CHAPTER- I

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India is recognized as a country uniquely rich in all aspects of Bio-diversity, ecosystem, species and genetic diversity. The National Conservation Strategy, 1992 outlines the policy actions required to give greater attention to Biodiversity conservation. The Forest Policy as amended in 1988, stresses the sustainable use of forests and on the need for greater attention to ecologically fragile and biologically rich areas. Studies on the occurrence and distribution of species have provided a basic knowledge in the areas of ecology, biogeography, systematics and conservation biology.

The North East India along with eastern Himalaya forms a megabiodiversity area in India and is one of the major centres of species diversity of amphibians. The eastern Himalayan ecosystem is unique and perhaps no other single geographical feature had greater influence on the life, culture and history of the people of Indian subcontinent than these mountains. In addition, these are extremely rich repositories of natural resources and biological wealth. The eastern Himalayan hill ranges show exceedingly diverse geology, topography and climate that accounts for the rich faunal diversity. The region comprises different vegetational
type along the subtropical, tropical, temperate and alpine climatic zones. The wet evergreen, semi evergreen forests form a suitable habitat for amphibian species.

The eastern Himalayan region is now recognised as one of the global biodiversity hotspot region in the world (Mayr, 1988). Recent workers treat this as synonymous to Arunachal Pradesh, as Arunachal covers the largest part of the eastern Himalaya (Singh et al. 1994). It is in fact the gateway to Indian region for migration from Myanmar China, Bhutan etc. (Rao, 1994). This zone is largely inaccessible and hence far less degraded ecologically than the mainland but is rather extremely fragile and vulnerable to even small biophysical changes. The pressure on forests is too high for natural resources, agriculture (traditional jhumming) developmental works, etc. Moreover the earth is extremely unstable and falls under the high seismic zone. Though for its inaccessibility and unexplored conditions there is great scope for finding out new species and taxons. The present investigation was taken up to explore the accessible areas for its amphibian faunastic diversity.

Amphibians have played a key role in ecological communities for over 250 million years. They are considered as important bio-indicators of global climatic change. Significant declines and apparent extinctions among numerous species were noted by researchers all over
the world since 1980. This type of decline can be recorded only when
detailed record of bio-resources exist. Two regions in our country
harbour the maximum diversity the Eastern Himalayan region and the
Western Ghats. The North Eastern region of India occupies a major part
of Eastern Himalayan region and has remained underexplored or
unexplored for the amphibian fauna inspite of being a hotspot of
biodiversity. The present work was taken up to explore the amphibian
fauna of Arunachal Pradesh, study of habitat ecology, distribution
pattern, and the use of amphibian species in food and medicine by the
indigenous people of Arunachal Pradesh.

The study of the distributional pattern in an area can be used
not only to formulate conservation strategies but also to throw more light
on the taxonomic relationship among the species. Analysis of
zoogeography of a species provides information on ranges of their
natural distribution and boundaries that helps to find out the endemic
status of a species. Endemism constitutes an important factor in the
formulation of conservation strategies. Therefore distribution pattern of
the species recorded and ecological aspects of amphibian habitats are
included in the present study.

234 species of amphibians from India, belonging to 11 families and 42 genera have so far been included in the global data base.
Till now 83 species of amphibians have been reported (BCPP, CAMP, 1998; Bordoloi and Borah 2001; Ahmed, 2001; Chanda, 2002; Sen, 2004) to occur in North East India. Present studies have compiled the data and the species present in Arunachal Pradesh has been raised to 58.

The study area is socio-culturally diversified where various ethnic groups (79.02%) co-exist. The state belongs to more than 25 different major ethnic groups. The use of different amphibian species by the indigenous people as food and medicine indicates the potential for economic utility and ethnozoological importance. Local inhabitants have been using frogs as food and medicine since time immemorial. A detail ethnozoological study may highlight various applications of the species and could provide a scope of knowledge for developing indigenous economy and environmental security. Documentation of tribal knowledge has become an utmost priority as we are rapidly loosing this knowledge base, passed from generation to generation verbally. Along with taxonomic exploration documentation of ethnozoological data has been done wherever possible. Information on use of amphibia as food, medicine, ritual, and folklore by different tribes inhabiting near the amphibian habitats have been included in this study.
The study of ecology of a species helps in understanding variations that may occur within a species in different ecological condition and thus has great taxonomic value. It is a well-established fact that a natural group would exhibit variations among individuals or populations throughout its range of distribution. The study of the distributional pattern in an area can be used not only to formulate conservation strategies but also to throw more light on the taxonomic relationship among the species. The study of habitat ecology of amphibian breeding habitats is an important aspect of the present study. Certain physico-chemical parameters of the amphibian breeding habitats have been analysed. The study also includes plankton and other vegetation present in the breeding habitats. The study gives an insight into the problem of habitat deterioration in the areas under investigation.