

3.8. Faunal survey

The spatial extent of the REIA was limited to an area of 7 km radius around each of the two drill sites. These areas were demarcated on Survey of India topomaps by placing a buffer of 7 km radius around each of the proposed drill sites. The buffered areas were found to overlap and included within them a total area of 255.77 sq. km. The demarcated area falls within the Himalayan Biodiversity Hotspot, marked out from the Indo-Burma Biodiversity Hotspot by a hotspots appraisal in 2005. It is within the Brahmaputra River corridor and is a part of an alluvial plain drained by south – flowing rivers, which feed the River Brahmaputra flowing from east to west along the southern boundary of the study area. Heavy rainfall, the fragile nature of the rock and steep gradients in their catchments in the Arunachal Himalayas, load these south flowing rivers with an enormous amount of silt and rock debris leading to changes in channel morphology and reduced carrying capacity. These rivers regularly flood their banks to inundate adjoining areas and when the floods recede, sheets of sand and rocky debris are left behind. Fluvial action of these rivers, and the River Brahmaputra, has played an important role in the creation of the array of landscape elements found within the study area. These include lotic and lentic water bodies, alluvial aquifers, riparian forests, floodplain grasslands, channel networks, bars, natural levees and terraces. The heterogeneity of landscape elements has found expression in a mosaic of habitats, which sustains the biodiversity of the area.

Mixed evergreen forests characterize the natural vegetation of the area and are typical of the low-lying floodplains along the River Brahmaputra. Most of these forests have been converted into human uses. The remnant patches—mostly in small protected areas—indicate that these forests were characterized by *Syzygium*, *Cinnamomum*, *Artocarpus*, *Terminalia* spp. *Tetrameles* spp. and *Stereospermum* spp. (Champion and Seth, 1968). These forests also contain several Deccan elements, indicative of the geological origins of the region. The alluvial grasslands along the Himalaya foothill valleys are among the tallest in the world. Characteristic species in these highly productive grasslands include *Saccharum spontaneum*, *Phragmites karka*, *Arundo donax*, *Imperata cylindrica*, *Erianthus ravaneae*, *Andropogon* spp., and *Aristida ascensionis* (Shrestha and Joshi, 1997). Annual silt deposition during monsoon floods rejuvenates these grasslands and promotes rapid regeneration. As the floodwaters recede, grasses such as *Saccharum spontaneum* and pioneer trees such as *Trewia nudiflora* and *Ehretia laevis* colonize the area. The grasslands transition into the Sal forests that flank

the hillsides along the lower reaches of the river valleys, below 1,000 m. The lower hill slopes above 1,000 meters are cooler and less drought-stressed during the spring pre-monsoon season. Here, the subtropical evergreen broadleaf forests are dominated by tree taxa such as *Castanopsis* and *Schima* from subtropical East Asia.

The administrative control of the forests within the study area lies with the Jonai Range of the Dhemaji Forest Division. The Pabha RF lying to the north east of the area demarcated for this study represents the largest tract of natural forest within the Jonai Range. Apart from the Pabha RF, the Jonai Range also looks after the Leku, Jelem, Rigbi, Bahir Sillai, Bijoypur and Gali Borbali JFMCs under the Assam Joint (People's Participation) Forestry Management initiative.

Knowledge of the fauna of the entire Eastern Himalayas Region, within which the present survey area occurs, is poor. Most of the information available is on the larger vertebrates that are easily observed and inventoried. It is likely that there are many smaller mammals, reptiles, amphibians, and fishes in the Region that remain to be known. Invertebrate taxa, with the exception of the Himalayan Lepidoptera, are also largely undocumented. Overall, more than 175 species of mammals and in excess of 500 species of birds are known from the region (WWF and ICIMOD 2001). The mammalian fauna in the lowlands are typically Indo-Malayan, but with altitude there is a transition into Palearctic fauna.

The recent origin of the Himalayas contributes to a low endemism of the Eastern Himalaya Region, especially among the better-known higher taxonomic groups. The region however harbors several species that are represented by globally significant populations. These include important populations of the largest carnivore and herbivores in Asia, notably the tiger (*Panthera tigris*), Asian elephant, and wild water buffalo. The elephant population in the remaining habitat patches along the north bank of the Brahmaputra River in Assam is one of India's largest and most important (Sukumar, 1992). The Brahmaputra that flows along the Himalayas foothills also supports globally important populations of the Gangetic dolphin (*Platanista gangetica*). The region is also home to some of Asia's largest birds. The populations of vultures, greater and lesser adjutants in the foothill grasslands and broadleaf forests are globally significant, as are the populations of several of the hornbill species and pheasants and the white-winged duck (*Cairina scutulata*).

