Iril River, a principal tributary of Imphal River originates from the south eastern slope of the Hougdu hill range (Lakhmei village) in Ukhrul district and drains the north eastern part of Manipur. The total length of the Iril River from its confluence with the Imphal River is only 144.5 kilometres. But the basin is characterized by a complex and intricate drainage system. The main tributaries of the river are Ithoi lok, Ihang lok, Ichai lok, Ekou lok, Leimakhong lok and Wari lok. The Iril, its main tributaries and sub-tributaries, the rivulets and rills constitute the Iril River subsystem. Major portion of the river lies in the hilly terrain for about 90 km and enters Imphal valley at Saikul. It runs southward in a zigzag course and then joins the Imphal River at Lilong which in turn flows into the Irrawaddy in Myanmar. Despite its short length, different ecological conditions are met with, during the entire length. The different ecological conditions are in fact almost those of the kind met in a major river. Such conditions enhanced different life forms and thus, high endemism.

List of biodiversity hot spots of the world have been compiled, but these are based on higher plants, terrestrial vertebrates and butterflies and ignore aquatic communities. With speciation and distribution patterns in freshwater organisms differing from those of terrestrial ones, it is not surprising that many of the terrestrial hotspots, such as oceanic islands, do not contain significant elements of aquatic communities while important regions are entirely missing from existing hotspot distribution maps. The data on the fishes, especially those in the Chindwin basin are very important to fill up the gaps and to establish phylogeny of several freshwater fish taxa of the region. Although there have been
surveys in the Chindwin basin of the state since Hora's (1921) report, no inventory has been carried out on Iril drainage.

In view of the lack of ichthyological exploration on the Iril River system, expected high endemism due to its major part lying in hilly areas and varied ecological conditions, the present work had been carried out with the following objectives:

1. Detailed inventory of fish fauna of Iril River. Extensive sampling of fishes from the hill stream, middle and lower courses and also from the local catches along the river.

2. Morphometric study of the fishes to identify them upto species level by comparing with the types/specimens in the Zoological Survey of India, Kolkata, specimens in other museums of the world wherever necessary and referring to relevant literature. Attempts are also made at describing species new to science.

3. Systematic cataloguing of species with collection data and field informations in MUMF (Manipur University Museum of Fishes).

4. Detailed biology of selected threat taxa in respect of the food and feeding habit, fecundity, length weight relationship, determination of age and length at which sexual maturity sets in. It will be a valuable resource in planning for riverine and reservoir fisheries and water resources development and management.

5. Quantify physical habitat characteristics that would influence fish densities that could be supported in upper, middle and lower stretches of the river.

The present survey revealed its high diversity in terms of endemic forms. The river has 53 fish species belonging to 36 genera, 10 families, 5 orders. The report also describes 10 (ten) new species. In accordance with the definition of high diversity pointed out by Kottelat (2001), the number of families obtained shows the richness of diversity in the river.
The new species described here are *Amblyceps caudolunata*, *A. tuberculata*, *Bangana orientalis*, *Barilius torosus*, *Barilius vittatula*, *Glyptothorax granula*, *G. tuberculata*, *G. tenebricosus*, *G. ventrolineatus* and *Puntius ater*.

The total numbers of species obtained are grouped as: a. Endemic to Chindwin drainage, b. Widely distributed forms, c. Shallow water forms, d. Bottom dwelling forms, e. Bottom dwelling forms with special modifications, f. Deep pool forms, g. Seasonal migrants and h. Introduced species.

Of the various species obtained, attempts have been made to distinguish between forms of different basins and in doing so some of the species turn out to be new to science. Till date, *Bangana dero* has been known to occur in the Chindwin basin of the state but on close examination of the species it has been found that the species actually differs from *Bangana dero* of Gangetic basin and hence described new. The nomenclatural status of *Brachydanio acuticephala* (now *Devano*) has been observed and the systematic status of *Garra abhoyai* are discussed and recognized as distinct from *G. rupecula*. The position of vent and the presence or absence of proboscis on snout has been considered to be of great systematic and evolutionary significance by Menon (1964) and Vishwanath (1993). In the present study *Garra gotyla* is found to have its vent shifted close to the anal fin base whereas in *G. abhoyai*, the vent is shifted away from the anal fin base.

