide shelters to the wild ducks in the winter season and to the wild buffaloes in summer. At that time it was principally a grass forest. On the high ground, batta and udhad grass (*Saccharum* sp) occured with a few scattered Sissu (*Dalbergia sissoo*), Udal (*Sterculia villosa*) and Palash (*Butea* sp) trees. In the adjacent arears of the beels, only Nal (*Phragmites karka*), Khagra/Kans Grass (*Saccharum spontaneum*) and Ekra/Hardy Pampas Grass (*Erianthus ravanae*) grasses were found. The trees were few and scattered.

It is also learnt from the report of Y. S. Ahmad (IFS, DFO, Buxa Division, Bengal in 1939) that a herd of about five wild buffaloes (*Bubalus sp.*), a number of Hog-Deer (*Axis porcinus*), six pairs of Bengal Florican (*Houbaropsis bengalensis*), plenty of Bear (*Ursus thibetanus*) and Peafowl (*Pavo cristatus*) were there in the Gadarhat Reserve. Numbers of buffaloes were reduced due to the epidemic of rinderpest. Other games vacated the Reserve due to destruction of their habitat because of several reasons. An elephant tract was there in the Atiamochar beat during that time.

After the mearger of Coochbehar with India, the Reserve came under the control of West Bengal Forest Department. On 3rd January, 1950 all Reserves of the Coochbehar State were taken under the charge of Shri K. L. Lahiri, the then Divisional Forest Officer, Buxa Division. The Gadarhat forest was declared as protected forest on 29th April, 1962 as per Government Notification No. 2622, dated 29/04/1962. The Atiamochar and Nagurhat beat was under the Coochbehar Social Forestry Division since 09/03/1984. Recently the name of the division has been redesignated as “Coochbehar Division” in terms of Government Notification No. 1373-For/FR/O/G/4E-01/05, dated 19th March, 2008.

At present the distribution of forest in and around Rasik Beel under the Coochbehar Division is given in Table-I.

Table-1 : The distribution of forest in and around Rasik Beel.

Name of Range	Beat	Mouza	J.L. No.	Total area in Ha.
Coochbehar-I	Nagurhat	Baro Salbari	27	383.92
		Dorko	13	60.97
		Choto Salbari	28	32.10
		Chengtimari	14	351.95
		Natabari	115	2.40
		Charalijani	35	0.88
		Debatter Charalijani	36	3.71
	Rasik beel	Rasik beel	26	136.38
	Atiamochar	Bansroja	55	63.20
		Part III	27	0.88
		Paglirkuti	16	30.65
		Mahiskuchi	62	33.32
		Atiamochar	15	238.47
		Madhurbasa	18	5.53
		Chat Bhalka	21	53.28
		Garbhanga	22	170.20
		Takuamari	25	254.42
		Falimari	64	67.31
		Jaldhoa	23	12.55
		Kharibari	17	258.33
		Najiram Deotikhata	20	46.67

GENESIS OF THE LAKE COMPLEX

The individual beel within this wetland complex are all cut-off meander in genesis. These are found due to abrupt change of river course in sub-Himalayan region. The general slope of the region is towards South-east. Northern part of Rasik Beel is bounded by 40 meter contour line and the average altitude of this complex is thus around 40 meter. The main river of the locality is Raidak River, which is about 7 km apart from the complex and lies on Western side of it. Other two rivers of the locality are Burah Raidak and Ghoramara River. The Rasik Beel Complex lies in between these two rivers.

It is learnt from the 1951 Census Report that the Rasik Beel wetland complex is not a very old one. The basic feature of the rivers of North Bengal, especially those in the Duars is that they carry a greater load of water in the rainy season than rest of the year because of this they frequently change their course in the rainy season and leave behind a lake or jheel along the old course. The survey report of Pemberton (1858) points out that the river Rongbarsuti was once a powerful stream. It is a tributary of the West Raidak and flowed through the Rasik Beel area. It is now known as the Ghoramara river and is a dead stream. Surprisingly Major Rennell's map of 1779 did not show this important river tract of the west Raidak. O. Donnel's survey report in 1869 mentioned a small stream named the Sakobhanga (also known as Chakwabhangni or Satwabhangni Nadi) which flowed through Atiamochar and Rasik Beel and finally joined the river Ghoramara. It can be postulated from these studies that Rasik Beel wetland complex was certainly formed from the river Raidak now known as Bura Raidak, the oldest major Raidak river or from its tributaries the Ghoramara, and/or Sakobhanga (or Chakwabhangni or Satwabhangni). It is very interesting that the name of Atiamochar and Rasik Beel was mentioned by both Pemberton (1858) and O. Donnell (1869). Therefore Rasik Beel was surely present before the survey of these two surveyers *i.e.* before 1858 but not earlier than 1779 *i.e.* at the time of survey by Major Rennell. Therefore Rasik Beel might have been formed from the course of the Bura Raidak. The lakes Bochamari now known as Dhakeswari and Raichengmari might have formed from the course of either Bura Raidak or Sakobhanga (or Chakwabhangni or Satwabhangni). But the Beel Salmara, Batikata, Sakobhanga was certainly formed from the river Sakobhanga. The position and the shape denote that the Atiamochar Beel, Pukipara-I and Pukipara-II, and the Nildoba beel might have been formed from the course of the river Ghoramara. All these beels except the Bochamari Beel might have been formed during the second half of the 18th century.

GEOTECTONIC SET UP

Geographically Northern part of West Bengal is broadly divided into mountain and plain regions. A 300 meter contour line divided these regions. The plains of North Bengal further divided into four sub-regions viz. (a) Piedmount (or Duars), (b) Active, (c) Matured and (d) Moribund. These divisions are based on height and there by demarcated by specific contour pattern. The Rasik Beel is situated in the plains of Tista-Jaldhaka-Torsa system. It is within the Active zone, just below the Piedmont zone. This Active zone extends from the 66 meter line in the North spreading out to 27 meter contour line in the South. The drainage pattern still remains divergent. The rivers of this Active zone are flowing south eastward. The overall topographic set up is like a wide alluvial fan spreading out like an inland delta, with channels diverging out like distributaries, to fall ultimately into the waters of the East to West running Ganga-Padma.

The gradient of the regional set up of this wetland complex is gentle. The lake complex contours are spaced wider apart. The rivers are serpentine in their still steady onward journey and the land building process is quite active. Wide river frequently overflow their shallow banks in torrents, but the water clears out speedily without causing water overlogging but leaving behind fresh silts. Although the slope here is more or less gentle and varying from 1 : 1800 to 1 : 7800, due to its proximity to the Himalayas, the river courses change abruptly and through this process a large number of wetlands have been formed and are constantly being formed. On the other hand, during flash flood, due to deposition of huge sediment, certain wetlands and sometimes even cultivated land are sometimes lost all on a sudden.

CLIMATE

The average temperature varies from 15.5°C to 32°C. Effect of South-West monsoon causes lot of rainfall which usually starts from later half of May, increases from moderate to heavy during June to August and ends by first week of October. Average annual rainfall is 3200 mm (distributed over 102 rainy days). The area is humid, dry weather prevails during March-April.

HYDROLOGY

The hydrology of Rasik Beel Wetland Complex is mainly controlled by run-off water. Run-off from the vast catchment area enters the beel complex during monsoon and flow out through the sluice gate at the extreme south part of the complex toward Ghoramara River. The hydrological flow is from north to south along the natural slope of the beel complex. Few beels particularly Bochamari, Raichengmari, Atiamochar, Noldoba and Sakobhanga beels are perennial in nature. All beels are fed by surface discharge.

VEGETATION

The water hyacinth (*Eichhornia crassipes*) is the dominant infested species of the open water area of most of the beels of this complex. The marshy and water edges area of the wetland complex consist of a few free floating, anchored and rooted emerged plants. The major mycrophytes covers the Rasik Beel wetland area are of emergent type the local names of which are Hincha (*Enhydra fluctuans*), Kalmi (*Ipomoea aquatica*), Kasara-dam (*Ludwigia adscendens*), Janglidal (*Hydroryza aristata*) etc. Water fern (*Azolla sp.*), Kureli (*Hydrilla verticillata*), Pata-sheola (*Vallisnaria sp.*), Paniphal (*Trapa natans*) vegetation dominates the free-floating area of the complex. The banks of the beels have luxuriant growth of grasses like water-pepper (*Polygonum sp.*), Kukundar (*Grangea sp.*), red nut sedge (*Cyperus sp.*), haldi (*Curcuma sp.*) etc.

DEMOGRAPHIC STATUS OF THE FOREST VILLAGES

There are three forest villages around the Rasik Beel wetland complex, namely Atiamochar, Rasik beel and Paglirkuthi banabasti. These villages are under the Coochbehar Forest Division. According to administration these villages are under the Mahiskuchi-II Gram Panchayat of Tufanganj-II Panchayat Samiti.

Generally inhabitants of these villages are Rava, Orao, Mins, Kharia, Rajbanshi etc. They belong to scheduled caste and scheduled tribe category. Department of Social Forestry, Government of West Bengal handed over 7.50 bighas of land for cultivation to each family of these villages. Almost all available land is being cultivated, mostly twice a year. As time passed, the number of the member of each family increased proportionately, and naturally, land per head decreased accordingly. Thus, a kind of disguised unemployment has been developing among the youth of these three forest villages. However, women are more enthusiastic about the formation of co-operative for fishing/farming and other manpower involved development works in that area for improving the economic status of their community.

According to the report of the social survey (2006-'07), conducted by "Patakuri Uttoran Samaj Kalyan Sangstha" (Reg. No. S/IL/18007 under registration of society act XXVI of 1961, WB), Coochbehar in association with Coochbehar Social Forestry Department, about 54.34% villagers are literate in these three villages. Literacy rate is highest in Rasikbeel banabasti, where it is 60% and lowest in Atiamochar banabasti (44.4%). The percentage and the level of literacy among the younger generation are much higher.

52.17% villagers are engaged in single primary occupation for their family livelihood. The primary occupation is mainly agriculture/fishing/farming/part-time services to the forest department etc. 41.30% villagers are engaged in double occupation. Secondary engagement is either fishing or daily labour or forest production collection. Only 6.52% villagers are engaged in triple occupation.

A large fraction of the households maintain one or two animals (namely pigs/goats/cows etc.), but are not aware of co-operative farming concept. These domestic animals are maintained mostly for their own consumption of meat/eggs/milk etc.

Electricity is not available in these three villages, though the infrastructure for electrification is almost complete.

LAKE DESCRIPTION

DHAKESWERI (BOCHAMARI)

The beel is typical ox-bow shaped (Plate-III), positioned extreme south of the wetland complex, and connected with the Raichengmari beel by a narrow finger shaped water body.

Previously known as Bochamari, it is composed of Boro Bochamari and Choto Bochamari. The main water body lies from east-west direction. It is a vast water body probably the largest of the wetland complex. Few landmasses have arisen in different location of the beel. The depth of the beel varies from 1 to 6 metres. Due to siltation the land mass area formed in between Bochamari and Raichengmari beel is known as Central Island.

RAICHENGMARI

It is one of the twin wetlands and portion of the ox-bow meander of the Bochamari-Raichengmari wetland complex. It is second largest in size in the wetland complex and is the main attraction of the tourists due to the development of banglow (forest rest house), Children Park, aquarium etc. adjacent to this beel. The depth of the beel varies from 1 to 5 metres.

ATIAMOCHAR

It is an ox-bow shaped beel. According to local villagers this beel is the actual Rasik beel. The eastern portion of the beel is transformed into a marshy land which is known as Salkata beel. The north-western portion of the beel is separated from the main body by a narrow walking strip and was divided into two lakes named as Pukipara-I and Pukipara-II beel of which 1st one is finger shaped and the other is ox-bow shaped marshy land. The depth of the beel varies from 1 to 3 metres. The marshy area around this beel has been transformed into seasonal cultivated land.

NOLDOBA

The shape of the beel is cut-off meander type. It is completely separated from the main wetland complex, lies at the southeast corner of the complex. It is separated from the main complex by a bandth, which is now used by the locals as their communication (walking) road. Large portion of the surface area of the beel is covered by dense weeds. Fringe area of the beel has been transformed into a marshy land sometimes used by the local people for agriculture. Now de-siltation and restoration is going on with the help of Central Government sponsored project.

SAKOBHANGA

Though it has been named as Satwabanga Nadi (previously Chakwabhangni Nadi) in SOI topographical sheet (1977) but locals called it Sakobhanga which is also found in the 1951 Census report of Government of India. Portion of it is fan-shaped and in winter season total length of the dead river comes to about 3 Km. The depth of the water varies from 4 to 8 feet during dry season. Certain portion of the dead river has transformed to marshy and dry lands thus dividing the stretch of the water body into few small beels namely Batikata, Salmara, Varveri, etc.

NILDOBA

Lying in the extreme northeast of the wetland complex and nearer to the Atiamachor forest banglow (forest rest house) is the Nildoba beel. Shaped like a finger, this beel might have been formed from the course of river Ghoramara. It is under the process of renovation by the locals and authority for the pisciculture purposes.

OBJECTIVES OF THE STUDY

The biotic community of the Rasik Beel water body complex is undergoing changes from aquatic/marshy to mesophytic types which have led to complex terrestrial and aquatic ecosystems. The Rasik Beel wetland provides suitable habitats for fish, winter resort for a variety of birds for shelter and foraging. Besides being a very good source of food, fodder and other important biological products these lakes also harbour a vast array of animals, birds, reptiles, fish and other lower fauna all of great economic, ecologic, aesthetic and scientific importance. This wetland also plays a great role in flood control, treatment of wastewater, sediment load reduction, production of organic materials, pollution abatement etc.

The main objectives of the study is

(a) to obtain a comprehensive information of Avifauna of the wetland complex

(b) to prepare a checklist of other major fauna of wetland complex

(c) to prepare an inventory of the merged, submerged and floating vegetation of the wetland complex

(d) to prepare a checklist of the zooplankton population of the wetland complex

(e) to determine the physical and chemical parameters of the various beels of the wetland complex.

and thus to explore the possibility of developing the Rasik beel area as a recreational bird watching spot.

METHODOLOGY ADOPTED

An initial survey work was conducted during the first quarter of the year 2006. The study on amphibians and reptilians were conducted later, i.e., June-July of the same year (monsoon season). The findings were further verified and supplemented by random surveys conducted throughout the years 2008 and 2009.

Conventional method through observation and photography of bird species and other major fauna was used during the survey. Avifauna survey was carried out by direct sighting using field binocular and pictorial guides. Stress was given on recording the call of the bird, collection

of feather and observing the nests. Capture and release method was applied for some small birds when necessary. The avifauna was identified with the aid of Ali and Ripley (1968-1974, 1996), Ali (1977, 1984, 1989, 2000); Ali and Futehally (2004); Green (1986); Lister (1956), Mukherjee (1995); Mukhopadhyay *et al.* (1999); Peterson (1963); Ripley (1982); Manakadan and Pittie (2001); Sanyal and Roychowdhury (2001); Majumdar *et al.* (1992); and Venkataraman (1995). Stress was also given to record the habitat and migratory status of the birds of this complex, as this wetland complex is popular for the migratory waterfowl watching. Waterfowl census was undertaken in three successive years *i.e.* in 4th week of January 2009, 3rd week of February 2010 and 2nd week of February 2011. Comparative checklist of the data of waterfowl census is given in the form of Table (Table-10).

In the field, notes were taken regarding the habit and habitat of the frogs, toads and lizards. Digging, night watching, locating by the use of bait etc. was applied to record the other major faunal species.

Aquatic fauna was collected by the help of bag-nets, cast-nets and fishing hooks, and preserved in 4% formaldehyde solution and identified with the aid of Shaw and Shebbeare (1937), Jayaram (1981) Talwar and Jhingran (1991) and Jhingran (1991). Vertebrate species other than bird and fish were identified with the aid of Agarwal *et al.* (1992); Ahmed and Dasgupta (1992); Biswas *et al.* (1999); Dutta Majumder (1995); Molur *et al.* (1998); Sarkar *et al.* (1992); Saha *et al.* (1992) and Prater (1998). Invertebrates were identified with the aid of Sinha *et al.* (1988), Bahuguna (1999), Ghosh (1992) and Singhal and Chowdhury (1996). Both terrestrial and arboreal fauna were collected by hand or by long forceps. All the data were recorded zone wise. The data on the history of occurrence/distribution of the major fauna was cross checked with the local people.

Water was collected from the different water bodies and analysed following standard methods as recommended by PHE, Govt. of India. Pankton were collected with the aid of plankton net made of standard bolting silk cloth, preserved in formaldehyde and identified with the aid of Khan (2003). Following methods were followed for the study of limnological status of the Rasik Beel wetland complex.

(i) **On the spot** pH of different spots were recorded by using a portable digital pH meter (Hanna make).

(ii) **On the spot** TDO (total dissolve oxygen) of different beels were estimated by using a portable digital DO meter (Electronic India Pvt. Ltd. Make).

(iii) Hydrophytic plants were collected by following anchoring and dragging method.

(iv) Thallophytic plants were collected by using plankton net.

(v) Individual specimen of different spots were isolated/separated and identified in the laboratory. For better resolution thallophytic specimens (phytoplanktons) were stained with 1% cotton blue and mounted on glass slide using lactophenol.

(vi) Pelagic Zooplanktons of different spots were collected by dragging a plankton net (with a test tube attached in its lower part by a rubber band) through water.

(vii) Individual samples were collected in Petri dish and 4% formalin was added drop wise to cease the movement and to preserve. Specimens were stained by 90% aqueous eosin and studied by a binocular microscope (Olimpus : Ch 20i).

(viii) For estimation of BOD (biochemical oxygen demand) the collected water samples were incubated five days in an incubator and analyzed them by titration method.

Methodology for Chemical Tests :

IRON : based on- Reaction of iron (II) with **Ferrospectral** in a thioglycolate buffer to form a violet colour complex; OD taken in a spectrophotometer at 565 nm [Ref. Kit insert, Merck, Germany].

CHLORIDE : based on-Reaction of chloride with mercuric thiocyanate in the presence of ferric iron to form mercuric chloride, chloromercurate-(II) anion and orange-red ferric thiocyanate; OD taken in a spectrophotometer at 450 nm [Ref. Kit insert, Merck, Germany].

HARDNESS : Conventional titration method was followed using EDTA as a titrating solution.

