CHAPTER-I

GENERAL INTRODUCTION
India has a rich variety of wetland habitat. The total area of wetlands (excluding rivers) in India is about 58,286,000 ha or 18.4% of the country's total area (Devi et al, 2007). The North-Eastern region of India has number of important wetlands including two Ramsar sites. The flood plains of the Brahmaputra River, the Barak River, and their tributaries are full of wetlands of different types and sizes. These wetlands are commonly known as beels in Assam. According to the ARSAC-SAC (Assam Remote Sensing Application Centre in collaboration with the Space Application Centre) report, the state has only inland wetlands of both natural and manmade types, lakes and ponds, oxbow lakes or cut of meanders. Water logged (seasonal) and swampy and marshy areas as principal varieties of natural wetlands. Tanks and reservoirs are the main categories in the manmade type of wetland of the state.

The floodplain wetlands are an integral part of the catchment and hydrological system of the Brahmaputra basin. Having river meanders (ox-bow lakes) and tectonic depressions as their major components, the weed infested, shallow and nutritionally rich wetlands support a wide variety of biotic communities.
The North-Eastern India is considered as one of the global hot spots of freshwater fish biodiversity in the world (Kottelat and Whitten, 1996). However, there has been drastic reduction in the abundance and distribution range of fishes in this region due to habitat modification, over exploitation and other anthropogenic causes (Agarwala, 1994; Sinha, 1994; Yadava and Chandra, 1994; Bhattacharjya, *et al.*, 1998; Sarkar and Ponniah, 2000). The number of fish species reported from Assam has gone up from 185 in 1994 (Sinha, 1994) to 217 species in 2004 (Bhattacharjya *et al.*, 2004) Biswas and Sugunan (2008) recorded fish diversity of Brahmaputra river system in Assam and reported 151 species under 93 genera, 35 families and 10 orders. However this work is based on their study during 1987-2000. NRFGR (2010) has recorded 120 threatened fishes from India.

Reports of intensive study from any natural habitat of Assam are important contributions to the study. The present work is an attempt to make a comprehensive study in the Garjan beel of Kamrup district of Assam. The study was planned to give an overview of present status, ichthyofaunal diversity, ecology and physicochemical analysis of water and detailed ecobiological study of three species of conservational importance.

To conserve a species data on habitat and detailed ecobiology is of immense importance. In the present investigation three species viz, *Puntius ornatus, Lepidocephalichthys guntea* and *Neotropius atherinoides*...
belonging to three different families from the same habitat have been taken up for detailed ecobiological study.

*Puntius ornatus* is a newly described species from the Brahmaputra drainage (Bordoloi and Baishya, 2006). They comprise a small percentage of total catch in the study area; so far the fish has not been recorded from any other place in Assam. Therefore a need has arisen to study the detailed ecobiology of the fish.

*Lepidocephalichthys guntea* is commonly known, as ‘Botia’ in Assam and is a bottom dwelling fish. The fish is available during monsoon period. The conservation status of the fish was not evaluated by CAMP(1998). This is a preferred food fish.

In Assam *Neotropius atherinoides* is commonly known as ‘Borduah’. The fish is available during monsoon period in the study area. The conservation status of the fish has been evaluated by CAMP (1998) as endangered (EN). Ecobiological data gathered on this species will help planning conservation measures in future. There is paucity of detailed information on the fishery biology of *Puntius ornatus, Lepidocephalichthys guntea* and *Neotropius atherinoides*. The study was aimed to make a thorough assessment of the beels as this is the first ever-comprehensive study of the fish and fisheries of Garjan beel, the important fish-harvesting site since time immemorial.
Along with data on fisheries and socio-economic condition of fishers, the detailed ecobiological study of the three important fish species will be an important contribution towards the conservation of fish species in North Eastern India.