INTRODUCTION

Amphibians are important components of many ecosystem and they may constitute the highest fraction of vertebrate biomass in some of these ecosystems (Blaustein et. al., 1994). Amphibians play a key role in our ecosystem and are well known for their sensitivity to pollution and habitat degradation.

Among amphibians, the group Anura forms the largest living order and a total of 5532 species of anurans are known from the world, of which 412 species are critically endangered, 682 are endangered, 618 species are vulnerable, 320 species are near threatened and 37 species are already extinct (GAA – 2009) (www.iucn.org/amphibians). In many parts of the world, especially in the tropics, knowledge of amphibian species, their distributions, and their requirements for survival is still too poor to be identified.

The north-east India along with eastern Himalaya forms a megabiodiversity area in India and is extremely rich repositories of natural and biological wealth. Many areas in the north-east India remains to be assessed for their diversity due to remoteness and inaccessibility. In recent years, due to loss of habitat and environmental degradation many species are threatened.

Manipur lies in the northeastern corner of India. The Loktak lake of Manipur, a Ramsar site holds a unique position and is recognised for its rich biodiversity. The area coupled with its physiography, has laid a foundation for the proliferation of a variety of habitats, which harbour a diverse biota with a high level of endemism (Mani, 1974). In general, its biological affinities are close to South-east Asia.
The Loktak lake and its surroundings of Bishnupur district has been considered for the present study. For amphibian diversity, knowledge about the faunastic composition of the study area is quite important. Therefore, extensive field survey has been carried out for better understanding and gathering information about the amphibians. In the present study Amphibian fauna in and around Loktak lake, Manipur, India, has been chosen to study these animals for their occurrence and carry out their documentation.

In pursuance of the present problems, the potential habitats both (lotic and lentic) of amphibians were surveyed over a period of three years (2004-2007) and the study has helped in the compilation of basic aspects regarding invetorisation of amphibian fauna, basic information of their occurrence and their distribution and helped in recording a total number of 25 species with 10 new records for the state from the study area.

Dubois (2000) is of the opinion that “a good knowledge of the major features of the mode of life of the organism studied allows to identify the taxa which may be the best biogeographical indicators”. The information on the diversity of the species that involves their distributional pattern, an understanding of the way of life of the species and its relationship with its biotic and abiotic environment is very essential.

During the study, it was found that the habitat is congenial for various torrent species specially the *Amolops*. The habitat was found to be active breeding ground of *Amolops formosus* (Gunther, 1876). So, the present investigation was planned to record detailed life history data of the species and also recording the habitat data. The data on ecological parameters of water will provide valuable
information on this species suitability of the wetland. The study also gives an insight regarding food and feeding behaviour of the frog. The food spectrum and preference of food of male and female *Amolops formosus* (Gunther, 1876) during breeding season are discussed in detail. Anuran amphibians are characterized by a unique type of larva, commonly named tadpole (Altig and McDiarmid 1999). Aquatic tadpoles occur in a great variety of morphologies, and have adapted to a multitude of environments.

Knowledge of the morphology and ecology of these larval stages is crucial to understand the ecological requirements of any particular frog species (Stuart et. al., 2004). In order to understand the value of larval characters in taxonomy and systematics, it is necessary to determine the developmental stage at which characters reach their definitive size, form and colour. The use of tadpole morphology in taxonomic and systematic studies requires full comprehension of the events that punctuate tadpole development, e.g. time of appearance, development, and regression of larval structures.

In the present study, detailed description of available larval stages of the species in natural habitat along with identification of Gosner stages and detailed morphological study of stage 38 tadpole has been included. Important information related to landmark characters of available stages could be generated.

The external features of *Amolops formosus* (Gunther, 1876) has been compared with available species of *Amolops* genus viz. female of *A.marmoratus* (Blyth, 1855), *A. gerbillus* (Annandale, 1912) and *A. viridimaculatus* (Jiang, 1983) and male of *A.monticola* (Anderson, 1871). A table has been prepared for some of the important diagnostic characters derived from the comparative study.
Amolops species occupy mountain streams that are more vulnerable to the effects of climate change (Liu et al., 2000). The study gives an insight on the frogs of lotic systems viz. Amolops marmorotus, Amolops formosus, Amolops assemensis, Amolops viridimaculatus and Amolops gerbillus recorded from different streams of Northeast India, Arunachal Pradesh (Pawar and Birand, 2001; Bordoloi et al., 2002); Assam (Sengupta et al., 2008); Nagaland (Ao et al., 2003); Shillong (Sahu, 1994).

The present study on amphibian diversity, eco-biology and data related to adaptive modifications of tadpoles and life history stages of Amolops formosus (Gunther, 1876) and comparative study on external morphology of Amolops formosus (Gunther, 1876) with available species of the genus Amolops will provide baseline information for future workers in this field.