

Final Report
on
FRESHWATER FISH SURVEY



Period
2 years
(22/04/2013 - 21/04/2015)

Area of Study
PASCHIM MEDINIPUR DISTRICT

West Bengal Biodiversity Board

GENERAL INFORMATION:

Title of the project

DOCUMENTATION OF DIVERSITY OF FRESHWATER FISHES OF WEST BENGAL

Area of Study to be covered

PASCHIM MEDINIPUR DISTRICT

Sanctioning Authority:

The West Bengal Biodiversity Board, Government of West Bengal

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Dr. Priti Ranjan Pahari
Joint Investigator

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Format for Final Database-2015

1. Region Surveyed: **Purba Medinipur and paschim Medinipur District**
2. Surveyed by :
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 - b. **Dr. Priti Rn. Pahari**, Assistant Professor in Zoology, Tamralipta Mahavidyalaya, Tamluk, Purba Medinipur
3. Duration of the Survey : **From 22-04-2013 To 21-04-2015**
4. Database of surveyed water bodies: Format A1 and A2
5. Database of fishes in the surveyed water bodies and region : Format B
6. Conclusive report (text) on the observations by the surveyor : (3000-5000 words on the past, present status and future of water bodies and freshwater fishes in the surveyed region)

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I. INTRODUCTION

After the partition of Midnapore district, Purba Medinipur and Paschim Medinipur were formed on January 1, 2002. The area of the Purba Medinipur and Paschim Medinipur is 4151.64 Km² and 9786 Km² respectively. The total population of the Purba Medinipur is 4417377 out of which total fisherman population is about 154207 among which 51723 person are engaged in inland sector and 102484 in marine sector. There are about 143 primary fisherman co-operative society in this district. Total annual production of the fish is about 121882 mt among which 34108 mt is fresh water fishes.

The Paschim Medinipur district has a total population of 5193411 of which 1/3 population (32.92%) belong to SC/ST categories. This district has a total water area of 30224 hactares. The district has a large number of small, medium and big tanks covering an area of 23170 hactares but only 26.91% of this area has borught under effective fish farming through FFDA. There is scope for enhancing fish production and employment generation in rural areas by way of utilizing the unutilized water bodies.

So, for the sustainable socioeconomic development, a database on fish biodiversity is essential as a decision making platform for the conservation and management of fish resources and protection and preservation of threatened species and mitigation of anthropogenic activities so as to fulfill district's biological diversity of ichthyofauna. In the proposed work an attempt would be made to prepare a consolidated list of fish and to assess their diversity and that status of Purba and Paschim Medinipur districts.

Fish faunal diversity of the West Bengal is more or less well understood (Day, 1878; Shaw and Shebbeare, 1937; Sen, 1985; Jayaram, 1981; Beavan, 1990; Pillai, 1929; Hora and Law, 1941; Talwar and Jhingran, 1991; Easa and Shaji, 1995; Jayram, 1999; Menon, 1999; and Kurup and Ranjit 2002. Sen (1992) published a list of 171 freshwater fishes from West Bengal. Mishra *et al.* (2003) published Ichthyofanal diversity of South West Bengal (Midnapore, Bankura and Haldi district) describing 103 species belonging to 76 genera under 33 families and 11 order. Barman (2007) published a list of 239 species belonging to 147 genera, 49 families and 15 orders including 12 species of exotic fish. 59 of the threatened fresh water fish species of India are found in West Bengal (Molur and Walke, 1998; and Menon, 1999, 2004. The factors responsible for the threats to these have also been identified by Menon (2004). However, no comprehensive work has so far been done on the ichthyofaunal diversity of Purba and Paschim Medinipur Districts. Keeping this in view the present project is being envisaged.

II. AIMS AND OBJECTIVES :

The main objectives of the present study are:

a. General :

General information regarding the area selected envisaged wetlands for study:

- a) Physical features, ponds, tanks, jheels diches, nayanjuly etc.
- b) The area of the Wetland
- c) Demographic profile of the people and their dependence on fish diversity and
- d) Problems encountered by the village people towards utilization and conservation of fish faunal diversity.

b. Fauna:

Specific objectives are

- a. To prepare an up-to-date Record/list of the freshwater fish in Purba and Paschim Medinipur District.
- b. To record the numerical abundance of ichthyofauna of this region.
- c. To generate economic and ecological information on the fish species as well as causes of threats there is.
- d. To evaluate the conservation status of these fish.
- e. To suggest appropriate conservation and management strategies with reference to the districts concerned.

III. PLAN OF WORK:

The pilot survey on proposed work started and several selected spot were identified and survey and sampling were started accordingly.

- In the first phase, a pilot survey were undertaken for the selection of the sampling sites and 44 sampling sites in the Purba Medinipur district and 50 sampling sites in Paschim Medinipur District were identified. During this phase instant sampling were also done 22 site in Purba Medinipur and 28 in the Paschim Medinipur.
- In the second phase, detailed survey and sample collection conducting for the collection and identification of the diversity of fishes. Proper documentation (photographic, video) of the collected specimens simultaneously done in this phase.

Socioeconomic survey of the region also recorded with the help of interview on the basis of local fisherman.

- In the third and final stage the collected information would be properly analysed, arranged and database information along with identification key, photograph based species wise catalogue, would be prepared so as to provide a complete and comprehensive information regarding fish biodiversity of these two district could be achieved at a glance.

IV. METHODOLOGY :

A. SOURCE:

The present investigation has been conducted in freshwater lentic and lotic systems in Purba Medinipur and Paschim Medinipur District, West Bengal, India.

B. COLLECTION PRESERVATION AND IDENTIFICATION:

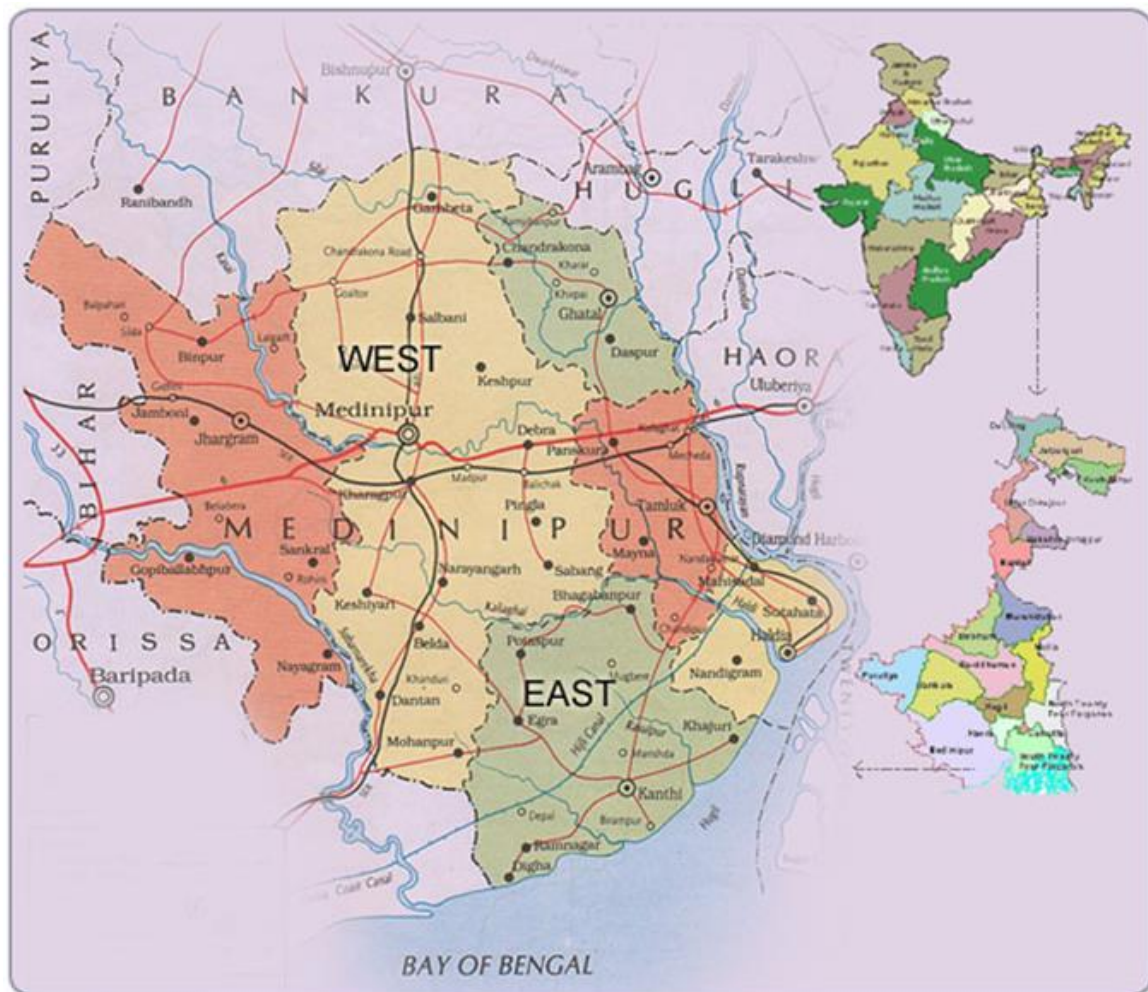
In the present study fish were collected from the enlisted sampling sites in Purba Medinipur District specially most of the large and reservoir type waterbodies including Pools, Ponds, Jhils, Nayanzooli, Khals, Bills, Bandhs, Swamps, Kharnri, Riever covering most of the blocks of the Purba Medinipur District ($22^{\circ}57'10''$ - $21^{\circ}36'33''$ N and $88^{\circ}21'40''$ - $86^{\circ}33'50''$ E).

Fish sampling was carried whenever applicable with the help of gill nets, cast nets and dragnets wherever applicable. The density and time duration of gill nets were standardised as far as possible. The nets of varying mesh sizes (1 inch x 2 no., 2 inch x 2 no., and 5 inch x 1 no), were chosen and laid in an approximate area of 200 x 200 sq m. The length of the net was maintained to 100 meters. In case of cast net a sampling, transects with an approximate length of 100 meters along the banks were laid with 20 castings in each location. Benthic habitats were sampled using hooks. Properly labeled samples were preserved in 4% formaldehyde solution. For identification of the specimens, standard keys (Talwar and Jhingran, 1991; Jayaram 1981; Jayaram, 1996; Day 1978) were used.

The information regarding the fishes at the nearby areas also investigated and recorded from the feedback of local fishermen and knowledgeable persons associated in concerning with the fisheries over the years. In such cases mainly focused on the availability of the specific fishes of interest.

C. STUDY SITES

Two district, Purba Medinipur and Paschim Medinipur is the area of this present investigation. In the pilot survey 44 in Purba Medinipur District and 50 in the Paschim Medinipur District has been initially selected. In most of the cases large and unique undisturbed water bodies having full of hydrophytes has been identified in both Purba and Paschim Medinipur District.) considered as sampling sites. In other cases managed and polluted water bodies (i.e. high drain in the Municipality area) also considered for the sampling. Among this sampling sites, 22 in Purba Medinipur and 28 in Paschim Medinipur District has already surveyed in pilot survey (marked as blue circle) where the instant sampling were made and the remaining identified sampling sites yet to be completed shortly (marked as yellow circle) during ongoing 2nd phase of survey. The nature, areas, vegetation coverage, types of hydrophytes present, depth, water circulation pattern etc were under process of analysis and will be included in details in the final report (some of these water bodies are given as photographs in the study sites).



Pict. 1 Combine Map of Midnapore (Purba Medinipur and Paschim Medinipur District)

District: Paschim Medinipur

In Paschim Medinipur District initially fifty remarkably large and unique water bodies selected as sampling site including Ponds, Pools, Jhills, Nayanjooli, Khals, Bandhs and River has been identified. Among this 28 sites already surveyed (marked as blue circle) and remaining in the survey process in 2nd phase (marked as yellow circle). The details features of the study sites were still in analysis process and will be included in the final report (some photographs of this water bodies are given as a photographs in the study sites).



Fig. 2: Location of the study site shown in the map of Paschim Medinipur District with marked location of study sites /survey areas covered

Plates 1 - 5: Some important sampling sites of Paschim Medinipur District where survey and instant sampling already undertaken during the study.

	
<p>G: Kalaikunda, Paschim Medinipur</p>	<p>H: Bhogpur jala, Paschim Medinipur</p>
	
<p>I: Rajar Dighi, Midnapore, Paschim Medinipur</p>	<p>J: Bhadutala, Paschim Medinipur</p>
	
<p>K: A distributory of River Shilaboti, Ghatal, Paschim Medinipur</p>	<p>L: Ramgarh Jala, Paschim Medinipur</p>
	
<p>M: Jalhari, Moupal, Paschim Medinipur</p>	<p>N: Pirakata Bandh, Paschim Medinipur</p>

	
O: Peardoba, Jhargram, Paschim Medinipur	P: Sebayatan Dighi, Paschim Medinipur
	
Q: Kangsaboti River, Paschim Medinipur	R: Subarnarekha River, Gopiballavpur, Paschim Medinipur
	
S: Pakhiralay, Hatibari, Paschim Medinipur	T: Kechanda Bandh, Sebayatan, Jhargram, Paschim Medinipur
	
U: Rajar Dighi, Jhargram, Paschim Medinipur	V: Ramgarh Bandh, Lalgarrh, Paschim Medinipur



Q Pirakata bandh, Paschim Medinipur



R. Lalgargh, Paschim Medinipur



S. Gurguripal, Paschim Medinipur



T. Chourangee, Kharagpur, Paschim Medinipur



U. Chourangee, Kharagpur, Paschim Medinipur



V. Ramgarh Bandh, Paschim Medinipur



W. Ramgarh Bandh, Paschim Medinipur



X. Jalhari, Moupal, Paschim Medinipur



Z. Kansai / Kangsaboti River, Paschim Medinipur

AA. Karnagarh, Paschim Medinipur



AB. Sharashankha, Dantan, Paschim Medinipur

AC. Dantan, Paschim Medinipur



AD. Balaipanda dighi, Paschim Medinipur

AE. Ponds, Moyna Front



AF Pakhiaralay, Hatibaari, Paschim Medinipur

AG. Balaipanda dighi, Paschim Medinipur

V. METHODS OF STUDY

In most of the cases survey were carried out mostly on holidays and Sundays. During the survey instant sampling were made and most of the cases small and uncommon fishes were collected in live form and brings into the institution and placed into the aquarium. Photographs taken in this intermediate time and one or two of them preserved for future study. Survey into the local fish markets has already been done frequently to know how much and what varieties of fishes are available in a sequence. Some times interview also been taken with the knowledgeable individuals for the availability of the specific fishes over the years. The documents and data were recorded for the future analysis. However, the modes of sampling done by the following ways:

1. Net sampling :

Fish sampling has been carried out with the help of hand-nets, gill-nets, cast-nets and drag-nets wherever applicable. The density and time duration of gill nets has been standardized as far as practicable. Benthic habitats has been sampled by using hooks. Collection of benthic fishes were done sometimes taking opportunity and advantages of whole water drainage of pools and ponds during the summer seasons. Collected samples has been preserved using suitable preservatives especially 4% formaldehyde. For identification of the specimens, standard keys (Day 1978; Jayaram, 1996; Jayaram 1981; Talwar and Jhingran, 1991) were used.

2. Survey and sampling Time and schedule:

The Purba Medinipur District has four subdivisions covering 25 Blocks and 5 Municipality. Paschim Medinipur District has four Subdivisions covering 29 Blocks and 8 Municipality. So to collect the fish fauna from every nuke and corner of these two districts trained man power were used. In the spot local fisherman were used specially for netting purposes. Sorting from the collected sample and their proper isolation and preservation, we get help of PG students of zoology having some knowledge on fisheries especially of Tamralipta Mahavidyalaya and ex-students of Vidyasagar University.

3. Preservation of collected samples:

The collected fish specimens must be immediately and properly preserve with suitable preservatives, otherwise these could be damage. For this purpose different preservative chemicals were used to fulfill the purposes. For very delicate

sample, initially we narcotized with the ENO Salt followed by the preservative (4% formaldehyde).

4. Travelling details to carry out the surveys :

To collect fish fauna, sample were collected once covering vital seasons (rainy and winter and summer) from some blocks and municipality areas both the districts. On the sampling day, we start journey very early in the morning with full essential gears, equipment and accessories with prior intimation to the local fisherman. During the travelling, ponds, nayanjuli, khals and other water bodies if found one or two trial samples were made and if found resourceful the needful sampling were done.

5. Logistics and Accessories used:

During collection of samples various types of the glass goods and plastic container of different sizes are used. Beside that we also surveyed in in the local fish markets and get information in the local experience stakeholders and fisherman of the locality to know how about the state of the fish availability and population over the years based on the questionnaires provided by the Prof. Dr. Silanjan Bhattacharyya, member of the West Bengal Biodiversity Board, We are intentionally not included the raw data in this interim report. After completion of the survey and proper analysis of data it will be presented accordingly.

6. Equipment used:

To collect the specimen different types of net like bag net, gill net, chaknijaal, etc. and variety of fishing gears and traps were used. Digital SLR cameras equipped with super-macro facilities (NIKON D90 with Micro NIKKOR 105mm, and NIKON D800E with AF-S G 28-300mm) were used to take the photographs with minute details. In most of the cases instant photographs were done using plate of suitable contrasting background whenever possible otherwise live specimens were brings in to the research station and their live photographs were taken within aquarium using tele-lens like NIKKOR 28-300mm, In some cases SONY dual mode camera with HD recording facility Model HDR-PJ50E was used for photography in minute detail. List of the fishes those are collected in the sampling sites and identified are included in this report and unidentified species are kept separately for identification and further study.

Major portion of the survey also includes for the collection of the deta as feedback from the nearby markets of the canals and khals of the Paschim Medinipur

District when visited early in the morning on Sundays, holidays. Samples and information were collected from the local fishers and small scale fish shellers whenever possible from each and every Block of Purba and Paschim Medinipur District. Purba Medinipur district is characteristically different from the Paschim Medinipur because most of the canals and rivers of this section are directly or indirectly linked with the sea water therefore its southern and eastern part is characteristically predominant with the brackish water. More than hundred small canals and khals are distributed throughout Purba Medinipur District. Therefore, most of the samples and related information from these areas were collected from fishers mainly depends on captured based fisheries.

Paschim Medinipur is one of the District of the West Bengal that having vast areas of its lateritic soil. There is no direct link of river that are tidal feed therefore mostly of fresh water and feeded by rain water.

VI. RESULTS AND DISCUSSION

Two districts are demographically very distinct to each other. Purba Medinipur as it is adjacent to the sea shore and fed by the numbers of the rivers, canals and most of the river mouth opens in this areas therefore aside to the freshwater brackish water is prevalent entire coastal belt. As a results fish diversity are more recorded here due to mixing up of marine water fresh water. Various occasional marine and huse numbers of brackish water fishes are recorded from the water bodies of coastal areas besides the lotic system. There are frequently hervested typical marine water fishes from the river mouth of Haldi and in the large part of their interior portion those are given the boundary of the Purba Medinipur district. Larger portions of this district is typically flooded over during the reany season each and every year therefore, brackish water fishes are also intermigleted with the freshwater system to some extent resulting mixing the varieties of fishes are the evident.

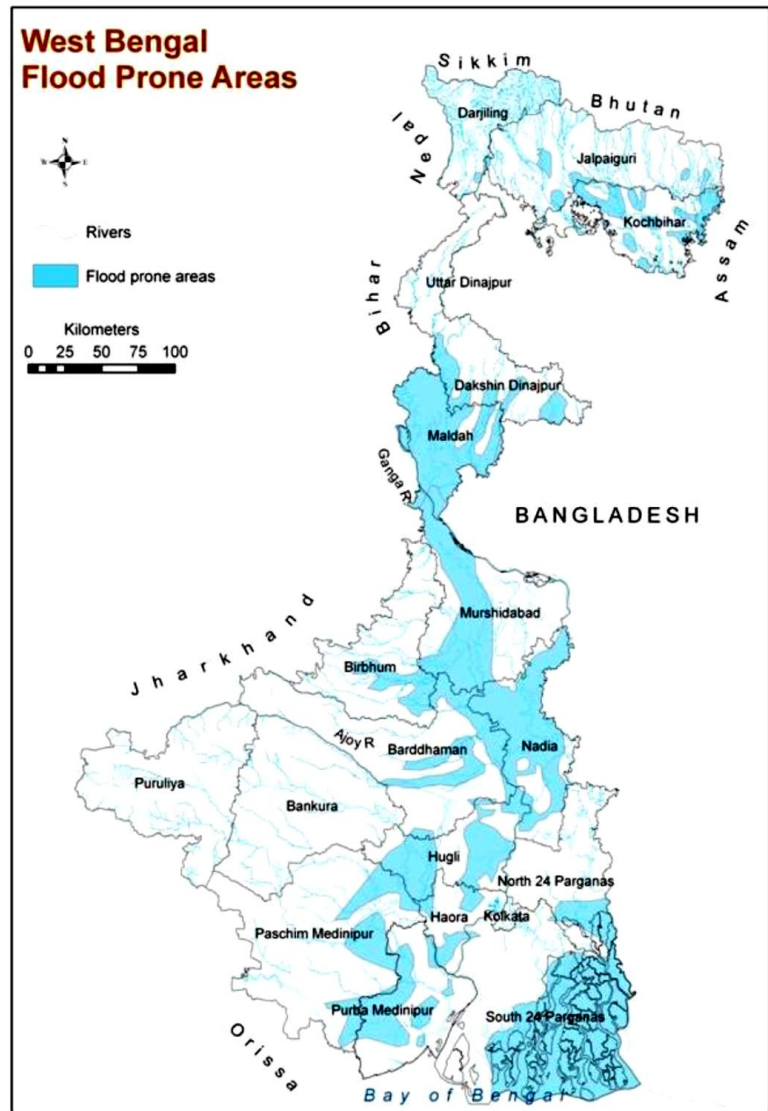


Fig. 3 Flood prone areas of West Bengal: (Source WBPCB)

While Paschim Medinipur is basically upland in compare to the Purba Medinipur and mostly covered with loamy and laterite based soils. Fould also reported adjacent lowland areas to the Purba Medinipur district. Otherwise flood is rare phenomena in this district. Here only three major rivers namely Subarnarekha, Kangsaboti, Keleghai and Shilaboti run through this district and some of canals linked with it. Only the limited numer

of large water bodies or bandh is maintain the water catchment area. Number of ponds are very few as compare to the Purba Medinipur District. Here only typical freshwater fishes are recorded. No brackishwater fishes or marine fishes are recorded from this district.

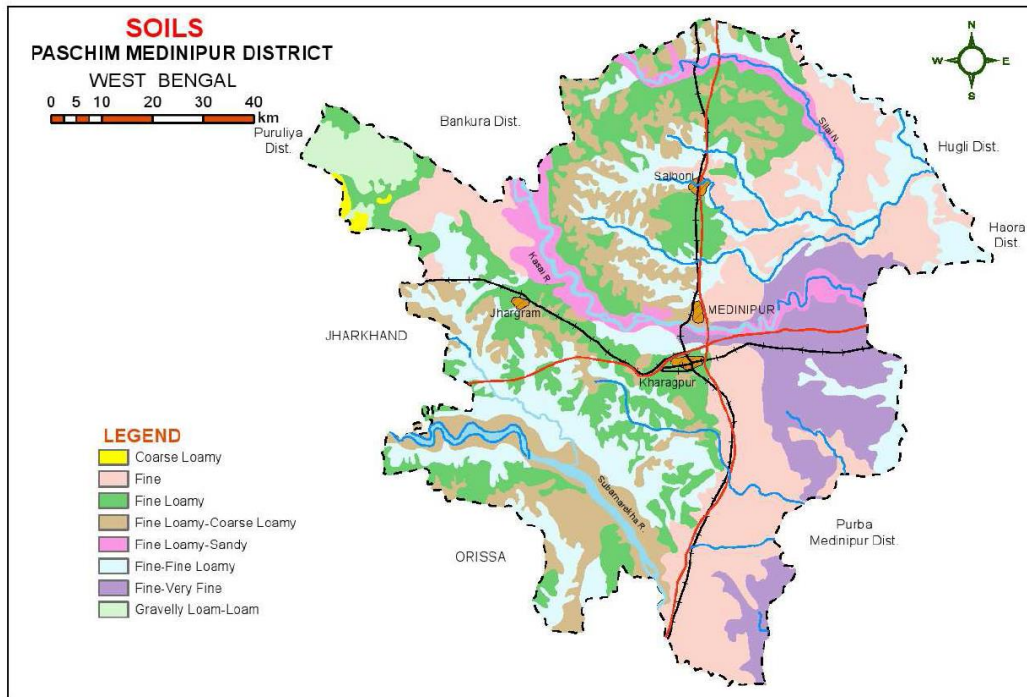


Fig. 4. Soil and River Map of Paschim Medinipur District

Total 81 species were found under 22 families of 09 Orders are collected during present investigations from Purba and Paschim Medinipur District. Among these species In Paschim Medinipur 70 and 61 species have been collected from lentic and lotics water bodies respectively. Fifty-two (52) species are found common in both the lentic and lotic water bodies. Maximum number of species *i.e.* Twenty seven (27) are counted within the order Cypriniformes while 23 and 18 species belong to the order Siluriformes and Perciformes respectively. Maximum species are observed in the lentic or stagnant water in thee Paschim Medinipur district, where rivers are charecterised by the presence of purely fresh water that is very contrast to that of the rivereine system of the Purba Medinipur District. In this district, unlike to the Purba Medinipur district, most of the species are Least Concern (LC) in their existing IUCN status. From present investigation it is evident that several species population as for example *Mystus vittatus* (Bloch), *Rita rita* (Hamilton), *Ompok bimaculatus* (Bloch), *Ompok pabda* (Hamilton), *Wallago attu* (Schenider), *Pseiideutropius atherinoides* (Bloch), *Bagarius bagarius* (Hamilton), *Clarias batrachus* (Linnaeus), *Chela cachi* (Hamilton), *Puntius conchoni* (Hamilton), *Puntius sophore* (Hamilton), *Systemus sarana* (Hamilton, 1822), *Salmophasia bacaila* (Hamilton, 1822),

Osteobrama cotio (Hamilton, 1822), *Botia almorhae*, *Pomadasys argenteus* (Forsskål, 1775), *Nandus nandus* (Hamilton), *Pseudapocryptes elongatus* (Cuvier, 1816), *Odontamblyopus rubicundus* (Hamilton, 1822), *Taenioides cirratus* (Blyth, 1860), *Gobius niger*, *Acanthogobius viridipunctatus* (Valenciennes, 1837), *Stigmatogobius sadanundio* (Hamilton, 1822), *Trichogaster fasciatus* (Schneider), *KholsaBadis badis* (Hamilton, 1822), *Channa gachua* (Hamilton), *Channa marulius* (Hamilton), *Chitala chitala* (Hamilton), *Anguilla bengalensis bengalensis*, and *Xenentodon cancila* (Hamilton, 1822) are found to be declining over the years as per local fisherman. These species may be considered at the margin of the threatened category line.

In our investigation we found very interesting results as for example, when we tried to know their population status in nreference to the IUCN Category and Criteria, it is found that out of 81 species, 63 species are Least Concern (LC) about their population status, where as Not Evaluated (NE) was found 07, Near Threatened (NT) is 10 (*i.e.* *Ompok bimaculatus* (Bloch), *Ompok pabda* (Hamilton), *Ompok pabo* (Hamilton), *Wallago attu* (Bloch & Schenider, 1801), *Ailia coila* (Hamilton, 1822), *Bagarius bagarius* (Hamilton, 1822), *Hypophthalmichthys molitrix* (Valenciennes), *Oreochromis mossambicus* (Peters, 1852, *Chitala chitala* (Hamilton, 1822), *Anguilla bengalensis bengalensis* (Gray, 1831); Data Deficient is 01 and Vernarable (V) is only one (*Cyprinus carpio carpio* Linnaeus).

In contradiction with the above results, we found thereare plenty of some species population not only available but they are potentially cultured throughout the district even throughout the state of West Bengal. Among them *Hypophthalmichthys molitrix* (Valenciennes), *Oreochromis mossambicus* (Peters, 1852, and *Cyprinus carpio carpio* Linnaeus aree huse in number and interestingly last two are potential breeder in thee captive *i.e.* in the stagnant water.

Whereas, population of *Ompok pabda* (Hamilton), *Bagarius bagarius* (Hamilton), *Osteobrama cotio* (Hamilton), *Nandus nandus* (Hamilton), *Gobius niger*, *Acanthogobius viridipunctatus* (Valenciennes, *Stigmatogobius sadanundio* (Hamilton), *Channa gachua* (Hamilton), *Anguilla bengalensis bengalensis*, and *Xenentodon cancila* (Hamilton) are extremely rare and only found occasinaly and in some reestricted places of Paschim Medinipur District. As per reflection on years' observation by the local knowlagable people that also matches with our observation too *i.e.* these species are declining very rapidly as such their availability is scant and rare over the years. Therefore, immediate action should be needed through proper management and conservation of wetland in these areas on an emergent basis.