Selection of Sites for the Faunal Survey and Faunal Survey Methods: The biodiversity of the region of India remains unmapped. Biosurvey efforts in the North Eastern region have been uneven and there are large areas where the biodiversity is still unexplored. Jonai subdivision in the Dhemaji district of Assam where OIL proposes to drill two wells for hydrocarbon exploration is one such unexplored area that is poorly defined in terms of its faunal characteristics.

The faunal survey undertaken as a part of the REIA of the proposed drilling project focused on eliciting information on the fauna of the study area to help assess the possible impact that the proposed drilling of exploratory wells could have on this important component of the biota. In selecting sites for acquiring the data relevant to the proposed seismic survey, an attempt was made to reflect the spatial variability of the survey area. Based on map inspection, field reconnaissance and information derived from the LU/LC classification of the survey area the following stations were selected for conducting the faunal survey:

The faunal survey stations are located at

- 1) Jonai Bazaar
- 2) Baro Mile Beat of Pabha RF
- 3) Sat Mile Beat of Pabha RF
- 4) Tin Mile Beat of Pabha RF
- 5) Bahir Jonai Village
- 6) Bhitari Sille Village
- 7) Jone Korong
- 8) Nich Ratanpur village
- 9) Upar Bijoypur Village
- 10) Nich Bijoypur Village
- 11) Gali Camp

These sites served as stations for the survey of the terrestrial fauna within the study area. Further, these stations were also used to access the lotic and lentic water bodies listed below for an evaluation of the aquatic fauna.

- 1) Leku River
- 2) Bahir Jonai River
- 3) Sille River
- 4) Tini Suti (Pabhamukh)
- 5) Rayang River
- 6) Rajakana River
- 7) Nahar Nala
- 8) Gali Nala
- 9) Sat Mile Beel.

Survey Method

The five taxonomic groups, which were chosen for assessment in the present faunal survey, were as follows:

- Ø Mammals
- Ø Birds
- Ø Reptiles
- Ø Amphibia
- Ø Fish

These vertebrate groups, dispersed across a range of terrestrial and aquatic habitats, can be expected to provide an indication of the health of wildlife habitats within the study area. Surveys were undertaken in the areas around the identified stations to assess the faunal diversity of the study area in terms of the targeted taxa. Care was exercised to ensure that all major habitats within the study area were included in the survey.

Keeping in view the objectives of the faunal survey and also the scope and limitations of the present rapid EIA, it was decided to carry out a Level 1 Assessment (Thompson, 2007) to elicit information on the faunal character of the study area. A Level 1 Assessment involves a desktop study followed by field reconnaissance to corroborate the desktop study. The field reconnaissance in the present study involved direct observation of animals and animal signs. This was supplemented by information obtained through interaction with local residents, forest officials and wildlife experts acquainted with the study area. Information obtained in

the field was collated with the information from the desktop study and used to describe the faunal characteristic of the study area.

In view of the lack of adequate documented information on the fauna of the study area and constraints of time of an REIA, a checklist survey method was followed in the field. Checklists surveys are unrestricted, comprehensive searches, and are in contrast to restricted transect methods (Royer et al., 1998). Checklist surveys are employed primarily to confirm the presence of species, and sometimes the number of individuals of species in a surveyed area. They allow the generalization of the faunal status across the surveyed area. An advantage of a checklist survey is that it leaves the observer free to search out productive habitats within the surveyed area for the detection of species. Another advantage of this survey method is its procedural simplicity with the surveyor needing to only identify and count species. Checklist counting also allows for responses to changes in site conditions. While checklisting offers the advantages of procedural freedom and economy of effort, this 'open – ended' survey approach does not adequately meet the rigors of statistics (Hellawell, 1991). Where continuous monitoring or indexing of abundance is a concern, transect methods are more suitable.

Surveys involved the use of vehicles and walking. Mammalian surveys were carried out both during the day and at night to elicit information on the diurnal and nocturnal species within the study area. Daytime surveys involved walking through a selected habitat to locate the presence of species and nighttime surveys were usually conducted from a number of fixed observation points. The latter procedure was adopted to resolve the problem of nighttime access to many of the selected survey locations.

Bird surveys were carried out at each of the identified stations during early morning hours. Herpetofauna surveys were timed so that amphibian surveys were undertaken at each location beginning at dusk while reptilian surveys were generally conducted during the afternoon hours. Microhabitats under stones, fallen logs and tree stumps found within a location were examined. In woodlands, trees were inspected for the presence of arboreal snakes.

Aquatic habitats were sampled for amphibians with the help of a hand net, ensuring that a sufficiently representative area of the aquatic body was netted.

Survey of the fish fauna involved netting efforts in the water bodies chosen for assessment. Local fishermen were employed to carry out the netting.