FLUORIDE TEST : based on-In a buffered, weakly acidic solution, fluoride ions react with alizarin complexone and lanthanum (III) to form a blue complex that is determined photometrically at 620 nm [Ref. Kit insert, Merck, Germany].

ARSENIC TEST : based on-When zinc and sulphuric acid added to compounds of arsenic (III) and arsenic (V), arsenic hydride is liberated, which in turn reacts with mercury (II) bromide contained in the reaction zone of the analytical test stripe to form yellow-brown mixed arsenic mercury halogenides. The concentration of arsenic (III) and arsenic (V) were measured semi quantitatively by visual comparison of the reaction zone of the analytical test stripe with the fields of a colour scale [Ref. Kit insert, Merck, Germany].

TURBIDITY : Determined by using turbidimeter; Eutech Instruments make.

CONDUCTIVITY : Determined by using conductivity meter; Eutech Instruments make.

TDS (Total dissolve solid) ESTIMATION : done by using “Standard TDScan 2 Pocket TDS Tester” (0.1-10.00 ppt); Eutech Instruments make.

FINDINGS AND DISCUSSION

Wetlands are transitional areas between aquatic and terrestrial ecosystems where the water table occurs usually at or shallowly above the surface of the land. They include marshes, flood plains, bogs, peat lands, shallow ponds, littoral zone of large water bodies etc. A rich variety of flora and fauna thrive in the congenial ambience of wetlands. This special environment fosters and supports species, which are unique to wetlands. Therefore, protection of wetland ecosystem is extremely important to the conservation of biodiversity of an area.

Coochbehar, the gateway city to north-eastern India, is in the cradle of Bhutan Himalaya, and is the cardinal point for tourists specially who are interested in ethnic spots and also those who want to enjoy the forest environment. Long distance inter-state communications by rail, road, and air in the offing, are available to the tourists to approach some of the famous sanctuaries and National Parks adjacent to the eastern Himalaya. Cooch Behar holds an important position in the tourist map of West Bengal not only as a planned township with amenities but also for having heritage buildings and surrounding eco-tourist spots rich in floral and faunal diversity.

Lake and surrounding areas of Rasik Beel Wetland Complex witness a large population of residential and migratory birds having variable status. Birds like cormorants, egrets, herons, snipes, kingfishers, raptors etc. reside almost throughout the year. Varieties of teals such as Brahmini duck, Wigeon, Lesser-whistling teals, Poachard etc. visit the area from far-off-corners during winter period.

LIMNOLOGICAL FINDINGS

Water quality, habitat structure, flow regime, energy source and biotic interactions are the major environmental factors that determine water resource integrity of any wetland. The physical and chemical attributes of water are the critical components of a water resource. They include temperature, dissolved oxygen, pH, hardness, turbidity, concentration of soluble and insoluble organic and inorganic, alkalinity, nutrients, and an array of toxic substances which may have simple chemical properties or their dynamics may be complex and changing, depending upon other constituents in the geological strata, soils, and land use in the region. With the aid of physical and chemical analysis techniques, it is possible to obtain information on the condition of water at the place and time at which the samples are taken. A number of physical and chemical parameters were measured in the Rasik Beel Wetland Complex in the present study.

Status of water quality :

With the aid of physical and chemical analysis techniques, it is possible to obtain information on the condition of water at the place and time at which the samples are taken. A number of physical and chemical parameters were measured in the Rasik Beel Wetland Complex in the present study. Results are given in tabular form in Table-2.

Table-2 : Showing various physical and chemical parameters of three major beels in Rasik Beel Wetland Complex.

Chemical & Physical Parameters	**Status in three major beels**		
	Bochamari	**Raichencmari**	**Atiamachor**
GPS reading	**26°24.547" N 89°43.382" E 103.6 ft AMSL**	**26°25.128" N 89°43.422" E 116.5 ft AMSL**	**26°25.462" N 89°43.912" E 121.3 ft AMSL**
Iron (mg/lit)	0.21	0.18	0.16
Nitrate (mg/lit)	3.75	2.82	4.15
Chloride (mg/lit)	4.3	2.4	1.4
Total Hardness (mg/lit)	80	64	52
Fluoride (mg/lit)	0.22	0.34	0.24
Arsenic (mg/lit)	<0.02	<0.02	<0.02
pH (on the spot)	7.3	7.4	7.9
TDS (ppm)	71.2	45.0	11.0
EC (microS/cm)	96.4	77.2	35.0
DO (mg/lit)	9.15	8.36	8.65
BOD (5 days incubation)	26.2	36.5	41.0

Abbreviations :

(1) NTU = Nephelometric Turbidity Unit

(2) TDS = Total Dissolve Solid

(3) EC = Electrical Conductivity

(4) DO = Dissolve Oxygen

(5) BOD = Biological Oxygen Demand

TDO (ppm) : Total dissolve oxygen was found highest in Bochamari (Dhakeswari) beel. The value ranges from 8.36 to 9.15 ppm in different spots of the beel. In Atiamochar the value has been found 8.65. Raichengmari recorded lowest TDO among the beels of Rasikbeel wetland complex. Here the result was found 8.36 ppm.

BOD (ppm) : After 5 days incubation Bochamari beel recorded BOD of 26.2 ppm and that of Raichengmari and Atiamochar recorded 36.5 and 41.0 ppm respectively.

IRON : The level of iron content in various beels of the Rasikbeel complex is very low and the result obtained in Bochamari beel is 0.21 mg/L, in Raichengmari 0.18 mg/L and in Atiamochar it is 0.16 mg/L.

NITRATE : In Bochamari beel the Nitrate was found 3.75 mg/L, in Raichengmari it is 2.82 mg/L and in Atiamochar the value obtained 4.15 mg/L.

FLUORIDE : It was recorded in 0.22 mg/L in Bochamari beel, 0.34 mg/L in Raichengmari and 0.24 in Atiamochar.

CHLORIDE : In Bochamari beel the chloride was found 4.3 mg/L, in Raichengmari it is 2.4 mg/L and in Atiamochar the value found 1.4 mg/L.

ARSENIC : All the beels of the Rasik beel wetland complex recorded less than 0.02 mg/L of Arsenic.

Visibility & Extent of silt :

The present study tried to evaluate the extent of silt in Rasik Beel wetland complex by comparing different methods like Secchi Disc transparency, Turbidity estimation and by siltation measurement by colorimetric method using silicon dioxide as standard. The results are presented in the Table-3.

Table-3 : Evaluation of the extent of silt in Rasik Beel Wetland Complex by different methods.

Name of Lake	Secchi Disc		Turbidity (NTU)	Siltation measurement by O.D. Method (Std.-SiO_2)
	Distance from bank	Visibility depth		
Bochamari (spot-1)	50 M	0.98 M	08.00	0.1140 mg
Bochamari (spot-2)	100 M	0.88 M	12.00	0.1643 mg
Atiamochar	15 M	0.75 M	15.00	0.0663 mg
Raichengmari (spot-1)	20 M	1.40 M	6.00	0.0742 mg
Raichengmari (spot-2)	50 M	1.50 M	4.00	0.0742 mg
Sakobhanga	10 M	0.88 M	11.00	0.1087 mg

ZOOPLANKTON

Twenty two types of Zooplanktons were identified from different beels of the Rasik Beel wetland complex. Two crustacean larva (namely *Nauplius* and *Zoea* larva), six Cladocera,

five Copepodans, one Ostracoda and nine rotifera were recorded from these wetland complex. All data including the abundance in three major bells are presented in the Table-4 (Plate-14 & 15). In addition to that few mosquito larva (Or : Diptera, Fm : Culicidae), housefly larvae (Or : Diptera, Fm: Muscidae), Chironomids larvae (Or : Diptera, Fm : Chironomidae), dragonfly larva (Or : Odonata, Fm : Libelluidae) and damselfly nymphs (Or : Odonata, Fm : Coenagrionidae) were also recorded from the beel complex.

SYSTEMATIC ACCOUNT OF ZOOPLANKTON

Table-4 : List of Zooplanktons identified from different beels in Rasik Beel Wetland Complex.

Common/Scientific Name	**Status in different beels (No. in 100 lit.)**		
	Bochamari	**Raichencmari**	**Atiamachor**
GPS reading	**26°24.547" N 89°43.382" E 103.6 ft AMSL**	**26°25.128" N 89°43.422" E 116.5 ft AMSL**	**26°25.462" N 89°43.912" E 121.3 ft AMSL**
Phylum ARTHROPODA			
Subphylum CRUSTACEAN			
Nauplius larva	180	20	140
Zoea larva	140	140	80
Class BRANCHIOPODA			
Order CLADOCERA			
Moina sp.	380	200	None found
Alona sp.	1320	20	None found
Daphnia sp.	300	20	100
Diphanosoma sp.	200	80	None found
Bosminopsis sp.	1180	140	None found
Chydorus sp.	20	80	None found
Class MAXILLOPODA			
Subclass COPEPODA			
Cyclops sp.	540	280	740
Mesocyclops sp.	320	220	320
Tropocyclops sp.	160	100	180
Neodiaptomus sp.	260	20	None found
Heliodiaptomus sp.	None found	60	None found

Table-4 : *Cont'd.*

Common/Scientific Name	Status in different beels (No. in 100 lit.)		
	Bochamari	**Raichencmari**	**Atiamachor**
GPS reading	**26°24.547" N 89°43.382" E 103.6 ft AMSL**	**26°25.128" N 89°43.422" E 116.5 ft AMSL**	**26°25.462" N 89°43.912" E 121.3 ft AMSL**
Class OSTRACODA			
Cypris sp.	100	20	None found
Phylum ROTIFERA			
Brachionus sp.	260	40	160
Fillinia sp.	20	80	None found
Lacane sp.	40	None found	None found
Epiphanes sp.	None found	40	160
Anuraeopsis sp.	320	220	20
Ascomorpha sp.	180	160	None found
Lepadella sp.	260	None found	60
Conochilus sp.	540	220	80
Gastropus sp.	60	20	None found

PHYTOPLANKTON AND MICROPHYTES

Eight Hydrophytes and twelve Thalophytes were identified from the study area. Name of the recorded hydrophytes and thallophytes are given in the Table-5 & 6. The major hydrophytes are *Hydrilla* sp., *Pistia* sp., *Azolla* sp., *Typha* sp., *Ipomea* sp. and *Cyperus* sp. of which *Eichornia sp* and *Azolla* sp. are the dominating free flotting water fern of the complex. Few Aquatic funguses *e.g. Peronospora sp*. etc. were also recorded during the study.

Table-5 : List of Hydrophytes & Thalophytes from Rasik Beel Wetland Complex.

HYDROPHYTE	Tape grass/Pata Sheola	*Vallisnaria* sp.
	Esthwaite waterweed/Patajhaji	*Hydrilla* sp.
	Bladder worts/Jhaji	*Utricularia* sp.
	Water hyacinth/Kochuripana	*Eichornia* sp.
	Water cabbage/Topa pana	*Pistia* sp.
	Water fern	*Azolla* sp.

	Water Lily/Shaluk	*Nymphaea* sp.
	Corndog grass/Hogla	*Typha* sp.
THALLOPHYTE		*Nostoc* sp.
		Oscillatoria sp.
		Chlamydomonas sp.
		Anabaena sp.
		Volvox sp.
		Zygnema sp.
		Vaucheria sp.
		Spirogyra sp.
		Chara sp.
		Oedogonium sp.
		Spirulina sp.
		Coleochaete sp.

Table-6 : List of Macrophytes from Rasik Beel Wetland Complex.

Macrophytes	**Common name**	**Scientific name**
Open water	Esthwaite waterweed/Kureli	*Hydrilla verticillata*
	Tape grass/Pata Sheola	*Vallisneri spiralis*
	Water Fern/Kariba weed	*Salvinia cuculata*
	Water caltrop/Paniphal	*Trapa natans varbispinosa*
	Brittle waternymph	*Najas spiralis*
		Najas minor
	Water lily/Shaluk	*Nymphoides indica*
		Nymphoides hydrophylla
Water edges	Water spinach/Kalmi	*Ipomoea aquatica*
	Hincha	*Enhydra fluctuans*
	Water-primrose/Kesara-dam	*Ludwigia adscendens*
	Aquarium plant/Jangli dal	*Hygroryza aristata*
Bank & Marsh area	Tear-thumb/Pakurmul	*Polygonum pulchrum*
		Polygonum hydropiper
	Dwarf umbrella-sedge/Namuti	*Cyperus platystylis*
		Grangea maderaspatana
	Holud/Haldi	*Curcuma zedoaria*

Extent of obnoxious diversity affecting health of waterbody :

None of the plants cause problems in their native lands. Aquatic plants play a significant role in wetlands, by providing food and habitat for fish and wildlife, stabilizing shorelines, and contributing to nutrient cycling. Sometimes beneficial aquatic plants can grow in over abundance. This is usually the result of excessive inputs of nutrients, such as nitrogen, phosphorus etc. Again some plants are there whose growth and proliferation rate is naturally very high, which sometimes act as obnoxious to the stagnant wetland system. These types of plants increases the solid mass of the wetland which ultimately effect on the lowering the depth of the water of the wetland system. A few such types of high proliferative plants has been identified in Rasik Beel wetland complex such as *Eichornia* sp., *Eutricularia sp.*, *Trapa sp.*, *Erianthus sp.* and *Phragmites sp.* and a few yet to be identified. These species has high growth rate and clogs waterways making fishing, boating, and almost all other water related activities impossible. The mats of these plants block the air-water interface and diminish oxygen level leading to the degradation of water quality. This in turn affects the species richness of the aquatic ecosystem. The mats also eliminate submerged plants by blocking sunlight.

AVIFAUNA

The Rasik Beel, a resort for eco-tourism, is located in the Tufanganj subdivision of Coochbehar district of West Bengal. It is a cut-off/ox-bow type of lake with a total area of about 178 ha. It is repose of birds, both residential and migratory. This lake is actually a complex of a number of wetlands namely, Atiamochar beel, Noldoba beel, Raichengmari beel, Bochamari (Dhakeswari) beel etc. In addition to these Salmara, Batikata, Pukipara-I, Pukipara-II, Sakobhanga, Nildoba beels etc. are also present under the Rasik Beel wetland complex. Some of the small beels or their portion are seasonal in nature and have been transformed into cultivated lands seasonally. The shape of few beels is that of a finger with a relative depth of about 2 metres from the adjacent land area.

A round the year study of avifauna of Rasik Beel wetland complex was carried out from December 2005 to February 2011. The data were presented in a Table in the form of a checklist with their status (Table-7). However, waterfowl census was started from 2009 onwards.

A total of 171 species (including sub-species) of Avifauna belonging to 116 genera, 45 families (8 sub-families) and 17 orders were recorded from Rasik Beel Wetland Complex during the course of study (Table-7 and Plate-6-8). 84 different types of migratory variety were recorded, of which 41 are exclusively migratory and other 43 varieties were belonging to the status of resident-migratory or local-migratory. They migrate on short distance from

one topographic region to a different topographic area. As the geographical position of Coochbehar is in the Terrai region of Eastern Himalayas, many vertically migrant varieties were also recorded in this region especially during winter. Family wise migratory status was presented in Table-8. Sixty eight species of water depended birds recorded from the lake area, of which 18 types uses open water area for their foraging and 50 varieties forage in the bank area or marshy zones of different beels. Family wise habitat preference of the birds in Rasik Beel Wetland Complex is given in Table-9. The family Anatidae (i.e. ducks, teals, etc), family Charadriidae (plover, sandpiper, snipe, etc) and family Muscicapidae (flycatcher, babbler, thrush, chat, etc.) together represents higher in number in species variety (total no. 14 - 19 each) in the Beel Complex. Nine types of both egrets and herons belonging to family Ardeidae and pipits and wagtails of family Motacillidae were also recorded from the wetland complex during the course of survey. Twenty "very common" and forty five "common" varieties were also noted during the study which is mentioned in the checklist. All the data of avifauna recorded from Rasik Beel wetland complex is presented in Table format. Eighteen species of birds of prey of family Accipitridae, Pandionidae, Falconidae, Tytonidae and Strigidae (Kite, Eagle, Owl etc.) were recorded from the beel area. Seven species of Rails of family Rallidae and Jacanidae were recorded from the beel complex, which largely depends on marshes and floating plants for their habitat and forage.

It is to be noted in the passing that in the recent past a renowned NGO of this region recorded 138 species of avifauna from the Rasik Beel Wetland Complex, out of which they claimed to have found/record 88 species of water fowls that were present in and around the Beel Complex. Records collected from the Department of Forests, Coochbehar, also display 88 varieties of water fowls residing in winter season in the Beel Complex (Ref.-From the guard file of the Coochbehar Division, Department of Forests, Government of West Bengal). But our survey recorded altogether 68 water-dependant birds from the same area during last four years. Now it stands that a thorough round-the-year long term study is very essential to know and identify the actual status of avifauna of the Rasik Beel Wetland Complex. Moreover, it should also be noted that there was no data from the local people of that area in respect of the presence of some of the birds like Gulls, Skimmers, Curlew, Avocet, Spoon bill, Ibis etc. It is only in the year 1990 that a record of Sarus Crane in the Rasik Beel area was very casually made (Ref) like we have recorded and phographed Bar-headed Goose (*Anser indicus*) on 20th February 2008 and Black-bellied Tern (*Sterna acuticauda*) on 11th July 2007 in the wetland complex, these were the accidental recordings. Bar-headed Goose and the Black-bellied Terns are not routine visitors of Rasik Beel wetland complex. Somehow they have chosen the beel complex for their temporary resort.

Table-7 : Check list of Avifauna of Rasik Beel Wetland Complex.