In this investigation it was found that more species were observed in Purba Medinipur District than Paschim Medinipur and it is also revealed that most of the species were present in the lotic system. In streams and rivers, the number of species generally increases from headwater to the mouth of the river. This is because as a river increases in size it presents a greater variety of ecological opportunities and its physical conditions become more stable and therefore more reliable (Allen, 1995). Diversity may increase as the stream becomes larger and presents more kinds of habitats and greater variety of food under 14 gene items. Next to this riverine system, the water body which was subjected to least anthropogenic interference was characterized by a good number of species whereas the least number of species was observed in sites which were a more or less managed water body and mainly engaged in pisciculture. This could be due to human activities that alter habitat characteristics and dramatize the relationship between habitat structure and local species richness. Several species were found to be inhabitants in both fresh and saline water as well as lentic and lotic systems. The occurrence of these fishes in diversified water bodies is obviously due to their wide range of salinity tolerance. Overexploitation and indiscriminate hunting of juveniles as well as of broods almost throughout the year seems to be a major threat to the survival of fish fauna. However, the mere assumption of the survival threats is of urgent need for the effective conservation of the threatened fishes of this district which is the prime requirement for utilization. After completion of the investigation, the actual scenario relating to diversity and abundance of fish fauna will be evident both from Purba and Paschim Medinipur District and that will be valuable information in this regard.

Besides the fish population we also recorded non-fish organisms, like aquatic insects, crustaceans, frogs, water birds etc along with the hydrophytes associated with the water bodies. We made a very comprehensive report along with these fresh water fishes.

Plate: 6 -11 Macrophyte diversity

Name	
	
<p><i>Alternanthera sessilis</i> L.</p>	<p><i>Eclipta alba</i> Hassk.</p>
	
<p><i>Monochoria hastate</i> Solms.</p>	<p><i>Phragmites</i> sp.</p>
	
<p><i>Scirpus articulatus</i> (Linn.)</p>	<p><i>Oryza</i> sp</p>
	
<p><i>Cyanotis axillaries</i> Roem & Sch.</p>	<p><i>Aeschynomene ampera</i> Linn.</p>



Sagiteria latifolia



Cyperus sp.



Ipomea carnea fistula (Mart)



Hygrosyza aristata Nees.



Hydrocotyla asiatica Nees.



Asteracantha longifolia



Hydrophylla difformis (L.f.)



Vallisneria sp.



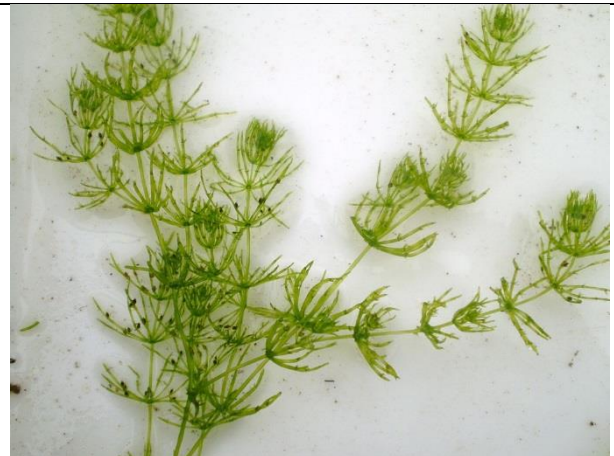
Hydrilla sp.



Potamogeton sp.



Utricularia stellaris L.f.



Chara sp.



Nitella sp.



Jussiaea repens Linn.



Trapa sp.



Nymphaea nouchali Burm. f.



Marsilea minuta L.



Nymphoides indica (L.)



Lemna sp.



Eichhornia sp.



Salvinia sp.



Pistia sp.



Ipomoea aquatica Forrsk.



Ludwigia sp.



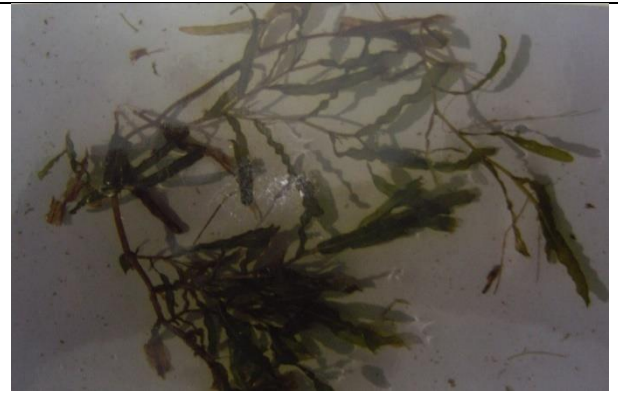
Commelina bengalensis L.



Leersia sp.



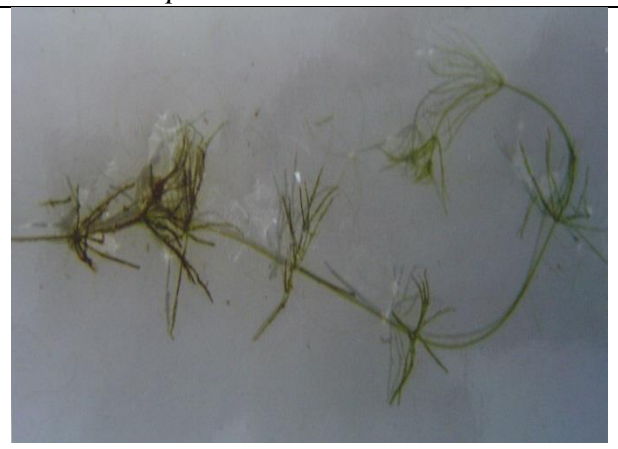
Chara sp.



Valisnaria sp.



Nymphaea sp.



Nitella sp.

Plates. 12-14: Photographs showing different methods used for collection of fishes from their different habitats.



A: Sampling strategy used using a types of Chakni Jaal for collection the small fishes from nayanjooli



B: A special types of fishing gear used for capturing chela and punti fishes in the distributary of river Shilabati



C: Hand nets are also used for the capturing the the fishes in the Pools, and nayanjoolis at different parts of Purba and paschim Medinipur



D: Special types of indigenous Bagnets used for the sampling of pelagic small fishes



E: A series of fishing gears used for Major Carps and other large fishes in the distributary of River Shilaboti at Ghatal, Paschim, Medinipur



F: A simple technique used for the capturing the fishes those moves against water flow. These are similar to the Chakni Jaal.



G: Special technique used for capturing the small fishes those are trying to move against the water current.



H: Simple drag net used for some sampling site in River Shilaboti



I: Hooks are used by local people for capturing specially *Pancalas armaatus* at River Shilabati, Near Ghatal, Paschim Medinipur



J: Sometimes local interested people also taking part in the capturing of fishes along with us near Ghata, Paschim Medinipur



K: Special types of fishing gears (Moogri) are also used for collection of fishes in a branch of River, Silabati at Ghatal, Paschim Medinipur



L: Sampling also done to collect small fishes those are associated with the aquatic weed in Ramgarh Bandh, Lalgah, Paschim Medinipur



M: Dr. Pahari trying to collect very small fishes those are taking shelter in the aquatic weed in Kechanda Bandh, Sebayatan, Paschim Medinipur



N: Special types of fishing gears (Moogri) used to capture Small fishes in a nayanjooli near Talivhata, Nandakumar, Purba Medinipur



O: Special types of 5 hooks were used to catch the large fishes from Haldi River, Near Teropakhya, Purba Medinipur



P: Sample site of a Municipal areas of Midnapore, Paschim Medinipur



Q: Sample site of a Municipal areas of Tamluk, Purba Medinipur



R: Fine mesh were used to collect guppy and other small fishes from drain of Midnapore Municipality



S: Community fishing at nayanjuli in Paschim Medinipur where individual people collecting small fishes using different gears of interest



T: Sampling done taking advantages in a spot after runoff of total water of a pond from where some benthic and bottom dweller fishes were collected

Plate : 15-16 Water birds associated with the wetlands



Motacilla flava (Linn)



Motacilla alba (Linn)



Podiceps ruficollis (Pallas)



Dendrocygna javanica (Horse field)



Ardea alba (Linn)



Ardeola grayii (Sykes)



Egretta intermedia (Linn)



Egretta garzetta (Linn)



Amaurornis phoenicurus (Pennant)



Metopidius indicus (Latham)



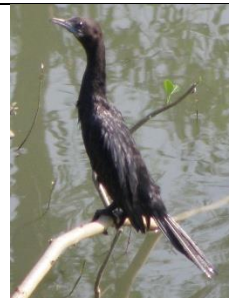
Alcedo atthis (Linn)



Halcyon smyrnensis (Linn)



Pelargopsis capensis (Linn)



Phalacrocorax niger (Vieillot)



Actitis hypoleucos Linnaeus, 1758



Himantopus himantopus (Linnaeus, 1758)
Tringa



Porzana pusilla



Dendrocygna javanica



Nettapus coromandelianus



Anas acuta



Fulica atra



Gallinula galeata



Tachybaptus ruficollis



Anchinga melanogaster

Format A1: Database of bigger water bodies (e.g. Beel, River, etc.) surveyed: (for each waterbody input information/data in the format given below)

A1.1

A1.1a - Name of the waterbody: **RAJAR DIGHI, MEDINIPUR**

A1.1b - Type of the waterbody: PERENNIAL, STAGNANT

A1.1c - Location Details : located in Midnapore town (22°26'39.24"N, 87°19'48.39"E - 22°26'28.95"N, 87°19'41.58"E), West Bengal, India.



A1.1d - Surface Areas covered (in ha) :

- a. Maximum surface area covered 4.51 ha during peak of monsoon or any other time)
- b. Minimum surface area covered 3.9 ha in the peak of dry season

A1.1e - Connectivity and nature of water flow with any other water bodies: totally confined, only the runoff water from the adjoining areas feed the pond.

A1.1f - Ownership and management pattern : Personal, Raja N.L. Khan

A1.1g - Major Non-Fish Fauna :

- a) *Aquatic Insects: Pachydiplax sp.*(Nymph), *Enallagma parvum*, *Ranatra sordidula*, *Laccotrephes grisaus*, *Laccotrephes ruber*, *Anisops sardae*, *Diplonychus annulatus*, *Canthydrus flavus*, *C. lactabilis*, *C. lactuosus*, *Hydrocoptus subvitlulus*, *Orectochilus (Patrus) productus*
- b) *Crustaceans: Exopalaeomon styliferous*, *Macrobrachium rosenbergii*, *M. idea*, *M. Malcolmsonii*, *M. javanicum*
- c) *Molluscs: Bellamya bengalensis typica*, *Thiara (Tarebia) lineata*, *Thiarla (Tarebia) granifera*, *Thiara (Melanoides) tuberculata*, *Indoplanorbis exustus*,

- d) Frogs: *Euphlyctic cynophlyctus*, *Haplobatrachus tigrina*, *Natrix sp.*
- e) Birds: *Motacilla flava*, *M. alba*, *Ardea alba*, *Ardeola grayii*, *Egretta intermedia*, *Egretta garzetta*, *Phalacrocorax niger*
- A1.1h - Rare or endangered species, if there any : The following species recorded during the periods of investigation
- a) **NT (Near Threatened)**
- Ompok bimaculatus* (Bloch), *Ompok pabda* (Hamilton), *Chitala chitala* (Hamilton), *Oreochromis mossambicus* (Peters, 1852).
- b) **VU (Vulnerable)**
- Cyprinus carpio carpio* Linnaeus,
- A1.1i - Major Flora : The following species recorded during the periods of investigation
- The following species of typical hydrophytes recorded during the periods of investigation. They are *Tillunthera sp.*, *Cyanotis axillaries* Roem & Sch., *Cyperus sp.*, *Aeschynomene ampera* Linn., *Hydrocotyla asiatica* Nees., *Vallisneria sp.*, *Chara sp.*, *Nitella sp.*, *Marsilea minuta* L., *Lemna sp.*, *Eichhornia sp.*, *Salvinia sp.*, *Pistia sp.*
- A1.1j - Hydrophyte covered area in the waterbody:
- a) 5% surface coverage
- b) 65% bottom coverage of the water body:
- A1.1k - Patterns of Use of the waterbody :
- a) Domestic purposed by the local people and residents at the bank of the water body
- b) Commercial fisheries done by the cooperative society
- A1.1l - Seasonality (Conspicuous changes in different seasons) : during the rainy seasons the water body overflows it water and towards the summer its water level gradually decreased but never dried and at that time water column remains at least 1.6 metres.
- A1.1m - Degrading factors and threats to the water body :
- a. Water excessively used by the local inhabitants for their domestic purposes. So, excess organic load is deposited leads to eutrophic condition that deteriorate the quality of water body.
- b. For pisciculture practice in this water body, huge amounts of artificial fish food is applied. Per haves due to such reasons water quality may changed and caused less availability of number of species.
- c. Water column is reporting declining over the years due to high rate siltation.
- A1.1n - Conservation efforts, if there any : NIL
- A1.1o - Notes on local history, and folk beliefs, practices relating to the waterbody : Raja Narendra Lal Khan, took initiative to dig out this water body for his own purpose later it is used by the local people.
- A1.1p - Notes on any other point on the water body, not yet covered : Temporal variation of water quality alongwith seasonal fluctuation of population dynamics of fishes in respect to the waterbody not yet covered.

A1.2 :

A1.2a - Name of the waterbody: **PAKHIRALAY, NEKRA GUDRI, HATIBARI, GOPIBALLAVPUR , PASCHIM MEDINIPUR**

A1.2b - Type of the waterbody: Man made, Area 12.8 hec, PERINNIAL, STAGNANT,

A1.2c - Location Details (located in Midnapore town (22°10'57.34"N, 86°43'52.71"E - 22°10'30.25"N, 86°43'35.44"E), West Bengal, India.)



A1.2d - Surface Areas covered (in ha) :

- a. Maximum surface area covered 17.8 ha during peak of monsoon or any other time)
- b. Minimum surface area covered 12.3 ha in the peak of dry season

A1.2e - Connectivity and nature of water flow with any other water bodies: totally confined, only the runoff water from the upland areas from catchment areas of the forests areas feed the pond.

A1.2f - Ownership and management pattern : Vested land of the Government, From the department of Land reform office of the DLRO, temporary authority has been given to the local Self-Help group to look after the water body. No pisciculture practice being done so far fisheries management is concern but frequently local people of the nearby forests areas capture some available fishes through traditional fishing gears.

A1.2g - Major Non-Fish Fauna :

a) *Aquatic Insects:*

Pachydiplax sp. Nymph, *Enallagma parvum*, *Agria sp.*, *Urothemis signata*, *Agriocnemis pygmoea* (Rambur), *Ranatra sordidula* (Dohrn), *Ranatra filiformes*, *Ranatra elongate*, *Laccotrephes griseus* (Guerin), *Laccotrephes ruber*, *Anisops sardae* Herrichshaffer., *Micronecta (Dichactoneda) halipliodes* Horath., *Micronecta merope.*, *Diplonychus annulatus* (Fab), *Diplonychus sp.* *Diplonychus rusticus*, *Hydrometra butlen* Hugesford and Evans, *Limnogonus (Limnogonus) nitidus* (Mayr), *Gerris nitida*, *Canthydrus flavus* (Mots). *Canthydrus laetabilis*, *C. lactabilis* (Walker), *C. lactuosus* (Aube), *Coplatus indicus*, *Hydrocoptus subvittulus* (Mots), *Hydrovatus confertus*, *Hydrovatus acuminiatus*, *Hydrovatus sp.*, *Laccophilus flexus* Aube, *Laccophilus*

parvulus, *Clypeodytes sp.*, *Guignofus sp.*, *Cybister convexus* Sharp., *Orectochilus (Patrus) productus*, *Hydrochus sp.*, *Coelostoma subditum*, *Helochares ancholaris*, *Hydrophilus olivaccous* (Fab), *Sternolophus rutipes* (Fab), *Berosus idicus* (Mots)

- b) Crustaceans: *Exopalaeomon styliferous*, *Macrobrachium rosenbergii*, *M. idea*, *M. Malcolmsonii*, *M. javanicum*
- c) Molluscs : The following species recorded during the periods of investigation

Bellamyia bengalensis typica (Lamarck), *Bellamyia bengalensis doliaris* (Gould), *Pila globosa* (Swainson), *Lymnaca (Pseudosuccinia) acuminata typica* (Lamarck), *Lamellidens marginalis* (Lamarck)

- d) Frogs: The following species recorded during the periods of investigation
Euphlyctic cynophlyctus (Schinder), *Natrix sp.*

- e) Birds: The following species recorded during the periods of investigation
Motacilla flava (Linn), *M. alba* (Linn), *Dendrocygna javanica* (Horse field), *Podiceps ruficollis* (Pallas), *Ardea alba* (Linn), *Ardeola grayii* (Sykes), *Egretta intermedia* (Linn), *Egretta garzetta* (Linn), *Amaurornis phoenicurus* (Pennant), *Tringa guttifer* Linn, *Metopidius indicus* (Latham), *Alcedo atthis* (Linn), *Halcyon smyrnensis* (Linn), *Pelargopsis capensis* (Linn), *Alcedo atthis* (Linn), *Phalacrocorax niger* (Vieillot), *Phalacrocorax carbo* (Shaw), *Dendrocygna javanica*, *Nettapus coromandelianus*, *Anas acuta*, *Fulica atra*, *Gallinula galeata*, *Tachybaptus ruficollis*, *Anchinga melanogaster*.

A1.2h - Rare or endangered species, if there any : The following species recorded during the periods of investigation

a) NT (Near Threatened)

Ompok bimaculatus (Bloch), *Ompok pabda* (Hamilton), *Ompok pabo* (Hamilton), *Wallago attu* (Bloch & Schenider, 1801), *Chitala chitala* (Hamilton), *Hypophthalmichthys molitrix* (Valenciennes), *Oreochromis mossambicus* (Peters, 1852,

b) VU (Vulnerable)

Cyprinus carpio carpio Linnaeus,

A1.2i - Major Flora :

- a) List of Hydrophytes: The following species of typical hydrophytes recorded during the periods of investigation. They are *Alternanthera sessilis* L., *Tillunthera sp.*, *Eclipta alba* Hassk., *Monochoria hastate* Solms., *Oryza sativa* (Var) *fetua*, *Phragmites sp.*, *Sagiteria sp.*, *Scirpus articulatus* (Linn.), *Cyanotis axillaries* Roem & Sch., *Cyperus sp.*, *Aeschynomene ampera* Linn., *Ipomea carnea fistula* (Mart), *Hygrorryza aristata* Nees., *Hydrocotyla asiatica* Nees., *Hydrophylla difformis* (L.f.), *Utricularia stellaris* L.f., *Chara sp.*, *Nitella sp.*, *Nymphaea nouchali* Burm. f., *Marsilea minuta* L., *Nymphoides indica* (L.), *Lemna sp.*, *Eichhornia sp.*, *Salvinia sp.*, *Pistia sp.*, *Ipomoea aquatica* Forrsk., *Ludwigia sp.*, *Asteracantha sp.*, *Commelina bengalensis* L., *Leersia sp.*

A1.2j - Hydrophyte covered area in the waterbody:

- a) 8% Surface coverage (floating)
- b) 45% bottom coverage of the water body (submerged)
- c) 11% Marginal vegetation covering of the surface area of the waterbody

A1.2k - Patterns of use of the waterbody :

- c) Domestic purposed by the local people and residents at the bank of the water body
- d) Traditional captured fisheries done by the local people
- e) Irrigation

A1.2l - Seasonality (Conspicuous changes in different seasons) : during the rainy seasons the water body overflows it water and towards the summer its water level gradually decreased but never dried and at that time water column remains at least 5.6 metres at the centre and . mitre at the periphery

A1.2m - Degrading factors and threats to the water body :

- a. Water body is frequently used by the local inhabitants for their every day uses some domestic purposes.
- b. After handover hand over the water body to the local SelpHelp Group, a little commercial management practice is allowed to make a PICKNIC / BANMOHATSAB at the bank of the water body. Therefore, little bit of pollution created at the specific spot on the bank of the water body. However, in concern to their huse areas it is negligible but during the winter season some people even from the nearby states like Odisha, frequently visited for looking the migratory birds on this water body. Huse numbers of migratory birds visited specially from December to middle of the February each and every year.
- c. Water column is reporting declining slowly over the years due to high rate siltation.

A1.2n - Conservation efforts, if there any: Local & ameture management practice are there after getting land lease by the Self help group.

A1.2o - Notes on local history, and folk beliefs, practices relating to the waterbody: A bandh is made and therefore water column is stgnent here nearly 5 to 6 mitre in the rainy season.

A1.2p - Notes on any other point on the water body, not yet covered : Temporal variation of water quality alongwith seasonal fluctuation of population dynamics of fishes in respect to the waterbody not yet covered.

A1.3 :

A1.3a - Name of the waterbody: **JALHARI, MOUPAL, PASCHIM MEDINIPUR**

A1.3b - Type of the waterbody: Man made, Area 8.56 hec, PERINNIAL, STAGNANT,

A1.3c - Location Details (located in Midnapore town (22°32'0.36"N - 22°31'44.72"N; 87°13'44.89"E - 87°13'29.08"E), West Bengal, India.)



A1.3d - Surface Areas covered (in ha) :

- c. Maximum surface area covered 7.56 ha during peak of monsoon or any other time)
- d. Minimum surface area covered 4.25 ha in the peak of dry season

A1.3e - Connectivity and nature of water flow with any other water bodies: totally confined, only the runoff water from the upland areas from catchment areas of the forests areas feed the pond.

A1.3f - Ownership and management pattern : Vested land of the Government, From the department of Land reform office of the DLRO, temporary authority has been given to the local NGO to look after the water body. No pisciculture practice being done so far fisheries management is concern but frequently local people of the nearby forests areas capture some available fishes through traditional fishing gears.

A1.3g - Major Non-Fish Fauna :

f) *Aquatic Insects:*

Pachydiplax sp. Nymph, *Enallagma parvum*, *Agria* sp., *Urothemis signata*, *Agriocnemis pygmaea* (Rambur), *Ranatra sordidula* (Dohrn), *Ranatra filiformes*, *Ranatra elongate*, *Laccotrephes griseus* (Guerin), *Laccotrephes ruber*, *Anisops sardae* Herrichshaffer., *Micronecta (Dichactoneda) halipliodes* Horath., *Micronecta merope*., *Diplonychus annulatus* (Fab), *Diplonychus* sp. *Diplonychus rusticus*, *Hydrometra butlen* Hugesford and Evans, *Limnogonus (Limnogonus) nitidus* (Mayr), *Gerris nitida*, *Canthydrus flavus* (Mots), *Hydrovatus confertus*, *Hydrovatus accuminatus*, *Laccophilus parvulus*, *Clypeodytes* sp., *Guignofus* sp., *Cybister convexus* Sharp., *Orectochilus (Patrus) productus*, *Hydrochus* sp., *Coelostoma subditum*, *Helochares ancholaris*, *Hydrophilus olivaceous* (Fab), *Sternolophus rutipes* (Fab), *Berosus indicus* (Mots)

g) Crustaceans: *Exopalaemon styliferous*, *Macrobrachium rosenbergii*, *M. idea*, *M. Malcolmsonii*, *M. javanicum*

h) Molluscs : The following species recorded during the periods of investigation

Bellamyia bengalensis typica (Lamarck), *Bellamyia bengalensis doliaris* (Gould), *Pila globosa* (Swainson), *Lymnaca (Pseudosuccinia) acuminata typica* (Lamarck), *Lamellidens marginalis* (Lamarck)

i) Frogs: The following species recorded during the periods of investigation

Euphylyctis cynophlyctus (Schinder), *Haplobatrachus tigrina*, *Natrix* sp.

j) Birds: The following species recorded during the periods of investigation

Motacilla flava (Linn), *M. alba* (Linn), *Dendrocygna javanica* (Horse field), *Podiceps ruficollis* (Pallas), *Ardea alba* (Linn), *Ardeola grayii* (Sykes), *Egretta intermedia* (Linn), *Egretta garzetta* (Linn), *Amaurornis phoenicurus* (Pennant), *Tringa guttifer* Linn, *Metopidius indicus* (Latham), *Alcedo atthis* (Linn), *Halcyon smyrnensis* (Linn), *Pelargopsis capensis* (Linn), *Alcedo atthis* (Linn), *Phalacrocorax niger* (Vieillot), *Phalacrocorax carbo* (Shaw), *Dendrocygna javanica*, *Nettion coromandelianus*, *Anas acuta*, *Fulica atra*, *Gallinula galeata*, *Tachybaptus ruficollis*, *Anchinga melanogaster*.

A1.3h - Rare or endangered species, if there any : The following species recorded during the periods of investigation

a) **NT (Near Threatened)**

Ompok bimaculatus (Bloch), *Wallago attu* (Bloch & Schneider, 1801), *Ailia coila* (Hamilton, 1822), *Anguilla bengalensis bengalensis* (Gray, 1831),

A1.3i - Major Flora :

- b) List of Hydrophytes: The following species of typical hydrophytes recorded during the periods of investigation. They are *Alternanthera sessilis* L., *Tillunthera sp.*, *Eclipta alba* Hassk., *Monochoria hastate* Solms., *Oryza sativa (Var) fetua*, *Phragmites sp.*, *Sagiteria sp.*, *Scirpus articulatus* (Linn.), *Cyanotis axillaries* Roem & Sch., *Cyperus sp.*, *Aeschynomene ampera* Linn., *Ipomea carnea fistula* (Mart), *Hygrorryza aristata* Nees., *Hydrocotyla asiatica* Nees., *Hydrophylla difformis* (L.f.), *Vallisneria sp.*, *Hydrilla sp.*, *Potamogeton sp.*, *Utricularia stellaris* L.f., *Chara sp.*, *Nitella sp.*, *Jussiaea repens* Linn., *Nymphaea nouchali* Burm. f., *Marsilea minuta* L., *Nymphoides indica* (L.), *Lemna sp.*, *Eichhornia sp.*, *Salvinia sp.*, *Pistia sp.*, *Ipomoea aquatica* Forrsk., *Ludwigia sp.*, *Asteracantha sp.*, *Commelina bengalensis* L., *Leersia sp.*

A1.3j - Hydrophyte covered area in the waterbody:

- d) 68% Surface coverage (floating)
- e) 85% bottom coverage of the water body (submerged)
- f) 61% Marginal vegetation covering of the surface area of the waterbody

A1.3k - Patterns of use of the waterbody :

- a) Traditional captured fisheries done by the local people
- b) Irrigation

A1.3l - Seasonality (Conspicuous changes in different seasons) : during the rainy seasons the water body overflows it water and towards the summer its water level gradually decreased but never dried and at that time water column remains at least 4.2 metres at the centre and 1.5 metre at the periphery

A1.3m - Degrading factors and threats to the water body :

- d. Water body is frequently used by the local inhabitants for their every day uses some domestic purposes.
- e. After handover hand over the water body to the local SelfHelp Group, a little commercial management practice is allowed to make a PICKNIC / BANMOHATSAB at the bank of the water body. Therefore, little bit of pollution created at the specific spot on the bank of the water body. People from nearby districts frequently visited for looking the migratory birds on this water body. Huse numbers of migratory birds visited specially from December to middle of the February each and every year. The population trends gradually decrease over the years as per report ofteh local people.
- f. Water column is reporting declining slowly over the years due to high rate siltation.

A1.3n - Conservation efforts, if there any: Local & amature management practice are there after getting land lease by the Self help group.

A1.3o - Notes on local history, and folk beliefs, practices relating to the waterbody: A bandh is made and therefore water column is stgnent here nearly 5 to 6 metre in the rainy season.

A1.3p - Notes on any other point on the water body, not yet covered : Temporal variation of water quality alongwith seasonal fluctuation of population dynamics of fishes in respect to the waterbody not yet covered.

A1.4 :

A1.4a - Name of the waterbody: **CHOURANGEE WESTLAND, KHARGAPUR, PASCHIM MEDINIPUR**

A1.4b - Type of the waterbody: Man made, Area 6.79 ha, PERENNIAL, STAGNANT

A1.4c - Location Details (located in Midnapore town (22°22'16.19"N, 87°20'32.81"E & 22°22'3.22"N, 87°20'16.16"E), West Bengal, India)



A1.4d - Surface Areas covered (in ha) :

- e. Maximum surface area covered 5.56 ha during peak of monsoon or any other time)
- f. Minimum surface area covered 3. 25 ha in the peak of dry season

A1.4e - Connectivity and nature of water flow with any other water bodies: totally confined, only the runoff water from the upland areas from catchment areas of the forests areas feeded the pond.