Because of the time constraints of an REIA, the possibility of the present faunal survey missing some species, belonging to the targeted taxa and present within the study area, cannot be obviated. However this is not expected to significantly alter the perception of the proposed project's impact on the fauna within the study area.

Faunal Composition of the Study Area

The Level 1 Faunal Assessment of the study area, carried out as described above, has allowed the preparation of checklists for the five taxonomic groups targeted by the faunal survey. It needs to be mentioned that there has been large-scale anthropogenic modification of the natural landscape of the surveyed area due to expansion of agriculture, unregulated clearing of forests for settlements, logging and several other factors. Despite this modification, the area manages to support a considerable faunal diversity.

Mammals

The surveyed area provides a habitat for at least 7 species of mammals that are listed in Schedule I of the Indian Wildlife (Protection) Act of 1972. The study area is a part of the habitat of the Asian Elephant population of the North Bank of Brahmaputra.. These elephants are known to regularly use this eastern most part of their range to cross over to the Dibru – Saikhowa Sanctuary (Choudhury, 1999). Another important large herbivore found in the floodplain habitat of the surveyed area is the Wild Water Buffalo. The wildlife habitat within the surveyed area also supports other herbivores like the Barking Deer and the Hog Deer. Forest sources and the residents of villages in the area attest to the presence of the tiger, leopard and even the clouded leopard in the area. This information is however only as recent as four years ago and the present survey could not confirm the more recent presence of any of these large carnivores in the study area. But without a more detailed study, the possibility of the area being a part of the habitat range of these large carnivores cannot be discounted. The presence of lesser carnivores like the Asiatic Jackal, Small Indian Civet, Large Indian Civet and Indian Grey Mongoose was however be directly confirmed from the area. The forests, which remain within the surveyed area, were also confirmed to provide a habitat for at least two primate species that are of conservation concern. These species are the Slow Loris listed

under Schedule I of the IWPA and the Assamese Macaque, which IUCN's Red List categorizes as Vulnerable. A very important mammalian species is the Gangetic Dolphin, which has been sighted sporadically in the stretch of the Brahmaputra abutting on the study area. This again is a Schedule I species and is also in the endangered category in IUCN's Red List. Table 3.35 lists the 28 species of mammals whose presence could be confirmed either directly or was attested to by reliable sources.

Birds

As is typical of a riverine floodplain, the surveyed area has a rich representation of avian species. Both water birds and upland birds were among the 128 species, which were recorded during the present faunal survey. The Pabhamukh area inside Pabha RF is recorded in references as a White Winged Duck habitat, but sightings of the bird in this area in recent years is rare. This bird is listed under Schedule I of the IWPA and the IUCN has placed it in its Critically Endangered list. Also in the Critically Endangered list is the Crested Serpent Eagle that has been recorded from the area. The Fish-eating Eagle is another important Schedule I bird species that occurs in the area. Other species of conservation concern that have been recorded from the surveyed area are the Greater Adjutant Stork belonging to IUCN's Endangered category, the Lesser Adjutant Stork, Swamp Francolin, Pallas' Fishing Eagle and the Great-horned Owl, all of which are in IUCN's Vulnerable category, and species like the Oriental Darter, Grey-headed Fish Eagle, Black-bellied Tern and Blyth's Kingfisher, which the IUCN recognizes as Near Threatened. The water bodies within the surveyed area are also confirmed to be visited by a number of winter migrant species. The checklist of birds prepared for the surveyed area is given in Table 3.36.

Herpetofauna

The herpetofauna recorded from the surveyed area include 10 amphibian species and 36 species of reptiles. The latter group includes 10 species of turtles and tortoises. Six of the recorded reptilian species are listed under Schedule I of the IWPA and these are the Asiatic Rock Python, Indian Monitor Lizard, Indian Tent Turtle, Indian Roofed Turtle, Peacock Soft shell Turtle and the Indian Flap shell turtle. Also recorded from the area are reptilian species like the King Cobra, Assam roofed Turtle, Narrow headed Softshell and the Elongated Tortoise that the IUCN's Red List categorizes as Endangered. The checklist of herpetofauna recorded from the study area is provided in Table 3.37.

Fish

Nettings carried out in the water bodies within the surveyed area, and information gathered from local sources, allowed the confirmation of the presence of 117 freshwater fish species from the area. A special character of the fish diversity of lotic bodies within the studied area is the occurrence of species typical of the hill stream habitat, and this can be attributed to the origin of these water bodies in the Arunachal Himalayas. The species usually associated with hill streams and found in the water bodies which were evaluated, included the Chocolate Mahsheer, Tor Mahsheer, Pangusia labeo, Chaguni carp, Gangetic latia, Gotyla Suckerfish, Kosi Hara, Jerdoni Hara, Glyptothorax cavia and the Himalayan olyra. From the viewpoint of conservation, it is also important to note that of the 117 fish species recorded from the area, an expert assessment has found at least 13 of these species to face a threat to their survival throughout the North-Eastern Region, including within the surveyed area (Dey et al., 2002). Fish species recorded from the study area are shown in the checklist in Table 3.38.