Common name	**Scientific name**	**Habitat preferences**	**Abundance status**	**Migratory status**
Order PODICIPEDIFORMES Family PODICIPEDIDAE				
Little Grebe	*Tachybapyus ruficollis* (Pallas, 1764)	OW	+++	R
Order PELECANIFORMES Family PHALACROCORACIDAE				
Great Cormorant	*Phalacrocorax carbo* (Linnaeus, 1758)	OW	+++	RM
Little Cormorant	*Phalacrocorax niger* (Vieillot, 1817)	OW	++++	R
Indian Shag	*Phalacrocorax fuscicollis* Stephens, 1826	OW	+	RM
Family ANHINGIDAE				
Darter/Snake Bird	*Anhinga melanogaster* Pennant, 1769	OW	+	RM
Order CICONIIFORMES Family ARDEIDAE				
Black-crowned Night Heron	*Nycticorax nycticorax* (Linnaeus, 1758)	WE	+	RM
Indian Pond Heron	*Ardeola grayii* (Sykes, 1832)	WE	++++	R
Purple Heron	*Ardea purpurea* Linnaeus, 1766	WE	+	M
Grey Heron	*Ardea cinerea* Linnaeus, 1758	WE	+	M
Large Egret	*Casmerodius albus* (Linnaeus, 1758)	WE	++	RM
Median Egret	*Mesophoyx intermedia* (Wagler, 1829)	WE	+++	RM
Little Egret	*Egretta garzetta* (Linnaeus, 1766)	WE	++++	R
Cattle Egret	*Bubulcus ibis* (Linnaeus, 1758)	WE	++++	R
Chestnut Bittern	*Ixobrychus cinnamomeus* (Gmelin, 1789)	WE	++	RM
Family CICONIIDAE				
Asian Openbill-Stork	*Anastomus oscitans* (Boddaert, 1783)	WE	+++	RM
Lesser Adjutant-Stork	*Leptoptilos javanicus* (Horsfield, 1821)	WE	++	RM

Table-7 : *Cont'd.*

Common name	**Scientific name**	**Habitat preferences**	**Abundance status**	**Migratory status**
Order ANSERIFORMES Family ANATIDAE				
Lesser Whistling-Duck	*Dendrocygna javanica* (Horsfield, 1821)	OW	++++	RM
Northern Pintail	*Anas acuta* Linnaeus, 1758	OW	+++	M
Common Teal	*Anas crecca* Linnaeus, 1758	OW	++++	M
Garganey	*Anas querquedula* Linnaeus, 1758	OW	++	M
Eurasian Wigeon	*Anas penelope* Linnaeus, 1758	OW	++	M
Mallard	*Anas platyrhynchos* Linnaeus, 1758	OW	++	M
Gad wall	*Anas strepera* Linnaeus, 1758	OW	++	M
Spot-billed Duck	*Anas poecilorhyncha* J.R. Forester, 1781	OW	+	M
Northern Shoveller	*Anas clypeata* Linnaeus, 1758	OW	++	M
Ferruginous Poachard	*Aythya nyroca* (Guldenstadt, 1770)	OW	++++	M
Common Pochard	*Aythya ferina* (Linnaeus, 1758)	OW	+	M
Red-crested Poachard	*Rhodonessa rufina* (Pallas, 1773)	OW	++	M
Cotton Pygmy-Goose	*Nettapus coromandelianus* (Gmelin, 1789)	OW	++	RM
Order FALCONIFORMES Family ACCIPITRIDAE				
Black Kite	*Milvus migrans* (Boddaert, 1783)	MT	+++	R
Brahminy Kite	*Haliastur indus* (Boddaert, 1783)	MT	++	R
Black-shouldered Kite	*Elanus caeruleus* (Desfontaines, 1789)	MT	++	R
Greater Grey-headed Fish-Eagle	*Ichthyophaga ichthyaetus* (Horsfield, 1821)	WE	++	R
Pallas's Fish-Eagle	*Haliaeetus leucoryphus* (Pallas, 1771)	MT	+	RM
Lesser Spotted Eagle	*Aquila pomarina* Brehm, 1831	MT	+	R
Greater Spotted Eagle	*Aquila clanga* Pallas, 1811	MT	+	M

Table-7 : *Cont'd.*

Common name	**Scientific name**	**Habitat preferences**	**Abundance status**	**Migratory status**
Common Buzzard	*Buteo buteo* Linnaeus, 1758	MT	++	M
Black Baza	*Aviceda leuphotes* (Dumont, 1820)	MT	+	RM
Western Marsh-Harrier	*Circus aeruginosus* (Linnaeus, 1758)	MT	++	M
Crested Serpent Eagle	*Spilornis cheela* (Latham, 1790)	MT	+	RM
Indian White-backed Vulture	*Gyps bengalensis* (Gmelin, 1788)	MT	+	R
Family PANDIONIDAE				
Osprey	*Pandion haliaetus* (Linnaeus, 1758)	WE	++	RM
Family FALCONIDAE				
Lesser Kestrel	*Falco naumanni* Fleischer, 1818	MT	+	R
Order GALLIFORMES Family PHASIANIDAE				
Red Junglefowl	*Gallus gallus* (Linnaeus, 1758)	MT	+	R
Order GRUIFORMES Family RALLIDAE				
White-breasted Waterhen	*Amaurornis phoenicurus* (Pennant, 1769)	WE	+++	R
Common Moorhen	*Gallinula chloropus* (Linnaeus, 1758)	WE	+++	R
Common Coot	*Fulica atra* Linnaeus, 1758	WE	++	RM
Purple Moorhen	*Porphyrio porphyrio* (Linnaeus, 1758)	WE	+	RM
Watercock	*Gallicrex cinerea* (Gmelin, 1789)	WE	+	RM
Order CHARADRIIFORMES Family JACANIDAE				
Pheasent-tailed Jacana	*Hydrophasianus chirurgus* (Scopoli, 1786)	WE	++++	RM
Bronze-winged Jacana	*Metopidius indicus* (Latham, 1790)	WE	++++	R

Table-7 : *Cont'd.*

Common name	**Scientific name**	**Habitat preferences**	**Abundance status**	**Migratory status**
Family ROSTRATULIDAE				
Greater Painted-Snipe	*Rostratula benghalensis* (Linnaeus, 1758)	WE	++	RM
Family CHARADRIIDAE				
Grey-headed Lapwing	*Vanellus cinereus* (Linnaeus, 1758)	WE	++++	M
Northern Lapwing	*Vanellus vanellus* (Linnaeus, 1758)	WE	++++	M
Red-wattled Lapwing	*Vanellus indicus* (Boddaert, 1783)	WE	++	M
Little Ringed Plover	*Charadrius dubius* Scopoli, 1786	WE	++	M
Kentish Plover	*Charadrius alexandrinus* Linnaeus, 1758	WE	+	M
European Golden Plover	*Pluvialis apricaria* (Linnaeus, 1758)	WE	+	M
Family Scolopacidae				
Little Stint	*Calidris minuta* (Leisler, 1812)	WE	++	M
Common Sandpiper	*Actitis hypoleucos* Linnaeus, 1758	WE	+++	RM
Wood Sandpiper	*Tringa glareola* Linnaeus, 1758	WE	+++	M
Marsh Sandpiper	*Tringa stagnatilis* (Bechstein, 1803)	WE	++	M
Common Redshank	*Tringa totanus* (Linnaeus, 1758)	WE	+	M
Common Greenshank	*Tringa nebularia* (Gunner, 1767)	WE	++	M
Common Snipe	*Gallinago gallinago* (Linnaeus, 1758)	WE	+++	RM
Pintail Snipe	*Gallinago stenura* (Bonaparte, 1830)	WE	+++	M
Order COLUMBIFORMES Family COLUMBIDAE				
Yellow-legged Green-Pigeon	*Treron phoenicoptera* (Latham, 1790)	MT	++	R
Blue Rock Pigeon	*Columba livia* Gmelin, 1789	MT	+++	R
Eurasian Collared-Dove	*Streptopelia decaocto* (Frivaldszky, 1838)	MT	+++	R

Table-7 : *Cont'd.*

Common name	**Scientific name**	**Habitat preferences**	**Abundance status**	**Migratory status**
Spotted Dove	*Streptopelia chinensis* (Scopoli, 1786)	MT	++++	R
Red Collared-Dove	*Streptopelia tranquebarica* (Hermann, 1804)	MT	++	R
Order PSITTACIFORMES Family PSITTACIDAE				
Rose-ringed Parakeet	*Psittacula krameri* (Scopoli, 1769)	MT	+++	R
Alexandrine Parakeet	*Psittacula eupatria* (Linnaeus, 1766)	MT	+++	R
Red-breasted Parakeet	*Psittacula alexandri* (Linnaeus, 1758)	MT	++	R
Order CUCULIFORMES Family CUCULIDAE				
Pied Crested Cuckoo	*Clamator jacobinus* (Boddaert, 1783)	MT	++	RM
Indian Cuckoo	*Cuculus micropterus* Gould, 1838	MT	+++	RM
Brainfever Bird	*Hierococcyx varius* (Vahl, 1797)	MT	+++	R
Rufous-bellied Plaintive Cuckoo	*Cacomantis merulinus* (Scopoli, 1786)	MT	++	R
Asian Koel	*Eudynamys scolopacea* (Linnaeus, 1758)	MT	+++	R
Greater Coucal	*Centropus sinensis* (Stephens, 1815)	MT	++	R
Order STRIGIFORMES Family TYTONIDAE				
Barn Owl	*Tyto alba* (Scopoli, 1769)	MT	+++	R
Family STRIGIDAE				
Spotted Owlet	*Athene brama* (Temminck, 1821)	MT	+++	R
Forest Owlet	*Heteroglaux blewitti* Hume, 1873	MT	++	R
Asian Barred Owlet	*Glaucidium cuculoides* (Vigors, 1831)	MT	+	R

Table-7 : *Cont'd.*

Common name	**Scientific name**	**Habitat preferences**	**Abundance status**	**Migratory status**
Order CAPRIMULGIFORMES Family CAPRIMULGIDAE				
Common Indian Nightjar	*Caprimulgus asiaticus* Latham, 1790	MT	++	R
Large-tailed Nightjar	*Caprimulgus macrurus* Horsfield, 1821	MT	+	R
Order APODIFORMES Family APODIDAE				
Asian Palm-Swift	*Cypsiurus balasiensis* (J. E. Gray, 1829)	MT	++++	R
House Swift	*Apus affinis* (J. E. Gray, 1829)	MT	++	R
Order CORACIIFORMES Family ALCEDINIDAE				
Small Blue Kingfisher	*Alcedo atthis* (Linnaeus, 1758)	WE	+++	RM
Stork-billed Kingfisher	*Halcyon capensis* (Linnaeus, 1766)	WE	+++	R
White-breasted Kingfisher	*Halcyon smyrnensis* (Linnaeus, 1758)	WE	++++	R
Lesser Pied Kingfisher	*Ceryle rudis* (Linnaeus, 1758)	WE	+++	R
Family MEROPIDAE				
Small Bee-eater	*Merops orientalis* Latham, 1801	MT	++	R
Blue-tailed Bee-eater	*Merops philippinus* Linnaeus, 1766	MT	+	M
Family CORACIIDAE				
Indian Roller	*Coracias benghalensis* (Linnaeus, 1758)	MT	++	R
Family UPUPIDAE				
Common Hoopoe	*Upupa epops* Linnaeus, 1758	MT	++	RM
Order PICIFORMES Family CAPITONIDAE				
Brown-headed Barbet	*Megalaima zeylanica* (Gmelin, 1788)	MT	+++	R

Table-7 : *Cont'd.*

Common name	**Scientific name**	**Habitat preferences**	**Abundance status**	**Migratory status**
Lineated Barbet	*Megalaima lineata* (Vieillot, 1816)	MT	++	R
Blue-throated Barbet	*Megalaima asiatica* (Latham, 1790)	MT	+++	R
Coppersmith Barbet	*Megalaima haemacephala* (P.L.S. Muller, 1776)	MT	+++	R
Family PICIDAE				
Lesser Golden-backed Woodpecker	*Dinopium benghalense* (Linnaeus, 1758)	MT	+++	R
Rufous Woodpecker	*Celeus brachyurus* (Vieillot, 1818)	MT	+	R
Brown-capped Pigmy Woodpecker	*Dendrocopos nanus* (Vigors, 1832)	MT	++	M
Fulvous-breasted Pied Woodpecker	*Dendrocopos macei* (Vieillot, 1818)	MT	++	RM
Yellow-fronted Pied Woodpecker	*Dendrocopos mahrattensis* (Latham, 1801)	MT	+	RM
Large Scaly-bellied Green Woodpecker	*Picus squamatus* Vigors, 1831	MT	+	R
Order PASSERIFORMES Family ALAUDIDAE				
Indian Short-toed Lark	*Calandrella raytal* (Blyth, 1845)	MT	+	R
Family HIRUNDINIDAE				
Plain Martin	*Riparia paludicola* (Vieillot, 1817)	MT	++	R
Red-rumped Swallow	*Hirundo daurica* Linnaeus, 1771	MT	++	RM
Family LANIIDAE				
Rufous-backed Shrike	*Lanius schach* Linnaeus, 1758	MT	+++	R
Rufous-backed Shrike (blackheaded)	*Lanius schach tricolor* (Hodgson, 1837)	MT	+++	M
Brown Shrike	*Lanius cristatus* Linnaeus, 1758	MT	+++	M
Family ORIOLIDAE				
Black-headed Oriole	*Oriolus xanthornus* (Linnaeus, 1758)	MT	+++	R
Family DICRURIDAE				
Black Drongo	*Dicrurus macrocercus* Vieillot, 1817	MT	++++	R

Table-7 : *Cont'd.*

Common name	**Scientific name**	**Habitat preferences**	**Abundance status**	**Migratory status**
Ashy Drongo	*Dicrurus leucophaeus* Vieillot, 1817	MT	++	M
Family ARTAMIDAE				
Ashy Woodswallow	*Artamus fuscus* Vieillot, 1817	MT	++	R
Family STURNIDAE				
Grey-headed Starling	*Sturnus malabaricus* (Gmelin, 1789)	MT	+++	R
Asian Pied Starling	*Sturnus contra* Linnaeus, 1758	MT	++++	R
Common Myna	*Acridotheres tristis* (Linnaeus, 1766)	MT	+++	R
Bank Myna	*Acridotheres ginginianus* (Latham, 1790)	MT	+++	R
Jungle Myna	*Acridotheres fuscus* (Wagler, 1827)	MT	++++	R
Family CORVIDAE				
Indian Treepie	*Dendrocitta vagabunda* (Latham, 1790)	MT	++	R
House Crow	*Corvus splendens* Vieillot, 1817	MT	++	R
Jungle Crow	*Corvus macrorhynchos* Wagler, 1827	MT	++	R
Family CAMPEPHAGIDAE				
Black-winged Cuckoo-Shrike	*Coracina melaschistos* (Hodgson, 1836)	MT	+	M
Large Cuckoo-Shrike	*Coracina macei* (Lesson, 1830)	MT	++	R
Common Woodshrike	*Tephrodornis pondicerianus* (Gmelin, 1789)	MT	++	R
Family IRENIDAE				
Common Iora	*Aegithina tiphia* (Linnaeus, 1758)	MT	++	R
Golden-fronted Chloropsis	*Chloropsis aurifrons* (Temminck, 1829)	MT	++	R
Family PYCNONOTIDAE				
Red-whiskered Bulbul	*Pycnonotus jocosus* (Linnaeus, 1758)	MT	+++	R
Red-vented Bulbul	*Pycnonotus cafer* (Linnaeus, 1766)	MT	+++	R

Table-7 : *Cont'd.*

Common name	**Scientific name**	**Habitat preferences**	**Abundance status**	**Migratory status**
Family MUSCICAPIDAE Subfamily Timaliinae				
Jungle Babbler	*Turdoides striatus* (Dumont, 1823)	MT	++++	R
Common Babbler	*Turdoides caudatus* (Dumont, 1823)	MT	++	R
Striated Babbler	*Turdoides earlei* (Blyth, 1844)	MT	++	R
Indian Scimitar Babbler	*Pomatorhinus horsfieldii* Sykes, 1832	MT	++	R
Spotted Babbler	*Pellorneum ruficeps* Swainson, 1832	MT	+	R
Rufous-necked Laughingthrush	*Garrulax ruficollis* (Jerdine & Selby, 1838)	MT	++	R
Subfamily Muscicapinae				
Red-throated Flycatcher	*Ficedula parva* (Bechstein, 1792)	MT	++	M
Grey-headed Flycatcher	*Culicicapa ceylonensis* (Swainson, 1820)	MT	+++	RM
Subfamily Monarchinae				
Asian Paradise-Flycatcher	*Terpsiphone paradisi* (Linnaeus, 1758)	MT	+	RM
Black-naped Monarch-Flycatcher	*Hypothymis azurea* (Boddaert, 1783)	MT	++	R
Subfamily Rhipidurinae				
White-throated Fantail-Flycatcher	*Rhipidura albicollis* (Vieillot, 1818)	MT	+++	R
Subfamily Sylviinae				
Common Tailor Bird	*Orthotomus sutorius* (Pennant, 1769)	MT	+++	R
Common Chiffchaff	*Phylloscopus collybita* (Vieillot, 1817)	MT	++	M
Subfamily Turdinae				
Oriental Magpie-Robin	*Copsychus saularis* (Linnaeus, 1758)	MT	+++	R
Common Stone Chat	*Saxicola torquata* (Linnaeus, 1766)	MT	++	RM
Pied Bushchat	*Saxicola caprata* (Linnaeus, 1766)	MT	++	RM

Table-7 : *Cont'd.*

Common name	**Scientific name**	**Habitat preferences**	**Abundance status**	**Migratory status**
Orange-headed Thrush	*Zoothera citrina* (Latham, 1790)	MT	+	RM
Scaly Thrush	*Zoothera dauma* (Latham, 1790)	MT	+	M
Family PARIDAE				
Grey Tit	*Parus major* Linnaeus, 1758	MT	++	R
Family MOTACILLIDAE				
Forest Wagtail	*Dendronanthus indicus* (Gmelin, 1789)	WE	+	RM
Citrine Wagtail	*Motacilla citreola* Pallas, 1776	WE	+++	RM
White Wagtail Sub sp.	*Motacilla alba personata* Linnaeus, 1758	WE	++	R
White Wagtail Sub sp.	*Motacilla alba dukhunensis* (Sykes, 1832)	WE	+++	RM
Yellow Wagtail	*Motacilla flava* Linnaeus, 1758	WE	++	RM
Grey Wagtail	*Motacilla cinerea* Tunstall, 1771	WE	++	M
Large Pied Wagtail	*Motacilla maderaspatensis* Gmelin, 1789	WE	+	RM
Oriental Tree Pipit	*Anthus hodgsoni* Richmond, 1907	WE	++	RM
Paddyfield Pipit	*Anthus rufulus* Vieillot, 1818	WE	+	R
Brown Rock Pipit	*Anthus similis* Jerdon, 1840	WE	+	M
Richard's Pipit	*Anthus richardi* Vieillot, 1818	WE	+	M
Family NECTARINIIDAE				
Purple Sunbird	*Nectarinia asiatica* (Latham, 1790)	MT	++	R
Crimson Sunbird	*Aethopyga siparaja* (Raffles, 1822)	MT	++	R
Little Spiderhunter	*Arachnothera longirostra* (Latham, 1790)	MT	++	M
Family ZOSTEROPIDAE				
Oriental White-eye	*Zosterops palpebrosus* (Temminck, 1824)	MT	++	R

Table-7 : *Cont'd.*

Common name	**Scientific name**	**Habitat preferences**	**Abundance status**	**Migratory status**
Family PASSERIDAE SUB FAMILY: Passerinae				
House Sparrow	*Passer domesticus* (Linnaeus, 1758)	MT	++++	R
Eurasian Tree Sparrow	*Passer montanus* (Linnaeus, 1758)	MT	+++	RM
Yellow-throated Sparrow	*Petronia xanthocollis* (Burton, 1838)	MT	++	RM
SUB FAMILY: Ploceinae				
Baya Weaver	*Ploceus philippinus* (Linnaeus, 1766)	MT	++++	R
FAMILY: Estrildidae				
Spotted Munia	*Lonchura punctulata* (Linnaeus, 1758)	MT	+++	R
Black-headed Munia	*Lonchura malacca* (Linnaeus, 1766)	MT	++	RM
R M RM OW WE MT	= Resident = Migratory = Resident-migratory/Local-migratory = Open water = Water edges/Bank = Marginal terrestrial	++++ +++ ++ +	= *Very Common* = *Common* = *Few* = *Occasional*	

Waterfowl census was undertaken in three successive years *i.e.* in January 2009, February 2010 and February 2011. Comparative checklist of the data of waterfowl census is given in the form of table (Table-10).