A1.4f - Ownership and management pattern : Vested land of the Government,

A1.4g - Major Non-Fish Fauna :

k) *Aquatic Insects:*

Pachydiplax sp. Nymph, *Enallagma parvum*, *Agria sp.*, *Urothemis signata*, *Agriocnemis pygmoea* (Rambur), *Ranatra sordidula* (Dohrn)., *Ranatra filiformes*, *Ranatra elongate*, *Laccotrephes grisaus* (Guerin)., *Laccotrephes ruber*, *Anisps sardae* Herrichshaffer., *Micronecta (Dichactoneda) halipliodes* Horath., *Micronecta merope.*, *Diplonychus annulatus* (Fab), *Diplonychus rusticus*, *Hydrometra butlen* Hungesford and Evans, *Limnogonus (Limnogonus) nitidus* (Mayr), *Gerris nitida*, *Canthydrus flavus* (Mots). *Canthydrus laetabilis*, *Helochares ancholaris*, *Hydrophilus olivaceous* (Fab), *Sternolophus rutipes* (Fab), *Berosus idicus* (Mots), *C. lactabilis* (Walker), *C. lactuosus* (Aube), *Coplatus indicus*, *Hydrocoptus subvitlulus* (Mots), *Hydrovatus confertus*, *Hydrovatus accuminatus*, *Laccophilus flexusses* Aube, *Laccophilus parvulus*, *Cybister convexsus* Sharp., *Orectochilus (Patrus) productus*, *Coelostoma subditum*,

l) Crustaceans: *Exopalaeomon styliferous*, *Macrobrachium rosenbergii*, *M. idea*, *M. Malcolmsonii*, *M. javanicum*

- m) Molluscs : The following species recorded during the periods of investigation
- Bellamyia bengalensis typica* (Lamarck), *Bellamyia bengalensis doliaris* (Gould), *Pila globosa* (Swainson), *Lymnaca (Pseudosuccinia) acuminata typica* (Lamarck), *Lamellidens marginalis* (Lamarck)
- n) Frogs: The following species recorded during the periods of investigation
Euphlyctic cynophlyctus (Schinder), *Natrix sp.*
- o) Birds: The following species recorded during the periods of investigation
Motacilla flava (Linn), *M. alba* (Linn), *Dendrocygna javanica* (Horse field), *Ardea alba* (Linn), *Ardeola grayii* (Sykes), *Egretta intermedia* (Linn), *Egretta garzetta* (Linn), *Amaurornis phoenicurus* (Pennant), *Metopidius indicus* (Latham), *Alcedo atthis* (Linn), *Halcyon smyrnensis* (Linn), *Alcedo atthis* (Linn), *Phalacrocorax niger* (Vieillot),
- A1.4h - Rare or endangered species, if there any : The following species recorded during the periods of investigation
- a) **NT (Near Threatened)**
Ompok bimaculatus (Bloch), *Ompok pabda* (Hamilton), *Wallago attu* (Bloch & Schenider, 1801), *Ailia coila* (Hamilton, 1822), *Anguilla bengalensis bengalensis* (Gray, 1831), *Oreochromis mossambicus* (Peters, 1852,
- b) **VU (Vulnerable)**
Cyprinus carpio carpio Linnaeus,
- A1.4i - Major Flora :
- c) List of Hydrophytes: The following species of typical hydrophytes recorded during the periods of investigation. They are *Alternanthera sessilis* L., *Tillunthera sp.*, *Eclipta alba* Hassk., *Monochoria hastate* Solms., *Oryza sativa (Var) fetua*, *Phragmites sp.*, *Sagiteria sp.*, *Scirpus articulatus* (Linn.), *Cyanotis axillaries* Roem & Sch., *Cyperus sp.*, *Aeschynomene ampera* Linn., *Ipomea carnea fistula* (Mart), *Hygrorryza aristata* Nees., *Hydrocotyla asiatica* Nees., *Hydrophylla difformis* (L.f.), *Vallisneria sp.*, *Hydrilla sp.*, *Potamogeton sp.*, *Utricularia stellaris* L.f., *Chara sp.*, *Nitella sp.*, *Jussiaea repens* Linn., *Nymphaea nouchali* Burm. f., *Marsilea minuta* L., *Nymphoides indica* (L.), *Lemna sp.*, *Eichhornia sp.*, *Ipomoea aquatica* Forrsk., *Ludwigia sp.*, *Asteracantha sp.*, *Commelina bengalensis* L., *Leersia sp.*
- A1.4j - Hydrophyte covered area in the waterbody:
- g) 91% Surface coverage (floating)
h) 95% bottom coverage of the water body (submerged)
i) 94% Marginal vegetation covering of the surface area of the waterbody
- A1.4k - Patterns of use of the waterbody :
- c) Traditional captured fisheries done by the local people
d) Irrigation
- A1.4l - Seasonality (Conspicuous changes in different seasons) : during the rainy seasons the water body overflows it water and towards the summer its water level gradually decreased but never dried and at that time water column remains at least 4.2 metres at the centre and 1.5 metre at the periphery
- A1.4m - Degrading factors and threats to the water body :
- g. Water body is frequently used by the local inhabitants for their every day uses some domestic purposes.

- h. Wasteland, no proper use for any purposes over the year.
- i. Water column is reporting declining slowly over the years due to high rate siltation.

A1.4n - Conservation efforts, if there any: Local & amature management practice are there after getting land lease by the Self help group.

A1.4o - Notes on local history, and folk beliefs, practices relating to the waterbody: none found any.

A1.4p - Notes on any other point on the water body, not yet covered : Temporal variation of water quality alongwith seasonal fluctuation of population dynamics of fishes in respect to the waterbody not yet covered.

A1.5 :

A1.5a - Name of the waterbody: **SURBANDH, MOUJITHAN, RAMRARH**

A1.5b - Type of the waterbody: Natural depression, Area 21.6 ha, perennial PERINNIAL, STAGNANT

A1.5c - Location Details (located at 22°42'0.60"N, 87° 3'22.79"E & 22°41'45.13"N, 87° 2'43.85"E, Paschim Medinipur, West Bengal, India)



A1.5d - Surface Areas covered (in ha) :

- a. Maximum surface area covered 19.4 ha during peak of monsoon or any other time)
- b. Minimum surface area covered 14.9 ha in the peak of dry season

A1.5e - Connectivity and nature of water flow with any other water bodies: Totally confined, only the runoff water from the adjoining areas of agricultural land feeded the pond. Main source of the water is is the rain water which is collected mainly during the railny season.

A1.5f - Ownership and management pattern : Vested land of the Government. No pisciculturer practice so far fisheries management is concern. Frequently local people of the nearby areas use this water body for their every day uses without any restriction. Local people capture available fishes using the traditional fishing grars.

A1.5g - Major Non-Fish Fauna :

- a) *Aquatic Insects:*
Pachydiplax sp. Nymph, *Enallagma parvum*, *Urothemis signata*, *Agriocnemis pygmoea* (Rambur), *Ranatra sordidula* (Dohrn), *Ranatra filiformes*, *Ranatra elongata*, *Laccotrephes grisaus* (Guerin), *Laccotrephes ruber*, *Anisops sardae Herrichshaffer.*, *Micronecta* (*Dichactoneda*) *haliplodes Horath.*, *Micronecta merope*, *Diplonychus annulatus* (Fab), *Diplonychus rusticus*, *Hydrometra butlen Hungesford and Evans*, *Limnogonus* (*Limnogonus*) *nitidus* (Mayr), *Gerris nitida*, *Canthydrus flavus* (Mots), *Canthydrus laetabilis*, *C. lactabilis* (Walker), *C. lactuosus* (Aube), *Coplatus indicus*, *Hydrocoptus subvitulus* (Mots), *Hydrovatus confertus*, *Hydrovatus accuminatus*, *Laccophilus flexus* Aube, *Laccophilus parvulus*, *Guignofus sp.*, *Cybister convexus* Sharp, *Orectochilus* (Patrus) *productus*, *Hydrochus sp.*, *Coelostoma subditum*, *Helochares ancholaris*, *Hydrophilus olivaceous* (Fab), *Sternolophus rutipes* (Fab), *Berosus idicus* (Mots)
- b) Crustaceans: *Exopalaeomon styliferous*, *Macrobrachium rosenbergii*, *M. idea*, *M. Malcolmsonii*, *M. javanicum*
- c) Molluscs
Bellamyia bengalensis typica (Lamarck), *Bellamyia bengalensis doliaris* (Gould), *Pila globosa* (Swainson), *Lymnaca* (*Pseudosuccinia*) *acuminata typica* (Lamarck), *Indoplanorbis exustus* (Deshayes), *Lamellidens marginalis* (Lamarck).
- d) Frogs.
Euphylectic cynophlyctus (Schinder), *Haplobatrachus tigrina*, *Natrix sp.*
- e) Birds.
Motacilla flava (Linn), *M. alba* (Linn), *Dendrocygna javanica* (Horse field), *Podiceps ruficollis* (Pallas), *Ardea alba* (Linn), *Ardeola grayii* (Sykes), *Egretta intermedia* (Linn), *Egretta garzetta* (Linn), *Bubulcus ibis* (Linn), *Amaurornis phoenicurus* (Pennant), *Rallus aquaticus* (Linn), *Tringa guttifer* Linn, *Metopidius indicus* (Latham), *Alcedo atthis* (Linn), *Halcyon smyrnensis* (Linn), *Pelargopsis capensis* (Linn), *Alcedo atthis* (Linn), *Phalacrocorax niger* (Vieillot), *Phalacrocorax carbo* (Shaw), *Dendrocygna javanica*,

A1.5h - Rare or endangered species, if there any : The following species recorded during the periods of investigation

a) NT (Near Threatened)

Ompok bimaculatus (Bloch), *Ompok pabda* (Hamilton), *Ompok pabo* (Hamilton), *Wallago attu* (Bloch & Schenider, 1801), *Ailia coila* (Hamilton, 1822), *Anguilla bengalensis bengalensis* (Gray, 1831), *Bagarius bagarius* (Hamilton, 1822), *Oreochromis mossambicus* (Peters, 1852,

b) VU (Vulnerable)

Cyprinus carpio carpio Linnaeus,

A1.5i - Major Flora :

a) List of Hydrophytes

Alternanthera sessilis L., *Tillunthera sp.*, *Eclipta alba* Hassk., *Monochoria hastate* Solms., *Oryza sativa* (Var) *fetua*, *Phragmites sp.*, *Sagiteria sp.*, *Scirpus articulatus* (Linn.), *Cyanotis axillaries* Roem & Sch., *Cyperus sp.*, *Aeschynomene ampera* Linn., *Typha domingensis* Pers., *Ipomea carnea fistula* (Mart), *Hygrorryza aristata* Nees., *Hydrocotyla asiatica* Nees., *Hydrophylla difformis* (L.f.), *Vallisneria sp.*, *Hydrilla sp.*, *Potamogeton sp.*, *Utricularia stellaris* L.f., *Chara sp.*, *Nitella sp.*, *Jussiaea repens* Linn., *Nymphaea nouchali* Burm. f., *Marsilea minuta* L., *Nymphoides indica* (L.), *Lemna sp.*, *Eichhornia sp.*, *Salvinia sp.*, *Pistia sp.*, *Ipomoea aquatica* Forrsk., *Ludwigia sp.*, *Asteracantha sp.*, *Commelina bengalensis* L., *Leersia sp.*

A1.5j - Hydrophyte covered area in the waterbody:

- c) 9% surface coverage
- d) 45% bottom coverage of the water body:

A1.5k - Patterns of use of the waterbody :

- a) Domestic purposed by the local people and residents at the bank of the water body
- b) Only capture fisheries were done by the local people
- c) Wate of this water body is frequently used by the local peoplefor their irrigation purposes.
- d) This water body is a main sourse of the wild elephant those are frequently coming here in every year as reported by the local people.

A1.5l - Seasonality (Conspicuous changes in different seasons) : during the rainy seasons the water body overflows it water and towards the summer its water level gradually decreased but never dried and at that time water column remains at least 2.6 mitres.

A1.5m - - Degrading factors and threats to the water body :

- a. Water body is frequently used by the local inhabitants for their domestic purposes as well as for their irrigation pruposes.
- b. Peripheral areas of this bank huse agricultural practice were done, runoff water with load of organic and inorganic fertilizers used in this agricultural practice were mixed up with this wetland therefore heavy algal growth is seen.
- c. Traditional captured fisheries done by the local people
- d. Areas of available water is shrinking in addition to tit water column is reporting declining over the years due to high rate siltation.

A1.5n - Conservation efforts, if there any : NIL

A1.5o - Notes on local history, and folk beliefs, practices relating to the waterbody : For the purpose of irrigation long time back local people with the help of the District level administration effort has been given to make a Bundh. Neary areas of the waterbody is the only source for the irrigation of the agricultural land.

A1.5p - Notes on any other point on the water body, not yet covered : Temporal variation of water quality alongwith seasonal fluctuation of population dynamics of fishes in respect to the waterbody not yet covered.

A1.6 :

A1.6a - Name of the waterbody: **PIRAKATA BANDH**

A1.6b - Type of the waterbody: PERINNIAL, STAGNANT

A1.6c - Location Details (located in Midnapore town (22°33'11.26"N, 87°10'48.61"E - 22°32'54.32"N, 87°10'41.56"E), West Bengal, India.)



A1.6d - Surface Areas covered (in ha) :

- a. Maximum surface area covered 4.3 ha during peak of monsoon or any other time)
- b. Minimum surface area covered 3.9 ha in the peak of dry season

A1.6e - Connectivity and nature of water flow with any other water bodies: Totally confined, only the runoff water from the adjoining areas feed the water body.

A1.6f - Ownership and management pattern : Vested land of the Government, No pisciculture practice so far fisheries management is concern but frequently local people of the nearby areas capture some available fishes.

A1.6g - Major Non-Fish Fauna :

a) *Aquatic Insects:*

Pachydiplax sp. Nymph, *Enallagma parvum*, *Agria sp.*, *Urothemis signata*, *Agriocnemis pygmaea* (Rambur), *Ranatra sordidula* (Dohrn), *Ranatra filiformes*, *Ranatra elongata*, *Laccotrephes grisau* (Guerin), *Laccotrephes ruber*, *Anisops sardae Herrichshaffer.*, *Micronecta (Dichactoneda) haliplodes* Horath., *Micronecta merope*, *Diplonychus annulatus* (Fab), *Diplonychus sp.*, *Diplonychus rusticus*, *Hydrometra butleni* Hungesford and Evans, *Limnogonus (Limnogonus) nitidus* (Mayr), *Gerris nitida*, *Canthydrus flavus* (Mots.), *Canthydrus laetabilis*, *C. lactabilis* (Walker), *C. lactuosus* (Aube), *Coplatus indicus*, *Hydrocoptus subvittulus* (Mots) , *Hydrovatus confertus*, *Hydrovatus acuminatus*, *Hydrovatus sp.*, *Laccophilus flexus* Aube, *Laccophilus parvulus*, *Clypeodytes sp.*, *Guignofus sp.*, *Cybister convexus* Sharp, *Orectochilus (Patrus) productus*, *Hydrochus sp.*, *Coelostoma subditum*, *Helochares ancholaris*, *Hydrophilus olivaceus* (Fab), *Sternolophus rutipes* (Fab), *Berosus idicus* (Mots)

b) Crustaceans: *Exopalaemon styliferous*, *Macrobrachium rosenbergii*, *M. idea*, *M. Malcolmsonii*, *M. javanicum*

c) Molluscs

d) *Bellamya bengalensis typica* (Lamarck), *Bellamya bengalensis doliaris* (Gould) , *Pila globosa* (Swainson), *Lymnaca (Pseudosuccinia) acuminata typica* (Lamarck), *Indoplanorbis exustus* (Deshayes), *Lamellidens marginalis* (Lamarck).

e) Frogs.

Euphylyctis cynophlyctus (Schinder), *Haplobatrachus tigrina*, *Natrix sp.*

- f) Birds.
Motacilla flava (Linn), *M. alba* (Linn), *Dendrocygna javanica* (Horse field), *Podiceps ruficollis* (Pallas), *Ardea alba* (Linn), *Ardeola grayii* (Sykes), *Egretta intermedia* (Linn), *Egretta garzetta* (Linn), *Bubulcus ibis* (Linn), *Amaurornis phoenicurus* (Pennant), *Rallus aquaticus* (Linn), *Tringa multicolor* Linn, *Metopidius indicus* (Latham), *Alcedo atthis* (Linn), *Halcyon smyrnensis* (Linn), *Pelargopsis capensis* (Linn), *Alcedo atthis* (Linn), *Phalacrocorax niger* (Vieillot), *Phalacrocorax carbo* (Shaw), *Dendrocygna javanica*, *Nettion coromandelianus*, *Fulica atra*, *Gallinula galeata*, *Tachybaptus ruficollis*, *Anchinga melanogaster*.

A1.6h - Rare or endangered species, if there any : The following species recorded during the periods of investigation

a) NT (Near Threatened)

Ompok pabda (Hamilton), *Wallago attu* (Bloch & Schneider, 1801), *Ailia coila* (Hamilton, 1822), *Anguilla bengalensis bengalensis* (Gray, 1831)

b) VU (Vulnerable)

Cyprinus carpio carpio Linnaeus,

A1.6i - Major Flora : List of Hydrophytes

Alternanthera sessilis L., *Tillunthera* sp., *Eclipta alba* Hassk., *Monochoria hastata* Solms., *Oryza sativa* (Var) *fetua*, *Phragmites* sp., *Sagittaria* sp., *Scirpus articulatus* (Linn.), *Cyanotis axillaries* Roem & Sch., *Cyperus* sp., *Aeschynomene ampera* Linn., *Ipomea carnea fistula* (Mart), *Hygrophoriza aristata* Nees., *Hydrocotyla asiatica* Nees., *Hydrophylla difformis* (L.f.), *Vallisneria* sp., *Hydrilla* sp., *Potamogeton* sp., *Utricularia stellaris* L.f., *Chara* sp., *Nitella* sp., *Jussiaea repens* Linn., *Nymphaea nouchali* Burm. f., *Marsilea minuta* L., *Nymphoides indica* (L.), *Lemna* sp., *Eichhornia* sp., *Salvinia* sp., *Pistia* sp., *Ipomoea aquatica* Forrsk., *Ludwigia* sp., *Asteracantha* sp., *Commelina bengalensis* L., *Leersia* sp.

A1.6j - Hydrophyte covered area in the waterbody:

- e) 65% surface coverage
- f) 45% bottom coverage of the water body:

A1.6k - Patterns of use of the waterbody :

- a) Nearly half portion of the water body is covered by the agricultural field and therefore its water is frequently used for the irrigation purposes.

A1.6l - water body overflows its water and towards the summer its water level gradually decreased but never dried and at that time water column remains at least 1.6 metres.

A1.6m - Degrading factors and threats to the water body :

- a. Water excessively used at the nearby agricultural practice. So, excess organic load is deposited leads to eutrophic condition that deteriorates the quality of water body.
- b. Most of the hydrophytes rotted during the post autumn or pre monsoon season therefore water quality in references to some physicochemical properties deteriorates significantly.
- c. Water column is reporting declining over the years due to high rate siltation.

A1.6n - Conservation efforts, if there any : NIL

A1.6o - Notes on local history, and folk beliefs, practices relating to the waterbody :

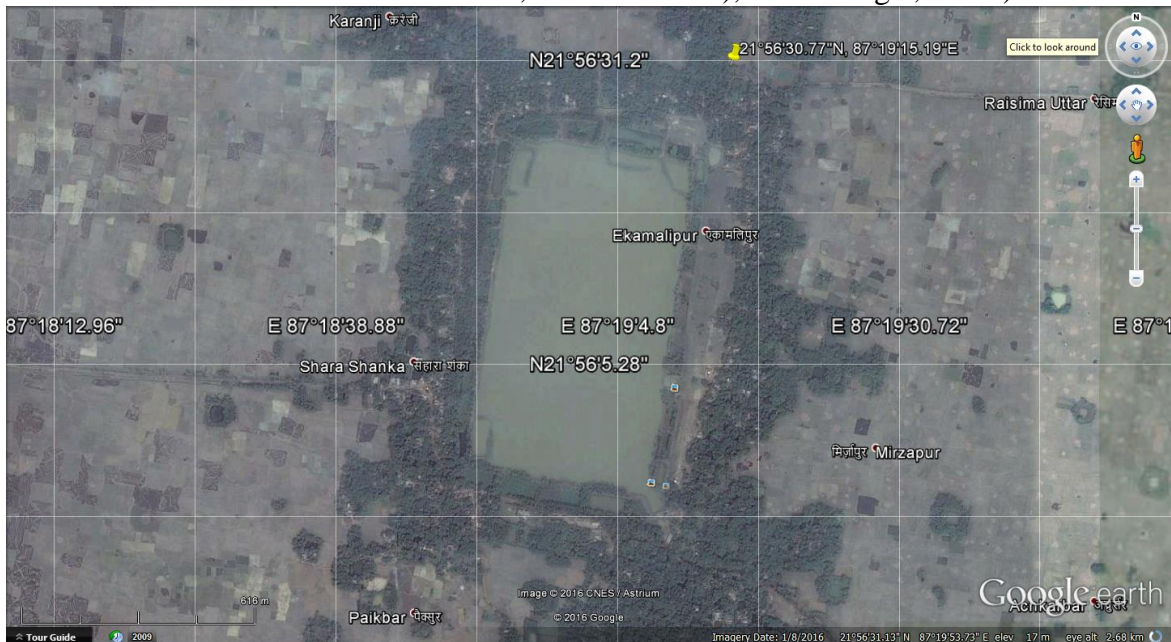
A1.6p - Notes on any other point on the water body, not yet covered : Temporal variation of water quality alongwith seasonal fluctuation of population dynamics of fishes in respect to the waterbody not yet covered.

A1 7 :

A1.7a - Name of the waterbody: **SHARASHANKHA, Dantan, Paschim Medinipur**

A1.7b - Type of the waterbody: PERINNIAL, STAGNANT

A1.7c - Location Details (located in Midnapore town (21°56'30.77"N, 87°19'15.19"E - 21°55'51.42"N, 87°18'48.16"E), West Bengal, India.)



A1.7d - **Surface Areas covered (in ha) :** According to the survey report conducted by the Fishery Department of the State Government of West Bengal, the area of Sarasanka Dighi comprises 61.9 ha. The perimeter encompassing the Dighi is almost 3009 meters 248 centimeters, while the total area of the boundary surrounding the lake is measured to be approximately 150 acres.

- c. Maximum surface area covered 65.3 ha during peak of monsoon or any other time)
- d. Minimum surface area covered 45.9 ha in the peak of dry season

A1.7e - **Connectivity and nature of water flow with any other water bodies:** Totally confined, only the runoff water from the adjoining areas feed the pond.

A1.7f - **Ownership and management pattern:** Certain sources posit that it had been excavated during King Sasanka's reign in the seventh century, after whose name it had been christened "Sarasanka". Now it is vested land of the Government, No pisciculturer practice so far fisheries management is concern but but frequently local people of the nearby areas capture some available fishes.

A1.7g - Major Non-Fish Fauna :

a) *Aquatic Insects:*

Pachydiplax sp. Nymph, *Enallagma parvum*, *Agria sp.*, *Urothemis signata*, *Agriocnemis pygmoea* (Rambur), *Ranatra sordidula* (Dohrn), *Ranatra filiformes*, *Ranatra elongata*, *Laccotrephes grisaus* (Guerin), *Laccotrephes ruber*, *Anisops sardae* Herrichshaffer., *Micronecta* (Dichactoneda) *halipliodes* Horath., *Micronecta merope*, *Diplonychus annulatus* (Fab), *Diplonychus sp.*, *Diplonychus rusticus*, *Hydrometra butlen* Hugesford and Evans, *Limnogonus* (Limnogonus) *nitidus* (Mayr), *Gerris nitida*, *Canthydrus flavus* (Mots), *Canthydrus laetabilis*, *C. lactabilis* (Walker), *C. lactuosus* (Aube), *Coplatus indicus*, *Hydrocoptus subvitulus* (Mots), *Hydrovatus confertus*, *Hydrovatus accuminatus*, *Hydrovatus sp.*, *Laccophilus flexusses* Aube, *Laccophilus parvulus*, *Clypoodytes sp.*, *Guignofus sp.*, *Cybister convexus* Sharp, *Orectochilus* (Patrus) *productus*, *Hydrochus sp.*, *Coelostoma subditum*, *Helochares ancholaris*, *Hydrophilus olivaccous* (Fab), *Sternolophus rutipes* (Fab), *Berosus idicus* (Mots)

b) Crustaceans: *Exopalaemon styliferous*, *Macrobrachium rosenbergii*, *M. idea*, *M. Malcolmsonii*, *M. javanicum*

c) Molluscs

Bellamya bengalensis typica (Lamarck), *Bellamya bengalensis doliaris* (Gould), *Pila globosa* (Swainson), *Lymnaca* (*Pseudosuccinia*) *acuminata typica* (Lamarck), *Indoplanorbis exustus* (Deshayes), *Lamellidens marginalis* (Lamarck)

d) Frogs.

Euphlyctic cynophlyctus (Schinder), *Haplobatrachus tigrina*, *Natrix sp.*

e) Birds.

Motacilla flava (Linn), *M. alba* (Linn), *Dendrocygna javanica* (Horse field), *Podiceps ruficollis* (Pallas), *Ardea alba* (Linn), *Ardeola grayii* (Sykes), *Egretta intermedia* (Linn), *Egretta garzetta* (Linn), *Bubulcus ibis* (Linn), *Amaurornis phoenicurus* (Pennant), *Rallus aquaticus* (Linn), *Tringa gultifer* Linn, *Metopidius indicus* (Latham), *Alcedo atthis* (Linn), *Halcyon smyrnensis* (Linn), *Pelargopsis capensis* (Linn), *Alcedo atthis* (Linn), *Phalacrocorax niger* (Vieillot), *Phalacrocorax carbo* (Shaw), *Dendrocygna javanica*, *Nettapus coromandelianus*.

A1.7h - Rare or endangered species, if there any : The following species recorded during the periods of investigation

a) NT (Near Threatened)

Ompok bimaculatus (Bloch), *Ompok pabda* (Hamilton), *Wallago attu* (Bloch & Schenider, 1801), *Anguilla bengalensis bengalensis* (Gray, 1831).

b) VU (Vulnerable)

Cyprinus carpio carpio Linnaeus,

A1.7i - Major Flora : List of Hydrophytes

Alternanthera sessilis L., *Tillunthera sp.*, *Eclipta alba* Hassk., *Monochoria hastate* Solms., *Oryza sativa* (Var) *fetua*, *Phragmites sp.*, *Sagiteria sp.*, *Scirpus*

articulatus (Linn.), *Cyanotis axillaries* Roem & Sch., *Cyperus sp.*, *Aeschynomene ampera* Linn., *Ipomea carnea fistula* (Mart), *Hygrorrryza aristata* Nees., *Hydrocotyla asiatica* Nees., *Hydrophylla difformis* (L.f.), *Vallisneria sp.*, *Hydrilla sp.*, *Potamogeton sp.*, *Utricularia stellaris* L.f., *Chara sp.*, *Nitella sp.*, *Jussiaea repens* Linn., *Nymphaea nouchali* Burm. f., *Marsilea minuta* L., *Nymphoides indica* (L.), *Lemna sp.*, *Eichhornia sp.*, *Salvinia sp.*, *Pistia sp.*, *Ipomoea aquatica* Forrsk., *Ludwigia sp.*, *Asteracantha sp.*, *Commelina bengalensis* L., *Leersia sp.*

A1.7j - Hydrophyte covered area in the waterbody: Totally weed infested waterbody or wasteland. Huse layer of the infested weed make a thich cover mostly total areas of the water body.

- g) 98% surface coverage
- h) 99.9% bottom coverage of the water body

A1.7k - Patterns of use of the waterbody :

- b) Totally waste mater filled bank of the water body. Most of them are feaces of human beings and other animals which pollutes the water since long time.
- c) Local people and residents at the bank of the water body occasionally used this water body for some rituals and other purposes.
- d) No fisheries were initiated rather by the initiatives of local administration an attempted has taken to reconstruction of the water body but finally some small ponds were made at the bank of this big wetland. But no effective fisheries practice were found at least in this newly made pods also.
- e) In the rainy seasons though wate column is found significantly but during the summer seasons or in other seasons its wate not used in any kind of irrigation purposes.

A1.7l - Seasonality (Conspicuous changes in different seasons) : during the rainy seasons the water body overflows it water and towards the summer its water level gradually decreased but never dried and at that time water column remains at least 0.6 metres. However, none of the open areas were seen from any corner of the water body.

A1.7m - Degrading factors and threats to the water body :

- a) Nothing management is found to maintain the water body
- b) Most of the organic load through the runoff water mied with the wate body and subsequently the organic load of the water body is increasing gradiually. Perhaves, therefore utrophication is increasing year after year.
- c) Totally waste mater filled bank of the water body. Most of them are feaces of human beings and other animals which pollutes the water since long time.