Table 3.35: Checklist of Mammals reported from the Study Area (S – I = Schedule I of Indian Wildlife Protection Act; EN = Endangered; VU = vulnerable; NT = near threatened LR/nt= Lower risk, near threatened; LC= Least concern; LR/lc = Lower risk / least concern, in IUCN Red List).

Order	Family	Sl.No.	Common	Scientific	Status
Proboscidea	Elephantidae	1	Asian	Elephas	EN/ S-I
Artiodactyla	Bovidae	2	Asian	Bubalus	EN/S-I
	Cervidae	3	Hog Deer	Axis porcinus	-
		4	Barking Deer	Muntiacus	LR/lc
	Suidae	5	Wild Boar	Sus scrofa	LR/lc
Carnivora	Felidae	6	Tiger	Panthera	EN/ S-I
		7	Leopard	Panthera	S-I
		8	Clouded	Neofelis	S-I/VU
		9	Jungle Cat	Felis chaus	LC
	Canidae	10	Asiatic Jackal	Canis aureus	LC
	Viverridae	11	Small Indian	Viverricula	LR/lc
		12	Large Indian	Viverricula	LC
	Mustelidae	13	Smooth –	Lutrogale	VU
	Herpestidae	14	Indian Grey	Herpestes	LR/lc
		15	Small Asian	Herpestes	LR/lc
Primates	Cercopithecidae	16	Rhesus	Macaca	LR/nt
		17	Assamese	Macaca	VU
	Loridae	18	Slow Loris	Nycticebus	
Rodentia	Sciuridae	19	Indian Palm	Funambulus	LR/lc
	Hystriidae	20	Porcupine	Hystrix	VU
		21	Little Indian	Mus booduga	LR/lc
		22	House Mouse	Mus	LR/lc
		23	Common	Rattus rattus	LR/lc
Chiroptera	Pteropodidae	24	Indian flying	Pteropus	LR/lc
	Rhinolophidae	25	Least	Rhinolophus	LR/lc
Soricomorphaaa	Soricidae	26	Asian House	Suncus	LR/lc
		27	Mole Shrew	Anourosorex	LR/lc
Cetacea	Platanistidae	28	Gangetic	Platanista	EN/S-I

Table 3.36. Checklist of Avifauna reported from the Study Area (S –I = Schedule I of Indian Wildlife Protection Act, 1972; CR = Critically Endangered, EN = Endangered; VU = vulnerable; LC= Least concern; LR = Lower risk, NT = near threatened in IUCN Red List.)

Family	Sl.No	Common Name	Scientific Name	Status
Podicipedae	1	Little Grebe	Tachybaptus ruficollis	LC
	2	Great Crested Grebe	Podiceps cristatus	LC
Phalacrocoracidae	3	Great cormorant	Phalacrocorax carbo	LC
	4	Little cormorant	Phalacrocorax niger	LC
	5	Indian Shag	Phalacrocorax fuscicollis	LC
Anhingidae	6	Oriental Darter	Anhinga melanogaster	NT
Ardeidae	7	Grey Heron	Ardea cinerea	LC
	8	Purple Heron	Ardea purpurea	LC
	9	Indian pond Heron	Ardeola grayii	LC
	10	Cattle Egret	Bubulcus ibis	LC
	11	Great Egret	Casmerodius albus	LC
	12	Intermediate Egret	Ardea intermedia	LC
	13	Little Egret	Egretta garzetta	LC
	14	Cinnamon Bittern	Ixobrychus cinnamomeus	LC
	15	Great Bittern	Botaurus stellaris	LC
	16	Black crown Night Heron	Nycticorax nycticorax	LC
Ciconiidae	17	Asian Open bill	Anastomus oscitans	LC
	18	Lesser Adjutant Stork	Leptoptilos javanicus	VU
	19	Greater Adjutant Stork	Leptoptilos dubius	EN
Anatidae	20	Lesser Whistling Duck	Dendrocygna javanica	LC
	21	Fulvous Whistling Duck	Dendrocygna bicolor	LC
	22	Ruddy Shelduck	Tadorna ferruginea	LC
	23	White winged Duck	Cairina scutulata	CR / S-I
	24	Pintail	Anas acuta	LC
	25	Common Teal	Anas crecca	LC
	26	Spot billed Duck	Anas poecilorhynchus	LC
	27	Bar Headed Goose	Anser indicus	LC
	28	Cotton Pygmy Goose	Nettapus	LC
	29	Tufted Duck	Aythya fuligula	LC
Phasianidae	30	Swamp Francolin	Francolinus gularis	VU
	31	Kalij Pheasant	Lophura leucomelanos	LC
	32	Black Francolin	Francolinus francolinus	LC
	33	Red Jungle Fowl	Gallus gallus	LC
Rallidae	34	Water Cock	Gallicrex cinerea	LC
	35	White breasted Water hen	Amaurornis phoenicurus	LC