Table-8 : Status of Avifauna Families of Rasik Beel.

Family	**Resident**	**Migratory**	**Resident-migratory/ Local-migratory**
Podicipedidae	1	-	-
Phalacrocoracidae	1	-	3
Ardeidae	3	2	4
Ciconiidae	-	-	2
Anatidae	-	12	2
Accipitridae	6	3	4
Falconidae	1	-	-
Phasianidae	1	-	-
Rallidae	2	-	3
Jacanidae	1	-	1
Rostratulidae	-	-	1
Charadriidae	-	12	2
Columbidae	5	-	-
Psittacidae	3	-	-
Cuculidae	4	-	2
Strigidae	4	-	-
Caprimulgidae	2	-	-
Apodidae	2	-	-
Alcedinidae	3	-	1
Meropidae	1	1	-
Coraciidae	1	-	-
Upupidae	-	-	1
Capitonidae	4	-	-
Picidae	3	1	2
Alaudidae	1	-	-
Hirundinidae	1	-	1

Table-8 : *Cont'd.*

Family	**Resident**	**Migratory**	**Resident-migratory/ Local-migratory**
Laniidae	1	2	-
Oriolidae	1	-	-
Dicruridae	1	-	1
Artamidae	1	-	-
Sturnidae	5	-	-
Corvidae	3	-	-
Campephagidae	2	1	-
Irenidae	2	-	-
Pycnonotidae	2	-	-
Muscicapidae	10	3	5
Paridae	1	-	-
Motacillidae	2	3	6
Nectariniidae	2	1	-
Zosteropidae	1	-	-
Ploceidae	3	-	3
Total	**87**	**41**	**44**
% of species	**51**	**24**	**25**

Table-9 : Habitat preference of the families of birds in Rasik Beel Wetland Complex.

Family	**Open water**	**Water edges/ Bank**	**Marginal terrestrial**
Podicipedidae	+	-	-
Phalacrocoracidae	+	-	-
Ardeidae	-	+	-
Ciconiidae	-	+	-
Anatidae	+	-	-
Accipitridae	-	+	+
Falconidae	-	-	+
Phasianidae	-	-	+
Rallidae	-	+	-
Jacanidae	-	+	-

Table-9 : *Cont'd.*

Family	Open water	Water edges/ Bank	Marginal terrestrial
Rostratulidae	-	+	-
Charadriidae	-	+	-
Columbidae	-	-	+
Psittacidae	-	-	+
Cuculidae	-	-	+
Strigidae	-	-	+
Caprimulgidae	-	-	+
Apodidae	-	-	+
Alcedinidae	-	+	-
Meropidae	-	-	+
Coraciidae	-	-	+
Upupidae	-	-	+
Capitonidae	-	-	+
Picidae	-	-	+
Alaudidae	-	-	+
Hirundinidae	-	-	+
Laniidae	-	-	+
Oriolidae	-	-	+
Dicruridae	-	-	+
Artamidae	-	-	+
Sturnidae	-	-	+
Corvidae	-	-	+
Campephagidae	-	-	+
Irenidae	-	-	+
Pycnonotidae	-	-	+
Muscicapidae	-	-	+
Paridae	-	-	+
Motacillidae	-	+	-
Nectariniidae	-	-	+
Zosteropidae	-	-	+
Ploceidae	-	-	+

(+ denotes the habitat preferences)

Table-10 : Ecological categories and number of each waterbird species recorded at Rasik Beel Wetland Complex.

Category	**No. of Species**	**Common Name**	**Total No.**		
			Jan 2009	**Feb 2010**	**Feb 2011**
I. Active swimmer	**1**	Little Grebe	51	26	30
II. Aerial waterbirds	**4**	Great Cormorant	9	10	32
		Indian Shag	6	4	12
		Litte Cormorant	91	134	85
		Darter	0	0	2
III. Medium and large sized lanky waders or marsh birds	**10**	Indian Pond-Heron	79	68	56
		Purple Heron	6	2	2
		Grey Heron	4	1	0
		Cattle Egret	22	42	30
		Little Egret	37	24	20
		Median Egret	47	72	24
		Large Egret	11	7	3
		Black-crowned Night-Heron	0	2	0
		Asian Openbill-Stork	11	26	34
		Lesser Adjutant-Stork	7	8	9
IV. Dabbling ducks	**9**	Lesser Whistling-Duck	2257	819	950
		Gadwall	416	200	158
		Eurasian Wigeon	2	10	8
		Mallard	0	0	10
		Spot-billed Duck	0	0	6
		Northern Shoveller	4	4	4
		Northern Pintail	0	6	18
		Garganey	0	12	0
		Common Teal	952	833	285
V. Diving ducks	**4**	Cotton Teal	26	40	26
		Red-crested Pochard	17	0	4

Table-10 : *Cont'd.*

Category	**No. of Species**	**Common Name**	**Total No.**		
			Jan 2009	**Feb 2010**	**Feb 2011**
		Common Pochard	45	22	0
		Ferruginous Pochard	103	126	215
VI. Shore birds or	**30**	Common Moorhen	24	33	40
small & medium		Common Coot	5	6	30
sized waders		White-breasted Waterhen	6	6	6
		Purple Moorhen	0	2	0
		Bronze-winged Jacana	69	60	36
		Pheasant-tailed Jacana	0	0	30
		Northern Lapwing	127	109	80
		Grey-headed Lapwing	463	230	380
		Red-wattled Lapwing	0	0	10
		Kentish Plover	0	0	2
		Little Ringed plover	5	48	12
		Marsh Sandpiper	2	2	12
		Green Sandpiper	4	2	8
		Wood Sandpiper	4	23	6
		Common Greenshank	3	0	0
		Common Sandpiper	48	37	6
		Common Snipe	0	10	20
		Pintail Snipe	6	2	4
		Greater Painted Snipe	18	10	2
		Greater Painted-Snipe	2	0	0
		Little Stint	8	0	0
		White Wagtail	8	2	14
		Citrine Wagtail	4	0	10
		Grey Wagtail	0	0	2
		Large Pied Wagtail	14	0	4
		Yellow Wagtail	4	22	18

Table-10 : *Cont'd.*

Category	No. of Species	Common Name	Total No.		
			Jan 2009	Feb 2010	Feb 2011
		Paddyfield Pipit	8	43	22
		Brown Rock Pipit	0	0	3
		Richard's Pipit	0	0	2
		Red-rumped Swallow	0	0	20
VII. Birds of prey	**5**	Osprey	5	2	2
		Crested Serpent-Eagle	0	0	1
		Greater Grey-headed Fish-Eagle	2	0	2
		Greater Spotted Eagle	0	0	1
		Western Marsh-Harrier	1	0	0
VIII. Non-social	**4**	Small Blue Kingfisher	28	14	6
headlong diver		Stork-billed Kingfisher	3	4	4
		White-breasted Kingfisher	21	12	12
		Lesser Pied Kingfisher	10	8	6
Total =	**68**		**5105**	**3142**	**2836**

ICHTHYOFAUNA

Diverse ichthyofauna (53 species under 22 families, 11 sub-families and 9 order) was recorded during the present survey which placed the Rasik Beel wetland complex in a most fascinating and interesting zone in West Bengal (Table-11) & (Plate-9 & 10). These 53 species composed of most the pisces characters includes foodfishes, gamefishes, aquarium fishes and larvivorous fishes. Marshy zones of some of the perennial lakes of Rasik Beel complex might have housed innumerable ichthyofauna which might be the reason for attraction of a large number of avifauna throughout the year especially the migratory birds in winter season. A checklist of fishes recorded during the survey is given below. The classification is based on Talwar and Jhingran (1991).

It is to be noted that there are more than one variety of locally named Pabda, Kharika and Poia/Poa present in the beel area, which needs further study. Betrangi or Bou Mach and Pithkata and many other varieties of fishes are present in the wetland complex, with which the local people are familiar and it needs scientific classification.

In this study we have recorded 8 fishes occurring in muddy water, 20 types of surface feeder (Cyprinids), 10 cat fishes of order Siluriformes and 13 perches of order Perciformes from the various beels of Rasik Beel wetland complex. 12 carps (6 major and 6 minor) and 4 species of *Channa* (family Channidae) and 5 species of *Puntius* (sub-family Barbinae) have also been recorded from the complex. Rasik Beel wetland complex also housed varieties of aquarium fish e.g. *Chanda sp*., *Pseudambassis sp.*, 3 type of *Colisa sp*. (order perciformes); 2 type of *Rasbora sp*. and one *Esomus sp*. (order Cypriniformes, family Cyprinidae, sub-family Danioninae).

Table-11 : Check list of Ichthyofauna of Rasik Beel.

Common/Local name	**Scientific name**
Class PISCES	
Order CLUPEIFORMES	
Family CLUPEIDAE	
Chapila/Korti/Khoira	*Gudusia chapra* (Hamilton, 1822)
Order OSTEOGLOSSIFORMES	
Family NOTOPTERIDAE	
Fali/Folui	*Notopterus notopterus* (Pallas, 1769)
Chital	*Chitala chitala* (Hamilton, 1822)
Order CYPRINIFORMES	
Family CYPRINIDAE	
Katla/Katal	*Catla catla* (Hamilton, 1822)
Mowa/Mourla/Chanda	*Osteobrama cotio cotio* (Hamilton, 1822)
Subfamily Danioninae	
Chela	*Laubuca laubuca* (Hamilton, 1822)
Maurala	*Amblypharyngodon mola* (Hamilton, 1822)
Darkina/Dankani/Dadhika	*Rasbora daniconius* (Hamilton, 1822)
Dari-kana	*Rasbora rasbora* (Hamilton, 1822)
Darika	*Esomus danricus* (Hamilton, 1822)
SUB FAMILY : Labeoninae	
Mrigal	*Cirrhinus cirrhosus* (Bloch, 1795)
Ruhi/Rui/Rohu	*Labeo rohita* (Hamilton, 1822)
Bata	*Labeo bata* (Hamilton, 1822)
Kalbaus	*Labeo calbasu* (Hamilton, 1822)
Kursa/Kurchi/Goni	*Labeo gonius* (Hamilton, 1822)
Subfamily Barbinae	
Kanchan Puthi	*Puntius conchonius* (Hamilton, 1822)

Table-11 : *Cont'd.*

Common/Local name	**Scientific name**
Gili-puthi	*Puntius gelius* (Hamilton, 1822)
Teri-puthi	*Puntius terio* (Hamilton, 1822)
Tita-puthi/Tit-puthi	*Puntius ticto* (Hamilton, 1822)
Sar-puthi/Saral-puthi	*Puntius sarana* (Hamilton, 1822)
Family BALITIRIDAE	
Subfamily Nemacheilinae	
Khorkey/khorika-poia	*Acanthocobitis botia* (Hamilton, 1822)
Family COBITIDAE	
Subfamily Cobitinae	
Poia/Poa	*Lepidocephalichthys guntea* (Hamilton, 1822)
Subfamily Botiinae	
Botya	*Botia Dario* (Hamilton, 1822)
Order SILURIFORMES	
Family BAGRIDAE	
Batashi/Tinkata	*Batasio batasio* (Hamilton, 1822)
Kucho-tengra	*Rama chandramara* (Hamilton, 1822)
Tengra	*Mystus vittatus* (Bloch, 1794)
Family SILURIDAE	
Pabda	*Ompok pabo* (Hamilton, 1822)
Pabda	*Ompok pabda* (Hamilton, 1822)
Boal	*Wallago attu* (Bloch & Schneider, 1801)
Family SCHILBEIDAE	
Subfamily Schilbeinae	
Khaura/Gharua	*Clupisoma garua* (Hamilton, 1822)
Family SISORIDAE	
Telchitta	*Glyptothorax telchitta* (Hamilton, 1822)
Family CLARIIDAE	
Magur	*Clarias batrachus* (Linnaeus, 1758)
Family HETEROPNEUSTIDAE	
Singi/Sing	*Heteropneustes fossilis* (Bloch, 1794)
Order CYPRINODONTIFORMES	
Family APLOCHEILIDAE	
Te-chokha	*Aplocheilus panchax* (Hamilton, 1822)
Order BELONIFORMES	
Family BELONIDAE	
Kankley/Kakley	*Xenentodon cancila* (Hamilton, 1822)

Table-11 : *Cont'd.*

Common/Local name	**Scientific name**
Order SYNBRANCHIFORMES	
Family SYNBRANCHIDAE	
Kuchia	*Monopterus cuchia* (Hamilton, 1822)
Family MASTACEMBELIDAE	
Guchi/Goichi/Bam	*Mastacembelus armatus* (Lacepede, 1800)
Guchi/Bam	*Macrognathus aculeatus* (Bloch, 1786)
Pankal/Pakal	*Macrognathus pancalus* (Hamilton, 1822)
Order PERCIFORMES	
Family CHANNIDAE	
Shal	*Channa marulius* (Hamilton, 1822)
Shol	*Channa striata* (Bloch, 1793)
Chang	*Channa orientalis* (Bloch & Schneider, 1801)
Sati/Taki (Lata)	*Channa punctata* (Bloch, 1793)
Family AMBASSIDAE	
Chanda	*Chanda nama* (Hamilton, 1822)
Lal-chanda/Ranga-chanda	*Pseudambassis ranga* (Hamilton, 1822)
Family NANDIDAE	
Subfamily Nandinae	
Bheda/Meni	*Nandus nandus* (Hamilton, 1822)
Family GOBIIDAE	
Subfamily Gobiinae	
Balia/Beley	*Glossogobius giuris* (Hamilton, 1822)
Family ANABANTIDAE	
Koi	*Anabus testudineus* (Bloch, 1792)
Family OSPHRONEMIDAE	
Subfamily Luciocephalinae	
Khalisha/Kholsa	*Colisa fasciatus* (Bloch & Schneider, 1801)
Ranga-kholisha/Kholsa	*Colisa labiosus* (Day, 1877)
Chuna kholisha	*Colisa sota* (Hamilton, 1822)
Subfamily Macropodinae	
Kucho-koi	*Ctenops nobilis* (McClelland, 1845)
Order TETRAODONTIFORMES	
Family TETRAODONTIDAE	
Tepa/Tayapa	*Tetraodon cutcutia* (Hamilton, 1822)

SYSTEMATIC ACCOUNT OF FISHES RECORDED IN RASIK BEEL WETLAND COMPLEX

Order CLUPEIFORMES

Family CLUPEIDAE

1. ***Gudusia chapra*** (Hamilton, 1822)

Common name/Local name : Chapila/Korti/Khoira.

Diagnostic characters : Head length is 4.3 to 4.5 of total length. Body is ventrally more convex. Broad adipose layer present on eyes. Dorsal fin closer to caudal base. Preventral scutes 18 and post ventral scutes 9. Glazy silvery body colour with dark band on the top of the shoulder.

Distribution : Throughout West Bengal and Assam, Bihar, Orissa. From upper part of Ganges up to Krishna river system.

Remarks : Length of the captured specimens is 9.5 cm. Locally very popular for its taste, but volume of flesh is less compare to bones. Present in Atiamochar and Batikata beel.

Order OSTEOGLOSSIFORMES

Family NOTOPTERIDAE

2. ***Notopterus notopterus*** (Pallas, 1769)

Common name/Local name : Fali/Folui.

Diagnostic characters : Head length is 4.1 to 5.5 of total length. Eye diameter 4.5 to 5.0 in head length. Maxilla reaches to mid orbit. Small dorsal fin situated midway between snout and caudal fin base. United anal and caudal fin. Rudimentary pelvic. Very minute scales present all over the body. Silvery in colour with gray back. Very gray spots present all over the body. Eyes golden in colour.

Distribution : Through out India.

Remarks : Length of captured specimens is 24 cm. Locally popular but conditional for its thin dense bones present all over the body. Present in Atiamochar and Raichengmari beel.

3. ***Chitala chitala*** (Hamilton, 1822)

Common name/Local name : Chital.

Diagnostic characters : Head length is 4.6 of total length. Eye diameter 7 to 8 in head length. Top of the head is concave and deeply curved. Body is dorsally convex and ventrally flat. Very minute scales present all over the body. United anal and caudal fin, rudimentary ventral fin, small dorsal fin. Dark silver in colour. About 15 silvery transverse bars present

with 2 dark black spots present on the caudal region of the body. Grayish spots present on the fins.

Distribution : Throughout West Bengal, Assam, U.P., Bihar etc.

Remarks : Length of captured specimens is 40 cm. Locally popular for its taste but due to presence of thin dense bones market is restricted. Present in Atiamochar and Raichengmari beel.

Order CYPRINIFORMES

Family CYPRINIDAE

4. ***Catla catla*** (Hamilton, 1822)

Common name/Local name : Katla/Katal.

Diagnostic characters : Head length 4.2 to 4.7 of total length. Eye diameter 6.0 to 7.0 in head length. Remarkably big head with wide mouth directed upward. Comparatively eyes are also big. Lower jaw is more prominent. Body is dorsally more convex than the ventral. Scales are large. Body colour is silvery with dorsally dark gray and ventrally dull whitish.