A1.7n - Conservation efforts, if there any : NIL

A1.7o - Notes on local history, and folk beliefs, practices relating to the waterbody : SaraShanka, the huge aqua tank or reservoir, is a famous name in Indian history. The Pandava Ghat describing in the Mahabharata is related to the SaraShankha. The greatest watercress with an ecosystem in biodiversity and environment is one of the largest and oldest formation of water ponds in India. This is called 'SaraShankha Pushkarini or Dighi or Pokhar or Gadiya or Tala' in many local languages. During the mid - January every year the Sankranti or Makar Sankranti Mela, the SaraShankha Fair is held where a big crowd congregate. SaraShankha is

a sanctum. The christian, buddhist, hindu, muslim, jain, persi, naturist, shikh, tao or dao, shinto believe the place a naive regarding religious prosperity. The Sankhawar, the people belong to sankhawar gotra or clan, avestan and svatesvatara regarded Sarashankha one of the holiest destinations in India. The holy bath water tank reminds 'the city lost into water' - the Mahata civilization of Kharbela or Khadwal in Mahad or Magad dynasty. The connectivity to the great pond

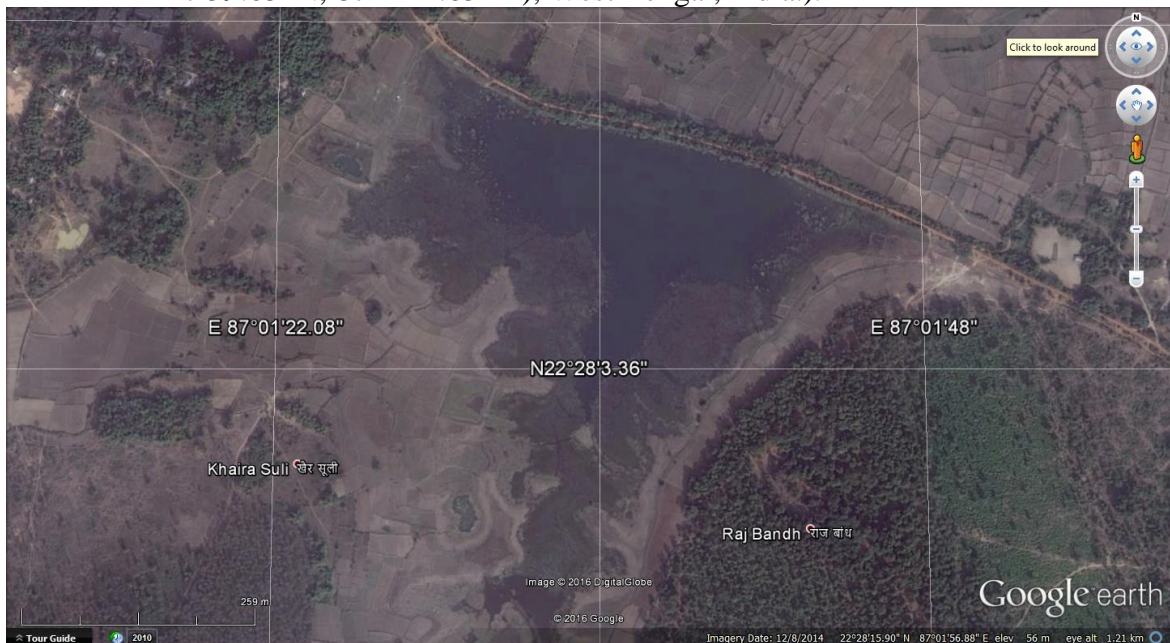
A1.7p - Notes on any other point on the water body, not yet covered : Temporal variation of water quality alongwith seasonal fluctuation of population dynamics of fishes in respect to the waterbody not yet covered.

A1.8 :

A1.8a - Name of the waterbody: **KECHANDA BANDH, Jhargram, Paschim Medinipur**

A1.8b - Type of the waterbody: **PERINNIAL, STAGNANT**

A1.8c - ocation Details (located in Midnapore town (22°28'17.37"N, 87°1'50.65"E; 22°27'39.05"N, 87°1'22.65"E), West Bengal, India.).



A1.8d - **Surface Areas covered (in ha) :** Area 19.3 ha, perennial with natural vegetation of marginal vegetation (11%), floating (85%) and submerged (55%) covering of the surface area of the waterbody less human interference, frequently fishes are collected by the local people

- e. Maximum surface area covered 18.3 ha during peak of monsoon or any other time)
- f. Minimum surface area covered 15.9 ha in the peak of dry season

A1.8e - **Connectivity and nature of water flow with any other water bodies:** Totally confined, only the runoff water from the adjoining forest water shed areas and nearby agricultural field fed the water body.

A1.8f - **Ownership and management pattern:** Natural depression but to collect the run off waater a bandh is made up from the local governess and thus a large water body is formed. After a long time, this water body is handed over the local society for the fishery management but due to deweedification, water quality of this water body become detoriated by the increasing of Organic load resulting water bad quality. Thereafter, now no management practiced there. Total water body covered up by the floting hydrophytes. Only frequently local people captured the available fishes.

A1.8g - **Major Non-Fish Fauna :**

f) *Aquatic Insects:*

Pachydiplax sp. Nymph, *Urothemis signata*, *Agriocnemis pygmoea* (Rambur), *Ranatra sordidula* (Dohrn), *Ranatra filiformes*, *Ranatra elongata*, *Laccotrephes grisaus* (Guerin), *Laccotrephes ruber*, *Micronecta* (Dichactoneda) *halipliodes* Horath., *Micronecta merope*, *Diplonychus annulatus* (Fab), *Diplonychus rusticus*, *Hydrometra butlen* Hugesford and Evans, *Canthydrus flavus* (Mots), *Canthydrus laetabilis*, *C. lactabilis* (Walker), *C. lactuosus* (Aube), *Coplatus indicus*, *Hydrocoptus subvitlulus* (Mots) , *Hydrovatus confertus*, *Hydrovatus acuminiatus*, *Laccophilus flexusses* Aube, *Laccophilus parvulus*, *Cybister convexsus* Sharp, *Orectochilus* (Patrus) *productus*, *Hydrochus sp.*, *Coelostoma subditum*, *Helochares ancholaris*, *Hydrophilus olivaccous* (Fab), *Sternolophus rutipes* (Fab), *Berosus idicus* (Mots)

g) Crustaceans: *Exopalaeomon styliferous*, *Macrobrachium rosenbergii*, *M. idea*, *M. Malcolmsonii*, *M. javanicum*

h) Molluscs

Bellamyia bengalensis typica (Lamarck), *Bellamyia bengalensis doliaris* (Gould), *Pila globosa* (Swainson), *Lymnaca (Pseudosuccinia) acuminata typica* (Lamarck), *Indoplanorbis exustus* (Deshayes), *Lamellidens marginalis* (Lamarck).

i) Frogs.

Euphlyctic cynophlyctus (Schinder), *Haplobatrachus tigrina*, *Natrix sp.*

j) Birds.

Motacilla flava (Linn), *M. alba* (Linn), *Dendrocygna javanica* (Horse field), *Podiceps ruficollis* (Pallas), *Ardea alba* (Linn), *Ardeola grayii* (Sykes), *Egretta intermedia* (Linn), *Egretta garzetta* (Linn), *Bubulcus ibis* (Linn), *Amaurornis phoenicurus* (Pennant), *Metopidius indicus* (Latham), *Alcedo atthis* (Linn), *Halcyon smyrnensis* (Linn), *Pelargopsis capensis* (Linn), *Alcedo atthis* (Linn), *Phalacrocorex niger* (Vieillot), *Phalacrocorex carbo* (Shaw), *Dendrogyna javanica*, *Nettapus coromandelianus*, *Anas acuta*, *Fulica atra*, *Gallinula galeata*, *Tachybaptus ruficollis*, *Anchinga melanogaster*.

A1.8h - Rare or endangered species, if there any : The following species recorded during the periods of investigation

a) **NT (Near Threatened)**

Ompok bimaculatus (Bloch), *Ompok pabda* (Hamilton), *Wallago attu* (Bloch & Schenider, 1801), *Ailia coila* (Hamilton, 1822), *Anguilla bengalensis bengalensis* (Gray, 1831), *Oreochromis mossambicus* (Peters, 1852,

b) **VU (Vulnareble)**

Cyprinus carpio carpio Linnaeus,

A1.8i - Major Flora : List of Hydrophytes

Alternanthera sessilis L., *Tillunthera sp.*, *Eclipta alba* Hassk., *Monochoria hastate* Solms., *Oryza sativa (Var) fetua*, *Phragmites sp.*, *Sagiteria sp.*, *Scirpus articulatus* (Linn.), *Cyanotis axillaries* Roem & Sch., *Cyperus sp.*, *Aeschynomene ampera* Linn., *Ipomea carnea fistula* (Mart), *Hygrorryza aristata* Nees., *Hydrocotyla asiatica* Nees., *Hydrophylla difformis* (L.f.), *Vallisneria sp.*, *Hydrilla sp.*, *Potamogeton sp.*, *Utricularia stellaris* L.f., *Chara sp.*, *Nitella sp.*, *Jussiaea repens* Linn., *Nymphaea nouchali* Burm. f., *Marsilea minuta* L., *Nymphoides indica* (L.), *Lemna sp.*, *Eichhornia sp.*, *Salvinia sp.*, *Pistia sp.*, *Ipomoea aquatica* Forrsk., *Ludwigia sp.*, *Asteracantha sp.*, *Commelina bengalensis* L., *Leersia sp.*

A1.8j - Hydrophyte covered area in the waterbody: Totally weed infested waterbody or wasteland. Huse layer of the infested weed make a thich cover mostly total areas of the water body.

- i) 89% surface coverage
- j) 96.9% bottom coverage of the water body

A1.8k - Patterns of use of the waterbody :

- f) Totally waste mater filled bank of the water body. Most of them are feaces of human beings and other animals which pollutes the water since long time.
- g) Local people and residents at the bank of the water body occasionally used this water body for some rituals and other purposes.
- h) No fisheries were initiated rather by the initiatives of local administration an attemped has taken to reconstruction of the water body but finally no effective fisheries practice were found.
- i) In the rainy seasons though wate column is found significantly but during the summer seasons or in other seasons its water not used in irrigation purposes at the lower land.

A1.8l - Seasonality (Conspicuous changes in different seasons) : during the rainy seasons the water body overflows it water and towards the summer its water level gradually decreased but never dried and at that time water column remains at least 3.6 mitres. However, only limited open areas were seen at the marginal side of the water body.

A1.8m - Degrading factors and threats to the water body :

- d) Nothing management is found to maintain the water body
- e) Most of the organic load through the runoff water maid with the wate body and subsequently the organic load of the water body is increasing gradiually. Perhaves, therefore utrophication is increasing year after year.
- f) Totally waste mater filled bank of the water body. Most of them are feaces of human beings and other animals which pollutes the water since long time.

A1.8n - Conservation efforts, if there any : NIL

A1.8o - Notes on local history, and folk beliefs, practices relating to the waterbody :

A1.8p - Notes on any other point on the water body, not yet covered : Temporal variation of water quality alongwith seasonal fluctuation of population dynamics of fishes in respect to the waterbody not yet covered.

A1.9:

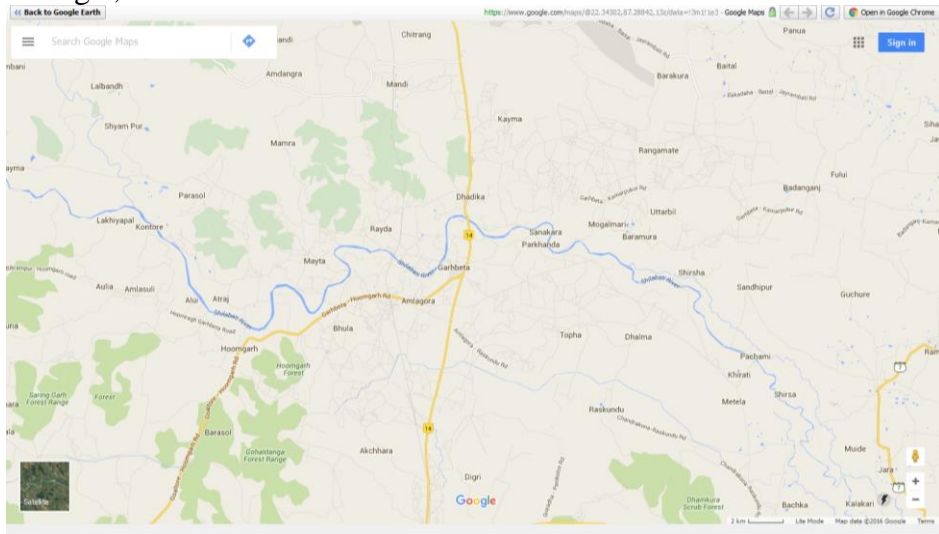
A1.9a - Name of the waterbody: **SHILABOTI RIEVER**

A1.9b - Type of the waterbody: PERINNIAL, RUNNING WATER

A1.9c - Location Details: The Silabati River (also known as Silai) originates in the terrain of the Chhota Nagpur Plateau in the Purulia district of the state of West Bengal in eastern India. It flows in an almost southeasterly direction through the districts of Bankura and West Midnapore. This river is running near about 91.9 km The Silabati joins the Dwarakeswar near Ghatal and afterwards is known as Rupnarayan. It finally joins the Haldi River, which empties into the Bay of Bengal.

Almost every year the Silabati causes flooding, particularly in Banka, Khirpai and Ghatal area. There is a small reservoir on the Silabati near Khatra known as Kadam Deuli Dam where a canal from Mukutmanipur Kangsabati dam meets.

Suervy were made different locations of fishing areas i.e. located 22°20'57.55"N, 87°17'45.68"E; 22.103072, 87.596226; 22.116085, 87.645850; 22.103651, 87.629309, 22.121577, 87.683303 in Paschim Medinipur District, West Bengal, India.



A1.9d - Surface Areas covered (in ha) :

- g. Maximum surface area covered in the study area 4.3 ha during peak of monsoon or any other time)
- h. Minimum surface area covered in the study are 3.9 ha in the peak of dry season

A1.9e - Connectivity and nature of water flow with any other water bodies: running water though frequently the stagnant water logging found within the sand dune. The main water source is rain otherwise most of the part if it is dries up during the summer season.

A1.9f - Ownership and management pattern : Vested land of the Government.

A1.9g - Major Non-Fish Fauna :

a) *Aquatic Insects:*

Urothemis signata, *Agriocnemis pygmoea* (Rambur), *Ranatra sordidula* (Dohrn), *Ranatra filiformes*, *Ranatra elongata*, *Laccotrephes grisaus* (Guerin), *Laccotrephes ruber*, *Anisps sardae* Herrichshaffer., *Diplonychus annulatus* (Fab), *Diplonychus rusticus*, *Canthydrus laetabilis*, *C. lactabilis* (Walker), *Hydrovatus confertus*, *Hydrovatus accuminatus*, *Hydrovatus sp.*, *Laccophilus flexus* Aube, *Laccophilus parvulus*, *Cybister convexus* Sharp, *Coelostoma subditum*, *Helochares ancholaris*, *Hydrophilus olivaceus* (Fab), *Sternolophus rutipes* (Fab)

b) Crustaceans: *Exopalaemon styliferous*, *Macrobrachium rosenbergii*, *M. idea*, *M. Malcolmsonii*, *M. javanicum*

c) Molluscs

Lymnaca (Pseudosuccinia) acuminata typica (Lamarck), *Indoplanorbis exustus* (Deshayes)

d) Frogs.

Euphlyctic cynophlyctus (Schinder), *Haplobatrachus tigrina*, *Netrix sp.*

e) Birds.

Motacilla flava (Linn), *M. alba* (Linn), *Ardea alba* (Linn), *Ardeola grayii* (Sykes), *Egretta intermedia* (Linn), *Egretta garzetta* (Linn), *Amaurornis phoenicurus* (Pennant), *Metopidius indicus* (Latham), *Alcedo atthis* (Linn), *Halcyon smyrnensis* (Linn), *Pelargopsis capensis* (Linn), *Alcedo atthis* (Linn)

A1.9h - Rare or endangered species, if there any : The following species recorded during the periods of investigation

a) **NT (Near Threatened)**

Ompok bimaculatus (Bloch), *Ompok pabo* (Hamilton), *Wallago attu* (Bloch & Schneider, 1801), *Ailia coila* (Hamilton, 1822), *Chitala chitala* (Hamilton), *Hypophthalmichthys molitrix* (Valenciennes), *Oreochromis mossambicus* (Peters, 1852,

b) **VU (Vulnerable)**

Cyprinus carpio carpio Linnaeus,

A1.9i - Major Flora : List of Hydrophytes

Eclipta alba Hassk., *Monochoria hastate* Solms., *Oryza sativa* (Var) *fetua*, *Ipomea carnea fistula* (Mart), *Hygrosyza aristata* Nees., *Hydrocotyla asiatica* Nees., *Marsilea minuta* L., *Ludwigia sp.*, *Asteracantha sp.*, *Commelina bengalensis* L.

A1.9j - Hydrophyte covered area in the waterbody:

k) 2% surface coverage

l) 8% bottom coverage of the water body:

A1.9k - Patterns of use of the waterbody :

- g) Domestic purposed by the local people and residents at the bank of the water body
- h) Only capture fisheries were done by the by the local fisherman at their respective territorial marked region. Several fishing gears are used for this.
- i) Irrigation

A1.9l - Seasonality (Conspicuous changes in different seasons) : During the rainy seasons the overflows it water and a large part of the paschim Midnapore district is flooded over specially Ghatal subdivision. At the mid summer its water level gradually decreased but never dried and at that time water column remains at least 1.6 metres.

A1.9m - Degrading factors and threats to the water body :

- d. Water excessively used by the local inhabitants for their daily purposes.
- e. For agriculture pactice at the bank of the river, huge amounts of nutrients also run off in to the river, and specially during the summer season, frequently algal bloom is observed specially stagnified areas of the river.
- f. Water column is reporting declining over the years due to high rate siltation.

A1.9n - Conservation efforts, if there any : NIL

A1.9o - Notes on local history, and folk beliefs, practices relating to the waterbody : This is property of the Governement

A1.9p - Notes on any other point on the water body, not yet covered :

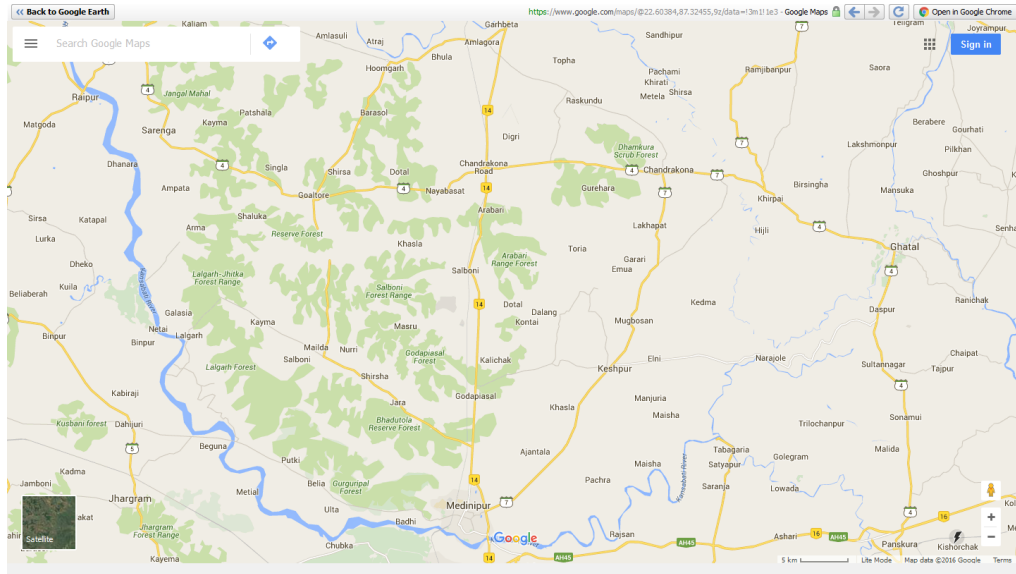
A1.10 :

A1.10a - Name of the waterbody: **KANGSABOTI RIEVER**

A1. 10b - Type of the waterbody: PERINNIAL, RUNNING WATER

A1. 10c - Location Details: Kangsabati River (also variously known as the Kasai and Cossye) rises from the Chota Nagpur plateau in the state of West Bengal, India and passes through the districts of Purulia, Bankura and Paschim Medinipur in West Bengal before draining in the Bay of Bengal. At Keshpur the river splits into two. The northern branch flows through the Daspur area as Palarpai and joins the Rupnarayan River. The other branch flows in a south-easterly direction and on joining the Kaliaghai River forms the Haldi River, which flows into the Bay of Bengal at Haldia. Purulia, Mukutmanipur, Binpur, Midnapore, and Kharagpur are towns on or near the banks of this river. This is one of the most important river running more or less 148 km across the Paschim Medinipur district with some parts of Purba Medinipur district.

We selected some important location where actively fishing were done by the local fisherman throughout the year. The details geographical position are 22°24'50.23"- 87°16'57.47"E; 22°40'58.57" - 87°30'15.68"; 22°40'25.4" - 87°34'88.56"; 22°42'10.06" - 87°15'20.72") Near Medinipur Town, Paschim Medinipur, 22.489511 - 87.092613 at Sebayatan, Jhargram, Paschim Medinipur, 22.492399, 87.565935 at Tabagaria - Shaldahari Rd, Tabagaria, West Bengal 721156West Bengal, India.)



A1.10d - Surface Areas covered (in ha) :

- i. Maximum surface area covered in average 99-100 % of the location during peak of monsoon or any other time
- j. Minimum surface area covered in average 2-8% of the location under study in the peak of dry season

A1.10e - Connectivity and nature of water flow with any other water bodies: Running water but partially confined, Mainly rain water fed river therefore during the summer seasons most of the areas are dried up and only a small portion is running with scanty of water column.

A1.10f - Ownership and management pattern : Government property

A1.10g - Major Non-Fish Fauna :

a) *Aquatic Insects:*

Enallagma parvum, Urothemis signata, Agriocnemis pygmoea (Rambur), *Ranatra filiformes, Ranatra elongata, Laccotrephes grisaus* (Guerin), *Laccotrephes ruber, Anisops sardae* Herrichshaffer., *Micronecta merope, Diplonychus annulatus* (Fab), *Diplonychus rusticus, Hydrometra butleni* Hungesford and Evans, *Limnogonus (Limnogonus) nitidus* (Mayr)., *Gerris nitida, Canthydrus flavus* (Mots)., *Canthydrus laetabilis, C. lactabilis* (Walker), *C. lactuosus* (Aube), *Coplatus indicus, Hydrocoptus subvitululus* (Mots) , *Hydrovatus confertus, Hydrovatus acuminiatus, Laccophilus flexus* Aube, *Laccophilus parvulus, Orectochilus (Patrus) productus, Hydrophilus olivaceous* (Fab), *Sternolophus rutipes* (Fab)

b) Crustaceans: *Exopalaeomon styliferous, Macrobrachium rosenbergii, M. idea, M. Malcolmsonii, M. javanicum*

c) Molluscs

Bellamya bengalensis typica (Lamarck), *Bellamya bengalensis doliaris* (Gould), *Lymnaca (Pseudosuccinia) acuminata typica* (Lamarck), *Indoplanorbis exustus* (Deshayes)

d) Frogs.

Euphlyctic cynophlyctus (Schinder), *Haplobatrachus tigrina, Natrrix sp.*

e) Birds.

Motacilla flava (Linn), *M. alba* (Linn), *Ardea alba* (Linn), *Ardeola grayii* (Sykes), *Egretta intermedia* (Linn), *Egretta garzetta* (Linn), *Amaurornis phoenicurus* (Pennant), *Metopidius indicus* (Latham), *Alcedo atthis* (Linn), *Halcyon smyrnensis* (Linn), *Pelargopsis capensis* (Linn), *Phalacrocorax niger* (Vieillot), *Phalacrocorax carbo* (Shaw).

A1.10h - Rare or endangered species, if there any : The following species recorded during the periods of investigation

a) **NT (Near Threatened)**

Ompok bimaculatus (Bloch), *Ompok pabo* (Hamilton), *Wallago attu* (Bloch & Schenider, 1801), *Chitala chitala* (Hamilton), *Bagarius bagarius* (Hamilton, 1822), *Hypophthalmichthys molitrix* (Valenciennes), *Oreochromis mossambicus* (Peters, 1852,

b) **VU (Vulnerable)**

Cyprinus carpio carpio Linnaeus,

A1.10i - Major Flora : List of Hydrophytes

Monochoria hastate Solms., *Oryza sativa* (Var) *fetua*, *Ipomea carnea fistula* (Mart), *Marsilea minuta* L., *Lemna* sp., *Eichhornia* sp., *Ipomoea aquatica* Forrsk., *Ludwigia* sp., *Asteracantha* sp., *Commelina bengalensis* L

A1.10j -Hydrophyte covered area in the waterbody:

- m) 5% surface coverage
- n) 45% bottom coverage of the water body:

A1.10k - Patterns of use of the waterbody :

- a) Local people and residents at the bank of the river depends on various aspects on this river. Fishers and local residents are depending on the capture of riverine fishes using different fishing gears.
- b) Several local people are depends on the fish seed collection mainly from the river.
- c) Water also use for the transportation at the adjacent areas.
- d) Irrigation purposes in the agricultural fields at the bank of the river

A1.10l - Seasonality (Conspicuous changes in different seasons) : during the rainy seasons the water body overflows it water and towards the summer its water level gradually decreased but never dried and at that time water column remains at least 1.6 metres.

A1.10m - Degrading factors and threats to the water body :

- a. Water excessively used by the irrigation purpose.
- b. Runoff water leeches and accumulate into the water with its high organic load therefore leads to the eutrophic condition that deteriorate the quality of water body.


- c. Waste water from cities of its neary areas drainase of its waste water directly into its therefore high organic load contaminated with this water which may may change its quality.
- d. Water column is reporting declining over the years due to high rate siltation.

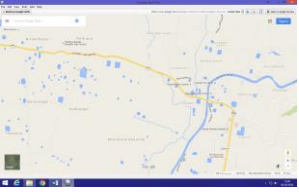

A1.10n - Conservation efforts, if there any : NIL

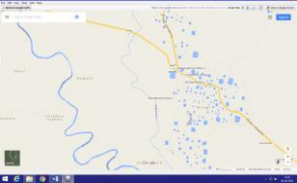
A1.10o - Notes on local history, and folk beliefs, practices relating to the waterbody :
Government properties

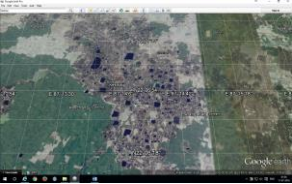
A1.10p - Notes on any other point on the water body, not yet covered : Temporal variation of water quality alongwith seasonal fluctuation of population dynamics of fishes in respect to the waterbody not yet covered.