	36	Common Moorhen	Gallinula chloropus	LC
	37	Purple Swamp hen	Porphyrio porphyrio	LC
	38	Water Rail	Rallus aquaticus	LC
	39	Common Coot	Fulica atra	LC
Jacaniidae	40	Pheasant –Tailed Jacana	Hydrophasianus	LC
	41	Bronze winged Jacana	Metopidius indicus	LC
Charadriidae	42	Grey headed Lapwing	Vanellus cinereus	LC
	43	Northern Lapwing	Vanellus vanellus	LC
	44	Red wattled Lapwing	Vanellus indicus	LC
	45	Little Ringed Plover	Charadrius dubius	LC
Scolopacidae	46	Wood Sandpiper	Tringa glareola	LC
	47	Common Sandpiper	Actitis hypoleucos	LC
Meropidae	48	Little Green Bee-eater	Merops orientalis	LC
Bucerotidae	49	Oriental Pied Hornbill	Anthracoceros albirostris	LC
Coraciidae	50	Indian Roller	Coracias benghalensis	LC
Upupidae	51	Hoopoe	Upupa epops	LC
Ramphastidae	52	Lineated Barbet	Megalaima lineata	LC
	53	Blue throated Barbet	Megalaima asiatica	LC
	54	Copper smith Barbet	Megalaima haemacephala	LC
Picidae	55	Greater Flame back	Chrysocolaptes lucidus	LC
	56	Black rumped Flameback	Dinopium benghalense	LC
Accipitridae	57	Grey headed fish Eagle	Ichthyophaga ichthyaetus	NT
	58	Pallas’s Fishing Eagle	Haliaeetus leucoryphus	VU
	59	Brahminy Kite	Haliastur indus	LC
	60	Osprey /Fish eating Eagle	Pandion haliaetus	LC/S-I
	61	Sparrow Hawk	Accipiter nisus	LC
	62	Lesser spotted Eagle	Aquila pomarina	LC
	63	Greater spotted Eagle	Aquila clanga	LC
	64	Pallas’ Fishing Eagle	Haliaeetus leucoryphus	VU
	65	Crested Serpent Eagle	Spilornis cheela	CR
	66	Black kite	Milvus migrans	LC
	67	Pied Harrier	Circus melanoleucos	LC
	68	Black eared kite	Milvus lineatus	LC
	69	Oriental Honey Buzzard	Pernis ptilorhynchus	LC
Nectarinidae	70	Purple Sunbird	Nectarinia asiatica	LC
Laridae	71	Brown headed Gull	Larus brunnicephalus	LC
	72	Common Blackheaded	Larus ridibundus	LC
	73	Indian River Tern	Sterna aurantia	LC
	74	Black bellied Tern	Sterna acuticauda	NT
	75	Whiskered Tern	Chlidonias hybrida	LC
Ploceidae	76	Baya weaver	Ploceus philippinus	LC