Distribution : Throughout India.

Remarks : Most common and highly market demanded. Present in almost all beels of Rasik Beel wetland complex.

5. ***Osteobrama cotio cotio*** (Hamilton, 1822)

Common name/Local name : Mowa/Mourla.

Diagnostic characters : Head length 5.5 to 6.0 of total length. Eye diameter 2.5 to 3.0 in head length. Frontal region of dorsal side is concave. Upper jaw bigger than the lower. Dorsal fin arises nearer to snout. 24 predorsal scales. Silvery body colour with glazy silver lateral band. Lower portion is slightly blackish.

Distribution : Throughout India.

Remarks : Most common during rainy seasons. High market demanded small fish especially in West Bengal. Present in almost all beels of Rasik Beel wetland complex.

Subfamily DANIONINAE

6. ***Laubuca laubuca*** (Hamilton, 1822)

Common name/Local name : Chela.

Diagnostic characters : Head length 5 to 6 of total length. Eye diameter 3 to 3.5 in head length. Head profile dorsal and curved upwardly, mouth also turned upwardly. Mouth cleft oblique. Silver body colour with light golden vertical stripes. Black marks present at the base of caudal and pectoral fin.

Distribution : Ponds of West Bengal, Assam, Orissa, M.P. etc.

Remarks : Length of captured specimens is 8.5 cm. Thin delicious, sold in the market with mixed composition of smallfishes. Present in Bochamari, Atiamochar and Raichengmari beel.

7. ***Amblypharyngodon mola*** (Hamilton, 1822)

Common name/Local name : Maurala.

Diagnostic characters : Head length 5 of total length. Eye diameter 3.5 in head length. Origin of dorsal fin is midway between front border of eye and caudal base. 9 to 10 rows present between lateral line and pelvic base.

Distribution : Throughout India.

Remarks : Length of captured specimens is 8.5 cm. Very popular small fish, easily chewable. Present in almost all beels of Rasik Beel wetland complex.

8. ***Rasbora daniconius*** (Hamilton, 1822)

Common name/Local name : Darkina/Dankani/Dadhika.

Diagnostic characters : Head length 4.5 to 5.0 of total length. Dorsally more convex than the ventral portion. There is no barbles. 14 predorsal scales present. Origin of dorsal fin nearer to the caudal fin base. Silvery lateral side with a blueish lateral band and greenish yellow back. Fins are pale orange in colour and caudal lobe tinged ith black.

Distribution : Throughout India.

Remarks : Very common. Present in almost all beels of Rasik Beel wetland complex.

9. ***Rasbora rasbora*** (Hamilton, 1822)

Common name/Local name : Dari-kana.

Diagnostic characters : Head length 5 of total length. Eye diameter 3.5 in head length. Ventral profile is more convex than that of dorsal. Dorsal fin situated nearer to the base of caudal fin. 12 predorsal scale and lateral line is concave. A distinguish dark black band present from mid of the eyes upto the base of caudal fin.

Distribution : West Bengal, Assam, Orissa, Bihar, U.P., A.P. etc.

Remarks : Length of captured specimen is 4.8 cm. Most common in West Bengal. Present in almost all beels of Rasik Beel wetland complex.

10. ***Esomus danricus*** (Hamilton, 1822)

Common name/Local name : Darika.

Diagnostic characters : Head length 5.2 to 5.5 of total length. Eye diameter 3.2 to 3.5 in head length. Ventral side convex. Mouth projected upward. 2 pairs of barbles present. Dorsal

fin and caudal fin originated from opposite side of almost same vertical line. 18 predorsal scales. Silver in colour with a black lateral line.

Distribution : Throughout India.

Remarks : Length of the captured specimen is 4.8 cm. Common, largely found during rainy seasons. Present in Atiamochar, Bochamari and Raichengmari beel.

Subfamily LABEONINAE

11. ***Cirrhinus cirrosus*** (Bloch, 1795)

Common name/Local name : Mrigal.

Diagnostic characters : Head length 5.0 to 5.2 of total length. Eye diameter 3.6 to 4.0 in head length. 1 pair of small barbell present within the fold of the lip. Compare to head the body is compressed. Body is dorsally convex. Origin of dorsal fin nearer to snout. Scales are large. Body colour is silvery with dark gray dorsally and whitish ventrally. Slight coppery tinge present on the dorsal side and fins are orange tinged with black. Eyes golden in colour.

Distribution : Throughout India.

Remarks : Most common and high market demanded. Present in almost all beels of Rasik Beel wetland complex.

12. ***Labeo rohita*** (Hamilton, 1822)

Common name/Local name : Ruhi/Rui/Rohu.

Diagnostic characters : Head length 4.5 to 5.0 of total length. Eye diameter 4.0 to 6.0 in head length. Snout obtuse and depressed, body dorsally convex. Caudal fin deeply forked. Dorsal fin arises from the point between caudal base and snout. Body colour is reddish brown with blue tinge. Vertically lower half is silvery with witish belly. Fins are tinged with pink.

Distribution : Throughout India.

Remarks : Very common and most popular carp with high market demand. Present in almost all beels of Rasik Beel wetland complex.

13. ***Labeo bata*** (Hamilton, 1822)

Common name/Local name : Bata.

Diagnostic characters : Head length 5.5 of total length. Eye diameter 4.0 to 4.3 in head length. Dorsally more convexed. Presence of a very short maxillary barbells. Lips are thin and continuous in nature. Dorsal fin situated nearer to snout than the caudal base. Caudal fin deeply forked. Body colour whitish silvery with dark gray dorsal region. Fins are slightly orange tinged.

Distribution : Throughout India.

Remarks : Very common minor carp with high market demand. Present in almost all beels of Rasik Beel wetland complex.

14. ***Labeo calbasu*** (Hamilton, 1822)

Common name/Local name : Kalbaus.

Diagnostic characters : Head length 5.0 to 6.0 of total length. Eye diameter 4.0 to 5.0 in head length. Both dorsal and ventral sides are equally convex. Narrow, obtuse mouth. Body is laterally depressed. 4 barbels present surrounding lips. Caudal fin deeply forked. Glossy blakish body colour including the fins. Ventral portion slightly lighter.

Distribution : Throughout India.

Remarks : The name was from its body colour. Popular sweet taste major carp. Not very common with high market demanded fish. Present in Raichengmari, Atiamochar and Bochamari Beels.

15. ***Labeo gonius*** (Hamilton, 1822)

Common name/Local name : Kursa/Kurchi/Goni.

Diagnostic characters : Head length 5.0 to 5.5 of total length. Eye diameter 4.5 to 5.0 in head length. Dorsally more convex. Lips are thick and fringed. Pores present in the snout. Jaws are horny. 2 pairs of small barbells present around lips. Dorsal fin originated nearer to snout than to caudal base. Caudal fin is deeply forked and scales are small. White silvery body colour with greenish gray dorsally. Scales with dark margins giving an impression of faint longitudinal lines.

Distribution : North Bengal, Assam, Bihar, U.P. and Krishna river system in south.

Remarks : Very popular for its taste but capture frequency is rare. Present in Raichengmari Beel.

Subfamily BARBINAE

16. ***Puntius conchonius*** (Hamilton, 1822)

Common name/Local name : Kanchan Puthi.

Diagnostic characters : Head length 5.0 of total length. Eye diameter 3.0 in head length. Dorsal and ventral sides are equally convex. Slight depression psesent on the nape. Dorsal fin is strong and serrated and opposite to pelvic fin. 9 predorsal scales. Body colour silvery with grayish green dorsal portion. A distinguish large black spot present on the middle of the caudal peduncle, approximately 19 to 20 no. of scales. All the fins are coloured with orange except the tip of the dorsal fin tinged with black.

Distribution : All over West Bengal and Assam, Orissa, Bihar, U.P., Panjab, M.P. etc.

Remarks : Most common all over West Bengal, low cost and high market demanded, plenty found during monsoon seasons. Present in almost all beels of Rasik Beel wetland complex.

17. ***Puntius gelius*** (Hamilton, 1822)

Common name/Local name : Gili-puthi.

Diagnostic characters : Head length 4.2 to 4.5 of total length. Eye diameter 2.5 in head length. Dorsal side comparatively more convex. Incomplete lateral present on the first half on both side (up to 5 to 6 scales). Caudal fin deeply forked. Dorsal fin situated before the appearance of the origin of ventral fin. Body colour is silvery with largely reddish brown. 2 dark black spots present, one at the base of the dorsal fin and another at the anterior half of the body just below the head. Black band on the tail and at the base of the anal fin is very distinguishing characters.

Distribution : Sub Himalayan Northern region of India especially in West Bengal, Assam, Bihar, Orissa etc.

Remarks : Common popular minor fishes with high market demand. Plenty found during in Monsoon. Present in almost all beels of Rasik Beel wetland complex.

18. ***Puntius terio*** (Hamilton, 1822)

Common name/Local name : Teri-puthi.

Diagnostic characters : Head length 4.0 to 4.5 of total length. Eye diameter 2.7 in head length. Body dorsally convex and laterally compressed. A marked elevation present from snout up to dorsal fin. Upper jaw is slightly longer than the lower. 9 predorsal scales. Body colour silvery with greenish gray on the back. Anterior part of the scales are marked with numerous black dots. 2 large black blotch like markings present, one on the below the middle of anal fin and another below the middle of dorsal fin. Colour of the fins are yellowish orange.

Distribution : West Bengal, Orissa, Assam, Bihar, U.P. Panjab etc.

Remarks : Most common, plenty found during monsoon. Present in almost all beels of Rasik Beel wetland complex.

19. ***Puntius ticto*** (Hamilton, 1822)

Common name/Local name : Tita-puthi/Tit-puthi.

Diagnostic characters : Head length 5 of total length. Eye diameter 3 in head length. A marked rise present from snout to dorsal fin. Body laterally compressed. Upper jaw comparatively larger than the lower. Strong dorsal ray. 11 predorsal scales. Caudal fin markedly forked. Body colour is largely silvery with reddish flank region and greenish back region. 2 black spots present on the lateral region.

Distribution : Throughout India.

Remarks : Most common, plenty found during monsoon. Present in almost all beels of Rasik Beel wetland complex.

20. ***Puntius sarana*** (Hamilton, 1822)

Common name/Local name : Sar-puthi/Saral-puthi.

Diagnostic characters : Head length 5.0 to 5.2 of total length. Eye diameter 4.2 to 4.7 in head length. Body dorsally convex, inter-orbital space convex, 2 pains of barbells present. Dorsal fin arises nearer to snout. Complete lateral line. Predorsal scale 10 and serated dorsal spine. Silky silver body colour. Yellowish golden patch present on the opercle. Fins are grayish tinged.

Distribution : Throughout India.

Remarks : Most popular with high market demand but capture frequency rare. Present in almost all beels of Rasik Beel wetland complex.

Family BALITORIDAE

Subfamily NEMACHEILINAE

21. ***Acanthocobitis botia*** (Hamilton, 1822)

Common name/Local name : Khorkey/khorika-poia.

Diagnostic characters : Head length 4.5 to 5.5 of total length. Eye diameter 3.7 in head length. Dorsal fin originates nearer to snout. Barbels are long. Maxillary barbell extended up to the eyes. Length of pectoral as mach as head., caudal is notched. Lateral line is complete. Body colour is grayish with 12 short bars present on the lateral line and a few irregular bands present over the back. Rows of black spots present on the orange tipped dorsal fin and 7 bars present on the caudal fin.

Distribution : Sub-Himalayan North East of India.

Remarks : Common in small ditches of Duars. Frequency of capture is less. Present in almost all beels of Rasik Beel wetland complex.

Family COBITIDAE

Subfamily COBITINAE

22. ***Lepidocephalicthys guntea*** (Hamilton, 1822)

Common name/Local name : Poia/Poa.

Diagnostic characters : Head length 6.0 of total length. Body is elongated and dorsal and ventral profiles are almost parallel. 3 pairs of barbells present. Head to snout region is slightly depressed. Ventral to the eyes a large suborbital spine is present. Body colour is yellowish

with dark brown dorsally and black specks present on the ventral side. A dark median diffused broad black line extended from gill up to the base of caudal fin.

Distribution : All over India from sub-Himalaya to Krishna river system.

Remarks : Common in small ditches. Frequency of capture is less available during monsoon. Market demand is also high. Present in almost all beels of Rasik Beel wetland complex.

Subfamily : Botiinae

23. ***Botia dario*** (Hamilton, 1822)

Common name/Local name : Botya.

Diagnostic characters : Head length 4.5 to 5.0 of total length. Eye diameter 5.0 in head length. Body elongated and laterally compressed. Dorsally convex. 4 pairs of barbells present. Ventral to the eyes presence of a strong bifid backwardly curved spine. Caudal fin deeply forked. Yellowish body colour with 7 dark brown vertical bands present over the body. 3 dark bands present on the caudal fin which are conical in shape.

Distribution : Sub-Himalayan northern region of India extended from Assam to Panjab.

Remarks : Frequency of capture is very rare, always found in mixed composition. Present in almost all beels of Rasik Beel wetland complex.

Order SILURIFORMES

Family BAGRIDAE

24. ***Batasio batasio*** (Hamilton, 1822)

Common name/Local name : Batashi/Tinkata.

Diagnostic characters : Head length 4.5 of total length. Eyes very small and present vertically top of the head. Overall head and mouth is very small. Very short 4 pairs of barbells present. Presence of strong serrated dorsal and ventral spines. Caudal fin lobed. Overall body colour is whitish with pinkish to yellowish tinge and marked with longitudinal bands. A dark shoulder spot is distinguishing.

Distribution : North Bengal, Assam.

Remarks : Small fish with high market demand, capture frequency is moderate. Present in Sakobhanga and Batikata Beels.

25. ***Rama chandramara*** (Hamilton, 1822)

Common name/Local name : Kucho-tengra.

Diagnostic characters : Head length 4.0 to 4.5 of total length. Eye diameter large but inferior, visible only from the ventral side. Dorsally convex and snout is also convex. Head is small and compressed and pores present on ventral and lateral side. Vestigial pectoral fin with

outer ray extended up to the ventral fin. Anal fin is short. Lateral line complete. Body colour is pale olive speckled with black dots. A black spot is present on the shoulder and another one one on the occipital region.

Distribution : Sub-Himalayan West Bengal, Assam, etc.

Remarks : Size is very small and capture frequency is high during post monsoon. Present in almost all beels of Rasik Beel wetland complex.

26. ***Mystus vittatus*** (Bloch, 1794)

Common name/Local name : Tengra.

Diagnostic characters : Head length 4.7 to 5.0 of total length. Eye diameter 4.5 to 6.0 in head length. Presence of 4 pairs of barbells. Maxillary barbell is very long extends up to pelvics. Serrated dorsal spine. Pectoral fin serrated and caudal fin is deeply forked. Silvery golden body colour. 5 black stripes present on the lateral side of the body. A black spot present on the shoulder.

Distribution : Throughout India.

Remarks : Most common, very popular and high market demand variety. Present in almost all beels of Rasik Beel wetland complex.

Family SILURIDAE

27. ***Ompok pabo*** (Hamilton, 1822)

Common name/Local name : Pabda.

Diagnostic characters : Head length 5.0 to 5.2 of total length. Eye diameter 4.0 to 4.5 in head length. Short dorsal fin is spineless, 2 pairs of barbells present of which maxillary barbels extends up to anal fin, anal fin is continuous in nature. Anal rays varies from 66 to 71. Pectoral spine is serrated. Body colour is silvery. A very light shoulder spot is present.

Distribution : West Bengal, Assam etc.

Remarks : Common, most popular fish, high market value. Present in almost all beels of Rasik Beel wetland complex.

28. ***Ompok pabda*** (Hamilton, 1822)

Common name/Local name : Pabda.

Diagnostic characters : Head length 4.5 to 5.6 of total length. Eye diameter 5.5 in head length. Short dorsal fin is spineless, 2 pairs of barbells present of which maxillary barbels extends up to the end of pectoral fin, anal fin is continuous in nature. Anal rays varies from 52 to 58. Pectoral spine is serrated. Caudal fin is forked, the lobes are equal and rounded in nature. Body colour is glazy silvery tinged with greenish to golden colour. A black shoulder spot is present.

Distribution : Sub-Tropical regions of India.

Remarks : Most popular, high market demand, Capture frequency is occasional. Present in almost all beels of Rasik Beel wetland complex.

29. ***Wallago attu*** (Bloch & Schneider, 1801)

Common name/Local name : Boal.

Diagnostic characters : Head length 5.0 to 5.5 of total length. Eye diameter 7.0 to 8.0 in head length. Dorsally convex but the head is depressed and snout is patulate. Mouth is sub terminal and gape is very wide. 2 pairs of barbells present. Thin dorsal fin having no spine, anal fin is long and continuous in nature. Body colour is silvery tinged with grayish, ventral portion is white. Yellow band present on the lateral side along with the lateral line.

Distribution : Throughout India.

Remarks : Very oily fish, fat content is very high. Common, moderate market demand. Present in Raichengmari and Noldoba Beel.

Family SCHILBEIDAE

Subfamily SCHILBEINAE

30. ***Clupisoma garua*** (Hamilton, 1822)

Common name/Local name : Khaura/Gharua.

Diagnostic characters : Head length 5.5 to 6.5 of total length. Eye diameter 3.5 to 4.0 in head length. Dorsally convex with high rise from snout to dorsal fin. Long upper jaw. Presence of 4 pairs of barbells of which maxillary is extending to the pelvic fin. Dorsal and pectoral fins are serrated. Grayish silvery body colour, dorsally the colour is faded. Fins are gray in colour.

Distribution : West Bengal, Orissa, Assam, Bihar, U.P., M.P. etc.

Remarks : Less market demand, in occasional cases people consider it as food. Capture frequency is moderate. Present in Raichengmari and Noldoba Beels.

Family SISORIDAE

31. ***Glyptothorax telchitta*** (Hamilton, 1822)

Common name/Local name : Telchitta.

Diagnostic characters : Head length 5.5 to 5.8 of total length. Eye diameter very small and interorbital space is flat. Dorsally convex, body torpedo shaped. Upper jaw long. Scales are small and longitudinally elevated. Presence of short barbells, whipe like caudal peduncle. Body colour is dark brown from dorsally and laterally, ventrally the colour is yellow. Total body is covered with dark spots; fins are also with spotted bands.