Format A1: Database of smaller water bodies (e.g. Ponds, Nayanjuli, etc) surveyed in the region Paschim Medinipur during 22-04-13 To 21-04-15


	Type of small water bodies	Locality of the survey	approx. Number/ha of locality	Size (ha) range of the waterbody type i.e. max-min	Most abundant Size (ha)	Notes on Use Patterns	Conspicuous flora/hydrophyte cover	Conspicuous non-fish fauna	Notes on degradation factors, conservation efforts
1	Ponds at Midnapore town areas	Midnapore Town 	~ 57 ponds are there in the Midnapore town areas	0.25ha to 1.5 ha	0.72ha	Most of the water body is used for traditional culture of fishes. Each and every year weed fishes entered with the flood water	On average 9% hydrophytes covers the surface areas <i>Commelina bengalensis</i> L. <i>Ipomoea aquatica</i> Forrsk. <i>Eichhornia sp.</i> <i>Lemna sp.</i> <i>Nymphaea nouchali</i> Burm. f. <i>Ipomea carnea fistula</i> (Mart) <i>Ipomea carnea fistula</i> (Mart) <i>Cyperus sp.</i> <i>Scirpus articulatus</i> (Linn.) <i>Sagiteria sp.</i> <i>Phragmites sp.</i> <i>Oryza sativa</i> (Var) <i>fetua</i> <i>Monochoria hastate</i> Solms. <i>Eclipta alba</i> Hassk <i>Alternanthera sessilis</i> L. <i>Tillunthera sp.</i>	Most common aquatic fauna are <i>Macrobrachium idea</i> , <i>M. Malcolmsonii</i> , <i>Ranatra filiformes</i> <i>Diplonchus rusticus</i> , <i>Bellamya bengalensis typica</i> (Lamarck) <i>Bellamya bengalensis doliaris</i> (Gould) <i>Pila globosa</i> (Swainson)' <i>Euphlyctic cynophlyctus</i> (Schinder), <i>Haplobatrachus tigrina</i> , <i>Natrix sp.</i> <i>Ardeola grayii</i> , <i>Egretta intermedia</i> , <i>Amaurornis phoenicurus</i> , <i>Metopidius indicus</i> , <i>Alcedo atthis</i> , <i>Halcyon smyrnensis</i> , <i>Pelargopsis capensis</i> , <i>Phalacocorex niger</i> .	None of the management practice are notices. Due to heavy siltation and eutrophication on macrophytes and hydrophytes are increasing


								<i>Phalacocorex niger</i> (Vieillot)	
2	Ponds at Ghatal to Ranibadzar areas	Ghatal to Ranibadzar areas 	~112 ponds are in this areas / location	0.2ha to 1.2 ha	0.32 ha	Most of Most of the water body is used for traditional culture of fishes. Each and every year weed fishes entered with the flood water	On average 12% hydrophytes covers the surface areas <i>Commelina bengalensis</i> L. <i>Ipomoea aquatica</i> Forrsk. <i>Eichhornia sp.</i> <i>Lemna sp.</i> <i>Nymphaea nouchali</i> Burm. f. <i>Ipomea carnea fistula</i> (Mart) <i>Ipomea carnea fistula</i> (Mart) <i>Cyperus sp.</i> <i>Scirpus articulatus</i> (Linn.) <i>Sagiteria sp.</i> <i>Phragmites sp.</i> <i>Oryza sativa</i> (Var) <i>fetua</i> <i>Monochoria hastate</i> Solms. <i>Eclipta alba</i> Hassk <i>Alternanthera sessilis</i> L. <i>Tillunthera sp.</i>	Most common aquatic fauna are <i>Macrobrachium idea</i> , <i>M. Malcolmsonii</i> , <i>Ranatra filiformes</i> <i>Diplonchus rusticus</i> , <i>Bellamya bengalensis typica</i> (Lamarck) <i>Bellamya bengalensis doliaris</i> (Gould) <i>Pila globosa</i> (Swainson) <i>Euphyctic cynophlyctus</i> (Schinder), <i>Haplobatrachus tigrina</i> , <i>Natrix sp.</i> <i>Ardeola grayii</i> , <i>Egretta intermedia</i> , <i>Amaurornis phoenicurus</i> , <i>Metopidius indicus</i> , <i>Alcedo atthis</i> , <i>Halcyon smyrnensis</i> , <i>Pelargopsis capensis</i> , <i>Phalacocorex niger</i> .	None of the management practice are notices. Due to heavy siltation and eutrophication on macrophytes and hydrophytes are increasing
3	Ponds at Radhanagar-Hemnagar-Jalsara region	Radhanagar-Hemnagar-Jalsara region 	~282 ponds are in this areas / location	0.12ha to 1.75 ha	0.42 ha	Most of Most of the water body is used for traditional culture	On average 15% hydrophytes covers the surface areas <i>Commelina bengalensis</i> L. <i>Ipomoea aquatica</i> Forrsk. <i>Eichhornia sp.</i>	Most common aquatic fauna are <i>Macrobrachium idea</i> , <i>M. Malcolmsonii</i> , <i>Ranatra filiformes</i> <i>Diplonchus rusticus</i> , <i>Bellamya bengalensis typica</i> (Lamarck)	None of the management practice are notices. Due to heavy siltation and eutrophication

						of fishes. Each and every year weed fishes entered with the flood water	<i>Lemna sp. Nymphaea nouchali</i> Burm. f. <i>Ipomea carnea fistula</i> (Mart) <i>Ipomea carnea fistula</i> (Mart) <i>Cyperus sp. Scirpus articulatus</i> (Linn.) <i>Sagiteria sp. Phragmites sp. Oryza sativa</i> (Var) <i>fetua Monochoria hastate</i> Solms. <i>Eclipta alba</i> Hassk <i>Alternanthera sessilis</i> L. <i>Tillunthera sp.</i>	<i>Bellamya bengalensis doliaris</i> (Gould) <i>Pila globosa</i> (Swainson)' <i>Euphlyctic cynophlyctus</i> (Schinder), <i>Haplobatrachus tigrina</i> , <i>Natrix sp. Ardeola grayii</i> , <i>Egretta intermedia</i> , <i>Amaurornis phoenicurus</i> , <i>Metopidius indicus</i> , <i>Alcedo atthis</i> , <i>Halcyon smyrnensis</i> , <i>Pelargopsis capensis</i> , <i>Phalacrocorax niger</i> .	on macrophytes and hydrophytes are increasing
4	Ponds at Khirpai	<p>Khirpai</p> 	~ 115 ponds are in this areas / location	0.13ha to 2.1 ha	0.34 ha	Most of Most of the water body is used for traditional culture of fishes. Each and every year weed fishes entered with the flood water	On average 5% hydrophytes covers the surface areas <i>Commelina bengalensis</i> L. <i>Ipomoea aquatica</i> Forrsk. <i>Eichhornia sp. Lemna sp. Nymphaea nouchali</i> Burm. f. <i>Ipomea carnea fistula</i> (Mart) <i>Ipomea carnea fistula</i> (Mart) <i>Cyperus sp. Scirpus articulatus</i> (Linn.) <i>Sagiteria sp. Phragmites sp. Oryza sativa</i> (Var) <i>fetua Monochoria hastate</i> Solms. <i>Eclipta alba</i>	Most common aquatic fauna are <i>Macrobrachium idea</i> , <i>M. Malcolmsonii</i> , <i>Ranatra filiformes</i> <i>Diplonchus rusticus</i> , <i>Bellamya bengalensis typica</i> (Lamarck) <i>Bellamya bengalensis doliaris</i> (Gould) <i>Pila globosa</i> (Swainson)' <i>Euphlyctic cynophlyctus</i> (Schinder) <i>Natrix sp. Ardeola grayii</i> , <i>Egretta intermedia</i> , <i>Amaurornis phoenicurus</i> , <i>Metopidius indicus</i> , <i>Alcedo atthis</i> , <i>Halcyon</i>	None of the management practice are notices. Due to heavy siltation and eutrophication on macrophytes and hydrophytes are increasing


							<i>Hassk Alternanthera sessilis</i> L. <i>Tillunthera sp.</i>	<i>smyrnensis, Pelargopsis capensis, Phalacocorex niger.</i>	
5	Keshiari	<p>Keshiari 22° 7'41.93"N- 87°14'58.96"E; 22° 6'12.89"N- 87°13'28.54"E</p> 	~ 135 ponds are in this areas / location	0.13ha to 0.75 ha	0.65 ha	Most of the cases none of the management are notices regarding pisciculture. Most of the water body is used for traditional culture of fishes. Each and every year weed fishes entered with the flood water	On average 6% hydrophytes covers the surface areas <i>Commelina bengalensis</i> L. <i>Eichhornia sp. Lemna sp. Nymphaea nouchali</i> Burm. f. <i>Cyperus sp. Scirpus articulatus</i> (Linn.) <i>Sagiteria sp. Phragmites sp. Oryza sativa (Var) fetua</i> <i>Monochoria hastate</i> Solms. <i>Tillunthera sp.</i>	Most common aquatic fauna are <i>Macrobrachium idea, M. Malcolmsonii, Ranatra filiformes Diplonchus rusticus, Bellamya bengalensis typica</i> (Lamarck) <i>Bellamya bengalensis doliaris</i> (Gould) <i>Pila globosa</i> (Swainson)' <i>Euphylyctic cynophlyctus</i> (Schinder) <i>Natrix sp. Ardeola grayii, Egretta intermedia, Amaurornis phoenicurus, Metopidius indicus, Alcedo atthis, Halcyon smyrnensis, Pelargopsis capensis, Phalacocorex niger.</i>	None of the management practice are notices. Due to heavy siltation and eutrophication macrophytes and hydrophytes are increasing



6	Narayang arh	<p>22°10'26.46"N-87°24'17.46"E; 22°8'34.25"N-87°22'11.08"E</p> 	~ 63 ponds are in this areas	0.12 – 1.27 ha	0.42 ha	Most of the water body is used for traditional culture of fishes. Each and every year weed fishes entered with the flood water	On average 3% hydrophytes covers the surface areas <i>Commelina bengalensis</i> L. <i>Eichhornia sp.</i> <i>Lemna sp.</i> <i>Nymphaea nouchali</i> Burm. f. <i>Cyperus sp.</i> <i>Scirpus articulatus</i> (Linn.) <i>Sagitaria sp.</i> <i>Phragmites sp.</i> <i>Oryza sativa (Var) fetua</i> <i>Monochoria hastate</i> Solms. <i>Tillunthera sp.</i>	Most common aquatic fauna are <i>Macrobrachium idea</i> , <i>M. Malcolmsonii</i> , <i>Ranatra filiformes</i> <i>Diplonychus rusticus</i> , <i>Bellamya bengalensis typica</i> (Lamarck) <i>Bellamya bengalensis doliaris</i> (Gould) <i>Pila globosa (Swainson)</i> <i>Euphlyctic cynophlyctus</i> (Schinder), <i>Haplobatrachus tigrina</i> , <i>Natrix sp.</i> <i>Ardeola grayii</i> , <i>Egretta intermedia</i> , <i>Amaurornis phoenicurus</i> , <i>Metopidius indicus</i> , <i>Alcedo atthis</i> , <i>Halcyon smyrnensis</i> , <i>Pelargopsis capensis</i> , <i>Phalacocorex niger</i> .	Most of the water body is eutrophic due to domestic organic load, dewaterification, selected spawn for culture specially owner's wetland causes water quality degradation
7	Moyna	Moynagarh Font Inner Pond 22°20'57.55"N, 87°17'45.68"E	Bhagawanpur	15ha to 35 ha	Area 500 acre,	Man made, perineal with natural vegetation, more human interference,	On average 2% hydrophytes covers the surface areas <i>Lemna sp.</i> <i>Nymphaea nouchali</i> Burm. f. <i>Cyperus sp.</i> <i>Scirpus articulatus</i> (Linn.) <i>Sagitaria sp.</i> <i>Phragmites sp.</i> <i>Oryza sativa (Var) fetua</i> , <i>Commelina</i>	Most common aquatic fauna are <i>Macrobrachium idea</i> , <i>M. Malcolmsonii</i> , <i>Ranatra filiformes</i> <i>Diplonychus rusticus</i> , <i>Bellamya bengalensis typica</i> (Lamarck) <i>Bellamya bengalensis doliaris</i> (Gould) <i>Pila globosa (Swainson)</i> <i>Euphlyctic cynophlyctus</i>	None of the management practice are notices. Due to heavy siltation and eutrophication on macrophytes and


						pisciculture re practiced frequentl y carried out	<i>bengalensis</i> L. <i>Eichhornia</i> sp.	(Schinder), <i>Haplobatrachus tigrina</i> , <i>Natrix</i> sp. <i>Ardeola grayii</i> , <i>Egretta intermedia</i> , <i>Amaurornis phoenicurus</i> , <i>Metopidius indicus</i> , <i>Alcedo atthis</i> , <i>Halcyon smyrnensis</i> , <i>Pelargopsis capensis</i> , <i>Phalacrocorax niger</i> .	hydrophytes are increasing
	Ditches	Locality of the survey	approx. Number/h a of locality	Size (ha) range of the waterbody type i.e. max-min	Most abunda nt Size (ha)	Notes on Use Patterns	Conspicuous flora/hydrophyte cover	Conspicuous non-fish fauna	Notes on degradation factors, conservation efforts
1	Khirai		0.37ha	2-3 ha		Most of the cases none of the managem ent are notices regarding piscicultu re. Most of the water body is used for traditiona	On average 8% hydrophytes covers the surface areas <i>Commelina bengalensis</i> L. <i>Eichhornia</i> sp. <i>Lemna</i> sp. <i>Nymphaea nouchali</i> Burm. f. <i>Cyperus</i> sp. <i>Scirpus articulatus</i> (Linn.) <i>Sagiteria</i> sp. <i>Phragmites</i> sp. <i>Oryza sativa</i> (Var) <i>fetua</i> <i>Monochoria hastate</i> Solms. <i>Tillunthera</i> sp.	Most common aquatic fauna are <i>Macrobrachium idea</i> , <i>M. Malcolmsonii</i> , <i>Ranatra filiformes</i> <i>Diplonchus rusticus</i> , <i>Bellamya bengalensis typica</i> (Lamarck) <i>Bellamya bengalensis doliaris</i> (Gould) <i>Pila globosa</i> (Swainson) <i>Euphylyctic cynophlyctus</i> (Schinder) <i>Natrix</i> sp. <i>Ardeola grayii</i> , <i>Egretta intermedia</i> , <i>Amaurornis phoenicurus</i> ,	Most of the water body is eutrophic due to domestic organic load, deweedificat ion, selected spawn for culture specially owner's wetland causes water

						l culture of fishes. Each and every year weed fishes entered with the flood water		<i>Metopidius indicus</i> , <i>Alcedo atthis</i> , <i>Halcyon smyrnensis</i> , <i>Pelargopsis capensis</i> , <i>Phalacrocorax niger</i> .	quality degradation
2	Narayangarh Khal	22° 7'45.58"N; 87°22'42.62"E 	0.87 ha			Water used for irrigation purposes, Capture fished after total runoff water in the early summer season	On average 11% hydrophytes covers the surface areas <i>Commelina bengalensis</i> L. <i>Eichhornia sp.</i> <i>Lemna sp.</i> <i>Nymphaea nouchali</i> Burm. f. <i>Cyperus sp.</i> <i>Scirpus articulatus</i> (Linn.) <i>Sagittaria sp.</i> <i>Phragmites sp.</i> <i>Oryza sativa</i> (Var) <i>fetua</i> <i>Monochoria hastata</i> Solms. <i>Tillunthera sp.</i>	Most common aquatic fauna are <i>Macrobrachium idea</i> , <i>M. Malcolmsonii</i> , <i>Ranatra filiformes</i> <i>Diplonchus rusticus</i> , <i>Bellamya bengalensis typica</i> (Lamarck) <i>Bellamya bengalensis doliaris</i> (Gould) <i>Pila globosa</i> (Swainson) <i>Euphyctis cynophlyctus</i> (Schinder), <i>Haplobatrachus tigrina</i> , <i>Natrix sp.</i> <i>Ardeola grayii</i> , <i>Egretta intermedia</i> , <i>Amaurornis phoenicurus</i> , <i>Metopidius indicus</i> , <i>Alcedo atthis</i> , <i>Halcyon smyrnensis</i> , <i>Pelargopsis capensis</i> , <i>Phalacrocorax niger</i> .	Most of the water body is eutrophic due to domestic organic load, dewaterification, selected spawn for culture specially owner's wetland causes water quality degradation

3	Shilabati feeder canal		0.27 ha			Most of the cases none of the management are notices regarding pisciculture. Most of the water body is used for traditional culture of fishes. Each and every year weed fishes entered with the flood water	On average 13% hydrophytes covers the surface areas <i>Commelina bengalensis</i> L. <i>Eichhornia sp.</i> <i>Lemna sp.</i> <i>Nymphaea nouchali</i> Burm. f. <i>Cyperus sp.</i> <i>Scirpus articulatus</i> (Linn.) <i>Sagiteria sp.</i> <i>Phragmites sp.</i> <i>Oryza sativa</i> (Var) <i>fetua</i> <i>Monochoria hastate</i> Solms. <i>Tillunthera sp.</i>	Most common aquatic fauna are <i>Macrobrachium idea</i> , <i>M. Malcolmsonii</i> , <i>Ranatra filiformes</i> <i>Diplonychus rusticus</i> , <i>Bellamya bengalensis typica</i> (Lamarck) <i>Bellamya bengalensis doliaris</i> (Gould) <i>Pila globosa</i> (Swainson) <i>Euphlyctic cynophlyctus</i> (Schinder) <i>Natrix sp.</i> <i>Ardeola grayii</i> , <i>Egretta intermedia</i> , <i>Amaurornis phoenicurus</i> , <i>Metopidius indicus</i> , <i>Alcedo atthis</i> , <i>Halcyon smyrnensis</i> , <i>Pelargopsis capensis</i> , <i>Phalacrocorax niger</i> .	Most of the water body is eutrophic due to domestic organic load, de-weedification, selected spawn for culture specially owner's wetland causes water quality degradation
	Nayanjuli	Locality of the survey	approx. Number/ha of locality	Size (ha) range of the waterbody type i.e. max-min	Most abundant Size (ha)	Notes on Use Patterns	Conspicuous flora/hydrophyte cover	Conspicuous non-fish fauna	Notes on degradation factors, conservation efforts

1	Kharagpur	Kharagpur, on the either side of the railway trac, 22°20'40.16"N; 87°20'51.82"E 	0.56 ha	0.23-0.53 ha	0.32 ha	Water used for irrigation purposes, Capture fished after total runoff water in the early summer season	On average 15-55% hydrophytes covers the surface areas <i>Commelina bengalensis</i> L. <i>Ipomoea aquatica</i> Forrsk. <i>Eichhornia sp.</i> <i>Lemna sp.</i> <i>Nymphaea nouchali</i> Burm. f. <i>Ipomea carnea fistula</i> (Mart) <i>Ipomea carnea fistula</i> (Mart) <i>Cyperus sp.</i> <i>Scirpus articulatus</i> (Linn.) <i>Sagiteria sp.</i> <i>Phragmites sp.</i> <i>Oryza sativa</i> (Var) <i>fetua</i> <i>Monochoria hastate</i> Solms. <i>Eclipta alba</i> Hassk <i>Alternanthera sessilis</i> L. <i>Tillunthera sp.</i>	Most common aquatic fauna are <i>Macrobrachium idea</i> , <i>M. Malcolmsonii</i> , <i>Ranatra filiformes</i> <i>Diplonychus rusticus</i> , <i>Bellamya bengalensis typica</i> (Lamarck) <i>Bellamya bengalensis doliaris</i> (Gould) <i>Pila globosa</i> (Swainson)' <i>Euphlyctic cynophlyctus</i> (Schinder) <i>Natrix sp.</i> <i>Ardeola grayii</i> , <i>Egretta intermedia</i> , <i>Amaurornis phoenicurus</i> , <i>Metopidius indicus</i> , <i>Alcedo atthis</i> , <i>Halcyon smyrnensis</i> , <i>Pelargopsis capensis</i> , <i>Phalacocorex niger</i> .	None of the management practice are notices. Due to heavy siltation and eutrophication on macrophytes and hydrophytes are increasing
2	Gobindanagar	Gobindanagar near Jakpur, on the either side of the railway trac. Location: 22°22'22.71"N; 87°25'8.25"E	0.72ha	0.14 – 1.26ha	0.35ha	Water used for irrigation purposes, Capture fished after total runoff water in the early	On average 15-55% hydrophytes covers the surface areas <i>Commelina bengalensis</i> L. <i>Ipomoea aquatica</i> Forrsk. <i>Eichhornia sp.</i> <i>Lemna sp.</i> <i>Nymphaea nouchali</i> Burm. f. <i>Ipomea carnea fistula</i>	Most common aquatic fauna are <i>Macrobrachium idea</i> , <i>M. Malcolmsonii</i> , <i>Ranatra filiformes</i> <i>Diplonychus rusticus</i> , <i>Bellamya bengalensis typica</i> (Lamarck) <i>Bellamya bengalensis doliaris</i> (Gould) <i>Pila globosa</i> (Swainson)'	None of the management practice are notices. Due to heavy siltation and eutrophication on macrophytes and

						summer season	(Mart) <i>Ipomea carnea fistula</i> (Mart) <i>Cyperus sp.</i> <i>Scirpus articulatus</i> (Linn.) <i>Sagiteria sp.</i> <i>Phragmites sp.</i> <i>Oryza sativa</i> (Var) <i>fetua</i> <i>Monochoria hastate</i> Solms. <i>Eclipta alba</i> Hassk <i>Alternanthera sessilis</i> L. <i>Tillunthera sp.</i>	<i>Euphlyctic cynophlyctus</i> (Schinder), <i>Haplobatrachus tigrina</i> , <i>Ardeola grayii</i> , <i>Egretta intermedia</i> , <i>Amaurornis phoenicurus</i> , <i>Metopidius indicus</i> , <i>Alcedo atthis</i> , <i>Halcyon smyrnensis</i> , <i>Pelargopsis capensis</i> , <i>Phalacrocorax niger</i> .	hydrophytes are increasing
3	Haur	Haur, on the eitherside of the railway trac 22°21'54.18"N; 87°39'17.53"E 	0.58ha	0.14 – 1.26ha	0.26ha	Water used for irrigation purposes, Capture fished after total runoff water in the early summer season	On average 15-55% hydrophytes covers the surface areas <i>Commelina bengalensis</i> L. <i>Ipomoea aquatica</i> Forrsk. <i>Eichhornia sp.</i> <i>Lemna sp.</i> <i>Nymphaea nouchali</i> Burm. f. <i>Ipomea carnea fistula</i> (Mart) <i>Ipomea carnea fistula</i> (Mart) <i>Cyperus sp.</i> <i>Scirpus articulatus</i> (Linn.) <i>Sagiteria sp.</i> <i>Phragmites sp.</i> <i>Oryza sativa</i> (Var) <i>fetua</i> <i>Monochoria hastate</i> Solms. <i>Eclipta alba</i> Hassk <i>Alternanthera sessilis</i> L. <i>Tillunthera sp.</i>	Most common aquatic fauna are <i>Macrobrachium idea</i> , <i>M. Malcolmsonii</i> , <i>Ranatra filiformes</i> <i>Diplonychus rusticus</i> , <i>Bellamya bengalensis typica</i> (Lamarck), <i>Pila globosa</i> (Swainson)' <i>Euphlyctic cynophlyctus</i> (Schinder) <i>Natrix sp.</i> <i>Ardeola grayii</i> , <i>Egretta intermedia</i> , <i>Amaurornis phoenicurus</i> , <i>Metopidius indicus</i> , <i>Alcedo atthis</i> , <i>Pelargopsis capensis</i> , <i>Phalacrocorax niger</i> .	None of the management practice are notices. Due to heavy siltation and eutrophication on macrophytes and hydrophytes are increasing

4	Khirai	<p>Khirai, the eitherside of the railway trac. Location: 22°22'21.99"N; 87°41'22.47"E</p> 	0.25ha		0.42ha	Water used for irrigation purposes, Capture fished after total runoff water in the early summer season	<p>On average 17% hydrophytes covers the surface areas <i>Commelina bengalensis</i> L. <i>Eichhornia sp. Lemna sp. Nymphaea nouchali</i> Burm. f. <i>Cyperus sp. Scirpus articulatus</i> (Linn.) <i>Sagitaria sp. Phragmites sp. Oryza sativa (Var) fetua</i> <i>Monochoria hastate</i> Solms. <i>Tillunthera sp.</i></p>	<p>Most common aquatic fauna are <i>Macrobrachium idea, Ranatra filiformes Diplonychus rusticus, Bellamya bengalensis typica</i> (Lamarck) <i>Bellamya bengalensis doliaris</i> (Gould) <i>Pila globosa</i> (Swainson)' <i>Euphlyctic cynophlyctus</i> (Schinder) <i>Natrix sp. Ardeola grayii, Egretta intermedia, Amaurornis phoenicurus, Metopidius indicus, Alcedo atthis, Halcyon smyrnensis, Pelargopsis capensis, Phalacocorex niger.</i></p>	None of the management practice are notices. Due to heavy siltation and eutrophication on macrophytes and hydrophytes are increasing
5	Ashari	Ashari, on the eitherside of the bus road	0.64ha	0.34 – 2.28ha	0.58ha	Water used for irrigation purposes, Capture fished after total runoff water in the early summer season	<p>On average 15-55% hydrophytes covers the surface areas <i>Commelina bengalensis</i> L. <i>Ipomoea aquatica</i> Forrsk. <i>Eichhornia sp. Lemna sp. Nymphaea nouchali</i> Burm. f. <i>Ipomea carnea fistula</i> (Mart) <i>Ipomea carnea fistula</i> (Mart) <i>Cyperus sp. Scirpus articulatus</i></p>	<p>Most common aquatic fauna are <i>Macrobrachium idea, Ranatra filiformes Diplonychus rusticus, Bellamya bengalensis typica</i> (Lamarck) <i>Bellamya bengalensis doliaris</i> (Gould) <i>Pila globosa</i> (Swainson)' <i>Euphlyctic cynophlyctus</i> (Schinder) <i>Natrix sp. Ardeola grayii, Egretta intermedia,</i></p>	None of the management practice are notices. Due to heavy siltation and eutrophication on macrophytes and hydrophytes

							(Linn.) <i>Sagiteria sp.</i> <i>Phragmites sp.</i> <i>Oryza sativa (Var) fetua</i> <i>Monochoria hastate</i> Solms. <i>Eclipta alba</i> Hassk <i>Alternanthera sessilis</i> L. <i>Tillunthera sp.</i>	<i>Amaurornis phoenicurus</i> , <i>Metopidius indicus</i> , <i>Alcedo atthis</i> , <i>Halcyon smyrnensis</i> , <i>Pelargopsis capensis</i> , <i>Phalacrocorax niger</i> .	are increasing
6	Sabang	Sabang, on the either side of the bus road	0.75ha	2.00–2.36ha	0.76ha	Water used for irrigation purposes, Capture fished after total runoff water in the early summer season	On average 15-55% hydrophytes covers the surface areas <i>Commelina bengalensis</i> L. <i>Ipomoea aquatica</i> Forrsk. <i>Eichhornia sp.</i> <i>Lemna sp.</i> <i>Nymphaea nouchali</i> Burm. f. <i>Ipomea carnea fistula (Mart)</i> <i>Ipomea carnea fistula (Mart)</i> <i>Cyperus sp.</i> <i>Scirpus articulatus (Linn.) Sagiteria sp.</i> <i>Phragmites sp.</i> <i>Oryza sativa (Var) fetua</i> <i>Monochoria hastate</i> Solms. <i>Eclipta alba</i> Hassk <i>Alternanthera sessilis</i> L. <i>Tillunthera sp.</i>	Aquatic insects, Mollusc, Frogs, Snakes with some avifauna are common i.e. <i>Ranatra filiformes</i> <i>Diplonchus rusticus</i> <i>Canthidrus flavus</i> (Mots). <i>Hydrometra butlen</i> <i>Hydrovatus confertus</i> <i>Coelostoma subditum</i> <i>Helochares ancholaris</i> <i>Berosus idicus</i> (Mots) <i>Bellamyia bengalensis typica</i> (Lamarck) <i>Bellamyia bengalensis doliaris</i> (Gould) <i>Pila globosa</i> (Swainson) <i>Euphylyctic cynophlyctus</i> (Schinder) <i>Natrix sp.</i> <i>Phalacrocorax niger</i> (Vieillot)	None of the management practice are notices. Due to heavy siltation and eutrophication on macrophytes and hydrophytes are increasing
7	Keshpur	Keshpur, on the either side of the bus road	0.45ha	0.14 – 2.38ha	0.57ha	Water used for irrigation purposes,	On average 15-55% hydrophytes covers the surface areas	Most common aquatic fauna are <i>Macrobrachium Malcolmsonii</i> , <i>Ranatra filiformes</i> <i>Diplonchus</i>	None of the management practice are notices. Due

						Capture fished after total runoff water in the early summer season	<i>Commelina bengalensis</i> L. <i>Ipomoea aquatica</i> Forrsk. <i>Eichhornia</i> sp. <i>Lemna</i> sp. <i>Nymphaea nouchali</i> Burm. f. <i>Ipomea carnea fistula</i> (Mart) <i>Ipomea carnea fistula</i> (Mart) <i>Cyperus</i> sp. <i>Scirpus articulatus</i> (Linn.) <i>Sagiteria</i> sp. <i>Phragmites</i> sp. <i>Oryza sativa</i> (Var) <i>fetua</i> <i>Monochoria hastate</i> Solms. <i>Eclipta alba</i> Hassk <i>Alternanthera sessilis</i> L. <i>Tillunthera</i> sp.	<i>rusticus</i> , <i>Bellamya bengalensis</i> (Lamarck) <i>Bellamya doliaris</i> (Gould) <i>Pila globosa</i> (Swainson)' <i>Euphlyctic cynophlyctus</i> (Schinder) <i>Natrix</i> sp. <i>Ardeola grayii</i> , <i>Egretta intermedia</i> , <i>Amaurornis phoenicurus</i> , <i>Metopidius indicus</i> , <i>Alcedo atthis</i> , <i>Halcyon smyrnensis</i> , <i>Pelargopsis capensis</i> , <i>Phalacrocorax niger</i> .	to heavy siltation and eutrophication on macrophytes and hydrophytes are increasing
8	Narajole	Narajole, on the eitherside of the bus road	1.16ha	0.21 – 1.58ha	0.35ha	Water used for irrigation purposes, Capture fished after total runoff water in the early summer season	On average 15-55% hydrophytes covers the surface areas <i>Commelina bengalensis</i> L. <i>Ipomoea aquatica</i> Forrsk. <i>Eichhornia</i> sp. <i>Lemna</i> sp. <i>Nymphaea nouchali</i> Burm. f. <i>Ipomea carnea fistula</i> (Mart) <i>Ipomea carnea fistula</i> (Mart) <i>Cyperus</i> sp. <i>Scirpus articulatus</i> (Linn.) <i>Sagiteria</i> sp. <i>Phragmites</i> sp. <i>Oryza sativa</i> (Var) <i>fetua</i>	Most common aquatic fauna are <i>Macrobrachium idea</i> , <i>Ranatra filiformes</i> <i>Diplonchus rusticus</i> , <i>Bellamya bengalensis typica</i> (Lamarck) <i>Pila globosa</i> (Swainson)' <i>Euphlyctic cynophlyctus</i> (Schinder) <i>Natrix</i> sp. <i>Ardeola grayii</i> , <i>Amaurornis phoenicurus</i> , <i>Metopidius indicus</i> , <i>Alcedo atthis</i> , <i>Halcyon smyrnensis</i> ,	None of the management practice are notices. Due to heavy siltation and eutrophication on macrophytes and hydrophytes are increasing