Sturnidae	78	Chestnut-tailed Starling	<i>Sturnus malabaricus</i>	LC
	79	Asian Pied Starling	<i>Sturnus contra</i>	LC
	80	Bank Myna	<i>Acridotheres ginginianus</i>	LC
	81	Common Myna	<i>Acridotheres tristis</i>	LC
	82	Hill Myna	<i>Gracula religiosa</i>	LC
Muscicapidae	83	Red breasted Flycatcher	<i>Ficedula parva</i>	LC
	84	Oriental Magpie Robin	<i>Copsychus saularis</i>	LC
Timaliidae	85	Jungle babbler	<i>Turdoides striata</i>	LC
Sylviidae	86	Common Tailor Bird	<i>Orthotomus sutorius</i>	LC
Turdidae	87	Blue Whistling Thrush	<i>Myophonus caeruleus</i>	LC
Columbidae	88	Thicked billed Green	<i>Treron curvirostra</i>	LC
	89	Rock Pigeon	<i>Columba livia</i>	LC
	90	Eurasian color Dove	<i>Streptopelia decaocto</i>	LC
	91	Spotted dove	<i>Stigmatopelia chinensis</i>	LC
Psittacidae	92	Rose Ringed Parakeet	<i>Psittacula krameri</i>	LC
	93	Red-breasted Parakeet	<i>Psittacula alexandri</i>	LC
Cuculidae	94	Indian Cuckoo	<i>Cuculus micropterus</i>	LC
	95	Banded Bay Cuckoo	<i>Cacomantis sonneratii</i>	LC
	96	Common Hawk Cuckoo	<i>Cuculus varius</i>	LC
	97	Common Cuckoo	<i>Cuculus canorus</i>	LC
	98	Asian Koel	<i>Eudynamys scolopaceus</i>	LC
	99	Greater Coucal	<i>Centropus sinensis</i>	LC
Oriolidae	100	Blackhooded Oriole	<i>Oriolus xanthornus</i>	LC
	101	Golden Oriole	<i>Oriolus oriolus</i>	LC
Apodidae	102	Little swift	<i>Apus affinis</i>	LC
	103	Common swift	<i>Apus apus</i>	LC
	104	House swift	<i>Apus nipalensis</i>	LC
Paridae	105	Great Tit	<i>Parus major</i>	LC
Tytonidae	106	Barn Owl	<i>Tyto alba</i>	LC
Strigidae	107	Asian Barred Owlet	<i>Glaucidium cuculoides</i>	LC
	108	Brown Hawk Owl	<i>Ninox scutulata</i>	LC
	109	Spotted Owlet	<i>Athene brama</i>	LC
	110	Great horned Owl	<i>Bubo bubo</i>	VU
Dicruridae	111	Fork tailed Drongo	<i>Dicrurus adsimilis</i>	LC
	112	Bronzed Drongo	<i>Dicrurus aeneus</i>	LC
	113	Ashy Drongo	<i>Dicrurus leucophaeus</i>	LC
	114	Hair crested Drongo	<i>Dicrurus hottentotus</i>	LC
	115	Lesser racket tailed	<i>Dicrurus remifer</i>	LC
	116	Greater Racket tailed	<i>Dicrurus paradiseus</i>	LC
Corvidae	117	House Crow	<i>Corvus splendens</i>	LC
	118	Large billed Crow	<i>Corvus macrorhynchos</i>	LC

Campephagidae	119	Small minivet	Pericrocotus	LC
Motacillidae	120	Grey Wagtail	Motacilla cinerea	LC
	121	Forest Wagtail	Dendronanthus indicus	LC
Alcedinidae	122	Pied King fisher	Ceryle rudis	LC
	123	Blyth's King fisher	Alcedo hercules	NT
	124	Common King fisher	Alcedo atthis	LC
	125	Stork billed King fisher	Pelargopsis capensis	LC
	126	White throated King	Halcyon smyrnensis	LC
Pycnonotidae	127	Red vented Bulbul	Pycnonotus cafer	LC
Passeridae	128	House Sparrow	Passer domesticus	LC
	129	Tree Sparrow	Passer montanus	LC

Table 3.37. Checklist of herpetofauna recorded in the survey area (S – I = Schedule I, of Indian Wildlife Protection Act, 1972, EN = Endangered; VU = vulnerable; LC = Least concern, LR/nt = Lower risk /near threatened, LR/lc = Lower risk / least concern, DD= Data deficient and NE = Not Evaluated in IUCN Red List .

Family	Sl.	Common Name	Scientific Name	Status
Bufo	1	Common Toad	Bufo melanostictus	LC
Rhacophoridae	2	Tree frog	Polypedates leucomystax	LC
Microhylidae	3	Ornamented Pygmy Frog	Microhyla ornata	LC
Ranidae	4	Indian bull frog	Hoplobatrachus tigerinus	LC
	5	Jerdon's bull frog	Hoplobatrachus crassus	LC
	6	Indian Skipper Frog	Euphlyctis cyanophlyctis	LC
	7	Flat headed frog	Limnonectes laticeps	LC
	8	Common Pond Frog	Fejervarya limnocharis	LC
	9	Assam Hills Frog	Rana alticola	LC
	10	Water frog	Rana garoensis	LC
Typhlopidae	11	Typhlops	Ramphotyphlops braminus	LR/nt
Boidae	12	Asiatic Rock Python	Python molurus	LR/nt/S-I
Colubridae	13	Common Rat Snake	Ptyas mucosus	LR/nt
	14	Chinese Rat Snake	Ptyas korros	NE
	15	Copperheaded Rat Snake	Coelognathus radiatus	LR/lc