Distribution : West Bengal, Assam, Bihar, U.P. etc.

Remarks : Unless situation arises, people do not consider it as food. Capture frequency is moderate. Present in Raichengmari and Noldoba Beels.

Family CLARIIDAE

32. ***Clarias batrachus*** (Linnaeus, 1758)

Common name/Local name : Magur.

Diagnostic characters : Head length 5.6 to 6.0 of total length. Eye diameter 8.0 in head length. Body elongated with vertically compressed head and laterally compressed tail. Upper jaw is long. Terminal mouth and wide gap present between nostrils. Dorsal fin is long and continuous. Presence of 4 pairs of barbells of which maxillary pair extended up to base of pectoral fin. Pectoral spine serrated, caudal fin rounded. Accessory respiratory organ present. Body colour is dark reddish-brown to grayish-black. Scale less smooth skin.

Distribution : Throughout India.

Remarks : Most popular, high market demand. Capture frequency is moderate. Present in almost all beels of Rasik Beel wetland complex.

Family HETEROPNEUSTIDAE

33. ***Heteropneustes fossilis*** (Bloch, 1794)

Common name/Local name : Singi/Sing.

Diagnostic characters : Head length 5.5 to 7.0 of total length. Eye diameter 7.5 in head length and it is very small. Body elongated with vertically compressed head and laterally compressed tail. Dorsal fin is long and continuous. Presence of 4 pairs of barbells of which maxillary pair extended up to base of pelvic fin. Gill opening is wide, caudal fin rounded. Pectoral spine is serrated. Accessory respiratory organ present. Body colour is dark reddish-brown to purplish-black. Ventrally dull in colour. Scale less smooth skin.

Distribution : Throughout India.

Remarks : Most popular, high market demand. Capture frequency is moderate. Present in almost all beels of Rasik Beel wetland complex.

Order CYPRINODONTIFORMES

Family APLOCHEILIDAE

34. ***Aplocheilus panchax*** (Hamilton, 1822)

Common name/Local name : Te-chokha.

Diagnostic characters : Head length 4.0 to 4.5 of total length. Eye diameter 3.5 in head length. Body elongated, dorsal and ventral profile is almost parallel. Lower jaw is longer.

Pectoral fin originates nearer to head, ventral fin small, anal almost square shaped and the caudal fin is rounded. Body colour is dark grayish dorsally and whitish laterally and ventrally. Fins are yellowish, the caudal and anal fins are coloured with orange margins.

Distribution : West Bengal, Assam Bihar, U.P., Panjab, Orissa, M.P. etc.

Remarks : Common, not popular as food. Present in almost all beels of Rasik Beel wetland complex.

Order BELONIFORMES

Family BELONIDAE

35. ***Xenentodon cancila*** (Hamilton, 1822)

Common name/Local name : Kankley/Kakley.

Diagnostic characters : Head length 2.6 of total length. Eye diameter 3.0 to 3.2 in head length. Body cylindrical, elongated. Long beak like upper and lower jaw. Lower jaw is slightly longer. Dorsal and anal fins are similar in shape and are close to the tail. A deep median longitudinal groove is present on the upper surface of the head. Body colour is largely greenish gray, ventrally the colour become whitish. A silvery band is present along the body. Numerous fine black spots present on the dorsal surface of the body.

Distribution : Throughout India.

Remarks : Occassional, but very popular with less market demand. Present in Sakobhanga and Batikata Beels.

Order SYNBRANCHIFORMES

Family SYNBRANCHIDAE

36. ***Monopterus cuchia*** (Hamilton, 1822)

Common name/Local name : Kuchia.

Diagnostic characters : Head length 6.0 to 8.0 of total length. Eye diameter 2.0 to 3.0 in head length. Body is very elongated eel-shaped. Tail region compressed vertically. Single ventral gill opening placed transversely. Upper jaw is larger than the lower. Dorsal fin is very rudimentary and situated just before the anus. Body colour is dark brown to blakish dorsally and dull brown ventrally. Numerous small black dots are present in lateral and ventral region.

Distribution : West Bengal, Assam, Bihar Panjub, Orissa. Etc.

Remarks : Due to snake like appearance it is not very popular. Very rare people consider it as food. Capture frequency is rare. Present in almost all beels of Rasik Beel wetland complex.

Family MASTACEMBELIDAE

37. ***Mastacembelus armatus*** (Lacepede, 1800)

Common name/Local name : Guchi/Goichi/Bam.

Diagnostic characters : Head length 6.5 to 7.5 of total length. Eye small. Body elongated and eel shaped with laterally compressed, tapering head and tail region. Mouth cleft is very narrow. Mouth is beak like with upper jaw much elongated. Snout is trilobed, elongated and fleshy. Presence of preorbital spine. Dorsal fin is elongated and continuous in nature and situated at the posterior part of the body. 32 to 39 free spines present anterior to the dorsal fin. Caudal fin united with dorsal and anal fins, no pelvic fin. Body colour is brownish dorsally and dull yellowish ventrally. Presence of a row of undulating type of black spots in the form of blotches on lateral side above the lateral line.

Distribution : Throughout India.

Remarks : Common, very popular with high market demand. Capture frequency is moderate. Present in almost all beels of Rasik Beel wetland complex.

38. ***Macrognathus aculeatus*** (Bloch, 1786)

Common name/Local name : Guchi/Goichi/Bam.

Diagnostic characters : Head length 5.0 to 6.0 of total length. Eye small. Body elongated and eel shaped with laterally compressed, tapering head and tail region. Mouth cleft is very narrow. Mouth is beak like with upper jaw much elongated. Snout is elongated and fleshy. Dorsal fin is elongated and continuous in nature and situated at the posterior part of the body with 4 to 9 large black ocelli. 13 to 20 rhythmic free spines present anterior to the dorsal fin. Rounded caudal fin with 3 black bands vertically present. Body colour is greenish to brownish dorsally and dull yellowish ventrally.

Distribution : Throughout India.

Remarks : Common, not very popular with less market demand. Capture frequency is moderate. Present in almost all beels of Rasik Beel wetland complex.

39. ***Macrognathus pancalus*** (Hamilton, 1822)

Common name/Local name : Pankal/Pakal.

Diagnostic characters : Head length 5.0 to 5.5 of total length. Eye very small. Body is elongated, cylindrical, eel shaped. Mouth cleft is very narrow. Mouth is beak like with upper jaw much extended. Snout is elongated and fleshy. Dorsal fin is elongated and continuous in nature and situated at the posterior part of the body. Numerous rhythmic free triangular spines like structure present anterior to the dorsal fin. Small rounded caudal fin separated from dorsal and anal fin by small notches. Body largely deep greenish dorsally and yellowish

ventrally. Fins yellowish dotted with black spots. Numerous white spots present all over the body.

Distribution : Throughout India.

Remarks : Common but not popular with less market demand. Capture frequency is moderate. Present in almost all beels of Rasik Beel wetland complex.

Order PERCIFORMES

Family CHANNIDAE

40. ***Channa marulius*** (Hamilton, 1822)

Common name/Local name : Shal.

Diagnostic characters : Head length 4.0 to 5.0 of total length. Eye diameter 7 in head length. Body dorso-ventrally convex and elongated. The maxilla extended up to the orbit. Presence of multiple cephalic pits. 16 predorsl scales, caudal fin is rounded. Body colour is largely blackish green with lighter ventrally. A orange coloured lateral band is present along with the lateral line. 5 rounded blck patches present along with the lateral line.

Distribution : Throughout India.

Remarks : Capture frequency is occasional, less demanded in market. Present in almost all beels of Rasik Beel wetland complex.

41. ***Channa striata*** (Bloch, 1793)

Common name/Local name : Shol.

Diagnostic characters : Head length 3.5 to 4.0 of total length. Eye diameter 6 to 7 in head length. Presence of 9 rows of scales between eyes and the angle of opercle. Lower jaw is longer than the upper, maxillary extended up to the hind border of eye. Predorsal scales 18 to 20 and the caudal fin is rounded. Colour of the body is dorsally dark grayish to black and ventrally yellowish to white. Fins are grayish in colour, Numerous dark grayish vertical bands are present all over the lateral part of the body.

Distribution : Throughout India.

Remarks : Most popular with high market demand. Capture frequency is moderate. Present in almost all beels of Rasik Beel wetland complex.

42. ***Channa orientalis*** (Bloch & Schneider, 1801)

Common name/Local name : Chang.

Diagnostic characters : Head length 3.5 to 4.2 of total length. Eye diameter 6 in head length. Head is slightly compressed vertically, a number of broad, irregular scales present on the upper surface of the head, maxillary extended up to the hind border of eye. Predorsal

scales 12 and the caudal fin is rounded. Colour of the body is dorsally dark grayish with greenish tinge and ventrally brownish white. Fins are grayish in colour bordered with red, Black band is present on the base of the pectoral fin.

Distribution : Throughout India.

Remarks : Not popular with less market demand. Capture frequency is rare. Present in almost all beels of Rasik Beel wetland complex.

43. ***Channa punctata*** (Bloch, 1793)

Common name/Local name : Sati/Taki (Lata).

Diagnostic characters : Head length 3.3 to 3.6 of total length. Eye diameter 7 to 8.5 in head length. Head is slightly compressed vertically. Presence of 5 rows of scales between eye and angle of preopercle, maxillary extended up to the hind border of eye. Predorsal scales 12 and the caudal fin is rounded. Colour of the body is dorsally dark grayish to black or brown with greenish tinge and ventrally brownish white. Fins are grayish in colour. Numerous black vertical bands present on the lateral side of the body.

Distribution : Throughout India.

Remarks : Most common, popular with moderate market demand. Capture frequency is high. Huge found after post monsoon. Present in almost all beels of Rasik Beel wetland complex.

Family AMBASSIDAE

44. ***Chanda nama*** (Hamilton, 1822)

Common name/Local name : Chanda.

Diagnostic characters : Head length 4.0 to 4.5 of total length. Body dorsally and ventrally equally convex, laterally largely flattened. Lower jaw larger than upper, maxilla extended below the eye. Number of dorsal fin is 2, one after another and they are united at their base. Slight serration is presented on preorbital. 2/3 large canines present on the lower jaw. Body is translucent, colour is yellowish with slight greenish tinge. Fins are orange in colour. Very minute black dots are present over the body.

Distribution : Throughout India.

Remarks : Common not so popular as food as the presence of spine and also because of flesh volume is less. Present in almost all beels of Rasik Beel wetland complex.

45. ***Pseudambassis ranga*** (Hamilton, 1822)

Common name/Local name : Lal-chanda/Ranga-chanda.

Diagnostic characters : Head length 3.2 to 4.0 of total length. Body dorsally and ventrally equally convex and more deeper, laterally largely flattened. Lower jaw larger than upper, maxilla extended below the eye. Small teeth present. Number of dorsal fin is 2, one after another and they are united at their base. Presence of spines on the dorsal fin. Body is translucent, colour is olive. Fins are gray in colour.

Distribution : Throughout India.

Remarks : Common not so popular as food as the presence of spine and also because of flesh volume is less. Present in almost all beels of Rasik Beel wetland complex.

Family NANDIDAE

Subfamily NANDINAE

46. ***Nandus nandus*** (Hamilton, 1822)

Common name/Local name : Bheda/Meni.

Diagnostic characters : Head length 3.0 of total length. Eye diameter 5.0 to 6.0 in head length. Body is dorsally convex and ventrally almost flat, laterally compressed. Deep angle arises from snout to dorsal fin. Snout pointed. Maxilla extended beyond post orbit. Caudal fin rounded. Body colour is dark brownish brassy reflection. 3 vertical broad bands present on the lateral side of the body. Narrow bands present across the fin or the fins are dotted with minute dark spots.

Distribution : Throughout India.

Remarks : Common and popular with moderate market demand. Capture frequency is moderate. Present in almost all beels of Rasik Beel wetland complex.

Family GOBIIDAE

Subfamily GOBIINAE

47. ***Glossogobius giuris*** (Hamilton, 1822)

Common name/Local name : Balia/Beley.

Diagnostic characters : Head length 3.5 to 4.0 of total length. Eye diameter 4.0 to 8.0 in head length. Elongated fish with frontal region is vertically compressed and the postal region is laterally compressed. Head is vertically pointed but laterally rounded. Both the jaws are prominent of which lower jaw is extended. Number of dorsal fin is 2 and they are placed closely. Pelvic fin is disc shaped. Body colour is dull yellowish somewhat translucent type with light greenish tinge dorsally. Ventrally colour is lighter. 4 to 6 patches are present along with the lateral line.

Distribution : Throughout India.

Remarks : Common but not so popular because of its bloodless translucen type appearance. Market demand is moderate. Capture frequency is moderate. Present in almost all beels of Rasik Beel wetland complex.

Family ANABANTIDAE

48. ***Anabus testudineus*** (Bloch, 1792)

Common name/Local name : Koi.

Diagnostic characters : Head length 3.5 to 3.6 of total length. Eye diameter 4.5 to 5.0 in head length. Body is laterally compressed, dorsal and ventral profiles are almost parallel. Opercle and preorbital serrated. Dorsal fin with 17 to 18 and anal fin with 10 spines. Dorsal fin is longer than the anal fin. Caudal fin rounded. Lateral line is interrupted at caudal region. Body colour is dark grayish green dorsally and dull yellowish to reddish ventrally.

Distribution : Throughout India.

Remarks : Common, very popular for its taste with high market demand. Capture frequency is moderate. Largely captured after monsoon season. Present in almost all beels of Rasik Beel wetland complex.

Family OSPHRONEMIDAE

Subfamily LUCIOCEPHALINAE

49. ***Colisa fasciatus*** (Bloch & Schnieder, 1801)

Common name/Local name : Khalisha/Kholsa.

Diagnostic characters : Head length 3.7 to 4.2 of total length. Eye diameter 3.1 to 3.5 in head length. Body dorsally deeply convex, laterally compressed. Small mouth. Continuous long dorsal and pelvic fin, both having spines. Single pectoral fin in the form of a filiform ray extended up to the base of caudal fin. Body colour is dorsally blueish to greenish and ventrally dull white. At least 14 orange to red coloured vertical bands present on the lateral side extended from dorsal side to ventral side. The border of these bands are blue. Margins of the ventral fins are red in colour. Colour of the eyes are red.

Distribution : Throughout India.

Remarks : Common and popular with moderate market demand. Capture frequency is very common. Present in almost all beels of Rasik Beel wetland complex.

50. ***Colisa labiosus*** (Day, 1877)

Common name/Local name : Ranga-kholisha/Kholsa.

Diagnostic characters : Head length 3.3 to 3.5 of total length. Eye diameter 3.2 to 3.4 in head length. Body dorsally deeply convex, laterally compressed. Small mouth. Continuous long dorsal and pelvic fin. Snout is concave type. Denticulated preorbital,preopercle serrated. Soft portion of dorsal fin, ventral fin as well as caudal fins are rounded. Body colour is dorsally gray blueish to greenish and ventrally dull white. At least 14 orange to red coloured vertical bands present on the lateral side extended from dorsal side to ventral side. The border of these bands are blue. Scarlet dots are present on dorsal and caudal fin.

Distribution : Ganga-Bramhaputra basin of India.

Remarks : Common but popular due to the presence of spines and less flesh content as the size is small. Capture frequency is high during monsoon. Present in almost all beels of Rasik Beel wetland complex.

51. ***Colisa sota*** (Hamilton, 1822)

Common name/Local name : Chuna kholisha.

Diagnostic characters : Head length 3.0 to 4.0 of total length. Eye diameter 2.8 to 3.1 in head length. Elongated, oval shaped laterally compressed body. Continuous long dorsal and pelvic fin males and females are pale orange at most times. The fins match the body colour. At spawning times, the male develops a dark orange colour, and his head, throat, and front part of the anal fin become dark green to black. The rear parts of the anal and dorsal fins is also dark orange, as is the caudal fin. The ventral fins of the male may become black. Total size is very small than the other two species. Maximum size recorded 4.5 cm. At spawning times, males become dark orange with a black head, throat, and belly. Females at that time are brownish orange.

Distribution : North Bengal, Brahmaputra basin of Northeastern India.

Remarks : Occassional,not popular due its small size with spine. Capture frequency moderate during monsoon. Present in almost all beels of Rasik Beel wetland complex.

Subfamily MACROPODINAE

52. ***Ctenops nobilis*** (McClelland, 1845)

Common name/Local name : Kucho-koi.

Diagnostic characters : Head length 3.5 to 4.0 of total length. Eye diameter 3.5 in head length. Body dorsally and ventrally convex and laterally compressed. Head region is concave, snout is pointed, lower jaw longer than the upper. Small mouth obliquely present. Serrated large preorbital. Body covered with ctenoid scales. Body colour is largely dark brown. Silvery white bands extended from eye to the base of caudal fin.

Distribution : Sub-Himalayan West Bengal, Assam and Bihar.

Remarks : Uncommon, not popular with less market demand. Capture frequency is less. Present in almost all beels of Rasik Beel wetland complex.

Order TETRAODONTIFORMES

Family TETRAODONTIDAE

53. ***Tetraodon cutcutia*** (Hamilton, 1822)

Common name/Local name : Tepa/Tayapa.

Diagnostic characters : Lenghth of head is equal the distance of the base of dorsal fin. Body is dumble shaped with broad back portion, tail is somewhat tapering. Broad and flat interorbital space. A single orifice act as nostril. 6 rays in caudal fin. All fins are rounded in nature. There is no pelvic fin. Dark greenish to yellow dorsally and yellowish to white ventrally. A white band is present from eye to eye. A large ocellus is present on both lateral side which is situated anterior to the dorsal fin. Lateral side of the body is covered with small dark greenish patch like markings.

Distribution : West Bengal, Assam, Orissa, etc.

Remarks : Not popular with no market demand as it is a poisonous. Occasionally poor people considered it as food. Capture frequency is rare. Present in almost all beels of Rasik Beel wetland complex.

OTHER MAJOR FAUNA IN RASIK BEEL WETLAND COMPLEX

Four annelids (Table-12), forty nine arthropods (Table-13), six molluscans (Table-14), five amphibian (Table-15), six reptilian (Table-16), nine mammalian species (Table-17) were recorded from the Beel area during this survey work. Twenty three different varieties of butterflies (Plate-11) were also recorded from the same survey area during the course of our study (Table-13). Systematic account of the higher vertebrates recorded from the wetland complex is given after the tables. Many more varieties/representatives of different phylum and classes might be there. To identify the most of the varieties, study should be continued over a period. Some of the mammalian species which were reported by the local people to be frequent in the past have now become rare. They include jackal, fishing cat, jungle cat, otter etc.