*Puntius* is called a catchall genus often consisting of colourful species. In the present study *P. ater* is a new species belonging to the *P. conchonius* species group and it has its close affinity with *P*. sp. of Khuga River and also found to be different from its nearest congeners *P. ticto* and *P. stoliczkanus*.

Previous workers recognized only one species of the genus *Amblyceps* in Indian waters. The Chindwin form of *Amblyceps* has been found to have various substantial features that distinguish them from *A. mangois* of the Gangetic basin. The two species are described new. Presence of pinnate like rays on caudal fin is generic character of *Amblyceps*, a character which is reported to be pronounced in the species of Indian region. However, the two species under description, i.e., *A.*
caudolunata and A. tuberculata are characteristic in the absence of this important character.

Some authors considered the genus *Glyptothorax* a wastebasket for species lacking the evident diagnostic characters of other genera. But according to Hora (1923) the genus is a generalized genus among its family and divided it into two groups. The two groups are herein referred to as "G. manipurensis group" and "G. pectinopterus group". In the present study four species of the genus were collected and each examined with the various types in ZSI and with specimens from other basins of the world and described new.

Early workers had access to a very few and poorly preserved specimens. With the then prevailing species concept, they usually conservatively concluded the observed variability for intraspecific rather than ontogenic, geographic, intra or interspecific. Now more ichthyologists than ever before are undertaking surveys of unexplored regions and little known habitats, they are conducting more through taxonomic revision and examining a wider scope of characters. Various workers reexamined such 'highly variable' widely distributed species and concluded that they were in fact aggregates of distinct, often not even closely related species. In the present study, a thorough examination of fresh and well preserved large number of the *Amblyceps, Glyptothorax, Puntius, Barilius, Bangana* specimens from different basins have been examined and each specimen from a particular basin were found to have various substantial features which distinguishes them from their nearest congeners, thus are described new.

Typically, fisheries tend to first deplete the largest species, and subsequently gradually change the exploitation pattern towards smaller sized fish. In general, large bodied fish tend to be more susceptible to fishing, partly because of their relative mobility, which increases the likelihood of encountering fishing gears. Add to this the preference of most fishers for large, valuable fish, and the fishery itself appears as a plausible cause of their decline. Froese and Torres (1999) conclude, from data in Fish Base, that the proportion of threatened
fishes increases substantially for maximum sizes exceeding 100cm, and that most fish species that grow to this size are threatened.

The introductions of *Clarias batrachus*, *Ctenopharyngodon idella* and *Cyprinus carpio* are known to be catastrophic. These species were found in the river and it is possible that their presence is already having a negative impact on the ecosystem.

The relationship of length and weight of *Bangana orientalis* and *Lepidocephalichthys berdmorei* confirmed the applicability of the general formula $W=aL^n$. The relationship thus supported the cube law. Fecundity of the two species was found to increase with increase in size of fish. Both the species were found to feed on bottom detritus matter and its mouth parts and the gut modified in accordance with the type of food consumed. A linear relationship was obtained between the total length and scale radii of the two species. *B. orientalis* was found to mature at the age of two and *L. berdmorei* after attaining its first year of age.

Habitat inventory of the river was carried out at three sites: upper, middle and lower stretches. The type of habitat encountered in the three stretches were found to be entirely different, each suitable for particular species. Big boulders and bedrocks mainly form the fish cover in the upper part of the river. The pool is the main fish cover and refuge for fishes in the middle stretch and in the lower part the depth and turbidity.

Along the course of the river it could be seen that siltation has occurred and banks are used for cultivation of vegetables by cutting down the trees, shrubs etc. Habitat loss is the principal factor that fragments natural populations and increases their risk of extinction but this often acts in synergy with other pressures such as alien species and unsustainable harvesting. In response to deteriorating biodiversity, many countries are party to international agreements. Thus it has become inevitable to take action to conserve the aquatic habitats without waiting for the evidence of loss to reach its peak.