	16	Checkered Keelback	<i>Xenochrophis piscator</i>	LR/lc
	17	Painted bronzeback Snake	<i>Dendrelaphis tristis</i>	LR/lc
	18	Golden Tree Snake	<i>Chrysopelea ornata</i>	LR/nt
	19	Common wolf Snake	<i>Lycodon aulicus</i>	LR/lc
	20	Buff –striped keelback	<i>Amphiesma stolatum</i>	LR/nt
	21	Eastern cat Snake	<i>Boiga gokool</i>	NE
	22	Red-necked Keelback	<i>Rhabdophis subminiatus</i>	VU
	23	Smooth water Snake	<i>Enhydris enhydris</i>	LR/lc
	24	Banded Krait	<i>Bungurus fasciatus</i>	LR/nt
Elapidae	25	Monocellate Cobra	<i>Naja kaouthia</i>	NE
	26	King Cobra	<i>Ophiophagus hannah</i>	En
Viperidae	27	Green Pit Viper	<i>Trimeresurus albolabris</i>	LR/lc
	28	Indian Monitor Lizard	<i>Varanus bengalensis</i>	VU/S-I
Varanidae	29	Yellow monitor	<i>Varanus flavencens</i>	LR/lc
	30	Tokay Lizard	<i>Gekko gecko</i>	DD
Gekkonidae	31	House Gecko	<i>Hemidactylus frenatus</i>	LR/lc
	32	House Lizard	<i>Hemidactylus brookii</i>	LR/lc
	33	Indian Garden Lizard	<i>Calotes versicolor</i>	LR/nt
Agamidae	34	Blue throated Lizard	<i>Ptyctolaemus gularis</i>	NE
	35	Common Skink	<i>Mabuya carinata</i>	LR/nt
Bataguridae	37	Assam Roofed Turtle	<i>Kachuga sylhetensis</i>	EN
	38	Indian Tent Turtle	<i>Pangshura tentoria</i>	LR/lc/S-I
	39	Brown Roofed Turtle	<i>Pangshura smithii</i>	LR/nt
	40	Indian Roofed Turtle	<i>Pangshura tecta</i>	LR/lc/S-I
	41	South Asian Box Turtle	<i>Cuora amboinensis</i>	VU
	42	Ganges soft shell	<i>Aspideretes gangeticus</i>	VU
Trionychidae	43	Peacock soft shell Turtle	<i>Aspideretes hurum</i>	VU/S-I
Trionychidae	44	Indian Flap-shell Turtle	<i>Lissemys punctata</i>	LR/lc/S-I
Trionychidae	45	Narrow headed soft shell	<i>Chitra indica</i>	EN
Testudinidae	46	Elongated Tortoise	<i>Indotestudo elongata</i>	EN

Table 3.38. Checklist of Fish fauna reported from the Study Area (Th= Threatened V= Vulnerable ; NTh= Not Threatened)

Family	Sl.no	Common Name	Species	Status
Cyprinidae	1	Mola carplet	Amblypharyngodon mola	NTh
	2	Chocolate mahsheer	Neolissocheilus hexagonolepis	NTh
	3	Tor mahsheer	Tor tor	V
	4	Catla	Catla catla	NTh
	5	Reba carp	Cirrhinus reba	NTh
	6	Rohu	Labeo rohita	NTh
	7	Kuria labeo	Labeo gonius	NTh
	8	Black rohu	Labeo calbasu	NTh
	9	Angra labeo	Labeo angra	NTh
	10	Bata labeo	Labeo bata	NTh
	11	Kalabans	Labeo dero	V
	12	Boga labeo	Labeo boga	NTh
	13	Pangusia labeo	Labeo pangusia	V
	14	Chaguni carp	Chagunius chagunio	Th
	15	Chola barb	Puntius chola	NTh
	16	Rosy barb	Puntius conchonius	NTh
	17	Golden dwarf barb	Puntius gelius	NTh
	18	Olive barb	Puntius sarana	Th
	19	Spotfin swam Barb	Puntius sophore	NTh
	20	Fire fin barb	Puntius ticto	NTh
	21	Bengala barb	Bengala elenga	Th
	22	Blackline rasbora	Parluciosoma daniconius	NTh
	23	Aspidoparia	Aspidoparia morar	NTh
	24	Jaya	Aspidoparia jaya	V
	25	Barna baril	Barilius barna	NTh
	26	Hamilton's barila	Barilius bendelisis	NTh
	27	Vagra baril	Barilius vagra	NTh
	28	Indian trout	Raiamas bola	V
	29	Assamese King fish	Cyprinion semiplotum	Th