CHECK LIST OF OTHER MAJOR FAUNA OF RASIK BEEL

Table-12 : List of Annelids in Rasik Beel.

Common/Local name	**Scientific name**
Phylum ANNELIDA	
Class CLITELLATA	
Order HAPLOTAXIDA	
Family TUBIFICIDAE	
Sludge worm/Gura Kecho	*Tubifex tubifex* (Muller, 1774)
Class OLIGOCHAETA	
Order OPISTHOPORA	
Family MEGASCOLECOIDEA	
The Common Earthworm/Kecho	*Pheretima posthuma*
Class HIRUDINEA	
Order ARHYNCHOBDELLIDA	
Family HIRUDINIDAE	
Subfamily Hirudininae	
Water Leech	*Hirudo birmanica* (Blanchard, 1894)
Family HAEMADIPSIDAE	
Land Leech	*Haemadipsa zeylanica* (Moore, 1938)

Table-13 : List of Arthropods in Rasik Beel.

Common/Local name	**Scientific name**
Phylum ARTHROPODS	
Class INSECTA	
Order LEPIDOPTERA	(BUTTERFLIES)
Suborder RHOPALOCERA	
Family PAPILIONIDAE	
Common Mormon Butterfly	*Papilio polytes* (Linnaeus, 1758)
Family PIERIDAE	
Psyche Butterfly	*Leptosia nina* (Fabricius, 1793)
Painted Jezebel Butterfly	*Delias hyparete* (Linnaeus, 1758)
Red-base Jezebel	*Delias aglaia* (Linnaeus, 1758)
Common Grass Yellow Butterfly	*Eurema hecabe* (Linnaeus, 1758)
Common Emigrant Butterfly	*Catopsilia pomona* (Fabricius, 1775)
Common Cabbage White	*Pieris canidia* (Linnaeus, 1758)

Table-13 : *Cont'd.*

Common/Local name	**Scientific name**
Family NYMPHALIDAE	
Common Tiger Butterfly	*Danaus genutia* (Cramer, 1779)
Common Crow Butterfly	*Euploea core* (Cramer, 1780)
Tawny Coster	*Acraea violae* (Fabricius, 1793)
Common Four Ring Butterfly	*Ypthima huebneri* (Kirby, 1871)
Common Three Ring Butterfly	*Ypthima asterope* (Klug, 1832)
Banded Tree Brown Butterfly	*Lethe confusa* (Aurivillus, 1897)
Tawny Rajah Butterfly	*Charaxes bernardus* (Fabricius, 1793)
Common Baron Butterfly	*Euthalia aconthea* (Hewitson, 1874)
Danaid eggfly Butterfly	*Hypolimnas misippus* (Linnaeus, 1764)
Grey Pansy Butterfly	*Junonia atlites* (Linnaeus, 1763)
Pansy Butterfly	*Junonia iphita* (Cramer, 1779)
Peacock Pansy	*Junonia almana* (Linnaeus, 1758)
Common Leopard Butterfly	*Phalanta phalantha* (Drury, 1773)
Common Sailer Butterfly	*Neptis hylas* (Linnaeus, 1758)
Family LYCAENIDAE	
Common Pierrot Butterfly	*Castalius rosimon* (Fabricius, 1775)
Pale Grass Blue Butterfly	*Pseudozizeeria maha* (Kollar, 1848)
Order HEMIPTERA	
Family NEPIDAE	
Water Scorpion	*Ranatra filiformis* (Fabricius, 1790)
Water Scorpion	*Ranatra sordidula* (Dohrn, 1860)
Water Scorpion	*Laccotrephes griseus*(Guerin-Mineville,1844)
Family GERRIDAE	
Pond Skater	*Gerris spinolae* (Lethierry & Severin, 1896)
Family BELOSTOMATIDAE	
Water Bug	*Sphaerodema annulatum* (Fabricius, 1781)
Water Bug	*Sphaerodema molestum* (Dufour, 1863)
Giant Water Bug	*Lethocerus indicus* (Lapeletier & Serville, 1825)
Water Bug	*Diplonychus annulatus* (Fabricius, 1781)
Order HYMENOPTERA	
Family APIDAE	
Giant Honey Bee	*Apis dorsata* (Fabricius, 1793)

Table-13 : *Cont'd.*

Common/Local name	**Scientific name**
Order ORTHOPTERA	
Family GRYLLIDAE	
Common Black Cricket	*Gryllus assimilis* (Fabricius, 1775)
Order ODONATA	
Suborder ZYGOPTERA (Damselfly)	
Family COENAGRIONIDAE	
Coromandel Marsh Dart	*Ceriagrion coromandelianum* (Fabricius, 1798)
Elegant Sprite	*Pseudagrion decorum* (Rambur, 1842)
Golden Dartlet	*Ischnura aurora* (Brauer, 1865)
Suborder EPIPROCTA (Dragonfly)	
Infraorder ANISOPTERA	
Family LIBELLULIDAE (Water dippers)	
Greater Grey Skimmer	*Brachydiplax sobrina* (Rambur, 1842)
Slender Skimmer/Green Marsh Hawk	*Orthetrum sabina* (Drury, 1770)
Ditch Jewel	*Brachythemis contaminata* (Fabricius, 1793)
Pied Paddy Skimmer	*Neurothemis tullia* (Drury, 1773)
Common Plain Skimmer	*Rhyothemis variegata* (Linnaeus, 1763)
Order COLEOPTERA	
Family CARABIDAE	
Tiger Beetle/Gold Cross	*Cicindela aurofasciata* (Dejean, 1831)
Family DYTISCIDAE	
Water Beetle	*Laccophilus sharpi* (Regimbart, 1889)
	Laccophilus flexuosus (Aube, 1838)
Family HYDROPHILIDAE	
Scavenger Beetle	*Berosus indicus* (Motschulsky, 1861)
Scavenger Beetle	*Sternolophus rufipes* (Fabricius, 1792)
Family : Gyrinidae	
Whirligig Beetle	*Dineutus unidentatus* Aube, 1838
Class MALACOSTRACA	
Fresh Water Prawn	*Macrobrachium dayanum* (Henderson, 1893)
Fresh Water Prawn	*Macrobrachium lamarrei* (H. Milne-Edwards, 1837)

Table-14 : List of Mollusca in Rasik Beel.

Common/Local name	**Scientific name**
Phylum MOLLUSCA	
Class GASTROPODA	
Order ARCHITAENIOGLOSSA	
Family VIVIPARIDAE	
Shamuk/Googli	*Bellamya bengalensis* (Lamark, 1882)
Family AMPULLARIIDAE	
Apple snail/Shamuk	*Pila globosa* (Swainson, 1821)
Family BITHYNIDAE	
Mud Snail/Faucet Snail	*Bithynia tentaculata* (Linnaeus, 1758)
Snail	*Digoniostoma cerameopoma* (Benson, 1830)
Family THIARIDAE	
Fresh Water Snail	*Thiara scabra* (Muller, 1774)
Class BIVALVIA	
Order UNIONOIDA	
Family UNIONIDAE	
Fresh Water Muscle/Jhinuk	*Lamellidens marginalis* (Lamarck, 1819)

CHECK LIST OF OTHER VERTEBRATES OF RASIK BEEL

Table-15 : List of Amphibia in Rasik Beel.

Common/Local name	**Scientific name**
Subphylum VERTEBRATA	
Class AMPHIBIA	
Order ANURA	
Family BUFONIDAE	
Common Indian Toad	*Duttaphrynus melanostictus* (Schneider, 1799)
Family MICROHYLIDAE	
Ornate narrow mouthed frog	*Microhyla ornate* (Dumeril & Bibron, 1841)
Family RANIDAE	
Skipping Frog/Skittering Frog	*Euphlyctis cyanophlyctis* (Schneider, 1799)
Indian Bull Frog	*Haplobatrachus tigerinus* (Daudin, 1803)
Family RHACOPHORIDAE	
Tree Frog	*Polypedates maculatus* (Gray, 1830)

Table-16 : List of Reptiles in Rasik Beel.

Common/Local name	**Scientific name**
Class REPTILIA	
Order SQUAMATA	
Suborder IGUANIA	
Family AGAMIDAE	
Oriental Garden Lizard/Girgiti	*Calotes versicolor* (Daudin, 1802)
Family SCINCIDAE	
Common Grass Skink/Anjani	*Eutropis carinata* (Schneider, 1801)
Family VARANIDAE	
Common Monitor/Goshap	*Varanus bengalensis* (Daudin, 1802)
Suborder SERPENTES	
Family COLUBRIDAE	
Oriental Rat Snake/Daras	*Ptyas mucosus* (Linnaeus, 1758)
Checkered Keelback/Jaldhora	*Xenochrophis piscator* (Schneider, 1799)
Smooth water snake	*Enhydris enhydris* (Schneider, 1799)

Table-17 : List of Mammals in Rasik Beel.

Common/Local name	**Scientific name**
Class MAMMALIA	
Order CHIROPTERA	
Family PTEROPODIDAE	
Indian Flying Fox/Badur	*Pteropus giganteus* (Brunnich, 1782)
Shortnosed Fruit Bat/Kala Badur	*Cynopterus sphinx* (Vahl, 1797)
Family VESPERTILIONIDAE	
Indian Pigmy Bat/Chamchika	*Pipistrellus tenuis mimus* (Temminck, 1840)
Order CARNIVORA	
Family MUSTELIDAE	
Common Otter/Bhondor/Ud	*Lutra lutra* (Linnaeus, 1758)
Family VIVERRIDAE	
Small Indian Civet/Gandhagokul/Gaula	*Viverricula indica* (Desmarest, 1804)
Toddy Cat/Bhum/Khatas	*Paradoxurus hermaphroditus* (Pallas, 1777)
Family HERPESTIDAE	
Small Indian Mongoose/Beji/Neul	*Herpestes auropunctatus* (Hodgson, 1836)
Order RODENTIA	
Family MURIDAE	
Indian Mole-Rat/Metho-indur	*Bandicota bengalensis* Gray, 1835
Bandicoot Rat/Dhere indur	*Bandicota indica* (Bechstein, 1800)

SYSTEMATIC ACCOUNT OF OTHER MAJOR VERTEBRATES RECORDED IN RASIK BEEL WETLAND COMPLEX

Subphylum VERTEBRATA

Class AMPHIBIA

Order ANURA

Family BUFONIDAE

1. ***Duttaphrynus melanostictus*** (Schneider, 1799)

Common name/Local name : Common Indian Toad.

Diagnostic characters : Width of head is broad than its length. Snout rounded and its length is equal to the diameter of eye. Nostril situated nearer to the tip of the snout. Tympanum is very distinct and it is 2/3rd the diameter of eye. Fingers free; toes blunt and half webbed. Colour of the body is dorsally dark brownish and ventrally yellowish. Few rough warts and black spots present on the dorsal and lateral sides of the body.

Distribution : Throughout India.

Remarks : Common toad found every where especially nearer to water bodies. Nocturnal in habit.

Family MICROHYLIDAE

2. ***Microhyla ornate*** (Dumeril and Bibron, 1841)

Common name/Local name : Ornate narrow mouthed frog.

Diagnostic characters : Width of head is broad than its length. Snout obtusely pointed. Nostril situated nearer to the tip of the snout. No distinct tympanum. Fingers free; toes webbed at the base; tips blunt. Skin smooth, dorsally the body is brownish in colour with a dark longitudinal mark with symmetrical projection. Ventrally the body is dull coloured with dark colour present in throat region. Few dark cross bars present on the limbs.

Distribution : Throughout India.

Remarks : Size is small, nocturnal in habit. Found in bushy area under the dry leaves spread over moist area.

Family RANIDAE

3. ***Euphlyctis cyanophlyctis*** (Schneider, 1799)

Common name/Local name : Skipping Frog/Skittering Frog.

Diagnostic characters : Width of head is slightly broader than its length. Snout rounded and equal to the diameter of eye. Nostril is situated equidistant from the tip of the snout and the eye. Inter orbital space is very less. Distinct tympanum having 2/3rd the diameter of eye.

Toes pointed and webbed; fingers free. Body colour dorsally brownish with grayish to olive tinge. Several marble like black spots present on the dorsal surface as well as on toes. Ventrally the colour is pale yellowish.

Distribution : Throughout India.

Remarks : Medium sized; common, found floating on the surface of water.

4. ***Haplobatrachus tigerinus*** (Daudin, 1803)

Common name/Local name : Indian Bull Frog.

Diagnostic characters : Width and length of head is equal. Pointed snout. Nostril is situated equidistant from the tip of the snout and the eye. Inter orbital space is very less. Distinct tympanum having 2/3rd the diameter of eye. Fingers are free and first one is longer than the second. Toes totally webbed and tips are not pointed. Body colour dorsally grayish olive to greenish olive and ventrally whitish. Dorsally the skin is folded longitudinally but ventrally it is smooth.

Distribution : Throughout India.

Remarks : Large sized frog, common, found inside bush grown on bank.

Family RHACOPHORIDAE

5. ***Polypedates maculatus*** (Gray, 1830)

Common name/Local name : Tree Frog.

Diagnostic characters : Width of head is broad than the length. Snout pointed and projected beyond mouth. Nostril is situated nearer to the tip of snout than the eye. Inter orbital space is more than the eye diameter. Fingers free with rudiment of web. 1st and 2nd fingers equal in length. Distinct half rounded disc present on the tips of fingers and toes. Toes are 3/4th webbed. Body colour dorsally yellowish brown speckled with dark spots and ventrally yellowish. Dorsally the skin is smooth and ventrally granular.

Distribution : Throughout India.

Remarks : Moderately common, nocturnal in habit; found in bushes and forest nearer to bank of aquatic system or in moist area.

Class REPTILIA

Order SQUAMATA

Suborder IGUANIA

Family AGAMIDAE

1. ***Calotes versicolor*** (Daudin, 1802)

Common name/Local name : Oriental Garden Lizard/Girgiti.

Diagnostic characters : Body is laterally compressed; shape of head is oval. Two distinct spines present on head behind the tympanum. Well developed limbs with long slender like digits ended with claws. Body scales are prominent, keel like and directed backwardly and upwardly. Long rounded tail. There is no fold in front of shoulder. Body colour is largely brownish to greenish. The species exhibit considerable colour variations. In case of male, head and tail is scarlet red to orange in colour.

Distribution : Throughout India.

Remarks : Common; found in bushes. As its red colour of head and tail region its name came as "blood sucker (Beng.- rakto chosha)" commonly.

Family SCINCIDAE

2. ***Eutropis carinata*** (Schneider, 1801)

Common name/Local name : Common Grass Skink/Anjani.

Diagnostic characters : Body elongated and to some extend dorso ventrally flattened. Snout obtusely present. Width and length of head is almost equal. Head shield symmetrical. Presence of moveble eyelids with scaly lower eyelid. 14 to 18 lamellae present under the fourth toe. Body colour is glazy dark brownish to blackish. Small spots or longitudinal lines present on the lateral side. Ventrally the colour is slightly lighter sometime yellowish. During breeding season few scarlet bands arrear on the male from shoulder to thigh region.

Distribution : Found throughout the plains of India.

Remarks : Common and widely distributed. Very shy; found in bushes under the dyr leaves.

Family VARANIDAE

3. ***Varanus bengalensis*** (Daudin, 1802)

Common name/Local name : Common Monitor/Goshap.

Diagnostic characters : Large sized lizard mainly terrestrial, youngs are occasional arboreal. Body elongated and heavy type. Width of head is broad than length. Limbs are very stout. Head shields are not symmetrical. A transparent disc is present on lower eyelid. Nostril to snout distance is greater than the distance between orbit and nostril. A slit like structure present at the opening of nostril. Scales on the skin are rougher in patches on sides and micropores present on scales. Tongue is forked. Dorsally the body colour is dark grayish or brownish to black (olive brown in immature stage). Ventral surface is slightly yellowish. Yellow bands are present on the sides of the body. Youngs are more colourful than the adult.

Distribution : Throughout India.

Remarks : Not very common now a days. Very shy and timid in nature.

Suborder SERPENTES

Family COLUBRIDAE

4. ***Ptyas mucosus*** (Linnaeus, 1758)

Common name/Local name : Oriental Rat Snake/Daras.

Diagnostic characters : Long snake whose head is distinct from neck. Presence of teeth in both the jaws but there is no poisonous fangs. Obtuse snout extended outwardly. Eyes are distinct and large. Ventrally the shields are broad. 15 or 17 rows of scales round the body at mid region. Dorsally the body colour is dark brown sometimes with olive tinge and ventrally the colour is largely yellowish brown. Black colour cross bars present on the posterior region of the body.

Distribution : Throughout India.

Remarks : Moderately common; non-poisonous, harmless and very shy. Moves very fast on the ground as well as on trees. Often diurnal.

5. ***Xenochrophis piscator*** (Schneider, 1799)

Common name/Local name : Checkered Keelback/Jaldhora.

Diagnostic characters : Strong bodied snake with rounded head and broad tapering snout. Head is distinct from neck. Snout is laterally pointed. Nostril distinct and present anteriorly; inter nasal space is narrow. Distinct eye with round shaped pupil. Snout elongated; body with 17-19 rows of scales on the mid region. Scales are strongly keeled, with outer row smooth. Dorsally the body colour is brownish tinged with grayish to yellowish. Ventrally the colour is yellowish to whitish. Dark brown cross bands present all over the body. 5 rows of small spots on dorsal side. Head largely olive brown in colour. Presence of 2 oblique black streaks on the head region.

Distribution : Throughout India.

Remarks : Common and most active and vicious. Diurnal in habit.

6. ***Enhydris enhydris*** (Schneider, 1799)

Common name/Local name : Smooth water snake.

Diagnostic characters : Elongated body; snout broad and rounded shaped. Valvular nostril. Teeth present on maxilla. Ventral shields are enlarged. Scales smooth. Small eyes placed high on head and the pupil is vertically elliptical. Body colour dorsally dark brownish grey with olive tinge and ventrally glazy lemon yellowish. Dark lateral line present on ventral side.

Distribution : West Bengal, Assam, Bihar, Orissa, U.P., A.P. etc.

Remarks : Fairly common. Cum and quite type of snake. Preys on frogs and fishes.