							<i>Monochoria hastate</i> Solms. <i>Eclipta alba</i> Hassk <i>Alternanthera</i> <i>sessilis</i> L. <i>Tillunthera</i> <i>sp.</i>	<i>Pelargopsis capensis</i> , <i>Phalacocorex niger.</i>	
9	Garbeta	Garbeta, on the eitherside of the bus road	0.37ha	0.34 – 2.16ha	0.43ha	Water used for irrigation purposes, Capture fished after total runoff water in the early summer season	On average 15-55% hydrophytes covers the surface areas <i>Commelina</i> <i>bengalensis</i> L. <i>Ipomoea aquatica</i> Forrsk. <i>Eichhornia sp.</i> <i>Lemna sp. Nymphaea</i> <i>nouchali</i> Burm. f. <i>Ipomea carnea fistula</i> (Mart) <i>Ipomea carnea</i> <i>fistula</i> (Mart) <i>Cyperus</i> <i>sp. Scirpus articulatus</i> (Linn.) <i>Sagiteria sp.</i> <i>Phragmites sp. Oryza</i> <i>sativa (Var) fetua</i> <i>Monochoria hastate</i> Solms. <i>Eclipta alba</i> Hassk <i>Alternanthera</i> <i>sessilis</i> L. <i>Tillunthera</i> <i>sp.</i>	Most common aquatic fauna are <i>Macrobrachium idea</i> , <i>M. Malcolmsonii</i> , <i>Ranatra filiformes</i> <i>Diplonychus rusticus</i> , <i>Bellamya bengalensis</i> <i>typica</i> (Lamarck) <i>Bellamya bengalensis</i> <i>doliaris</i> (Gould) <i>Pila</i> <i>globosa</i> (Swainson) <i>Euphyctis cynophlyctus</i> (Schinder) <i>Natrix sp.</i> <i>Ardeola grayii</i> , <i>Metopidius indicus</i> , <i>Alcedo atthis</i> , <i>Halcyon</i> <i>smyrnensis</i> , <i>Pelargopsis capensis</i> , <i>Phalacocorex niger.</i>	None of the management practice are noticed. Due to heavy siltation and eutrophicati on macrophytes and hydrophytes are increasing
10	Shalboni	Shalboni, on the eitherside of the bus road	0.67ha	0.24 – 1.86ha	0.34ha	Water used for irrigation purposes, Capture fished after total	On average 15-55% hydrophytes covers the surface areas <i>Commelina</i> <i>bengalensis</i> L. <i>Ipomoea aquatica</i> Forrsk. <i>Eichhornia sp.</i> <i>Lemna sp. Nymphaea</i>	Most common aquatic fauna are <i>Macrobrachium idea</i> , <i>Ranatra filiformes</i> <i>Diplonychus rusticus</i> , <i>Bellamya bengalensis</i> <i>typica</i> (Lamarck) <i>Bellamya bengalensis</i>	None of the management practice are noticed. Due to heavy siltation and eutrophicati



						runoff water in the early summer season	<i>nouchali</i> Burm. f. <i>Ipomea carnea fistula</i> (Mart) <i>Ipomea carnea fistula</i> (Mart) <i>Cyperus sp. Scirpus articulatus</i> (Linn.) <i>Sagiteria sp. Phragmites sp. Oryza sativa (Var) fetua</i> <i>Monochoria hastate</i> Solms. <i>Eclipta alba</i> Hassk <i>Alternanthera sessilis</i> L. <i>Tillunthera sp.</i>	<i>doliaris</i> (Gould) <i>Pila globosa</i> (Swainson)' <i>Euphlyctic cynophlyctus</i> (Schinder) <i>Natrix sp. Ardeola grayii,</i> <i>Amaurornis phoenicurus,</i> <i>Metopidius indicus,</i> <i>Alcedo atthis,</i> <i>Halcyon smyrnensis,</i> <i>Pelargopsis capensis,</i> <i>Phalacocorex niger.</i>	on macrophytes and hydrophytes are increasing
11	Pirakata	Pirakata, on the eitherside of the bus road	1.07ha	0.11 – 2.16ha	0.27ha	Water used for irrigation purposes, Capture fished after total runoff water in the early summer season	On average 15-55% hydrophytes covers the surface areas <i>Commelina bengalensis</i> L. <i>Ipomoea aquatica</i> Forrsk. <i>Eichhornia sp. Lemna sp. Nymphaea nouchali</i> Burm. f. <i>Ipomea carnea fistula</i> (Mart) <i>Ipomea carnea fistula</i> (Mart) <i>Cyperus sp. Scirpus articulatus</i> (Linn.) <i>Sagiteria sp. Phragmites sp. Oryza sativa (Var) fetua</i> <i>Monochoria hastate</i> Solms. <i>Eclipta alba</i> Hassk <i>Alternanthera sessilis</i> L. <i>Tillunthera sp.</i>	Most common aquatic fauna are <i>Macrobrachium idea,</i> <i>M. Malcolmsonii,</i> <i>Ranatra filiformes</i> <i>Diplonychus rusticus,</i> <i>Bellamya bengalensis typica</i> (Lamarck) <i>Bellamya bengalensis doliaris</i> (Gould) <i>Pila globosa</i> (Swainson)' <i>Euphlyctic cynophlyctus</i> (Schinder) <i>Natrix sp. Ardeola grayii,</i> <i>Egretta intermedia,</i> <i>Amaurornis phoenicurus,</i> <i>Metopidius indicus,</i> <i>Alcedo atthis,</i> <i>Pelargopsis capensis,</i> <i>Phalacocorex niger.</i>	None of the management practice are notices. Due to heavy siltation and eutrophication on macrophytes and hydrophytes are increasing



12	Dherua	Dherua, on the eitherside of the bus road	0.62ha	0.24 – 2.56ha	0.54ha	Water used for irrigation purposes, Capture fished after total runoff water in the early summer season	On average 15-55% hydrophytes covers the surface areas <i>Commelina bengalensis</i> L. <i>Ipomoea aquatica</i> Forrsk. <i>Eichhornia</i> sp. <i>Lemna</i> sp. <i>Nymphaea nouchali</i> Burm. f. <i>Ipomea carnea fistula</i> (Mart) <i>Ipomea carnea fistula</i> (Mart) <i>Cyperus</i> sp. <i>Scirpus articulatus</i> (Linn.) <i>Sagiteria</i> sp. <i>Phragmites</i> sp. <i>Oryza sativa</i> (Var) <i>fetua</i> <i>Monochoria hastate</i> Solms. <i>Eclipta alba</i> Hassk <i>Alternanthera sessilis</i> L. <i>Tillunthera</i> sp.	Most common aquatic fauna are <i>Macrobrachium idea</i> , <i>M. Malcolmsonii</i> , <i>Ranatra filiformes</i> , <i>Diplonychus rusticus</i> , <i>Bellamya bengalensis typica</i> (Lamarck) <i>Bellamya bengalensis doliaris</i> (Gould) <i>Pila globosa</i> (Swainson)' <i>Euphlyctic cynophlyctus</i> (Schinder) <i>Natrix</i> sp. <i>Ardeola grayii</i> , <i>Egretta intermedia</i> , <i>Amaurornis phoenicurus</i> , <i>Metopidius indicus</i> , <i>Alcedo atthis</i> , <i>Pelargopsis capensis</i> , <i>Phalacocorex niger</i> .	None of the management practice are notices. Due to heavy siltation and eutrophication on macrophytes and hydrophytes are increasing
13	Lalgarh	Lalgarh, on the eitherside of the bus road	1.06ha	0.34 – 3.12ha	0.37ha	Water used for irrigation purposes, Capture fished after total runoff water in the early summer season	On average 15-55% hydrophytes covers the surface areas <i>Commelina bengalensis</i> L. <i>Ipomoea aquatica</i> Forrsk. <i>Eichhornia</i> sp. <i>Lemna</i> sp. <i>Nymphaea nouchali</i> Burm. f. <i>Ipomea carnea fistula</i> (Mart) <i>Ipomea carnea fistula</i> (Mart) <i>Cyperus</i> sp. <i>Scirpus articulatus</i>	Most common aquatic fauna are <i>Macrobrachium idea</i> , <i>M. Malcolmsonii</i> , <i>Ranatra filiformes</i> , <i>Diplonychus rusticus</i> , <i>Bellamya bengalensis typica</i> (Lamarck), <i>Pila globosa</i> (Swainson)' <i>Euphlyctic cynophlyctus</i> (Schinder) <i>Natrix</i> sp. <i>Ardeola grayii</i> , <i>Amaurornis phoenicurus</i> ,	None of the management practice are notices. Due to heavy siltation and eutrophication on macrophytes and hydrophytes




							(Linn.) <i>Sagiteria sp.</i> <i>Phragmites sp.</i> <i>Oryza sativa (Var) fetua</i> <i>Monochoria hastate</i> Solms. <i>Eclipta alba</i> Hassk <i>Alternanthera sessilis</i> L. <i>Tillunthera sp.</i>	<i>Metopidius indicus</i> , <i>Alcedo atthis</i> , <i>Pelargopsis capensis</i> , <i>Phalacocorex niger</i> .	are increasing
14	Gopiballav pur	Gopiballavpur, on the eitherside of the bus road	1.17ha	0.23 – 2.32ha	0.52ha	Water used for irrigation purposes, Capture fished after total runoff water in the early summer season	On average 15-55% hydrophytes covers the surface areas <i>Commelina bengalensis</i> L. <i>Ipomoea aquatica</i> Forrsk. <i>Eichhornia sp.</i> <i>Lemna sp.</i> <i>Nymphaea nouchali</i> Burm. f. <i>Ipomea carnea fistula</i> (Mart) <i>Ipomea carnea fistula</i> (Mart) <i>Cyperus sp.</i> <i>Scirpus articulatus</i> (Linn.) <i>Sagiteria sp.</i> <i>Phragmites sp.</i> <i>Oryza sativa (Var) fetua</i> <i>Monochoria hastate</i> Solms. <i>Eclipta alba</i> Hassk <i>Alternanthera sessilis</i> L. <i>Tillunthera sp.</i>	Most common aquatic fauna are <i>Macrobrachium idea</i> , <i>M. Malcolmsonii</i> , <i>Ranatra filiformes</i> <i>Diplonychus rusticus</i> , <i>Bellamya bengalensis typica</i> (Lamarck) <i>Bellamya bengalensis doliaris</i> (Gould) <i>Pila globosa</i> (Swainson) <i>Euphyctic cynophlyctus</i> (Schinder) <i>Natrix sp.</i> <i>Ardeola grayii</i> , <i>Egretta intermedia</i> , <i>Metopidius indicus</i> , <i>Alcedo atthis</i> , <i>Halcyon smyrnensis</i> , <i>Pelargopsis capensis</i> , <i>Phalacocorex niger</i> .	None of the management practice are notices. Due to heavy siltation and eutrophication on macrophytes and hydrophytes are increasing



Format B: Fish fauna (include edible crustaceans also)



Table - 1 List of ichthyofauna



	Scientific Name	Local Name	Present abundance (grade 0-3)	Past abundance (grade 0-3)	IUCN Status	Reasons for change in abundance	Other observations
Order I. SILURIFORMES Family 1. BAGRIDAE (Bagrid catfishes)							
1.	 1. <i>Mystus bleekeri</i> (Day, 1877) Location of Collection: Kangsaboti River, Midnapore	Tengra	3	3	LC	Population is found static over the year, availability is normal as earlier. 1. Overexploitation 2. Killing of Brood fishes 3. Indiscriminate hunting with fine net 4. Destruction of breeding ground	Captured from wild with other fishes, population spreaded over with flood water. No special breeding ground. Abundant throughout the year but they are breed on monsoon and thus its number increases in the post manson season,
2.	 2. <i>Mystus cavasius</i> (Hamilton, 1822)	Dwarf catfish, Tengra	3	3	LC	Population is found static over the year, availability are normal as earlier. 1. Overexploitation 2. Killing of Brood fishes	Delicious table fish, Captured from wild, culture practice not yet started. Found in tidal rivers and lakes; also beels, canals, ditches, ponds, and inundated fields.



	Location of Collection: Kangsaboti river, Midnapore					3. Indiscriminate hunting with fine net 4. Destruction of breeding ground	
3.	 <p>3. <i>Mystus maculatus</i> (Valenciennes, 1840) Location of Collection: Kangsaboti River, Midnapore</p>	Tangra	3	3	LC	Population is found static over the year, availability are normal as earlier. It has no threat regarding its survivability in the wild.	Delicious table fish, Captured from wild, culture practice not yet started. Found in tidal rivers and lakes; also beels, canals, ditches, ponds, and inundated fields.
4.	 <p>4. <i>Mystus keletius</i> (Valenciennes, 1840) Location of Collection: Keleghai river, Midnapore</p>	Nadi tangra	3	3	LC	Population is found static over the year, availability are normal as earlier. It has no threat regarding its survivability in the wild.	Delicious table fish, Captured from wild, culture practice not yet started. Found in tidal rivers and lakes; also beels, canals, ditches, ponds, and inundated fields.




5.	 <p>6. <i>Mystus gulio</i> (Hamilton, 1822) Location of Collection: Kangsaboti river, Midnapore</p>	Long whiskered catfish, Nuna Tengra	3	3	LC	Population is found static over the year, availability are normal as earlier. Now this fish is trying to culture in the firewater ponds in Purba and Paschim Medinipur district.	Delicious table fish, Captured from wild, culture practice not yet started. Primarily a brackish water fish that enters and lives in fresh water. In freshwater, adults occur mainly in larger water bodies (rivers and streams) with mud or clay substrates, and rarely found in smaller streams. Abundant throughout the year but more in post in the monsoon season.
6.	 <p>7. <i>Mystus tengara</i> (Hamilton, 1822) Location of Collection: Panskura, Purba Midnapore</p>	Tengra	2	3	LC	Population is found slightly declining over the year, availability are normal as earlier.	Adults inhabit rivers and ponds in plains and submontane regions in flowing and standing waters.
7.	 <p>8. <i>Mystus vittatus</i> (Bloch, 1794)</p>	Strtiped dwarf catfish, Tengra	1	3	LC	Population is found declining over the year, availability is more during the summer season. Main factors are 1. Overexploitation 2. Killing of Brood fishes	Adults inhabit standing and flowing waters. Usually found among marginal vegetation with a mud substrate.



	Location of Collection: Kangsaboti river, Midnapore					3. Indiscriminate hunting with fine net 4. Destruction of breeding ground	
8.	 <p>9. <i>Mystus singhala</i> (Sykes, 1839) Location of Collection: Rupnarayan river, Purba Midnapore</p>	Aarr	1	3	LC	<p>Population is found declining over the year, availability recorded occasionally on premonsoon. Declining mainly due to:</p> <ol style="list-style-type: none"> 1. Selective Killing 2. Indiscriminate hunting with fine net 3. Destruction of breeding ground 	<p>Found in rivers, canals, beels, ditches, inundated fields and other freshwater areas.</p> <p>Abundant throughout the year but more in post in the monsoon season, population is drastically reduces over the years.</p>
9.	 <p>10. <i>Rita rita</i> (Hamilton, 1822) Location of Collection: Kangsaboti River, Midnapore</p>	Rita	1	3	LC	<p>Population is found declining over the year, availability recorded occasionally on premonsoon. Declining mainly due to:</p> <ol style="list-style-type: none"> 1. Selective Killing 2. Indiscriminate hunting with fine net 3. Destruction of breeding ground 	<p>Very rare in occurrence. Inhabits rivers and estuaries, preferably muddy to clear water. Prefers backwater of quiet eddies. Its availability reduces drastically over the years</p>



10.	 <p>12. <i>Sperata aor</i> (Hamilton, 1822) (= <i>Aorichthys aor</i> (Hamilton, 1822))</p> <p>Location of Collection: Kansai, Panskura, Jhargram Gopiballavpur, Lalghard, Ramgarh, Midnapore, Keshpur, Paniparul, Ramnagar</p>	Long whiskered catfish, Arr	1	3	LC	<p>Population is found declining over the year, availability recorded mostly on premonsoon. Declining mainly due to:</p> <ol style="list-style-type: none"> 1. Selective Killing 2. Indiscriminate hunting with fine net 3. Destruction of breeding ground 	<p>Found in rivers, canals, beels, ditches, inundated fields and other freshwater areas. Abundant throughout the year but more in post in the monsoon season, population is drastically reduces over the years.</p>
Family 2. SILURIDAE (Sheat fishes)							
11.	 <p>1. <i>Ompok bimaculatus</i> (Bloch)</p> <p>Location of Collection: Kudi, Kolaghat, Tamluk, Midnapore</p>	Butter catfish, Pabda	1	3	NT	<p>Population is found declining over the year, availability are reducing from earlier may be due to:</p> <ol style="list-style-type: none"> 1. Overexploitation 2. Killing of Brood fishes 3. Indiscriminate hunting with fine net 4. Destruction of breeding ground 	<p>Maximum Size 14 inch, highest availability during premonsoon (March-May) and frequently found from the hydrophytes infested ponds. Very rare in occurrence and it has been reported by the local knowledgeable person that its availability reduces more than 50% over 5 years and occasionally found in premonsoon season. Due to its deicious tests its market price is highest one.</p>


12.	 <p>2. <i>Ompok pabda</i> (Hamilton)</p> <p>Location of Collection: Midnapore, Egra, Panskura, Tamluk</p>	Butter catfish, Pabda	1	3	NT	<p>Population is found declining over the year, availability recorded occasionally on premonsoon. Availability are reducing from earlier may be due to:</p> <ol style="list-style-type: none"> 1. Overexploitation 2. Killing of Brood fishes 3. Indiscriminate hunting with fine net 4. Destruction of breeding ground 	<p>Maximum Size 4 inch, highest availability during premonsoon (March-May) and frequently found from the hydrophytes infested ponds. Very rare in occurrence and it has been reported by the local knowledgeable person that its availability reduces more than 50% over 5 years and occasionally found in premonsoon season. Due to its decious tests its market price is highest one.</p>
13.	 <p>3. <i>Ompok pabo</i> (Hamilton)</p> <p>Location of Collection: Kangsaboti river, Midnapore</p>	Butter catfish, Pabda	2	3	NT	<p>Very rare in occurrence and it has been reported by the local knowledgeable person that its availability reduces more than 50% over 5 years. Availability are reducing from earlier may be due to:</p> <ol style="list-style-type: none"> 1. Overexploitation 2. Killing of Brood fishes 3. Indiscriminate hunting with fine net 	<p>Maximum Size 9 inch, highest availability during premonsoon (March-May) and frequently found from the river and to some extend from the larger ponds. Its highest availability found in summer and premonsoon season. Due to its decious tests its market price is highest one.</p>



						4. Destruction of breeding ground	
14.	 <p>4. <i>Wallago attu</i> (Bloch & Schenider, 1801)</p> <p>Location of Collection: Contai, Tamluk, Keshpur, Midnapore</p>	Freshwater shark, Boal	2	3	NT	<p>Population is found declining over the year, availability recorded mostly on premonsoon. Declining mainly due to:</p> <ol style="list-style-type: none"> 1. Selective Killing 2. Indiscriminate hunting with fine net 3. Destruction of breeding ground 	<p>Population is decreasing, mostly available in the perennial water bodies and wasteland types of water body. It has been reported by the local knowledgeable person that its availability reduces more than 50% over 5 years and occasionally found in summer and premonsoon season.</p>
Family 3. SCHILBEIDAE (Schilbid catfishes)							
15.	 <p>1. <i>Ailia coila</i> (Hamilton, 1822)</p> <p>Location of Collection: Kangsaboti river, Contai, Tamluk, Keshpur, Midnapore</p>	Banspati	1	3	NT	<p>Population is found drastically declining over the year, availability are reducing may be due to:</p> <ol style="list-style-type: none"> 1. Indiscriminate hunting with fine net 2. Destruction of breeding ground 	<p>Very rare in occurrence and it has been reported by the local knowledgeable person that its availability reduces more than 50% over 10 years</p>



16.	 <p>2. <i>Clupisoma garua</i> (Hamilton, 1822)</p> <p>Location of Collection: Panskura, Contai, Tamluk, Keshpur, Midnapore</p>	Garua Bachcha, Gaura, Fultusi	3	3	LC	Population is found static over the year, availability is normal as earlier. They are frequently culture as good table fishes with best market price.	Maximum Size 18 inch, availability throughout the year, Highest availability during premonsoon (March-May) and abundant throughout the district in culturable ponds and frequently found from the river.
17.	 <p>3. <i>Eutropiichthys vacha</i> (Hamilton, 1822)</p> <p>Location of Collection: Panskura, Contai, Tamluk, Keshpur, Midnapore</p>	Vacha, Bacha Barah fultusi	3	3	LC	Population is found static over the year, availability is normal as earlier. They are frequently culture as good table fishes with best market price.	Maximum Size 24 inch, availability throughout the year, Highest availability during premonsoon (March-May) and abundant throughout the district in culturable ponds and frequently found from the river.
18.	 <p>4. <i>Pseiideutropius atherinoides</i> (Bloch, 1994)</p>	Tinkanta, Tetangara	1	2	LC	Population is drastically declined over the year, availability is very scant and only found during the post summer - premonsoon seasons. 1. Overexploitation	Max. size riched upto 2.8 inches, freshwater dwellers, found in both stagnant and running water system basically ponds, canals, khal, bills, dishes, and river. Abundant more in the post monsoon season, population is



	Location of Collection: Panskura, Contai, Tamluk, Keshpur, Midnapore					2. Indiscriminate hunting with fine net 3. Destruction of breeding ground	nearly static over the years. It is basically known as airbreathers.
Family 4. PANGASIIDAE (Shark catfish. Pungas)							
19.	 <p>1. <i>Pangasius pangasius</i> (Hamilton)</p> <p>Location of Collection: Panskura, Contai, Tamluk, Keshpur, Midnapore</p>	Pangash	3	3	LC	Population is found static over the year, availability is normal as earlier. They are frequently culture as good table fishes with best market price. Now they are cultured in the ponds for best market prices.	Maximum Size 24 inch, availability throughout the year, Highest availability during premonsoon (March-May) and abundant throughout the district in culturable ponds and occassionally in the river.
20.	Family 5. SISORIDAE (Sucker catfishes)						
	 <p>1. <i>Bagarius bagarius</i> (Hamilton, 1822)</p> <p>Location of Collection: Kangsaboti river, Midnapore</p>	Dwarf Goonch/ Bagarius, Baghmach	1	3	NT	It has no threat regarding its survivility in the wild. This fish is used as an aquarium fishes	Max. sice riched upto 16 inches, freshwater dwellers, found in the river. Very rare in occurrence and it has been reported by the local knowledgeable person that its availability is very occasional and reduces more than 50% over 5 years

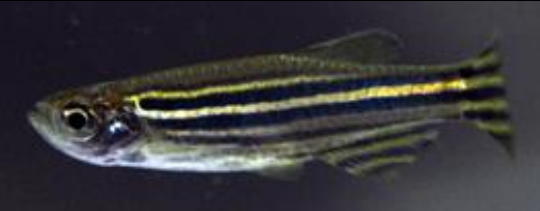


	Family 6. LORICARIIDAE						
21.	 <p>2. . <i>Hypostomus plecostomus</i> (Linnaeus, 1758)</p> <p>Location of Collection: Keshpur, Midnapore</p>	Armoured Sukermouth Catfish	1	0	NE	Such fish is basically used as an aquarium fishes but accidentally it is invaded in the water body and gradually increases its population. They are hard survivor in any harse situation or even low water. It can be live without water for a day. Ithas no threat found regarding its survivility in the wild. Due to its armoured backbone it no one easily feed upon it.	Max. sice riched upto 19 inches, freshwater dwellers, found in the stagnant water system basically ponds, khal, dishes. Its has good market value due to its ornamental looks anf therfor it is one of the best aquarium fished. This fish is exotic one.
	Family 7. CLARIIDAE (Air breathing catfishes)						
22.	 <p>1. <i>Clarias batrachus</i> (Linnaeus)</p> <p>Location of Collection: Kudi, Panskura, Midnapore</p>	Walking catfish, Magur	3	3	LC	Population is found static over the year, availability are normal as earlier. Abundant more in the post monsoon season, population is gradually declining over the years. 1. Overexploitation 2. Killing of Brood fishes	Max. sice riched upto 15 inches, freshwater dwellers, found in the stagnant water system basically ponds, khal, dishes, bills with high organic load. This fish is one of the best air breathers and can survive more than a day without water. Its has good market value due to its good tests ethnological use. Its flesh is frequently recommended by the doctor due



						<ul style="list-style-type: none"> 3. Indiscriminate hunting with fine net 4. Destruction of breeding ground 5. Intraspecific competition specifically with Hybreed one 	to its high protein content and easy digestibility.
Family 8. HETEROPNEUSTIDAE (Stinging catfishes)							
23.	 <p>1. <i>Heteropneustes fossilis</i> (Bloch)</p> <p>Location of Collection: Kudi, Panskura, Midnapore</p>	Stinging catfish, Singee	2	3	LC	<p>Population is found static over the year, availability are normal as earlier. Abundant more in the post monsoon season, population is gradually declining over the years.</p> <ul style="list-style-type: none"> 1. Overexploitation 2. Killing of Brood fishes 3. Indiscriminate hunting with fine net 4. Destruction of breeding ground 	Max. size reached upto 15 inches, freshwater dwellers, found in the stagnant water system basically ponds, khal, dishes, bills with high organic load. This fish is one of the best air breathers and can survive more than a day without water. Its has good market value due to its good tests ethnological use. Its flesh is frequently recommended by the doctor due to its high protein content and easy digestibility.
Order II. CYPRINIFORMES							
Family 1. CYPRINIDAE (Minnows, Carps)							



24.	 <p>1. <i>Amblypharyngodon mola</i> (Hamilton)</p> <p>Location of Collection: Panskura, Midnapore</p>	Mola carplet, Mourala/Mowka	2	3	LC	<p>Population is found declining over the year, their population declination may be due to:</p> <ol style="list-style-type: none"> 1. Indiscriminate hunting with fine net 2. Destruction of breeding ground 3. Use of insecticide that kills juveniles and adults specially in the rice field 	<p>Maximum Size 3 inch, common in occurrence, found throughout the year. During the summer (April-May) its availability become high, and it has been reported by the local knowledgeable person that its availability reduces more than 50% over 10 years.</p>
25.	 <p>2. <i>Catla catla</i> (Hamilton)</p> <p>Location of Collection: Kudi, Panskura, Midnapore</p>	Catla, Catla	3	3	LC	<p>Population is found static over the year, availability is normal as earlier. They are frequently culture as good table fishes with best market price.</p>	<p>Maximum Size 16-22 inch, availability throughout the year, Highest availability during premonsoon (March-May) and abundant throughout the district in culturable ponds and occassionally in the river. Population is found static over the year.</p>



26.	 <p>3. <i>Chela cachius</i> (Hamilton)</p> <p>Location of Collection: Ghatal, Shilaboti river, Midnapore</p>	Dhanbulbuli	1	3	LC	<p>Population is found declining over the year, Their population declination may be due to:</p> <ol style="list-style-type: none"> 4. Indiscriminate hunting with fine net 5. Destruction of breeding ground 6. Use of insecticide that kills juveniles and adults specially in the rice field 	<p>Maximum Size 2.2 inch, very very rare in occurrence, found in one time middle of the summer (April-May), and it has been reported by the local knowledgeable person that its availability reduces more than 50% over 05 years.</p>
27.	 <p>4. <i>Cirrhinus mrigala</i> (Hamilton)</p> <p>Location of Collection: Kudi, Panskura, Midnapore</p>	Mrigal	3	3	LC	<p>Population is found static over the year, availability is normal as earlier. They are frequently culture as good table fishes with best market price.</p>	<p>Maximum Size 16-22 inch, availability throughout the year, Highest availability during premonsoon (March-May) and abundant throughout the district in culturable ponds and occasionally in the river. Population is found declining over the year. They are frequently culture as good table fishes with best market price.</p>


28.	 <p>5. <i>Ctenopharyngodon idella</i> (Valenciennes)</p> <p>Location of Collection: Kudi, Panskura, Midnapore</p>	Grass carp	3	3	NE	Population is found static over the year, availability is normal as earlier. They are frequently culture as good table fishes with best market price.	Maximum Size 2.3 feet, availability throughout the year, Highest availability during premonsoon (March-May) and abundant throughout the district in Beels and ponds. Found basically weed infested water body. Population in static trend decreasing over the years.
29.	 <p>6. <i>Cyprinus carpio carpio</i> Linnaeus</p> <p>Location of Collection: Kudi, Panskura, Narayangarh, Midnapore</p>	Common carp	3	3	Vulnerable (VU) (A2ce)	Very abundant and apparently there is no threat found in its survivality in the wild though it is exotic species. Adapted in every condition and due to its natural breeding in stagnant water, population is found abundant over the years.	Huge in abundance, can breed in the stagnant water thus its no problem in the spawning. Each and every where its adaptability is quite good though its market price is not so high.