	30	Zebra danio	Brachydanio rerio	NTh
	31	Giant danio	Danio aequipinnatus	NTh
	32	Dangila danio	Danio dangila	NTh
	33	Silver danio	Danio devario	NTh
	34	Indian Glass barb	Chela laubuca	NTh
	35	Silver hatchet chela	Chela cachius	NTh
	36	Cotio barb	Osteobrama cotio	V
	37	Large razor belly minnow	Salmostoma bacaila	NTh
	38	Finescale razor belly minnow	Salmostoma phulo	NTh
	39	Gangetic scissortail rasbora	Rasbora rasbora	Th
	40	Gangetic latia	Crossochelius latius	V
	41	Flying barb	Esomus danricus	NTh
	42	Gotyla sucker fish	Garra gotyla	V
	43	Mrigal	Cirrhinu mrigala	NTh
Nandidae	44	Mottled nandus	Nandus nandus	V
	45	Dwarf Chameleon fish	Badis badis	NTh
Anguillidae	46	Indian longfin eel	Anguilla bengalensis	Th
Synbranchidae	47	Gangetic mud eel	Monopterus cuchia	NTh
Notopteridae	48	Humped featherback	Notopterus chitala	Th
	49	Grey featherback	Notopterus notopterus	NTh
Clupeidae	50	Indian River shad	Gudusia chapra	NTh
	51	Hilsa	Hilsa ilisha	NTh
Psilorhynchidae	52	Balitora minnow	Psilorhynchus balitora	V
	53	Sucatio minnow	Psilorhynchus sucatio	V
Balitoridae	54	Botia loach	Nemachelius botia	NTh
	55	Reticulated loach	Nemachelius reticulofasciatus	NTh
Cobitidae	56	Guntea loach	Lepidocephalus guntea	NTh
	57	Gongota loach	Somileptis gongota	Th
	58	Necktie loach	Botia dario	NTh
	59	Hara loach	Botia dayi	NTh
	60	Gangetic loach	Botia rostrata	NTh
Bagridae	61	Long whiskered catfish	Aorichthys aor	V

	62	Giant river catfish	Aorichthys seenghala	V
	63	Tista batasio	Batasio batasio	V
	64	Assamese batasio	Batasio tengana	V
	65	Day's catfish	Mystus bleekeri	Th
	66	Gangetic mystus	Mystus cavasius	NTh
	67	Tengara catfish	Mystus tengara	NTh
	68	Striped dwarf catfish	Mystus vittatus	NTh
	69	Asian cory	Rama chandramara	V
	70	Rita	Rita rita	V
Siluridae	71	Indian butterfish	Ompok bimaculatus	V
	72	Pabdah catfish	Ompok pabda	V
	73	Pabo catfish	Ompok pabo	Th
	74	Boal	Wallago attu	NTh
Scheilbeidae	75	Gangetic ailia	Ailia coila	NTh
	76	Garua bachcha	Clupisoma garua	NTh
	77	Batchwa vacha	Eutropiichthys vacha	NTh
	78	Murius vacha	Eutropiichthys murius	NTh
	79	Indian potasi	Pseudeutropius atherinoides	NTh
	80	Gangetic hairfin anchovy	Setepinna phasa	NTh
	81	Silondia vacha	Silonia silondia	NTh
	82	Pungas	Pangasius pangasius	NTh
Sisoridae	83	Gangetic gonch	Bagarius bagarius	Th
	84	Gonch	Bagarius yarrellii	Th
	85	Gangetic erethistes	Erethistes pusillus	V
	86	Kosi hara	Hara hara	V
	87	Jerdoni hara	Hara jerdoni	V
	88	Kosi nangra	Nangra nangra	V
	89	Huddah nangra	Gagata itchkeea	V
	90	Indian gagata	Gagata cenia	V
	91	Gangetic gagata	Gagata gagata	V
	92		Glyptothorax cavia	V
Family	Sl.no	Common Name	Species	Status
Olyridae	93	Himalayan olyra	Olyra longicaudata	V

Belontiidae	94	Freshwater garfish	Xenentodon cancila	NTh
Ambassidae	95	Elongated glass perchlet	Chanda nama	NTh
	96	Dwarf glass perchlet	Pseudambassis ranga	NTh
	97	Himalayan glassy perchlet	Pseudambassis baculis	V
Gobiidae	98	Tank goby	Glossogobius giuris	NTh
Channidae	99	Giant snakehead	Channa marulius	NTh
	100	Asiatic snakehead	Channa orientalis	NTh
	101	Spotted snakehead	Channa punctata	NTh
	102	Banded snakehead	Channa striatus	NTh
	103	Assamese snakehead	Channa stewarti	V
	104	Barca snakehead	Channa barca	Th
Claridae	105	Magur	Clarias batrachus	NTh
Heteropneustidae	106	Stinging catfish	Heteropneustes fossilis	NTh
Mugilidae	107	Corsula mullet	Rhinomugil corsula	V
	108	Yellowtail mullet	Sicamugil cascasia	V
Mastcembelidae	109	One – stripe spiny eel	Macrogathus aral	NTh
	110	Striped spiny eel	Macrogathus pancalus	NTh
Belontiidae	112	Giant gourami	Colisa fasciatus	N.Th
	113	Dwarf gourami	Colisa lalia	N.Th
	114	Honey gourami	Colisa sota	V
Anabantidae	115	Climbing perch	Anabas testudineus	NTh
Cyprinodontidae	116	Blue panchax	Aplocheilus panchax	NTh
Tetraodontidae	117	Ocellated pufferfish	Tetraodon cutcutia	V