Class MAMMALIA

Order CHIROPTERA

Family PTEROPODIDAE

1. ***Pteropus giganteus*** (Brunnich, 1782)

Common name/Local name : Indian Flying Fox/Badur.

Diagnostic characters : Large sized bat; head region looks like a small fox due to the structure of large eyes and small pointed ears. Inner margin of the nostril projected outwardly. Sharp curved claws present on the toes. Colour of head and around the neck regions are reddish brown. A orange coloured band acrosely present in upper back. Dorsal surface of lower back is blackish brown. Ventral surface is largely dark chestnut brown. Skin of uropatagium and wings are nacked i.e. without hair and the colour is jet black. Inside the both legs a small flap of skin is present. Snout blackish. Chin, flank, vent and neck is darker.

Distribution : Throughout India.

Remarks : Common; nocturnal in habit, found flying with slow wing beat at dusk, roosts in colonies on the branches of large trees near water bodies; noisy in nature.

2. ***Cynopterus sphinx*** (Vahl, 1797)

Common name/Local name : Shortnosed Fruit Bat/Kala Badur.

Diagnostic characters : Medium sized bat with long snout. Inner margin of the nostril projected outwardly, looking like divergent nostril. Presence of two pairs of lower incisors. Check teeth present 4 in upper and 5 in lower jaw. Nostril is divergent and a deep inter-narial groove is present. Fur is silky type. Dorsal surface is ferruginous brown in color. Margin of ears, metacarpals and phalanges are whitish. Ventral surface paler.

Distribution : Throughout India.

Remarks : Moderately common, nocturnal in habit, nests typically high in palm trees; very important species as a cross-pollinator.

Family VESPERTILIONIDAE

3. ***Pipistrellus tenuis mimus*** (Temminck, 1840)

Common name/Local name : Indian Pigmy Bat/Chamchika.

Diagnostic characters : Small bat. Body covered with short dense fur. Separated small ears sub-triangular in shape with rounded tips. Wings starts from the base of the toes. Check teeth less than 6 on both the upper and lower jaws. Muzzle blunt. Fifth finger longer than metacarpal and first phalanx of fourth and third. Body colour dorsally dark brown; base of the hairs are black. Ventrally the colour is lighter. Nacked parts of the body i.e face, ears, wings etc. are complete black.

Distribution : Throughout India.

Remarks : Common; shy; roosts in dark cum places like nooks and corners of buildings and abundant houses, high dense trees etc. Fly very fast and flight is erratic in nature.

Order CARNIVORA

Family MUSTELIDAE

4. ***Lutra lutra*** (Linnaeus, 1758)

Common name/Local name : Common Otter/Bhondor/Ud.

Diagnostic characters : Amedium sized otter covered with fuller and rougher coat. Tail thick and muscular flat type suitable for swimming. Hind foot comparatively broader than fore foot. Vibrissae thick. Presence of larger paws and well developed claws. The digits are webbed. Body largely glazy brownish in colour. Hairs are long with pale tips. Mouth and throat region is pale yellow.

Distribution : West Bengal, Assam, Peninsular India.

Remarks : Uncommon due to destruction of wetlands. Found in reed bed and bushes near wetland. Vertically migratory species. Nocturnal in habit.

Family VIVERRIDAE

5. ***Viverricula indica*** (Desmarest, 1804)

Common name/Local name : Small Indian Civet/Gandhagokul/Gaula.

Diagnostic characters : Narrow fore head and anterior parts of ears are close together. Digitigrade feet terrestrial type. Presence of scent gland in both sexes; in male between scrotum and prepuce and in female behind or encircling vulva. Body colour is tawny grey or grayish brown with small black spots and lines present on the fore-quarters and large spots on the flanks tending to run into 6-8 longitudinal stripes down the back. Few cross bars present on neck. Tail with 8-9 complete dark rings.

Distribution : Throughout India.

Remarks : Not very common, nocturnal in habit and very shy and timid; lives in holes in rocky or bushy area. Climbs well, very easy to climb the vertical trunk also.

6. ***Paradoxurus hermaphroditus*** (Pallas, 1777)

Common name/Local name : Toddy Cat/Bhum/Khatas.

Diagnostic characters : Medium zized civet having semi-plantigrade feet scansorial type. Presence of double carpal and metacarpal pads. Presence of scent gland in both sexes; in male between scrotum and prepuce and in female behind or encircling vulva. Body covered with course, shaggy hairs and the color is largely grayish to blackish. Colour of feet, ears

and muzzle is complete black. A definite pattern of three black dorsal stripes and lateral spots are present. Spots present on the flanks, shoulders and thigh region. Limbs are dark brownish. A white patch of facial mark is present below the eye.

Distribution : Throughout India.

Remarks : Common, nocturnal in habit, very shy, found near human habitation. Rests on large trees during day.

Family HERPESTIDAE

7. ***Herpestes auropunctatus*** (Hodgson, 1836)

Common name/Local name : Small Indian Mongoose/Beji/Neul.

Diagnostic characters : Small sized mongoose with shorter tail. Body slender with elongated head and pointed snout. Cranium gradually narrows from the orbit. Ears are short. Feet with five toes having long claws. Body covered with soft, short, and very dense hairs. Tail is very bushy with the presence of tall hairs. Body colour largely brown and the muzzle is dark brown. Few dark bands are present on the legs.

Distribution : Throughout India.

Remarks : Common; found near the human habitation particularly adjacent to paddy field and burial ground. Often seen hunting its food around cultivated fields, in bushes and hedges. Burrowing animal, lives in holes prepare by itself.

Order RODENTIA

Family MURIDAE

8. ***Bandicota bengalensis*** Gray, 1835

Common name/Local name : Indian Mole-Rat/Metho-indur.

Diagnostic characters : Small sized rat with rounded head and short broad muzzle. Ears are also rounded in shape. Anterior palatal foramina elongated and narrower posteriorly. Nasal short with less than 1/3rd the length of occipito-nasal length. Maxillary teeth arranged in 3 longitudinal rows. Upper incisor proodont. Presence of claws on hallux and on fifth toe. Body color dorsally dark grayish brown to blackish speckled with buff, and ventrally light grey.

Distribution : Throughout India.

Remarks : Very common; very active; destroy huge grains. Burrowing animals, nocturnal in habit. Dig its burrowing holes and tunnel and pile up fresh earth like a molehill, therefore its name is Mole-Rat.

9. ***Bandicota indica*** (Bechstein, 1800)

Common name/Local name : Bandicoot Rat/Dhere indur.

Diagnostic characters : Large sized rat with rounded head and short broad muzzle. Large ears typically flat type with tip rounded. Anterior palatal foramina elongated and broad at both ends. Nasal more than 1/3rd the length of occipito-nasal length. Maxillary teeth arranged in 3 longitudinal rows. Upper incisor proodont. Presence of claws on hallux and on fifth toe. Body color dorsally dark grayish to blackish with logh hairs covered the body. Ventral surface lighter.

Distribution : Throughout India.

Remarks : Uncommon, nocturnal in habit and burrowing animals.

Further study in different seasons of consecutive three year is required in order to understand not only the changing faunal diversity but also the population dynamics of some of the important animal species of the Rasik Beel complex that reflect the health of such varied ecosystem.

Once the faunal and floral inventory along with a calendar of their activities is prepared, the status of this complex ecosystem with regard to their future viability will be apparent. Development of this complex in to an eco-tourist centre may then be planed with further recommendation on conservation and sustainable maintenance of the biota.

Few suggestions from the desk of Investigators for maintenance and sustainable development of the Rasik Beel Wetland Complex as a waterfowl abode :

★ Awareness Programme among the local people for the maintenance of the wetland eco-balance and to preserve the biodiversity.

★ Awareness Programme about the restriction on the use of chemicals in the cultivation to avoid run off pollution.

★ Complete restriction of fishing inside the lake area and generation of alternate arrangement for the fishermen with the help of local authority as to maintain undisturbed pristine environment in the complex.

★ Complete restriction on grazing as this activity affects the nesting of few birds in grass land and bank area.

★ Complete stop of cultivation inside the wetland complex area.

★ Trespassing, motor driving inside the complex, sound and plastic pollution should be stopped.

★ All kind of unscientific and improper developmental works in the complex area should be avoided unless and until suggested by experts or the situation arises.

★ Implementation of scientific aforestration measures (large trees suitable for nesting, and flower and fruit bearing trees for foraging) recommended giving weightage to plantation in bank areas and complete bio fencing of the lake areas.

★ Survey and monitoring the distribution of aquatic flora in different beels.

★ Round the year survey and monitoring of water depended small faunas (snails, frogs, pieces etc.) including zooplankton, phytoplankton population as these are the vital components (trophic level) of wetland ecosystem.

★ Round the year survey and census of avifauna for long term basis.

★ Routine monitoring the physical biotic parameters of the water (e.g. TDO, BOD, pH, turbidity, TDS, pollutants etc.) as all these parameters represents the quality of water for supporting life.

★ To promote and included within the ecotourism circuit of State and National level.

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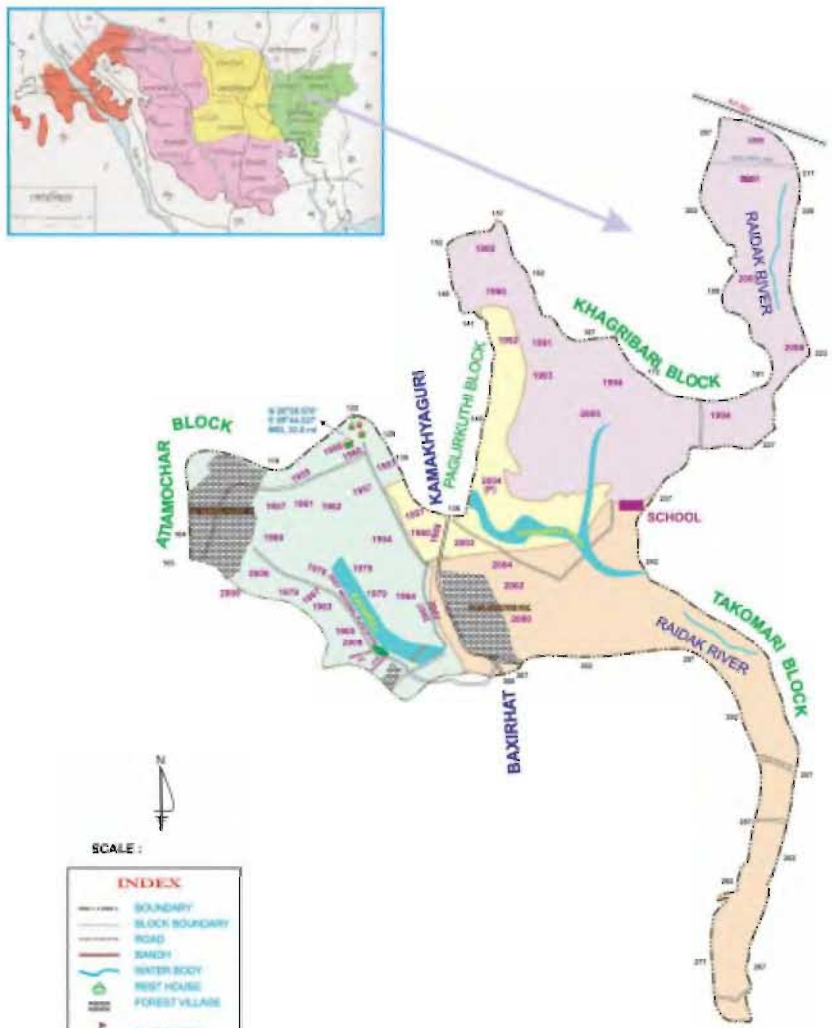
ATIAMOCHAR BEAT



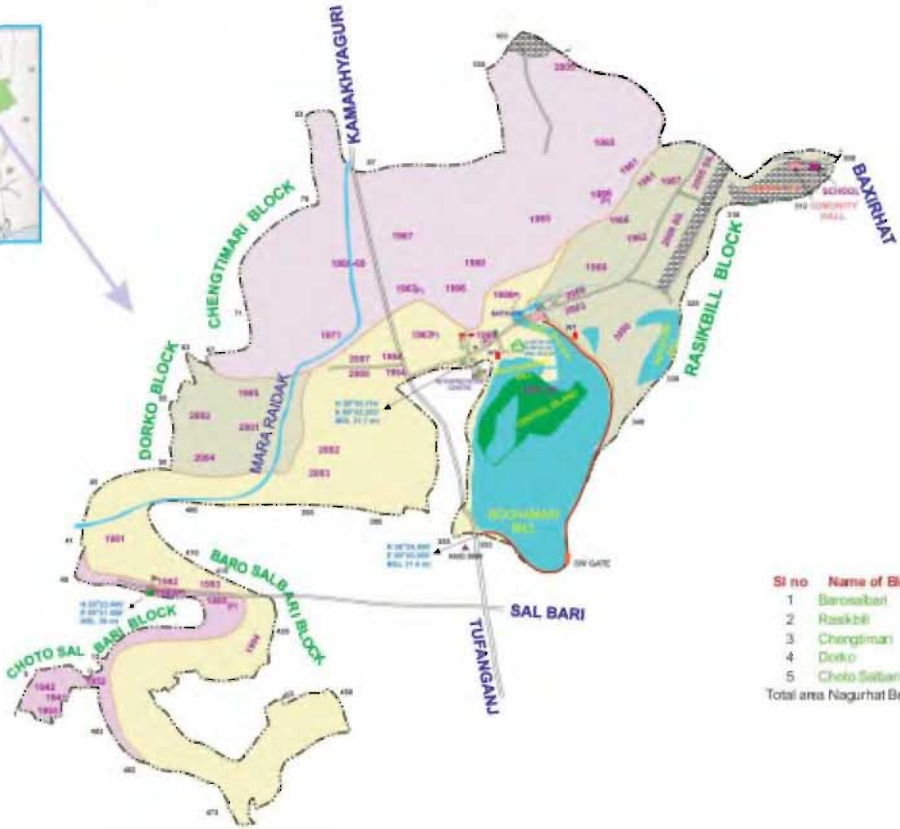
Sl. No.	Name of Block	Area (Ha)
1.	Takomari	252.12
2.	Khagribari	256.17
3.	Paglirkuti	89.84
4.	Atiamochar	236.33
Total area Atiamochar Beat		834.46

Atiamochar Beat

Prepared by:
Sri Aparbu Sen, DFO, CDBP.
Sri Pranab Mitra, CDBP.
Sri Kaji Nawaz DRFO, ATM Beat.

NAGURHAT BEAT

COOCH BEHAR RANGE
COOCH BEHAR SOCIAL FORESTRY DIVISION



N

SCALE :

INDEX

- BOUNDARY
- BEAT BOUNDARY
- BLOCK BOUNDARY
- ROAD
- SANDH
- WATER BODY
- WATCH TOWER
- REST HOUSE
- LEOPARD HOUSE
- DEER HOUSE
- PYTHON HOUSE
- BIRD CAGE
- GHARIAL POND
- TORTOISE POND
- FOREST VILLAGE
- PEACOCK CAGE
- BEAT OFFICE

Sl no	Name of Block	Area (Ha)
1	Barosalbari	384.12
2	Rasikbill	135.12
3	Chengtimari	384.83
4	Dorko	60.43
5	Choto Salbari	31.97
Total area Nagurhat Beat		996.47

Nagurhat Beat

Prepeard by:
Sri Apurba Sen,DFO,CCBSF.
Assisted by:
Sri Prasun Mitra, CCBSF.
Sri Narayan Joarder DR/FI, NGT Beat.

Year - Dec. 2007.

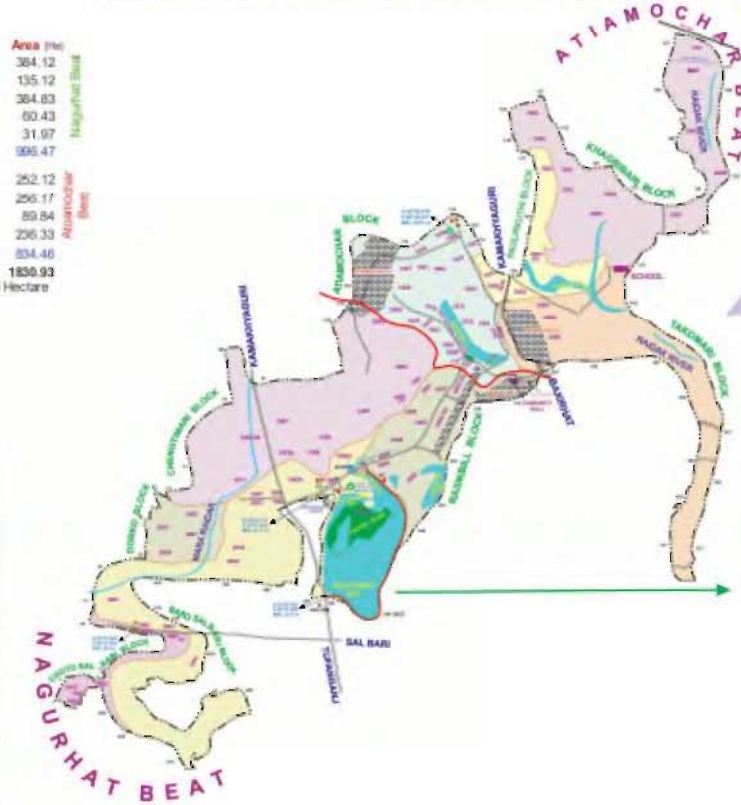
RASIKBILL WETLAND COMPLEX

COOCH BEHAR RANGE, COOCH BEHAR SOCIAL FORESTRY DIVISION

Sl no	Name of Block	Area (Ha)	
1	Barosalbari	384.12	Nagurhat Beat
2	Rasikbil	135.12	
3	Chengtimari	384.83	
4	Dotko	60.43	
5	Choto Salbari	31.97	
Total area Nagurhat Beat		996.47	
6	Takomari	252.12	Atiamochar Beat
7	Khagribari	256.17	
8	Pagirkhuti	89.84	
6	Atiamochar	236.33	
Total area Atiamochar Beat		834.46	
Total Area		1830.93	

Total Area of Wet Land- 178 Hectare

SCALE :



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Year - Dec. 2007.





















































































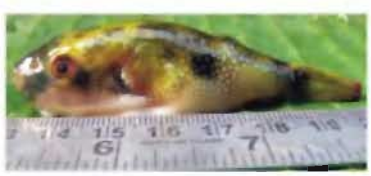

Damselfly

Water Scater