30.	 <p>7. <i>Danio rerio</i> (Hamilton)</p> <p>Location of Collection: Pirakata, Kudi, Panskura, Kharagpur, Midnapore</p>	Zebra Danio, Anju	1	3	LC	Very abundant and apparently there is no threat found in its survivality in the wild Due to its natural breeding in stagnant water, population is found abundant over the years.	Maximum Size 2.3 inch, availability throughout the year, Highest availability during premonsoon (March-May) and abundant throughout the district in Beels and ponds. Found basically weed infested water body. Population in static trend over the years.
31.	 <p>8. <i>Hypophthalmichthys molitrix</i> (Valenciennes)</p> <p>Location of Collection: Egra, Kudi, Panskura, Narayangarh, Midnapore</p>	Silver carp	3	3	NT	Very abundant and apparently there is no threat found in its survivality. Exotic fishes but well adapted in various condition of the water.	Maximum Size 18-28 inch, availability throughout the year, Highest availability during premonsoon (March-May) and abundant throughout the district in culturable ponds and in river occasionally.
32.	 <p>9. <i>Labeo bata</i> (Hamilton)</p>	Bata	2	3	LC	Very abundant and apparently there is no threat found in its survivality.	Maximum Size 6 inch, availability throughout the year, Highest availability during premonsoon (March-May) and abundant throughout the district in culturable ponds and occasionally in the river.



	Location of Collection: Egra, Kudi, Contai, Panskura, Midnapore						Population is found declining over the year. They are frequently culture as good table fishes with best market price.
33.	 <p>10. <i>Labeo calbasu</i> (Hamilton)</p> <p>Location of Collection: Egra, Kudi, Contai, Panskura, Midnapore</p>	Orangefin labeo, Calbasu	2	3	LC	<ol style="list-style-type: none"> 1. Overexploitation 2. Killing of Brood fishes 3. Indiscriminate hunting with fine net 4. Destruction of breeding ground <p>Population is found static over the year, availability are normal as earlier.</p>	Maximum Size 16-22 inch, availability throughout the year, Highest availability during premonsoon (March-May) and abundant throughout the district in culturable ponds and occasionally in the river. Population is found declining over the year. They are frequently culture as good table fishes with best market price.
34.	 <p>11. <i>Labeo rohita</i> (Hamilton)</p> <p>Location of Collection: Egra, Kudi, Contai, Panskura, Midnapore</p>	Rohu, Rui	3	3	LC	<p>Population is found static over the year, availability are normal as earlier.</p> <ol style="list-style-type: none"> 1. Overexploitation 2. Killing of Brood fishes 3. Indiscriminate hunting with fine net 4. No proper breeding ground 	Maximum Size 14-20 inch, availability throughout the year, Highest availability during premonsoon (March-May) and abundant throughout the district in culturable ponds and occasionally in the river. Population is found declining over the year. They are frequently culture as good table fishes with best market price.



35.		Swamp barb, Kerrundi	1	3	LC	<p>Population is found declining over the year, availability is very occasional. They are declining may be due to:</p> <ol style="list-style-type: none"> 1. Overexploitation 2. Killing of Brood fishes 3. Indiscriminate hunting with fine net 4. Destruction of breeding ground 5. Use of insecticide that kills juveniles and adults specially in the rice field 	<p>Maximum Size 3 inch, Highest availability during premonsoon (March-May) and abundant throughout the district in hydrophyte infested ponds and occasionally in the river. Population is found declining over the year. They are frequently captured from the wild, no culture practice were done. Used as good table fishes with moderate market price.</p>
36.		Rosy barb, Kanchanputi	1	3	LC	<p>Population is found declining over the year, availability is very occasional. They are declining may be due to:</p> <ol style="list-style-type: none"> 1. Overexploitation 2. Killing of Brood fishes 3. Indiscriminate hunting with fine net 4. Destruction of breeding ground 5. Use of insecticide that kills juveniles 	<p>Maximum Size 3.5 inch, Highest availability during premonsoon (March-May) and abundant throughout the district in hydrophyte infested ponds and occasionally in the river. Population is found declining over the year. They are frequently captured from the wild, no culture practice were done. Used as good table fishes with moderate market price.</p>



						and adults specially in the rice field	
37.	 <p>14. <i>Puntius sarana</i> (Hamilton)</p> <p>Location of Collection: Egra, Kudi, Contai, Panskura, Ghatal, Dashpur, Midnapore</p>	Olive barb, Sarpunti, Swarna puti, Sonapunti, Sonamukhi Punt	3	3	LC	<p>Population is found static over the year, availability are normal as earlier. Very abundant and apearantly there is no threat found in its survivality.</p> <ol style="list-style-type: none"> 1. Overexploitation 2. Killing of Brood fishes 3. Indiscriminate hunting with fine net 4. Destruction of breeding ground 	<p>Maximum Size 14 inch, Highest availability during premonsoon (March-May) and abundant throughout the district and occassionally in the river. Population is found declining over the year. They are now cultured in the waterbody. Used as good table fishes with moderate market price.</p>
38.	 <p>15. <i>Puntius sophore</i> (Hamilton)</p> <p>Location of Collection: Egra, Kudi, Contai, Panskura, Ghatal, Dashpur, Midnapore</p>	Pool barb, Puti	2	3	LC	<p>Population is found static over the year, availability is normal as earlier. Very abundant and apearantly there is no threat found in its survivality.</p> <ol style="list-style-type: none"> 1. Overexploitation 2. Killing of Brood fishes 3. Indiscriminate hunting with fine net 4. Destruction of breeding ground 	<p>Maximum Size 3 inch, Highest availability during premonsoon (March-May) and abundant throughout the district in hydrophyte infested ponds and occassionally in the river. Population is found declining over the year. They are frequently captured from the wild, no culture practice were done. Used as good table fishes with moderate market price.</p>



						5. Use of insecticide that kills juveniles and adults specially in the rice field	
39.	 <p>16. <i>Puntius ticto</i> (Hamilton)</p> <p>Location of Collection: Egra, Kudi, Contai, Panskura, Ghatal, Dashpur, Midnapore</p>	Ticto barb, Tit puti	2	3	LC	<p>Very abundant and apparently there is no threat found in its survivality. Population is found slightly declining over the year, these may be due to:</p> <ol style="list-style-type: none"> 1. Overexploitation 2. Killing of Brood fishes 3. Indiscriminate hunting with fine net 4. Destruction of breeding ground. 5. Use of insecticide that kills juveniles and adults specially in the rice field 	<p>Maximum Size 2.5 inch, Highest availability during premonsoon (March-May) and abundant throughout the district in hydrophyte infested ponds and occasionally in the river. Population is found declining over the year. They are frequently captured from the wild, no culture practice were done. Used as good table fishes with moderate market price.</p>
40.			1	2	LC	<p>Very rare in availability. Population is found slightly declining over the year, these may be due to:</p> <ol style="list-style-type: none"> 1. Overexploitation 2. Killing of Brood fishes 	<p>Maximum Size 2 inch, Highest availability during premonsoon (March-May) and abundant in a certain portion of the Purba Medinipur district specially near Tamluk. Due to its colourful looks it is frequently used as a ornamental fish with moderate market value.</p>



						<p>3. Indiscriminate hunting with fine net</p> <p>4. Destruction of breeding ground.</p>	
	<p>18. <i>Puntius narayani</i></p> <p>Location of Collection: Tamluk</p>						
41.					LC	<p>Very rare in availability. Population is found declining over the year, these may be due to:</p> <p>5. Overexploitation</p> <p>6. Killing of Brood fishes</p> <p>7. Indiscriminate hunting with fine net</p> <p>8. Destruction of breeding ground.</p>	<p>Maximum Size 6 inch, Highest availability during premonsoon (March-May) and abundant in a certain portion of the Purba Medinipur district Panskura, Ghatal, Dashpur, Midnapore. It is used as table fish and looks contemporary to <i>Lebio bata</i> with moderate market value.</p>
	<p>17. <i>Systemus sarana</i> (Hamilton, 1822)</p> <p>Location of Collection: Panskura, Ghatal, Dashpur, Midnapore</p>						
42.		Chela, Jahala, jolai maach, fool chela, chelka	2	3	LC	<p>Population is gradually declining over the year, availability is very scant and only found during the post summer - premonsoon seasons.</p>	<p>Maximum Size 6 inch, Highest availability during premonsoon (March-May) and abundant throughout the district in hydrophyte infested ponds and occasionally in the river.</p>
	<p>19. <i>Salmostoma phulo</i> (Hamilton)</p>						



	Location of Collection: Egra, Kudi, Contai, Panskura, Ghatal, Dashpur, Midnapore					<ol style="list-style-type: none"> 1. Overexploitation 2. Indiscriminate hunting with fine net 3. Destruction of breeding ground 	Population is found declining over the year. They are frequently captured from the wild, no culture practice were done. Used as good table fishes with moderate market price.
43.	 <p>20. <i>Salmophasia bacaila</i> (Hamilton, 1822)</p> <p>Location of Collection: Egra, Kudi, Contai, Panskura, Ghatal, Dashpur, Midnapore</p>	Ghora chela	2	3	LC	<p>Population is gradually declining over the year, availability is very scant and only found during the post summer - premonsoon seasons.</p> <ol style="list-style-type: none"> 1. Overexploitation 2. Indiscriminate hunting with fine net 3. Destruction of breeding ground 	Maximum Size 6.5 inch, Highest availability during premonsoon (March-May) and abundant throughout the district in hydrophyte infested ponds and occasionally in the river. Population is found declining over the year. They are frequently captured from the wild, no culture practice were done. Used as good table fishes with moderate market price.
44.	 <p>23. <i>Osteobrama cotio</i></p> <p>Location of Collection: Shilaboti river, Kaangsaboti River, Midnapore</p>		1	3	LC	<p>Population is gradually declining over the year, availability is very scant and only found during the post summer - premonsoon seasons.</p> <ol style="list-style-type: none"> 1. Overexploitation 2. Indiscriminate hunting with fine net 3. Destruction of breeding ground 	Very very rare in occurrence, found in one time middle of the summer (9 th May, 2014), and it has been reported by the local knowledgeable person that its availability reduces more than 50% over 05 years.



45.	 <p><i>24. Nuria danrica (Ver malabarica)</i> (Hamilton)</p> <p>Location of Collection: Egra, Kudi, Contai, Panskura, Ghatal, Dashpur, Midnapore</p>	Flying barb, denre, danrdia	2	3	LC	Very abundant and apearantly there is no threat found in its survivality.	Common throught the year, found in every water body from ponds to river. Captured from the wild alongwith the so called weed fishes. It has no specific market value.
Family 2. POECILIIDAE (Poeciliids)							
46.	 <p><i>1. Poecilia reticulate</i></p> <p>Location of Collection: Egra, Kudi, Contai, Panskura, Ghatal, Dashpur, Midnapore</p>	Guppy, Techokha	3	3	NE	Very abundant and apearantly there is no threat found in its survivality.	Maximum Size 2 inch, Highest availability during premonsoon (March-May) and abundant throughout the year. Commonly occur in the polluted drain or in the cannels throught the year, also found in any water body from ponds to river. They are not usedas food but it has ornamental values therefore used as aquarium fishes. Therefore it has specific market value.



47.	 <p>2. <i>Gambusia affinis</i></p> <p>Location of Collection: Egra, Kudi, Contai, Panskura, Ghatal, Dashpur, Midnapore</p>		3	3	NE	Very abundant and apparently there is no threat found in its survivality.	Maximum Size 2 inch, Highest availability during premonsoon (March-May) and abundant throughout the year. Commonly occur in the polluted drain or in the canals throughout the year, also found in any water body from ponds to river. They are not used as food but it has ornamental values therefore used as aquarium fishes. Therefore it has specific market value.
48.	 <p>3. <i>Aplocheilichthys panchax</i> (Hamilton, 1822)</p> <p>Location of Collection: Egra, Kudi, Contai, Panskura, Ghatal, Dashpur, Midnapore</p>	Techokha	3	3	LC	Very abundant and apparently there is no threat found in its survivality.	Maximum Size 2.5 inch, Highest availability during premonsoon (March-May) and abundant throughout the year. Commonly occur in the polluted drain or in the canals throughout the year, also found in any water body from ponds to river. They are not used as food and treated as weed fishes.
	<i>Aplocheilichthys panchax</i> (Hamilton, 1822)						



49.	 <p>4. <i>Botia almorhae</i></p> <p>Location of Collection: Shilaboti river, Midnapore.</p>	Baghua gunte	1	2	LC	<p>Abandant in the rivers and cananls, dominant in the monsoon and at that time mostly caught with the so called weed fishes. Population reported declining perhaves due to destruction of breeding ground.</p> <ol style="list-style-type: none"> 1. Overexploitation 2. Indiscriminate hunting with fine net 3. Destruction of breeding ground 	<p>Maximum Size 3.2 inch, availability throughout the year, sessile, Highest availability during premonsoon (March-May) and abundant throughout the district. Found in running water body. Population in decreasing trend over the years. It is frequently used as an aquarium fished due to its ornamental look.</p>
50.	 <p>5. <i>Lepidocephalus guntea</i></p> <p>Location of Collection: Egra, Kudi, Contai, Panskura, Ghatal, Dashpur, Midnapore</p>	Gunte	2	3	LC	<p>Abandant, dominant in the monsoon and at that time mostly caught with the so called weed fishes. Population reported declining due to unknown reason.</p> <ol style="list-style-type: none"> 1. Overexploitation 2. Indiscriminate hunting with fine net 3. Destruction of breeding ground 	<p>Maximum Size 2.8 inch, availability throughout the year, sessile, Highest availability during premonsoon (March-May) and abundant throughout the district. Found in weed infested water body. Population is decreasing trend over the years.</p>
Order III. CHARACIFORMES							
Family 1. SERRASALMIDAE							



51	 <p>1. <i>Colosoma macropomum</i></p> <p>Location of Collection: Egra, Kudi, Contai, Panskura, Ghatal, Dashpur, Midnapore</p>	Rupchand,	2	0	NE	Very abundant and apparently there is no threat found in its survivality. They are now culture along with the IMC and found better yield. Most commercial culture practice successfully carried out at the Moyna Front of Paschim Medinipur.	Maximum Size 26 inch, Highest availability during premonsoon (March-May) and abundant throughout the district and occasionally in the rivers. Used as good table fishes with high market price.
Family 2. CENTROPOMIDAE (Giant/Glass perches)							
52	 <p>2. <i>Lates calcarifer</i> (Bloch, 1790).</p> <p>Location of Collection: Argoal, Pratapdighi, Egra, Kudi, Contai, Panskura, Ghatal, Dashpur, Midnapore</p>	Bhetki	3	3	LC	Very abundant and apparently there is no threat found in its survivality. Breed in the sea water and frequently found in the estuarine areas of the river.	Maximum Size 28 inch, Highest availability during premonsoon (March-May) and abundant in brackish water bodies in the rivers throughout the district. They are frequently captured from the wild, recently they are culture in the brackish and in fresh water also. Used as very good table fishes with high market price.
Family 4. AMBASSIDAE (= CHANDIDAE) (Glass fishes)							



53	 <p>4. <i>Chanda nama</i> Hamilton</p> <p>Location of Collection: Egra, Kudi, Contai, Panskura, Ghatal, Dashpur, Midnapore</p>	Elongate Glassy perchlet. Chanda	2	3	LC	<p>Very abundant and apparently there is no threat found in its survivality.</p> <ol style="list-style-type: none"> 1. Overexploitation 2. Indiscriminate hunting with fine net 3. Destruction of breeding ground 	<p>Maximum Size 2.5 inch, availability throughout the year, sessile, Highest availability during premonsoon (March-May) and abundant throughout the district. Found in stagnant water body. Population in decreasing trend over the years. It is frequently used as an aquarium fish due to its ornamental look.</p>
54	 <p>5. <i>Pseudambassis ranga</i> (Hamilton)</p>	Indian glassfish, Chanda	3	3	LC	<p>Very abundant and apparently there is no threat found in its survivality. More common in the highly weed infested water bodies.</p> <ol style="list-style-type: none"> 1. Overexploitation 2. Indiscriminate hunting with fine net. 3. Destruction of breeding ground 	<p>Maximum Size 2.5 inch, availability throughout the year, sessile, Highest availability during premonsoon (March-May) and abundant throughout the district. Found in stagnant water body. Population in decreasing trend over the years. It is frequently used as an aquarium fish due to its ornamental look.</p>



	Location of Collection: Egra, Kudi, Contai, Panskura, Ghatal, Dashpur, Midnapore						
55	 <p>6. <i>Ambasis commersoni</i> (Lacepède, 1802)</p> <p>Location of Collection: Kangsaboti river, Midnapore</p>	Kachaki, Kath chanda	2	2	LC	Very abundant and apparently there is no threat found in its survivality.	Maximum Size 3 inch, availability throughout the year, sessile, Highest availability during premonsoon (March-May) and abundant throughout the district. Found in stagnant water body. Population in decreasing trend over the years. It is frequently used as an aquarium fished due to its ornamental look.
Family 5. NANDIDAE (Asian leaf fishes, Mud perches)							
56	 <p>7. <i>Nandus nandus</i> (Hamilton, 1822)</p> <p>Location of Collection: Panskura, Ghatal, Keshpur, Kudi, Egra, Midnapore</p>	Nadus, Nadosh, Noina maach,	1	3	LC	Population is drastically declined over the year, availability is very scant and only found during the post summer - premonsoon seasons. 1. Overexploitation 2. Killing of Brood fishes 3. Indiscriminate hunting with fine net 4. Destruction of breeding ground	Maximum size 4.2 inch, very very rare in occurrence, found hardly in middle of the summer (pre and post monsoon), and its availability reduces rapidly and its population decreasing more than 50% over 05 years. It is frequently used as an aquarium fished due to its ornamental look.



Family 6. GOBIEDAE (Gobies) (Loaches)							
57	 <p>2. <i>Pseudapocryptes elongatus</i> (Cuvier, 1816)</p> <p>Location of Collection: Panskura, Ghatal, Dashpur, Midnapore</p>	China maach, Chama mach	1	3	LC	<p>Population is drastically declined over the year, availability is very scant and only found during the post summer - premonsoon seasons.</p> <ol style="list-style-type: none"> 1. Overexploitation 2. Killing of Brood fishes 3. Indiscriminate hunting with fine net 4. Destruction of breeding ground 5. Interspecific competition specifically with Hybred one 	<p>Max. size riched upto 9 inches, freshwater dwellers, found in the stagnant water system basically ponds, khal, dishes, bills. Abundant more in the post monsoon season, population is nearly static over the years. It is basically known as airbreathers. Its has good market value due to its good tests.</p>
58	 <p>3. <i>Odontamblyopus rubicundus</i> (Hamilton, 1822)</p> <p>Location of Collection: Panskura, Ghatal, Dashpur, Midnapore</p>	<i>Apocryptes bato</i> = <i>Odontamblyopus rubicundus</i> (Hamilton, 1822)	1	3	LC	<p>Population is drastically declined over the year, availability is very scant and only found during the post summer - premonsoon seasons.</p> <ol style="list-style-type: none"> 6. Overexploitation 7. Killing of Brood fishes 	<p>Max. size riched upto 5 inches, freshwater to slightly brakishwater dwellers, found in the stagnant to slow running water system basically ponds, khal, cannals, dishes, bills. Abundant more in the post monsoon season, population is nearly static over the years. It is</p>



						8. Indiscriminate hunting with fine net 9. Destruction of breeding ground 10. Interspecific competition specifically with Hybred one	basically known as airbreathers. Its has good market value due to its good tests.
59	 <p>5. <i>Glossogobius giuris</i> (Hamilton, 1822)</p> <p>Location of Collection: Egra, Kudi, Contai, Panskura, Ghatal, Dashpur, Midnapore</p>	Bar-eyed goby, Beley	3	3	LC	Very abundant and aperantly there is no threat found in its survivality.	Maximum Size 4.5 inch, availability throughout the year, sessile, Highest availability during premonsoon (March-May) and abundant throughout the district. Found basically wed infested water body. Population in decreasing trend over the years.
60.	 <p>6. <i>Gobius niger</i> Linnaeus, 1758</p>	Kaalo beley, Kala bhatua	1	2	LC	Population is drastically declined over the year, availability is very scant and only found during the post summer - premonsoon seasons. 1. Indiscriminate hunting with fine net 2. Destruction of breeding ground	Maximum Size 3.5 inch, availability occasional, sessile, Capture during premonsoon (March-May).



	Location of Collection: Panskura, Ghatal, Dashpur, Midnapore						
61.	 <p>7. <i>Acentrogobius viridipunctatus</i> (Valenciennes, 1837)</p> <p>Location of Collection: Panskura, Ghatal, Dashpur, Midnapore</p>	Spotted green goby	1	3	NE	<p>Population is drastically declined over the year, availability is very scant and only found during the post summer - premonsoon seasons.</p> <ol style="list-style-type: none"> 1. Killing of Brood fishes 2. Indiscriminate hunting with fine net 3. Destruction of breeding ground 	<p>Very very rare in occurrence, found in one time middle of the summer (9th May, 2014), and it has been reported by the local knowledgeable person that its availability reduces more than 50% over 05 years.</p>
62	 <p>8. <i>Stigmatogobius sadanundio</i> (Hamilton, 1822)</p> <p>Location of Collection: Tamluk, Mahisadal,</p>		1	2	LC	<p>Population is drastically declined over the year, availability is very scant and only found during the post summer - premonsoon seasons.</p> <ol style="list-style-type: none"> 1. Overexploitation 2. Killing of Brood fishes 3. Indiscriminate hunting with fine net 4. Destruction of breeding ground 5. Interspecific competition 	<p>Very very rare in occurrence, found in one time middle of the summer (9th May, 2014), and it has been reported by the local knowledgeable person that its availability reduces more than 50% over 05 years. It is frequently used as an aquarium fished due to its ornamental look.</p>


						specifically with Hybreed one	
63.	 <p><i>Brachygobius xanthomelas</i> Herre, 1937</p> <p>Location of Collection: Egra, Kudi, Contai, Panskura, Ghatal, Dashpur, Midnapore</p>	Bumblebee goby Choto beley	2	2	LC	Very small and usually associated within the roots of aquatic weed. Its population is declining over the years may be due to : 1. Difficult to survivality due to lac of suitable habitat. 2. Indiscriminate hunting with fine net	Minute and very small (8-10MM) very common and abundant throughout the district. Found in weed infested water body. Population in decreasing trend over the years.
Family 9. ANABANTIDAE (Climbing perch)							
64	 <p>1. <i>Anabas testudineus</i> (Bloch)</p> <p>Location of Collection: Egra, Kudi, Contai, Panskura, Ghatal, Dashpur, Midnapore</p>	Climbing perch, Koi	2	3	DD	Very abundant and aperantly there is no threat found in its survivality.	Max. sice riched upto 6 inches, freshwater dwellers, found in the stagnant water system basically ponds, khal, dishes, bills and even in rice field, abundant more in the post monsoon season, population is nearly static over the years. It is basically known as airbreathers. Due to its good tests its market value is high then other.
Family 10. OSPHRONEMIDAE (Gouramies)							



65	 <p>1. <i>Colisa lalia</i> (Hamilton, 1822) Khalisha</p> <p>Location of Collection: Egra, Kudi, Contai, Panskura, Ghatal, Dashpur, Midnapore</p>	Kholsa	3	3	LC	<p>Population is declining over the year, local people reporting that their availability gradually decreasing and only found during the post summer - premonsoon seasons.</p> <ol style="list-style-type: none"> 1. Overexploitation 2. Killing of Brood fishes 3. Indiscriminate hunting with fine net 4. Destruction of breeding ground 	<p>Maximum Size 3.2 inch, availability throughout the year, sessile, Highest availability during premonsoon (March-May) and abundant throughout the district. Found in weed infested water body. Population in decreasing trend over the years. It is frequently used as an aquarium fish due to its ornamental look.</p>
66	 <p>2. <i>Poliacanthus fasciatus</i> (Bloch & Schneider, 1801), Kholsa</p>	Banded gourami, Lal kholsa Kholsa	1	3	LC	<p>Population is drastically declined over the year, availability is very scant and only found during the post summer - premonsoon seasons.</p> <ol style="list-style-type: none"> 1. Overexploitation 2. Killing of Brood fishes 3. Indiscriminate hunting with fine net 4. Destruction of breeding ground 	<p>Maximum Size 3.2 inch, availability throughout the year, sessile, Highest availability during premonsoon (March-May) and abundant throughout the district. Found in weed infested water body. Population in decreasing trend over the years. It is frequently used as an aquarium fish due to its ornamental look.</p>



67.	 <p>3. <i>Badis badis</i> (Hamilton, 1822)</p> <p>Location of Collection: Egra, Kudi, Contai, Panskura, Ghatal, Dashpur, Midnapore</p>	Kalo khalse, Dhobachi	1	3	LC	<p>Very small and usually associated with the aquatic weed. Its population is declining over the years may be due to :</p> <p>3. Difficult to survivality due to lac of suitable habitat.</p> <p>4. Indiscriminate hunting with fine net</p>	<p>Maximum Size 0.4 inch, availability throughout the year, sessile, Highest availability during premonsoon (March-May) and abundant throughout the district. Found in weed infested water body. Population in decreasing trend over the years. It is frequently used as an aquarium fished due to its ornamental look.</p>
Family 11. CICHLIDAE							
68	 <p>1. <i>Oreochromis mossambicus</i> (Peters, 1852 (Female & male)</p>	Telapiya	3	3	NT	<p>Very abundant and apearantly there is no threat found in its survivality.</p>	<p>Maximum Size 11 inch, availability throughout the year, Easily culturable. It has good market value due to used as table fishes.</p>


	Location of Collection: Panskura, Ramnagar, Midnapore						
69.	 <p><i>Oreochromis niloticus</i> (Linnaeus, 1758)</p> <p>Location of Collection: Kharagpur, Paniparul, Panskura, Tamluk, Midnapore</p>		3	3	NE	Very abundant and apparently there is no threat found in its survivality.	Maximum Size 11 inch, availability throughout the year, Easily culturable. It has good market value due to used as table fishes.
Order – V: CHANNIFORMES							
Family 1. CHANNIDAE (Murrels)							
70.	 <p>1. <i>Channa gachua</i> (Hamilton)</p>	Gachua snakehead, Gachua	1	3	LC	Very rare in occurrence. Breed in the fresh water and frequently found in the any freshwater system of the district. It declining population due to: 1. Overexploitation 2. Killing of Brood fishes	Maximum size up to 6 inch. Very rare in occurrence, freshwater dwellers, found in the stagnant water system basically ponds, khal, dishes, bills and even in rice field in monsoon, abundant more in the post monsoon season, population is drastically reducing over the years. It is reported by the local knowledgeable persons that its population is reducing



	Location of Collection: Egra, Kudi, Contai, Panskura, Ghatal, Dashpur, Midnapore					3. Indiscriminate hunting with fine net 4. No proper breeding ground 5. Interspecific competition specifically with Hybreed one	more than 50% over the last 5 years. It is basically known as airbreathers.
71.	 <p>2. <i>Channa marulius</i> (Hamilton)</p> <p>Location of Collection: Egra, Kudi, Contai, Panskura, Ghatal, Dashpur, Midnapore</p>	Giant snake head murrel, Gajal/Sal	1	2	LC	Rare in occurrence. Breed in the fresh water and frequently found in the any freshwater system of the district. It declining population due to: 1. Overexploitation 2. Killing of Brood fishes 3. Indiscriminate hunting with fine net 4. No proper breeding ground	Very rare in occurrence, freshwater dwellers, found in the stagnant water system basically weed infested ponds, khals, dishes, bills in monsoon, abundant more in the post monsoon season, population is drastically reducing over the years. It is reported by the local knowledgeable persons that its population is reducing more than 50% over the last 5 years. It is basically known as airbreathers.
72	 <p>3. <i>Channa punctata</i> (Bloch, 1793)</p>	Green snake head, Lata/Taki	3	3	LC	Very abundant and apparently there is no threat found in its survivality. Breed in the fresh water and frequently found in the any freshwater system of the district. 1. Overexploitation	Maximum Size 9 inch, availability throughout the year, It is one of the most common air breathing fishes. Highest availability during premonsoon (March-May) and abundant throughout the Year within the district. Found in weed infested water body. Population is


	Location of Collection: Egra, Kudi, Contai, Panskura, Ghatal, Dashpur, Midnapore					<ul style="list-style-type: none"> 2. Killing of Brood fishes 3. Indiscriminate hunting with fine net 4. No proper breeding ground 	decreasing trend over the years. It has a moderate market value.
73.	 <p>4. <i>Channa striatus</i> (Bloch, 1793)</p> <p>Location of Collection: Egra, Kudi, Contai, Panskura, Ghatal, Dashpur, Midnapore</p>	Striped snake head, Shol	3	3	LC	<p>Very abundant and apparently there is no threat found in its survivality. Breed in the fresh water and frequently found in the any freshwater system of the district. decreasing trend over the years.</p> <ul style="list-style-type: none"> 1. Overexploitation 2. Killing of Brood fishes 3. Indiscriminate hunting with fine net 4. No proper breeding ground 	Maximum Size 20 inch, availability throughout the year, It is one of the most common air breathing fishes. Highest availability during premonsoon (March-May) and abundant throughout the Year within the district. Found in weed infested water body. Population is It has a high market value.
<p>Order VI: OSTEOGLOSSIFORMES Family 1. NOTOPTERIDAE (Feather backs)</p>							

74.	 <p>1. <i>Chitala chitala</i> (Hamilton)</p> <p>Location of Collection: Egra, Kudi, Contai, Panskura, Ghatal, Dashpur, Midnapore</p>	Humped feather-back, Chital	1	3	NT	<p>Population is drastically declined over the year, availability is very scant and only found during the post summer - premonsoon seasons.</p> <ol style="list-style-type: none"> 1. Overexploitation 2. Killing of Brood fishes 3. Indiscriminate hunting with fine net 4. Destruction of breeding ground 	<p>Maximum Size 32 inch, Highest availability during premonsoon (March-May). Found in weed infested water body. Occasionally it is captured from the reverine system specially Shilaboti, kangsaboti, Subarnarekha, It has a high market value.</p>
75.	 <p>2. <i>Notopterus notopterus</i> (Pallas, 1769)</p> <p>Location of Collection: Egra, Kudi, Contai, Panskura, Ghatal, Dashpur, Midnapore</p>	Feather back, Phalui	3	3	LC	<p>Very abundant and aperantly there is no threat found in its survivality. Breed in the sea water and frequently found in the estuarine areas of the river.</p>	<p>Maximum Size 12 inch, Highest availability during premonsoon (March-May). Found in slight weed infested water body. Occasionally it is also abundant in the reverine system specially Shilaboti, kangsaboti, Subarnarekha, It has a high market value.</p>
<p>Order VII: ANGUILLIFORMES Family 1. ANGUILLIDAE (Freshwater Eels)</p>							

76.	 <p><i>Anguilla bengalensis bengalensis</i> (Gray, 1831)</p> <p>Location of Collection: Panskura, Ghatal, Dashpur, Midnapore</p>	Indian mottled eel, Eel	1	2	NT	<p>Population is drastically declined over the year, availability is very scant and only found during the post summer - premonsoon seasons.</p> <ol style="list-style-type: none"> 1. Overexploitation 2. Killing of Brood fishes 3. Indiscriminate hunting with various fishing gears used specially for muddwellers 4. Destruction of breeding ground 	<p>Maximum Size 18 inch, Highest availability during premonsoon (March-May). Found in slight weed infested water body. It has a high market value and feed by the tribal and local people in selective manner.</p>
Order XIII: BELONIFORMES							
Family 1. BELONIDAE							
77.	 <p>1. <i>Xenentodon cancila</i> (Hamilton)</p> <p>Location of Collection: Ghatal, and Shilaboti river, Midnapore</p>	Freshwater garfish, gungtarha	1	3	LC	<p>Population is drastically declined over the year, availability is very scant and only found during the post summer - premonsoon seasons.</p> <ol style="list-style-type: none"> 1. Overexploitation 2. Killing of Brood fishes 	<p>Very rare in occurrence, freshwater dwellers, found both in the lentic and lotic water, abundant more in the post monsoon season, population is rapidly reduces over the years. It is popular as a marine aquarium fished due to its ornamental look.</p>

						<p>3. Indiscriminate hunting with fine net</p> <p>4. Destruction of breeding ground</p> <p>5. Interspecific competition specifically with Hybred one</p>	
<p>Order XIV: SYNBRANCHIFORMES</p> <p>Family 1. SYNBRANCHIDAE</p>							
78.	 <p>1. <i>Monopterus cuchia</i> (Hamilton)</p> <p>Location of Collection: Egra, Kudi, Contai, Panskura, Ghatal, Dashpur, Midnapore</p>	<p>Feshwater eel, Cuchia, Kuche maach, jal kuche,</p>	1	3	LC	<p>Population is drastically declined over the year, availability is very scant and only found during the post summer - premonsoon seasons.</p> <p>1. Destruction of breeding ground</p> <p>2. Indiscriminate hunting</p>	<p>Rare in occurrence, freshwater dwellers, found in the stagnant waterbody, abundant more in the premonsoon season, population is reducing over the years. It is popular as a marine aquarium fished due to its ornamental look. It has special importance as ethnozoological values due to its high himoglobin content and used for good protein values for patient with easy digestion.</p>
<p>Family 2. MASTACEMBELIDAE</p>							

79.	 <p>1. <i>Macrogathus aral</i> (Bloch and Schneider)</p> <p>Location of Collection: Egra, Kudi, Contai, Panskura, Ghatal, Dashpur, Midnapore</p>	One stripe spiny eel, Baim	3	3	LC	<p>Very abundant and apparently there is no threat found in its survivality.</p> <ol style="list-style-type: none"> 1. Overexploitation 2. Indiscriminate hunting with fine net 3. Destruction of breeding ground 	
80	 <p>2. <i>Macrogathus pancalus</i> (Hamilton)</p> <p>Location of Collection: Egra, Kudi, Contai, Panskura, Ghatal, Dashpur, Midnapore</p>	Barred spiny eel, Pakal/Baim mach	2	3	LC	<p>Population is drastically declined over the year, availability is very scant and only found during the post summer - premonsoon seasons.</p> <ol style="list-style-type: none"> 1. Overexploitation 2. Killing of Brood fishes 3. Indiscriminate hunting with fine net 4. Destruction of breeding ground 5. Interspecific competition specifically with Hybreed one 	<p>Rare in occurrence, freshwater dwellers, found in the stagnant waterbody, abundant more in the premonsoon season, population is reducing over the years. It is popular as a marine aquarium fished due to its ornamental look. It has special importance as ethnozoological values due to its high himoglobin content and used for good protein values for patient with easy digestion.</p>

81.	 <p>3. <i>Mastacembelus armatus</i> (Lacepede)</p> <p>Location of Collection: Shilaboti River, Keleghai River, Paschim Midnapore</p>	Spiny/Zig-zag eel, Pakal/Baim mach	2	3	LC	<p>Very abundant and apearantly there is no threat found in its survivality. Population is reducing over the years.</p> <ol style="list-style-type: none"> 1. Overexploitation 2. Killing of Brood fishes 3. Indiscriminate hunting with fine net 4. No proper breeding ground 5. Interspecific competition specifically with Hybreed one 	<p>Rare in occurrence, freshwater dwellers, found in the stagnant areas of running waterbody, abundant more in the premonsoon season. It has special importance as ethnozoological values due to its high himoglobin content and used for good protein values for patient with easy digestion.</p>
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Key: Abandance category: 0=Absent , 1 = Rare, 2 = Common, 3= Abandant

Threat Category:

- a. Overexploitation = OE,
- b. Killing of Brood fishes = KBF;
- c. Indiscriminate hunting (with fine net) = IHFN;
- d. Indiscriminate hunting (during Meen Collection) = IHMC;
- e. Unwise competition / Intra specific Competition (ISC);
- f. Deatruction of breeding ground –DBG;
- g. Poisoning through Insectisides (in the rice field) - PI

POPULATION FLUCTUATION AND ITS PROBABLE REAGION

Time of abundance:

Highest abundant is found for most of the fresh water fishes is monsoon to post monsoon seasons. At that time most of the native species have their breeding season's perhaves due to available foods and breeding ground. Most of the pond, khal, beels, and lowland areas are filled up with water in normal situations. Fishes are fond scope to spread over from the surroundings, breeds and spreaded whats ever possibilities found.

Reason of population depletion

1. Deattraction of the Breeding Ground & Habitat:

- a) **Total Runn off the water:** Dried up all ponds in the summer seasons is a common fenomeon in these two district. But now a day's frequent total drain off water from parinnial ponds / water bodies using machanised water pumpming system or motorized water pumping system is increasing in alarming state. As a result no one of aquatic animals are escape for their survival and available as a brood for the next generation.
- b) **Mass Killing:** Mass harvesting of fishes applying soft poisons basically Mohua Oil Cake totally killed all the inhabitants of the water body resulting the same fate as earlier. To stabilized as earlier community structure of these prticular water body require a massive flood to mixing up all the possibilities but this is not occurred as required.
- c) **Transformation of habitat structure:** Lentic water bodies transformed into fisheries practices for more revenue earning resulting to shift of habitat structure causes loss of diversity of fishes.

2. Exploitation pressure :

1. **Indiscreminate hunting:** Fishing without selecting the nature and types of fish is a major cause of population declination of fishes. As for example use of machine manufactured fine nets now used for

ffishing in the perennial water bodies instead of “**Bachari Jaal**” for large fishes mainly for IMC and “**Chunamari Jaal**” for small weed fishes. Resulting all the types of fishes alongwith broods and the juveniles killed for earning high priced at a time.

2. **Drought:** Drought prone reagion and continuous / prolong drought incidence caused most of the natural water bodies is desiccated and all the inhabitants are killed, resulting mass killing and unavailable situations for vast areas is another cause of population depletion of fishes.



3. **Depletion of Brood Fishes**

Capture of Brood Fishes and juveniles: Capture of brood fishes and juveniles without any reasons causes serious affects on the availability of the seeds of next generations therefore declining the fish populations occurred drastically specifically from the freshwater habitat.

4. **Construction of Dams and Barrages:** Construction of Dams and Barrages on the river one of the important case of depletions of population due to inaccessible of breeding ground especially of migratory fishes. Change / block of Migration Route due to construction of Dam and Barrages is leads to change the migration routes resulting local unavailable circumstances.

5. **Introductionof Exotic Fishes:**

Invation of exitic or alien fish species caused serious survival threats to the native dwellers due to unhealthy completion for space and food. Most of the inveders are agresssive in nature for their coomon foods and brutal behavior with the competitors as for example Roopchand, *Colosoma macropomum*.

Recommendatons:

- 1.** Lagislative directives require with full implementation of totally banned of indiscriminate hunting through fine net/ masari jaal
- 2.** Banned of fishing / fish landing during atleast one month during the reproductive / breeding season
- 3.** Conservation of breeding grounds of fishes for specifics reasond if require any.
- 4.** Initiatives should be taken at panchayet level to maintain the water level for some identified parinial undiaturbed water bodies as a feeder source for future availability.
- 5.** Culture of any exotic or hybreed fishes must confined to restricted areas or localities. It should not be set free to culture in the open land with the native fishes.
- 6.** Composite culture in combination with exotic fishes should be avoided mainly for the species those can breed potentially in nature.
- 7.** During construction of any Dam / barrages there should be save passage for the migratory fishes or other aquatic animals.
- 8.** Government initiatives needed for the conservation of threatened category fishes and those population declining adruptly over the years, to select and natural water body in each district where such species maintain with proper management following conservation guidelines.
- 9.** Water bodies should be maintained and reframed by local governens like panchayat / municipality. They should invest at least 15 dayes out of 100 days from Jawhar Rojkar Joyona (100 working days project)

Table - 1 List of ichthyofauna

	Scientific Name	Paschim Medinipur	
		Stagnant water	Running water
	Order I. SILURIFORMES		
	Family 1. Bagridae		
1.	1. <i>Mystus bleekeri</i> (Day)	+	+
2.	2. <i>Mystus cavasius</i> (Hamilton)	+	+
3.	3. <i>Arius maculatus</i> (Thunberg)	-	+
4.	4. <i>Mystus keletius</i> (Valenciennes)	+	+
5.	5. <i>Mystus gulio</i> (Hamilton)	-	+
6.	6. <i>Mystus tengara</i> (Hamilton)	+	+
7.	7. <i>Mystus vittatus</i> (Bloch)	+	+
8.	8. <i>Mystus singhala</i>	+	+
9.	9. <i>Rita rita</i> (Hamilton)	-	+
10.	10. <i>Sperata aor</i> (Hamilton)	+	+
	Family 2. Siluridae		
11.	1. <i>Ompok bimaculatus</i> (Bloch)	-	+
12.	2. <i>Ompok pabda</i> (Hamilton)	+	-
13.	3. <i>Ompok pabo</i> (Hamilton)	+	+
14.	4. <i>Wallago attu</i> (Schenider)	+	+
	Family 3. Schilbeidae		
15.	1. <i>Ailia coila</i> (Hamilton)	-	+
16.	2. <i>Clupisoma garua</i> (Hamilton)	-	+
17.	3. <i>Eutropiichthys vacha</i> (Hamilton)	+	+
18.	4. <i>Pseiidotropius atherinoides</i> (Bloch)	+	+
	Family 4. Pangasiidae		
19.	1. <i>Pangasius pangasius</i> (Hamilton)	+	+
	Family 5. Sisoridae		
20.	1. <i>Bagarius bagarius</i> (Hamilton)	+	+
21.	2. <i>Hypostomus plecostomus</i> (Linnaeus)	+	+
	Family 6. CLARIIDAE		
22.	1. <i>Clarias batrachus</i> (Linnaeus)	+	-
	Family 7. HETEROPNEUSTIDAE		
23.	1. <i>Heteropneustes fossilis</i> (Bloch)	+	+
	Order II. CYPRINIFORMES		
	Family 1. CYPRINIDAE		
24.	1. <i>Amblypharyngodon mola</i> (Hamilton)	+	+
25.	2. <i>Catla catla</i> (Hamilton)	+	+
26.	3. <i>Chela cachius</i> (Hamilton)	+	-
27.	4. <i>Cirrhinus mrigala</i> (Hamilton)	+	+
28.	5. <i>Ctenopharyngodon idella</i> (Valenciennes)	+	+
29.	6. <i>Cyprinus carpio carpio</i> Linnaeus	+	+
30.	7. <i>Danio rerio</i> (Hamilton)	+	-
31.	8. <i>Hypophthalmichthys molitrix</i> (Valenciennes)	+	-
32.	9. <i>Labeo bata</i> (Hamilton)	+	+

33.	10. <i>Labeo calbasu</i> (Hamilton)	+	+
34.	11. <i>Labeo rohita</i> (Hamilton)	+	+
35.	12. <i>Puntius chola</i> (Hamilton)	+	-
36.	13. <i>Puntius conchoni</i> (Hamilton)	+	+
37.	14. <i>Puntius sarana</i> (Hamilton)	+	+
38.	15. <i>Puntius sophore</i> (Hamilton)	+	+
39.	16. <i>Puntius ticto</i> (Hamilton)	+	-
40.	17. <i>Puntius narayani</i>	+	-
41.	18. <i>Systomus sarana</i> (Hamilton)	+	-
42.	19. <i>Salmostoma phulo</i> (Hamilton)	-	+
43.	20. <i>Salmophasia bacaila</i> (Hamilton)	+	+
44.	21. <i>Osteobrama cotio</i> (Hamilton)	+	-
45.	22. <i>Nuria danrica</i> (<i>Ver malabarica</i>) (Hamilton)	+	+
	Family 2. POECILIIDAE		
46.	1. <i>Poecilia reticulata</i>	+	+
47.	2. <i>Gambusia affinis</i>	+	+
48.	3. <i>Aplocheilus panchax</i> (Hamilton)	+	+
49.	4. <i>Botia almorhae</i>	-	+
50.	5. <i>Lepidocephalus guntea</i>	+	+
	Order III. CHARACIFORMES		
	Family 1. SERRASALMIDAE		
51.	1. <i>Pygocentrus nattereri</i>	+	-
	Order IV. PERCIFORMES		
	Family 1. CENTROPOMIDAE		
52.	1. <i>Lates calcarifer</i>	+	+
	Family 3: AMBASSAIDAE		
53.	1. <i>Chanda nama</i> Hamilton	+	+
54.	2. <i>Pseudambassis ranga</i> (Hamilton)	+	+
55.	3. <i>Ambassis commersoni</i> (Lacepède)	-	+
	Family 4: NANDIDAE		
56.	1. <i>Nandus nandus</i> (Hamilton)	+	-
	Family 5: GOBIDAE		
57.	1. <i>Pseudapocryptes elongatus</i> (Cuvier)	+	-
58.	2. <i>Odontamblyopus rubicundus</i> (Hamilton)	+	-
59.	3. <i>Acentrogobius viridipunctatus</i> (Valenciennes)	+	+
60.	4. <i>Stigmatogobius sadanundio</i> (Hamilton)	+	+
61.	5. <i>Glossogobius giuris</i> (Hamilton)	+	+
62.	6. <i>Gobius niger</i> Linnaeus, 1758	+	-
63.	7. <i>Brachygobius xanthomelas</i> Herre	+	-
	Family 8. Anabantidae		
64.	1. <i>Anabas testudineus</i> (Bloch)	+	+
	Family 9. Osphronemidae		
65.	1. <i>Trichogaster lalius</i> (Hamilton)	+	+
66.	2. <i>Trichogaster fasciatus</i> (Schneider), Kholsa	+	+
67.	3. <i>Badis badis</i> (Hamilton)	+	+
	Family 10. CICHLIDAE		
68.	1. <i>Oreochromis mossambicus</i> (Peters)	+	+
69.	2. <i>Oreochromis niloticus</i> (Linnaeus)	+	+

	Order V. OPHIOCEPHALIFORMES		
	Family 1. CHANNIDAE		
70.	1. <i>Channa gachua</i> (Hamilton)	+	+
71.	2. <i>Channa marulius</i> (Hamilton)	+	+
72.	3. <i>Channa punctata</i> (Bloch)	+	+
73.	4. <i>Channa striatus</i> (Bloch)	+	+
	Order VI. OSTEOGLOSSIFORMES		
74.	1. <i>Chitala chitala</i> (Hamilton)	+	+
75.	2. <i>Notopterus notopterus</i> (Pallas)	+	+
	Order VII. ANGUILIFORMES		
	Family 1. ANGUILIDAE		
76.	1. <i>Anguilla bengalensis bengalensis</i> (Gray)	+	-
	Order X. BELONIFORMES		
	Family 1. BELONIDAE		
77.	1. <i>Xenentodon cancila</i> (Hamilton)	+	-
	Order XI. SYNBRANCHIFORMES		
	Family 1. SYNBRANCHIDAE		
78.	3. <i>Monopterus cuchia</i> (Hamilton)	+	-
	Family 2. MASTACEMBELIDAE		
79.	1. <i>Macrornathus aral</i> (Bloch and Schneider)	+	+
80.	2. <i>Macrornathus pancalus</i> Hamilton)	+	+
81.	3. <i>Mastacembelus armatus</i> (Lacepede)	-	+
	TOTAL	70	61

+ = Present - = Absent

Common : 52

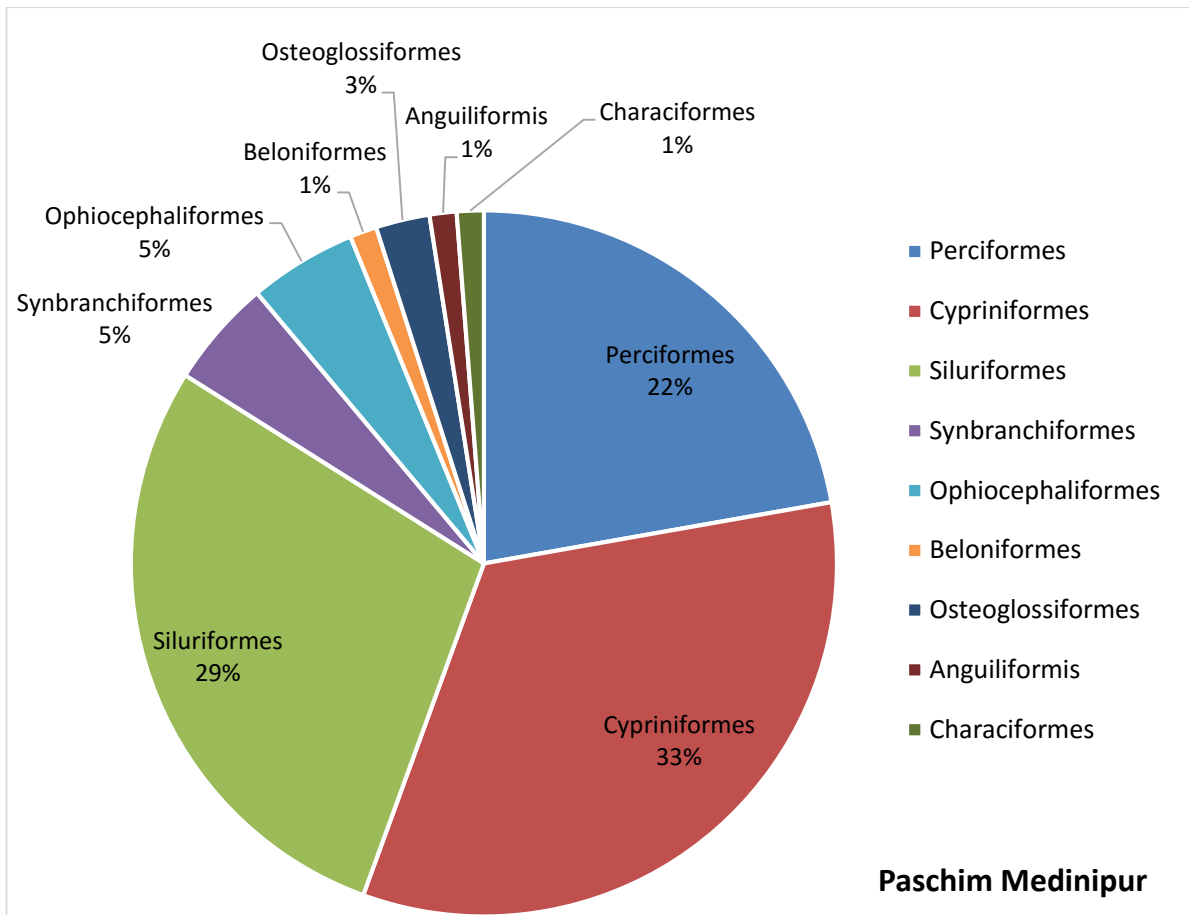


Fig. 5 Relative abundance of orders in Paschim Medinipur District

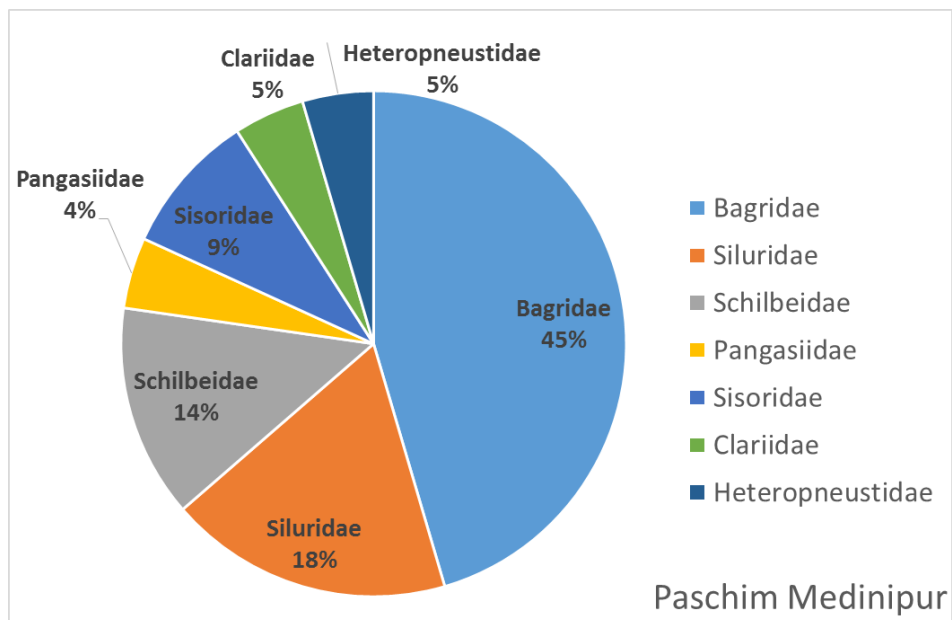


Fig. 6 Relative abundance of Families of Siluriformes of Paschim Medinipur

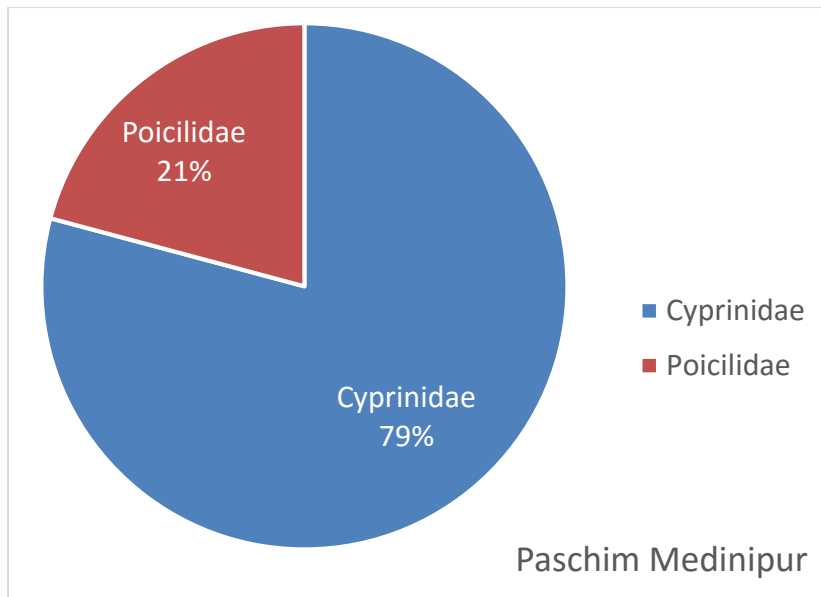


Fig. 7 Relative abundance of Families of Cypriniformes of Paschim Medinipur

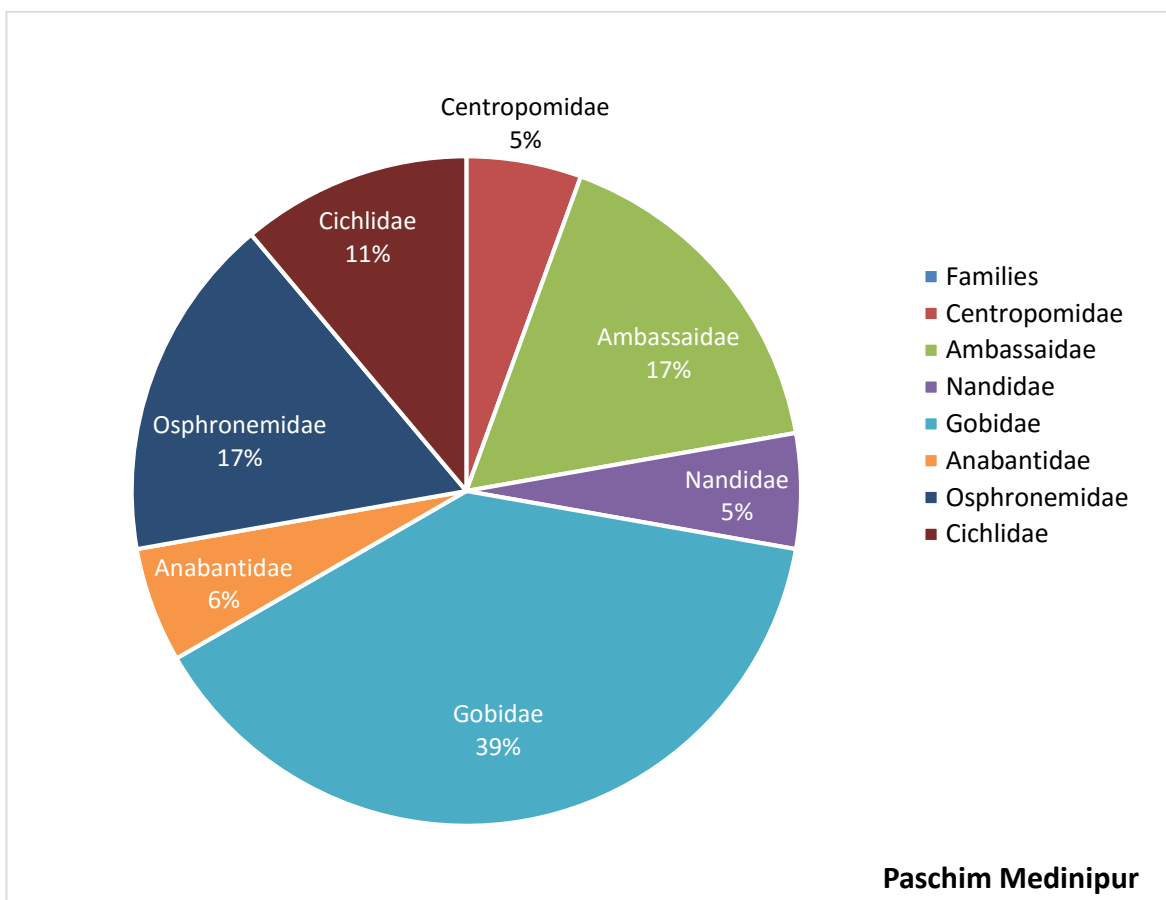


Fig. 8 Relative abundance of Families of Perciformes of Paschim Medinipur

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